

From strategy to success: the path to financial resilience through strategic foresight in mining SMEs



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ABSTRACT

This study examines the influence of strategic foresight on the financial performance of small and medium-sized firms (SMEs) within the mining sector of South Africa's Eastern Limb. It examines the roles of scenario planning, external environmental assessment, and organisational culture in fostering financial resilience and competitive advantage. The research utilises a quantitative methodology, employing survey data gathered from 310 participants, comprising firm owners, managers, and employees within mining SMEs. The study employs linear regression analysis to evaluate the correlations between strategic foresight activities and financial performance metrics, including revenue growth, profitability, and return on investment (ROI). Reliability was established via Cronbach's alpha (exceeding 0.9 for all constructs), while validity was assessed using Pearson correlation coefficients. The findings demonstrate that all three elements of strategic foresight—scenario planning, external environmental scanning, and organisational culture—exhibit a substantial and favourable correlation with financial success in mining SMEs. The investigation indicates that SMEs with strong strategic foresight systems are more adept at risk mitigation, regulatory adaptation, and maintaining financial growth. The research highlights the essential function of strategic foresight in improving financial resilience and stability in mining-focused SMEs. Companies that actively participate in scenario planning and environmental monitoring while fostering a robust organisational culture are more likely to adeptly manage market uncertainty. The findings provide guidance to SME leaders, policymakers, and researchers on incorporating foresight-driven strategies for enduring sustainability and financial prosperity.

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Introduction

The mining sector in South Africa continues to be a major contributor to the national economy. Nonetheless, it is exceedingly volatile, encountering obstacles such as variable commodity prices, regulatory changes, labour conflicts, and environmental issues. Small and medium-sized firms (SMEs) servicing the mining sector are especially susceptible to these uncertainties, as they frequently lack the strategic planning frameworks utilised by larger corporations. A significant number of SMEs function reactively instead of proactively, impacting their financial performance and long-term viability.

Strategic foresight is seen as an essential instrument for enterprises functioning in volatile circumstances. By employing foresight approaches like scenario planning, external environmental assessment, and cultivating an adaptive organisational culture, SMEs can augment their capacity to foresee risks and opportunities, thus enhancing financial resilience. Recent research demonstrates that firms possessing advanced strategic foresight capabilities are more inclined to sustain competitive advantages, adjust to market fluctuations, and attain financial stability (Rohrbeck & Kum, 2018; Vecchiato, 2020).

Although there is increasing study on strategic foresight in major businesses and international enterprises, there is a paucity of studies examining its use in SMEs, especially in resource-dependent industries like mining. The study gap offers a chance to

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investigate if SMEs in South Africa's Eastern Limb mining sector can utilise strategic foresight to improve financial performance. This study investigates the role of scenario planning, external environmental assessment, and organisational culture in enhancing financial resilience among mining SMEs.

This research posits that strategic foresight enhances financial performance by providing SMEs with the means to manage uncertainty and seize new opportunities. A quantitative methodology is utilised to evaluate this hypothesis, examining survey data from managers and decision-makers in the mining sector of SMEs. The findings enhance scholarly discourse and practical applications, offering insights into how SMEs might incorporate foresight measures to bolster their financial stability.

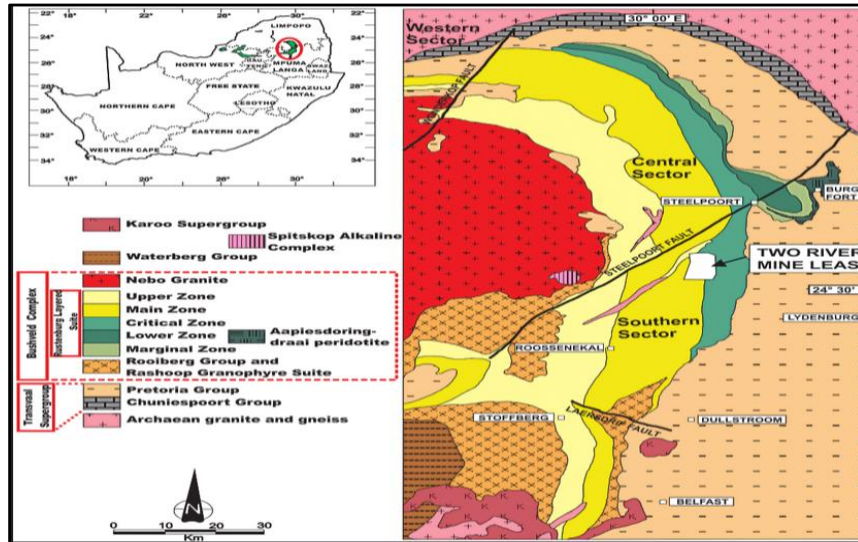


Figure 1: Geographical Position of the Eastern Limb Region (Morgan, 2019)

The South African mining industry is essential to the national economy, greatly impacting GDP, employment, and export revenues. Nonetheless, it is marked by significant uncertainty and volatility, influenced by variable commodity prices, regulatory alterations, labour conflicts, and increasing environmental apprehensions (Mining Weekly, 2024). Small and medium-sized firms (SMEs) supporting the mining sector encounter increased financial risks due to their limited financial resources, inadequate strategic planning, and insufficient market intelligence compared to larger corporations (ResearchGate, 2024).

A significant difficulty for many SMEs is their incapacity to foresee and adequately react to external interruptions. In the absence of proactive initiatives, SMEs find it challenging to adapt their business models, optimise resource allocation, or capitalise on emerging market prospects (Technovation, 2025). This reactive strategy impairs financial performance and constrains the capacity to cultivate resilience and sustain a competitive edge. Due to the escalating uncertainty in the mining sector, SMEs must implement strategic foresight mechanisms and a systematic methodology to anticipate, prepare for, and respond to future risks (JFS Digital, 2024).

