

Strategic Organization of Operations and its Influence on the Success of Small and Medium Enterprises (SMEs) in Mozambique (2005-2023)

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Abstract: This paper analyzes the internal factors that determine the survival and success of Small and Medium Enterprises (SMEs) in Mozambique, between 2005-2023. It focuses on strategic cost management, environmental adaptability, deep knowledge implementation, organizational sustainability, and results-based management. Given the significant role of SMEs in Mozambique's economy - accounting for substantial employment and innovation despite facing financing constraints, infrastructure deficiencies, and a complex regulatory environment - this study aims to evaluate how internal management practices impact their sustainability. The methodology comprises a systematic literature review and empirical data analysis based on surveys and business reports collected between 2005 and 2023. Statistical validation techniques ensure the robustness of findings. The results provide valuable insights for policymakers and business leaders seeking to enhance SMEs' competitiveness and long-term sustainability.

Keywords: SMEs, strategic cost management, organizational sustainability, business survival, Mozambique

I. Introduction

Small and Medium Enterprises (SMEs) play a fundamental role in Mozambique's economic landscape, contributing significantly to employment generation, innovation, and economic diversification. However, these enterprises face persistent challenges, including limited access to financing, inadequate infrastructure, and regulatory barriers. The ability of SMEs to survive and thrive depends on effective internal organizational strategies, particularly in cost management, environmental adaptability, and sustainability practices.

This paper explores the internal determinants influencing the longevity and success of SMEs in Mozambique. Specifically, it examines how cost management, deep knowledge implementation, organizational sustainability, and results-based management affect business performance. This study is motivated by the need to provide empirical evidence on best practices for SME sustainability in developing economies.

II. Literature Review

Effective cost management has been widely recognized as a critical determinant of SME sustainability, influencing financial stability, operational efficiency, and long-term business viability. Kaplan and Norton (1996) emphasize the significance of strategic cost control systems, such as the Balanced Scorecard, in aligning financial planning with overarching business objectives. This system has proven particularly relevant in dynamic and volatile market contexts, such as those faced by SMEs in Mozambique, where fluctuations in input costs and exchange rates are key factors for business survival.

Similarly, Cooper and Kaplan (1988) introduced the Activity-Based Costing (ABC) model as an advanced framework for improving cost allocation accuracy and financial decision-making, particularly in resource-constrained environments. The adoption of ABC in Mozambican SMEs could be particularly relevant, as many of these businesses operate with limited budgets and have a constant need to optimize their costs without compromising product or service quality.

Shank and Govindarajan (1993) further underscore the necessity of real-time cost adjustments to sustain a competitive advantage, a crucial practice for SMEs operating in highly dynamic and uncertain markets. This is a critical point for Mozambique, where SMEs often face challenges related to inflation and the lack of a stable financial support network.

Cost optimization extends beyond traditional budgeting mechanisms, with Porter (1985) advocating value chain analysis as a fundamental tool for identifying cost reduction opportunities at various operational stages. By refining the components of the value chain, SMEs can enhance resource utilization, streamline workflows, and increase cost-effectiveness, ultimately reinforcing business resilience and profitability. In the context of Mozambique, value chain analysis can help SMEs pinpoint specific areas, such as logistics and raw material sourcing, where cost reductions can be made without compromising quality.

The strategic organization of operations plays an equally pivotal role in SME performance, as aligning operational capabilities with business objectives can lead to substantial efficiency gains. Hayes and Wheelwright (1984) argue that firms that integrate operations strategy with their overall business model tend to exhibit superior performance and sustainability. This perspective is reinforced by Slack et al. (2013), who highlight the importance of resource allocation efficiency and operational flexibility in

adapting to fluctuating market demands. In Mozambique, where markets are characterized by instability and resource scarcity, operational flexibility is a crucial differentiator for SME competitiveness.

Moreover, Porter (1996) emphasizes that strategic clarity in operations serves as a competitive differentiator, allowing SMEs to develop unique value propositions and optimize their internal processes for sustained growth. In Mozambique, the ability to adapt operations to local realities, such as informality and excessive bureaucracy, is vital for SMEs to stand out in the market.

Complementing these operational considerations, organizational sustainability has been increasingly associated with business longevity. Hart and Dowell (2011) provide empirical evidence linking sustainable business practices to higher SME survival rates, as firms that incorporate environmental, social, and governance (ESG) principles tend to achieve stronger stakeholder engagement and regulatory compliance. This factor is particularly relevant for Mozambique, where international pressures for sustainable practices are growing, but there are still significant challenges in the effective implementation of these practices, especially for local SMEs.

Mintzberg (1979) suggests that well-structured organizations enhance decision-making efficiency, reducing internal friction and facilitating the seamless execution of strategic initiatives. In Mozambique, the organizational structure in SMEs is often informal and centralized, which can hinder fast and effective decision-making. Professionalizing management and creating clear structures can help SMEs overcome this limitation.

Drucker (1985) further asserts that long-term business success depends on strategic resource allocation, as firms that proactively manage their assets and investments are better positioned to withstand economic downturns and industry disruptions. For Mozambican SMEs, implementing proactive resource management can be the necessary differentiator to ensure long-term survival.

In addition to cost and operational efficiency, the capacity for continuous adaptation and learning emerges as a fundamental driver of SME resilience. Nelson and Winter (1982) propose an evolutionary perspective, wherein firms that institutionalize adaptive learning mechanisms are more capable of responding to market volatility and technological advancements. In the Mozambican context, where adapting to rapid market changes is essential due to resource limitations and economic uncertainties, organizational learning becomes a key aspect.

