

Application of Strategic Management Tools and Techniques by Small and Medium-Sized Enterprises: A Qualitative Review



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ABSTRACT

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This study provides a comprehensive scan of the strategic management literature and the practices of small and medium-sized enterprises (SMEs). Through a systematic literature review (SLR) applying the PRISMA technique, the research emphasizes the role of Strategic Techniques and Tools (STTs) in analyzing internal and external environments, shaping action plans, and measuring performance. Key tools forming the foundation of strategic decision-making are addressed and evaluated, including: SWOT, Porter's Five Forces (PFF), Mission and Vision Statements, Ansoff Matrix, Benchmarking, Brainstorming, Balanced Scorecard (BSC), Scenario Planning, PESTEL, Business Model Canvas (BMC), Stakeholder Analysis, and Cash Flow Management. Despite their widespread use in large firms, these tools are increasingly being adopted by SMEs to develop structure, boost profits, and enhance competitiveness. A major challenge remains the selection and automated implementation of these tools, highlighting the importance of leadership support, access to information, and alignment between business needs and managerial understanding. The paper focuses on the impact of these tools on business development and performance, and on identifying research gaps for future investigation.

1. INTRODUCTION

Strategic management is essential for businesses and operates as a systematic process to guide an enterprise toward achieving long-term objectives. The core activities of strategic management involve a series of concrete steps that steer the business toward fulfilling its goals. One of the key activities involves conducting internal and external environment analyses to support sound and beneficial decision-making [1, 2]. Several widely used Strategic Techniques and Tools (STTs) have been developed for this purpose. These tools and techniques help define business objectives, assess environments, and successfully develop action plans. The effective use of strategic tools and techniques has been documented during periods when businesses began to grow more complex and competitive. The introduction of these tools and techniques has revolutionized strategic business management, making it more structured, data-driven, and efficient. Strategic tools have enabled businesses to identify their unique strengths, understand competition, and capitalize on market opportunities—ultimately creating sustainable competitive advantages [3].

The use of STTs varies across businesses, but it is generally less widespread compared to larger enterprises. Typically, businesses tend to apply these tools and techniques in a more informal and limited manner. Since managers often perform multiple roles simultaneously, this makes the formal

implementation of such tools more challenging. Nevertheless, the level of use, satisfaction, and intention to apply these tools in the future can vary significantly. This potential can be realized if business managers gain more information, exposure, and success with strategic tools and techniques. The more they understand the importance of these tools and techniques, the sooner they will recognize that using strategic management tools can positively impact firm performance and that the extent of this impact depends on how effectively they are applied.

This is precisely the aim of this paper: to identify strategic business tools and techniques and to promote their value in relation to enhancing business performance and effectiveness. This study addresses and encompasses a comprehensive range of tools and techniques that are applied to strategic decision-making across all organizational levels of the enterprise. To achieve this objective, a systematic literature review (SLR) is conducted to explore both the theoretical and practical usefulness of strategic tools and techniques. In order to carry out this systematic review, the research is focused on the following research questions:

RQ1: What are the most commonly used STTs among businesses?

RQ2: To what extent have STTs influenced business development?

RQ3: What are the main challenges businesses face in applying STTs within their operations?