Although the advantages of strategic foresight in corporate management are acknowledged, empirical research on its implementation in the SME sector, especially in resource-dependent industries like mining, remains scarce. Numerous studies on strategic foresight concentrate on major businesses with established strategic planning frameworks, resulting in a deficiency in comprehension regarding how foresight-driven plans can improve financial performance in small and medium-sized enterprises (SMEs) (ScienceDirect, 2018). This study aims to fill this gap by examining the function of strategic foresight in enhancing financial resilience among mining SMEs in South Africa's Eastern Limb region (Mining Weekly, 2024).

The primary research purpose of the study is to examine the influence of strategic foresight on the financial performance of small and medium-sized firms (SMEs) within the mining sector of South Africa's Eastern Lim.

The specific research objectives are:

- i. To examine the relationship between strategic foresight and financial performance in mining SMEs.
- ii. To analyze how scenario planning contributes to financial resilience and competitiveness in mining SMEs.
- iii. To assess the role of external environmental scanning in influencing financial stability and adaptability in mining SMEs.
- iv. To evaluate the impact of organizational culture on the financial sustainability of mining SMEs.
- v. To provide strategic recommendations for integrating foresight-driven strategies into SME operations for long-term financial success.

These objectives direct the hypothesis testing and analysis of strategic foresight processes (scenario planning, environmental scanning, and organisational culture) in relation to financial performance.

This study analyses the correlation between strategic foresight and financial success in small and medium-sized firms (SMEs) in South Africa's mining industry, particularly in the Eastern Limb. This study evaluates important foresight mechanisms—scenario planning, external environmental monitoring, and organisational culture—to ascertain their contributions to financial resilience and sustainability. The subsequent research questions have been devised to enhance comprehension of the study's emphasis and aims:

- i. How does strategic foresight impact the financial performance of mining SMEs in South Africa's Eastern Limb? *(Aligned with Objective 1)*
- ii. What role does scenario planning play in improving financial resilience among SMEs in the mining sector? *(Aligned with Objective 2)*
- iii. How does external environmental scanning influence financial stability and adaptability of mining-oriented SMEs? *(Aligned with Objective 3)*
- iv. How does organizational culture affect mining SMEs' financial sustainability and decision-making processes? *(New - Aligned with Objective 4)*
- v. What strategic recommendations can enhance the integration of foresight-driven strategies into SME operations for long-term financial success? *(Aligned with Objective 5)*

This study is important as it underscores the essential function of foresight in financial planning and risk management for SMEs in the mining industry. Considering the significant volatility within the sector, comprehending how SMEs can incorporate foresight-driven methods would empower them to:

- i. Anticipate market shifts and adjust their business strategies accordingly.
- ii. Enhance financial resilience by mitigating risks related to price fluctuations, regulatory changes, and labour disruptions.
- iii. Develop proactive business models that foster sustainable growth.
- iv. Improve decision-making processes by leveraging data-driven external environmental scanning.
- v. Build a foresight-oriented organizational culture that promotes innovation and adaptability.

This paper outlines a strategy for enhancing the financial resilience and competitiveness of South African mining firms by addressing the research gap in the implementation of strategic foresight inside SMEs. The insights acquired can be utilised outside the mining sector, providing valuable lessons for SMEs in other resource-dependent industries encountering analogous issues.

This study thoroughly examines how strategic foresight might improve financial performance and resilience in mining SMEs. By incorporating scenario planning, environmental scanning, and a foresight-oriented organisational culture, SMEs can shift from reactive decision-making to a more deliberate, proactive approach. This study will provide theoretical and practical insights into strategic management, foresight studies, and SME development through empirical investigation.

The subsequent sections of this work are organised as follows: The subsequent part provides a literature review that situates strategic foresight within the larger context of organisational strategy and financial performance. The subsequent section delineates the methodology, detailing the research strategy, data collection methods, and analytical methodologies employed in this work. The results part delineates major findings, succeeded by a discourse on their ramifications for SMEs. Ultimately, the report culminates in recommendations for practitioners, policymakers, and avenues for future research.

Literature Review

Theoretical Framework and Literature Review

This literature review explores the theoretical and empirical basis of strategic foresight and its impact on financial performance in mining-oriented SMEs. It addresses dynamic capability theory, which explains how organizations adapt to changing environments by reconfiguring resources and competencies. The review examines key aspects of strategic foresight, including scenario planning, external environmental scanning, and organizational culture, which help businesses anticipate changes and improve decision-making and financial performance. Empirical studies show these practices improve financial outcomes, particularly in uncertain markets. The review concludes by proposing a conceptual framework linking strategic foresight to financial performance, laying the groundwork for research hypotheses.

Theoretical framework: dynamic capability theory

Introduction to Dynamic Capability Theory

Teece, Pisano, and Shuen (1997) introduced Dynamic Capability Theory (DCT) as a framework explaining how organizations develop and reconfigure their internal resources to adapt to rapidly changing environments. Unlike traditional resource-based views, which emphasize static competitive advantages, DCT focuses on an organization's ability to integrate, build, and reconfigure competencies to sustain long-term performance in dynamic markets.

In the context of mining SMEs in South Africa, the volatile nature of commodity markets, regulatory shifts, labour disputes, and environmental concerns necessitate adaptive capabilities. SMEs that lack strategic foresight mechanisms struggle to anticipate and respond to these disruptions, often leading to financial instability. By applying DCT, this study explores how mining SMEs can leverage scenario planning, external environmental scanning, and an adaptive organizational culture to enhance financial resilience.

Core Components of Dynamic Capability Theory

DCT is built upon three fundamental components:

- i. **Sensing (Opportunity Identification)** Firms must continuously monitor external trends (e.g., regulatory changes, market shifts, technological advancements) to identify new opportunities and threats (Teece, 2007). Environmental scanning enables SMEs to detect risks in the mining sector, such as policy shifts in mining regulations, global commodity prices, or emerging sustainability trends (e.g., green mining technologies).
- ii. **Seizing (Resource Mobilization and Decision-Making)** Once opportunities or threats are identified, organizations must mobilize resources to capitalize on opportunities or mitigate risks (Eisenhardt & Martin, 2000). For SMEs, this involves investing in workforce training, adopting cost-effective sustainability practices, or revising business strategies in response to market uncertainties.
- iii. **Reconfiguring (Continuous Adaptation and Transformation)** Firms must continuously renew their internal processes, structures, and knowledge to sustain long-term competitiveness (Winter, 2003). For mining SMEs, this means adjusting their business models by integrating sustainable practices, optimizing supply chain efficiency, and investing in scenario planning for risk mitigation.