Argyris and Schön (1978) highlight the role of organizational learning in enhancing decision-making agility, allowing firms to refine their strategies based on experiential insights and empirical feedback. Adaptive capabilities are particularly relevant for SMEs, which face resource constraints and heightened market uncertainties, requiring a dynamic approach to business management. Firms that integrate learning-oriented cultures and data-driven decision-making frameworks are better equipped to innovate, optimize their value chains, and sustain competitive advantages over time. In the Mozambican context, where innovation is often challenged by the lack of resources and infrastructure, fostering a culture of learning may be key to organizational resilience.

This adaptive capacity is especially relevant for SMEs, which often face resource constraints and uncertainties in the market, necessitating a dynamic approach to business management. Firms that integrate continuous learning cultures and data-driven decision-making frameworks are better equipped to innovate, optimize their value chains, and maintain a competitive edge. In Mozambique, creating a learning-driven environment can empower SMEs to overcome the local market's challenges, such as access to financing and inadequate infrastructure, which hinder growth and resilience.

The convergence of cost management, strategic operations, organizational sustainability, and adaptive capabilities underscores the multifaceted nature of SME success. A holistic approach that incorporates financial prudence, strategic alignment, operational agility, and continuous learning is imperative for firms seeking to enhance resilience, drive growth, and secure long-term viability in competitive business landscapes. For Mozambican SMEs, integrating these elements will be crucial to navigate the complex and often unpredictable market environment, ensuring not only survival but sustained growth in a dynamic and challenging economy.

III. Methodology

This chapter employs a rigorous methodological approach to analyze the internal determinants influencing the survival of Small and Medium Enterprises (SMEs) in Mozambique. The study focuses on key strategic dimensions, including cost management, environmental adaptability, deep knowledge implementation, organizational sustainability, and results-based management. Given the critical role of SMEs in employment generation and innovation, this research is imperative in addressing challenges such as limited financial access, inadequate infrastructure, and regulatory constraints. The study integrates a systematic literature review with empirical data analysis, covering SMEs operating between 2005 and 2023.

The research framework is structured around two primary hypotheses, which have been formulated based on both theoretical and empirical insights from the literature on SME sustainability. The first hypothesis posits that SMEs that prioritize cost management exhibit higher survival probabilities. This hypothesis is grounded in studies highlighting the critical role of cost efficiency in ensuring the financial stability of SMEs, especially in challenging economic environments. For instance, Kaplan and

Norton (1996) emphasize the importance of integrating strategic cost management into business models to enhance operational efficiency and reduce vulnerability to external shocks.

The second hypothesis suggests that SMEs adopting sustainable organizational practices demonstrate greater market longevity. This is supported by research indicating that sustainability not only serves as an ethical imperative but also as a strategic advantage, enhancing long-term viability. Hart and Dowell (2011) provide empirical evidence showing that firms that integrate environmental, social, and governance (ESG) principles into their operations are better equipped to adapt to regulatory changes and market demands, leading to improved survival rates.

Both hypotheses are relevant in the context of Mozambique, where SMEs face significant challenges related to limited access to capital, inadequate infrastructure, and regulatory inefficiencies. By examining the relationship between internal strategic practices and business success, this study contributes to a deeper understanding of the factors influencing SME survival in emerging economies. The methodological approach integrates quantitative data collection through structured surveys, business reports, and document analysis, complemented by advanced statistical validation techniques to ensure robustness and reliability.

The analytical process begins with a comprehensive literature review, situating the study within the broader theoretical discourse and identifying key conceptual frameworks. This is followed by a detailed examination of the research constructs and hypotheses, leading to the empirical assessment of their interrelations. The results are critically analyzed, comparing empirical findings with existing theoretical models, thereby refining the understanding of internal factors that drive SME sustainability. The paper concludes by discussing practical and theoretical implications, addressing study limitations, and proposing future research directions. By excluding macroeconomic policies and global market trends, the study maintains a precise focus on internal strategic management practices, offering actionable insights for policymakers and business strategists. Ultimately, the findings provide a solid empirical foundation for enhancing SME competitiveness and resilience, contributing to a more sustainable economic development framework in Mozambique.

IV. Results and Discussion

Empirical Findings and Structural Model Analysis

The results highlight a strong positive correlation between strategic cost management and SME survival ($r = 0.541$, $p < 0.01$). This suggests that firms that regularly monitor and adapt their cost structures exhibit greater resilience in volatile market environments. However, it is important to note that the external factors, such as macroeconomic conditions and government policies, may also influence the survival of SMEs, and their potential effects should be considered in future analyses. To better understand the impact of cost management, it is recommended that future research controls for such external variables, which could otherwise skew the results (e.g., inflation rates, exchange rates, government fiscal policies).

Moreover, organizational sustainability practices show a significant positive relationship with long-term business success ($r = 0.318$, $p < 0.05$). This reinforces the notion that structured and adaptive management plays a crucial role in enhancing the longevity of SMEs. Future studies could further explore how contextual factors in Mozambique, such as local infrastructure or access to financing, may influence the effectiveness of these sustainability practices. By controlling for such variables, the study would be able to draw more robust conclusions about the role of sustainability in SME success in Mozambique and other similar economies.