2. LITERATURE REVIEW

Strategic management tools and techniques represent essential mechanisms for supporting the decision-making process at the organizational level. These tools are not only instruments for analysis and evaluation but also conceptual platforms that help managers transform information into knowledge and knowledge into competitive advantage, especially in contexts where information is limited and the external environment is complex. This literature review focuses on a series of well-known and widely implemented STTs, including: SWOT analysis, Porter's Five Forces (PFF) model, Mission and Vision Statements, the Ansoff Matrix, Benchmarking, Brainstorming, the Balanced Scorecard (BSC), Scenario Planning, PESTEL analysis, the Business Model Canvas (BMC), Stakeholder Analysis, and Cash Flow Management. SWOT analysis is one of the most widely used tools for assessing an organization's internal and external position, by identifying strengths, weaknesses, opportunities, and threats [4]. Similarly, PFF model enables a detailed analysis of an industry's competitive structure through five dimensions: rivalry among existing competitors, threats from new entrants and substitute products, and the relative bargaining power of suppliers and customers [5]. Mission and Vision Statements play a critical role in the strategic direction of organizations. The mission helps define the organization's goals and its stance toward stakeholders [6-8], while the vision provides an aspirational guide for its desired future [7, 8]. In addition, the Ansoff Matrix supports the formulation of growth strategies through four main options: product development, market development, market penetration, and diversification [9]. Benchmarking represents another important technique, involving the comparison of internal performance against external standards or best practices, with the aim of improvement and increased efficiency [10]. Meanwhile, Brainstorming functions as a tool for stimulating creativity in the development of new ideas, particularly in contexts where innovation is required [11]. An increasingly widespread approach to measuring organizational performance is the BSC, which goes beyond traditional financial metrics by incorporating indicators related to customers, internal processes, and organizational development [12]. In the same vein, Scenario Planning is a technique that helps organizations prepare for uncertain futures by modeling several possible event development scenarios [13-16]. In macro-level analysis, PESTEL provides a useful tool for identifying political, economic, social, technological, environmental, and legal factors that influence the business operating environment [17, 18]. The BMC model, on the other hand, represents a visual framework that helps organizations describe, structure, and innovate their business models through nine key elements [19]. Stakeholder Analysis is essential for identifying and managing the influence that groups or individuals may have on the achievement of organizational objectives [20]. On the financial side, cash flow remains a key indicator for managing a business's monetary stability by tracking the inflow and outflow of funds [21]. Meanwhile, financial ratio analysis enables the identification of key aspects of an organization's performance and financial condition [22].

2.1 Integration of Strategic Techniques and Tools in small and medium-sized enterprises

As previously emphasized, the use of STTs is widely

prevalent among SMEs. These tools are systematically integrated into the strategy-building process, becoming an integral part of the strategic practices of these businesses. According to Bellamy et al. [23], STTs play a dominant role in SME applications, serving as a supportive framework for the strategy formation process. In a broader context, strategic management tools and techniques offer a range of significant benefits for organizations. As argued by the same authors, beyond helping to deconstruct and simplify complex situations that affect strategy formulation and development, these tools also contribute to enhancing strategic awareness and reinforcing confidence in decision-making [23].

2.2 Facts on the implementation of Strategic Techniques and Tools

The implementation of STTs in businesses is accompanied by a range of challenges that affect their effectiveness. According to Jarzabkowski and Kaplan [24], some of the main obstacles include: the lack of autonomy for individuals with expertise to select strategic tools; the absence of choice based on alignment with personal needs and satisfaction; limitations on independence in selection regardless of hierarchical position; and the lack of negotiation of business interests in the social construction of strategies. Despite these challenges, the application of such tools brings significant benefits. Vlados [25] argued that SWOT analysis has a positive impact on strategic planning and helps neutralize emerging difficulties through the integration of knowledge and skills. Similarly, in a study on Japanese enterprises [5] found that applying PFF model contributes to strategy improvement by clarifying the impact of new entrants and customer power. Hungund and Mani [26] applied the Benchmarking model to 213 SMEs in India and identified factors influencing innovation, including age, education, experience, and competition. Nguyen et al. [27] in their analysis of the PESTEL model in Vietnam, showed that economic, social, technological, environmental, and legal factors had a positive impact on Corporate Social Responsibility (CSR), while political factors had no significant effect. In the Brazilian context, Moretti et al. [28] found that Brainstorming fosters the generation of new ideas through group meetings, enhancing the analysis of customer requirements. Meanwhile, Abdullah et al. [29] observed an increase in the use of Mission and Vision Statements among SMEs operating in Malaysia and Singapore. Veiga and Franco [9] identified a link between business strategy and the formation of portfolio alliances in several textile companies in Portugal. Similarly, Schwarz et al. [30] argued that Scenario Planning supports the development of strategies in the face of future uncertainties. Sort and Nielsen [31] found that the BMC model positively influences information and communication security among entrepreneurs and investors, although a negative impact was observed when no compromise was reached regarding the investment offer. Fiore et al. [32] emphasized the role of stakeholders in fostering innovation and increasing economic, social, and environmental value. Oyewo et al. [33] found that the use of the BSC positively influences organizational performance in 300 businesses in Nigeria. Markus and Rideg [34] analysed the impact of cash flow on SME competitiveness in Hungary, highlighting the greater importance of future forecasts compared to historical data. Finally, Alarussi [35] identified a negative relationship between liquidity and efficiency in an analysis of 108 companies in Malaysia.

