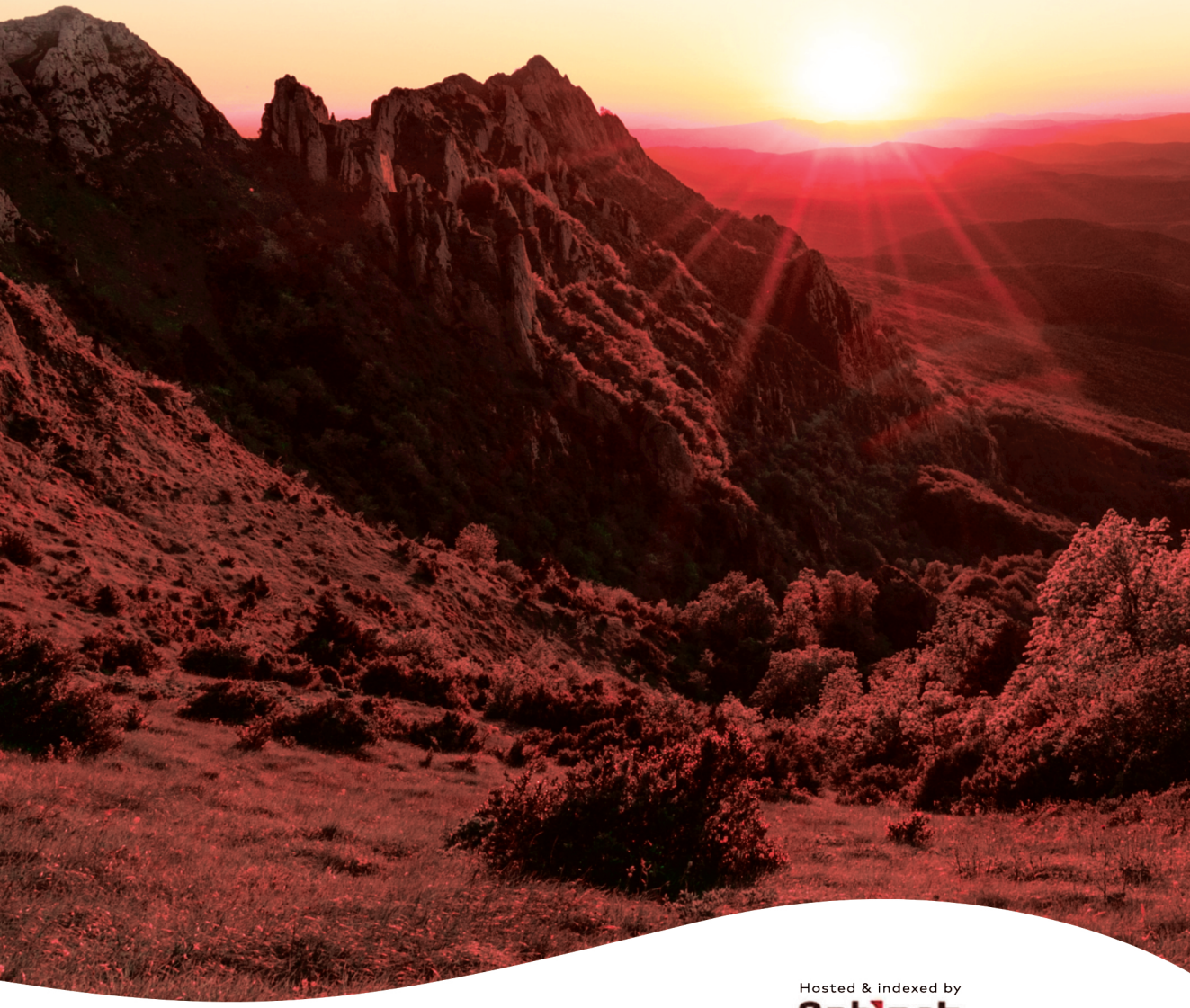
The Dyke

Volume 18 No.3

Leadership & Management



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The Dyke
www.thedyke.msu.ac.zw
https://journals.co.za/loi/dyke

ISSN 1815-9036 (Print)
ISSN 2790-0940 (Online)

Human capital analytics adoption in the SMEs in the city of Gweru: Opportunities and challenges

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Abstract

This paper examines the extent of Human Capital Analytics (HCA) adoption in Zimbabwean Small to Medium Entreprises, alongside the opportunities and barriers shaping its integration. A qualitative research design was employed, relying on unstructured face-to-face interviews with SME representatives selected through convenience sampling. Findings reveal that HCA adoption in Zimbabwean SMEs is still embryonic. The primary constraints include inadequate technological infrastructure, resistance to organisational change, limited financial investment, insufficient statistical expertise among Human Resources (HR) professionals, and resource scarcity. These barriers collectively restrict the ability of SMEs to embed analytics into HR decision-making processes. Nonetheless, the study highlights considerable opportunities for Zimbabwean SMEs to benefit from HCA adoption. Data-driven decision-making could optimise talent acquisition, identify and address skill gaps, and inform the development of targeted training initiatives. Furthermore, embedding HCA has the potential to enhance workforce productivity, support effective resource allocation, and improve overall operational efficiency. The study concludes that while structural, financial, and technological barriers continue to impede HCA uptake in Zimbabwean SMEs, strategic investment and capacity-building could enable these enterprises to harness its benefits. Addressing these challenges would not only strengthen HR practices but also contribute to sustainable organisational growth in a competitive and data-driven global economy.

Key Words: Human Capital Analytics, Adoption, Challenges, Small and Medium Enterprises, Zimbabwe

The Dyke
www.thedyke.msu.ac.zw

18(3):448-470
ISSN 1815-9036 (Print)
ISSN 2790-0940 (Online)
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Introduction

Digital transformation has reshaped organisational functions across sectors, with human resources increasingly harnessing data to inform strategic decisions. Within this shift, Human Capital Analytics (HCA) has emerged as a pivotal capability: the systematic capture, integration and analysis of workforce data, drawing on information science, computing, mathematics and statistics, to generate real-time, evidence-based insights. Positioned beyond intuition or routine reporting, HCA enables organisations to forecast workforce needs, optimise talent acquisition and development, strengthen retention, and link people decisions to organisational performance. In practice, this entails modelling and visualisation, mining multimodal data (text, voice, image and video), and translating patterns into actionable interventions that elevate operational efficiency and competitive advantage.