Strategic Foresight as a Dynamic Capability

Strategic foresight aligns with DCT by enhancing an SME's ability to sense, seize, and reconfigure its capabilities in response to industry disruptions. The three key components of strategic foresight—scenario planning, external environmental scanning, and an adaptive organizational culture serve as mechanisms for dynamic capability development.

- i. **Scenario Planning and Sensing Capabilities;** Scenario planning enhances an SME's ability to anticipate future industry shifts, allowing firms to prepare contingency strategies (Wilkinson & Kupers, 2014). For mining SMEs, scenario planning enables firms to model different economic conditions, such as fluctuating mineral prices, government policy changes, or shifts in labour laws, thereby improving financial decision-making.
- ii. **External Environmental Scanning and Seizing Capabilities;** SMEs that engage in systematic environmental scanning can identify and capitalize on emerging trends before competitors (Vecchiato, 2012). For mining SMEs, external scanning includes monitoring technological advancements (e.g., automated mining equipment), policy updates (e.g., carbon emission reduction regulations), and global demand fluctuations.
- iii. **Organizational Culture and Reconfiguring Capabilities;** A foresight-driven culture encourages continuous learning, strategic agility, and proactive decision-making (Denison & Mishra, 1995). SMEs with an adaptive culture are more likely to embrace digital transformation, implement sustainability practices, and retain top talent by fostering an innovation-driven work environment.

Application of Dynamic Capability Theory in Mining SMEs

This study applies DCT to understand how mining SMEs can strengthen financial resilience through strategic foresight mechanisms. Mining SMEs often face financial distress due to poor adaptability to regulatory and economic fluctuations. The ability to 'sense' (through external scanning), 'seize' (by making strategic investments), and 'reconfigure' (by adjusting business models) is crucial for maintaining profitability. Firms that fail to develop dynamic capabilities risk becoming reactive rather than proactive, leading to financial vulnerability. Conversely, those who actively implement strategic foresight practices gain a competitive edge by mitigating industry risks, enhancing resource efficiency, and fostering long-term sustainability.

Limitations of Dynamic Capability Theory in SMEs

While DCT provides a strong theoretical foundation, several challenges limit its direct applicability to SMEs in resource-intensive industries like mining:

Resource Constraints: Unlike large corporations, SMEs often lack the financial and technological resources to fully implement advanced foresight mechanisms.

Knowledge Gaps: Many SMEs lack dedicated foresight teams, making it difficult to systematically track industry trends and anticipate disruptions.

Regulatory Barriers: Stringent mining regulations may restrict how SMEs can experiment with new business models, limiting their ability to reconfigure operations.

Despite these challenges, this study argues that SMEs can leverage dynamic capabilities by forming strategic partnerships with industry bodies, investing in workforce training, and integrating digital tools for real-time environmental scanning.

Dynamic Capability Theory provides a robust framework for understanding how mining SMEs can leverage strategic foresight to enhance financial performance. By focusing on sensing, seizing, and reconfiguring capabilities, SMEs can proactively navigate market volatility, adapt to regulatory changes, and achieve long-term financial resilience. This study contributes to the literature by demonstrating how strategic foresight mechanisms act as dynamic capabilities that enable mining SMEs to sustain financial stability in a turbulent industry. Future research should explore how policy interventions and financial support mechanisms can further strengthen dynamic capabilities in SMEs.

Literature review: strategic foresight and financial performance

Strategic Foresight and Financial Performance

Financial performance is a key indicator of a firm's sustainability and competitive advantage. In the context of mining SMEs, financial success is influenced by several strategic foresight mechanisms, including scenario planning, environmental scanning, and organizational culture (Adomako & Danso, 2020). Research suggests that firms that integrate foresight-driven strategies experience stronger financial outcomes due to their ability to anticipate risks, optimize resource allocation, and capitalize on emerging opportunities (George, Walker & Monster, 2022). Key insights from previous studies include:

Scenario planning and financial performance: Firms that engage in scenario planning achieve higher revenue growth and profitability, as they make more informed investment decisions (Chermack, Lynham & Ruona, 2020).

External scanning and market positioning: SMEs that actively track external factors can identify cost-saving innovations and adjust operations accordingly (Nguyen, Skagen & Moufakkir, 2023).

Culture and financial resilience: Companies that foster an innovation-driven culture outperform competitors in volatile industries, as they adapt more rapidly to market changes (Hartman, 2006).

By leveraging strategic foresight, SMEs in the mining sector can enhance financial stability, mitigate risks, and achieve long-term success, even in highly volatile environments.

Scenario Planning

Scenario planning is a strategic tool that helps organizations visualize multiple future possibilities and prepare for uncertainty. It enhances financial performance by improving strategic flexibility and resilience, allowing firms to develop contingency plans in response to possible disruptions (Postma & Liebl, 2005). Wilkinson & Kupers (2014) emphasize that scenario planning fosters adaptability by forcing decision-makers to consider a range of external factors, such as economic shifts, regulatory changes, and technological advancements. By analyzing alternative futures, companies can make informed decisions about risk mitigation and investment allocation, ultimately strengthening their financial stability. Several empirical studies validate the role of scenario planning in financial resilience:

Bowman et al. (2013) found that companies using scenario planning allocate resources more effectively, reducing operational inefficiencies and boosting profitability. Schoemaker (1995) argues that SMEs engaged in scenario planning outperform competitors by leveraging insights to enhance agility and market positioning.

Scenario planning is particularly valuable for mining SMEs in addressing volatile commodity prices, labour market fluctuations, and evolving environmental regulations. By simulating different scenarios, businesses can proactively adjust their strategies, ensuring long-term sustainability and financial growth.

