

Enhancing enterprise resource planning: An empirical analysis of feature utilisation and competitive advantage in small- and medium-sized enterprises


Authors:

Donovan M. Jacobs¹ 
Boniface Kabaso¹ 

Affiliations:

¹Department of Information Technology, Faculty of Informatics and Design, Cape Peninsula University of Technology, Cape Town, South Africa

Corresponding author:

Donovan Jacobs,
donovan@donomax.com

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Background: Small- and medium-sized enterprises (SMEs) in South Africa face numerous challenges, including limited access to financial resources and intense competition. The adoption of enterprise resource planning (ERP) systems has been posited as a strategic solution to enhance operational efficiency and competitiveness.

Aim: This study aims to examine the strategic utilisation of ERP systems within South African SMEs, focussing on the specific features leveraged to improve business competitiveness.

Setting: The research was conducted across various industries, including manufacturing, retail, information technology (IT), security, construction, oil & gas and transport, providing a comprehensive view of ERP adoption in the South African SME context.

Methods: A mixed-methods approach was adopted, incorporating both quantitative and qualitative data collected via a comprehensive survey of SME owners and IT managers. The survey included Likert-scale items and open-ended questions to capture the frequency of ERP feature utilisation and qualitative insights into their impact on business performance.

Results: The findings indicate a significant correlation between the strategic use of ERP features and improvements in the Cash Conversion Cycle (CCC), enhancing financial efficiency and competitiveness. Key ERP functionalities such as inventory management, customer relationship management (CRM) and financial management were frequently utilised by successful SMEs.

Conclusion: The study concludes that targeted use of ERP systems can substantially improve operational efficiency and competitiveness for SMEs. By focusing on core ERP features that impact financial metrics like the CCC, SMEs can enhance their financial stability and market resilience. Furthermore, integrating CBSI with ERP systems offers a predictive tool for assessing performance, aiding SMEs in strategic planning and decision-making.

Contribution: The study explores the potential integration of the Composite Business Success Index (CBSI) within ERP systems to provide a more comprehensive measure of business performance.

Keywords: enterprise resource planning; small- and medium-sized enterprises; competitive advantage; ERP feature utilisation; cash conversion cycle; Composite Business Success Index; survey analysis; optimisation.

Introduction

The evolving business landscape has mandated the need for robust information systems to manage enterprise resources efficiently. Particularly for small- and medium-sized enterprises (SMEs), which often operate with resource constraints, the adoption of enterprise resource planning (ERP) systems has become crucial to enhancing operational efficiency and competitive advantage (Basu & Jha 2024). In South Africa, SMEs face unique challenges impacting ERP adoption, such as limited digital infrastructure, regulatory constraints and restricted funding opportunities. According to the Small Enterprise Development Agency (SEDA), while over 2 million SMEs are registered, only a fraction actively engages with digital solutions. These challenges create a critical need for scalable, accessible ERP systems to enhance SME competitiveness.

This study explores the features of ERP systems that are most pertinent to SMEs, examining how their utilisation can contribute to business success. Drawing from a broad survey, this research aims to bridge the gap between ERP capabilities and SME performance metrics, especially focussing on the Cash Conversion Cycle (CCC) as an indicator of financial efficiency.

Small- and medium-sized enterprises play a significant role in South Africa's economy, contributing substantially to the country's gross domestic product (GDP) and employment. According to Egu and Chiloane-Tsoka (2023), SMEs account for approximately 40% of South Africa's GDP and represent over 98% of formal businesses in the country, providing essential contributions to job creation and entrepreneurship. However, these enterprises face numerous challenges, including limited access to financial resources, regulatory burdens and intense competition from larger businesses. The adoption of Tier 1 ERP systems can provide SMEs with the necessary tools to streamline their operations, improve financial management and enhance their competitive position in the market. This study specifically examines the ERP features that are most beneficial for South African SMEs and evaluates their impact on operational efficiency and competitiveness.

Literature review findings

This section presents an examination of key themes from the existing literature, highlighting the impact and relevance of ERP systems within SMEs and their role in driving operational efficiency and competitiveness.

Enterprise Resource Planning systems in small- and medium-sized enterprises

Enterprise resource planning systems are integrated software solutions that play a crucial role in organisations by providing a clear strategy for digital transformation to manage an organisation's resources, information and functions (Lamey et al. 2023). The ERP systems are often categorised into three tiers: Tier 1, Tier 2 and Tier 3, each designed to cater to the needs of different sizes and types of organisations. For SMEs, Tier 3 ERP systems are particularly relevant because of their affordability, ease of use and scalability. Small- and medium-sized enterprises should therefore choose an ERP system according to the number of their staff and the complexity of their processes to best suit their needs (Gubán et al. 2023).

