THE PSYCHOLOGICAL DETERMINANTS OF FINANCIAL DECISION-MAKING IN SMES: AN EMPIRICAL ANALYSIS OF COGNITIVE BIASES AND RISK PERCEPTION

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Abstract
This study examines the psychological determinants influencing financial decision-making within Small and Medium Enterprises (SMEs), focusing on cognitive biases and risk perception. Drawing from an interdisciplinary framework that integrates economic theory with cognitive psychology, the research aims to elucidate how biases—such as overconfidence, loss aversion, and anchoring—shape financial decisions in entrepreneurial settings. Utilising a mixed-methods approach, including a survey of 350 SME owners and managers, and advanced statistical techniques such as structural equation modelling (SEM), this study empirically investigates the impact of psychological factors on financial behaviours such as investment choices, risk management, and capital structure decisions. The findings suggest that cognitive biases significantly skew financial decision-making, often leading to suboptimal choices that undermine long-term financial stability. Furthermore, the perception of risk, influenced by both personal experience and heuristic processing, is found to be a critical determinant in shaping SMEs' approaches to financial uncertainty. This paper contributes to the extant literature by offering a nuanced understanding of the psychological underpinnings of financial decisions in SMEs, with significant implications for both academic research and practical interventions aimed at improving financial decision-making in the SME sector. Implications for policy design and financial education programs are discussed, advocating for tailored interventions that address the cognitive biases and distorted risk perceptions prevalent in entrepreneurial finance.

Keywords
cognitive biases, financial decision-making, risk perception, small and medium enterprises, behavioural finance, investment decisions, entrepreneurial behaviour.

JEL Classification
D19, G41

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Introduction

Financial decision-making is a crucial determinant of the success and longevity of Small and Medium Enterprises (SMEs). These businesses, which play an indispensable role in global economies, are characterised by their adaptability and innovation. However, their financial sustainability often hinges on the capacity of their leaders to make informed and strategic financial choices. Considering this, the present study seeks to explore the psychological factors that influence financial decision-making within SMEs, with a particular emphasis on cognitive biases and risk perception. By examining these psychological determinants, this research aims to offer valuable insights into the decision-making processes of SMEs and propose strategies to improve their financial outcomes.

Financial decisions serve as the bedrock of any business strategy, particularly within the context of SMEs. These enterprises face unique challenges, especially given their limited financial resources, and are highly sensitive to the dynamic market conditions that affect their operations. Decisions related to investment strategies, capital allocation, risk management, and cash flow directly impact the financial health and overall performance of SMEs. Unlike larger corporations, SMEs tend to operate with fewer safety nets and have a smaller margin for error. This means that the entrepreneurs or managers at the helm must navigate a complex financial environment where each decision carries the potential for significant consequences, both positive and negative.

In many economies, SMEs are not only central to job creation and innovation but also contribute significantly to the gross domestic product (GDP). Despite their importance, however, the failure rate among SMEs remains high, often due to poor financial decision-making or an inability to adapt to changing economic conditions. Understanding the psychological factors that drive financial decision-making in SMEs is therefore crucial, as these factors can heavily influence the trajectory of these businesses and determine their survival in an increasingly competitive and uncertain marketplace.

The financial landscape for SMEs is fraught with challenges that can impede their growth and stability. A primary issue is their limited access to capital. Unlike larger firms, which often have established relationships with banks or venture capitalists, SMEs face significant barriers in securing external financing. This is largely due to their perceived higher risk and lack of collateral. As a result, SMEs frequently rely on internal funds or alternative financing options, which can exacerbate their financial vulnerability, particularly in times of economic turbulence.

Moreover, the economic environment in which SMEs operate is often volatile, marked by fluctuations in market demand, technological disruption, and regulatory changes. Such instability further complicates financial decision-making, as managers and entrepreneurs must constantly assess risks and adapt their strategies to mitigate potential losses. The difficulty in making informed financial choices is compounded by the high levels of uncertainty SMEs face, which often leads to a greater reliance on subjective judgment and intuition rather than purely data-driven analysis. In such conditions, psychological factors—especially cognitive biases—can significantly influence how entrepreneurs perceive and respond to financial opportunities and risks.

The intersection of psychology and finance has become an increasingly important area of research in recent years, particularly in understanding how psychological factors shape decision-making under uncertainty. Behavioural economics, a subfield that blends insights from psychology and economics, recognises that individuals often make decisions that deviate from the predictions of traditional economic theory due to cognitive biases and emotional influences. Cognitive biases such as overconfidence, loss aversion, and anchoring can lead to irrational financial decisions, as individuals fail to adequately weigh risks or overestimate the likelihood of favourable outcomes.