Yet, adoption is uneven, particularly among Small and Medium Enterprises (SMEs). Resource constraints, limited analytical skills, incompatible or costly technologies, change resistance, governance and privacy concerns, and low data maturity frequently impede uptake. These barriers are acute in Zimbabwean SMEs, often owner-managed, labour-intensive and financially constrained, where awareness of HCA's value may not translate into implementation. This study therefore examines the extent of HCA adoption in Zimbabwean SMEs, the challenges that hinder diffusion, and the opportunities for value creation. Guided by Contextually Based Human Resource Theory (CBHRT), which integrates contingency, institutional and resource-based perspectives, the analysis foregrounds how external (PESTEL), stakeholder and cultural conditions shape HR choices and the assimilation of analytics. By situating HCA within its organisational and environmental context, the study clarifies what enables, or inhibits, evidence-led HR decision-making in SMEs, and identifies practical pathways to accelerate responsible, high-impact adoption.

Background

The rapid uptake of information technology and the Internet has accelerated digital transformation across organisational functions, including human resource management (HRM). Human Capital Analytics (HCA) has emerged as a pivotal development in this transformation, enabling organisations to forecast workforce trends and optimise decision-making by digitalising data processes (Bhawna et al., 2019; Ekka & Singh, 2022). Evidence suggests that HCA constitutes a strategic game-changer, enhancing employee retention, skills development,

and organisational competitiveness (Ekka & Singh, 2022). By leveraging present information to generate predictive insights, HCA is increasingly regarded as a cornerstone of evidence-based HRM with far-reaching organisational benefits.

Digitalisation within HR functions has facilitated the rise of Human Capital Analytics (HCA), whereby software systems generate real-time workforce data to inform managerial decisions (Ekka & Singh, 2022). Margherita (2020) defines HCA as a data-driven pathway that strengthens people-related decision-making, while Chalutz Ben-Gal (2019) conceptualises it as the application of advanced data mining and business analytics methods within HR. Similarly, Shet et al. (2021) argue that HCA integrates information science, computer science, mathematics, and statistics to generate data-driven insights capable of resolving complex organisational challenges. Crucially, HCA promotes rational, evidence-based evaluation and reduces reliance on assumption or intuition (Chalutz Ben-Gal, 2019).

The application of HCA requires specialised skills to process and interpret data from diverse sources, text, voice, image, and video, transforming these inputs into actionable insights and causal relationships (Shet et al., 2021). Through modelling and simulation, HCA enables organisations to identify patterns across HR variables, improving governance of workforce decisions and supporting strategic outcomes (Ekka & Singh, 2022). For effective adoption, however, organisations must not only invest in technological infrastructure but also embed HCA into their decision-making processes. This involves articulating a business case, securing stakeholder involvement, investing in training and resources, and cultivating a culture of evidence-based HR practice (Shet et al., 2021).

Despite the global growth of HCA, adoption among Small and Medium Enterprises (SMEs) remains at an embryonic stage, particularly in developing economies. Many SMEs lack awareness of HCA's potential and continue to rely on intuition or subjective judgement for decision-making (Maroufkhani et al., 2020). While large organisations have integrated HCA into their operations, SMEs have been comparatively slow to adopt due to barriers such as limited financial investment, inadequate infrastructure, and insufficient analytical expertise (Kinange et al., 2023). This gap is especially salient in Zimbabwe, where SMEs form a vital part of the economy yet face significant challenges in integrating advanced HR technologies.

Definitions of SMEs vary globally. In the United Kingdom, firms employing fewer than 250 employees qualify as SMEs, while thresholds extend to 3,000 employees in countries such as the United States and China (Financial Tribune, 2018). In Zimbabwe, however, the Zimbabwe Revenue Authority (ZIMRA) defines SMEs as enterprises employing between five and forty people (Financial Tribune, 2018). For the purposes of this study, this Zimbabwean definition has been adopted. Structural characteristics of SMEs, including labour intensity, resource scarcity, and heavy owner-manager influence, present distinctive HRM challenges, often resulting in ad hoc or informal practices (Harney & Alkhalaf, 2021). Consequently, most Zimbabwean SMEs lack both the financial resources and the HR capabilities necessary to integrate HCA (Maroufkhani et al., 2020).

Although HCA is widely recognised as a strategic enabler, research on its adoption and value creation in SMEs remains limited. The literature highlights managerial uncertainty and a lack of confidence in using HCA tools, often stemming from insufficient knowledge of its applications and benefits (Fernandez & Gallardo-Gallardo, 2020). Existing empirical studies further indicate that adoption is constrained by ethical concerns, limited technical expertise, and weak institutional support, all of which undermine the translation of HCA into tangible business value (Ushara & Chandrika, 2022). This paucity of evidence underscores the need to examine the extent of adoption, opportunities, and challenges associated with HCA in SMEs within the Zimbabwean context.

Scholarly investigations into HCA adoption have predominantly concentrated on individual-level factors, leaving a gap in research that integrates both individual and organisational perspectives (Fernandez & Gallardo-Gallardo, 2020). This conceptual ambiguity, combined with limited clarity on adoption determinants, has contributed to SMEs being left behind, despite their recognised role as engines of economic development (Kinange et al., 2023). Only a small number of SMEs have been able to fully harness the potential of HCA (Noutsa et al., 2017). Although often hailed as a transformative tool in HRM, the determinants and consequences of HCA adoption within SMEs remain underexplored. This underscores the need to establish the extent of adoption, as well as the challenges and opportunities created by the integration of HCA in such enterprises.