In conclusion, the implementation of STTs represents a vital component for the development and long-term success of businesses, especially SMEs. Although structural, organizational, and contextual challenges persist, existing literature demonstrates that the benefits derived from using these tools outweigh the complexity of their implementation.

The integration of methods such as SWOT analysis, PFF model, PESTEL, Benchmarking, Mission and Vision Statements, the BSC, and the BMC enables organizations to develop more informed, flexible, and sustainability-oriented strategies. These tools are not merely technical instruments, but also bridges between analysis, decision-making, and strategic action—strengthening businesses’ capacity to navigate the uncertainties of a dynamic environment and to maximize their economic and social impact.

3. RESEARCH METHODOLOGY

The central objective of this research is to identify which STTs are most widely used by SMEs, to determine the extent and manner in which managers and employees apply them, and to assess how these tools influence SME performance. To achieve these aims, the study employed the PRISMA methodological framework (Preferred Reporting Items for Systematic Reviews and Meta-Analyses), which is recognized for ensuring systematic, transparent, and replicable procedures in reviewing scientific literature. PRISMA’s structured approach was applied across four phases—identification, screening, validation, and final selection. This framework ensured scientific rigor in identifying relevant publications, evaluating their eligibility, and selecting only those studies directly contributing to the research objectives (Figure 1).

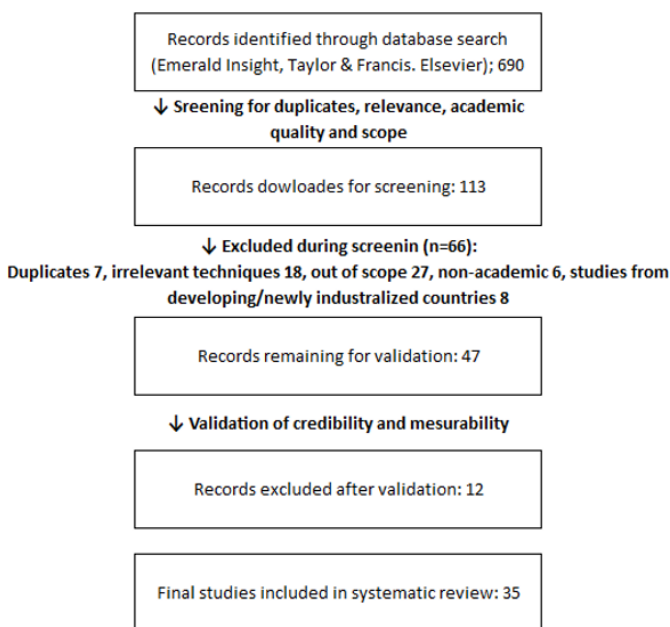


Figure 1. PRISMA flow diagram – identifying, screening, validation and selecting relevant articles process

Identification Phase - The identification phase involved a systematic search for scientific studies related to the use of STTs in SMEs. Three academic platforms Emerald Insight, Taylor & Francis, and Elsevier (ScienceDirect) were selected due to their strong academic reputation, peer-reviewed content, and indexing in leading databases such as Web of

Science and Scopus. Only sources meeting specific eligibility criteria were considered: publications had to be scientific articles written in English, appear between 2019 and 2025, undergo anonymous peer review, open-access publications and explicitly address strategic tools or techniques in the SME context. The time restriction was set to capture the most recent theoretical and empirical developments in the relevant field, reflecting recent technological, organizational, and economic transformations. The search was intentionally limited by excluding studies from developing, newly industrialized, or slow-growth economies (including BRICS) and by accepting only open-access publications. The exclusion of BRICS countries was implemented to maintain institutional homogeneity and analytical comparability among the studies, serving as a methodological limitation rather than a geographical or cultural judgment. The restriction of the literature review to open-access publications was implemented to ensure transparency, verifiability, and reproducibility of the research process, allowing all sources used to be accessible for verification by the scientific community without financial barriers, while also ensuring equal access to the analyzed evidence. The identification phase was carried out in two series:

First Literature Search Series - In the first search series, specific keywords were used, including: Strategic Management Tools in SMEs; Strategic Planning Techniques in SMEs; Use of Strategic Tools by SMEs; Techniques for Strategic Decision-Making in SMEs; Tools Applied by SMEs for Strategic Analysis; and Strategic Practices for SME Management. The results were as follows: Emerald Insight – 32 articles identified, 12 downloaded; Taylor & Francis – 9 articles identified, 4 downloaded; and Elsevier (ScienceDirect) – 62 articles identified, 28 downloaded. In total, 103 articles were identified and 44 were downloaded.

Second Literature Search Series - The second series combined the phrase “Strategic Management Tools and Techniques in SMEs” with specific keywords such as SWOT, PESTEL, PFF model, Mission and Vision Statements, Ansoff Matrix, Benchmarking, Brainstorming, BSC, Scenario Planning, BMC, Stakeholder Analysis, and Cash Flow Management. Emerald Insight provided the majority of results: 583 articles identified and 67 downloaded, including 13 for SWOT, 3 for PESTEL, 2 for Mission/Vision Statements, 3 for the Ansoff Matrix, 31 for Benchmarking, 10 for Brainstorming, and 5 for Stakeholder Analysis. Taylor & Francis and Elsevier each yielded only 2 articles, with 1 downloaded for each technique (SWOT). After both series, a total of 690 articles were identified and 113 were downloaded for the screening phase.

Screening Phase

In this phase, articles were reviewed based on their title, abstract, and research methods to exclude duplicates, articles outside the scope of strategic tools, those not aligned with the study’s purpose and scope, non-academic formats, and studies from developing or newly industrialized countries. Out of 113 articles, 66 were excluded: 7 duplicates, 18 on techniques outside the study’s focus, 27 not aligned with purpose/scope, 6 non-academic, and 8 from countries outside the defined boundaries. This left 47 articles for the validation phase.

Validation Phase

During this phase, credibility and the measurability of the articles were assessed by checking their alignment with the research questions, the application of strategic tools/techniques, the significance of content, and the

measurability of results. Articles were examined using the “find” function with key terms (SWOT, PESTEL, Five Forces, Mission/Vision Statements, Ansoff Matrix, Benchmarking, Brainstorming, BSC, Scenario Planning, BMC, Stakeholders, Cash Flow). 12 articles were excluded, leaving 35 validated articles for further review and analysis.

4. RESULTS

This chapter presents the findings related to the application of strategic methods and tools in SMEs, focusing on the key outcomes generated by their use as well as the challenges businesses have faced during their implementation (Table 1).

Table 1. Strategic methods and tools applied in small and medium-sized enterprises (SMEs)