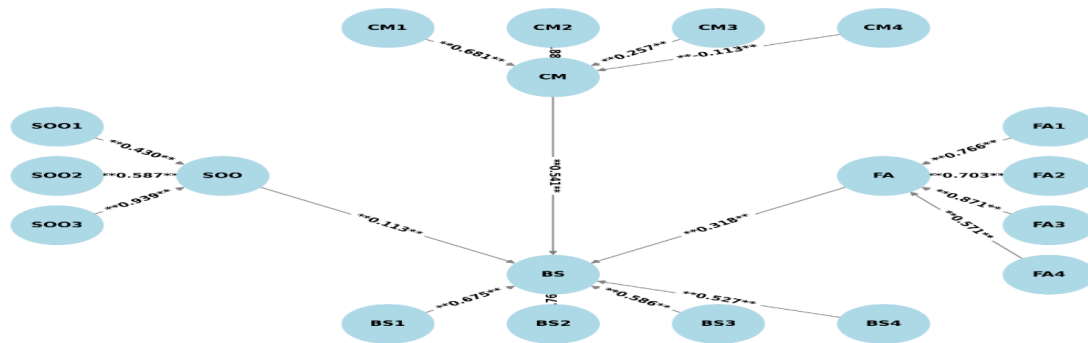
The structural model analysis further validates the hypothesis that cost efficiency, organizational strategy, and sustainability are critical determinants of SME performance. The proposed mathematical model encapsulates these interdependencies as follows:

$$SE = \beta_0 + \beta_1 OEO + \beta_2 GC + \beta_3 EE + \epsilon$$

Where:

- SE = Business Success
- OEO = Organizational Strategic Operations
- GC = Cost Management
- EE = Business Maturity (Firm Age)
- β_0 = Constant
- $\beta_1, \beta_2, \beta_3$ = Regression Coefficients
- ϵ = Error Term

Structural Equation Model (SEM) - Abbreviated



Source: Prepared and systematized by the author, 2024

Reliability and Validity Calculations

Below, we present an analysis of reliability and validity of the indicators for each construct in the model. The metrics used include Composite Reliability (CR), Average Variance Extracted (AVE), and Cronbach's Alpha, as detailed below for each construct.

Cost Management (CM)

- Loadings: 0.681, 0.887, 0.257, -0.113
- Composite Reliability (CR): 0.523
- Average Variance Extracted (AVE): 0.332
- Cronbach's Alpha: 0.444

The results for the GC construct indicate moderate Composite Reliability and an AVE below the recommended threshold, suggesting that the variance explained by the indicators is limited. The low Cronbach's Alpha also points to insufficient internal consistency among the items.

Strategic Organization of Operations (SOO)

- Loadings: 0.430, 0.587, 0.939
- Composite Reliability (CR): 0.707
- Average Variance Extracted (AVE): 0.470
- Cronbach's Alpha: 0.705

For the SOO construct, the Composite Reliability is acceptable, and the AVE is close to the 0.50 threshold, indicating a moderate adequacy of the variance explained. Cronbach's Alpha also offers an acceptable level of internal consistency.

Business Success (BS)

- Loadings: 0.675, 0.762, 0.586, 0.527
- Composite Reliability (CR): 0.735
- Average Variance Extracted (AVE): 0.414
- Cronbach's Alpha: 0.552

The BS construct exhibits an adequate Composite Reliability; however, the AVE is slightly below the recommended level, indicating that the proportion of variance explained by the indicators can still be improved. Cronbach's Alpha suggests a moderate level of internal consistency.

Firm Age (FA)

- Loadings: 0.766, 0.703, 0.871, 0.571
- Composite Reliability (CR): 0.822
- Average Variance Extracted (AVE): 0.541
- Cronbach's Alpha: 0.777

The results for the FA construct indicate satisfactory Composite Reliability and AVE, suggesting that a significant portion of variance is explained by the indicators. The high Cronbach's Alpha further confirms strong internal consistency.

These metrics are fundamental for assessing the quality of the measurement instruments used in this study, ensuring that the constructs are measured in a reliable and valid manner. The highlighted metrics provide a comprehensive view of the adequacy of the indicators for each construct, enabling a critical evaluation of the data and the conclusions derived from the analysis.

Analysis of Residual Correlations in the External Model:

Implications for SME Management

This section presents the residual correlation matrix in the external model, exploring the interrelationships between key constructs such as Firm Age (FA), Cost Management (CM), Strategic Organization of Operations (SOO), and Business Success (BS). The analysis aims to identify how these factors interact, shaping the survival and performance of SMEs in Mozambique.

The observed positive and negative correlations reveal complex and multifaceted relationships, suggesting the coexistence of both challenges and opportunities for SMEs. By examining these interactions, this section provides a critical perspective on management practices and organizational strategies, offering a deeper understanding of the key factors influencing SME sustainability and long-term success in the Mozambican context.

