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Barriers and Enablers to Competitive Intelligence Adoption in South African SMEs: A Contextual Analysis of Challenges and Opportunities

Abstract

Small and Medium Enterprises (SMEs) are important for growth, jobs, and new ideas in South Africa's fast-changing economy. However, they still can't use and integrate Competitive Intelligence (CI), a strategic tool that helps businesses become more sustainable and responsive to the market. The objective of this study is to examine how many SMEs in South Africa are currently using CI and identify the main factors that make it easier or harder to use. The research specifically examines the impact of structural difficulties, including financial limitations, insufficient management and technical competence, inadequate infrastructure, and regulatory complications, on the strategic utilisation of CI for the sustainability of SMEs. A quantitative study design was utilised, employing a self-administered web-based questionnaire sent to 400 SMEs in Gauteng and KwaZulu-Natal, yielding 179 valid replies. To ensure the data were reliable and to identify relevant patterns, we used descriptive statistics, exploratory factor analysis, and Cronbach's alpha. The results show significant gaps in CI awareness, resource allocation, and strategy integration. They also show that there are ways to improve through focused interventions, capacity building, and support for legislative frameworks. This study enhances comprehension of CI dynamics in resource-limited SME contexts and offers practical guidance for policymakers, development agencies, and SME stakeholders. The research supports the strategic development of SMEs in line with South Africa's National Development Plan and its objectives for inclusive economic transformation by addressing obstacles and leveraging the facilitators of CI adoption.

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1. Introduction

SMEs are known all over the world as engines of economic growth, job creation, and new ideas. SMEs make up the majority of businesses in the world, and they make a big difference to the national GDP and job market. Even though they are important, SMEs face problems that make it hard for them to grow, compete, and use strategic tools like CI. CI, which means gathering and analyzing information about competitors, market trends, and outside factors in a systematic way, is becoming more and more important for businesses to stay in business and make strategic decisions. However, a number of structural and contextual barriers still make it hard for SMEs to adopt it. Resource constraints, such as financial limitations, insufficient skilled personnel, and inadequate technological infrastructure, frequently hinder the incorporation of CI into SMEs operations (Wu et al., 2023; Liu et al., 2022). These limitations make it hard for SMEs to set up standard CI processes and use data-driven insights to get ahead of the competition. Furthermore, the view of CI as an ad hoc or secondary role by SME owners and managers makes it even harder to use it strategically (Kettani & Aljandali, 2022). The digital divide, especially in developing countries, makes this problem worse because many SMEs don't have the infrastructure or technical skills to set up advanced CI systems (Dutta, Kumar, Sindhwani & Singh, 2020; Singh, Telukdarie & Mongwe, 2024).

SMEs are very important for South Africa's economy because they make a big difference in GDP and jobs. But they have a lot of problems that make it hard for them to grow. These challenges consist of limited access to capital, insufficient managerial and technical expertise, restricted capacity for innovation, unfavourable regulatory conditions, inadequate infrastructure, and heightened competitive pressures (Lwesya, 2021; Pulka & Gawuna, 2022; Enaifoghe & Vezi-Magigaba, 2023; Hasan, Chy, Johora, Ullah & Saju, 2024; Zide & Jokonya, 2022; Frances, Ogbo, & Tanimu, 2023; Maghfirah & Eni, 2024). These systemic problems not only make it harder for SMEs businesses to run smoothly, but they also make it harder for them to adopt and benefit from CI practices.

Access to finance is still one of the biggest problems for SMEs around the world and in South Africa. Many SMEs depend on informal funding sources like personal savings, family, and friends because it is hard to get affordable and accessible financing from formal institutions (Msomi & Olarewaju, 2021; Rajamani, Jan, Subramani & Raj, 2022; Epede & Wang, 2023; Owusu, Owusu Ansah, Djan & Anin, 2021; Liu, Dilanchiev, Xu & Hajiyeva, 2022; Purwidianti, Pramuka, Laksana & Wiwiek, 2023). High interest rates and strict collateral requirements make it even less likely that SMEs will look for formal financial help (Manzoor et al., 2021; Rajamani et al., 2022; Serrasqueiro, Leitão & Smallbone, 2021; Nicolas, 2022; Finnegan & Kapoor, 2023). This lack of access to money makes it hard for them to buy CI tools and technologies that could help them be more competitive and flexible in their strategies (Amadasun & Mutezo, 2022; Nicolas, 2022; Vlassas, Kallandranis & Anastasiou, 2023; Shaikh, Khoso & Jummani, 2024).

In addition to not having enough money, SMEs often don't have the skills or knowledge they need to use CI effectively. The lack of marketing, technology, and strategic management skills makes it hard for SMEs to use CI frameworks and make sense of data (Elhusseiny & Crispim, 2022; Anoke, Onu & Agagbo, 2022; Phiri & Ramasimu, 2025; Demirkan, Srinivasan & Nand, 2022; Shaik, A.S., Alshibani, Mishra, Papa & Cuomo, 2023; Iyelolu et al., 2024). SMEs with strong human resource capabilities tend to do better and have a better chance of surviving and growing in competitive markets (Xin, Khan, Dagar & Qian, 2023). But most SMEs businesses don't have access to training and development programs that could help them improve these skills.

For SMEs to stay relevant and competitive, they need to adopt new technologies and come up with new ideas. However, many SMEs do not innovate because they don't have enough money, technical know-how, or support systems (Hanaysha, Al-Shaikh, Joghee & Alzoubi, 2022; Liu et al., 2024; Jahanger, Usman, Murshed, Mahmood & Balsalobre-Lorente, 2022; Maher, Yarnold & Pushpamali, 2023; Wongsansukcharoen & Thaweepaiboonwong, 2023; Iyelolu et al., 2024). High costs and usability issues often make it hard for SMEs to use the right technologies, which stops them from using digital tools for CI

and other strategic tasks (Anshari & Almunawar, 2022; Elhusseiny & Crispim, 2022). Regulatory environments significantly influence SME performance. Government policies on taxes, licenses, labour laws, and building infrastructure can either help or hurt the growth of SMEs (Zhang & Ayele, 2022; Olayemi & Folajimi, 2021). SMEs in South Africa often have to deal with bureaucratic red tape and inconsistent policy implementation, which makes it even harder for them to use CI and other strategic tools.