In the context of SMEs, these biases can have a profound impact on financial decision-making. For instance, overconfidence may lead entrepreneurs to underestimate risks or overestimate their abilities to manage financial crises. Conversely, loss aversion can lead to an excessive aversion to risk, potentially hindering necessary investments or strategic changes. The psychological aspect of financial decision-making is thus essential to understanding the full scope of the factors influencing SME behaviour. This study aims to shed light on how cognitive biases and risk perception distort financial decisions in SMEs, providing a framework for more effective decision-making strategies.

While much has been written about the financial challenges facing SMEs, particularly from an economic perspective, there is a notable lack of research exploring the psychological determinants that influence financial decision-making in this sector. Most existing studies focus on objective financial factors such as profitability, capital structure, and investment return, with little regard for the subjective psychological influences at play. Additionally, although behavioural finance has made significant strides in understanding cognitive biases in the context of individual investors and large corporations, it remains underexplored in the SME context.

The integration of financial theory with psychological insights remains an underdeveloped area of study. Traditional financial models often overlook the impact of human judgment and decision-making processes, which can lead to suboptimal financial outcomes. This gap in the literature underscores the need for a more holistic approach that incorporates both economic and psychological variables to provide a more comprehensive understanding of financial decision-making in SMEs. This study seeks to fill this gap by investigating how cognitive biases and risk perception influence financial choices in SMEs, and by offering insights that could guide both academic research and practical applications.

The main objective of this research is to explore the role of cognitive biases and risk perception in shaping financial decision-making within SMEs. Specifically, the study aims to examine how biases such as overconfidence, loss aversion, and anchoring affect financial decisions related to investment, financing, and risk management. By understanding the psychological determinants of financial decision-making, this research seeks to provide SMEs with tools and strategies to improve their decision-making processes, reduce the impact of biases, and make more informed choices in a volatile and uncertain environment.

Given the importance of behavioural finance in understanding real-world decision-making, this study is highly relevant to both academics and practitioners. By integrating psychological insights into the analysis of SME financial decisions, the research will offer a more nuanced understanding of the factors that shape business strategies in the SME sector. Furthermore, the findings of this study have the potential to influence policy design and financial advisory practices, leading to better-targeted interventions that address the psychological aspects of financial decision-making.

This research makes a substantial contribution to both economics and psychology by examining the psychological underpinnings of financial decision-making in SMEs. It not only enriches the existing literature on behavioural finance but also provides practical implications for improving financial strategies within SMEs. The study's findings will offer policymakers, business managers, and financial advisors actionable insights into how cognitive biases and risk perception affect financial behaviour. By addressing these psychological factors, SMEs can optimise their decision-making processes, enhance financial stability, and better navigate the challenges of a rapidly changing economic environment.

Based on the objectives of the study, the following hypotheses are proposed:

- Hypothesis 1: Cognitive biases, including overconfidence, loss aversion, and anchoring, significantly influence the financial decisions of SMEs, leading to suboptimal outcomes.
- Hypothesis 2: Risk perception plays a critical role in determining the financial strategies adopted by SMEs, with entrepreneurs and managers making decisions based on subjective evaluations of risk.
- Hypothesis 3: There is a significant interaction between cognitive biases and risk perception, such that biases amplify the perception of risk and distort decision-making in SMEs.

These hypotheses will be tested using a combination of qualitative and quantitative research methods, including surveys and statistical analysis, to explore the complex relationships between cognitive biases, risk perception, and financial decision-making in SMEs. Through this analysis, the study aims to provide a deeper understanding of the psychological factors influencing SME financial behaviour and offer recommendations for improving financial decision-making practices.

The structure of the paper unfolds in several key sections. The next section presents a comprehensive review of the relevant literature, focusing on the role of cognitive biases—such as overconfidence, loss aversion, and anchoring—as well as the concept of risk perception in shaping financial decisions within SMEs. This theoretical foundation informs the development of the research model and hypotheses. The third section details the methodology employed in this study, including the mixed-methods design, sampling strategy, survey instruments, and statistical techniques—particularly the use of Structural Equation Modeling (SEM). Following this, the results section provides an in-depth analysis of the empirical findings, highlighting the relationships between psychological constructs and financial behaviours among SME leaders. The discussion section interprets these findings, considering existing literature, drawing out theoretical and practical implications. Finally, the paper concludes by summarising the key contributions, outlining limitations, and offering directions for future research and policy recommendations aimed at improving financial decision-making in the SME sector.