Key questions therefore arise: to what extent have SMEs adopted HCA? What challenges hinder this adoption? And what opportunities may arise if adoption is accelerated? According to Shet et al. (2021), HCA is an increasingly

indispensable component of HRM because of its ability to deliver data-driven insights that strengthen organisational decision-making. Yet, integration has proven complex, with many organisations, particularly SMEs, struggling to adopt analytics due to financial, technical, and cultural constraints (Fernandez & Gallardo-Gallardo, 2020). As Boakye and Lamptey (2020) observe, HCA remains unknown in many organisations, and where it is known, managerial decisions often still rely on instinct rather than analytical tools. Similarly, Ekka and Singh (2022) note that despite its benefits, adoption among HR professionals remains sluggish, largely due to technological barriers.

Empirical studies illustrate this complexity. In Spain, Fernandez and Gallardo-Gallardo (2020) found ongoing conceptual confusion regarding HCA, which undermined its uptake. They identified 14 barriers grouped into four broad categories: data and models, software and technology, people, and management. Similarly, Shet et al. (2021) identified five clusters of influencing factors: technological, organisational, environmental, data governance, and individual-level determinants. Within these categories, sub-factors include a lack of implementation software, weak HR skills and expertise, data privacy and ethical concerns, limited presentation and selling skills among HR professionals, and a lack of capacity to derive actionable insights from data.

Park and Kim (2021) reinforce these findings, highlighting the significance of data quality, integration, and technological capabilities. They also emphasise the role of security and privacy, managerial support, and government policy as additional influences on adoption. In practice, organisations face challenges spanning infrastructure deficiencies, managerial resistance, inadequate expertise, and unsupportive legal and economic environments. For SMEs, the constraints are particularly acute. Many lack the financial resources and IT infrastructure required for HCA, while insufficient managerial commitment, limited skills, and resistance to change exacerbate slow adoption (Maroufkhani et al., 2020; Kinange et al., 2023).

Cross-country studies further highlight context-specific barriers. In Iran, Maroufkhani et al. (2020) found that knowledge of HCA benefits does not guarantee adoption when organisations lack financial, technological, or human resource capacity. They propose that adoption is shaped by three contextual domains: technology, organisation, and environment. Later work by Maroufkhani et al. (2023) shows that SMEs are more likely to adopt HCA if systems are easy to use and consistent with existing practices. Incompatibility,

however, such as applying systems designed for multinational firms within SMEs, can severely hinder adoption.

Evidence from Palestine and beyond suggests that individual competencies also matter. Tunsi et al. (2024) found that HR practitioners' self-efficacy significantly influenced acceptance and adoption of HCA, with weaker perceptions of competence reducing adoption likelihood. Similarly, Muhammad et al. (2023) report that practitioners with stronger mathematical and statistical backgrounds adopt HCA more readily, highlighting the critical role of computational skills. They further identify the importance of social factors, such as positive support from line managers and top management, in driving adoption. These findings point to the need for robust training and development programmes to build analytical competencies within SMEs.

Studies across the Global South indicate that structural limitations also constrain adoption. Maroufkhani et al. (2020) argue that while larger corporations have long utilised HCA to gain competitive advantage, SMEs continue to struggle, often lacking even consistent and reliable basic metrics. Kanaiyalal and Sinha (2023) identify ethical issues, data integration challenges, and shortages of skilled HR personnel as additional barriers, while Kinange et al. (2023) emphasise employee resistance, inadequate infrastructure, and managerial bottlenecks. Chalutz Ben-Gal (2019) highlights two enduring paradoxes: despite its popularity, high-quality scientific research on HCA adoption remains limited, and despite evidence of positive organisational outcomes, actual adoption rates remain low.

African studies reveal similar patterns. In Ghana, Boakye and Lamptey (2020) found that HCA enhances talent acquisition and employee retention, but most organisations fail to use it effectively due to poor analytics competencies and limited managerial support. They argue that while adoption is well advanced in the Global North, the Global South has yet to realise the full benefits. Shah et al. (2020) report that in Tanzanian SMEs, adoption remains shallow, constrained by financial, technical, and security challenges. Process maturity within HR functions also appears to be a critical factor (Shet et al., 2021).

Adoption, is therefore, influenced by a confluence of organisational, technological, environmental, and individual-level factors. Amoako et al. (2023) show that perceived ease of use, perceived utility, and system compatibility are pivotal. If systems are perceived as difficult or misaligned with organisational needs, adoption slows or fails altogether. Meanwhile, Mukuze et al. (2022)

demonstrate that many organisations prioritise short-term operational stability over longer-term investments in analytics, further impeding adoption. These findings collectively explain why HCA uptake remains slow among SMEs, particularly in the Global South.

In the Zimbabwean context, empirical evidence suggests that adoption of HCA is hindered by a range of socio-technical and organisational factors. Maphosa (2021) observes that reluctance to accommodate change, coupled with concerns regarding confidentiality and the security of employee records, presents significant barriers. These findings underscore the importance of mindset and cultural attitudes towards innovation: employees and managers who perceive HCA as a threat are less likely to support its adoption. Consequently, Zimbabwean organisations need to manage change processes effectively, ensuring that resistance is addressed through awareness, trust-building, and training interventions.

Mukuze et al. (2023) similarly identify both individual and organisational barriers to HCA integration. On the individual level, ethical concerns and a lack of statistical competence constrain HR professionals' ability to harness analytics for predictive purposes. On the organisational level, leadership and management styles often reinforce reliance on traditional, descriptive analytics, which remain inadequate for addressing forward-looking workforce challenges (Mukuze et al., 2022). These insights suggest that enhancing quantitative and analytical skills among HR practitioners, alongside fostering supportive leadership, is essential if HCA is to be effectively operationalised in Zimbabwe.

Conceptual Framework

This research is guided by the CBHRT, developed by Paauwe (2004), offers a holistic framework for understanding why organisations adopt particular HR practices. CBHRT posits that HR policies and strategies are shaped by both external and internal environments, encompassing political, economic, social, technological, environmental, and legal (PESTEL) factors, as well as cultural and institutional contexts and the influence of dominant stakeholders (Decramer et al., 2012). Integrating contingency theory, institutionalism, and the RBV, CBHRT highlights that while human and other resources generate organisational value, their use is constrained by environmental pressures and the need for legitimacy within prevailing social and regulatory frameworks (Paauwe, 2004; Mohammad, 2019).