Another problem is that infrastructure is not good enough, especially in developing areas. Bad service in electricity, water, and transportation raises costs and lowers productivity (Xiong, 2024; Mthiyane, Wissink & Chiwawa, 2022; Li, Gu & Meng, 2023; Oguanobi & Joel, 2024). These restrictions make it harder for SMEs to get into markets, deliver goods on time, and stay competitive. Another thing that slows down SME growth is competition from bigger companies. SMEs often have a hard time keeping their market share and getting new customers because they don't have the same level of resources as bigger companies (Amadasun & Mutezo, 2022; Enaifoghe, 2024; Mugano & Dorasamy, 2024; Zheng & Khalid, 2022). This pressure makes it even more important for SMEs to use strategic tools like CI, which can help them find market opportunities, guess what their competitors will do, and make smart choices.

Even though there are these problems, there are still a lot of chances for SMEs to use CI. CI can help SMEs deal with complicated market situations, make better choices, and come up with new ideas. Since SMEs are known around the world to be important for economic growth and job creation (Enaifoghe & Vezi-Magigaba, 2023; Sagar, Anand, Perumalla Varalaxmi & Raj, 2023; Kuteesa, Akpuokwe & Udeh, 2024), it is both timely and necessary to improve their strategic capabilities through CI. In South Africa, where SMEs are anticipated to play a pivotal role in job creation and economic transformation, comprehending the obstacles and facilitators of CI adoption is essential.

This research seeks to examine the challenges and opportunities related to the adoption of CI among South African SMEs. The research aims to offer actionable insights for policymakers, support agencies, and SMEs stakeholders by analyzing the structural, financial, technological, and policy-related factors that affect CI integration. The results will enhance the discourse on SMEs competitiveness and sustainability in emerging economies and facilitate the achievement of national development objectives, exemplified by South Africa's National Development Plan (Mhlongo & Daya, 2023; Ogujiuba, Eggink & Olamide, 2023; Durokifa, 2024).

2. Literature Review

This section provides an extensive examination of the current literature pertaining to the implementation of CI within SMEs, specifically on the South African setting. It starts by explaining what CI is and why it is important for businesses to stay competitive and stay in business. The review then looks at the many problems that make it hard for SMEs to adopt CI, such as limited access to finance, a lack of managerial and technical skills, low levels of innovation and technology adoption, regulatory burdens, poor infrastructure, and strong competition. Each of these impediments is analysed through empirical research and theoretical frameworks to underscore their influence on the strategic integration of CI. The literature also points out many chances that could make it easier for SMEs to implement CI, even when there are these problems. These encompass the increasing acknowledgment of CI as a catalyst for innovation, the prospects for digital transformation, and the significance of conducive policy frameworks and capacity-building programs. This review synthesizes perspectives to establish a contextual framework for comprehending the current state of CI in South African SMEs, so preparing for the subsequent empirical inquiry.

Table 1 : CI définitions

Author	Definitions
Zaidan et al. (2022)	"CI is defined as a method for scanning and analysing information on rivals' activities and work trends to gain a competitive advantage"
Köseoglu et al. (2021)	"CI is defined as "the process of identifying key competitors; assessing their objectives, strengths and weaknesses, strategies and reaction patterns; and selecting which competitors to attack or avoid."
Nenzhelele (2023)	"CI is defined as "a process or practice that produces and disseminates actionable intelligence by planning, ethically and legally collecting, processing, and analysing information from and about the internal and external or competitive environment to help decision-makers in decision-making and to provide a competitive advantage to the enterprise"

Challenges in SMEs CI Adoption

The effectiveness of this CI can't be questioned, but its application in SMEs meets some challenges (Wu et al., 2023). One significant challenge is the lack of essential resources such as financial constraints, limited personnel, and insufficient human capital which often prevents organizations from establishing standardized CI processes. (Liu et al., 2022). The situation is resented by the low understanding of CI by SMEs owners and managers as they perceive the function as an ad hoc or alternative approach rather than a well-developed strategy (Kettani & Aljandali, 2022). The research study conducted from India by Dutta, Kumar, Sindhwani and Singh, (2020); Singh and Rahman, (2025) show that the CI digital gap in SMEs is also a major hurdle, as these enterprises often lack the appropriate infrastructure, or technical skills required to use such advanced systems.

While the contribution of SMEs in fostering economic growth and development is universally recognised, SMEs encounter many challenges that may impede their growth (Lwesya, 2021; Pulka & Gawuna, 2022; Enaifoghe & Vezi-Magigaba, 2023; Hasan, Chy, Johora, Ullah & Saju, 2024). The main challenges include constrained access to finance, deficient abilities and awareness, lack of innovation and adopting suitable technologies, adverse regulatory environment, inadequate infrastructure and competitive pressure (Zide & Jokonya, 2022; Frances, Ogbo, & Tanimu, 2023; Maghfirah & Eni, 2024).

Constrained access to finance

Access to finance remains a hope for many SMEs globally (Msomi & Olarewaju, 2021; Rajamani, Jan, Subramani & Raj, 2022; Epede & Wang 2023). The main source of income for SMEs stems from savings, family and friends (Owusu, Owusu Ansah, Djan & Anin, 2021; Liu, Dilanchiev, Xu & Hajiyeva, 2022; Purwidianti, Pramuka, Laksana & Wiwiek, 2023). It is often difficult for SMEs to obtain accessible and affordable finance from financial institutions (Manzoor et al., 2021; Rajamani et al., 2022;). SMEs may face financial constraints because of high interest rates and a restricted capacity to provide collateral (Serrasqueiro et al., 2021; Nicolas, 2022; Finnegan & Kapoor, 2023). SMEs with limited access to finance may be further discouraged from investing in appropriate technologies (Amadasun & Mutezo, 2022; Nicolas, 2022; Vlassas, Kallandranis & Anastasiou, 2023; Shaikh, Khoso & Jummani, 2024). A lack of access to finance is widely acknowledged as a major burden to the survival and growth of SMEs (Zide & Jokonya, 2022; Wansi & Burrell, 2023; Mugano & Dorasamy, 2024).

