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Business Intelligence in African Small and Medium Enterprises

A Systematic Literature Review

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Master Thesis

presented as partial requirement for obtaining a Master's Degree in Data-Driven Marketing

NOVA Information Management School
Instituto Superior de Estatística e Gestão de Informação
Universidade Nova de Lisboa

Business Intelligence in African Small and Medium Enterprises
A Systematic Literature Review

by

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Master Thesis presented as partial requirement for obtaining the Master's degree in Data-Driven Marketing, with a specialization in Marketing Intelligence.

Supervised by

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Maio, 2025

STATEMENT OF INTEGRITY

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism, any form of undue use of information or falsification of results along the process leading to its elaboration. I further declare that I have fully acknowledged the Rules of Conduct and Code of Honor from the NOVA Information Management School.

[Lisbon, Maio 2025]

DEDICATION

I dedicate this work to my mother who never failed to motivate and push me to finish the work I had to do whenever I felt like giving up. I see the vision she has for my future and that is why this thesis is being presented today.

I dedicate it to my father whose career as an engineer inspired me to feel that I could dip my feet in the waters of science despite coming from a background in Psychology.

Lastly, I dedicate it to my older brother who served as a shoulder to rely on and a steward of my choice of subjects. Without his advice, I probably would not have chosen this course.

Together, they allow me to feel that nothing is impossible if you work hard at it.

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ABSTRACT

The adoption of Business Intelligence (BI) by Small and Medium Enterprises (SMEs) in Africa is an emerging trend with promising potential. However, African SMEs face unique and often overlooked challenges not commonly encountered in more developed economies, such as infrastructural limitations, financial constraints, and inadequate institutional support. This systematic literature review aims to assess the current state of BI adoption among African SMEs, identify the primary barriers to implementation, and highlight contextual factors that influence the integration and use of BI tools. Following the PRISMA 2020 guidelines, a structured search strategy using Boolean logic was conducted across multiple academic databases and registers. After applying inclusion and exclusion criteria focused on empirical studies, a final sample of 32 peer-reviewed journal articles was selected for analysis. Findings indicate that while there is a growing interest in BI adoption among African SMEs, several critical challenges persist. These include limited financial resources, unstable internet connectivity, insufficient government support, inadequate digital infrastructure, and a lack of skilled personnel. Despite these obstacles, the literature affirms that BI holds significant promise for improving SME competitiveness, market resilience, and sustainable growth. BI adoption in African SMEs remains a complex and uneven process, with no universal framework applicable across all contexts. Country-specific disparities and government inaction in areas such as digital literacy and resource provision continue to hinder widespread adoption. Nevertheless, BI represents a strategic enabler for SME growth and integration into global markets. Future research should aim to expand the geographic scope of analysis, address sector-specific implementation barriers, and explore practical frameworks tailored to the diverse realities of African SMEs.

KEYWORDS

Business Intelligence; Competitive Intelligence; Knowledge Management; African Small and Medium Enterprises.

Sustainable Development Goals (SDG):



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LIST OF ABBREVIATIONS

ABBREVIATION	MEANING
BI	Business Intelligence
CI	Competitive Intelligence
KM	Knowledge Management
SME	Small And Medium Enterprise
TOE	Technology Organization Environment
TAM	Technology Acceptance Model
MBI	Mobile Business Intelligence

1- INTRODUCTION

Business Intelligence (BI) refers to the technologies, processes, strategies, and tools that businesses use to collect, analyse, and present data in a meaningful way. The ultimate goal of BI is to help organizations make better-informed decisions by turning raw data into actionable insights (Edun & Wei, 2011). BI tools streamline decision-making processes and help SMEs improve operational efficiency. By automating data collection and analysis, businesses can reduce the time spent on manual processes, enabling faster decision-making and enhanced productivity, operational efficiency is improved by enabling businesses- specifically in sectors that include sales or services to many people- to identify areas for optimization, reduce waste, and allocate resources more effectively (Dafir & Alaoui, 2024). The role of BI has been evidenced throughout research as one of the most efficient manners of collecting data and making well-reasoned and logical decisions to settle on the course of a business and on the scaling and developing of Small and Medium Enterprises (SMEs) (Papachristodoulou et al., 2017)

SMEs are hard to define in a universal manner. This is because each country has developed its own definition to fit its context and economic circumstances (Khurram et al., 2018). For instance, SMEs in Germany are defined by Germany's Federal Ministry for Economic Affairs and Energy as firms that have less than 500 employees or that generate up to 50 million euros in annual turnover whereas Egypt defines SMEs as having more than 5 and fewer than 50 employees (Herr & Nettekoven, 2018). Furthermore, The World Bank defines SMEs as those enterprises with a maximum of 300 employees, \$15 million in annual revenue, and \$15 million in assets. Meanwhile, the Inter-American Development Bank describes SMEs as having a maximum of 100 employees and less than \$3 million in revenue (Dalberg, 2011). To illustrate the difference, South African SMEs typically have fewer than 200 employees and an annual turnover of less than R64 million (€3,2 million). In other African countries, the same criteria are used to define them, although annual turnover is not as used due to recent inflation rates (Moyo & Loock, 2016) . In Malawi for instance, SMEs are estimated to be at around 758,000 and 41% of them collectively employ a total of 1,050,320 Malawians on full-time basis and contribute 22% to the GDP through trading and retailing activities (Chawinga & Chipeta, 2017). Therefore, the difference in number of staff and revenue turnout, showcases the different environment African SMEs operate under, giving reasoning behind a more in-depth exploration of the degree of BI adoption in the continent.

Historically, Africa has been seen as the weakest and saddest region due to issues like war, corruption, poor leadership, neglect, and exclusion from global power dynamics. Not long ago, it was labeled a "Hopeless Continent" with minimal contributions to the global stage (Endris & Kassegn, 2022). The continent now offers numerous business opportunities, largely driven by SMEs, which play a vital role in economic development and sustainability as they make up more than 90% of businesses in African countries such as Nigeria and South Africa and at

present moment are responsible for around 70% of total employment and contribute to 50% of the Sub-Saharan African GDP (Fabian et al., 2024). Thus, information technology is crucial for sustaining, facilitating, and advancing the internal and external business activities of SMEs to maintain relevance on the economic map of their respective markets and respective GDPs, the SME sector must adopt BI for effective business decision-making (Dafir & Alaoui, 2024). As result of this progress, the importance of synthesising the state of business intelligence in the continent rose with the goal of increasing their international competitiveness and their positioning in global discourse (Chidiadi, 2024)

In literature, there has been a usage of terms such as Knowledge Management (KM) and Competitive Intelligence (CI) which are simply distinct aspects that fall within the umbrella of BI. They are distinct yet complementary and have a similar goal (Amaeshi et al., 2021). Whether internal or external both serve the same purpose: intelligent decision making with the purpose of growth (Irenaus et al., 2021).

This systematic literature review aimed at exploring the topic of BI in the context of African SMEs as many countries in Africa are still in the early stages of technology implementation and still struggle with technological illiteracy (Kester & Preko, 2015) despite that, a boom in Africa's population, as well as their rapid development in the technological and economic areas has been observed in many capital cities (Kikawa et al., 2019); their contributions to their markets 'GDPs have not gone unnoticed. This emerging development make them a plausible arena for most of the business processes in the future, making it an important area of study (Endris & Kassegn, 2022).

Therefore, the fundamental question of this systematic literature review is "What is the degree of BI adoption in African SMEs?" in the process, factors that affect B.I implementation, its awareness level, as well as affordable options and recommendations that allow for BI to be implemented in the African context will be showcased based on the scientific literature available from various countries and studies.

Despite the growing global interest in data-driven decision-making, the body of literature specifically addressing BI implementation in African SMEs remains fragmented and underexplored. Thus, employing the PRISMA methodology the review intends to offer valuable insights for scholars, policymakers, and SME stakeholders interested in leveraging BI for growth and competitiveness.

2- METHODOLOGY

This systematic literature review employed the PRISMA Methodology which is a set of guidelines used to improve the reporting of systematic reviews (Page et al., 2021). In this systematic literature review, the sources IEEE Explore, MDPI, DimensionsAI, Web of Science, Scopus, ScienceDirect, Research Gate, and Nova IMS data repository (RUN) were used.

The search was conducted using the Boolean method, three other queries were used however the query “Business Intelligence, OR, Competitive Intelligence, OR, Knowledge Management AND African SMEs” returned the most appropriate results to conduct the study. The systematic literature review consists of mainly peer reviewed journal articles and the rest are conference proceedings. A timeframe limit was not imposed and a total 1429 documents and conference proceedings came up as results across all repositories.