Applying CBHRT to HCA adoption is particularly apposite, as it situates organisational choices within broader contextual realities. As Keerthi and Reddy (2018) argue, HCA inherently involves contextual evaluation, using data exploration to derive insights tailored to specific business challenges. Similarly, Etukudo (2019) emphasises that environmental analysis is a prerequisite for HCA to deliver meaningful and actionable solutions. Thus, CBHRT provides a robust theoretical lens for examining how Zimbabwean SMEs navigate the economic, technological, cultural, and political conditions that mediate the adoption of HCA.

Methodology

This study adopted a qualitative, multiple case study design underpinned by an interpretivist philosophy, enabling an in-depth exploration of participants lived experiences and perceptions regarding the adoption of HCA within Zimbabwean SMEs. SMEs employing between 10 and 60 workers were purposively targeted, with participants selected through convenience sampling using registers obtained from the Gweru City Council. Data were collected through unstructured face-to-face interviews with owners, managers, and non-managerial employees, allowing respondents to share their perspectives on adoption, challenges, and opportunities associated with HCA, while also enabling the emergence of new insights. To ensure credibility and trustworthiness, the researchers engaged in prolonged fieldwork, maintained detailed field notes and audit trails, and safeguarded anonymity and confidentiality through the use of pseudonyms. Ethical clearance was obtained, and participants provided informed consent. Data analysis followed the six-step thematic approach outlined by Kiger and Varpio (2020), comprising familiarisation, coding, theme development, review, definition, and reporting. This design was considered appropriate as it allowed the study to capture nuanced, context-specific understandings of the factors influencing the adoption of HCA in SMEs.

Results

This study aimed to assess the extent of Human Capital Analytics (HCA) adoption among Small and Medium Enterprises (SMEs) in the City of Gweru, Zimbabwe, and to explore the challenges and opportunities associated with its integration. A key objective was to identify the specific levels of analytics adoption, namely descriptive, predictive, and prescriptive analytics, across participating SMEs over the past five years. This tiered approach to HCA adoption is widely recognised in academic literature as a framework for

measuring organisational maturity in analytics implementation (Shet et al., 2021; Chalutz Ben-Gal, 2019).

Descriptive analytics involves the systematic reporting of historical HR data and is often the entry point for organisations beginning their HCA journey (Ekka & Singh, 2022). Predictive analytics, which leverages statistical models to forecast future workforce trends, requires greater analytical sophistication and data infrastructure (Muhammad et al., 2024; Park & Kim, 2021). Prescriptive analytics, the most advanced level, supports decision-making through optimisation and scenario modelling (Margherita, 2022).

Research suggests that while large corporations have made notable strides in adopting all three levels of analytics, SMEs, especially in developing economies, face significant barriers due to resource limitations, technological gaps, and low data maturity (Maroufkhani et al., 2020; Kinange et al., 2023). In Zimbabwe, where SMEs play a pivotal role in economic development (*Financial Tribune*, 2018), the integration of HCA is further constrained by limited awareness, lack of analytical competencies, and organisational resistance to change (Maphosa, 2021; Mukuze et al., 2023).

This study, therefore, situates its empirical inquiry within this context, using the Contextually Based Human Resource Theory (CBHRT) (Paauwe, 2004) as a guiding framework. CBHRT recognises that HR practices, such as HCA adoption, are shaped by internal organisational resources and capabilities as well as external environmental and institutional pressures (Decramer et al., 2012; Etukudo, 2019). By applying this framework, the research provides a context-sensitive analysis of how Zimbabwean SMEs in Gweru are engaging with, or resisting, the adoption of human capital analytics tools.

Extent and Levels of HCA Adoption

Figure 1 shows the adoption levels of HCA among the studied SMEs for the period 2020 to 2023.

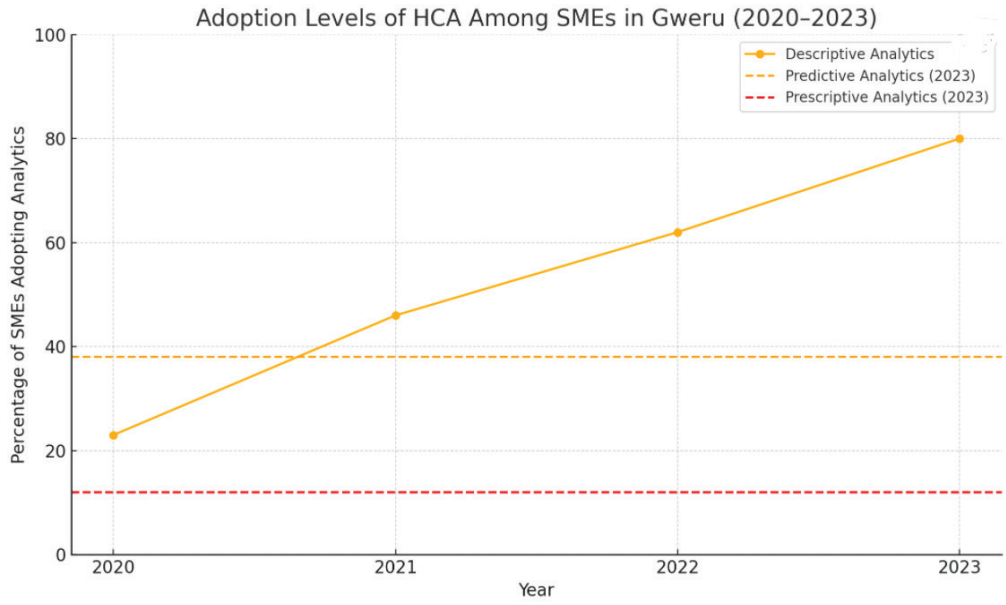


Figure 1: Adoption Levels of HCA Among SMEs in Gweru 2020-2023

Source: Researcher, 2024

The adoption of HCA among SMEs in the City of Gweru reveals a clear progression in basic analytics engagement, with a dominant preference for descriptive analytics. According to the study findings, 80% of SMEs used descriptive data by 2023, up significantly from 62% in 2022, 46% in 2021, and just 23% in 2020. This upward trend reflects a growing awareness of the need to collect and organise workforce data for basic reporting and compliance purposes, such as maintaining employee records, payroll documentation, and staff turnover logs. This stage of adoption aligns with what Chalutz Ben-Gal (2019) describes as the "foundational level" of analytics maturity, where organisations begin using historical data to describe past events.