Deficient abilities and awareness

The scarcity of skills, knowledge and experience can present a significant barrier for the growth of SMEs (Elhusseiny & Crispim, 2022). SMEs with an educated workforce and suitable skills perform competently (Anoke, Onu & Agagbo, 2022; Phiri & Ramasimu, 2025). In addition, SMEs that are highly developed in terms of human resource capacities are more successful and may experience higher productivity, long-term survival and sustainability (Xin, Khan, Dagar & Qian, 2023). However, numerous SMEs experience a lack

of skills and knowledge in respect to marketing and current technological developments, making SMEs more vulnerable to failure in comparison to larger enterprises (Demirkan, Srinivasan & Nand, 2022; Shaik, A.S., Alshibani, Mishra, Papa & Cuomo, 2023; Iyelolu et al., 2024).

Innovation and adopting suitable technologies

innovation is crucial for businesses to improve business performance and sustain its market position (Hanaysha, Al-Shaikh, Joghee & Alzoubi, 2022; Kelečević & Lesjak, 2025). Failure to innovate may render SMEs uncompetitive and obsolete in their operating environment (Liu et al., 2024). Jahanger, Usman, Murshed, Mahmood and Balsalobre-Lorente (2022) states that lower levels of investments are directed towards innovation in developing countries compared to developed countries. Financial, environmental and human resource challenges prevent SMEs from becoming innovative (Maher, Yarnold & Pushpamali, 2023; Wongsansukcharoen & Thaweepaiboonwong, 2023). In addition, the limited adoption of appropriate technologies may also hinder SMEs from becoming innovative (Iyelolu et al., 2024; Engstrom & Engelschiøn, 2025). It has been said that successful SMEs practice innovation by adopting technologies that create a competitive edge (Anshari & Almunawar, 2022; Zemljak, Čampelj, Martinc & Kerneža, 2025). Elhusseiny and Crispim (2022) found that SMEs experience technology challenges due to high costs and inability to use the technology. SMEs that do not embrace innovation and technology can have a detrimental effect on their business performance (Liu et al., 2024; Vuorio, Reiman, Kekkonen & Lampela, 2025).

Adverse regulatory environment

According to Zhang and Ayele (2022), the environment presented by the government in relation to wages, tax rates, licences, technological support and infrastructure can lead the way to the success or failure of SMEs. High rules and regulations as well as unfavourable tax rates can hinder the growth of SMEs (Olayemi & Folajimi, 2021).

Inadequate infrastructure

The quality of infrastructure in developing countries can pose a significant obstacle to the growth prospects for SMEs (Xiong, 2024). Infrastructure challenges include key barriers such as poor service delivery of electricity, water and poor infrastructure (Mthiyane, Wissink & Chiwawa, 2022). Li, Gu and Meng (2023) point out that poor infrastructure such as undeveloped roads, railways, bridges and airports make transportation less dependable in terms of timely delivery and increases costs for SMEs. In addition, Oguanobi and Joel (2024) highlights that electricity supply is central to SMEs operation and cost efficiency.

Competitive pressure

Increased and robust competition may pose a threat to SMEs growth (Amadasun & Mutezo, 2022). SMEs competitiveness may be obstructed due to lack of skills and training, access to finance and increased production costs (Enaifoghe, 2024). SMEs face competition from larger, well-established enterprises which can make it challenging for them to increase their market share (Mugano & Dorasamy, 2024). Zheng and Khalid (2022) argue that SMEs should focus on well-developed strategies to effectively withstand competitive pressure.

Opportunities in SME CI Adoption

SMEs play a key role in both developing and developed countries and are identified as significant contributors to global economic development and employment (Enaifoghe & Vezi-Magigaba, 2023; Sagar, Anand, Perumalla Varalaxmi & Raj, 2023; Kuteesa, Akpuokwe & Udeh, 2024). SMEs account for approximately 90% of enterprises worldwide (across all sectors) and contribute about 50% to GDP and around 70% to employment (Chetty, Boojhawon, Bhagwant & Levy, 2024; Munyemana, Mung'atu & Ruranga, 2024; Yazeer & Sachithra, 2024).

SMEs are critical economic growth accelerators in many countries as they constitute most businesses and contribute significantly to GDP and employment (Dhiman, & Arora, 2024; Dinku, Singh & Singh, 2024;

Durst, Foli & Edvardsson, 2024). In the EU, for instance, approximately 99% of enterprises are SMEs, contributing over 50% to GDP (Enaifoghe, 2024; Maman, Dias, & Bassi, 2024; Sharma, Ilavarasan & Karanasios, 2024). SMEs account for approximately two-thirds (67%) of employment within the EU, with micro enterprises accounting for 30%, SMEs accounting for 20%, and medium enterprises accounting for 17% (Aguzzi, Ianole-Calin & Durst, 2024).

In Malaysia, SMEs account for about 98.5% of all enterprises, contributing approximately 38.2% to GDP and 50% to employment (Munyemana, Mung'atu, & Ruranga, 2024). The contribution of SMEs to economic growth in Malaysia is driven mainly by the services sector, specifically wholesale and retail trade (Hidzir, Ismail, Nor & Sahiq, 2024). India's economy consists of more than 90% of SMEs, contributing approximately 30% and 50% to the country's GDP and employment respectively (Somani, 2024). In the US, around 99% of all enterprises are SMEs, contributing approximately 56% to the country's GDP and 52% to employment (Akinwale & Alshraim, 2024). In China, SMEs account for over 90% of enterprises (Sharma et al., 2024). SMEs in China continue to demonstrate their resilience by recording a significant contribution of 60% to the country's GDP and more than 80% to employment (Tieng et al., 2024).