No.	Ref.	Strategic Techniques/Tools	Key Findings	Challenges
1	[3]	Porter’s Five Forces, Balanced Scorecard by Kaplan & Norton, BCG Growth-Share Matrix, SWOT analysis, SMART goals (Specific, Measurable, Achievable, Relevant, Time-bound), stakeholder maps, media response analysis, VRIN matrix, Benchmarking, Value Chains	Strategic communication management	Limited training, cultural barriers
2	[23]	Financial management instruments for resource planning and process control, internal planning tools, performance monitoring and control instruments	SMEs focus on operational/financial aspects	Lack of strategic thinking
3	[36]	Benchmarking and clear objectives, priorities, planning, and follow-up techniques	Collaboration and long-term development	Limited data, cultural challenges
4	[37]	Maintenance checklists, FMEA (Failure Mode and Effects Analysis), Root Cause Analysis, ABC Analysis, 5 Whys, Pareto Analysis, KPIs (key performance indicators), framework analysis	Time saving, preventive maintenance	Data integration, coordination
5	[38]	PDCA cycles tailored for Benchmarking, evidence resource checklists, five- or six-step critical thinking process	More standardized decision-making	Missing standardization, cultural challenges
6	[39]	Multi-level analysis, business modelling, evaluation and feedback, case studies, network analysis	Flexibility and innovation	Sustainable investments, human resources
7	[40]	Resource-Based View, dynamic systems, competitiveness index, KPIs, case studies	Increased competitiveness	Poor standardization, resistance to change
8	[41]	Business Model Canvas, Servitization Maturity Model	85 service requests, increased flexibility	Resistance, KPIs, complexity
9	[42]	SWOT analysis, PIPRECIA (Pivot Pairwise Relative Criteria Importance Assessment), MCDM (Multi-Criteria Decision Making), TOWS (extended SWOT variant)	More effective WO2 strategy	Subjectivity, lack of data
10	[43]	Data-Driven Business Model (DDBM), Big Data in Facility Management, BM Canvas, Business Model Innovation (BMI), 4Vs (Volume, Velocity, Variety, Veracity), digital transformation of business models	Data-driven decision-making	Technical and cultural challenges
11	[44]	Artificial Intelligence, Machine Learning, Natural Language Processing, knowledge representation, hybrid human–AI decision-making	Stronger strategic decision-making	Data quality, ethics, cost
12	[45]	Cross-functional and ecosystem leadership, end-to-end cybersecurity, IT systems architecture, clear strategies and digital integration, dedicated cross-departmental teams, information/process/tool flow plans, measurable indicators/KPIs, alignment of business and digital strategies, strategic plans and maturity models, use of workshops + evaluations, top-down and bottom-up approaches	Early-stage SMEs	Unclear strategies, lack of resources
13	[46]	Visual co-design technique	Cohesion and cost avoidance	Transition, impact measurement
14	[47]	Structure and governance of Industry Peer Networks, collaborative and competitive learning, knowledge and learning management, network transformation and expansion, Benchmarking and performance evaluation	Mutual learning, expertise	Collaboration–competition balance
15	[48]	Collaboration and co-design, multi-level analysis, knowledge mobilization, organizational Canvas modelling	Collaboration and policy influence	Knowledge transformation, data security
16	[49]	Design-science research approach, scoping review, comparative analysis of existing tools, focus group discussions with practitioners	Support for innovation ecosystems	Local adaptation
17	[50]	Strategic Planning (SP), Corporate Social Responsibility (CSR), Customer Orientation (CO), mediation model where CSR and CO interact to strengthen the SP–FP link, Structural Equation Modeling (SEM), economic transition context	CSR linked to long-term performance	Limited data, transitional context
18	[51]	Formal vs. informal Sustainability Management Control Tools (SMCTs): assessment of their prevalence, how they support decision-making and data discipline, Sustainability Management Control Packages (SMCP): combining various control tools to enhance reporting and sustainability performance, non-financial reporting tools (including social and environmental performance reporting)	Transparency, sustainability management	Informal, limited use
19	[52]	Six Sigma, non-normal distribution analysis, Data Envelopment	More efficient cost–	Context-based