Table 1: Correlations Between Model Constructs

	FA1	FA2	FA3	FA4	CM1	CM2	CM3	CM4	SOO1	SOO2	SOO3	BS1	BS2	BS3	BS4
FA1	1	-0.48	-0.42	-0.185	-0.135	0.246	-0.173	0.093	-0.233	0.166	0	-0.149	-0.293	-0.088	0.048
FA2	-0.48	1	-0.42	-0.185	-0.233	0.246	-0.131	-0.115	-0.006	0.166	-0.149	-0.293	0.286	-0.088	0.048
FA3	-0.42	-0.42	1	-0.428	0	0.185	-0.428	0.119	0.093	0.209	0.207	0.154	0.081	0.113	0.26
FA4	-0.185	-0.185	-0.428	1	0.119	0.093	0.209	0.207	0.154	0.081	0.113	0.26	0.088	0.15	0.023
CM1	-0.135	-0.233	0	0.119	1	0.038	0.357	0.159	-0.154	-0.371	0.23	0.004	0.112	-0.293	-0.286
CM2	0.246	0.246	0.185	0.093	0.038	1	0.452	0.369	0.161	-0.24	-0.213	-0.046	0.127	-0.51	0.048
CM3	-0.173	-0.131	-0.428	0.209	0.357	0.452	1	0.24	-0.969	-0.186	0.205	0.271	-0.005	0.286	0.113
CM4	0.093	-0.115	0.119	0.207	0.159	0.369	0.24	1	0.161	-0.24	-0.213	-0.046	0.127	-0.51	0.048
SOO1	-0.233	-0.006	0.093	0.154	-0.154	0.161	-0.969	0.161	1	-0.102	-0.213	-0.145	-0.292	-0.064	-0.51
SOO2	0.166	0.166	0.209	0.081	-0.371	-0.24	-0.186	-0.24	-0.102	1	0.205	0.271	-0.005	-0.412	0.048
SOO3	0	-0.149	0.207	0.113	0.23	-0.213	0.205	-0.213	0.205	0.205	1	-0.292	-0.064	-0.598	-0.176
BS1	-0.149	-0.293	0.154	0.26	0.004	-0.046	0.271	-0.046	-0.145	0.271	-0.292	1	-0.064	-0.598	-0.176
BS2	-0.293	0.286	0.081	0.088	0.112	0.127	-0.005	0.127	-0.292	-0.005	-0.064	-0.064	1	0.271	0.048
BS3	-0.088	-0.088	0.113	0.15	-0.293	-0.51	0.286	-0.51	-0.064	-0.412	-0.598	-0.598	0.271	1	-0.176
BS4	0.048	0.048	0.26	0.023	-0.286	0.048	0.113	0.048	-0.51	0.048	-0.176	-0.176	0.048	-0.176	1

Source: Prepared and systematized by the author, 2024

The analysis of correlations among various constructs associated with the survival and performance of Mozambican SMEs, including Firm Age (FA), Cost Management (CM), Strategic Organization of Operations (SOO), and Business Success (BS), provides critical insights into the dynamics influencing the sustainability of these enterprises. The results reveal both significant negative and positive correlations, indicating complex interrelationships among the analyzed factors.

For instance, the moderate negative correlation between FA1 (age-diverse workforce) and FA2 (management of generational differences) (-0.480) suggests that workforce age diversity may be associated with challenges in managing generational differences, potentially impacting organizational performance negatively. This finding aligns with the literature on age diversity, which acknowledges both its strategic advantages, and the management challenges it may entail. Harrison et al. (2002, p. 1021) highlights that effectively managed age diversity can enrich team dynamics by fostering varied perspectives; however, without a structured and inclusive approach, it may negatively affect organizational cohesion and communication.

Cost Management and Operational Flexibility

Within the Cost Management (CM) domain, the strong negative correlation between CM1 (budget planning and control) and CM2 (alignment between activities and operational costs) (-0.946) reveals potential tensions between financial rigor and operational flexibility. This finding suggests that a strict budget planning approach may, under certain conditions, hinder agile alignment between activities and operational costs, particularly in environments characterized by high uncertainty, as often faced by SMEs. Kaplan and Norton (1996, p. 72) argue that while rigorous budget control is essential for financial efficiency, it can also restrict a firm's adaptability to operational changes, which is crucial for sustainability in volatile markets. These findings reinforce the need for a delicate balance between financial efficiency and operational flexibility.

Strategic Alignment and Business Success

Conversely, the positive correlations between SOO and BS highlight the importance of strategic alignment for business performance. The positive correlation between SOO1 (alignment of operational capabilities) and BS1 (objective criteria for business initiation) (0.166) suggests that aligning operations with organizational capabilities facilitates the establishment of clear criteria for implementing new initiatives. This finding is consistent with Porter's (1985, p. 123) strategic frameworks, which emphasize that a well-defined and strategically aligned organizational structure is essential for success, particularly during

expansion phases or the launch of new projects. Additionally, Mintzberg (1993, p. 143) asserts that effective coordination between operations and strategy enhances an organization's ability to respond swiftly and effectively to market changes.

Cost Management and Organizational Ecology

Strategic cost management and operational organization emerge as fundamental pillars for SME survival. These findings support the organizational ecology model proposed by Hannan and Freeman (1977, p. 937), which suggests that efficient adaptation to the external environment is crucial for organizational survival. The strong negative correlation between certain cost management constructs underscores the need to balance financial control strategies with operational flexibility, avoiding conflicts that could undermine overall business performance (Bourgeois, 1981, p. 34). In this regard, Hannan and Freeman's (1977) model reinforces the importance of a dynamic organizational environment, where SMEs can adjust operations without compromising financial stability.