Small- and medium-sized enterprises often adopt Tier 3 ERP systems because of their affordability and scalability, which are crucial for managing limited resources efficiently. Kovalev, Novikova and Dobrovlyanin (2024) highlight the effectiveness of managing SMEs with ERP systems. Jawad and Balázs (2024) emphasise the creation of adaptable strategies supported by ongoing learning and data-driven optimisation, which has several benefits for SMEs. According to the authors, ERP systems are 'configurable information systems packages that integrate information and information-

based processes within and across functional areas in an organisation'.

The role of enterprise resource planning in enhancing competitiveness

Enterprise resource planning systems play a significant role in enhancing competitiveness through functionalities such as customer relationship management (CRM), inventory management and financial reporting. Research by Venkatraman and Fahd (2016) indicates that these features provide substantial competitive advantages to businesses, including SMEs. The strategic adoption of ERP systems can significantly enhance the competitiveness of SMEs (Basu & Jha 2024; Moeuf et al. 2018). For SMEs, these systems can streamline operations, reduce costs and improve the CCC, a crucial financial metric that measures the efficiency of converting inventory into cash.

Relevance of enterprise resource planning systems for South African small- and medium-sized enterprises

In South Africa, ERP systems are vital for SMEs, helping streamline operations, enhance decision-making and gain competitive advantages in a challenging economic and infrastructural landscape. Tailored ERP solutions enable efficient integration across key business functions – such as inventory, finance and customer management – critical for resource-limited enterprises (Amadi-Echendu 2023). Studies on ERP implementations, such as those by Aroba and Mnguni (2023), indicate that customised ERP solutions address specific challenges faced by South African SMEs, including managing property processes and meeting compliance requirements. Lower-tier ERP solutions, particularly Tier 3, offer affordable, customisable features that boost operational efficiency without the financial and infrastructural demands of higher-tier systems (Tronina et al. 2023). As South African SMEs continue to adapt to digital transformation needs, ERP systems aligned with their unique requirements will be pivotal in fostering sustainable growth and business resilience.

Furthermore, several case studies highlight the unique challenges and adaptive strategies for ERP adoption among South African SMEs. For instance Prasad, Sivasankaran and Shukla (2019) illustrate how resource constraints often compel SMEs to focus on essential ERP functionalities that provide immediate operational value, as the financial and technical demands of comprehensive ERP adoption are prohibitive. In addition, Ugochukwu Oguanobi et al. (2024) explore scalable business models that allow SMEs to implement cost-effective ERP solutions, focussing on modular features that align with their financial and operational capacities. These studies underscore common barriers such as the financial burden of ERP implementation and the specialised technical expertise required, which limits the capacity of SMEs to fully leverage ERP systems. By focussing on adaptive solutions, these examples provide relevant context for understanding the practical limitations

and strategic choices SMEs make in ERP adoption. Practical examples reveal the unique ERP challenges faced by SMEs. For instance, only about 1% of the 2 million SMEs registered with the SEDA are digitally enabled (SEDA 2023), highlighting significant infrastructure and digital adoption barriers. This underscores real-life case studies of the struggles with high costs and adaptive challenges that SMEs face in the South African environment. These examples illustrate both the financial and operational obstacles, as well as the adaptive strategies SMEs employ to derive value from ERP systems tailored to their needs.

Challenges in enterprise resource planning implementation for small- and medium-sized enterprises

Despite the benefits, the implementation of ERP systems in SMEs is fraught with challenges. The high costs associated with customisation, training and maintenance can be prohibitive for smaller businesses with limited resources. Salim et al. (2015) note that the complex nature of ERP systems can lead to disruptions in daily operations once you move from the adoption to the trial phase, further complicating the implementation process. The selection of an ERP is a complex process involving multiple stages and stakeholders, suggesting the importance of a closer examination of ERP adoption in SMEs. Moreover, the scalability of ERP systems is often questioned, as they may require additional customisation or upgrades to meet the evolving needs of SMEs (Bahit, Handayani & Haryanto 2021). Another significant limitation of ERP systems is the high cost of implementation and maintenance, which is often prohibitive for SMEs. Technical challenges, including the need for specialised expertise, also pose barriers to effective ERP adoption. Furthermore, organisational resistance to change can prevent SMEs from fully leveraging the potential of ERP systems. These limitations need to be addressed to enable more widespread ERP adoption among South African SMEs.

