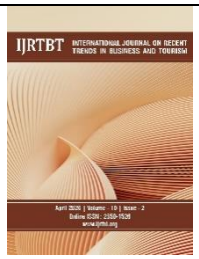
Int. J. Recent Trends Bus. Tour. 10(2), 10-23
https://doi.org/10.31674/ijrtbt.2026.v010i02.002

IJRTBT

International Journal on Recent Trends in Business & Tourism
Online ISSN: 2550-1526
www.ijrtbt.com.my



Review Article

Inventory Control Outcomes as Catalysts for Organizational Decision-Making in Cameroonian SMEs: A Systems Theory Perspective

George Atongang Owajege*, Akram Abdulsamad

Lincoln University College, Wisma Lincoln, No. 12-18, Jalan SS6/12, 47301 Petaling Jaya Selangor, Malaysia

**Corresponding Author's Email: Owajege.phdscholar@lincoln.edu.my*

Abstract

Introduction: Small and medium-sized enterprises (SMEs) are vital to Cameroon's economy; however, they face significant inventory control challenges. Despite the availability of advanced inventory techniques, these enterprises struggle to adopt them due to limited resources, inadequate infrastructure, insufficient training, and employee resistance. These factors hinder SMEs from reconfiguring inventory systems, despite poor performance, causing adverse outcomes. The literature lacks a comprehensive explanation of how operational feedback influences SME decisions to improve inventory control. This issue is evident among Sub-Saharan as well as SMEs in developing countries, which often rely on manual record-keeping, leading to stockouts and overstocking. Although studies attempt to connect these issues, there is a lack of clear understanding of how inventory outcomes impact SME decision-making from a systems perspective. **Methods**: This conceptual literature review aims to close this gap. It examines articles from Scopus, IEEE Xplore, and Google Scholar using qualitative thematic synthesis, inventory processes, technology adoption, and socio-technical relationships. **Results**: Most SMEs in these regions rely on manual tracking, often linked to poor records, which increases the perceived value of improved tracking. Manual systems tie up capital that could be used for new or existing inventory control infrastructures. Organizational readiness, infrastructure availability, and managerial competencies mediate and moderate these relationships, indicating that without these factors in place, the effectiveness of improved tracking systems may be significantly diminished. **Conclusion**: This study portrays inventory control as a feedback-generating subsystem within a socio-technical framework. Theory advances by examining the relationship between operational performance and decision-making in resource-constrained settings.

***Keywords**: Digital Inventory Tools; Inventory Control; Systems Theory; Operations Management; SMEs in Cameroon*

Introduction

Small and medium enterprises (SMEs) in Cameroon and other Sub-Saharan African (SSA) countries are vital for economic growth and job creation (Wansi & Burrell, 2023). According to the Cameroonian Ministry of Small and Medium Enterprises, Social Economy, and Handicrafts (MINPMEESA), SMEs account for 99.8% of formal enterprises, spanning trade, agriculture, manufacturing, and services, and

Received: 8th January 2026; Revised version received: 23rd March 2026; Accepted: 24th April 2026

significantly contributing to poverty reduction, employment, and GDP growth (MINPMEESA, 2023). Amoah *et al*. (2022) and Keelson *et al*. (2024) emphasize that SMEs are crucial economic drivers in developing countries, showing financial stability and resilience. They contribute to GDP, create employment, and promote innovation. In Ghana, SMEs account for over half of GDP and nearly 70% of industrial employment (Amoah *et al*., 2022).

Cameroonian SMEs are adopting various inventory control approaches, including mobile platforms, money networks, barcode scanners, and cloud computing. Remote data platforms enhance inventory records and demand forecasting, as the use of connected systems among SSA SMEs increases. Research indicates these systems foster innovation despite limited resources (Nagahawatta *et al*., 2024). Connected systems enhance inventory platforms and operational efficiency, helping enterprises update operations and compete effectively. Cloud computing boosts data storage, analytics, and inventory efficiency. In SSA, SMEs use connected systems to collect and monitor real-time inventory data. IoT sensors, cloud computing, and mobile platforms form a digital ecosystem for efficient inventory control and supply chain financing (Khan *et al*., 2023). Cameroonian SMEs are increasingly adopting these platforms to improve inventory processes and gain a competitive advantage.

Information systems such as Radio Frequency Identification (RFID) can address inventory control issues by improving tracking and data accuracy. However, small and medium-sized enterprises (SMEs) in developing countries, such as Cameroon, often rely on manual methods due to limited finance, managerial incompetence, unreliable power, and poor Internet access (Irene *et al*., 2025; Kuteyi & Winkler, 2022). Similar constraints across similar contexts, including infrastructure gaps, insufficient training, and weak regulations, hinder SMEs from adopting technologies (Simba *et al*., 2023).

Current research addresses inventory control or technology adoption challenges separately, with limited studies integrating both dimensions in Cameroon. This gap affects the understanding of the relationship between technology adoption and inventory control in SMEs. Overcoming barriers can facilitate managerial adoption decisions by SMEs.

Research Objectives

- To examine the prevailing inventory control practices utilized by small and medium-sized enterprises (SMEs) in Cameroon.
- To identify the types of technologies available to or adopted by these SMEs for inventory control, such as spreadsheets, inventory management systems (IMS), and mobile/cloud-based tools.
- To analyze the relationship between the effectiveness of inventory control practices and the degree of technology adoption.
- To identify and categorize the moderating and mediating factors, such as financial resources, managerial skills, and infrastructure, that influence this relationship.

Literature Background

Conceptual Review

Inventory control is a systematic process for monitoring raw materials, finished goods, and work-in-progress items to ensure production and sales continuity. It also covers materials, repairs, and operations (MRO) items. The main goal is to ensure product availability while minimizing costs. An effective system reduces ordering, holding, and shortage costs, enhancing performance (Abdolazimi *et al*., 2021).