		Analysis, performance evaluation models, Benchmarking	quality balance	evaluation
20	[53]	Balanced Scorecard framework, Delphi process for indicator ranking, vision/mission analysis for strategic alignment, contextual approach with focus on indirect procurement	29 KPIs for indirect procurement	Non-specific PMS, lack of standards
21	[54]	Business Model Canvas, Business Model Integration (linking with strategy)	More balanced strategies	Conflicts, link to sustainability
22	[55]	Evaluation of SMEs' financial indicators, strategic orientation: Entrepreneurial Orientation (EO – innovativeness, proactiveness, risk-taking) and Market Orientation (MO), institutional environment and regulatory context analysis	SMEs affected by liquidity shortages	Bureaucracy, financial access
23	[56]	Study and identification of good practices as strategic input, case studies to identify mechanisms and differentiating factors, implementation of the “11 Principles of Innovation” in family firms, prototype of an adaptive innovation management approach, practitioner validation and review of practices	Family firms proactive in innovation	Intergenerational dynamics
24	[57]	Online engagement exporters, asynchronous collaboration, scenario literature analysis, scenario structures as management tools, use of non-linear data infrastructures, linkage with practices and indicators, organizational impact and structuring of online interventions	Greater interregional engagement	Data security, planning
25	[58]	Data analytics for informing stakeholder engagement strategies, lifelong learning approaches, cross-functional interactions to leverage data from financial, operational, and business functions	Career and skills improvement	Technical–soft skills balance
26	[59]	Business Model Canvas, textual and graphical analyses, development cycle analysis, artifact analysis	Strategy–IT alignment	Lack of comprehensive guidelines
27	[60]	SWOT analysis, marketing analysis and product/purchasing management, Resource-Based View (RBV), integrated matrix for resource evaluation	Marketing challenges identified	Market monopoly, poor communication
28	[61]	Business value design, creation, and sustainability, Stakeholder Analysis, Business Model Canvas, value creation process chain	Standardization and certification	Complexity, regulations
29	[62]	Innovation Management Assessment Framework, Stage Gate Models, process design, KPIs	Better idea selection	Training, organizational culture
30	[63]	Stakeholder networking, use of a SWOT framework, qualitative analysis of event management practices (focus groups), change management analysis and development of inclusive culture, service infrastructure analysis and stakeholder territorial networks, performance analysis and program effectiveness evaluation, legal compliance analysis and funding opportunities	Increased employment of PwDs (People with Disabilities)	Regional fragmentation, scarce resources
31	[64]	Purchasing as a daily practice (purchasing practices), Strategic purchasing practices and maturity (strategic purchasing characteristics), Case study approach and collected data, Fit/alignment angle analysis, Use of an established framework (portfolio/strategic alignment literature)	Procurement progress, regional harmonization	Environmental uncertainty, integration
32	[65]	Miles and Snow strategic orientation paradigm, use of Mediobanca and Unioncamere criteria, in-depth interviews with firm actors, document analysis, cross-case analysis, triangulation between interview and document data	Strategy shape's structure	Limited data, difficult classification
33	[66]	Risk management in the innovation value lifecycle, Safe-by-Design (SbD): integrating safety in early development of nano-enabled materials and products, Regulatory Preparedness (RP): proactive engagement with regulators to ensure coverage of new technologies, stakeholder collaboration (industry, regulators, academia, consumer representatives), use of a shared roadmap defining steps and timelines for SIA adoption in the industry value chain, environmental and health impact assessments, expert input and use of existing references, analysis of anticipated benefits, organizational environment and infrastructure analysis	Safe innovation, higher profits	Cost, stakeholder coordination
34	[67]	Qualitative approach (case study) and in-depth inductive analysis, concepts of “organizational knowledge,” “knowledge search,” and “knowledge implementation,” top-down governance perspective, organizational identity and culture analysis, interviews with family and non-family members, bottleneck effect and tacit similarity analysis, identification of innovation barriers	The role of management in innovation	Bottlenecks, emotions
35	[68]	TriProGenix (Strategy, Resources, Structure & Ecosystem, Culture), guidance model, implementation support methods, Business Model Canvas, Business Model Innovation, servitization and digital servitization, PSS (Product-Service Systems), SPSS (Smart Product-Service Systems), RBV (Resource-Based View), resource and capability analysis, scaling barrier analysis for PSS	Flexible business models	Digital integration, data security

Source: Authors

Use of STTs in contemporary literature - The existing literature highlights a wide range of methods and instruments applied in the strategic analysis and development of enterprises, particularly in the context of SMEs. The most commonly used tools include business and strategy models such as the BMC, SWOT and TOWS analyses, PFF model, Miles & Snow typologies, and Stage Gate models. In the field of quality and process management, the use of Six Sigma, the PDCA cycle, Benchmarking, and KPIs is widespread. Additionally, studies examine technology-driven approaches based on artificial intelligence, Big Data, digital collaboration tools, World Class Manufacturing (WCM), and Safe by Design (SbD). At the organizational level, particular emphasis is placed on competence management, organizational culture development, and stakeholder engagement. Most papers underline that combining traditional tools with digital approaches creates added value.