In South Africa, there are varying estimates regarding the contribution of SMEs to the economy; as a result, further research is required (Akoh, 2024). Based on recent statistics, SMEs in South Africa account for over 90% of formalised enterprises, contributing between 37.4% and 50% toward the GDP and 47-59% to employment (Azam & Abdullah, 2024; Madzvamuse, Kadyamatimba & Munyoka, 2024; Okeke, 2024). The National Development Plan (NDP) has envisioned that South African SMEs will contribute approximately 90% of the 11 million expected new jobs by 2030 (Mhlongo & Daya, 2023; Ogujiuba, Eggink & Olamide, 2023; Durokifa, 2024). In support of this NDP goal, the Department of Small Business Development (DSBD) coordinates and promotes the creation of a favourable environment for SMEs to thrive (Ajani, Khumatake & Gamede, 2023; Nomafu, van Vuuren & Davies, 2023).

The DSBD houses support agencies such as the Small Business Development Agency (SBDA) and the Small Business Finance Agency (SEFA) to ensure the promotion of SMEs (Boks & Mazenda, 2023; Molope, Ladzani & Seeletse, 2024; Weilbach, & Visser, 2024). SEDFA provides non-financial support to SMEs while Sefa provides financial support services (Ogunsola, Potwana & Chikosha, 2023; Nkoana & Mashamaite, 2024). Although there are government initiatives in place to support SMEs, there is still a need to increase awareness of these initiatives and their level of effectiveness in implementation (Permatasari & Gunawan, 2023; Rawindaran, Jayal, Prakash, & Hewage, 2023; Nazir, & Khan, 2024).

According to recent analysis, the SME sector in South Africa is not flourishing at an efficient pace and would need to grow at an annual rate of at least 20% in order to achieve the targets set out by the NDP (Msomi & Kandolo, 2023; Peter, Pradhan & Mbohwa, 2023; Akoh, 2024). South Africa's future economic success depends mostly on new and growing SMEs (Enaifoghe & Ramsuraj, 2023; Mankgele, 2023). Ramsuraj (2023); Sibiya, van der Westhuizen, and Sibiya (2023); Okeke (2024) argued that the sustainability of SMEs is imperative for the economy of South Africa. Furthermore, Xiong (2024) emphasises that SMEs play a crucial role in resolving the country's developmental challenges.

SMEs are the key engine of growth reducing the unemployment rate and driving economic growth and development (Ricci, Battaglia & Neirotti, 2021; Hu, & Kee, 2022; Jeong & Chung, 2023; Komolafe et al., 2024; Arthur-Sam, 2025). SMEs foster competitive discovering new markets by introducing new products and services (Cosenz & Bivona, 2021; Marinho & Costa Melo, 2022). SMEs can adapt to changing preferences and trends more rapidly compared to larger enterprises (Klein & Todesco, 2021; Su, Zhang & Wu, 2023; Iyelolu et al., 2024). SMEs are vital for poverty alleviation by providing opportunities for aspiring entrepreneurs and creating a source of income (Dzingirai, 2021; Dahliah, Tjan & Rahmi, 2023). SMEs play a more significant role in developing countries through generating wealth, developing infrastructure, and increasing business opportunities for local communities (Manzoor et al., 2021; Endris, & Kassegn, 2022; Enaifoghe & Vezi-Magigaba, 2023; Shah, Zehri, Saraih, Abdelwahed & Soomro, 2024).

SMEs have very distinct characteristics compared to larger enterprises, they are more flexible, open to change, and have a simple, flat/organic organisational structure (Alasiri & AlKubaisy, 2022; Zhang, 2022).

Adobor (2020); Mahmud, Soetanto, and Jack (2021); Angeles, Perez-Encinas and Villanueva (2022) argue that having a flat or organic organisational structure may result in higher visibility, quick decision-making, rapid implementation of management strategies, and a better understanding of and swift response to customer needs. Furthermore, Kiss (2020) allude that flat or organic organisational structure is characterised by a lower level of specialisation, standardisation, and formalisation which may inspire innovativeness and allow SMEs to respond and adapt to the environment better than larger enterprises.

SMEs have a greater willingness to take risks and are more result oriented. SMEs can establish strong relationships with the community through increased personalisation (Pappas, Caputo, Pellegrini, Marzi & Michopoulou, 2021; Beckmann, Garkisch & Zeyen, 2023; Kedi, Ejimuda, Idemudia & Ijomah, 2024). In addition, SMEs provide employees with diverse learning experiences compared to larger enterprises that are more focused on specialised jobs (Sinha, Saunders, Raby & Dewald, 2022; Vives, 2022; Idris, Saridakis & Johnstone, 2023).

While some characteristics of SMEs make them more flexible, other characteristics such as size may increase the vulnerability of SMEs to internal and external events (Iborra, Safón & Dolz, 2020; Weaven, Quach, Thaichon, Frazer, Billot & Grace, 2021; Miklian & Hoelscher, 2022; Verreynne, Ford & Steen, 2023; Abid, 2025). SMEs operate in a context where there is growing uncertainty due to factors such as the global pandemic (COVID-19), economic and political stability, rapid advancements in technology, and laws and regulations (Zutshi, Mendy, Sharma, Thomas, & Sarker, 2021; Hossain, Akhter & Sultana, 2022; Kaftan, Kandalov, Molodtsov, Sherstobitova & Strielkowski, 2023). As a result, Paeleman, Vanacker and Zahra (2024) indicate that SMEs continue to face several challenges that may deter their growth and impact their long-term survival. The main challenges faced by SMEs are highlighted in the next section.

Theoretical Framing: Organizational Learning Theory and Competitive Intelligence

To contextualize the strategic adoption of Competitive Intelligence (CI) within South African SMEs, this study draws on Organizational Learning Theory (OLT) as a guiding framework. OLT provides a lens through which the processes of knowledge acquisition, interpretation, and application can be examined in relation to CI integration. Given the volatile and resource-constrained environment in which South African SMEs operate, OLT offers critical insights into how internal capabilities and external conditions shape the effectiveness of CI as a learning mechanism. The following section explores how absorptive capacity, human capital, financial investment, technological readiness, regulatory conditions, and competitive dynamics influence organizational learning and CI implementation, thereby contributing to the broader goals of inclusive economic transformation outlined in South Africa's National Development Plan.