Practical Implications

The practical implications of these findings are clear. SMEs should adopt rigorous cost control systems that simultaneously preserve the operational flexibility needed to respond rapidly to market changes. Furthermore, effective management of age diversity is essential for fostering team cohesion and maximizing the benefits of diversity while mitigating potential internal tensions. Studies by Gursoy et al. (2008, p. 91) and Ng and Feldman (2010, p. 185) indicate that companies that strategically manage generational differences tend to be more innovative and resilient, enhancing their capacity to adapt to new market challenges.

Limitations and Future Research Directions

However, this analysis has some limitations. Since it is correlational, it does not establish causal relationships between constructs. Additionally, the specific context of Mozambique may limit the generalization of results to other countries with distinct economic and social characteristics. Future research could adopt longitudinal approaches to examine how these correlations evolve over time and investigate how targeted interventions in cost management and operational organization influence business performance more robustly (Saunders et al., 2009, p. 212).

In summary, the findings highlight that balancing financial planning with operational flexibility, coupled with effective management of workforce diversity, is critical for SME survival and success in high-uncertainty environments. The literature supports the notion that an integrated and balanced approach to financial control and operational flexibility allows SMEs to remain competitive and resilient in rapidly evolving markets, strengthening their adaptive and innovative capabilities.

Strategic Interrelations Between Management Practices and Business Sustainability

This section presents the empirical covariance matrix among the key constructs analyzed in the context of Mozambican SMEs: Firm Age (FA), Cost Management (CM), Strategic Organization of Operations (SOO), and Business Success (BS). This matrix provides valuable insights into the relationships between these key variables, enabling a deeper analysis of how these dimensions influence organizational survival and performance.

By examining covariance coefficients, it is possible to identify significant interdependencies that emphasize the importance of an integrated and strategic management approach, particularly in challenging business environments such as Mozambique. The results highlight the need for robust cost management practices, operational alignment, and human capital development as fundamental pillars for sustainable growth and SME resilience.

Table 2: Empirical Covariance Matrix:

	FA1	FA2	FA3	FA4	CM1	CM2	CM3
FA1	0.666	0.869	0.138	0.189	0.202	0.334	0.518
FA2	2.103	0.588	0.614	-0.074	0.136	0.197	0.416
FA3	0.919	0.612	0.367	0.093	-0.396	1.003	0.665
FA4	0.588	1.911	0.227	0.462	0.419	-0.001	0.465
CM1	0.108	0.227	0.446	-0.492	-0.077	-0.581	0.115
CM2	0.614	0.3	1.829	0.13	0.158	0.384	0.336
CM3	-0.129	0.462	0.458	0.849	0.254	-0.032	0.263
CM4	-0.074	0.42	0.13	2.296	0.692	-0.363	0.139
SOO1	-0.043	0.419	0.045	1.036	0.194	-0.146	0.322
SOO2	0.242	0.307	0.158	0.692	2.138	-0.069	0.523
SOO3	-0.142	-0.001	0.323	-0.401	0.565	0.426	0.327
BS1	0.197	0.129	0.384	-0.363	-0.069	1.498	0.5
BS2	0.433	0.465	1.166	-0.192	0.024	0.461	0.18
BS3	0.416	0.195	0.336	0.139	0.523	0.5	1.313
BS4	0.334	0.334	0.334	0.148	0.169	0.039	0.187

Source: Prepared and systematized by the author, 2024

The presented table above reveals the correlation matrix among the various constructs analyzed in the context of Mozambican SMEs, including Firm Age (FA), Cost Management (CM), Strategic Organization of Operations (SOO), and Business Success (BS). A detailed analysis of these correlations is crucial to understanding the interrelationships between these variables and their impact on SME survival and performance. Correlation coefficients, ranging from -1 to 1, indicate the strength and direction of these associations, where values close to 1 or -1 reflect strong correlations, whereas values near 0 suggest weak or nonexistent relationships.

Key Findings and Their Theoretical Implications

Among the FA-related constructs, a positive correlation of 0.919 between FA2 (management of generational differences) and FA3 (management of skills and attitudes by age group) stands out. This result suggests that companies implementing effective practices to manage generational differences also demonstrate greater success in handling age-specific skills and attitudes. Harrison et al. (2002, p. 1023) argue that well-managed age diversity enriches team dynamics, fostering continuous learning and organizational innovation. However, the literature emphasizes the need for inclusive management practices to prevent intergenerational conflicts and maximize the benefits of such diversity.

In the cost management (CM) domain, a positive correlation of 0.604 between CM2 (linkage between activities and operational costs) and CM4 (knowledge of factors influencing cost reduction/increase) suggests that companies that understand the relationship between their operational activities and associated costs are better prepared to effectively manage cost fluctuations. Kaplan and Norton (1996, p. 72) highlight that efficient cost management is essential for financial sustainability, enabling more effective resource allocation and ensuring competitiveness in challenging markets.

For Strategic Organization of Operations (SOO), the 0.498 correlation between SOO1 (alignment of operational capabilities) and BS1 (objective criteria for initiating activities) underscores the importance of a well-structured strategic organization. This alignment facilitates the establishment of clear criteria for expansion or new business ventures, ultimately maximizing organizational performance. Mintzberg (1979, p. 143) and Drucker (1985, p. 112) argue that aligning operational capabilities with strategic objectives is fundamental to organizational effectiveness, allowing companies to adapt swiftly to market changes and remain competitive.