In contrast, predictive analytics, which uses statistical modelling to forecast trends and workforce behaviours, was reported in only 38% of participating SMEs as of 2023. The low uptake suggests a gap in analytical capacity and infrastructure required for forecasting talent needs or evaluating future workforce risks (Muhammad et al., 2024). Similarly, prescriptive analytics,

which involves advanced optimisation and scenario-based recommendations, was adopted by a mere 12% of SMEs. This finding is consistent with global research indicating that prescriptive HCA is often underutilised in resource-constrained environments, particularly where there is a shortage of data science expertise and digital infrastructure (Shet et al., 2021; Maroufkhani et al., 2020).

The trend, as illustrated in Figure 1, indicates that while Gweru's SMEs are making commendable progress in adopting descriptive HCA, they remain at the nascent stages of analytics maturity. This mirrors the broader pattern observed in developing economies, where small firms face structural constraints that hinder the transition from basic data reporting to predictive and prescriptive decision-making (Kinange et al., 2023; Boakye & Lamptey, 2020). The limited engagement with advanced analytics suggests that most SMEs are yet to harness the full strategic potential of HCA in areas such as talent optimisation, succession planning, or predictive workforce modelling.

From a theoretical standpoint, this gradual progression reinforces the relevance of the CBHRT, which emphasises the influence of contextual conditions, such as technological readiness and institutional support, on HRM practices (Paauwe, 2004; Decramer et al., 2012). Without supportive policy frameworks and capacity-building initiatives, Zimbabwean SMEs are unlikely to evolve beyond basic data practices. Thus, while the current level of HCA adoption demonstrates increasing data awareness, it also highlights the urgent need for investment in analytics training, software, and system integration if SMEs in Gweru are to shift from descriptive to transformative HCA practices.

Types of Data Collected and Utilised in HCA

The findings revealed that all participating SMEs in the City of Gweru maintained some form of HR-related data, forming the foundation for descriptive analytics practices. Figure 2 represents the types of HR-related data collected by SMEs in Gweru, along with the estimated percentage of firms collecting each data type.

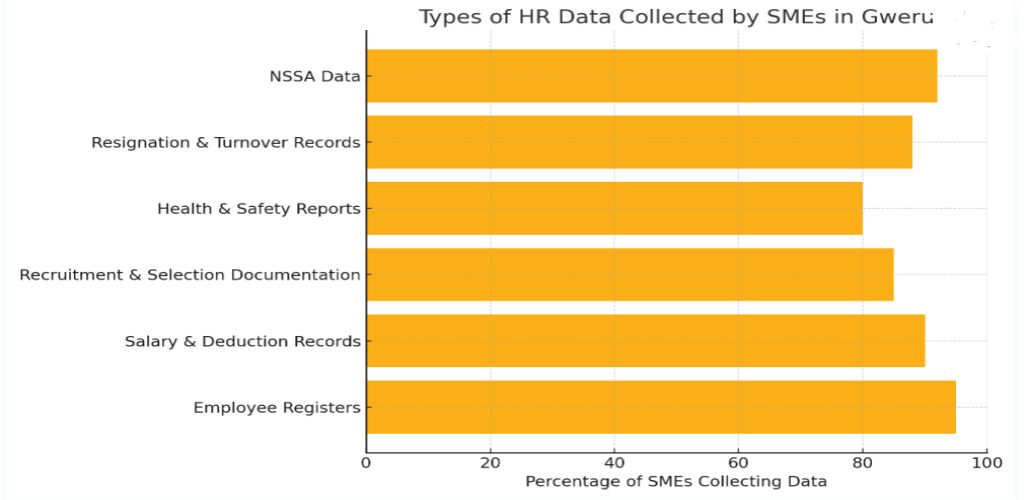


Figure 2: Types of HR Data Collected by SMEs in Gweru

Source: Researcher, 2024

Figure 2 highlights that

- Employee Registers and NSSA Data were the most commonly collected data types.
- Health & Safety Reports and Recruitment Documentation were slightly less common, suggesting areas where data practices could be strengthened.
- The visual helps quickly compare collection frequency and can guide prioritisation in capacity-building or system development.

The results align with prior research indicating that the initial stages of HCA adoption in SMEs are largely operational and compliance-oriented. Most SMEs engaged primarily in descriptive analytics, whereby raw HR data was used to generate simple reports or comply with external audits, but without deeper strategic insight or predictive modelling. Despite this baseline level of data collection, the depth, consistency, and analytical application of HR data varied significantly across firms. Some SMEs maintained only paper-based records with minimal digitisation, while a minority employed spreadsheets or cloud-based HR information systems (HRIS) to track employee metrics. However, none of the organisations had adopted formal predictive or prescriptive analytics tools, such as statistical modelling, machine learning, or AI-based dashboards.

This heterogeneity addresses a key observation in the HCA literature: while data availability is not necessarily a constraint, data literacy and analytic capability

often are. Many organisations, particularly SMEs, collect substantial volumes of workforce data through payroll systems, attendance registers, and compliance documentation, yet lack the skills to transform these inputs into actionable insights (Chalutz Ben-Gal, 2019; Ekka & Singh, 2022). Research shows that the real challenge lies not in gathering data but in developing the analytical capacity to interpret it effectively, requiring specialised competencies in statistics, data mining, and interpretation (Shet et al., 2021). This gap between data possession and analytical proficiency is especially pronounced in developing economies such as Zimbabwe, where limited investment in digital infrastructure and training hampers the translation of raw data into strategic decision-making (Maroufkhani et al., 2023; Boakye & Lamptey, 2020). Consequently, the bottleneck for advancing HCA adoption lies less in technological access and more in building human expertise and organisational cultures that support evidence-based HR practices.