Organizational Learning Theory (OLT) serves as a fundamental framework to explain how South African SMEs can use CI for better strategic response in their unstable economic environment. The adoption of CI faces barriers because organizations struggle to implement its knowledge acquisition and interpretation and application processes. SMEs fail to maximize CI potential because they view it as an outside function which prevents them from building learning-focused cultures and using collected data for decision-making (Wu et al., 2023; Liu et al., 2022; Kettani & Aljandali, 2022). The research reveals two main weaknesses in CI implementation and strategy implementation because organizations lack sufficient absorptive capacity to recognize and implement new knowledge. The combination of financial restrictions and insufficient technical expertise and inadequate infrastructure prevents SMEs from building CI systems which transform intelligence into strategic decisions (Dutta et al., 2020; Singh, Telukdarie & Mongwe, 2024).

The organizational learning process becomes stalled because of these restrictions which prevent the organization from adapting to changes. The research shows that human capital stands as the essential element which determines learning readiness within organizations. The insufficient marketing and technological and strategic management competencies of SME staff members prevents them from properly understanding CI data. Organizations with better human resource capabilities achieve higher learning results and demonstrate better adaptability because they need specific training programs (Elhusseiny & Crispim, 2022; Phiri & Ramasimu, 2025; Xin, Khan, Dagar & Qian, 2023). Organizational Learning Theory requires

organizations to develop learning systems through strategic investments. South African SMEs operate under continuous financial instability because they depend on informal funding sources while facing elevated interest rates and strict collateral requirements. The financial constraints prevent SMEs from acquiring CI technology and training which restricts their learning capacity (Msomi & Olarewaju, 2021; Rajamani et al., 2022; Amadasun & Mutezo, 2022; Shaikh, Khoso & Jummani, 2024). Organizational learning requires innovation and technological adoption as fundamental elements.

The identification of market gaps and emerging trends through CI leads to innovation but most SMEs fail to implement suitable technologies because of their limited technical expertise and insufficient resources. The high expenses and complicated usage of digital CI systems create obstacles for organizations to implement these systems (Hanaysha et al., 2022; Liu et al., 2024; Anshari & Almunawar, 2022). The learning process of organizations depends heavily on the rules and regulations that exist in their environment. The combination of slow bureaucratic processes and inconsistent policies and unfavourable tax systems creates barriers for SMEs to experiment with new strategies and adapt their CI approaches based on policy feedback (Zhang & Ayele, 2022; Olayemi & Folajimi, 2021). The quality of infrastructure networks determines how efficiently organizations can learn. The poor delivery of electricity and water services and transportation systems creates information bottlenecks which increase operational expenses and makes it difficult for SMEs to maintain continuous learning and apply CI insights (Xiong, 2024; Li, Gu & Meng, 2023; Oguanobi & Joel, 2024).

The competitive environment should normally drive organizations to develop their learning abilities but most SMEs lack the necessary infrastructure and competencies to respond effectively. The intense competition from larger companies requires CI-based learning solutions to help SMEs detect business opportunities and enhance their strategic approaches (Mugano & Dorasamy, 2024; Zheng & Khalid, 2022). The research investigates how resource-limited South African SMEs implement OLT-based learning systems to prove that learning systems can scale across different organizational contexts. The research shows that organizations need both internal talent development and external supportive conditions to achieve successful CI implementation. The research investigates how different factors including absorptive capacity and human capital and financial support and environmental conditions affect South African SMEs' organizational learning processes. The research supports the National Development Plan's strategic objectives through its analysis of how Competitive Intelligence can enhance inclusive economic growth (Mhlongo & Daya, 2023; Durokifa, 2024).

3. Research Methodology

Research methodology is the belief that establishes the methods in which research should be performed in order to achieve the defined purposes (Pandey & Pandey, 2015). Research methods include qualitative, quantitative, and mixed (Creswell & Creswell, 2017). In quest of achieving the objective of this research, a quantitative method was employed. The quantitative design approach enhances the accuracy of results through statistics analysis (Myers, Well & Lorch Jr, 2013) and avoids the elements of subjectivity associated with the qualitative approach (Ratner, 2002). A self-administered questionnaire was designed and used to collect data for the purpose of fulfilling the objectives of this study. The questionnaire consisted of closed-ended questions. A five-point Likert scale ("Strongly disagree" (1) to "Strongly agree" (5)) was used to establish the level of agreement to variable items. The questionnaire was designed from scratch as there was no existing comprehensive one that would address the objectives of this research. The questionnaires were administered to SMEs in Gauteng and Kwazulu Natal province, targeting those who are currently active in the SMEs economy. Probability sampling, specifically random sampling was used to select a sample of SMEs. According to Small Enterprise Development and Finance Agency SOC Limited (2024) published in 26 September 2024 there was 2 683 602 registered SMEs in South Africa. Gauteng and KZN province, they have most registered SMEs, and they constituted 51% from total number of registered SMEs. Four hundred (400) SMEs were sampled for the purpose of this research. A web-based questionnaire was developed based

on literature review and expert validation before it was distributed to 400 SMEs across Gauteng and KwaZulu-Natal provinces, 179 response received yielding response rate of 44.8%. A quantitative positivist approach was used in this study to evaluate the effects of CI on SME sustainability. Collected data was captured, organised, and coded on Microsoft Excel before being exported to Statistical Packages for Social Sciences (SPSS). To ensure the validity of the data, exploratory factor analysis was performed (Howard, 2016). Cronbach's alpha was used to ensure the reliability of data (Hair et al., 2021). Malhotra (2020) recommends that the lowest recognized composite reliability value should be 0.70. The satisfactory value for the Cronbach alpha coefficient should also be greater than 0.70 (Gournelos, 2019). Descriptive statistics were used to describe valid and reliable data. The mean and standard deviation were used to describe data in this research (Hair et al., 2021). Ethical clearance was obtained for this study prior to the collection of data. Respondents participated in this study voluntarily. All respondents by continuing to complet the online survey they gave the consent to participate in this study as stipulated in the web cover page.