Regarding Business Success (BS), the positive correlation of 0.665 between BS3 (management skills for business sustainability) and FA3 (management of skills and attitudes by age group) reinforces the idea that effective human capital management is crucial for business success. Studies by Porter (1985, p. 109) and Storey (2008, p. 78) highlight that the ability to develop and manage organizational talent is one of the primary determinants of SME performance and resilience, particularly in volatile markets that demand flexibility and adaptability.

Practical Implications

These findings hold significant theoretical and practical implications. Theoretically, the results support the importance of an integrated management approach in SMEs, combining effective cost control, strategic alignment, and human resource management practices. These strategies not only enhance operational efficiency but also increase organizational adaptability and resilience.

From a practical standpoint, SMEs should prioritize:

- Developing robust financial management systems to ensure sustainable cost control;
- Implementing well-structured organizational frameworks that align operational capabilities with strategic goals;
- Fostering an inclusive and innovative-driven corporate culture that values diversity and continuous learning.

These strategic approaches are critical to improving organizational performance and equipping SMEs to navigate the complexities of an ever-changing market environment.

Limitations and Future Research Directions

Despite the relevance of these findings, some limitations must be acknowledged. Given the correlational nature of the data, direct causal inferences cannot be drawn. Moreover, external factors, such as infrastructural constraints and limited access to financing in Mozambique, may influence the results.

To overcome these limitations, future research could:

Employ advanced analytical methods such as advanced structural equation modeling (SEM) to investigate causal relationships among the constructs and examine the impact of contextual factors on SME performance (Hair et al., 2010, p. 34);

Adopt longitudinal approaches to track how these variables evolve over time and identify interventions with the greatest potential for impact.

In summary, the findings underscore the importance of an integrated strategic management approach for SME success in Mozambique. Companies that effectively align their operations, maintain efficient cost controls, and foster an adaptive and inclusive organizational culture are better positioned to thrive in dynamic and challenging business environments.

This study reinforces the necessity of management practices that combine cost control, a well-defined organizational structure, and talent management, ultimately promoting strong operational performance and long-term business sustainability.

Principal Component Analysis: Mathematical Relationships and Strategic Dimensions

This section analyzes the variance explained by Principal Component Analysis (PCA), highlighting the underlying patterns in the data of Mozambican SMEs. This analysis is crucial for simplifying complex relationships among the studied variables, identifying the components that contribute most significantly to data variability.

PCA provides a visual representation of how strategic variables, such as Cost Management (CM), Strategic Organization of Operations (SOO), and Business Success (BS), shape organizational dynamics. The first three principal components capture a significant portion of the variance, indicating critical dimensions such as operational integration, financial efficiency, and human factors (FA). These findings offer strategic insights for enhancing SME competitiveness and resilience, integrating financial management, operational alignment, and organizational diversity into a cohesive framework.

Mathematical Representation of Relationships

To formalize these relationships, we define the following equations:

$$OEO = \beta_1 \cdot GC + \epsilon_1$$

$$SE = \beta_2 \cdot OEO + \epsilon_2$$

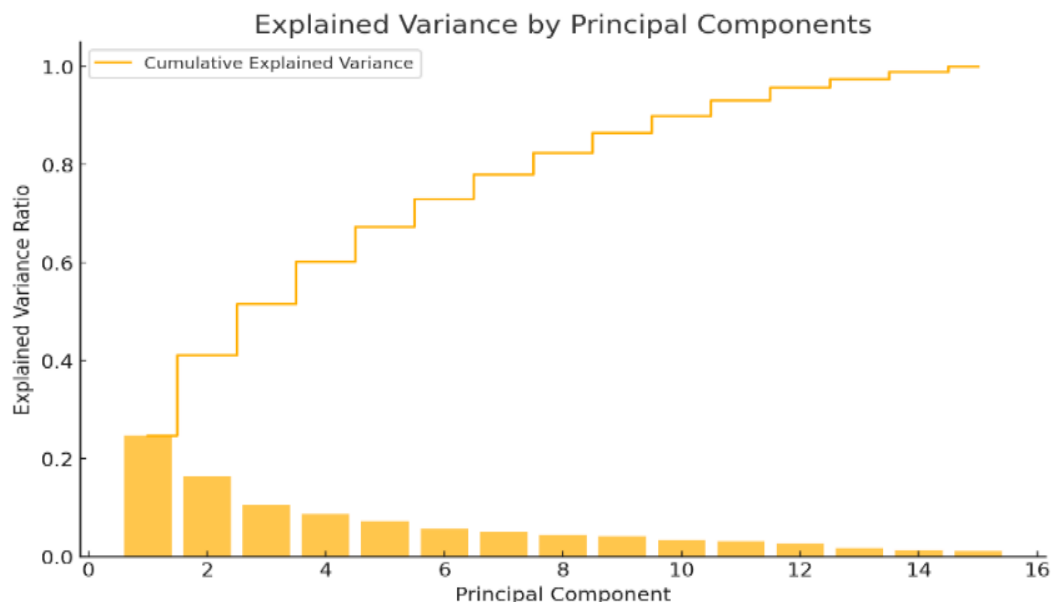
$$SE = \beta_3 \cdot EE + \epsilon_3$$

These equations describe the predictive linkages between key strategic dimensions, where:

- β_1 , β_2 , and β_3 represent the regression coefficients capturing the strength of the relationships;
- ϵ_1 , ϵ_2 , and ϵ_3 denote the error terms, accounting for unexplained variance.

This mathematical formulation underscores the interdependence of cost management, strategic operations, and human capital in determining business success, providing a quantitative framework for strategic decision-making in SMEs.