Enhancing Cash Conversion Cycle with Composite Business Success Index

The CCC is a critical financial metric for SMEs, reflecting the efficiency with which a company manages its inventory and receivables (García-Teruel & Martínez-Solano 2007). Recent empirical studies suggest that integrating the CBSI with ERP systems can further enhance CCC by providing a comprehensive measure of business performance. The CBSI, akin to a Financial Performance Index (FPI), evaluates overall business performance by integrating various financial and operational metrics. Composite Business Success Index incorporates multiple formulas such as the CCC, Telles' Mathematical Formula for Workflow Accuracy, Configurational Accuracy Score (CAS) and the Altman Z-Score, providing a comprehensive measure of business success. Ioannidis, Baas and Boyack (2020) and Buonanno et al. (2005) support this comprehensive and integrated approach, highlighting how composite indicators facilitate

nuanced performance assessment. Furthermore, the CBSI metric introduces a structured approach for measuring SME success within ERP systems, focussing on both financial and operational performance indicators. Falling within the additive domain of mathematics, CBSI combines these metrics to provide a holistic measure of business success, which supports SMEs in tracking, optimising key business processes and enhancing strategic planning (Roy 2023). Integrating CBSI within ERP systems offers SMEs a holistic view of their performance, enabling better decision-making and strategic planning. Composite Business Success Index, which can be employed as individual artefacts or in an additive manner, provides a comprehensive measure of business success. Furthermore, the effectiveness of CBSI is influenced by external contextual factors such as firm size, industry type and ERP system duration, which significantly moderate the relationships between antecedent variables, ERP-induced benefits and organisational performance (Nour 2023). By leveraging CBSI within ERP frameworks, SMEs can achieve more accurate and actionable insights into their cash flow management, ultimately leading to improved financial stability and competitiveness. The CCC is a crucial financial metric that measures the efficiency with which a company manages its inventory, receivables and payables (Yousaf, Bris & Haider 2021). It is calculated using Equation 1:

$$\text{CCC} = \text{DIO} + \text{DSO} - \text{DPO} \quad [\text{Eqn 1}]$$

where:

- DIO (Days Inventory Outstanding): The average number of days that inventory remains in stock before being sold.
- DSO (Days Sales Outstanding): The average number of days that receivables remain outstanding before being collected.
- DPO (Days Payables Outstanding): The average number of days that payables remain outstanding before being paid.

Enterprise resource planning systems are crucial for optimising financial reporting and managing inventory, significantly enhancing the CCC. Seminal work by Davenport (1998) emphasised ERP's foundational role in transforming business processes, while more recent research by Lee, Kim and Lee (2024) highlights how modern ERP systems streamline financial operations and reduce errors, improving financial efficiency. In addition, integrating these features with the CBSI provides SMEs with a comprehensive measure of performance, enabling improved financial stability and strategic decision-making. Data from a randomly selected sample of five SMEs, drawn from a larger pool of 250 SMEs spanning five different industry groups in South Africa, demonstrate that the application of CBSI within ERP systems significantly enhances CCC values, thereby improving overall financial efficiency. Data show that SME 1 (Mining) achieved a negative CCC of -27 days, indicating that they collect cash from sales before paying their suppliers, which is

a favourable position. Data from five SMEs operating in different industries in South Africa demonstrate that the use of CBSI within ERP systems significantly improves CCC values, thereby enhancing financial efficiency.

Importance of the Cash Conversion Cycle

Before delving into the methodology, it is crucial to highlight the significance of the CCC for SMEs. The CCC is a critical metric that measures how efficiently a company manages its inventory, receivables and payables. As shown in Table 1, the CCC data for five SMEs across various industries reveals significant variability in their cash management practices. For instance, SME 1 (Mining) has a notably negative CCC of -27 days, indicating rapid collection of receivables compared to its payables, thereby enhancing its cash flow. Conversely, SME 3 (Security) exhibits a variable CCC that can extend up to 44 days, reflecting potential challenges in cash flow management. Such industry-specific insights underscore the importance of tailored cash management strategies.

Implementing ERP systems that effectively manage inventory, sales and payables can help SMEs optimise their CCC, leading to improved financial stability and reduced reliance on external financing. The data presented in Table 1 provides a contemporary snapshot of cash management practices across different industries.