Figures 3 and 4 show the depth of analytics use by data type obtained from the studied SMEs in Gweru.

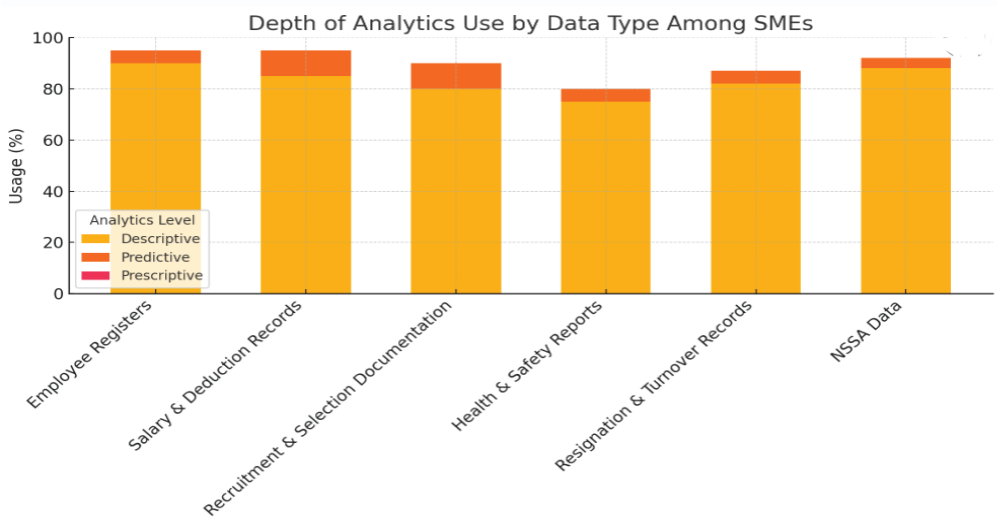
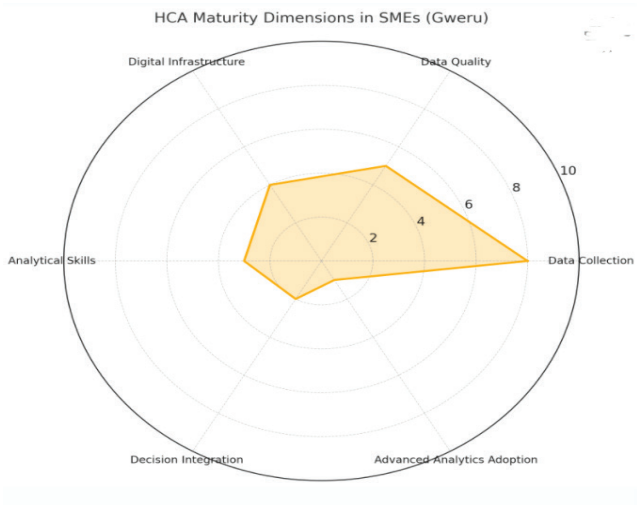


Figure 3: Depth of Analytics Use by Data Type Among SMEs

Source: Researcher, 2024

Figure 4: The HCA maturity profile of SMEs in Gweru

Source: Researcher, 2024



Methods of Data Management

The study revealed that data storage and management practices among SMEs in Gweru remain largely traditional and fragmented. Approximately 80% of SMEs reported reliance on manual, paper-based methods, including printed records, counter books, exercise books, and diaries, as their primary means of HR data storage. Only 20% had made partial transitions to basic digital tools, such as Microsoft Excel, Word, or smartphone-based record keeping. Importantly, none of the surveyed SMEs were using advanced HRM software or Human Resource Information Systems (HRIS), despite their centrality to effective HCA.

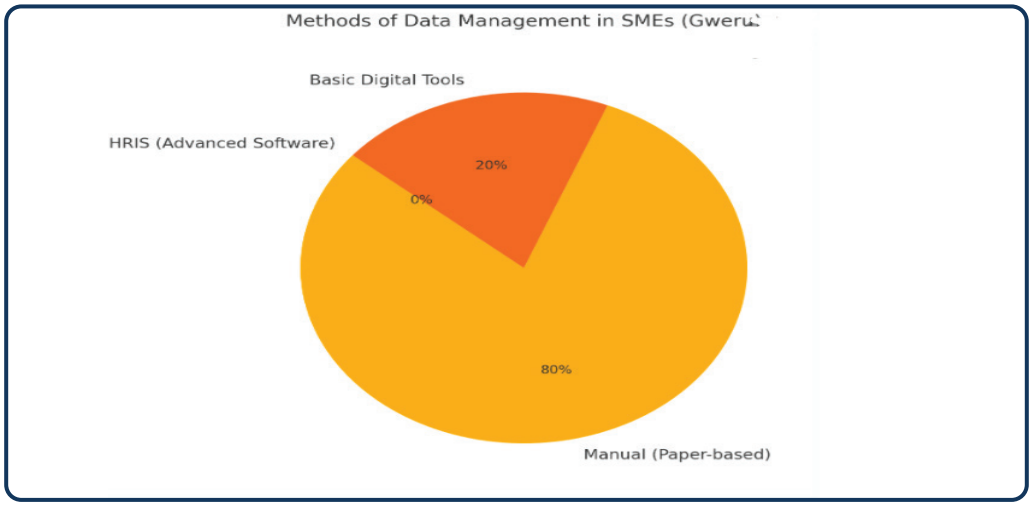


Figure 5: Methods of Data Management in SMEs (Gweru)

Source: Researcher, 2024

These findings are consistent with wider evidence in the literature, which shows that SMEs in developing economies often face challenges in digital transformation due to limited financial resources, insufficient technical know-how, and resistance to technological change. While the adoption of digital platforms can improve accuracy, accessibility, and integration of HR data, the financial and technical barriers to HRIS adoption are particularly acute in resource-constrained settings. Furthermore, the reliance on manual data storage methods introduces risks of data loss, duplication, and inefficiency, undermining SMEs' ability to engage in predictive and prescriptive analytics.