Each citation was imported to Zotero and duplicates were removed using the Zotero software. After that, Master’s theses and non-reviewed peer journals were removed, reducing the articles to 79. These 79 articles were selected for full-text review to determine their eligibility for inclusion in the systematic literature review.

Out of the 79 articles assessed for eligibility, 47 articles were excluded for various reasons

- 1- **Non-SME Focus:** 12 articles were excluded because they did not focus specifically on SMEs. Instead, they discussed BI in the context of large enterprises or mixed-size companies.
- 2- **Conceptual Frameworks:** 3 articles were excluded because they were conceptual frameworks without empirical data. These articles provided valuable insights but did not meet the empirical research criterion. While these papers contributed valuable theoretical perspectives to the topic, they did not meet the inclusion criterion requiring empirical evidence (e.g., data collection, analysis, or case studies). As the aim of this review is to synthesize findings from empirical research, these theoretical contributions were excluded from the final analysis.
- 3- **Geographic Scope:** 15 articles were excluded as their research was conducted outside the African continent, which was outside the scope of this review focused on African SMEs.
- 4- **Methodological Flaws:** 17 articles were excluded due to significant methodological flaws according to PRISMA standards (Page et al., 2021), such as inadequate sample sizes, lack of proper controls, or insufficient data analysis.

The final selection included 32 articles that meet all the eligibility criteria. These articles were included in the qualitative synthesis of the review and were stored in Zotero to manage referencing.

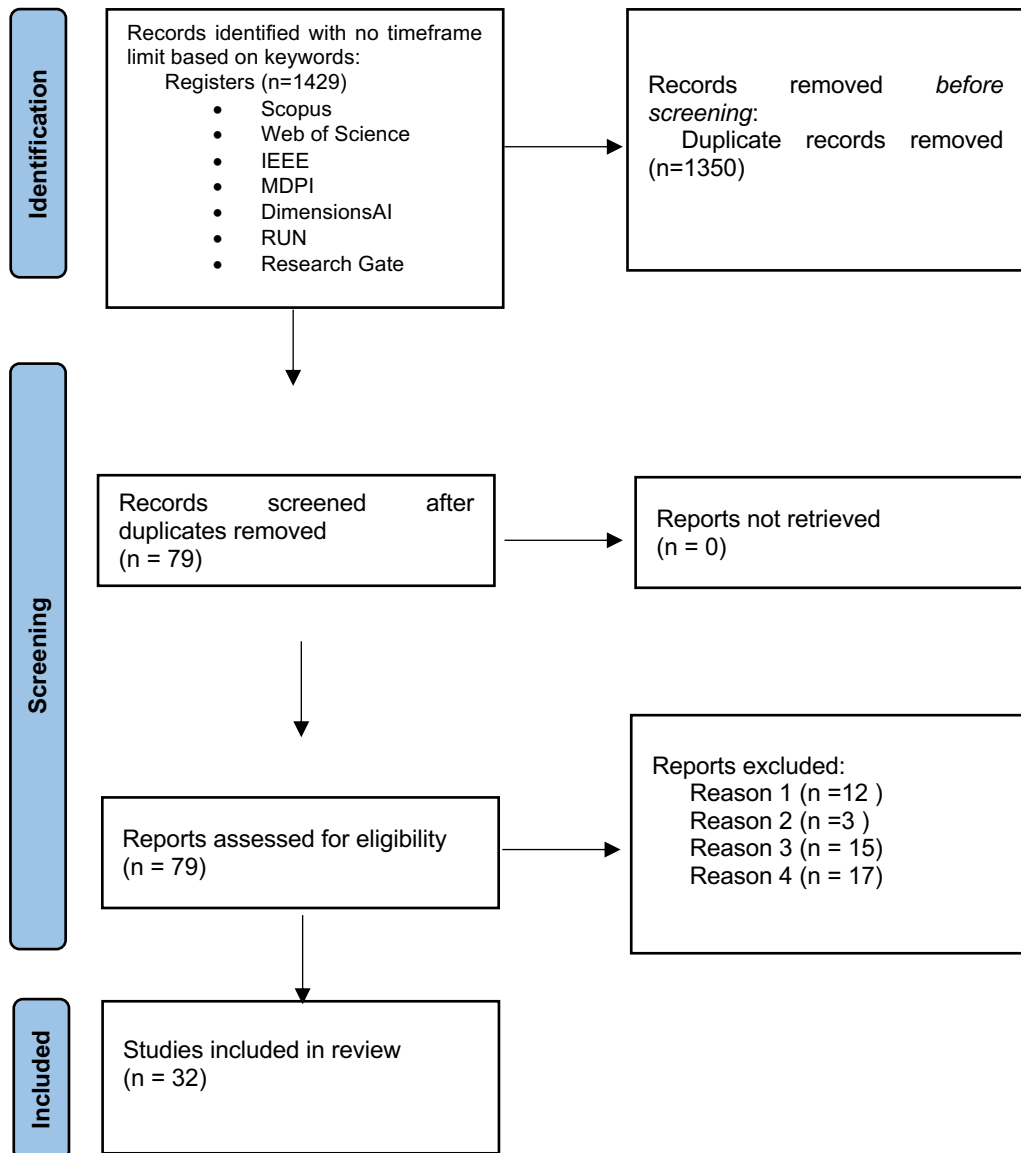


Figure 1- PRISMA Flow Diagram

3- RESULTS AND DISCUSSION

The studies included in the review spanned a range of African countries including Nigeria, South Africa, Morocco, and Kenya. They ranged from 2013 to the most recent being in 2025 (Figure 2). The sample sizes varied widely, with some studies involving fewer than 20 SMEs and others including over 300 people.

Overall, the studies touched on several aspects such as government support, availability of financial resources, staff education and other factors as it concerns to the state of BI adoption in African SMEs (Figure 3). The results will be divided into an insight into different countries as one of the goals is to allow for scholar as well as SME owners to have a deeper understanding of the situation in each country (Figure 4, 5). A separation between countries allows them to go straight for the country they could be searching for. Also, recurring authors explored the same countries and regions therefore it was reasonable to group them together (Figure 6). With this information, the research question “What is the current state of BI adoption in African SMEs?” will be answered from data from various countries in Africa.