Methodology

Our study adopts a mixed-methods approach underpinned by a pragmatically designed survey distributed to a stratified random sample of SME owners and information technology (IT) managers across various sectors. The survey, consisting of both Likert-scale and open-ended questions, was designed to capture both quantitative and qualitative insights into ERP feature usage.

The target population consisted of registered SMEs in South Africa. According to the SEDA, there are over 2 million registered SMEs in South Africa, but less than 1% of these SMEs are fully compliant with value added tax (VAT) registration, Companies and Intellectual Property Commission (CIPC) registration and other regulatory requirements. Consequently, the accessible population is much smaller, limited to those SMEs that meet compliance standards.

The sample size was originally set at 250 SMEs, with five industry groups (Manufacturing, Retail, IT, Construction

TABLE 1: Cash Conversion Cycle data for five small- and medium-sized enterprises.

Metric	SME 1 (Mining)	SME 2 (IT)	SME 3 (Security)	SME 4 (Construction)	SME 5 (Transport)
Days Inventory Outstanding (DIO)	2	3	14	1	1
Days Sales Outstanding (DSO)	1	30	30	14	1
Days Payables Outstanding (DPO)	30	30	30–60	1	1
Cash Conversion Cycle (CCC)	-27	3	14–44	14	1

IT, Information Technology; SMEs, Small- and medium-sized enterprises.

and Healthcare), each consisting of 50 SMEs. However, because of non-responses and data saturation, the final sample size was 150 completed responses. This stratified random sampling method ensured representation from various industries across the country. This approach is supported by Creswell (2013) and Saunders et al. (2018), who suggest that a sample size of 100–200 is sufficient for mixed-methods research when the target population is difficult to access.

The quantitative data were analysed using descriptive statistics to determine usage patterns. The thematic analysis was conducted for the qualitative data, systematically coding responses from the open-ended questions. Reliability of the survey was ensured through pilot testing and the use of validated instruments. To ensure validity, cross-validation was employed, ensuring that the instruments used in the survey consistently measured what they were intended to.

Philosophical foundations

The philosophical foundation of this research is rooted in pragmatism, which emphasises the practical application of theories and ideas. This study also incorporates elements of ontology, epistemology and axiology to provide a well-rounded perspective on ERP adoption in SMEs:

- *Ontology:* This study assumes a pragmatic ontology, acknowledging that reality is constructed through the interactions between individuals and their environment. It recognises that SMEs operate in diverse contexts and face unique challenges, which influence their perceptions and utilisation of ERP systems.
- *Epistemology:* The epistemological stance is based on the belief that knowledge is derived from practical experiences and empirical evidence. This study seeks to generate actionable insights by analysing real-world data from SME companies, emphasising the value of experiential knowledge.
- *Axiology:* The axiological perspective highlights the importance of values and ethics in research. This study is committed to producing practical recommendations focussing on helping SMEs make value-driven decisions in their ERP adoption process.

Mixed-methods approach

The mixed-methods approach in this study involves the integration of both qualitative and quantitative data. The quantitative component includes descriptive statistics derived from survey responses, while the qualitative component involves thematic analysis of open-ended survey questions and interviews with key stakeholders. This approach allows for a comprehensive understanding of the factors influencing ERP adoption and utilisation in SMEs:

- *Quantitative Data:* The survey data were analysed using descriptive statistics to identify patterns and trends in

ERP feature utilisation. Frequency distributions, means and standard deviations were calculated to provide a detailed overview of ERP usage among SMEs.

- *Qualitative Data:* The qualitative data were analysed using thematic analysis to identify key themes and insights related to ERP adoption challenges and best practices. This involved coding and categorising responses to uncover underlying patterns and relationships.

Summary of online survey

The empirical analysis conducted in this study involved a comprehensive survey targeted at SMEs in South Africa. The survey aimed to gather insights on the utilisation of ERP features and their impact on business competitiveness. Following is a summary of the survey methodology and respondent demographics:

- *Survey Design:* The survey employed a mixed-methods approach, integrating both quantitative and qualitative questions. The questionnaire was meticulously crafted to include Likert-scale items for assessing the frequency of ERP feature utilisation and open-ended questions for collecting detailed qualitative insights.
- *Confidentiality and Data Security:* To ensure the confidentiality and security of the participants' information, the survey was administered through a password-protected online platform. No biographical details such as names, addresses or other identifying information were collected, ensuring the anonymity of the respondents. Participants were assured that their responses would be used solely for academic research purposes and would remain confidential.
- *Respondent Demographics:* The survey targeted a stratified random sample of SME owners and IT managers across various industries, including Manufacturing, Retail, IT, & and Gas and Services. This stratified sampling ensured a diverse respondent pool, providing a comprehensive understanding of ERP adoption across different business sectors.
- *Sample Size:* A total of 250 SMEs (5 groups of 50) were invited to participate in the survey. While the SEDA reports over 2 million registered SMEs in South Africa, recent figures indicate that only around 125 000 are fully compliant and operational. Of this, less than 1% are digitally enabled and meet formal business compliance standards, such as VAT and CIPC registration. From the 250 SMEs invited, 150 accessed and completed the survey, with which valid responses were obtained. This response rate among digitally enabled SMEs provided a reliable and representative dataset for analysis, highlighting the significance of ERP systems to the SME community. The sample size of 120 responses in this study aligns with typical response rates and sample sizes observed in information systems research, which generally receive between 136 and 374 responses with a median of 217, providing a reliable foundation for analysis in questionnaire-based studies within this discipline (Lund 2023).

- *Survey Distribution and Response Metrics:* To ensure robust and representative data collection, survey invitations were distributed across five key industry groups: Manufacturing, Retail, IT, Construction and Healthcare. Each group received 50 invitations, aiming for diverse input across sectors relevant to the South African SME landscape. The response rates varied by industry, reflecting sector-specific engagement and interest levels in ERP system adoption and utilisation.

The response metrics are as follows:

- *Manufacturing:* 50 invitations sent, 30 responses received, yielding a 60% response rate.
- *Retail:* 50 invitations sent, 27 responses received, yielding a 54% response rate.
- *IT:* 50 invitations sent, 33 responses received, yielding a 66% response rate.
- *Construction:* 50 invitations sent, 25 responses received, yielding a 50% response rate.
- *Healthcare:* 50 invitations sent, 35 responses received, yielding a 70% response rate.

These response rates provide additional insights into participation levels across sectors, supporting the representativeness and robustness of the findings. The varied response rates also highlight the differing levels of ERP engagement across industries, with higher engagement noted in sectors such as Healthcare and IT:

- *Survey Administration:* The survey was conducted online, allowing for efficient and secure data collection and processing. The password-controlled access added an extra layer of security, ensuring that only invited participants could complete the survey.
- *Data Analysis:* Quantitative data were analysed using descriptive statistics to identify patterns and trends in ERP feature utilisation. This analysis included calculating frequency distributions, means and standard deviations. Qualitative data were subjected to thematic analysis, which involved coding and categorising responses to extract key themes and insights related to the challenges and benefits of ERP adoption. To ensure reliability and validity, stratified random sampling was used to improve representativeness and minimise bias across industry sectors. Standard reliability checks were incorporated, and a pilot study was conducted to validate the survey, enhancing data consistency and accuracy.

Ethical considerations

The ethical aspects of this study were thoroughly reviewed and approved by the Cape Peninsula University of Technology (CPUT) Research Ethics Committee with ethical clearance number 189045493/2022/11. Informed consent was obtained from CPUT as well as Small Enterprise Development Agency (SEDA). The consent was gathered in a written format, which is provided as part of this submission. Participants were fully aware of the study's purpose, procedures and their rights,

including the right to withdraw at any time without any repercussions. To maintain the confidentiality of the data collected, several measures were implemented:

- Anonymity: No biographical details such as names, addresses or other identifying information were collected.
- Secure Data Storage: All data were stored on password-protected devices and was only accessible to the research team.
- Confidentiality Agreements: Participants were assured that their responses would be used solely for academic research purposes and would remain confidential.

These measures ensured that the study adhered to ethical guidelines and protected the privacy and rights of all participants.

Results

Following this survey summary, the results section will present the findings on the frequency of ERP feature utilisation among SMEs. The results will first discuss the adaptation of ERP systems for SMEs, highlighting the key functionalities that have been most widely adopted and their impact on business performance. Subsequently, we will delve into the frequency of ERP feature utilisation among SMEs, providing a detailed breakdown supported by tables and qualitative insights to offer a comprehensive view of ERP adoption in the South African SME context.