Integrating EOQ, reorder-point methods, ABC analysis, and JIT inventory concepts creates an efficient inventory control strategy. EOQ determines the optimal order size to minimize costs. Reorder-point methods set thresholds for new orders to prevent stockouts. ABC analysis groups inventory by value, with a focus on critical items. JIT, or Just-In-Time, schedules deliveries to match production and sales,

reducing costs and waste. These methods integrate cost optimization, inventory control, prioritization, and production synchronization for effective management (Demiray Kırmızı *et al*., 2024).

Research shows these strategies effectively address inventory control challenges by streamlining operations, ensuring real-time availability, and reducing costs. The just-in-time approach is linked to lower expenses but risks insufficient inventory, thereby disrupting operational activities and performance (García-Cutrín & Rodríguez-García, 2024). To maintain robust inventory control, firms must monitor stock, forecast demand accurately, and build strong supplier relationships (Marques *et al*., 2010).

Technology adoption involves structured inventory control to maintain firm balance. Tools range from basic to advanced digital systems. SMEs, with narrow margins, choose based on their needs and capacity (Rosário & Dias, 2024). Organizations may use spreadsheets or accounting software for manual stock monitoring. Entities with more resources may choose standalone inventory systems, often integrated into ERP packages, for automated stock tracking and corporate integration. Point-of-sale software with inventory scanning and payment registration is available (Taylor, 2016). Mobile and cloud solutions are increasingly used for remote stock updates and analytics. Organizations with large budgets may use IoT and systems like RFID tags for real-time stock visibility, as seen in smart warehouses (Affia & Aamer, 2021).

Empirical evidence shows structured inventory practices and improved systems enhance inventory control through real-time monitoring. Research in developing nations indicates that structured practices benefit perishable inventory control in MSMEs, reducing costs and extending shelf life (Edeh *et al*., 2024). SMEs can share and store data in the cloud, which, despite adoption challenges in developing countries, optimizes processes. Improved systems enable SMEs to conduct advanced analytics and enhance overall performance. Technology adoption in inventory control uses structured tools to provide accurate stock information, which is essential for improving operational performance.

Under Cameroonian Law No. 2010/0001 and its 2015 amendment, an SME is defined as a business with under 100 permanent staff and annual revenue below 3 billion CFA francs. Many SMEs in Cameroon operate informally. The SME sector includes very small enterprises (VSEs) with fewer than five staff and revenue under 15 million CFA francs; small enterprises (SEs) with 6 to 20 staff and revenue under 250 million CFA francs; and medium enterprises with up to 100 staff and revenue under 3 billion CFA francs. Most SMEs are very small and are mostly active in trade, agriculture, light manufacturing, and services (MINPMEESA, 2023).

Theoretical Review

Hinings and Greenwood (2017) discussed general system theory regarding an organization's interaction with its environment. They highlighted that an organization acts like an open system with strong environmental ties, serving as a bridge for studying organizational behavior. The primary goal is to understand how organizations interact with their environment and coordinate to enhance the firm. Here, inventory control and technological adoption function as subsystems within small and medium-sized enterprise (SME) systems, working together to achieve objectives.

A successful inventory control system generates timely, accurate information necessary for effective organizational operations. This guides decisions on stockouts, holding costs, and technology adoption (Affia & Aamer, 2021). The open system considers internal and external factors in technology adoption. Poor infrastructure and a lack of skilled labor can hinder technology adoption despite the need. In summary, inventory information aids technology adoption by enabling accurate decision-making.

Yu *et al*. (2023) developed a systems-theoretic model of IT adoption, focusing on how organizational work systems comprising people, processes, information, and technologies interact. This contrasts with the Technology-Organization-Environment (TOE) framework, which centers on technology adoption within work systems. Adoption is considered a process of technical and social change, requiring users to identify adoption gaps. The work system perspective involves simultaneous changes in inventory control activities, management structures, and technology implementation. Improved inventory control

may enhance performance, accelerating technology adoption. The theory emphasizes that adoption is continuous and adapts to work system changes through training and process reconfiguration.

Social and technical subsystems are interdependent (Saka *et al*., 2020). Technology aims for perfection, and social factors like skills and culture must align with technical components (Díaz-Arancibia *et al*., 2024). Adopting inventory systems is as crucial as training employees to use the technology. Inventory tools are ineffective without skilled operators, but skilled employees enhance performance (Mandaleeka *et al*., 2025). Inventory control and technology adoption are part of the same system, highlighting their mutual benefits.

Empirical Review: Linking Inventory Control and Technology Adoption

Empirical studies indicate that inventory control practices vary across regions, especially among SMEs (Edeh *et al*., 2024). Due to financial and infrastructural constraints, many SMEs struggle to keep pace with technological trends and rely on manual inventory control methods. Most SMEs in South Africa and Kenya use simple tools like Excel spreadsheets for stock monitoring (Mafini & Loury-Okoumba, 2018; Mafini & Muposhi, 2017).

Research in Cameroon and SSA shows SMEs consider technology beneficial for efficiency and competitiveness. However, barriers like high costs, skill shortages, and poor managerial insights hinder adoption (Baig *et al*., 2020). Unaddressed, these barriers deter investment in technologies not aligned with capabilities, especially in developing countries. Despite these obstacles, some SMEs adopt advanced tools like cloud and AI technologies (Nwagbala *et al*., 2025). Literature confirms that internal and external factors significantly influence SMEs' move to structured inventory practices.

Inventory control issues may prompt firms to adopt structured inventory practices, but few studies support this assertion. Syed (2021) found that inefficient stock control harms profits and customer satisfaction, prompting faster adoption. Operational failures, experience, strategic pressures, or low performance can drive firms away from manual tools (Korir & Mutua, 2024). Few studies link inventory control to technology adoption, so some claims are anecdotal. Most research views technology adoption as reactive due to low performance or data discrepancies. More research is needed to determine the impact of inventory control on technology adoption.

For firms in resource-constrained settings such as Cameroon, efficient inventory control can increase revenue. It frees up capital and attracts customers with timely deliveries, prompting investment in inventory systems. High operational performance may lead to reconfiguring inventory structures. Aligning inventory records with reality increases credit potential, enabling investment in new tools (Kumar *et al*., 2024). These study propositions are conceptual and need empirical testing.