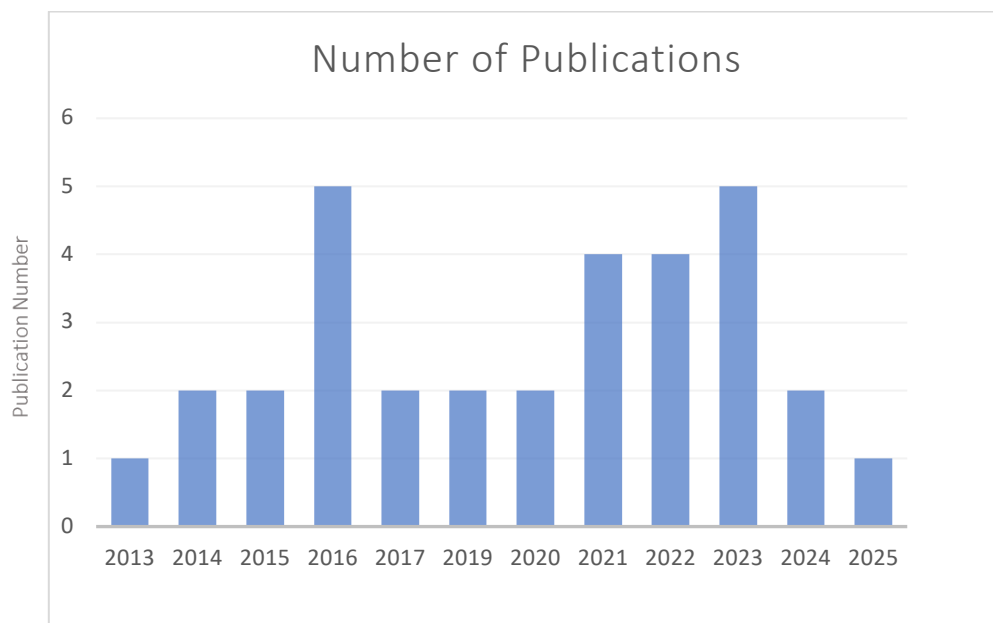


Figure 2- Number of Articles according to Year

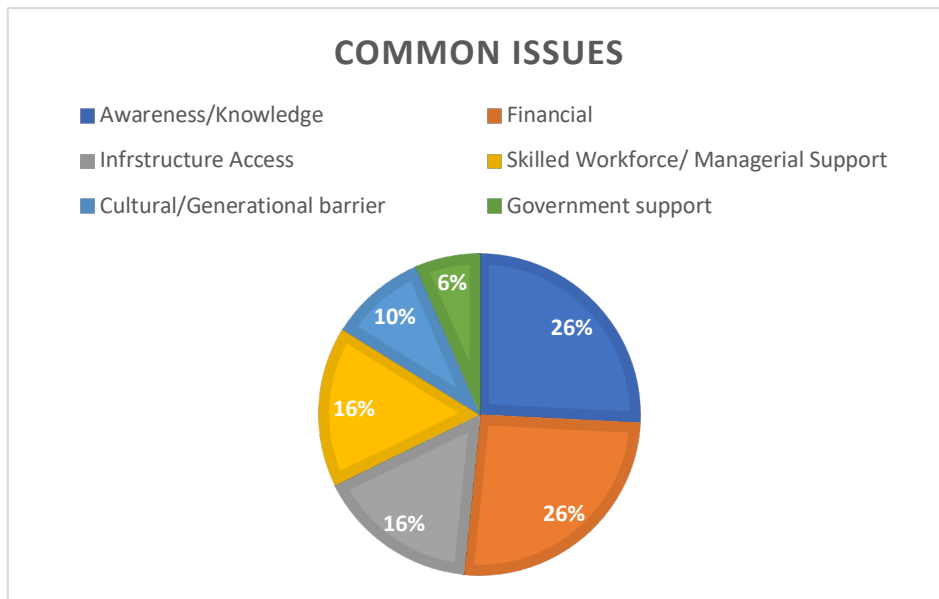


Figure 3- Common Issues and Barriers faced by SMEs

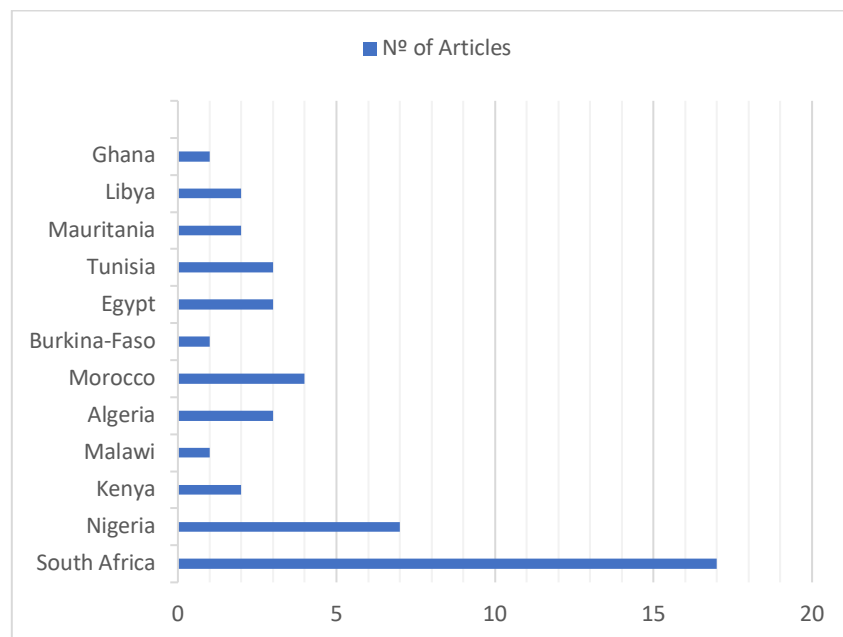


Figure 4-Articles by Country



Figure 5-Country Illustration Map

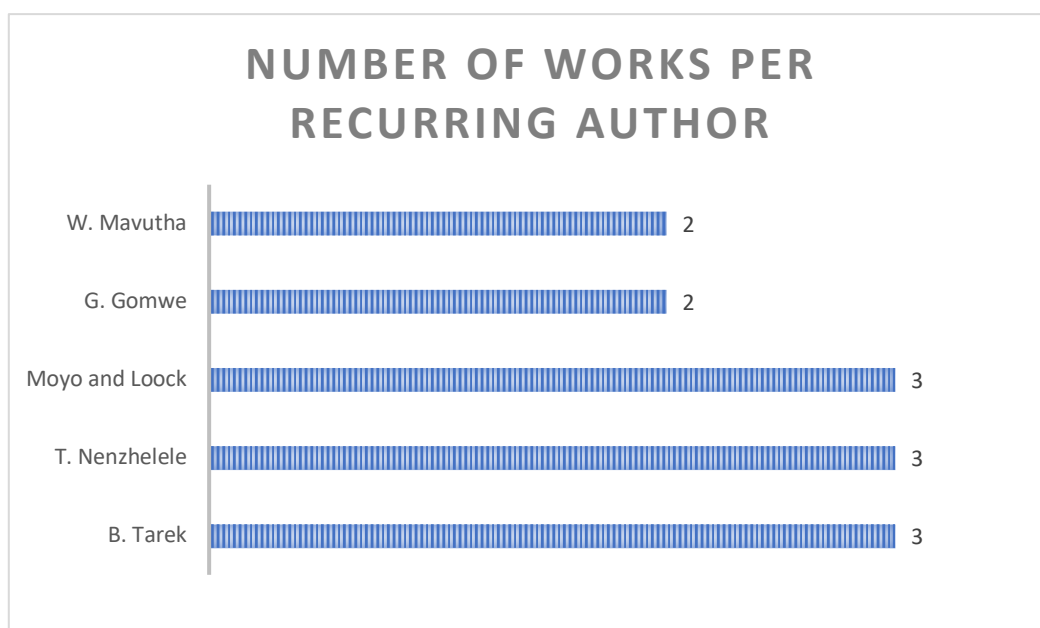


Figure 6-Recurring Authors

3.1- SOUTH AFRICA AND NIGERIA

South Africa and Nigeria have been the most mentioned countries in the research (Figure 2, 3) thus have been grouped together to present the information and statistics from the countries which implement BI tools in their SMEs the most. The tables below (Table 1, 2) were separated, with the first being for studies conducted in South Africa and the second being for studies conducted in Nigeria. Both tables are formatted to include authors of the study, sample size, method used and a summary of the key findings.

<i>Study</i>	<i>Sample Size</i>	<i>Method</i>	<i>Key Findings</i>
<i>Adeyelure & Kalema (2016)</i>	140	Survey	Identified factors for MBI framework deployment; highlighted challenges in access to BI tools.
<i>Nenzhelele & Pellissier (2014)</i>	100	Questionnaire	Identified challenges in CI implementation among SMEs, including lack of resources and training.
<i>Nenzhelele (2015)</i>	100	Questionnaire	Established the location of competitive intelligence within SMEs.
<i>Magoma et al.(2021)</i>	200	Questionnaire	Used non-probability sampling techniques to discover advantages and affordability of IBM Cognos in SMEs
<i>Mashego & Sewdass(2023)</i>	21	Semi-Structured Interview	Aim of this study was to investigate how can competitive intelligence ameliorate innovativeness of SMEs in emerging economies
<i>Mavutha, Kamwendo & Corbishley (2023)</i>	132	Questionnaire	The aim of this study was to establish the factors that influence the adoption of BI by micro-small apparel retailers in KwaZulu-Natal
<i>Gomwe, Potgieter & Litheko (2023)</i>	12	In-depth Interview	Study grounded on the technology acceptance model (TAM), which describes perceived ease of use (PEOU) and perceived usefulness (PU) in implementing business intelligence.
<i>Dishman & Calof (2014)</i>	5	Quantitative Questionnaires	Survey Used TAM and PEOU to examine roles of a selection of technological, and specific environmental factors in enhancing competitive advantage for SMEs, within the Telecommunications Industry in the Gauteng Province.

<i>Gomwe, Potgieter & Litheko (2022)</i>	400	In-depth interview	Aims at validating the impact of B.I in SMMEs, in North-West Province.
<i>Nenzhelele(2015)</i>	100	Self-administered questionnaire	This research establishes the impact of business type and sector, location and annual turnover on the competitive intelligence practise of SMEs
<i>Nenzhelele & Pellissier (2013)</i>	100	Questionnaire	Aimed at establishing the influence of owners' and managers' working experience of CI practice and awareness in SMEs environment.
<i>Ajibade (2016)</i>	23	Interview	Found that money is not the main barrier and knowledge is regarding KM adoption.
<i>Mavutha (2024)</i>	132	Questionnaire	Explored the part that government institutions can do to help specifically apparel SMEs with the common issues of BI implementation.
<i>Moyo & Loock (2019)</i>	109	Online Questionnaire	Presented the 3 different stages of BI adoption, challenges and security aspects of BI implementation.
<i>Moyo & Loock(2021)</i>	57	Online Questionnaire	Delved deeper into security tools implemented in BI systems and how they chose them and their respective BI systems.
<i>Kikawa et al. (2019)</i>	161	Questionnaire	The results demonstrate a strongly significant relationship between BI acceptance and the key characteristics under TAM and TOE factors in the Tshwane Republic specifically.