4. Research Results

Data validity

This research used exploratory factor analysis (EFA) to test the validity of the collected data. Exploratory Factor Analysis (EFA) was employed to identify underlying constructs and reduce data dimensionality, aligning with the study's objective to assess CI readiness. (Howard, 2016). Katz et al (2021) advocates for a safety sample size of 300 cases, and a minimum of at least 150 cases. Successful responses from 179 SMEs, which is considered suitable for factor analysis (Hair Jr et al., 2021). To measure the appropriateness of the factor analysis the Kaiser-Meyer-Olkin Measure (KMO) of Sampling Adequacy and Bartlett's Test of Sphericity were conducted as shown in Table 3. The minimum threshold of the KMO value is .5, in this study the Kaiser-Meyer-Olkin had a value of 0.857 which is above the threshold. The Bartlett's Test of Sphericity had a chi-square value of 4.635.450 with 465 degrees of freedom and a p-value of less than 0.001 which is highly significant at a 5% level of significance. There are sufficient correlations among the variables since the Bartlett's Test of Sphericity null hypothesis was rejected, therefore factor analysis is appropriate.

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.857
Bartlett's Test of Sphericity	Approx. Chi-Square	4635.450
	df	465
	Sig.	<.001

Data reliability

The Cronbach alpha was used to assess the internal consistency of the status of CI through readiness analysis in table 4. The coefficient was 0.971 and consisted of six items, a Cronbach alpha that is above .9 is considered excellent reliability as proposed by Ahmed and Ishtiaq (2021). This indicates that the response values for each respondent across the six items is consistent and highly reliable. Table 4 shows the Item-Total statistics that assesses the individual performance of each item in CI readiness analysis construct. The corrected item-total correlations indicated that all items had a very strong positive correlation that ranged from. 847 to .929, which is above the .30 threshold proposed by Field (2024) and Hair Jr et al (2021). This validates that items contribute meaningfully to the construct. The Cronbach alpha if item deleted ranged from 0.962 to 0.971 which is lower or equal to the overall Cronbach alpha therefore none of the items are deleted since no item reducing reliability. The item-total statistics in Table 4 contain the scale mean if item

deleted, scale variance if item deleted, corrected item-total correlation and Cronbach's Alpha if item deleted".

Table 4: Summary of reliability test results of total statistics items

Item-Total Statistics				
	Scale mean if item deleted	Scale variance if item deleted	Corrected Item-total correlation	Cronbach's alpha if Item deleted
Our business actively engages CI to understand market trends	11.97	37.988	.929	.962
CI activities are integrated into the decision-making processes of our business	11.98	39.258	.913	.964
Employees in our business are aware of the CI initiatives being implemented	12.01	39.062	.912	.964
There is a structured approach to CI in our business	11.97	39.291	.906	.965
CI is crucial to maintaining the competitiveness of our business	11.90	38.035	.918	.963
CI practices in our business are regularly reviewed and updated	11.92	39.673	.847	.971

Source: (Author's own compilation)

Table 5 and figure 1 reveal the descriptive statistics and spread of responses for the leveraging CI readiness analysis, respectively. ten items of the dependent factor leveraging CI readiness analysis are valid and reliable. Their central tendencies are analysed hereunder.

B1. Our business actively engages CI to understand market trends: The SD, skewness and kurtosis for this element are 1.378, 0.761 and -0.768 respectively. The respondents did not perceive that business actively engages CI to understand market trends. This indicates that there is moderate variability within the responses, which shows that most respondents shared similar views and there is consistency in the response's reliability is supported by this consistency and there is a deeper understanding of the CI readiness in the business. The mode, median and mean for this element are 2.4 respectively. The mode indicates that the most selected answer to this element was "disagree". Thus, the mean and the median indicate that majority of the South Africa SMEs endorses that there is lack of CI awareness therefore the developed framework will address common barriers to CI adoption.

B2. CI activities are integrated into the decision-making processes of our business: The SD, skewness and kurtosis for this element are 1.289, 0.717 and -0.698 respectively. The respondents did not perceive that CI activities are integrated into the decision-making processes of the business. This indicates that there is moderate variability within the responses, which shows that most respondents shared similar views and there is consistency in the response's reliability is supported by this consistency and there is a deeper understanding of the CI readiness in the business. The mode, median and mean for this element are 2.4 respectively. The mode indicates that the most selected answer to this element was "disagree". Thus, the mean and the median indicate that majority of the South Africa SMEs endorses that there is lack of CI awareness therefore the developed framework will address common barriers to CI adoption.

B3. Employees in our business are aware of the CI initiatives being implemented: The SD, skewness and kurtosis for this element are 1.307, 0.765 and -.615 respectively. The respondents did not perceive that employees in the business are aware of the CI initiatives being implemented. This indicates that there is moderate variability within the responses, which shows that most respondents shared similar views and

there is consistency in the response's reliability is supported by this consistency and there is a deeper understanding of the CI readiness in the business. The mode, median and mean for this element are 2.4 respectively. The mode indicates that the most selected answer to this element was "disagree". Thus, the mean and the median indicate that majority of the South Africa SMEs endorses that there is lack of CI awareness therefore the developed framework will address common barriers to CI adoption.

B4. There is a structured approach to CI in our business: The SD, skewness and kurtosis for this element are 1.294, 0.740 and -.581 respectively. The respondents did not perceive that employees in the business are aware of the CI initiatives being implemented. This indicates that there is moderate variability within the responses, which shows that most respondents shared similar views and there is consistency in the response's reliability is supported by this consistency and there is a deeper understanding of the CI readiness in the business. The mode, median and mean for this element are 2.4 respectively. The mode indicates that the most selected answer to this element was "disagree". Thus, the mean and the median indicate that majority of the South Africa SMEs endorses that there is lack of CI awareness therefore the developed framework will address common barriers to CI adoption.