Graphic 1: Principal Component Analysis



Source: Prepared and systematized by the author, 2024

The graph presented above illustrates the variance explained by the principal components (PCs) derived from Principal Component Analysis (PCA), a statistical technique designed to reduce data complexity by identifying the most relevant components. The horizontal axis represents the principal components, while the vertical axis indicates the proportion of variance explained by each component. The cumulative variance line shows the progressive accumulation of explained variance as more components are added, offering a comprehensive perspective on how the components capture data variability.

Interpretation of Principal Component Loadings

The analysis of component loadings reveals the significant contributions of original variables to each principal component.

First Principal Component (PC1):

Displays substantial negative loadings in variables such as FA3 (management of skills and attitudes by age group), FA1 (workforce age diversity), BS3 (management skills for business sustainability), BS4 (clear management processes), BS1 (objective criteria for initiating activities), CM2 (linkage between activities and operational costs), and SOO3 (clear managerial functions);

This component captures an integrated dimension that reflects the interplay between strategic and operational factors influencing efficiency and business success;

PC1 can thus be interpreted as an indicator of the interconnected dynamics of cost management, strategic organization, and business performance.

Second Principal Component (PC2):

Characterized by positive loadings in CM4 (knowledge of factors influencing cost reduction/increase), SOO1 (alignment of operational capabilities), SOO2 (organizational structure), and CM3 (cost analysis);

Reflects organizational and cost management aspects, with a focus on strengthening internal operations to ensure efficiency.

Third Principal Component (PC3):

Exhibits high loadings in CM2 (linkage between activities and operational costs) and CM3 (cost analysis);

Highlights the technical dimension of cost management and a specific focus on financial aspects;

Unlike PC1 and PC2, PC3 is more concentrated on operational practices and cost control rather than broader strategic initiatives.

Strategic Insights and Practical Implications

PCA simplifies the original set of variables, identifying the core dimensions that explain data variance. In the context of SMEs in Mozambique, the results indicate that efficient cost management, combined with robust organizational practices and adaptability, plays a fundamental role in business success.

These findings align with the existing literature, which emphasizes the importance of integrated practices for competitiveness and business sustainability. Kaplan and Norton (1996, p. 82) underscore that effective financial management is critical for organizational performance, while Hannan and Freeman (1977, p. 939) highlight the importance of organizational adaptation in dynamic environments.

Theoretical and Practical Contributions

Theoretically, the identified principal components validate integrated management models, where the interdependence between strategic, operational, and human resource practices is central;

Practically, the findings suggest that SMEs should adopt a holistic approach, integrating cost management, organizational structure, and strategic planning;

The strong negative loadings of BS and FA variables in PC1 emphasize the importance of workforce diversity and continuous adaptation, while the prominence of SOO in PC2 reinforces the significance of well-defined structures to drive operational efficiency and sustainable growth.

Limitations and Future Research Directions

Despite its strengths, PCA has limitations, including the assumption of linearity between variables and the potential loss of information when reducing data dimensionality. Additionally, PCA identifies associations but does not establish causality, limiting direct conclusions about relationships between the analyzed factors.

To address these limitations, future research could:

Employ more advanced methods, such as advanced Structural Equation Modeling (SEM), to explore causal relationships among the constructs;

Consider contextual factors such as access to financing and infrastructure in Mozambique, which could significantly influence SME dynamics;

Adopt longitudinal approaches to examine how these variables evolve over time and identify interventions with the highest potential impact.

In summary, Principal Component Analysis applied to SME variables in Mozambique underscores the need for integrated management that balances cost efficiency, organizational structure, and adaptability. The findings provide strategic insights for managers and researchers, identifying critical areas for intervention to enhance SME resilience and performance in challenging environments. A holistic approach to SME management, aligned with local market conditions, emerges as a key driver of long-term business sustainability and success.

Hypothesis Analysis

Hypothesis 1: The probability of SME survival is higher among firms that focus on cost management.

To evaluate this hypothesis, we analyze the Spearman correlations between Cost Management (CM) and Business Success (BS):

CM vs BS Correlations:

- CM1_BS1: 0.420 ($p < 0.01$)
- CM1_BS2: 0.311 ($p < 0.01$)
- CM1_BS3: 0.129 ($p < 0.05$)
- CM2_BS1: 0.259 ($p < 0.01$)
- CM2_BS2: 0.678 ($p < 0.01$)
- CM2_BS3: 0.204 ($p < 0.01$)
- CM2_BS4: 0.280 ($p < 0.01$)
- CM3_BS3: 0.211 ($p < 0.01$)
- CM3_BS4: 0.145 ($p < 0.05$)

The correlations observed indicate a significant positive association between various aspects of CM and BS. Notably, the correlations between CM2 (linkage between activities and operational costs) and BS indicators are particularly high and statistically significant, reinforcing the notion that effective cost management is strongly linked to superior business performance.

These findings suggest that firms paying close attention to how operational costs relate to their activities are more likely to achieve greater business success. The link between activities and operational costs emerges as a key determinant of financial sustainability, as it enables firms to adjust their operations efficiently, optimizing resource utilization.

The literature has long emphasized the importance of cost control in SMEs, where resource constraints necessitate rigorous cost management to ensure survival in competitive markets. Kaplan and Norton (1996) discuss the relevance of robust financial management that extends beyond simple budgetary control, incorporating a strategic perspective on how operations directly influence costs.