Table 1- Studies in South Africa

<i>Study</i>	<i>Sample Size</i>	<i>Method</i>	<i>Key Findings</i>
<i>Adeyeye & Kalema (2016)</i>	140	Survey	Identified factors for MBI framework deployment; highlighted challenges in access to BI tools.
<i>Fabian, Uchekwukwo & Eze (2024)</i>	6	Open-ended questionnaire	Delved into importance of BI timely decision-making in Nigerian SMEs.
<i>Irenaus, Ikechuckwu & Ndubuisi (2021)</i>	318	Questionnaire	Survey research design was used to evaluate competitive intelligence and organizational performance in small and medium enterprises in south east, Nigeria.
<i>Ajibike, Fagbemi & Ologunde(2023)</i>	400	Questionnaire	Evaluates the effect of business intelligence (BI), organizational learning (OL) and innovation (IN) on the performance of SMEs in the South West Nigeria.
<i>Francis (2020)</i>	392	Questionnaire	It assessed the influence of the essential success factors found by SMEs on the implementation of BIS on SME efficiency in Lagos.
<i>Lateef & Keikhosrokiani(2022)</i>	165	Questionnaire	This research aims to investigate the impact of success factors on the implementation of business intelligence in SMEs

Table 2- Studies in Nigeria

Financial issues are a big SME barrier in BI implementation, Magoma et al. (2021) based their study on exploring a more affordable, specifically cloud-based solution. It specifically addressed the research gap in terms of the significance of affordability as a feature of the BI tool IBM Cognos for SMEs in South Africa. It was discovered that 63.7 % of respondents presumed that IBM Cognos aids financial decision-making and alerts SMEs with cost overruns. In addition, 61,5% agree that it is low cost and high quality. Overall, the results show that modifying data, viewing data easily, access to information, data encryption, scheduling and alerts, data visualisation and making better business decisions and financial decisions are considered highly important by managers, making IBM Cognos a suitable option.

Conversely, Mashego and Sewdass (2023) focused on the current state of technological innovativeness with data collection specifically on liquor retailing SMEs in South Africa. They found that SME liquor retailers collected different types of data to aid their innovativeness yet did it manually, Fabian et al. (2024) supports this finding as their study

concluded the same on manual data collection. However, both Mashego and Sewdass (2023) and Fabian et al. (2024) were able to showcase evidence that despite cost concerns, the importance of data collection with the use of technology to grow and improve on business is very high.

Another study by Mavutha et al. (2023) used the TOE Framework to establish the factors that influence the adoption of BI by micro-small apparel retailers in KwaZulu-Natal. The Technology Organization Environment (TOE) Framework looks at technology adoption from a broader organizational perspective, considering three contexts: Technology (compatibility with existing systems), Organization (internal factors like size and resources), and Environment (external influences such as industry trends and regulations) (Mavutha et al., 2023).

Their findings highlighted SME owners' struggle with innovation due to their lack of education, as running a small business requires little to no formal education.

Regarding the current state of BI implementation and adoption, Mavutha et al. (2023) results show that businesses are currently training their staff on the use of BI, and that businesses are uncertain about adopting BI (in both cases $p < .001$). Although, there is significant agreement that businesses have decided that it is in their best interests to adopt BI (in all cases $p < .001$). They discovered that despite agreeing on its importance, the main barriers to BI system adoption were largely financial in nature. Costs involve the price of initial setup and support, as well as the cost and amount of time needed for staff employees to receive system handling training.

The TOE analysis was also used to highlight the low rate of BI implementation, finding that 79.4% of micro-small apparel businesses do not conduct trial runs of BI tools (Mavutha, 2024). They identified barriers to BI evaluation, such as perceived relative advantage, the rational decision-making culture, and external support—especially from government in regards to funding SMEs access to reliable hardware or providing SMEs with reliable internet—as internet service providers are often owned by the governments (Owuso, 2020) - have contributed to financial exclusion for SMEs (Mavutha, 2024).

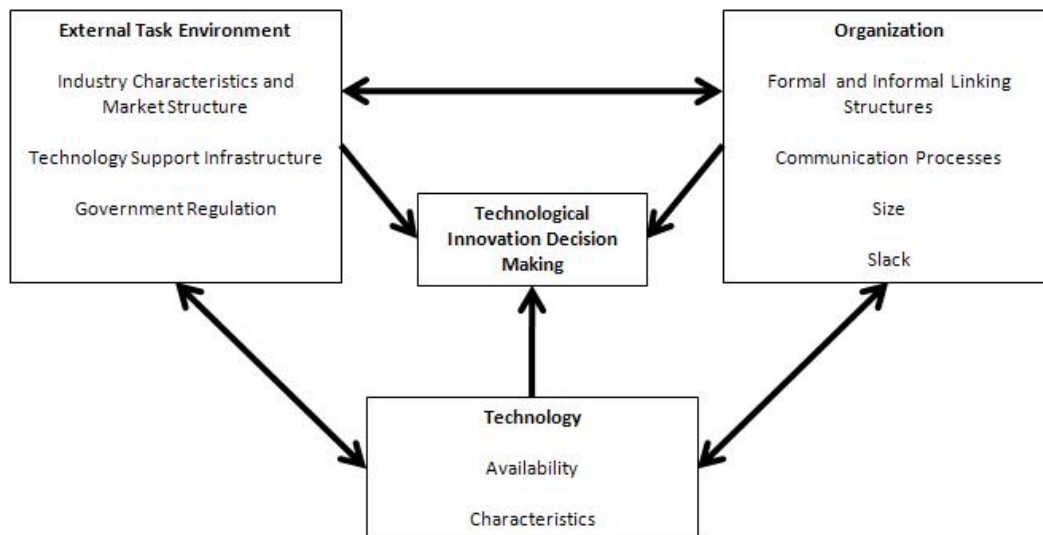


Figure 7-TOE Framework (Mavutha et al., 2023)

Expanding on the current adoption of BI in African SMEs using the TAM Model, Gomwe et al. (2022) focused on developing an innovative BI model as a competitive advantage, concluding that clear goal setting and providing education mechanisms were key for successful BI adoption. The Technology Acceptance Model (TAM), explains how users come to accept and use technology, focusing on two key factors: perceived ease of use (PEOU) and perceived usefulness (PU). These factors determine how likely individuals are to adopt technology based on their beliefs about its ease and benefits (Gomwe et al., 2023). In addition, Gomwe (2023) found that top management support, staff enthusiasm, and proper training were crucial for BI implementation, aligning with Nenzhelele (2014) research that highlights training as an essential factor for successful BI adoption. However, the researchers (Gomwe et al., 2023) also noted the challenge of high BI costs and a lack of financial support.

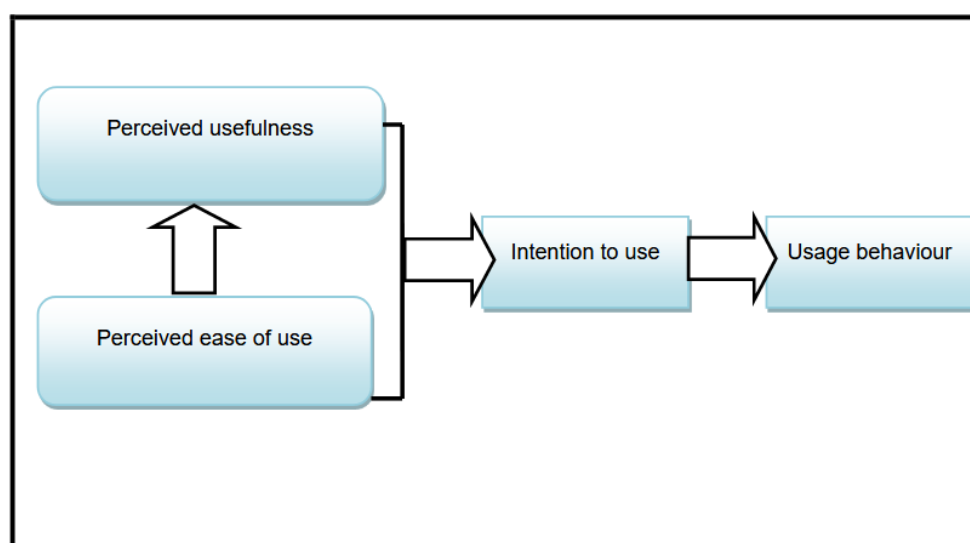


Figure 8- TAM Model (Gomwe et al., 2023)

Moreover, Lateef and Keikhosrokiani, (2023) investigated the success factors for BI implementation in SMEs. They found that technology orientation, knowledge management, and entrepreneurial orientation played significant roles in BI success, while organizational resources had less impact than expected. This is in agreement with Kikawa et al. (2019) as their findings attribute these same reasons as affecting BI implementation.