Key findings reported in the studies - A number of studies report increased collaboration and organizational flexibility, as well as substantial support for innovation processes and the transition toward service-based and digitalized business models. The use of STTs also contributes to improved decision-making, making it more informed and standardized. Repeatedly, studies document enhanced performance and operational efficiency. For family-owned firms, organizational culture and strategic orientation emerge as essential factors in fostering innovation and competitiveness. Overall, the findings suggest that strategic tools have a positive impact on performance and competitive sustainability, although their effectiveness depends on the organization's ability to integrate them coherently into practice.

Key challenges identified - The most common challenges relate to limitations in data quality and availability, organizational resistance to change, technical complexity, and difficulties in integrating new systems. In addition, many enterprises face shortages of financial, human, or time resources. Regulatory and environmental uncertainties also emerge as constraining factors. The literature emphasizes that the main issue is not the lack of STTs, but rather the difficulty in implementing and adapting them to the specific context of the enterprise.

Most common models in the literature - Among the most frequently used models, Benchmarking remains an important mechanism for performance comparison and identifying opportunities for innovation. SWOT/TOWS analysis is a consistent tool for strategic assessment, particularly in the field of sustainability. The BMC appears as a flexible tool that can be integrated with other models. Meanwhile, KPIs and the BSC are widely used for performance measurement, especially in quality management and procurement.

Key trends identified in the literature - Current trends indicate a clear shift toward digitalization and the utilization of Big Data, although many SMEs are still in the early stages of this process. Innovation in family-owned firms is increasingly being treated as a distinct field of study, where organizational culture plays a decisive role. Servitization and service-based business models are gaining importance, requiring profound organizational transformations.

Sustainability strategies including CSR, SMCT, SbD, and innovation ecosystems are being more organically integrated into the overall strategies of SMEs. Meanwhile, financial, environmental, and regulatory crises remain persistent challenges that affect the strategic capacity of enterprises.

5. DISCUSSION

The literature analysis identifies four key thematic areas related to the strategic and innovative development of SMEs:

- (1) maintenance and operational process management,
- (2) competence and resource management,
- (3) digital transformation and data utilization,
- (4) collaborative approaches and networking.

For each theme, in addition to convergence, notable divergences are observed that enrich but also complicate the theoretical and practical framework.

5.1 Maintenance and operational process management

Lundgren et al. [36] and Kundu et al. [37] argued that Benchmarking and the integration of tools such as FMEA and KPIs lead to efficiency and resource savings. In contrast, Kulikowski [38] emphasized that the impact of maintenance should not be viewed merely at a technical level, but as part of a broader socio-technical process, where organizational culture and human resource coordination are decisive.

This distinction suggests that while some studies give maximum importance and priority to the technical dimension, others insist on the role of human and institutional factors. In practice, this contradiction often leads to partial implementations, where technical tools are adopted without a parallel cultural transformation. In maintenance and operational management, companies such as Toyota demonstrate that tools like FMEA and KPIs can significantly enhance efficiency when embedded within a continuous improvement culture [69, 70]. Similarly, General Electric shows that predictive maintenance technologies generate measurable gains only when supported by organizational restructuring and workforce coordination [71].

5.2 Competence and resource management

Loufrani-Fedida and Aldebert [39] and Lafuente et al. [40] viewed the development of dynamic capabilities as a prerequisite for sustainability, relying on flexible and customized approaches. On the other hand, studies such as those by Adrodegari and Sacconi [41] and Rasheed et al. [42] offered more structured frameworks, such as servitization or the Resource-Based View (RBV), which aim to create an applicable "recipe" across different practices. This creates a theoretical tension, should resource management be seen as an emergent and contextualized process, or as a transferable and standardizable model? This dilemma remains unresolved, especially for SMEs facing financial and knowledge constraints. Siemens illustrates how structured frameworks like servitization and the Resource-Based View can succeed in large corporations with strong technological capabilities. However, SMEs often rely on incremental and context-driven adaptations rather than standardized "recipes" [72, 73].