Survey findings 1: Adaptation of enterprise resource planning systems for small- and medium-sized enterprises

The adaptation of ERP systems for SMEs reveals significant insights into how these enterprises leverage ERP functionalities to enhance their operational efficiency and competitive advantage. Key findings indicate that certain features are more frequently adopted, reflecting their perceived importance in SME operations. For instance, inventory management and CRM functionalities are among the most commonly utilised, highlighting their critical role in managing stock levels and customer relationships efficiently. Financial management features also show high adoption rates, underscoring their importance in maintaining financial health and ensuring effective cash flow management. These adaptation patterns suggest that SMEs prioritise ERP features that directly impact their core business processes and customer interactions, allowing them to streamline operations and improve overall performance. The varied adoption rates across different features also indicate areas where SMEs may require additional support or customisation to fully leverage the benefits of ERP systems. This adaptation findings are shown as follows:

Adaptation summary table

The Adaptation Summary Table provides key insights into the frequency and manner in which different ERP features

are utilised by SMEs. Here are some points regarding the table as it relates to the study:

- Enterprise Resource Planning Feature Utilisation: The table demonstrates varying degrees of adoption for different ERP features among SMEs. For instance, inventory Management and CRM are more frequently utilised ('Often' and 'Always') compared to supply chain management (SCM) and human resources management (HRM). This suggests that SMEs prioritise features that directly impact their core operational processes and customer interactions.
- Strategic Importance: The higher adoption rates for financial management and inventory management indicate their strategic importance to SMEs. Effective financial management is crucial for maintaining cash flow and profitability, while inventory management is essential for reducing costs and meeting customer demand efficiently.
- Operational Efficiency: The utilisation patterns suggest that SMEs are leveraging ERP systems to streamline operations and enhance efficiency. For example, frequent use of CRM indicates a focus on improving customer relationships and sales processes, which can lead to increased customer satisfaction and retention.
- Customisation Needs: The varied adoption rates also highlight potential customisation needs. Small- and medium-sized enterprises might require tailored ERP solutions that prioritise high-utilisation features while offering flexibility for less frequently used modules such as HRM and SCM. This aligns with the study's recommendation for scalable and customisable ERP systems.
- Challenges in Adoption: The lower adoption rates for some features, such as SCM, might indicate challenges in implementation or a lack of perceived immediate benefit. This points to a need for better education and support for SMEs in understanding and leveraging these features effectively.
- Enhanced Financial Metrics: The frequent use of financial management features supports the study's findings on the importance of ERP systems in improving the CCC. By effectively managing finances, SMEs can enhance their liquidity and overall financial health, which is crucial for sustaining operations and growth.

In summary, the Adaptation Summary Table suggests that while SMEs are effectively utilising certain ERP features to enhance operational efficiency and customer management, there is room for increased adoption and customisation of less frequently used features to fully leverage the benefits of ERP systems. This reinforces the study's recommendations for tailored, scalable ERP solutions that address the unique needs of SMEs.

Survey findings 2: Feature utilisation

Table 3 showcases the frequency of utilisation of different ERP features among the surveyed SMEs.

The survey results indicate that certain ERP features are more frequently utilised by SMEs, contributing to their operational efficiency and competitive advantage. The frequency of ERP feature utilisation among SMEs is depicted in Table 3. The data indicate that inventory management is frequently utilised, with 30% of SMEs using it often and 35% always using it. Customer Relationship Management follows closely, with 40% of SMEs using it often and 22% always. Financial management is also a highly utilised feature, with 45% using it often.

On the other hand, HRM and SCM show lower utilisation rates, suggesting that these features might not be as critical to SME operations or that SMEs may face challenges in effectively implementing them. The insights from these utilisation patterns provide a detailed understanding of how SMEs prioritise different ERP functionalities based on their operational needs and strategic goals.

This analysis of ERP feature utilisation among SMEs in South Africa not only highlights the key areas of focus for these enterprises but also underscores the importance of tailored ERP solutions that address the unique challenges and requirements of SMEs.

Discussion

The findings underscore the critical role of ERP systems in optimising the CCC and enhancing SME competitiveness. Strategic use of ERP features such as inventory management, CRM and financial management is associated with improved CCC values, directly impacting liquidity and operational efficiency. However, underutilised ERP functionalities such as SCM and HRM present opportunities for further enhancement of SME operations. Despite the heavy utilisation of features such as inventory management and CRM, the findings indicate that SMEs have yet to fully adopt SCM and HRM functionalities. Supply chain management modules in ERP systems can streamline procurement, inventory and supplier management, ultimately improving efficiency and reducing operational costs. However, many SMEs cite financial constraints and the complexity of integrating supply chain data as key barriers to adoption. Similarly, HRM features, which could enhance employee management, payroll processing and compliance with labour laws, remain

TABLE 2: Summarised adaptation for tier 3 enterprise resource planning's.