Regarding firm performance and competitiveness whilst using the TAM and PEOU model, Dishman and Calof (2008) evidenced that the utilization of BI can prove to give rise to enhanced performance within these SMEs and postulated that trade performance will depend on the quality of a country's coordinated intelligence capabilities.

In Southeast Nigeria, a study conducted by Irenaus et al. (2021) examined the relationship between technology intelligence and market intelligence in SMEs in South East Nigeria. They found a positive significant relationship between technology intelligence and return on investment (ROI), as well as between market intelligence and market share, emphasizing the importance of both intelligence types in improving business performance.

It was also found that despite SME owners awareness of BI, few of them implemented it (Nenzhelele & Pellissier, 2014). Nenzhelele, (2014) then delved into implementation challenges of BI due to its large awareness and implementation gap. The barriers stated were lack of time (99%); budgetary constraints (97%); lack of human resource (97%); and creating a participatory environment and awareness of BI (64%).

Another study by Nenzhelele (2015) aimed at showcasing the tools used in BI practices in South African SMEs. The results show that they are still rudimentary in their ways as customers are the main source of information for BI for these SMEs. This could be because they come in contact with customers daily -as is the case of the SMEs studied by (Fabian et al., 2024; Mashego & Sewdass, 2023; Mavutha, 2024; Mavutha et al., 2023). Most of these SMEs use teamwork and brainstorming, SWOT analysis, macroenvironment analysis, and value chain analysis to analyse the collected information thus showing a lack of computerized analytical tools to produce actionable intelligence. Additionally, the SMEs use face-to-face meetings, e-mail, written reports, and presentations to disseminate actionable intelligence. Face-to-face meetings are the most widely used method to disseminate BI by SMEs (Nenzhelele, 2015).

On the topic of Mobile Business Intelligence(MBI) in South Africa. (Adeyelure et al., 2016) argued that SMEs in developing countries are experiencing a significant business opportunity cost by not utilizing MBI systems as these systems have shown benefits such as accessibility, usability, collaboration, and improved workforce productivity. The study therefore envisioned designing a framework for the deployment of MBI in developing countries' SMEs. Their study emphasized the importance of organizational factors, entrepreneurial competencies, and

technological complexity in determining the success of MBI adoption in SMEs, although they found that graphical user interface and storage capacity had less influence than expected.

Conversely, Oluwasegun et al. (2024) conducted a study to evaluate the effect of BI, organizational learning, and innovation on the performance of SMEs in the South West Nigeria. explored the effect of BI, organizational learning, and innovation on the performance of SMEs in South West Nigeria. Their study found that SMEs that adopted BI were 46% more likely to experience improved performance due to enhanced organizational learning and innovation. This study also emphasized the significant relationship between product innovation and firm performance.

Furthermore, Francis (2020) assessed the success factors for BI implementation in SMEs in Lagos State, Nigeria. Their study found that environmental factors, such as government support and the competitive landscape, were the most important for BI adoption, followed by technological and organizational factors. The study also highlighted the high cost of implementing BI as a major obstacle for SMEs.

Other recurring authors in the field, Moyo and Loock (2019) found that only 12,9% of their sample applied BI at an extensive use, compared to 50,4% of them which were aware of it. An awareness gap highlighted by other recurring researcher Nenzhelele (Figure 5) , showcasing a prevailing of the issues despite the 5 year gap between the 2014 and 2019 (Nenzhelele, 2014, 2015). They found an interesting factor which is not mentioned by other articles in this systematic literature review's which is the managers' fear of hacking and of who could physically access the hardware. Their following research delved deeper into their security protocol when choosing BI and found that these protocols are costly and not user-friendly which becomes a barrier to properly assessing the safety of tools, causing the managers to remain using basic systems that they are accustomed to (Moyo & Loock, 2021).

Finally , Ajibade (2016) found a precarious use of BI in the firms assessed. He found that out of the 23 businesses, none of them use or adopt BI in their business processes. There is no formal process to convert their tacit knowledge into explicit knowledge and their biggest issue was their trainees having a short-term mentality, focused on present sales instead of using BI systems to forecast and arrange for future sales.

3.2- NORTH AFRICA

The following studies presented are from the north region of Africa where the countries studied included Morocco, Libya, Tunisia, Algeria, Mauritania and Egypt. In this section the researchers Tarek and Adel are common to find, and it is also formatted to include study authors, sample size, method used and their key findings.

<i>Study</i>	<i>Sample Size</i>	<i>Method</i>	<i>Key Findings</i>
<i>Tarek, Adel & Sami (2016)</i>	180	Questionnaire	Analyse the effects of innovation and the protection of information assets in the relationship between business intelligence (BI) and international competitiveness of North-African (Algerian, Tunisian, Egyptian and Moroccan) SMEs based on export intensity
<i>Tarek & Adel (2016)</i>	300	Questionnaire	Analyzes the effects of different devices of business intelligence and entrepreneurial competitive intelligence on the international competitiveness of 300 North African Algerian, Tunisian, Egyptian, Libyan, Moroccan and Mauritanian) SMEs.
<i>Kettani & Aljandali (2022)</i>	9	Questionnaires	Study examines competitive intelligence practices across different sectorized SMEs in Fez-Meknes region of Morocco.
<i>Tarek, Zouhayer & Adel (2017)</i>	300		Aims at enriching Uppsala model to analyse the effects of entrepreneurial C.I on the process of internationalization of Algeria, Egypt, Libya, Mauritania, Morocco, & Tunisian SMEs.

Table 3- Studies in North Africa

The BI adoption in North-African countries was studied by Tarek et al. (2016) who provided robust samples of study as they sent out questionnaires to at least 180 people in all 3 studies they conducted (Tarek et al., 2016, 2019; Tarek & Adel, 2016). Giving results based on more than 600 people's responses. Additionally, they analysed various countries consistently, such as Algeria, Tunisia, Morocco, Egypt and Libya.

The results of Tarek et al. (2016) concluded that the effects of BI on international competitiveness of SMEs are both mediated by innovation and moderated by the protection of information assets. Among SMEs practicing BI, those most competitive are those more innovative -highlighting a congruence of results with Oluwasegun et al. (2024)- Thus, the protection of information assets influences the effects of BI on the international competitiveness.

In addition, the results of Tarek and Adel (2016) analysed factors of BI implementation, specifically entrepreneurial competitive intelligence in relation to international business competitiveness. They studied if entrepreneurial competitive intelligence happens when BI is used and taken a step further to establish better competitiveness in the marketplace. This, being an interesting standpoint and gap to analyse the effectiveness of BI and how far it can take a business, if other factors remain static. The results show that the competitiveness of SMEs requires not only the reaction to a need of information but also the implementation of a real decisive approach on managing the information (Tarek & Adel, 2016).

The final study conducted by Tarek et al. (2019) aimed at enriching the findings done by the previous study conducted by the same researchers to solidify the conclusions and suggestions made. They assessed 300 SMEs in North Africa to better understand theoretically and empirically the specificities of the concept related to entrepreneurial competitive intelligence, and its effects on the process of internationalization.

As intended, its results solidified previous studies (Tarek et al., 2016; Tarek & Adel, 2016) as they concluded that the process of entrepreneurial competitive intelligence is a longer, more globalizing, more focused, and, especially, more economically efficient process than that of business intelligence. Thus, solidifying their contributions on the topic of how to internationalize African SMEs.

On managerial perception of BI, Kettani and Aljandali (2022) delved into SME practices in Morocco. The saturation principle -which postulates that in depth exploration of a topic provides better insight-was used, which allowed the respondents to better explain their personal experiences in the industry regarding BI. Interviewees expressed the need for governmental help in the form of subsidies to be able to implement these systems, and increase profits. Stating that the pandemic was a big setback regarding costs, which also affected the quality of managers chosen. Findings also indicate that BI is not deeply rooted in the minds of many of the respondents. While some are unaware of the existence of such a practice, others provide partially correct definitions. Finally, this article cites Nenzhelele and Pellissier's work (2014), showcasing an ecosystem of information with findings that support information that data is gathered informally.

Together, the studies mentioned in this sub-chapter (Kettani & Aljandali, 2022; Tarek et al., 2016, 2019; Tarek & Adel, 2016), shed light on the various factors influencing BI adoption and its impact on SME competitiveness in North Africa. They highlight the importance of integrating both BI and entrepreneurial competitive intelligence, along with the need for managerial awareness and government support to fully leverage BI for international success.

3.3- REMAINING COUNTRIES

For the last section of countries presented, the remaining countries were grouped due to the lower number of research available. Besides including the study authors, sample sizes, method and key findings, this table is formatted differently to include the names of specific countries studied.