Synthesis of Literature and Proposed Conceptual Framework

Reviewing current literature reveals a research gap in inventory control and technology adoption studies in Cameroon's SMEs. While many studies exist globally, few focus on Cameroon. Most literature explores inventory control and information and communication technology (ICT) from various perspectives but not how inventory performance indicators can drive improved systems adoption (Singh *et al*., 2025). A conceptual model using system theory illustrates the link between inventory control and technology adoption through mediating and moderating variables. Managers' technology adoption decisions relate to stockout rates, overstocking, data accuracy, and production continuity.

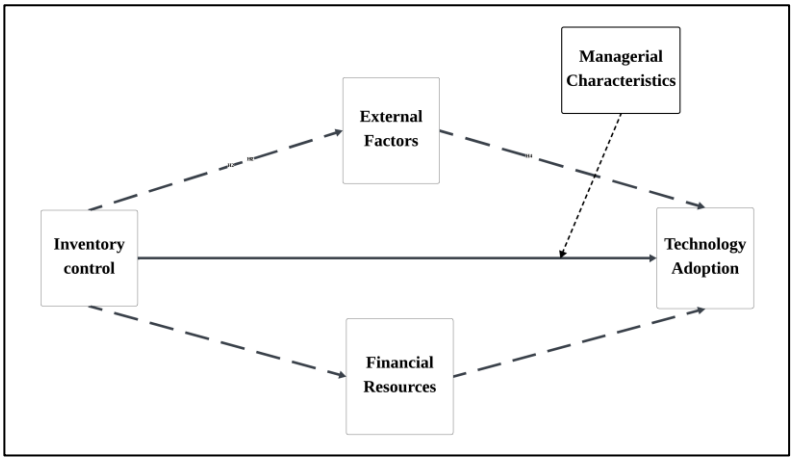


Figure 1: Conceptual Framework

Figure 1 suggests organizations can use the link between inventory control and technology adoption to address inventory issues. It shows this relationship is mediated by external factors and financial capabilities and moderated by managerial characteristics, such as the decision-making styles and risk tolerance of the management team. The framework highlights that technology adoption, especially in SMEs in developing countries, stems from operational performance, managerial competence, and internal and external conditions. The relationships in Figure One are conceptual and require empirical validation.

Methodology

Research Design

Snyder (2019) explains types of literature reviews. This study conducted an SLR using Snyder's protocols. Systematic reviews differ from semi-systematic or integrative ones, reflecting authors' perspectives. Sauer and Seuring (2023) state that systematic reviews use empirical evidence that meets criteria and addresses research questions, aligning with this research's objectives. SLR is a valuable tool for evaluating literature across fields, e.g., transportation (Son *et al*., 2025). SLRs on inventory control and technology adoption in SSA are scarce, making this study a great addition.

The review was carried out in a structured, transparent, and replicable process that comprised database searches, screening using inclusion and exclusion criteria, quality appraisal, and thematic synthesis, all of which conform to systematic literature review protocols.

Search Strategy and Sources

In this SLR, multiple databases, including Scopus, Google Scholar, and IEEE Xplore, were used to identify relevant papers. These were selected for their extensive publications in information systems, inventory control, and SME research. Results indicate changes in database coverage over the last decade, highlighting Google Scholar's forward citation advantage over Scopus and Web of Science. Google Scholar provided the most forward and backward citations, confirming its broad scope for this review (Gusenbauer, 2024).

Boolean operators combined inventory control, technology adoption, SME performance, and system theory for optimal database results. Truncation and synonym expansion enhanced sensitivity and coverage. Manual screening of leading journals and grey literature identified relevant articles from reference lists not captured in the initial search (Carcassi & Sbardolini, 2022).

“Inventory control” AND “technology adoption” AND “SMEs”

“Inventory management” AND “technology adoption” AND “Africa”

“SME” AND “ICT” AND “Cameroon”

“System theory” AND “inventory control OR management” AND “(SSA)”

"System theory" AND "ICT" AND "SME Performance" AND "Emerging economies"

Selection Criteria and PRISMA-based screening

The study selection process followed a multi-stage screening procedure, consistent with PRISMA guidelines for systematic reviews.

- Initial database search yielded: 511 records
- Duplicate records removed:511-96=415
- Records screened by title and abstract: 415
- Records excluded at title/abstract stage: 415-328=87 (due to irrelevance, non-SME focus, or lack of inventory/technology linkage)
- Full-text articles assessed for eligibility: 87
- Full-text articles excluded with reasons=58 (reasons included large-enterprise focus, absence of inventory dimension, purely descriptive opinion pieces, or insufficient methodological clarity)
- Studies included in qualitative syntheses: 87-58=29
- Final studies included in the review: 29 articles

Table 1: Characteristics of Studies Included in the Systematic Literature Review (*n *= 29)

ID	Author (Year)	Context/Focus	Methodology	Country/Context	Key Variables	Key Findings and SLR Relevance
1	Abdolazimi *et al*. (2021)	Inventory Optimization	Quantitative	Iran	Inventory control, cost efficiency	ABC reduces costs; improves performance
2	Affia & Aamer (2021)	IoT/Warehousing	Case Study	UAE/Global	IoT, inventory visibility	Real-time tracking improves control
3	Amoah *et al*. (2022)	SME Role	Quantitative	Ghana	SME performance, economic growth	SMEs drive GDP and employment
4	Ardic *et al*. (2012)	SME Finance	Quantitative	Global	Financial constraints, adoption	Budget deficits hinder adoption
5	Baig *et al*. (2020)	Adoption Barriers	Quantitative	Pakistan	Cost, skills, adoption	Barriers reduce adoption likelihood
6	Bam *et al*. (2017)	System Dynamics	Quantitative	South Africa	Feedback loops, inventory control	Inventory acts as a feedback signal
7	Carcassi & Sbardolini (2022)	Boolean Logic	Theoretical	Global	Search strategy variables	Improves SLR rigor
8	Demiray Kırmızı *et al*. (2024)	Safety Stock	Case Study	Turkey	Inventory methods, optimization	EOQ/ABC improve control
9	Demuijnck & Ngnodjom (2013)	CSR/SMEs	Qualitative	Cameroon	Informality, ICT gaps	SMEs lack structured systems