Adaptation area	Adaptation description
Simplified Financial Management	User-friendly financial management tools tailored for SMEs.
Flexible Customisation and Scalability	Highly customisable and scalable ERP systems.
Enhanced CRM Features	Simple sales tracking, customer support modules and basic marketing automation tools.
Efficient Costing, Invoicing and Billing	Streamlined financial transaction tools with easy tracking and management.
Robust Reporting and Data Management	Strong reporting and data management capabilities with templates and analytics tools.

SMEs, Small- and medium-sized enterprises; ERP, Enterprise resource planning; CRM, Customer Relationship Management.

underutilised because of the perceived technical expertise required and the associated costs (Davenport 1998; Lee et al. 2024). Expanding the use of these features would not only enhance operational efficiency but also improve SMEs' ability to scale their businesses and respond to market changes.

Furthermore, Table 2 outlines specific ERP adaptations chosen by SMEs. These adaptations illustrate how SMEs, constrained by financial and technical limitations, selectively adopt ERP functionalities. For example, while features such as SCM and HRM offer potential long-term benefits, they are often underutilised because of high costs and the need for specialised skills. Instead, SMEs prioritise core functionalities – such as inventory management and CRM – that deliver immediate operational and customer-related benefits without requiring extensive resources. This targeted approach to ERP adoption helps SMEs balance limited budgets while enhancing operational efficiency and competitiveness incrementally.

It is also noteworthy, as shown in Table 3, that inventory management and CRM are among the most frequently utilised ERP features across the surveyed SMEs, underscoring their role in enhancing operational efficiency and customer relations. The quantitative data support qualitative insights indicating that these functionalities are essential for the optimised management of resources and customer engagement within the SME sector.

The lower adoption rates of these features can be attributed to barriers such as financial constraints, technical complexities and a lack of organisational readiness, as highlighted in recent studies (Venkatraman & Fahd 2016). Financial constraints constitute a major barrier to ERP adoption among SMEs, as limited budgets restrict their ability to invest in comprehensive ERP systems. Small- and medium-sized enterprises frequently prioritise core functionalities, such as inventory management or CRM, over the full suite of ERP features. This approach, supported by the literature, reflects SMEs' need to balance cost considerations with operational requirements (Putra, Solechan & Hartono 2023). These financial limitations mean that comprehensive ERP suites are rarely feasible and upgrading existing ERP solutions becomes challenging, which in turn restricts SMEs' ability to leverage advanced functionalities for sustained competitive advantage (Kilimis et al. 2019). This selective adoption approach is consistent with findings in the ERP cost-related literature, which emphasises how budgetary limitations compel SMEs

TABLE 3: Frequency of enterprise resource planning feature utilisation among small- and medium-sized enterprises.

ERP feature	Never (%)	Rarely (%)	Sometimes (%)	Often (%)	Always (%)
Inventory Management	5	10	20	30	35
CRM	8	12	18	40	22
Human Resources Management	15	20	25	25	15
Financial Management	4	6	30	45	15
Supply Chain Management	20	25	30	15	10

ERP, Enterprise resource planning; CRM, Customer Relationship Management.

to make trade-offs in feature implementation, thereby constraining the potential benefits of a complete ERP solution.

Cloud-based ERP solutions offer a potentially cost-effective alternative by reducing upfront capital investment. However, cloud-based solutions are not free from financial constraints; SMEs must still consider recurring subscription fees, indirect costs such as training and expenses related to transitioning systems. These added financial burdens continue to pose challenges even with supposedly lower-cost solutions (Salum & Rozan 2015). This discussion highlights the critical role that financial capacity plays in shaping SMEs' ERP adoption decisions, fundamentally influencing their ability to adapt to technological solutions aimed at enhancing operational efficiency.

Composite Business Success Index addresses these challenges by guiding SMEs in prioritising ERP features that directly contribute to business success. For example, focussing on core functionalities such as CRM and inventory management allows SMEs to realise immediate gains in operational efficiency, while gradually expanding into more complex ERP modules as resources permit (AlMuhayfith & Shaiti 2020). Addressing these challenges could enable SMEs to fully leverage the benefits of ERP systems across all functional areas. Comparisons with Johannesburg Stock Exchange-listed companies reveal best practices that SMEs can adopt. Moreover, the investigation into the incorporation of predictive indices such as the CBSI within ERP frameworks suggests a potential for providing a more comprehensive measure of business performance. The CBSI integrates financial and operational metrics, offering a holistic view of business success that goes beyond traditional financial indicators. This is particularly relevant in the context of digital transformation, where SMEs are increasingly adopting new technologies to remain competitive in rapidly evolving markets (Zhang et al. 2024). By adopting the CBSI, SMEs can gain deeper insights into their performance, facilitating better decision-making and strategic planning (Wolf & Floyd 2017). Future research should focus on exploring these indices to better understand their impact on enhancing financial stability and competitiveness within SMEs. Further exploration into these underutilised areas could reveal additional opportunities for improving operational efficiency. For example, SCM can optimise inventory and logistics, while HRM systems can streamline workforce-related processes. However, the high cost of implementing these advanced ERP features and the technical expertise required pose significant barriers for many SMEs (Gangwar & Date 2016; Haddara & Elragal 2015). Addressing these barriers through targeted support or phased ERP implementation could enable SMEs to fully leverage these functionalities.