<i>Study</i>	<i>Country</i>	<i>Sample Size</i>	<i>Method</i>	<i>Key Findings</i>
<i>Chawinga & Chipeta (2017)</i>	Malawi	20	Questionnaire	Study investigates how KM and CI can be a source of competitive advantage to SMEs in Mzuzu, Malawi.
<i>Owuso (2020)</i>	Ghana	17	In-depth Interview	Uses TOE framework and Information Systems Adoption Model for Small Business to explore the determinants of Cloud BI adoption among SMEs.
<i>Abdulganiyu, Musa, Matayo, Saidu & Ahmed (2023)</i>	Various African countries, Latin America & Central and Eastern Europe.	X	Desk research	Explores the difficulties SMEs in Africa examining several BI tools and approaches with the aim of shifting Africa to industrialised production.
<i>Ouedraogo, Compaoré & Nasse (2022)</i>	Burkina-Faso	60	Interview	Analyses the climate of BI adoption by SMEs in Burkina-Faso according to current business climate.
<i>Musungu, Rintari & Gichohi (2021)</i>	Kenya	72	Interview guides and close-ended questionnaires.	This study aimed to establish the influence of data management on market access by SMEs in Trans Nzoia County.
<i>Orina & Tick (2025)</i>	Kenya	42	Structured interview and questionnaire	The results demonstrated that the TOE factors led to more intensive BI adoption, but there is a lack of awareness or technical skills to adopt advanced BI technologies

Table 4- Studies in Remaining Countries

BI adoption in other countries has been grouped as result of less articles on these countries found and used. Chawinga and Chipeta (2017) discussed BI as a source of competitive advantage in Mzuzu City in Malawi. Their study found that one of the issues SME owners in Mzuzu City are faced with is fierce competition on the market following the flourishing of Chinese and Asian traders and other foreign enterprisers who have invaded the city, trading

in various merchandises. Of the 200 respondents 72,1%, agree that competition is high and prevalent between SMEs, these respondents are also Malawian nationals.

Chawinga and Chipeta (2017) also found that SME owners gather knowledge in rudimentary ways, still relying on word-of-mouth from their customers and not having a necessarily grounded database and clear data governance principles for managing that information to make informed decisions- a recurring issue for SMES across Africa (Fabian et al., 2024; Mashego & Sewdass, 2023.; Mavutha, 2024; Mavutha et al., 2023, Nenzhele, 2015). Regarding the SME owners that use BI, Chawinga & Chipeta (2017) found that BI has allowed these owners to be able to identify competitors' potential moves as well as has helped them understand the industry they operate in. They saw an increasing trend in focusing on efficiency despite still being faced by financial barriers.

On the other hand, Abdulganiyu et al. (2023) explored the difficulties SMEs in Africa currently face, such as restricted access to financing, inadequate infrastructure, and a lack of technological improvementsadvocating that this can be partially solved by introducing BI approaches. The study also looks at examples of successful BI-driven economic transformation in other locations through case studies. The study highlights several key strategic lessons for effective BI implementation in African SMEs. Firstly, aligning BI initiatives with overarching corporate objectives emerges as a recurring recommendation, ensuring that data-driven strategies are integrated with the organisation's long-term vision. Secondly, the importance of investing in data governance and ensuring high data quality is consistently underscored, as the effectiveness of BI systems heavily relies on the accuracy and reliability of underlying data. Thirdly, a phased implementation approach is advised — beginning with smaller-scale projects or pilot departments. This incremental strategy allows for system refinement before full-scale deployment, yet remains an underexplored practice in the literature

Regarding barriers, hardware, software, and internet connectivity are necessary for a successful BI installation. However, a large number of SMEs in Africa are located in areas with poor infrastructure, which makes it challenging to access and make use of the required technologies. On a different note, it can be difficult to create a data-driven culture within African SMEs as many organisations lack the expertise and abilities needed to properly gather, analyse, and understand data. Additionally, there can be a lack of knowledge of the advantages of data-driven decision-making as well as reluctance to change (Abdulganiyu et al., 2023).

Differentially, Ouedraogo et al. (2022) offered a perspective on Burkina-Fasoan SMEs and they found that Burkina-Fasoan SME owners showcase a low awareness rate regarding BI. They found that 88.33% of respondents say they have never heard of BI, against only 11.67% who have heard of it through training and personal interactions. Access and use of the internet is

of great importance with or 88.33% using the internet. Additionally, 68.33% say they do not use management software, against 31.67% who use it.

Ultimately, 41 SMEs are camped at the elementary level against 15 SMEs at the average level. Only 4 SMEs appear at the advanced level and none at the very advanced level. These different tiers were based on different metrics; the elementary level being based on internet connectivity, the average level being based on having a website and a presence on social media, the advanced level being based on having a dedicated team for information processing and the very-advanced level being based on having a fully functioning BI system. Considering these elements, we can argue that there is a low level of BI practice by SMEs in Burkina Faso. The researchers also found that the fear of costs is a consequence of the myth about the complexity of BI (Ouedraogo et al., 2022).

In regards to Cloud-Based Business Intelligence Systems, a Ghanaian study was conducted which also used the TOE framework. Owusu (2020) argued that as managers and owners complain that BI Systems are very expensive to implement and demands a lot of skilled manpower, time-consuming and others, certain vendors specialize in offering cloud-based BI and analytics which is more affordable and offered as part of Software as a service (SaaS) namely BI as a Service (BI-as-aService). This is similar to Magoma et al.'s postulation (2021). Whilst 50% claimed that they used BI tools for work, most respondents could not exemplify these tools besides Twitter Analytics and SEO. In terms of cloud BI, its adoption is still at its infancy although the SMEs CEOs and other managers are willing and ready to add it to the existing cloud services they are patronizing (Owusu, 2020).

Owuso (2020) also stated that some of the barriers include older generations' resistance to using it, making it harder to implement because of older workers.

For policymakers, it has been established that the lack of a regulatory framework for the adoption of cloud computing may impede its implementation and use. Thus, it is highly recommended that the government comes out with legislation that will help aid SMEs in their implementation of modern technologies such as cloud BI. Additionally, owner-managers characteristics such as innovativeness and knowledge have also been found in this study to aid in the adoption of Cloud BI. This statement is in agreement with Tarek and Adel's findings (Tarek & Adel, 2016).

In continuation, (Musungu et al., 2021) conducted a study that aimed to establish the influence of data management on market access by SMEs in Trans Nzoia County in Kenya. The study established that the decisions made by the SME management did not originate from reliable sources such as business intelligence systems but rather on personal experiences, emotions and customer feedback.

Another Kenyan study by Orina and Tick (2025) found a severe lack of awareness regarding the extensive amount of BI tools available, their participants listed MS Excel as a BI tool similar

to Owusu's findings (2020). The tool with the biggest adoption is MS Power BI and there is still a consensus that BI is for large enterprises. Decision-making is also very intuitive-based still which is congruent with Musungu et al. 's findings (2021).

4- FINAL CONSIDERATIONS

The results of this systematic review provide a very insightful understanding of the current state of BI in African SMEs. They touch on different aspects yet come together to provide a great basis of knowledge on the current state of BI adoption in the continent.

The challenges faced by SMEs in Africa regarding the implementation and use of BI are numerous and complex. One of the most prominent challenges is the lack of awareness and knowledge of BI among business owners and managers. Many SMEs are either unaware of what BI is or have a limited understanding of how it can benefit their operations. This lack of familiarity often leads to a reluctance to explore or invest in BI tools, which in turn hampers their ability to make data-driven decisions that could improve their competitiveness.

Another major challenges are the financial barriers to the adoption of BI tools and systems and the lack of literacy on these tools and systems. Even when business owners are aware of BI, the complexity and costs associated with implementing these systems can be daunting. Many SMEs perceive BI tools as expensive and difficult to use, which discourages them from adopting more advanced solutions. As a result, even businesses that do implement BI systems often start with basic entry-level tools that provide limited functionality and fail to fully leverage the potential of BI for strategic decision-making.

In addition to the challenges related to awareness and adoption, many SMEs face infrastructure and technological barriers. Poor internet connectivity, inadequate hardware, and limited access to reliable software solutions make it difficult for businesses to implement and maintain BI systems. In regions with weak infrastructure, even cloud-based solutions, which could offer more affordable options, are not always viable due to connectivity issues or lack of reliable technology support.

There is also a cultural barrier to the adoption of BI in many SMEs. Besides that, older employees or staff would rather execute tasks in the manner they are more accustomed to which generates a mindset that makes it difficult to shift towards a more analytical approach that incorporates BI into everyday business operations. Business owners and managers may be resistant to change, especially if they have not experienced firsthand the benefits of data-driven decision-making.