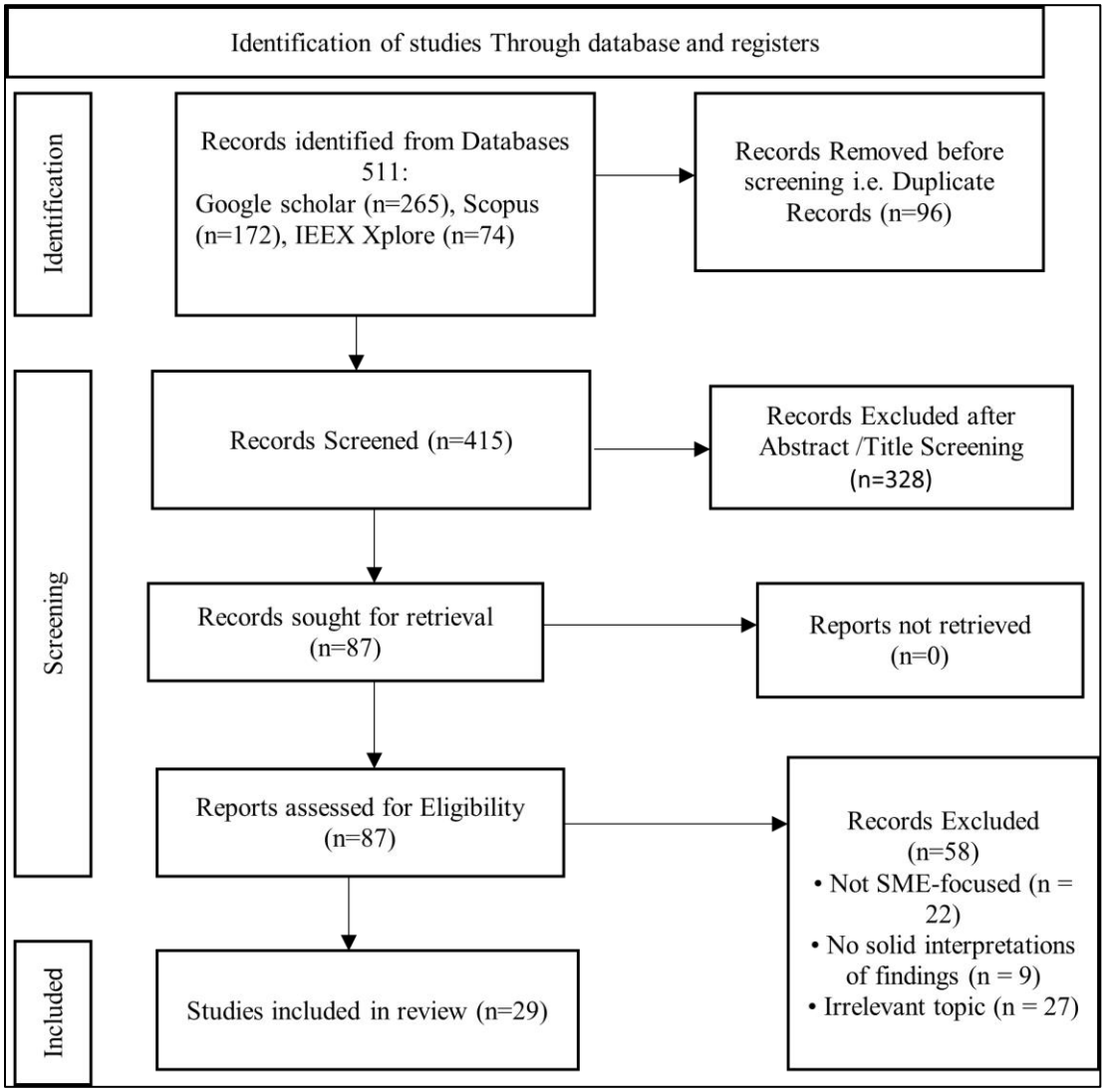
10	Díaz-Arancibia *et al*. (2024)	Digital Transformation	Review	Global	Socio-technical alignment	Alignment needed for adoption
11	Edeh *et al*. (2024)	Innovation	Qualitative	Global	IC practices, innovation	Many SMEs rely on manual systems
12	García-Cutrín & Rodríguez-García (2024)	JIT	Meta-analysis	Global	JIT, performance	Reduces cost but risky
13	Geng *et al*. (2024)	Agriculture Tech	Mixed-Methods	China	Cloud systems, data sharing	Improves record accuracy
14	Gusenbauer (2024)	Database Eval	Comparison	Global	Citation coverage	Google Scholar strongest
15	Hinings & Greenwood (2017)	Org Theory	Theoretical	Global	Systems theory	Organizations as open systems
16	Houngbonon *et al*. (2021)	Digital Inclusion	Quantitative	Africa	Infrastructure, adoption	Electricity gaps hinder adoption
17	Ibidunni *et al*. (2020)	Innovation	Quantitative	Nigeria	SME behavior, IC	SMEs reactive to problems
18	Irene *et al*. (2025)	Finance	Review	SSA	Finance, digital literacy	Weak finance limits adoption
19	Keelson *et al*. (2024)	SME Performance	Quantitative	Global	SME growth, innovation	SMEs drive growth
20	Khan *et al*. (2023)	Digitalization	Review	Pakistan	IoT, monitoring	Enables real-time tracking
21	Korir & Mutua (2024)	Tech Adoption	Quantitative	Kenya	Drivers, barriers	Adoption driven by context
22	Kumar *et al*. (2024)	Working Capital	Quantitative	India	Financial resources	Efficiency frees capital
23	Kuteyi & Winkler (2022)	Logistics	Review	SSA	Infrastructure, regulation	Weak systems hinder adoption
24	Mafini & Loury-Okoumba (2018)	SCM	Quantitative	South Africa	Inventory tools, adoption	Excel-based systems common
25	Mafini & Muposhi (2017)	SCM	Quantitative	South Africa	IC practices, tech use	Limited adoption
26	Mandaleeka *et al*. (2025)	Training	Quantitative	India	Skills, adoption	Skills determine effectiveness
27	Marques *et al*. (2010)	Vendor Managed Inventory (VMI)	Review	Global	Demand forecasting	Essential for control
28	Muffee (2021)	Inventory control	Quantitative	Cameroon	SME Performance	Necessary for optimized performance
29	Ndzana *et al*. (2021)	Innovation	Quantitative	Cameroon	Innovation, performance	Innovation improves SME outcomes