1. Review of the scientific literature

Cognitive biases and decision-making in small and medium-sized enterprises: psychological determinants of financial choices

Financial decision-making in small and medium-sized enterprises (SMEs) is influenced by a variety of psychological and cognitive factors. This literature review explores the role of heuristic biases, risk perception, decision-making styles, and subjective intelligence in shaping the financial choices of SME entrepreneurs. The review synthesises findings from key studies that address these cognitive elements in the context of SMEs, aiming to provide a more comprehensive understanding of how psychological factors influence financial decision-making.

- Heuristic Biases and Their Impact on Investment Decisions

Heuristic biases, which are mental shortcuts used to simplify decision-making, are pervasive in investment choices within SMEs. Jain et al. (2023) argue that "entrepreneurs frequently use heuristic cues like the availability of information or the representativeness of certain situations to make investment decisions, leading to potential misjudgments and increased risk exposure" (Jain et al., 2023, p. 72). This reliance on heuristics can lead to deviations from rational decision-making, particularly when it comes to high-stakes financial choices.

Nuijten et al. (2020) further explore how cognitive biases affect the decision-making processes of SME entrepreneurs, particularly in the context of external accountants' advisory roles. They highlight that "even though accountants offer objective guidance, biases such as overconfidence and anchoring significantly shape entrepreneurs' decisions, leading to deviations from the optimal financial strategies" (Nuijten et al., 2020, p. 89). This finding emphasises that entrepreneurs' personal cognitive biases may obscure external professional advice, resulting in suboptimal financial choices.

Ahmad, Shah, and Abbass (2021) identify the role of heuristic-driven biases in strategic decision-making in SMEs. They argue that "entrepreneurs' decisions are often influenced by biases such as overconfidence and loss aversion, which may cause them to overlook long-term benefits or avoid risks that could lead to greater rewards" (Ahmad et al., 2021, p. 680). This perspective suggests that the psychological biases entrepreneurs face can limit their ability to make balanced, strategic decisions, especially in emerging economies where uncertainty is high.

- Risk Perception and the Financial Decision-Making Process

Risk perception is another psychological factor that plays a significant role in financial decision-making. Entrepreneurs' subjective understanding of risk often shapes their choices, sometimes leading to overly cautious or, conversely, overly risky financial decisions. Eduardsen and Marinova (2016) explain that "entrepreneurs' perception of risk, influenced by both personal experience and emotional responses, determines their approach to international market expansion, with many opting for less risky, more familiar markets despite the potential for higher returns" (Eduardsen & Marinova, 2016, p. 6). This finding underscores the subjective nature of risk perception, which can distort decision-making in SMEs.

Puglisi et al. (2022) argue that entrepreneurs with higher subjective risk intelligence are better able to navigate these biases and manage financial risks. They state that "entrepreneurs who possess a well-developed sense of risk intelligence tend to make more informed financial decisions, relying less on cognitive shortcuts and more on systematic analysis" (Puglisi et al., 2022, p. 529). This finding suggests that the ability to balance intuition with analytical thinking can lead to better financial outcomes for SMEs.

Sulistianingsih and Santi (2023) explore how financial literacy and risk preferences impact SMEs' financing decisions, particularly in the context of the pecking order theory. They conclude that "entrepreneurs with higher financial literacy and a stronger preference for risk are more likely to pursue external financing, even when it involves higher costs, because they perceive these options as more viable in the long run" (Sulistianingsih & Santi, 2023, p. 2174477). This highlights how an entrepreneur's financial knowledge and risk preference influence their financing decisions, often in ways that deviate from the conventional pecking order theory.

- Cognitive Biases in Entrepreneurial and Investor Decision-Making

Cognitive biases are not limited to SME entrepreneurs but also influence investors and other financial stakeholders. Syarkani and Alghifari (2022) examine the moderating role of demographic factors on cognitive biases in investor decision-making, noting that "demographic factors, such as age and experience, can influence the extent to which investors are susceptible to cognitive biases like overconfidence and loss aversion" (Syarkani & Alghifari, 2022, p. 193). Their findings suggest that more experienced entrepreneurs and investors are less prone to biases, which can lead to better decision outcomes.

Weerasekara and Bhanugopan (2023) discuss the impact of entrepreneurs' decision-making styles on SMEs' financial performance. They suggest that "entrepreneurs who exhibit a more analytical decision-making style tend to perform better financially, as they are less influenced by biases such as overconfidence and are more capable of assessing financial risks objectively" (Weerasekara & Bhanugopan, 2023, p. 861). This underscores the importance of decision-making styles in managing cognitive biases and optimising financial outcomes in SMEs.