The absence of HRIS adoption highlights a major bottleneck in analytics maturity. Without structured digital databases, SMEs are unable to move beyond descriptive reporting toward data-driven strategic HR decision-making, thereby limiting their capacity to harness human capital as a driver of organisational competitiveness.

Challenges to HCA Adoption

The study revealed that the adoption of Human Capital Analytics (HCA) in SMEs is impeded by a set of interrelated challenges spanning knowledge, skills, finance, technology, and culture.

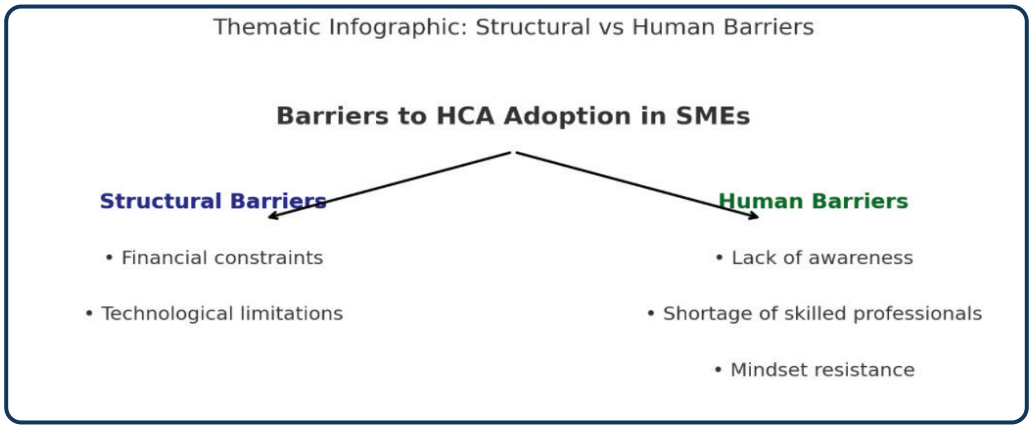


Figure 6: Barriers to HCA Adoption in SMEs

Source: Researcher, 2024

The study's findings highlight that the barriers to HCA adoption among SMEs can be broadly divided into structural and human dimensions. Structural barriers encompass system-level challenges, notably *financial constraints* that limit investment in HRIS platforms and professional development, as well as

technological limitations linked to outdated infrastructure and poor access to digital tools. On the other hand, human barriers reflect people-level challenges, including a *lack of awareness* of HCA principles and benefits, a *shortage of skilled professionals* such as data analysts and HR specialists, and *mindset resistance*, where SME owners and employees demonstrate scepticism or reluctance toward data-driven practices. Figure 6 provides clarity for stakeholders, making it evident that overcoming barriers requires a dual strategy: strengthening resource and infrastructure capacity while also addressing skills development, cultural readiness, and behavioural change.

Opportunities Identified

Despite the barriers outlined, the study found that SMEs in Gweru recognised several opportunities and benefits that could arise from adopting HCA.

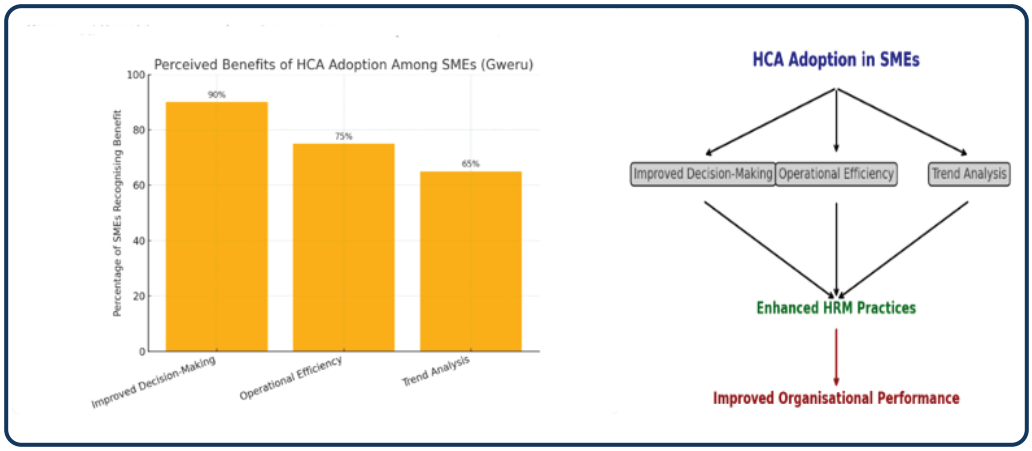


Figure 7: Perceived Benefits of HCA Adoption Among SMEs (Gweru)

Source: Researcher, 2024

Taken together, Figure 7 suggests that with appropriate support, training, and investment, Zimbabwean SMEs could leverage HCA as a strategic tool to enhance HRM practices and overall organisational performance. Importantly, this also positions SMEs to remain competitive in a digitising economy and to transition from reactive HR management to proactive, analytics-driven talent strategies.

Discussion

This study shows that HCA adoption among Zimbabwean SMEs remains highly limited, with practices largely confined to basic record-keeping and descriptive reporting. The heavy reliance on manual methods such as printed

documents, counter books, and diaries reflects broader patterns in SMEs across developing economies, where digital uptake in HRM is minimal (Ekka & Singh, 2020; Boakye & Lamptey, 2020; Kinange et al., 2023). This overdependence on traditional approaches restricts data quality and availability, leading to incomplete and inconsistent HR records that weaken the potential for analytics-driven insights (Fernandez & Gallardo-Gallardo, 2021).

A key barrier is the lack of technological infrastructure, with most SMEs lacking the hardware, software, or connectivity required to implement advanced HRM systems. Similar findings have been reported elsewhere: Maroufkhani et al. (2020) noted that SMEs often underinvest in IT systems due to financial constraints, while Boakye and Lamptey (2020) found that the absence of modern HRIS hinders adoption of analytics-based HR practices. This technological deficit contributes to weak data management systems, which in turn make trend analysis, predictive modelling, and evidence-based decision-making unattainable.