This review references 49 articles, listed in the bibliography. Of these, 29 were included in the systematic review, as detailed in Section 3.3 and the PRISMA flow diagram. The remaining works include methodological papers, theoretical contributions, and sources such as government reports, which are used to enrich the introduction, theoretical framework, and discussion sections. However, they were unsuitable for the final synthesis based on the inclusion criteria.

Int. J. Recent Trends Bus. Tour. 10(2), 10-23

Inclusion and Exclusion Criteria

The studies included in this review were mainly SME-oriented and focused on inventory control and technology adoption. The studies included in this review were empirical, conceptual, and theoretical in nature. The studies included in the final review consisted exclusively of peer-reviewed journal articles. Other studies, such as institutional reports and dissertations, were consulted only for contextual and policy background information and were therefore not part of the final thematic synthesis. English language articles were primarily used, with some non-English materials with a satisfactory contextual background being translated for interpretive purposes. Articles from 2020 to 2025 were prioritized for recent outcomes, but older works were included if conceptually justified. Studies on large firms in developed countries and those that did not address inventory control related to technology adoption or lacked methodological rigor were excluded (Sauer & Seuring, 2023).



PRISMA Flow Diagram

Quality Appraisal of Included Studies

To enhance the study's methodological rigor, all included articles were evaluated using an adapted quality evaluation framework commonly used in other systematic literature reviews (SLRs) on management and information systems.

The appraisal criteria included

- Clear research objectives
- Methodological clarity
- Appropriate research design
- Data sources and analytical procedures should be clear and bias-free
- Studies should have a strong theoretical grounding
- Studies should be relevant to the technology adoption-inventory control relationship
- Contextual applicability to SMEs in developing countries

For absolute clarity, each appraisal criterion was rated on a three-point scale, i.e., low, moderate, and high. Studies rated as low on multiple criteria were retained only for contextual meanings. Most studies that used theoretical anchors were rated high on the appraisal scale. This procedure greatly reduced bias and enhanced the credibility of synthesized findings (Sauer & Seuring, 2023).

Data Extraction and Thematic Synthesis

The extraction was conducted using a structured guide, which captured:

- Study context and country
- Research design and methods
- Inventory control practices examined
- Type and level of technology adoption
- Theoretical framework employed
- Key findings and implications

The extracted data was analyzed using qualitative thematic synthesis, allowing patterns and relationships to emerge inductively. Thematic coding focused on:

- Dominant inventory control practices in SMEs
- Types of inventory-related technologies adopted
- Mechanisms linking inventory performance to adoption decisions
- Mediating and moderating organizational and environmental factors

Since this study is anchored in systems theory, special attention was given to feedback loops, interdependencies, and nonlinear relationships among the variables. Cross-study triangulation was employed to increase the validity and credibility of the findings. Multiple sources were used to reinforce themes wherever necessary. The review indicates that most Cameroonian SMEs use manual inventory control methods. Some firms have small storage areas where inventory is managed through paperwork and physical counts. Managers often persist with these methods and do not view inventory control as a strategic priority (Ntwoku *et al*., 2017).

Results

This section presents the objective findings extracted from the 29 peer-reviewed articles included in the systematic literature review.

Current Inventory Control Practices in Cameroonian SMEs

The review indicates that most Cameroonian SMEs utilize manual inventory control methods, such as paperwork and physical counts. Specifically, in pharmaceutical shops in Buea, research documented that poor inventory control leads to higher costs and lower profits (Muffee, 2021).

Technology Adoption Trends for Inventory Control

Research indicates that the adoption of organized inventory control practices among Cameroonian SMEs, as in other developing countries, is inconsistent. A minority utilize specialized cloud-based systems, whereas a larger number depend on spreadsheets or basic accounting software for manual data entry (Mafini & Loury-Okoumba, 2018; Mafini & Muposhi, 2017). These practices are described in studies as incremental rather than transformative in nature.

Impact of Performance on Adoption

Studies indicate that failures in manual systems, like excessive stock and incorrect records, compel SMEs to explore better inventory software or automated notifications (Ndzana *et al*., 2021). On the other hand, the high costs associated with holding inventory limit the available cash flow for upgrading systems (Kumar *et al*., 2024).

Contextual Factors

The synthesis highlighted that financial capabilities and external influences play a mediating role in the adoption process (Ardic *et al*., 2012). It was also discovered that managerial traits, such as technological expertise and a willingness to embrace innovation, influence the probability of adoption (Houngbonon *et al*., 2021).

Moderating and Mediating Factors in the Cameroonian Context

The synthesis of findings showed that the relationship between inventory control and technology adoption was significantly influenced by contextual moderators and mediators unique to the Cameroonian SME landscape. Financial capability and external factors were frequent mediators. Many SMEs knew their inventory was performing poorly but lacked resources for hardware, software, or training (Ardic *et al*., 2012).

Managerial traits were crucial moderators. Owner-managers with knowledge of structured inventory tools, openness to innovation, or ICT experience often saw inventory challenges as solvable through technology. Conversely, resistance to change and limited tech skills reduced the likelihood of adoption, despite significant inventory issues (Díaz-Arancibia *et al*., 2024; Mandaleeka *et al*., 2025). This highlights the socio-technical aspects of adoption, showing the impact of human agency on technical feasibility.