B5. CI is crucial to maintaining the competitiveness of our business: The SD, skewness and kurtosis for this element are 1.387, 0.744 and -0.775 respectively. The respondents did not perceive that CI is crucial to maintaining the competitiveness of the business. This indicates that there is moderate variability within the responses, which shows that most respondents shared similar views and there is consistency in the response's reliability is supported by this consistency and there is a deeper understanding of the CI readiness in the business. The mode, median and mean for this element are 2.4 respectively. The mode indicates that the most selected answer to this element was "disagree". Thus, the mean and the median indicate that majority of the South Africa SMEs endorses that there is lack of CI awareness therefore the developed framework will address common barriers to CI adoption.

B6. CI practices in our business are regularly reviewed and updated: The SD, skewness and kurtosis for this element are 1.332, 0.743 and -0.659 respectively. The respondents did not perceive that CI is crucial to maintaining the competitiveness of the business. This indicates that there is moderate variability within the responses, which shows that most respondents shared similar views and there is consistency in the response's reliability is supported by this consistency and there is a deeper understanding of the CI readiness in the business. The mode, median and mean for this element are 2.4 respectively. The mode indicates that the most selected answer to this element was "disagree". Thus, the mean and the median indicate that majority of the South Africa SMEs endorses that there is lack of CI awareness therefore the developed framework will address common barriers to CI adoption.

All the items in this construct are positively skewed which suggest that a larger proportion of responders selected lower agreement levels and this is substantiated by the low mean values. There is an overall negative disagreement on CI adoption in the business. The responses were less peaked and more dispersed around the mean due to the kurtosis values ranging from -0.775 to -0.581 which means the distribution is platykurtic. Kurtosis and skewness further reinforce on respondents disagreeing to competitive readiness of the business.

Table 5: Descriptive statistics for CI readiness analysis

Item	Mode	Median	Mean	SD	Skewness	Kurtosis	Response count	Agreement Level
B1.	2	2	2.38	1.378	.761	-.768	179	Disagree

B2.	2	2	2.37	1.289	.717	-.698	179	Disagree
B3.	2	2	2.34	1.307	.765	-.615	179	Disagree
B4.	2	2	2.38	1.294	.740	-.581	179	Disagree
B5.	2	2	2.45	1.387	.744	-.775	179	Disagree
B6.	2	2	2.43	1.332	.743	-.659	179	Disagree

Source: (Author's own compilation)

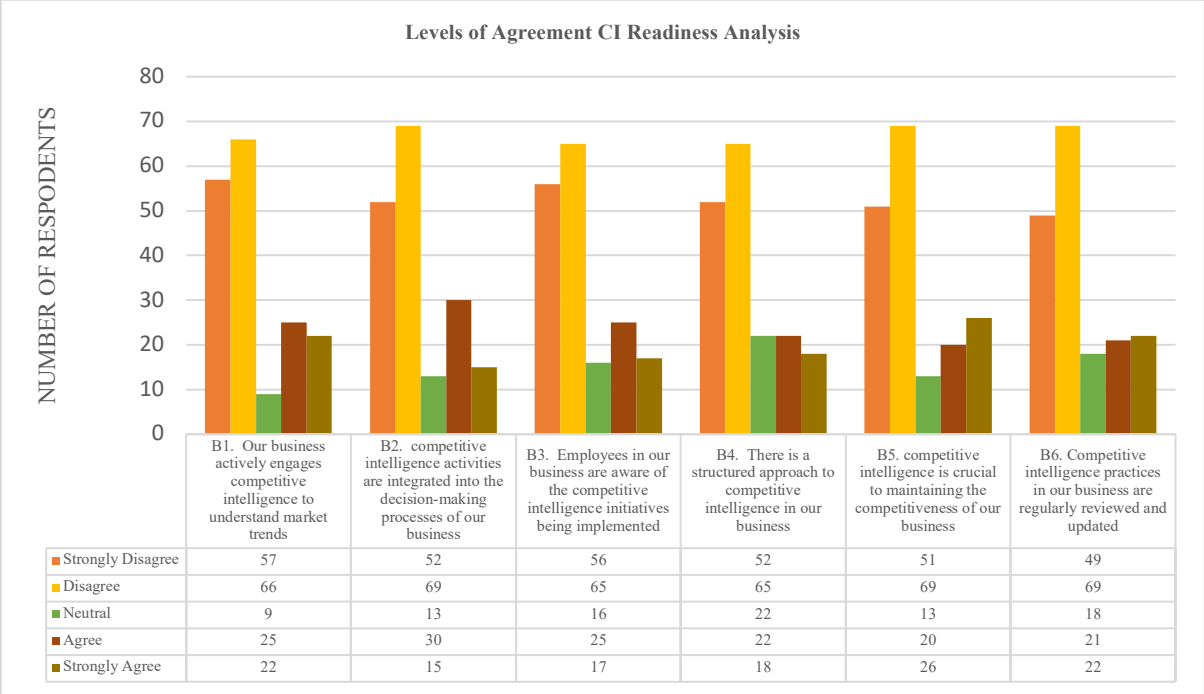

Figure 1: Level of agreement of CI readiness analysis

CI readiness analysis was assessed using a five-point Likert scale and the level of agreement using the guidelines by (Sekhon, Cartwright and Francis, 2022) are shown in figure 1. From the visualisation there is an overall disagreeing in the agreement levels of CI readiness analysis of the business. This is also substantiated by the descriptive statistics above in table 5. About 68.7% of the respondents disagreed that the business actively engages CI to understand market trends, 5% of the respondents were neutral and only 26.3% agreed. Similarly, 67.6% of the respondents disagreed that CI activities are integrated into the decision-making processes of our business, 7.3% were neutral and 25.2% agreed. For the statement "Employees in our business are aware of the CI initiatives being implemented." 67.6% again disagreed, showing that majority of the respondents are not confident that employees are aware of the CI initiatives being implemented in the business, 25.5% agreed and 8.9% were neutral. About 65.4% respondents were in disagreement with the statement "There is a structured approach to CI in our business", with only 22.4% agreeing and 12.3% being neutral. The statement "CI is crucial to maintaining the competitiveness of our business" 65% were in disagreement, with 7.3% neutral and 25.7% in agreement. About 65.9% were in disagreement that CI in their business is regularly reviewed and updates, with 10.1% neutral and 24% agreed. This shows that CI not widely embedded or adopted into the businesses.