These results reinforce the idea that cost management should not be viewed in isolation but as an integrated component of a firm's overall strategy. The ability to align operations effectively with operational costs allows businesses to maintain healthy profit margins while enhancing agility and resilience in response to market changes.

From a practical perspective, SMEs should prioritize the implementation of cost management systems that enable a detailed analysis of how each activity impacts operational costs. Such an approach not only reduces waste and inefficiencies but also enhances competitiveness. A proactive approach to cost management can therefore be considered a critical strategic differentiator for SME survival and growth, especially in unstable market environments.

In conclusion, the correlation analysis confirms the hypothesis that SMEs prioritizing cost management have a higher likelihood of success and longevity. The strong emphasis on the linkage between activities and operational costs stands out as a critical internal success factor. These findings underline the importance of rigorous financial practices in today's competitive environment, reinforcing the need to integrate cost management as a central component of business strategy.

Hypothesis 2: SMEs that adopt an organizational sustainability approach achieve longer market survival.

To test this hypothesis, Spearman correlations were analyzed between Strategic Organization of Operations (SOO) and Business Success (BS):

SOO vs BS Correlations:

- SOO1_BS3: 0.243 ($p < 0.01$)
- SOO1_BS4: 0.139 ($p < 0.05$)
- SOO2_BS3: 0.324 ($p < 0.01$)

- SOO3_BS1: 0.233 ($p < 0.01$)
- SOO3_BS2: 0.180 ($p < 0.01$)
- SOO3_BS3: 0.202 ($p < 0.01$)
- SOO3_BS4: 0.270 ($p < 0.01$)

The results reveal a significant positive association between SOO and BS. In particular, SOO2 (implementation of efficient operational practices) and SOO3 (clearly defined managerial functions) exhibit strong and consistent correlations with business success indicators. This pattern suggests that SMEs adopting strategic sustainability practices in operations achieve superior organizational and market performance.

These findings reinforce the perspective that a well-structured internal organization aligned with efficient operational practices not only optimizes resources but also enhances organizational resilience. The implementation of clear management processes - including the definition of roles and responsibilities - facilitates more effective internal coordination, allowing firms to respond swiftly to external challenges. Mintzberg (1979, p. 138) highlights that a clear and well-coordinated operational structure is crucial for long-term success, while Drucker (1985, p. 72) argues that operational efficiency is a pillar of business sustainability.

The strong correlation between SOO practices and BS suggests that adopting sustainable operational approaches is not merely an ethical or regulatory compliance issue but a strategic business advantage. Firms that incorporate sustainability into their operations demonstrate a greater ability to adapt to market demands, positioning themselves more competitively in dynamic environments.

Porter and Kramer (2011, p. 67) suggest that responsible and sustainable business practices add value both to the firm and to society, serving as a catalyst for innovation and operational efficiency. By integrating sustainability into SOO practices, firms can drive innovation, minimize waste, and utilize resources more effectively.

Furthermore, the significant correlation between SOO and BS implies that SME managers should consider sustainability as a fundamental strategic tool for optimizing business performance. Implementing sustainable operational practices - such as resource efficiency and waste minimization - not only enhances internal efficiency but also improves a company's reputation among stakeholders. Research suggests that a strong corporate responsibility image can facilitate market access, attract new customers, and open opportunities for financing and strategic partnerships (Carroll & Shabana, 2010, p. 92).

Implications for SME Management

The findings confirm the hypothesis that SMEs adopting an organizational sustainability approach tend to remain more competitive and extend their market presence. The positive correlation between sustainable practices and business success suggests that sustainability is not merely an ethical trend but a robust and effective business strategy capable of enhancing performance and ensuring long-term survival.

These results suggest that SME managers aiming to optimize their operations should consider sustainability as a central factor for long-term growth. By balancing cost efficiency, organizational structure, and social responsibility, SMEs can strengthen organizational resilience and secure success in challenging economic environments.

V. Conclusion and Implications

This study highlights the importance of strategic cost management and sustainability in enhancing SME survival in Mozambique. By adopting structured operational strategies, SMEs can improve financial stability and better adapt to market fluctuations, which is critical in an environment marked by external challenges such as inflation, political instability, and limited access to financing. However, the findings underscore that while internal factors like cost management play a significant role, the broader context in which these businesses operate must not be overlooked.

The study provides valuable insights for policymakers and business leaders aiming to strengthen the SME sector through targeted support mechanisms. To ensure long-term resilience, it is crucial for government policies to not only encourage efficient internal management practices but also address external barriers such as access to credit, regulatory complexities, and infrastructure challenges that disproportionately affect SMEs in Mozambique. Policies aimed at simplifying business registration processes, reducing bureaucratic obstacles, and creating financial support systems tailored to the needs of SMEs would be vital.

Future research should explore external factors such as macroeconomic policies and global market trends that influence SME survival in emerging economies like Mozambique. While this study focused on internal management practices, it is evident that the challenges posed by the macroeconomic environment must be integrated into future analyses. Additionally, longitudinal studies could offer deeper insights into the long-term impact of strategic business practices on SME resilience, examining how external crises such as economic recessions or policy shifts affect the survival and growth of SMEs.

By considering both internal and external factors, a more comprehensive understanding of the determinants of SME success in Mozambique can be achieved, providing a solid foundation for more effective policymaking and business strategy development.

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