External factors worsened this relationship's instability. Research showed that improved inventory systems in Cameroon and other sub-Saharan countries were hindered by unstable electricity and low internet. With government support, SMEs adopted new technologies, but without it, inventory signals didn't lead to investments. These moderating and mediating factors show that in most developing country SMEs, like Cameroon, technology adoption is tied to institutional deficiencies, infrastructural instability, and managerial capacity limitations in the business landscape (Houngbonon *et al*., 2021). The literature shows inventory control outcomes interact dynamically with financial, human, and environmental subsystems, influencing adoption in complex, non-linear ways.

Discussion

This section examines the results through the lens of systems theory and explores their implications for decision-making in small and medium-sized businesses.

Systems Theory Interpretation

From a systems perspective, inventory control operates as a feedback-generating subsystem. When manual processes transmit inaccurate information, it impacts the entire organizational system, rendering SME structures vulnerable and diminishing their agility in volatile environments (Bam *et al*., 2017; Saka et *al*., 2020).

Socio-Technical Alignment

The findings concerning managerial resistance and skill deficiencies point out the importance of socio-technical alignment. Implementing a tool is ineffective unless the "social" subsystem (employee skills) is aligned with the "technical" subsystem (Kumar *et al*., 2024).

Reactive vs. Proactive Decision-Making

The observation that tools are frequently adopted only after experiencing "significant inventory losses" suggests a reactive approach to decision-making, which is prevalent in resource-constrained environments (Syed 2021; Shillie & Nchang, 2023). This implies that the adoption process is more influenced by operational pain points rather than by proactive strategic planning.

Theoretical Synthesis

The conceptual framework (Figure 1) enhances traditional models such as the Technology Acceptance Model (TAM) by integrating adoption within "interdependent workflows." This systemic feedback loop elucidates the persistent slow adoption rate despite the recognition of operational failures (Yu *et al*., 2023).

Limitations

This study is a systematic literature review with associated hurdles. While it offers a framework clarifying relationship dynamics, empirical testing is needed. Selecting specific databases limits the study, as they may exclude other articles or grey literature. Most articles are in English, with some translations that may introduce bias. The timeframe focus might omit older relevant publications. Systematic screening identified relevant articles, but the researcher's judgment may not be entirely correct. These hurdles can affect the review's reproducibility and replicability.

Conclusion

This literature review is based on systems theory, positing that an organization functions as a system with interconnected subsystems working toward a common goal. Systems theory emphasizes that a problem in one subsystem affects the entire system. This review examined the relationship between inventory control and technology adoption in Cameroonian SMEs, revealing a complex relationship influenced by financial capacity and moderated by managerial expertise. Inventory is a feedback loop, and technology adoption results from internal and external factors, not just inventory control signals. Focusing solely on inventory efficiency or failures is insufficient for adoption decisions; alignment with environmental factors is crucial. This review integrates inventory control and technology adoption, examining how inventory outcomes influence technology adoption in SMEs, especially in developing countries. It explores how feedback loops and connectivity among work, social, and technical components promote digitalization despite limited resources. Inventory discrepancies are common when control mechanisms are poor. This system approach explains the gradual adoption of technology among Cameroonian SMEs. The findings offer insights into the gradual adoption of inventory control tools in resource-limited contexts like Cameroon. To enhance adoption, firms must adopt a systemic approach that addresses challenges such as initial costs, skilled personnel, and infrastructure. Success requires aligning technology with the socio-technical needs of the SME ecosystem.

Recommendations

SME owners and managers can invest in low-cost inventory practices, like regular stock audits and ABC analysis, to build discipline and free up capital. Over time, they can explore affordable inventory systems, such as mobile apps or cloud spreadsheets, and invest in structured inventory tools if performance improves. To address staff digital literacy concerns, the organization can invest in foundational programs to increase readiness and reduce resistance to future technological changes.

Policymakers should reduce some SME taxes and subsidize firms that are interested in or have structured inventory processes. Infrastructure is a major adoption barrier, policymakers should invest in internet and energy infrastructure, especially in industrial hubs with dense SME populations. They should also raise awareness through TV, radio, and social media, focusing on the benefits of structured inventory systems for SMEs. To motivate SME owners and managers, they can showcase a local case.

Future research should rigorously test claims using quantitative and mixed methods approaches. The conceptual framework's relationships need empirical validation. The longitudinal dynamics of technology adoption in SMEs, especially in developing countries, should be examined, such as their transition from manual to improved inventory systems and the role of organizational learning. Investigating how emerging technologies such as AI and IoT benefit SMEs in resource-constrained settings, with a focus on scalability and sustainability, will enhance existing knowledge.

CRediT authorship contribution statement

G. A: Conceptualization, Methodology, Investigation, Data curation, Writing – original draft, Writing – review & editing. A. A: Conceptualization, Supervision, Validation, Writing – review & editing.

AI Assistance Declaration

The authors used AI tools for this paper. ChatGPT helped with the initial structure and organization. Thereafter, the authors created, checked, and improved all the main content using their knowledge and academic sources. Scite AI and PaperPal helped with citations and references. Grammarly and Paperpal were used for language, grammar, and consistency checks. The authors checked and edited all AI outputs to ensure they were accurate and original and met academic standards. The authors take full responsibility for the content of the paper.

Conflict of Interest

The authors have declared no conflicts of interest and did not receive any outside support for this study.

Acknowledgement

The authors sincerely thank all individuals who participated directly or indirectly in making this manuscript a reality.