5. Discussion

This research revealed numerous opportunities and challenges of the SMEs. The findings of the study showed that SMEs contribute to the economy through contribution to job opportunities, provision of income, poverty alleviation, and competitiveness. It can be concluded that SMEs exists primarily because of unemployment, but this ignores its true value. The SMEs serves as a safety net for the economy, allowing the unemployed and unemployable to find employment or start new businesses, thereby increasing income and alleviating poverty. The worldwide recognition of the SME sector stems from its substantial impact on economic development, entrepreneurial activity, and job creation (Abisuga-Oyekunle, Patra & Muchie, 2020; Munyo & Veiga, 2024; Surya, Menne, Sabhan, Suriani, Abubakar & Idris, 2021). These companies represent around 40% of South Africa's GDP and employ over 60% of the workforce (Chigbu & Nekhwevha, 2021). Their mobility makes them fill in gaps instantly making the economy more innovative and competitive (Anshari & Almunawar, 2022). The analysis of descriptive statistics reveals that CI is not yet well-integrated into the operations of South African SMEs. The findings are summarized as follows: Mean scores for CI-related items ranged between 2.34 and 2.45, indicating overall disagreement with statements about the presence, importance, and integration of CI in business practices. The highest mean score 2.45 was recorded for the statement "CI is crucial to maintaining business competitiveness", yet even this fell within the disagreement category, reflecting weak recognition of CI's strategic value. SD ranged from 1.289 to 1.387, suggesting moderate variability but relative consensus among respondents, with most sharing similarly skeptical views on CI readiness.

This consistency adds credibility to the findings and suggests that the observed trends reflect broad perceptions rather than isolated opinions. All CI items exhibited positive skewness, meaning that lower agreement responses dominated. Kurtosis values were negative platykurtic, pointing to flatter distributions and more dispersed responses. This indicates respondents were generally spread out around the mean, rather than clustering at a single point. A significant majority 67.6% disagreed that employees are aware of CI initiatives, highlighting weak internal communication and awareness. 65.4% of respondents disagreed that there is a structured CI approach, implying a lack of formal systems or frameworks for CI. For the statement on CI being crucial to competitiveness, 65% disagreed showing that many SMEs may underestimate its strategic importance. Similarly, 65.9% disagreed that CI practices are regularly reviewed and updated, suggesting poor CI maintenance and evolution.

The research results validate that South African SMEs have not developed CI capabilities to a satisfactory level which matches previous studies showing limited CI adoption in this sector. The study results show low mean scores and high disagreement rates which indicate that South African SMEs continue to face challenges in understanding and implementing CI for strategic agility and sustainability and competitiveness (Naradda et al., 2020; Ranjan & Foropon, 2021; García-Madurga & Esteban-Navarro, 2020). The study by Ibrahim, Ahmad, and Abu Bakar (2025) confirms that numerous SMEs face difficulties in understanding CI value and implementing it properly because of insufficient frameworks. The combination of financial restrictions and insufficient human resources and inadequate technological systems (Liu et al., 2022; Kettani & Aljandali, 2022) makes it difficult for businesses to establish structured CI approaches as shown by the 65.4% of participants who indicated their organizations lack such systems. The results show that employee awareness about CI remains low because of internal communication problems which create a gap between leadership and operational staff. The strategic implementation of CI for sustainability and long-term performance in South African SMEs remains minimal despite its proven benefits for SMEs worldwide (Didonet, Fearne & Simmons, 2020; Hadebe, 2022). The study confirms that SMEs operate at a disadvantage compared to large corporations because they lack access to sophisticated CI systems and worldwide networks (Cantelmi, Di Gravio & Patriarca, 2021; Wang & Zhao, 2024). The practical application of localized CI methods according to Lopez-Torres (2023) and Wu et al. (2023) enables SMEs to obtain competitive market intelligence. South African SMEs can use AI-based CI systems with dual strategic-

tactical intelligence to enhance their CI operations according to current industry trends (Cavallo et al., 2021; Pattanayak, 2022). The successful implementation of CI requires intentional capacity development and strategic planning integration and dedicated leadership support (Maluleka & Chummun, 2023b; Sishuba, 2020; Vuorio et al., 2025).

The current status of CI in South African SMEs appears underdeveloped. There is limited institutionalisation of CI activities, minimal awareness among employees, and weak recognition of its strategic benefits. These gaps suggest an urgent need for capacity building, internal alignment, and the implementation of structured CI frameworks to enhance competitiveness and informed decision-making across the sector.

6. Conclusion

This study aimed to investigate the obstacles and facilitators to the adoption of CI among South African SMEs, specifically examining how these elements affect the present state of CI integration for company sustainability. The results show that SMEs are important for economic growth, job creation, and innovation, but they face ongoing structural and contextual problems that make it hard to apply CI strategically. Some of the biggest problems are not being able to get enough money, not having enough managerial and technical skills, having bad infrastructure, and having too many rules. These problems not only make operations less efficient, but they also impede SMEs from using CI as a way to go ahead of the competition and stay in business for a long time. The research focused exclusively on SMEs in the Gauteng and KwaZulu-Natal provinces, comprising a sample size of 179 respondents. The spatial and numerical limitations may hinder the applicability of the findings to the wider SME community throughout South Africa. Furthermore, employing a solely quantitative approach may have neglected subtle insights that qualitative methods could uncover. Policymakers should put CI awareness and training programs for SMEs at the top of their list of things to do. Financial institutions and support groups need to come up with finance arrangements that are good for SMEs and consider CI development as a key factor. Plans for building infrastructure should include digital access to make it possible for CI to be used. To make SMEs more competitive and resilient, CI should be a part of government policies for developing them. Start targeted capacity-building programs to help SMEs owners and managers become more literate in CI. Change economic and social policies so that they better meet the demands of SMEs businesses. To boost CI innovation, make it easier for the government, academia, and business to work together. Subsequent research ought to broaden the geographic focus to encompass all provinces and utilize mixed method approaches to enhance the comprehension of CI dynamics. Longitudinal studies could evaluate the effects of CI adoption over time on the performance and sustainability of SMEs.

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