Beyond infrastructure, SMEs face human-capital-related challenges, including the shortage of skilled HR analysts and data specialists capable of operationalising HCA. Without analytical expertise, even digital data remains underutilised. Moreover, awareness gaps and cultural resistance emerged as significant obstacles. Many SME owners are either unfamiliar with HCA or sceptical of its relevance, echoing Fernandez and Gallardo-Gallardo's (2021) observation that the perceived complexity and intangibility of analytics limit its acceptance. This mindset reflects a reliance on intuition and experiential judgment, which continues to dominate HR decision-making in smaller firms (Kinange et al., 2023).

Despite the barriers, the study highlights significant opportunities for SMEs to leverage HCA. First, analytics can improve decision-making by enabling evidence-based HR strategies such as targeted recruitment, workforce planning, and succession management. Second, HCA facilitates operational efficiency, streamlining HR processes and reducing redundancy, outcomes that are increasingly important in resource-constrained contexts (Boakye & Lamptey, 2020). Third, trend analysis provides insights into workforce dynamics (e.g., turnover, absenteeism, recruitment yields) that can inform proactive interventions. These benefits resonate with global research demonstrating how SMEs can use analytics to optimise HR outcomes and strengthen competitiveness (Ekka & Singh, 2020; Maroufkhani et al., 2020).

Overall, the discussion suggests that the slow uptake of HCA is not merely technological, but also cultural and strategic. SMEs require not only financial and infrastructural support but also capacity-building initiatives aimed at raising awareness, improving data literacy, and embedding a culture of evidence-based HRM. By addressing both structural and human barriers simultaneously, Zimbabwean SMEs could transition from rudimentary HR record-keeping to strategic use of analytics, thereby improving efficiency, competitiveness, and long-term sustainability.

Conclusion

This study concludes that the adoption of HCA among Zimbabwean SMEs remains at an early and limited stage, with most SMEs relying on manual, paper-based data systems and only a small fraction experimenting with basic digital tools. The findings highlight critical barriers, chief among them inadequate technological infrastructure, poor data quality, limited financial resources, a shortage of skilled personnel, and low levels of awareness regarding the benefits of analytics. These obstacles reflect broader challenges identified in the literature, where SMEs in developing contexts often struggle with digital transformation and underinvestment in HRM technologies (Boakye & Lamptey, 2020; Maroufkhani et al., 2020; Fernandez & Gallardo-Gallardo, 2021).

Nevertheless, the study demonstrates that HCA presents significant opportunities for SMEs that can overcome these challenges. Analytics has the potential to improve decision-making by grounding HR practices in evidence, enhance operational efficiency through streamlined processes and reduced redundancies, and support talent management strategies such as targeted recruitment, skills development, and succession planning. By leveraging workforce data to monitor trends like turnover and absenteeism, SMEs can also make proactive interventions that improve both employee engagement and business outcomes (Ekka & Singh, 2020; Kinange et al., 2023).

For Zimbabwean SMEs to realise such benefits, a multifaceted strategy is required. At the firm level, SMEs should invest in digital infrastructure and adopt scalable HRIS platforms suited to their resource constraints. Simultaneously, developing analytical skills among HR practitioners and managers is crucial, supported by training, capacity-building initiatives, and knowledge sharing. At the ecosystem level, policy support and collaborative networks can reduce barriers by providing financial incentives, subsidising digital tools, and fostering partnerships with universities, technology providers, and industry

associations. Such interventions can help SMEs transition from descriptive HR reporting to predictive and prescriptive analytics, thereby embedding data-driven decision-making into organisational culture.

Ultimately, the findings stress that successful HCA adoption in SMEs is not only a matter of technology but also of mindset and strategic orientation. By cultivating an organisational culture that values data, aligning human capital strategies with business goals, and investing in the necessary tools and skills, Zimbabwean SMEs can harness HCA as a driver of competitiveness, resilience, and long-term growth in an increasingly digital and knowledge-based economy.

Recommendations

In light of the findings, several recommendations are proposed to facilitate the adoption and integration of HCA in Zimbabwean SMEs.

i) Investment in HR Technology Infrastructure

SMEs should prioritise the acquisition of appropriate HR technology platforms, including affordable Human Resource Information Systems (HRIS) and cloud-based analytics tools. Since many SMEs face financial barriers, partnerships with technology providers, access to subsidised packages, or financial support from government and development agencies could lower entry costs (Maroufkhani et al., 2020). Adoption of scalable, low-cost digital systems would enable more effective data collection, storage, and analysis, thus bridging the current technology gap.

ii) Capacity Building and Skills Development

Building analytical capabilities among HR personnel is critical for HCA success. SMEs should invest in training programs that strengthen competencies in data management, statistical analysis, and the application of analytics software. Collaboration with universities, training institutions, and professional bodies can ensure SMEs access tailored programs that address their needs. As Fernandez and Gallardo-Gallardo (2021) note, analytics adoption requires not just tools but also the development of human capital capable of using those tools effectively.

iii) Improving Data Quality and Standardisation

To overcome challenges of incomplete and inconsistent data, SMEs should adopt standardised data management protocols, including clear data collection guidelines, periodic updates, and robust digital storage systems with backup features. Ensuring secure, reliable, and accurate data will provide a foundation

for meaningful analytics and strengthen confidence in data-driven decision-making (Ekka & Singh, 2020).

iv) Collaboration and Knowledge Sharing

Platforms for collaboration among SMEs, academia, and industry experts should be established to foster the exchange of best practices. Peer-learning forums and networks can reduce knowledge gaps, promote shared solutions to common barriers, and encourage collective bargaining for affordable analytics tools. Such knowledge ecosystems have been shown to accelerate SME digital transformation in other contexts (Kinange et al., 2023).

v) Development of a Simplified SME-Oriented Analytics Model

Most existing HCA models are designed for large corporations with extensive resources and specialist personnel. Zimbabwean SMEs would benefit from a simplified, context-specific analytics model that addresses their unique resource constraints. Such a model should be cost-effective, user-friendly, and scalable, enabling SMEs to progressively build their analytics maturity while aligning human capital strategies with organisational goals.

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