Finally, the lack of skilled personnel is another significant challenge. Many SMEs lack employees with the necessary expertise to implement, manage, and make use of BI systems effectively. Without individuals who are trained in data analysis, SMEs struggle to turn raw data into meaningful insights that can inform business strategies. This gap in knowledge and expertise further contributes to the reluctance of businesses to adopt BI technologies and use them to their full potential.

Together, these challenges create significant obstacles for SMEs in Africa, limiting their ability to harness the power of BI to enhance their competitiveness and drive growth. Overcoming these barriers requires addressing both the technological and cultural issues, along with providing education and training to improve awareness and build the necessary skills for successful BI implementation.

Based on these findings, we can see in figure 5 the frequency of the common issues and barriers were mentioned

The findings can also support recommendations on how to improve the current state of BI adoption in African SMEs. One of the most critical steps is increasing awareness and education about BI. Many SMEs are unaware of the benefits and potential of BI, so providing training and resources to business owners and managers is crucial. This could include workshops, seminars, and online resources to help them understand how BI can drive growth, improve decision-making, and enhance competitiveness.

Another important recommendation is to start small and scale up gradually. SMEs should begin with pilot projects or use BI tools in a single department or process. This approach allows businesses to test the system, make necessary adjustments, and build confidence in the technology before rolling it out on a larger scale. Starting with a smaller, manageable project helps reduce the perceived complexity and costs associated with BI implementation.

Additionally, it is advised that SMEs align their BI initiatives with their overall business goals. BI should not be implemented in isolation but should be integrated into the company's broader strategy. This alignment ensures that BI efforts are focused on areas that will provide the most value, such as improving operational efficiency, understanding market trends, or enhancing customer experience. To make BI more accessible, a recommended option is that SMEs that do not experience connectivity issues, explore cloud-based BI solutions (Magoma et al., 2021). . Using Software as a Service (SaaS) models can also reduce the upfront costs and minimize the technical barriers associated with setting up BI systems (Owuso, 2020).

Investing in data governance and quality is another critical recommendation. For BI systems to be effective, the data being used must be accurate, reliable, and well-organized. SMEs should prioritize the collection of high-quality data and implement clear data governance practices to ensure that the data used for decision-making is trustworthy and valuable.

Furthermore, it is essential for SMEs to foster a data-driven culture within their organizations. Encouraging employees to embrace data-driven decision-making and integrating BI tools into daily operations can help shift the business mindset from relying on intuition or informal sources of information to using data as the basis for decisions.

Finally, governments and policymakers can play a significant role by creating an enabling environment for BI adoption. This could involve offering subsidies, providing incentives for technology adoption, and establishing a regulatory framework that supports the use of modern technologies, including BI and cloud computing. By providing the necessary infrastructure and support, policymakers can help remove some of the barriers that SMEs face when implementing BI systems.

By following these recommendations, SMEs can overcome the challenges associated with BI adoption, improve their decision-making processes, and ultimately enhance their competitiveness in the market.

5- CONCLUSION

In conclusion, this systematic literature review of the state of BI in African SMEs reveals a complex landscape of both opportunities and challenges. While there is growing recognition of the importance of BI in driving competitiveness, particularly in the face of fierce market competition, many SMEs are still in the early stages of adoption. The primary obstacles include limited awareness of BI tools, a lack of infrastructure, and insufficient technical expertise. As a result, many SMEs continue to rely on informal methods of data collection and decision-making, which limits their ability to leverage data effectively for business growth.

Despite these challenges, the potential for BI to transform African SMEs is recognized. Studies indicate that when properly implemented, BI can offer significant benefits such as improved decision-making, better market understanding, and enhanced competitiveness. However, for these benefits to be fully realized, SMEs must overcome the barriers to adoption, which include high costs, lack of technical skills, and infrastructure limitations.

To move forward, there is a need for targeted support, including government interventions, industry-specific training programs, and the development of more affordable BI solutions tailored to the unique needs of SMEs in Africa. Additionally, creating a data-driven culture within these businesses will require shifts in both managerial mindsets and organizational structures. By addressing these challenges, African SMEs can unlock the full potential of BI, thereby enhancing their efficiency, innovation, and international competitiveness in an increasingly globalized market.

6- LIMITATIONS AND FURTHER RESEARCH

Despite the valuable insights provided by the studies included in this review, there are several limitations in the evidence itself.

A notable issue and limitation of the systematic literature review is the geographic bias in the studies, which predominantly focus on Nigeria and South Africa. These countries, being two of the largest economic hubs in Africa, provide useful insights but may not fully represent the diverse conditions across other regions. Countries such as the PALOP (African Portuguese-speaking countries) and French-speaking African nations were not represented in the studies, and their exclusion may limit the generalizability of the findings. Moreover, the socio-economic and infrastructural challenges in the under-represented regions could differ from those in the more developed African economies, thereby warranting further investigation into the specific barriers faced by SMEs in these underrepresented regions.

The implications of this review for practice are clear: SMEs, particularly in Africa, need to invest in both the technological tools and the human capital necessary to utilize them. Training and development programs focusing on data analysis, visualization, and interpretation should be prioritized to ensure that employees can effectively use BI tools. Partnerships between SMEs and technology vendors or industry consultants should also be encouraged. Such partnerships could provide affordable, tailor-made BI solutions for SMEs, helping them to address financial constraints while enhancing their competitive edge.

From a policy perspective, governments should focus on creating supportive environments for SMEs by facilitating access to technology and training. This could involve offering subsidies for BI software, tax breaks for companies investing in workforce development, or creating public-private partnerships to improve technology infrastructure. Policymakers must also consider the diversity of challenges faced by SMEs across different African countries, recognizing that there is no one-size-fits-all solution.

For future research, there is a clear need to examine the barriers and opportunities for BI adoption across a more diverse set of African countries, including those that were underrepresented in this review. Furthermore, exploring sector-specific challenges in BI implementation could provide insights into how different industries can adapt these technologies. Longitudinal studies that track the impact of BI adoption on the long-term performance of SMEs would also contribute valuable evidence to the field.

In conclusion, while the adoption of BI systems can greatly enhance the competitive position of African SMEs, the journey is fraught with challenges. Both local businesses and policymakers must prioritize strategic investments in technology and human capital to bridge the digital divide and foster sustainable growth in an increasingly globalized marketplace.

REFERENCES

- Abdulganiyu, J., Musa, M. N., Matayo, V. A., Saidu, A. A., & Ahmed, A. A. (2023). *Integrating Business Intelligence and Small and Medium Enterprises for Shifting Africa from Consumption to a Production and Industrialised Economy*. 1(2).
- Adeyelure, T. S., Kalema, B. M., & Bwalya, K. J. (2016). Development of Mobile Business Intelligence framework for small and medium enterprises in developing countries: Case study of South Africa and Nigeria. *2016 4th International Symposium on Computational and Business Intelligence (ISCBI)*, 11–14. <https://doi.org/10.1109/ISCBI.2016.7743252>
- Ajibade, P. (2016). The Role of Knowledge Management in Improving Small, Micro and Medium Enterprises Productivity: A Case of Nkonkobe Municipality, South Africa. *Journal of Social Sciences*, 47(3), 229–238. <https://doi.org/10.1080/09718923.2016.11893563>
- Amaeshi, A. U. F., Okoye, U. C., & Asiabaka, I. P. (2021). *Enhancing Competitive Intelligence Innovation for Competitive Performance of SMEs in Nigeria*.
- Chawinga, W. D., & Chipeta, G. T. (2017). A synergy of knowledge management and competitive intelligence: A key for competitive advantage in small and medium business enterprises. *Business Information Review*, 34(1), 25–36. <https://doi.org/10.1177/0266382116689171>
- Chidiadi, A. (2024). Effect of Knowledge Management Practices on Organizational Performance in African SMEs. *African Journal of Information and Knowledge Management*, 2(1), 26–36. <https://doi.org/10.47604/ajikm.2265>

- Dafir, A., & Alaoui, M. (2024). The Role of Business Intelligence in the Internationalization of Moroccan Companies in Sub-Saharan Africa. *International Journal of Financial Studies, Economics and Management*, 3(3), 1–11. <https://doi.org/10.61549/ijfsem.v3i3.241>
- Dishman, P. L., & Calof, J. L. (2008). Competitive intelligence: A multiphasic precedent to marketing strategy. *European Journal of Marketing*, 42(7/8), 766–785. <https://doi.org/10.1108/03090560810877141>
- Edun, A. O., & Wei, L. (2011). Knowledge Management and Innovation for Firms Competitiveness: A Strategic Approach for African SMEs. *2011 International Conference on Management and Service Science*, 1–5. <https://doi.org/10.1109/ICMSS.2011.5998937>
- Endris, E., & Kassegn, A. (2022). The role of micro, small and medium enterprises (MSMEs) to the sustainable development of sub-Saharan Africa and its challenges: A systematic review of evidence from Ethiopia. *Journal of Innovation and Entrepreneurship*, 11(1), 20. <https://doi.org/10.1186/s13731-022-00221-8>
- Eybers, S., Hattingh, M. J., & Zandamela, O. M. P. (2019). Investigating Business Intelligence (BI) Maturity in an African Developing Country: A Mozambican Study. In K. Krauss, M. Turpin, & F. Naude (Eds.), *Locally Relevant ICT Research* (Vol. 933, pp. 279–294). Springer International Publishing. https://doi.org/10.1007/978-3-030-11235-6_18
- Fabian, A. A., Uchechukwu, E. S., & Blessing, E. O. (2024). Business Intelligence and Decision-Making in Micro Small and Medium Enterprises in Africa. *Scholars Journal of Economics, Business and Management*, 11(04), 124–133. <https://doi.org/10.36347/sjebm.2024.v11i04.003>
- Francis, O. O. (2020). *EVALUATION OF THE IMPLEMENTATION OF BUSINESS INTELLIGENCE SYSTEMS ON SME RESULTS IN LAGOS STATE, NIGERIA*. 7(3).