External Environmental Scanning

External environmental scanning is closely linked to financial performance, as it helps businesses anticipate industry shifts and seize emerging opportunities. Wilkinson & Kupers (2014) argue that environmental scanning is crucial in strategic decision-making, enabling companies to align their strategies with external market dynamics.

Early identification of regulatory risks: By tracking changes in environmental policies, SMEs can adapt before compliance deadlines, avoiding fines and legal complications (Postma & Liebl, 2005).

Technological adaptation: Mining firms that actively scan for advancements in automation and digitalization can implement cost-saving innovations (Sperling & Gordon, 2023).

By embedding external environmental scanning into strategic foresight practices, SMEs in the mining sector can enhance financial resilience, optimize resource allocation, and maintain a competitive edge.

Organizational Culture

Organizational culture is a fundamental driver of financial performance, as it shapes employee engagement, decision-making processes, and adaptability to change (Wilkinson & Kupers, 2014). Companies with strong, forward-thinking cultures foster a proactive mindset, ensuring employees are aligned with strategic goals and innovation-driven approaches.

Denison & Mishra (1995) identify four cultural traits that positively correlate with financial performance:

- i. Involvement – Organizations that empower employees to participate in strategic foresight initiatives tend to be more innovative and agile.
- ii. Consistency – A well-established set of shared values and norms enhances operational efficiency and decision-making.
- iii. Adaptability – Firms that embrace change and continuous learning are better equipped to navigate uncertainty.
- iv. Mission alignment – A clear long-term vision fosters strategic alignment across all levels of the organization.

Empirical studies reinforce the connection between culture and financial success:

- i. Kotter (2008) discovered that organisations with adaptive cultures significantly outperform those with rigid, hierarchical structures.
- ii. Cameron and Quinn (2011) emphasise that companies which foster continuous learning and innovation are better positioned for long-term financial growth.
- iii. Lee and Yu (2004) highlight that a positive culture reduces employee turnover, improves operational stability, and lowers costs.

For mining SMEs, cultivating a culture that prioritizes strategic foresight, innovation, and continuous learning is essential. Firms that actively encourage adaptive behaviours and invest in leadership development

The literature reviewed highlights that strategic foresight is critical in shaping financial performance, particularly for SMEs operating in high-risk industries such as mining. Scenario planning, external environmental scanning, and organizational culture have been identified as key enablers of financial resilience, allowing businesses to anticipate disruptions, optimize resource allocation, and drive innovation. Despite extensive research on foresight practices in large corporations, limited studies have focused on their application within mining-oriented SMEs. This study addresses this gap by empirically testing the relationship between strategic foresight and financial performance, contributing to academic literature and practical applications.

The next section will outline the conceptual framework and hypotheses formulation, further establishing the link between foresight mechanisms and financial resilience in SMEs.

Conceptual framework and hypotheses formulation

This section describes the formulation of the conceptual framework and hypotheses that will be tested in this study.

Conceptual Framework Formulation

A conceptual framework provides a structured representation of the relationship between key research variables (Sachdeva, 2023). It serves as a visual guide that clarifies how the independent variable (strategic foresight) influences the dependent variable (financial performance).

This study examines how strategic foresight, comprising scenario planning, external environmental scanning, and organizational culture, impacts financial performance in mining-oriented SMEs. These components enable firms to anticipate uncertainties, enhance decision-making, and achieve financial stability. By integrating foresight-driven strategies, SMEs operating in volatile environments, such as the mining sector, can improve resilience and sustain long-term profitability.

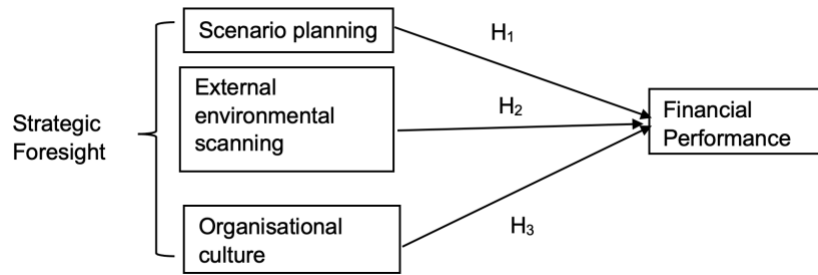


Figure 2: Author's own work

Figure 2 illustrates this relationship, showing how foresight-driven strategies may enhance financial resilience and competitive advantage in volatile markets.

Hypotheses Formulation

Strategic foresight consists of structured methodologies that help businesses anticipate changes, assess potential risks, and develop adaptive strategies (Rohrbeck & Kum, 2018). For SMEs operating in the mining sector, where economic volatility, regulatory uncertainty, and environmental risks are prevalent, foresight mechanisms such as scenario planning, external environmental scanning, and organizational culture are critical in ensuring long-term financial stability. These foresight-driven practices enable firms to navigate industry disruptions, optimize resource allocation, and strengthen competitive positioning (Vecchiato, 2020).

The following hypotheses are grounded in Dynamic Capability Theory (Teece, 2007), which emphasizes an organization's ability to sense opportunities, seize resources, and reconfigure capabilities in response to market uncertainties. Additionally, they are informed by empirical research examining the link between strategic foresight mechanisms and financial performance. The conceptual framework is the foundation for these hypotheses, ensuring a structured approach to understanding how foresight-driven strategies influence financial resilience in mining SMEs.

Hypothesis 1: Scenario planning and financial performance

We hypothesize that scenario planning positively influences financial performance in mining SMEs.

Scenario planning is a structured foresight tool that helps businesses explore multiple future possibilities and develop strategic responses to potential market disruptions (Postma & Liebl, 2005). By simulating different economic, regulatory, and technological scenarios, firms enhance their ability to make informed decisions and mitigate risks before they materialize (Wilkinson & Kupers, 2014). In the mining industry, volatile global demand and environmental regulations create uncertainty, making scenario planning an essential tool for improving financial stability and investment decision-making (Schoemaker, 1995). Furthermore, studies indicate that scenario-driven organizations perform better during economic crises, as they have already modelled potential downturns and developed contingency strategies (Slaughter, 2022).