References

Abdolazimi, O., Shishebori, D., Goodarzian, F., Ghasemi, P., & Appolloni, A. (2021). Designing a new mathematical model based on ABC analysis for inventory control problem: A real case study. *RAIRO-Operations Research*, *55*(4), 2309-2335. https://doi.org/10.1051/ro/2021104

Affia, I., & Aamer, A. (2022). An internet of things-based smart warehouse infrastructure: design and application. *Journal of Science and Technology Policy Management, 13*(1), 90-109. https://doi.org/10.1108/JSTPM-08-2020-0117

Amoah, J., Belas, J., Dziwornu, R., & Khan, K. A. (2022). Enhancing SME contribution to economic development: A perspective from an emerging economy. *Journal of International Studies, 15*(2), 63–76. https://doi.org/10.14254/2071-8330.2022/15-2/5

Ardic, O. P., Mylenko, N., & Saltane, V. (2012). Access to finance by small and medium enterprises: a cross-country analysis with a new data set. *Pacific Economic Review, 17*(4), 491-513. https://doi.org/10.1111/j.1468-0106.2012.00596.x

Baig, S. A., Abrar, M., Batool, A., Hashim, M., & Shabbir, R. (2020). Barriers to the adoption of sustainable supply chain management practices: Moderating role of firm size. *Cogent Business & Management, 7*(1), 1841525. https://doi.org/10.1080/23311975.2020.1841525

Bam, L., McLaren, Z. M., Coetzee, E., & Von Leipzig, K. H. (2017). Reducing stock-outs of essential tuberculosis medicines: a system dynamics modelling approach to supply chain management. *Health Policy and Planning, 32*(8), 1127-1134. https://doi.org/10.1093/heapol/czx057

Carcassi, F., & Sbardolini, G. (2023). Assertion, denial, and the evolution of Boolean operators. *Mind & Language, 38*(5), 1187-1207. https://doi.org/10.1111/mila.12448

Demiray Kırmızı, S., Ceylan, Z., & Bulkan, S. (2024). Enhancing inventory management through safety-stock strategies—A case study. *Systems*, *12*(7), 260. https://doi.org/10.3390/systems12070260

Demuijnck, G., & Ngnodjom, H. (2013). Responsibility and informal CSR in formal Cameroonian SMEs. *Journal of Business Ethics, 112*(4), 653-665. https://doi.org/10.1007/s10551-012-1564-3

Díaz-Arancibia, J., Hochstetter-Diez, J., Bustamante-Mora, A., Sepúlveda-Cuevas, S., Albayay, I., & Arango-López, J. (2024). Navigating digital transformation and technology adoption: A literature review from small and

medium-sized enterprises in developing countries. *Sustainability*, *16*(14), 5946. https://doi.org/10.3390/su16145946

Edeh, J., Nuhu, N., Tajeddin, M., & Simba, A. (2024). Dealing with adversity: innovation among small and medium-sized enterprises in developing economies. *International Journal of Entrepreneurial Behavior & Research, 30*(10), 2578-2600. https://doi.org/10.1108/IJEBR-02-2023-0183

García-Cutrín, J., & Rodríguez-García, C. (2024). Enhancing corporate sustainability through Just-In-Time (JIT) practices: A meta-analytic examination of financial performance outcomes. *Sustainability*, *16*(10), 4025. https://doi.org/10.3390/su16104025

Geng, W., Liu, L., Zhao, J., Kang, X., & Wang, W. (2024). Digital technologies adoption and economic benefits in agriculture: A mixed-methods approach. *Sustainability*, *16*(11), 4431. https://doi.org/10.3390/su16114431

Gusenbauer, M. (2024). Beyond Google Scholar, Scopus, and Web of Science: An evaluation of the backward and forward citation coverage of 59 databases' citation indices. *Research Synthesis Methods, 15*(5), 802-817. https://doi.org/10.1002/jrsm.1729

Hinings, B., & Greenwood, R. (2017). The opening up of organization theory: Open systems, contingency theory, and organizational design. *The Oxford Handbook of Management*. https://doi.org/10.1093/oxfordhb/9780198708612.013.7

Houngbonon, G. V., Le Quentrec, E., & Rubrichi, S. (2021). Access to electricity and digital inclusion: evidence from mobile call detail records. *Humanities and Social Sciences Communications, 8*(1), 170. https://doi.org/10.1057/s41599-021-00848-0

Ibidunni, A. S., Kolawole, A. I., Olokundun, M. A., & Ogbari, M. E. (2020). Knowledge transfer and innovation performance of small and medium enterprises (SMEs): An informal economy analysis. *Heliyon*, *6*(8), e04740. https://doi.org/10.1016/j.heliyon.2020.e04740

Irene, B., Ndlovu, E., Felix-Faure, P. C., Dlabatshana, Z., & Ogunmokun, O. (2025). The role of financial institutions in bridging the financing gap for women entrepreneurs in Sub-Saharan Africa. *Administrative Sciences*, *15*(8), 323. https://doi.org/10.3390/admsci15080323

Keelson, S. A., Cúg, J., Amoah, J., Petráková, Z., Addo, J. O., & Jibril, A. B. (2024). The influence of market competition on SMEs' performance in emerging economies: Does process innovation moderate the relationship?. *Economies*, *12*(11), 282. https://doi.org/10.3390/economies12110282

Khan, A. A., Laghari, A. A., Li, P., Dootio, M. A., & Karim, S. (2023). The collaborative role of blockchain, artificial intelligence, and industrial internet of things in digitalization of small and medium-size enterprises. *Scientific Reports, 13*(1), 1656. https://doi.org/10.1038/s41598-023-28707-9

Korir, D. K., & Mutua, J. (2024). An evaluation of the drivers and barriers of technological innovation adoption among SMEs in Kenya. *The Strategic Journal of Business & Change Management, 11* (2), 462 – 476. http://dx.doi.org/10.61426/sjbcm.v11i2.2920

Kumar, S. S., Sawarni, K. S., Roy, S., & G, N. (2024). Influence of working capital efficiency on firm's composite financial performance: evidence from India. *International Journal of Productivity and Performance Management, 73*(9), 2787-2806. https://doi.org/10.1108/IJPPM-07-2023-0374

Kuteyi, D., & Winkler, H. (2022). Logistics challenges in sub-Saharan Africa and opportunities for digitalization. *Sustainability*, *14*(4), 2399. https://doi.org/10.3390/su14042399