- Gomwe, G., Potgieter, M., & Litheko, A. (2023). Business intelligence as a competitive advantage for SMMEs in the North West Province of South Africa. *Journal of Contemporary Management*, 20(1), 474–498.
<https://doi.org/10.35683/jcman1033.205>
- Gomwe, G., Potgieter, M., & Litheko, A. M. (2022). Proposed framework for innovative business intelligence for competitive advantage in small, medium and micro-organisations in the North West province of South Africa. *The Southern African Journal of Entrepreneurship and Small Business Management*, 14(1).
<https://doi.org/10.4102/sajesbm.v14i1.501>
- Herr, H., & Nettekoven, Z. M. (2018). *The role of small and medium-sized enterprises in development: What can be learned from the German experience?* (Global Labour University Working Paper 53). International Labour Organization (ILO).
<https://hdl.handle.net/10419/189840>
- Irenaus, O. N., Ikechukwu, E. O., & Ndubuisi, P. O. (2021). Competitive Intelligence and Organizational Performance in Small and Medium Enterprises in South East Nigeria. *International Journal of Research in Management*, 11.
- Kester, Q.-A., & Preko, M. (2015). Business Intelligence Adoption in Developing Economies: A Case Study of Ghana. *International Journal of Computer Applications*, 127(1), 5–11.
<https://doi.org/10.5120/ijca2015906025>
- Kettani, Z., & Aljandali, A. (2022). Corporate governance: Study case of competitive intelligence practices in Moroccan SMEs. *Corporate Ownership and Control*, 20(1), 214–221. <https://doi.org/10.22495/cocv20i1art19>
- Khurram, S., Sultan, M. F., & Turi, J. A. (2018). LINKING E-MARKETING PRACTICES WITH THE SALES OF SMALL AND MEDIUM-SIZED ENTERPRISES, IN KARACHI: A MODERATING

- ROLE OF BUSINESS INTELLIGENCE GATHERING. *Grassroots (1726-0396)*, 52(2), 138-138–152. Academic Search Complete.
- Kikawa, C. R., Kalema, B. M., & Carol, M. N. (2019). A *STATISTICAL ANALYSIS OF BUSINESS INTELLIGENCE ACCEPTANCE BY SMES IN THE CITY OF TSHWANE, REPUBLIC OF SOUTH AFRICA*. 25(2).
- Lateef, M., & Keikhosrokiani, P. (2023). Predicting Critical Success Factors of Business Intelligence Implementation for Improving SMEs' Performances: A Case Study of Lagos State, Nigeria. *Journal of the Knowledge Economy*, 14(3), 2081–2106.
<https://doi.org/10.1007/s13132-022-00961-8>
- Magoma, T., Khumalo, S., & Du Plessis, T. (2021). Affordability of IBM Cognos business intelligence tool features suitable for small-and medium-sized enterprises' decision-making. *SA Journal of Information Management*, 23(1).
<https://doi.org/10.4102/sajim.v23i1.1291>
- Mashego, K., & Sewdass, N. (n.d.). *Ameliorating effect of competitive intelligence on SME innovativeness in emerging economies*.
- Mavutha, W. (2024). Identifying obstacles to evaluating business intelligence in Micro-Small Apparel Enterprises: A case study in Durban, South Africa. *International Journal of Research in Business and Social Science (2147- 4478)*, 13(5), 121–132.
<https://doi.org/10.20525/ijrbs.v13i5.3314>
- Mavutha, W., Kamwendo, A., & Corbishley, K. (2023). Business intelligence adoption among small apparel retailers in KwaZulu-Natal. *International Journal of Research in Business and Social Science (2147- 4478)*, 12(6), 66–78.
<https://doi.org/10.20525/ijrbs.v12i6.2639>

- Moyo, M., & Loock, M. (2016). *South African small and medium-sized enterprises' reluctance to adopt and use cloud-based business intelligence systems: A literature review*.
- Moyo, M., & Loock, M. (2019). Small and Medium-Sized Enterprises' Understanding of Security Evaluation of Cloud-Based Business Intelligence Systems and Its Challenges. In H. Venter, M. Loock, M. Coetzee, M. Eloff, & J. Eloff (Eds.), *Information Security* (Vol. 973, pp. 133–148). Springer International Publishing. https://doi.org/10.1007/978-3-030-11407-7_10
- Moyo, M., & Loock, M. (2021). Conceptualising a Cloud Business Intelligence Security Evaluation Framework for Small and Medium Enterprises in Small Towns of the Limpopo Province, South Africa. *Information*, 12(3), 128. <https://doi.org/10.3390/info12030128>
- Musungu, T. W., Rintari, N. G., & Gichohi, P. M. (n.d.). The Influence of Data Management on Market Access by SMEs in Trans Nzoia County, Kenya. *Project Management*, 1(2).
- Nenzhelele, T. E. (2014). Competitive Intelligence Location in Small and Medium-Sized Enterprises. *Mediterranean Journal of Social Sciences*. <https://doi.org/10.5901/mjss.2014.v5n23p608>
- Nenzhelele, T. E. (2015). Competitive intelligence tools used by small and medium-sized enterprises. *Journal of Governance and Regulation*, 4(3), 191–200. https://doi.org/10.22495/jgr_v4_i3_c2_p1
- Nenzhelele, T. E., & Pellissier, R. (2014). Competitive Intelligence Implementation Challenges of Small and Medium-Sized Enterprises. *Mediterranean Journal of Social Sciences*. <https://doi.org/10.5901/mjss.2014.v5n16p92>
- Oluwasegun, A. J., Ologunde, O. A., & Fagbemi, F. (2024). Effects of Business Intelligence, Organisation Learning and Innovation on the Performance of Small and Medium Scale

- Enterprises (SMEs) in South-West Nigeria. *IIARD International Journal of Economics and Business Management*, 9(10), 185–195.
<https://doi.org/10.56201/ijebm.v9.no10.2023.pg185.195>
- Ouedraogo, Dr. H., Compaoré, D. I., & Nassè, Dr. T. B. (2022). PRACTICE OF BUSINESS INTELLIGENCE BY SMEs IN BURKINA FASO. *International Journal of Management & Entrepreneurship Research*, 4(1), 48–58. <https://doi.org/10.51594/ijmer.v4i1.262>
- Owusu, A. (2020). Determinants of Cloud Business Intelligence Adoption Among Ghanaian SMEs: *International Journal of Cloud Applications and Computing*, 10(4), 48–69.
<https://doi.org/10.4018/IJCAC.2020100104>
- Papachristodoulou, E., Koutsaki, M., & Kirkos, E. (2017). Business intelligence and SMEs: Bridging the gap. *Journal of Intelligence Studies in Business*, 7(1), 70–78.
<https://doi.org/10.37380/jisib.v7i1.216>
- Tarek, B. H., & Adel, G. (2016). Business Intelligence versus Entrepreneurial Competitive Intelligence and International Competitiveness of North African SMEs. *Journal of International Entrepreneurship*, 14(4), 539–561. <https://doi.org/10.1007/s10843-016-0194-8>
- Tarek, B. H., Adel, G., & Sami, A. (2016). Business Intelligence Versus Competitive Intelligence in the Case of North African SMEs. *Journal of Information & Knowledge Management*, 15(04), 1650034. <https://doi.org/10.1142/S0219649216500349>
- Tarek, B. H., Zouhayer, M., & Adel, G. (2019). Entrepreneurial Competitive Intelligence Between Uppsala Model and Born Global Theories in the Case of North African SMEs. *Journal of the Knowledge Economy*, 10(2), 734–755. <https://doi.org/10.1007/s13132-017-0489-6>