Hypothesis 2: External environmental scanning and financial performance

We hypothesize that environmental scanning positively impacts the financial performance of mining SMEs.

External environmental scanning is crucial in risk mitigation and opportunity identification, allowing firms to align their strategies with external market dynamics (Wilkinson & Kupers, 2014).

In the mining sector, firms that engage in systematic environmental scanning can identify:

Regulatory shifts (e.g., new safety or environmental policies) should be made early, and operations should be adapted accordingly (Postma & Liebl, 2005).

Hypothesis 3: Organizational culture and financial performance

We hypothesize that organizational culture will positively impact financial performance in mining SMEs.

Organizational culture influences employee engagement, decision-making processes, and adaptability to change (Wilkinson & Kupers, 2014). A strong, innovation-driven, forward-thinking culture fosters strategic alignment and resilience, improving financial performance (Denison & Mishra, 1995).

Companies that cultivate adaptive cultures where employees embrace continuous learning, innovation, and proactive decision-making tend to be more competitive and financially sustainable (Kotter & Heskett, 1992). Research by Cameron & Quinn (2011) confirms that firms with a flexible, learning-oriented culture are better positioned to anticipate and respond to market uncertainties, reducing risks and improving profitability.

Furthermore, studies show that:

- i. Organizations with strong cultural alignment experience higher employee engagement, which translates into better operational efficiency and financial performance (Lee & Yu, 2004).
- ii. A foresight-driven culture fosters innovation, enabling SMEs to adjust their business models and explore new revenue streams (Kotter & Heskett, 1992).
- iii. Companies with rigid, bureaucratic cultures struggle to adapt, leading to financial underperformance in volatile industries such as mining (Cameron & Quinn, 2011).

The conceptual framework developed in this study establishes a structured relationship between strategic foresight and financial performance in mining-oriented SMEs. By integrating scenario planning, external environmental scanning, and organisational culture, firms can proactively navigate uncertainties, mitigate risks, and enhance long-term financial sustainability. These foresight mechanisms are expected to improve decision-making and resource allocation, leading to greater competitive advantage and financial resilience.

The hypotheses formulated in this section provide a foundation for empirical testing, aiming to validate whether strategic foresight directly influences financial performance in mining SMEs. This research will contribute to the existing body of knowledge by offering empirical evidence on how foresight-driven strategies impact financial success in volatile industries. The next section will outline the research methodology used to test these relationships and assess the practical implications of strategic foresight in SME performance.

Research and Methodology

Research Design

This study employs quantitative research to examine the relationship between strategic foresight and financial performance in mining-oriented SMEs within South Africa's Eastern Limb. Given the objective nature of this investigation, a positivist research paradigm was adopted, emphasizing empirical evidence and minimizing subjective interpretation (Creswell & Creswell, 2018). A cross-sectional survey design was utilized, enabling data collection at a single point to assess correlations between foresight mechanisms and financial outcomes (Bell & Bryman, 2020). A deductive research approach was employed, wherein hypotheses were developed based on theoretical foundations and tested through empirical analysis (Bell & Bryman, 2020). The study applied structured, standardized online questionnaires distributed through Microsoft Forms, ensuring consistency in data collection and minimizing interviewer bias (Cohen, Manion & Morrison, 2018). This approach facilitates precision, efficiency, and broad applicability in assessing cause-and-effect relationships (Field, 2013).

The study targeted SME owners, managers, and employees engaged in strategic planning within mining-related enterprises in South Africa's Eastern Limb. The total population was 1,002 individuals representing SMEs supporting mining companies. The inclusion criteria ensured that respondents had relevant decision-making and organizational planning expertise. A sample size of 278 respondents was determined based on a 5% margin of error and a 95% confidence level (Bell & Bryman, 2020). Exceedingly, the final number of responses totalled 310 participants, exceeding the minimum requirement and strengthening the statistical robustness of the study. A simple random sampling (SRS) technique was employed, ensuring equal probability of selection for all SMEs operating within the Eastern Limb mining sector (Cooper & Schindler, 2014). This technique was applied across community forums, industry consortia, and independently owned SMEs to generate a diverse and representative sample. Employees within selected companies formed the secondary sampling frame, ensuring balanced representation across different hierarchical levels within SMEs. The questionnaire was distributed via Microsoft Forms, and email invitation links were sent to SME representatives. These representatives further disseminated the survey within their organizations. Continuous monitoring and follow-up reminders were conducted to enhance response rates, ensuring at least 278 valid responses were obtained. Ultimately, 310 completed questionnaires were collected and analysed.

Questionnaire Design

Each construct was measured using a 5-point Likert scale, ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The items were adapted from previously validated scales to ensure reliability and validity.

Table 1: Summary of Related Literature

Construct	Measurement instrument	Source
Environmental Scanning	Our company regularly checks the outside world to spot new trends.	Choo (2001); Daft et al. (1988)
	Checking the outside world regularly helps us do better financially.	
	Our outside checks guide our big plans and day-to-day changes.	
	We compare our way of checking the outside world with the best companies to keep up with top standards.	
Financial Performance	Putting money into future planning has helped us grow our revenue.	Venkatraman & Ramanujam (1986); Kaplan & Norton (2005)
	Companies like ours that do well in future planning also have better financial numbers.	
	Using tools and methods for future planning links closely with our profits.	
	Our financial results have improved since we started integrating future planning into our business.	
Organisational Culture	Our company culture really supports planning for the long run and preparing for different futures.	Denison & Mishra (1995); Cameron & Quinn (2011)
	Our way of doing things at work matches well with how well we do financially.	
	Our work culture helps us adjust and be flexible based on what we expect for the future.	
	When everyone in the company gets involved in planning for the future, we perform better overall.	
Scenario Planning	Our company often plans for different future situations to get ready for what might happen	Schoemaker (1995); Vecchiato (2012)
	Planning for different future situations greatly affects how we make important decisions.	
	Using plans for future situations has made our company make more money over the past years	
	Planning for different future situations helps our company handle risks from changes in the market	

Reliability and Validity

Ensuring data reliability and validity was a fundamental aspect of this study.