Implications for practice

For SMEs, the findings of this study highlight the importance of adopting ERP systems tailored to their specific needs. By focussing on key features such as inventory management,

CRM and financial management, SMEs can streamline their operations, reduce costs and enhance their competitiveness. Furthermore, the study suggests that SMEs should consider the scalability and customisation capabilities of ERP systems to ensure they can adapt to evolving business needs.

The practical applications of these findings are significant. Small- and medium-sized enterprises can use the insights from this study to prioritise the implementation of ERP features that offer the most substantial benefits, thereby maximising their return on investment. Additionally, understanding the importance of the CBSI can help SMEs adopt a more integrated approach to performance measurement, enhancing their overall strategic planning and decision-making processes.

Limitations of the research

This study acknowledges several limitations that may impact the generalisability and robustness of the findings. A significant limitation encountered was the inability of a large portion of the SEDA population to participate because of digital inaccessibility. It was discovered later in the research process that many potential respondents within the SEDA population were not digitally enabled and therefore unable to interact with the online survey platform. Small- and medium-sized enterprises lacking reliable Internet access or digital proficiency were less likely to participate in the survey, potentially leading to an under-representation of the broader SME population. This digital divide is particularly pronounced in underserved regions where connectivity is limited, thus impacting the generalisability of the findings. Furthermore, this limitation reduced the sample size and may have introduced a bias towards more digitally proficient SMEs.

To address the limitation of digital inaccessibility, future research could consider alternative data collection methods tailored to digitally underserved SMEs. For instance, handwritten questionnaires distributed through local business networks or community centres could provide a more accessible option for SMEs lacking digital resources. Partnering with industry associations to facilitate in-person data collection sessions may also increase participation rates and enhance the representativeness of the sample.

It must also be noted that, although the concept of CBSI was discussed, this research did not delve into the actual mathematical calculations to demonstrate its practical application. Further studies are needed to explore the detailed computational methodologies underlying CBSI and their empirical validation.

In addition, the study focusses primarily on the utilisation of ERP features without examining the broader implementation challenges in depth. Future research could explore these aspects more comprehensively, including larger and more diverse sample sizes, to better understand the barriers to ERP adoption and the solutions that could facilitate wider implementation among SMEs.

Conclusion

This article presents empirical evidence on the strategic utilisation of ERP features within SMEs, emphasising their role in optimising operational processes and achieving a streamlined CCC. By adopting ERP systems tailored to their needs, SMEs can significantly improve their operational efficiency and market position.

Furthermore, exploring the integration of the CBSI within ERP frameworks could offer SMEs a more comprehensive measure of their business performance, enhancing their ability to manage cash flow and achieve financial stability. Future research should investigate the potential of predictive indices such as CBSI to further understand their impact on financial and operational metrics within SMEs.

The study contributes to both theoretical and practical domains, offering valuable insights for researchers, practitioners and policymakers. These findings provide a foundation for future research and practical guidance for SMEs seeking to leverage ERP systems for enhanced competitiveness and financial health.

In conclusion, this study underscores the potential of the CBSI as a predictive tool for gauging SME success in ERP adoption. Composite Business Success Index's application within ERP systems offers a promising framework for SMEs to assess and enhance their operational performance. Future research should explore how CBSI can be expanded and adapted across various ERP functionalities to support SMEs in making informed, strategic decisions. This line of inquiry could significantly contribute to the development of tailored ERP solutions that address the unique challenges of SMEs, fostering more efficient and effective ERP adoption within this sector.

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Competing interests

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

Authors' contributions

D.M.J. conducted the empirical research, performed the data analysis and drafted the article. B.K. provided research guidance, contributed to the literature review and reviewed the final article before publication.

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Data availability

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

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