5.3 Digital transformation and data utilization

Here, the contradictions are more pronounced. Marcinkowski and Gawin [43] and Stone et al. [44] suggested that Artificial Intelligence and Big Data are essential for creating competitive advantages and enabling sophisticated decision-making. In contrast, Machado et al. [45] and other empirical studies show that many SMEs lack both the technical capabilities and financial capital to sustainably

implement these technologies. Thus, while part of the literature is technologically optimistic, another part remains critical and realistic, viewing digital transformation as fragmented, selective, and often conditioned by public policy and institutional support. This distinction highlights a gap between theoretical potential and practical applicability. Firms such as Amazon leverage AI and Big Data to achieve competitive advantage, yet many SMEs lack the financial and technical capacity to replicate such models [74, 75].

5.4 Collaborative approaches and networking

Studies such as those by Elikan and Pigneur [46] and Leung et al. [47] viewed co-design and networking as strategies to enhance cohesion and innovation. However, Cukier et al. [48] and Jütting [49] warned that collaboration is often fragmented and its impact on public policy or long-term development remains limited. This reveals an interesting contradiction, while managerial literature often romanticizes networking as an all-encompassing solution, empirical studies show that collaboration is fragile, frequently conditioned by short-term interests and cultural challenges. This suggests the need for a more realistic and critical understanding of the role of networks. Kankam and Dza [76] provided empirical evidence from manufacturing SMEs, including firms such as Airbus and Toyota, showing that inter-organizational collaboration significantly enhances supply chain performance. Practices like information sharing, joint planning, and operational coordination positively influence efficiency, flexibility, and responsiveness.

5.5 Thematic critical summary

This analysis reveals that the literature does not present a homogeneous stance, but rather a field rich in tensions and contradictions:

- Technology vs. Organizational Culture – While some authors emphasize technology as the main catalyst, others warn that without cultural change, tools remain formal and non-functional.

- Standardized Models vs. Contextualized Approaches – The literature is divided between those offering general frameworks and those insisting on local and organizational specificities.

- Digital Optimism vs. Practical Skepticism – The discourse on Big Data and AI often clashes with the reality of SMEs' financial and institutional constraints.

- Romanticizing Networks vs. Empirical Limitations – Although collaboration is seen as a source of innovation, in practice it faces fragility and inter-organizational tensions.

These contradictions suggest that the strategic development of SMEs should be viewed as a mediated and tension-filled process, where technology, human resources, and institutional structures interact not always harmoniously. In this sense, the literature does not propose a “one-size-fits-all” solution, but rather a fragile balance between technical, organizational, and collaborative approaches that must be adapted to context.

6. CONCLUSIONS AND RECOMMENDATIONS

This study has examined the role of strategic management tools and techniques in improving the performance, efficiency, and competitiveness of SMEs. The findings indicate that the

application of tools such as SWOT, PESTEL analysis, BMC, PFF model, BSC, as well as other techniques like Scenario Planning and Cash Flow Management, provides a structured framework for analyzing the environment, identifying competitive advantages, and guiding decision-making under uncertainty.

The integration of these tools has a positive impact on enhancing strategic awareness and helping businesses adapt to market changes. However, their implementation often faces obstacles such as lack of autonomy in decision-making, inappropriate tool selection, and limitations in coordination across organizational levels. These challenges can be mitigated through the development of expertise, continuous training, and the establishment of an organizational structure that supports the independent selection and use of strategic tools.

In practice, it is recommended to develop a “basic package” for SMEs, including SWOT, PESTEL, and the BMC, with the option to add tools such as the BSC or Scenario Planning based on the specific needs of the business. Their implementation should be accompanied by measurable performance indicators to ensure continuous monitoring and improvement.

Furthermore, businesses are encouraged to invest in practical training and case studies, strengthen managerial accountability mechanisms, and define clear roles at every stage of the strategic process. Integrating these tools with financial analyses and KPIs is essential to create synergy and ensure effective progress control. An open organizational culture that fosters discussion and clear communication about strategies is also crucial for increasing staff engagement.

From a research perspective, it is recommended to systematically assess the effectiveness of strategic tools and to investigate the cultural factors that influence their adoption, such as innovation orientation or risk tolerance.

In an evolving technological context, it is suggested to integrate traditional tools with advanced technologies such as artificial intelligence and big data analytics, in order to strengthen the decision-making process and enhance the competitive sustainability of SMEs.

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