Reliability

Internal consistency was assessed using Cronbach's alpha, with all constructs achieving values above 0.9, confirming high reliability (Tavakol & Dennick, 2011). The survey instrument underwent pretesting and pilot testing with a subset of SME participants, refining clarity and reducing potential measurement errors (Bryman & Bell, 2020).

Validity

Construct validity was ensured by adopting previously validated survey instruments and aligning them with the study's conceptual framework. Expert review established content validity, ensuring questionnaire items effectively measured strategic foresight dimensions. Criterion validity was confirmed through Pearson correlation analysis, demonstrating statistically significant relationships between foresight constructs and financial performance indicators. This section has detailed the research methodology employed to examine the relationship between strategic foresight and financial performance in mining-oriented SMEs. The positivist, quantitative approach, combined with random sampling, structured survey instruments, and rigorous statistical analysis, ensures the study's credibility and robustness. Ethical considerations were meticulously upheld, reinforcing the reliability of the findings. The next section will present the results and empirical analysis, evaluating the impact of strategic foresight on SME financial resilience in the mining sector.

Findings and Discussions

Findings

This section presents the study's findings, focusing on the demographic and descriptive statistics of the sample, reliability and validity assessments, and hypothesis testing. The demographic data offers insights into the composition of respondents based on factors such as gender, age, employment type, position level, educational attainment, and length of service. These statistics contextualize the study's results, facilitating a deeper understanding of the relationships explored. Additionally, tests for reliability and validity ensure the robustness of the measurement instruments, while hypothesis testing evaluates the impact of strategic foresight mechanisms on financial performance in mining-oriented SMEs.

Demographic statistics

Demographic information provides an overview of the sample characteristics, contributing to a nuanced understanding of the study's participants. The total sample size comprises 310 respondents with varying characteristics.

Table 2: Demography

Gender	Distribution
Male	66.77%
Female	30.65%
Non-binary	1.61%
Prefer not to say	0.97%
Total	100%
Age	
20 to 30 years	14.19%
31 to 41 years	41.61%
42 to 52 years	24.19%
53 to 63 years	14.19%
64+ years	5.81%
Total	100%
Type of employment	
Full-time	78.71%
Contract	13.55%
Part-time	5.16%
Other	2.58
Total	100%
Level of education	
Grade 12	8.39%
Diploma	21.29%

Degree	27.42%
Honours degree	25.48%
Masters degree	14.84%
Total	100%
Visited Soweto Township	
Total	100%

Gender Distribution

Data presents the gender distribution of respondents, indicating that 207 participants (66.77%) were male, 95 (30.65%) were female, 5 (1.61%) identified as non-binary, and 3 (0.97%) preferred not to disclose their gender. This demographic breakdown reveals a predominantly male sample, with implications for future studies on gender representation within the mining sector.

Age Distribution

The age distribution showing that the largest proportion of respondents (41.61%) falls within the 31-41 age range. The next most common group is 42-52 years (24.19%), followed by 20-34 years (14.19%) and 53-63 years (14.19%). The smallest group (5.81%) consists of individuals aged 64 and above. This age distribution suggests a workforce largely comprised of mid-career professionals with extensive industry experience.

Type of Employment

The employment type distribution reveals that full-time employment is predominant (78.71%), followed by contract employees (13.55%), part-time workers (5.16%), and non-standard employment types (2.58%). This finding underscores the prevalence of stable, long-term employment arrangements within mining SMEs.

Level of Position

Mid-level positions constitute the largest group (32.90%), followed by senior-level roles (24.84%) and entrepreneurial positions (18.71%). The remaining categories include low-level positions (10.97%), other roles (8.39%), and strategic positions (4.19%). This distribution highlights a strong presence of decision-makers in the sample.

Level of Education

The highest level of education among respondents is a Degree (27.42%), followed by Honours (25.48%), Diploma (21.29%), Masters (14.84%), and PhD (0.65%). This distribution emphasizes the high educational attainment within the sample, with many respondents holding advanced qualifications.

Length of Service at Current Workplace

Data depicts respondents' length of service, with the majority (54.84%) having 0-6 years of tenure. The next largest group (26.12%) has 7-12 years of service, while 13-18 years (11.61%), 19-23 years (2.90%), and 24+ years (4.52%) represent smaller portions. This trend suggests a relatively young workforce, which has implications for succession planning in mining SMEs.

Tests for reliability and validity

Reliability test

Construct	Descriptive Statistics		Reliability
	Mean	Standard Deviation	Cronbach Alpha (α)
Environmental Scanning	3,928	0,883	0,928
Financial Performance	4,002	0,767	0,913
Organisational Culture	3,921	0,835	0,926
Scenario Planning	3,997	0,837	0,913

Reliability was assessed using Cronbach's alpha, measuring the internal consistency of key constructs.

- Scenario Planning ($\alpha = 0.913445$): High reliability with a mean score of 4.02581.
- External Environmental Scanning ($\alpha = 0.928179$): Strong reliability with a mean of 3.928225.
- Organizational Culture ($\alpha = 0.926394$): High reliability with a mean of 3.920965.
- Financial Performance ($\alpha = 0.913010$): Strong reliability with a mean of 4.0016125.

These results indicate excellent internal consistency, confirming that the constructs effectively measure their intended dimensions.

Validity test

Validity was tested using Pearson correlation coefficients, measuring predictive validity.

- i. Organizational Culture ($r = 0.78581$): Strongest correlation with financial performance.
- ii. External Environmental Scanning ($r = 0.72805$): Significant positive correlation.
- iii. Scenario Planning ($r = 0.63233$): Moderate predictive validity.

These findings confirm that all strategic foresight components positively correlate with financial performance, supporting the construct's predictive validity.

Hypothesis testing

Relationship	Hypothesis	Estimate	P-value	Outcome
Scenario Planning → Financial Performance	H ₁	0.682	***	Supported & significant
Environmental Scanning → Financial Performance	H ₂	0.692	***	Supported & significant
Organisational Culture → Financial Performance →	H ₃	0.767	***	Supported & significant

The hypotheses were tested using linear regression models, with results summarized below.