Mafini, C., & Loury-Okoumba, W. V. (2018). Extending green supply chain management activities to manufacturing small and medium enterprises in a developing economy. *South African Journal of Economic and Management Sciences, 21*(1), 1-12. https://hdl.handle.net/10520/EJC-ec5ecf6b9

Mafini, C., & Muposhi, A. (2017). The impact of green supply chain management in small to medium enterprises: Cross-sectional evidence. *Journal of Transport and Supply Chain Management, 11*(1). https://doi.org/10.4102/jtscm.v11i0.270

Mandaleeka, L. K., Thatta, S., & Sriramneni, C. (2025). Influence of digital training on job performance in South Indian automotive sector: a sequential mediation via psychological factors. *The Learning Organization*, *32*(6), 970-992. https://doi.org/10.1108/TLO-10-2023-0188

Marques, G., Thierry, C., Lamothe, J., & Gourc, D. (2010). A review of vendor managed inventory (VMI): from concept to processes. *Production Planning & Control, 21*(6), 547-561. https://doi.org/10.1080/09537287.2010.488937

Ministry of Small and Medium-Sized Enterprises, Social Economy and Handicrafts (MINPMEESA). (2023). *Statistical yearbook of SMEs, social economy organizations and handicrafts in Cameroon*, 13th ed, *1*. https://www.minpmeesa.cm/siteinhoud/uploads/2025/04/2023-STATISTICAL-YEARBOOK-ON-SMESEHs.pdf

Muffee, V. W. (2021). The effects of inventory management on the performance of pharmaceutical shops in the buea municipality of cameroon. *International Journal of Social Science and Economic Research, 6*(1), 148-186. https://doi.org/10.46609/IJSSER.2021.v06i01.011

Nagahawatta, R., Warren, M., Salzman, S., & Lokuge, S. (2024). Towards an understanding of cloud computing adoption in SMEs: The role of security and privacy factors. *International Journal of Cyber Warfare and Terrorism (IJCWT), 14*(1), 1-13. https://doi.org/10.4018/IJCWT.343315

Ndzana, M., Cyrille, O., Mvogo, G., & Bedzeme, T. (2021). Innovation and small and medium enterprises' performance in Cameroon. *Journal of Small Business and Enterprise Development, 28*(5), 724-743. https://doi.org/10.1108/JSBED-06-2020-0188

Ntwoku, H., Negash, S., & Meso, P. (2017). ICT adoption in Cameroon SME: application of Bass diffusion model. *Information Technology for Development, 23*(2), 296-317. https://doi.org/10.1080/02681102.2017.1289884

Nwagbala, S. C., Ezeanokwasa, F. N., Nwachukwu, R., Uzodike, N. J., & Nwosu, O. P. (2025). AI adoption and sustainability of SMES in Africa: Opportunities and challenges. *International Journal of Science and Research Archive, 14*(1), 467-475. https://doi.org/10.30574/ijsra.2025.14.1.0009

Rosário, A. T., & Dias, J. C. (2024). Exploring the landscape of smart tourism: a systematic bibliometric review of the literature of the internet of things. *Administrative Sciences, 14*(2), 22. https://doi.org/10.3390/admsci14020022

Saka, A. B., Chan, D. W., & Siu, F. M. (2020). Drivers of sustainable adoption of building information modelling (BIM) in the Nigerian construction small and medium-sized enterprises (SMEs). *Sustainability*, *12*(9), 3710. https://doi.org/10.3390/su12093710

Sauer, P. C., & Seuring, S. (2023). How to conduct systematic literature reviews in management research: a guide in 6 steps and 14 decisions. *Review of Managerial Science, 17*(5), 1899-1933. https://doi.org/10.1007/s11846-023-00668-3

Shillie, P. N., & Nchang, N. N. (2023). Influence of employee soft skills on job performance: Evidence from SMEs in Cameroon. *Business Perspective Review, 5*(1), 1-11. https://doi.org/10.38157/bpr.v5i1.530

Simba, A., Tajeddin, M., Dana, L. P., & Ribeiro Soriano, D. E. (2024). Deconstructing involuntary financial exclusion: A focus on African SMEs. *Small Business Economics, 62*(1), 285-305. https://doi.org/10.1007/s11187-023-00767-1

Singh, R., Joshi, A., Singh, A., Raghuveer, K., & Kumar, V. (2025). Synergising HR practices and social performance for adoption of digital circular economy: a case of developing country perspective. *Strategy & Leadership, 53*(4), 434-456. https://doi.org/10.1108/SL-12-2024-0146

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research, 104*, 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039

Son, H., Jang, J., Park, J., Balog, A., Ballantyne, P., Kwon, H. R., ... & Hwang, J. (2025). Leveraging advanced technologies for (smart) transportation planning: A systematic review. *Sustainability*, *17*(5), 2245. https://doi.org/10.3390/su17052245

Syed, S. A. (2021). Smart Inventory Management Systems Using RFID and IoT Technologies for Real-Time Stock Visibility. *International Journal of Artificial Intelligence Engineering and Transformation, 2*(1), 22–36. https://doi.org/10.54660/ijaiet.2021.2.1.22-36

Taylor, E. (2016). Mobile payment technologies in retail: a review of potential benefits and risks. *International Journal of Retail & Distribution Management, 44*(2), 159-177. https://doi.org/10.1108/IJRDM-05-2015-0065

Wansi, T., & Burrell, D. N. (2023). Financing Challenges of Cameroon's Small and Medium Enterprises (SMEs). *Financial Markets, Institutions and Risks, 7*(4), 88-104. https://doi.org/10.61093/fmir.7(4).88-104.2023

Yu, X., Xu, S., & Ashton, M. (2023). Antecedents and outcomes of artificial intelligence adoption and application in the workplace: the socio-technical system theory perspective. *Information Technology & People, 36*(1), 454-474. https://doi.org/10.1108/ITP-04-2021-0254