H1: Scenario Planning and Financial Performance

- i. Path Coefficient: 0.68189
- ii. P-value: < 0.0001 (Significant)
- iii. Outcome: Reject H₀

The results confirm a strong positive relationship between Scenario Planning (SP) and Financial Performance (FP), aligning with prior research (Chermack & Nimon, 2013). Firms engaging in strategic scenario planning achieve higher financial performance due to enhanced flexibility and risk management.

H2: External Environmental Scanning and Financial Performance

- i. Path Coefficient: 0.69226
- ii. P-value: < 0.0001 (Significant)
- iii. Outcome: Reject H₀

These findings demonstrate that External Environmental Scanning (EES) significantly enhances financial performance, consistent with strategic management literature (Daft, Sormunen, & Parks, 1988). SMEs that actively monitor external trends and threats experience improved financial outcomes.

H3: Organizational Culture and Financial Performance

- i. Path Coefficient: 0.76709
- ii. P-value: < 0.0001 (Significant)
- iii. Outcome: Reject H₀

A strong positive relationship was observed between Organizational Culture (OC) and Financial Performance (FP), supporting studies by Denison (1990) and Kotter & Heskett (2008). A strong, adaptive culture contributes to employee engagement, innovation, and profitability.

This paper has analysed the demographic and descriptive statistics, followed by reliability and validity assessments and hypothesis testing results. The findings indicate that strategic foresight mechanisms -Scenario Planning, External Environmental Scanning, and Organizational Culture positively influence financial performance. These results align with prior research, reinforcing the importance of foresight-driven strategies in enhancing SME competitiveness and resilience. The next section will discuss these findings in detail, outlining their implications for practice and future research.

Discussion

This paper comprehensively discusses the study's findings, analyzing their implications for strategic foresight and financial performance in mining-oriented SMEs within South Africa's Eastern Limb. The discussion integrates key demographic factors -

gender, age, employment type, position level, educational attainment, and length of service and their influence on organizational decision-making, innovation, and financial sustainability. The results highlight the critical role of strategic foresight components, including scenario planning, external environmental scanning, and organizational culture, in enhancing financial performance. The findings are interpreted in relation to existing literature, emphasizing their relevance in shaping the strategic capabilities of SMEs operating in volatile environments.

The role of demographic factors in strategic foresight and financial performance

Gender and strategic decision-making

The study's gender distribution data indicate a predominantly male workforce, with 66.77% male, 30.65% female, and 2.58% identifying as non-binary or undisclosed. This gender imbalance is consistent with broader industry trends, where women represent only 13.5% of the workforce in the South African mining sector (Statistics South Africa, 2022). Research suggests that gender diversity contributes to enhanced strategic foresight, innovation, and risk mitigation, which is essential for financial sustainability (Govender, 2019).

Age and organizational adaptability

The study reveals that most respondents (41.61%) are aged 31-41 years, with substantial representation in the 42-52 age bracket (24.19%). A balanced age distribution fosters resilient organizational cultures, enhancing SMEs' ability to navigate industry uncertainties (Van der Walt, Kruger & Le Roux, 2018).

Employment type and strategic commitment

A significant proportion of respondents (78.71%) hold full-time employment, with fewer in contract (13.55%) or part-time (5.16%) roles. Contract and part-time workers offer operational flexibility but may have limited influence on strategic decisions, reinforcing the need for SMEs to balance workforce stability with adaptive capabilities (Badenhorst-Weiss & Cilliers, 2014).

Organizational hierarchy and strategic foresight

The study identifies mid-level managers (32.90%) as the dominant positional group, followed by senior managers (24.84%) and entrepreneurs (18.71%). The research underscores the role of mid-level managers in linking strategic vision with operational execution, ensuring that foresight-driven strategies are effectively implemented (Urban & Naidoo, 2012). 5.2.5 Educational Attainment and Strategic Foresight

The study finds that most respondents hold degrees (27.42%) and honours qualifications (25.48%), highlighting a highly educated workforce. Research confirms that educated SME leadership correlates with improved business performance and adaptability (Herrington & Kew, 2010). The findings underscore the importance of education in fostering strategic foresight and financial sustainability.

Workforce tenure and knowledge transfer

The study's results indicate that 54.84% of respondents have a tenure of 0-6 years, with fewer employees in longer tenures. This finding suggests a relatively new workforce, which, while bringing fresh perspectives and innovation, may lack institutional knowledge essential for long-term planning (McKenzie & Woodruff, 2017). Effective knowledge transfer mechanisms, such as mentorship programs and strategic training, can bridge this gap, ensuring that historical insights complement forward-thinking strategies (Alvesson & Kärreman, 2016).

Strategic foresight and financial performance

Scenario planning and financial performance

Regression analysis confirms a strong positive relationship between scenario planning and financial performance ($\beta = 0.68189$, $p < 0.0001$). Scenario planning enhances strategic flexibility, allowing SMEs to anticipate market shifts, regulatory changes, and technological advancements (Schoemaker, 1995).

External environmental scanning and financial performance

The study establishes a significant link between external environmental scanning and financial performance ($\beta = 0.69226$, $p < 0.0001$). SMEs actively monitoring external trends can better anticipate industry disruptions and align strategies accordingly (Bracker & Pearson, 1986). This finding aligns with research demonstrating that firms engaging in systematic environmental scanning achieve superior financial performance due to enhanced adaptability and competitive positioning (Daft, 1983).

Organizational culture and financial performance

The results highlight a strong relationship between organizational culture and financial performance ($\beta = 0.76709$, $p < 0.0001$). A robust culture fosters employee engagement, innovation, and long-term strategic commitment, all enhancing business performance (Kotter & Heskett, 1992).

This discussion highlights the importance of strategic foresight in shaping financial performance in mining-oriented SMEs. Demographic factors such as gender diversity, employment stability, educational attainment, and leadership structures significantly influence an organization's capacity to implement foresight-driven strategies. Empirical results validate that scenario planning, external environmental scanning, and organizational culture are key financial resilience and competitive advantage predictors. The findings underscore SMEs' need to integrate foresight-driven strategies into decision-making, ensuring long-term sustainability in volatile market environments. The next section presents the study's conclusions and recommendations, offering actionable insights for SME leaders, policymakers, and industry stakeholders.

Limitations of the study

Despite the significant contributions of this study in examining the relationship between strategic foresight and financial performance in mining-oriented SMEs in South Africa's Eastern Limb, several limitations should be acknowledged. These constraints provide opportunities for future research to address gaps and enhance the robustness of findings.

Limited geographic scope

This study is confined to the Eastern Limb mining sector in South Africa. While the findings provide valuable insights into strategic foresight practices within this industry, they may not be fully generalizable to other mining regions or industries. The economic, regulatory, and operational conditions specific to this region may not reflect the broader challenges SMEs face in other resource-dependent sectors or geographical areas.

Sector-specific focus

The research exclusively examines mining-oriented SMEs operating in a highly volatile and capital-intensive industry. As a result, the applicability of findings to SMEs in other sectors such as manufacturing, agriculture, or technology - remains uncertain. Future studies should extend this analysis to other industries to determine whether strategic foresight mechanisms yield similar financial benefits across diverse business environments.

Cross-sectional research design

The study employs a cross-sectional design, capturing data at a single point in time. While this approach effectively identifies relationships between strategic foresight variables and financial performance, it does not establish causality or account for changes over time. Longitudinal studies would provide a more comprehensive understanding of how strategic foresight influences financial performance trends over an extended period.

Exclusion of external macroeconomic factors

The study does not account for external macroeconomic factors such as inflation, exchange rate fluctuations, global commodity price changes, or national policy shifts that might influence financial performance in the mining sector. While scenario planning and environmental scanning help mitigate external risks, their effectiveness in addressing sudden economic shocks remains an area for further exploration.

Lack of qualitative insights

Although the study employs a quantitative research methodology, it does not capture the qualitative nuances of strategic foresight implementation within SMEs. A mixed-methods approach, incorporating interviews or case studies, could provide richer insights into how organizational culture and leadership influence foresight adoption and its long-term impact on financial performance.

Generalizability and sample representation

While the sample size of 310 respondents exceeds the minimum threshold for statistical significance, it may not fully represent the diverse range of SMEs operating within the mining sector. A broader and more diverse sample, including SMEs from multiple regions and company sizes, would enhance the generalizability of the study's findings.

Measurement limitations

Although the study ensures high reliability (Cronbach's $\alpha > 0.9$) and validity through Pearson correlation testing, the constructs used to measure financial performance (e.g., profitability, revenue growth, ROI) may not fully capture long-term financial resilience. Future studies could incorporate alternative financial indicators, such as liquidity ratios, debt-to-equity ratios, or operational efficiency metrics.

Conclusion

This study's findings affirm that strategic foresight via scenario planning, external environmental assessment, and organisational culture substantially influences the financial performance of mining-focused SMEs in South Africa's Eastern Limb. The study aimed to evaluate three hypotheses concerning these foresight mechanisms, all of which were empirically validated by statistical analysis.

The findings indicate that proactive strategic foresight improves financial resilience, underscoring the necessity for SMEs to consistently prepare for future uncertainty in unpredictable circumstances.

The working hypothesis proposed that strategic foresight methods have a favourable impact on the financial performance of mining SMEs. Linear regression models were employed in the testing, yielding data that affirm statistically substantial correlations among scenario planning, external environmental scanning, organisational culture, and financial performance. The independent variables significantly influenced SME financial outcomes, substantiating the research hypothesis and affirming that strategic foresight is a crucial predictor of financial resilience and competitive advantage.

This research offers a unique contribution to entrepreneurship and strategic management by experimentally illustrating the impact of strategic foresight on improving financial sustainability in SMEs within a resource-dependent sector. This study extends the debate on corporate strategic foresight by demonstrating that small and medium-sized firms can also derive substantial advantages from structured foresight approaches. Additionally, the research presents a conceptual framework that connects strategic foresight methods to financial results, establishing a theoretical basis for forthcoming empirical investigations in comparable high-risk sectors.

To build on this study, future research should:

- i. Expand the geographic and industry scope - investigate strategic foresight in other resource-dependent sectors, such as agriculture, energy, and manufacturing.
- ii. Adopt a longitudinal approach - tracking SME financial performance over time to assess the sustained impact of foresight-driven decision-making.
- iii. Integrate qualitative research - through case studies and in-depth interviews to capture managerial perspectives on foresight implementation.
- iv. Examine macroeconomic influences -investigating how external factors like policy shifts, commodity price fluctuations, and global economic conditions interact with strategic foresight practices.
- v. Incorporate alternative financial indicators -such as liquidity ratios, debt-to-equity levels, and return on investment (ROI) to create a more comprehensive measure of financial success.

The results of this study have important implications for policymakers, financial institutions, and SME support organizations. Given the proven link between strategic foresight and financial performance, the following policy recommendations are proposed:

- i. Government agencies should introduce foresight training programs tailored for SMEs, equipping entrepreneurs with future-oriented strategic planning skills.
- ii. Financial institutions should incorporate foresight assessments into funding criteria, encouraging SMEs to develop structured strategic plans before accessing loans and investment capital.
- iii. Industry regulators should foster collaboration between SMEs and foresight institutions, ensuring that small businesses remain adaptive to regulatory and market shifts.
- iv. Development policy should prioritize strategic foresight integration, embedding scenario planning and environmental scanning into entrepreneurial education and business incubation programs.
- v. Mining industry associations should establish strategic foresight frameworks to standardize risk management practices across SMEs operating in volatile sectors.

This research offers compelling empirical evidence that strategic foresight markedly improves financial performance in small and medium-sized enterprises (SMEs). By strategically preparing for future uncertainty, SMEs can reduce risks, seize emerging opportunities, and enhance their competitive advantage. The research underscores the imperative for mining SMEs, and by extension, SMEs in other risky sectors, to integrate strategic foresight into their fundamental business processes. Promoting a foresight-oriented business culture is essential not just for competitive advantage but also for ensuring long-term financial stability.

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