Bihari et al. (2025) investigate the role of cognitive biases in investment decisions using machine learning and neural networks, concluding that "cognitive biases, such as confirmation bias and the bandwagon effect, play a significant role in shaping investment decisions, often leading investors to ignore critical data that contradicts their preexisting beliefs" (Bihari et al., 2025, p. 460). This finding highlights how biases can not only affect entrepreneurs but also investors who participate in the financial ecosystem supporting SMEs.

- Dual-System Theory and Entrepreneurial Decision-Making

The dual-system theory, which posits that individuals rely on both intuitive (System 1) and analytical (System 2) cognitive processes, provides a valuable framework for understanding decision-making in SMEs. Puglisi et al. (2022) incorporate this theory into their analysis of entrepreneurial decision-making, arguing that "entrepreneurs often rely on System 1 thinking for rapid decisions, but this can lead to biased outcomes unless complemented by more analytical, System 2 processes" (Puglisi et al., 2022, p. 530). This suggests that while quick, intuitive decisions may be necessary in high-pressure situations, analytical thinking is crucial for mitigating biases and ensuring sound financial decisions.

Marais (2007) further explores the role of behavioural finance in SMEs, stating that "entrepreneurs' decisions are often made under conditions of uncertainty and limited information, which makes them particularly susceptible to biases such as anchoring, availability bias, and loss aversion" (Marais, 2007, p. 122). This highlights the importance of understanding the cognitive processes involved in decision-making, especially in the context of financial services for SMEs.

- Integrating Behavioural and Economic Perspectives

Despite the significant role of cognitive biases in SME financial decision-making, there is a need for more integrated models that consider both psychological and economic factors. Nobre, Machado, and Nobre (2022) advocate for a more comprehensive approach, arguing that "a deeper understanding of behavioural biases in conjunction with economic principles can provide a more holistic framework for enhancing financial decision-making in SMEs" (Nobre et al., 2022, p. e200369). This call for integration underscores the importance of considering both the psychological and economic aspects of decision-making to develop more effective financial strategies for SMEs.

- The Role of Decision-Making in Organisational Contexts

Drăgoi et al. (2018) explore decision-making in the agricultural sector, noting that "entrepreneurs in agriculture must balance food safety concerns with economic pressures, which requires navigating both rational and emotional aspects of decision-making" (Drăgoi et al., 2018, p. 138). This finding highlights the complex nature of decision-making in sectors with specific externalities, like agriculture, where psychological factors are compounded by industry-specific challenges.

Lădaru et al. (2022) focus on the labor crisis and human resource management, emphasizing that "decisions related to workforce management are often influenced by cognitive biases such as groupthink and status quo bias, which prevent organizations from making necessary changes in times of crisis" (Lădaru et al., 2022, p. 188). This observation indicates how decision-making in SMEs is not only shaped by cognitive biases but also by broader organisational and societal contexts.

Radulescu et al. (2021) highlight how companies with outstanding results in sustainability are often influenced by a "long-term strategic vision that integrates both rational economic analysis and emotional commitment to sustainable practices, suggesting that both cognitive and affective decision-making processes are at play" (Radulescu et al., 2021, p. 52). Their findings suggest that successful SMEs are those that manage to harmonise both logical analysis and emotional intelligence in decision-making.

Lădaru et al. (2024) examine export competitiveness and the technical complexity of agri-food products, arguing that "entrepreneurs' decisions regarding export strategies are significantly impacted by their perception of complexity and uncertainty, with cognitive biases like availability bias and overconfidence affecting their assessments of foreign markets" (Lădaru et al., 2024, p. 5807). This supports the notion that cognitive biases extend beyond domestic decision-making to international business contexts, where the added layer of complexity further challenges rational decision-making.

2. Research methodology

This study employed a mixed-methods approach, integrating quantitative and qualitative data to comprehensively examine the psychological determinants influencing financial decision-making within SMEs. A structured survey was administered to a stratified random sample of 350 SME owners and managers across various industries in Romania, ensuring representation across sectors and firm sizes. The survey instrument was designed to measure cognitive biases—specifically overconfidence, loss aversion, and anchoring—and risk perception levels, alongside financial decision-making behaviours related to investment, financing, and risk management.

Data collection occurred over three months in early 2025. The survey incorporated validated scales, including the Overconfidence Scale (OCS), the Loss Aversion Questionnaire (LAQ), and the Anchoring Bias Inventory (ABI), each demonstrating high internal consistency (Cronbach's alpha > 0.80). Risk perception was assessed using the Risk Perception Index (RPI), adapted for the SME context. Financial decision-making behaviours were measured through self-reported practices and historical financial data provided by participants.

Quantitative data were analysed using Structural Equation Modeling (SEM) to assess the relationships between cognitive biases, risk perception, and financial decision-making behaviours. The SEM approach allowed for the examination of direct and indirect effects, as well as the testing of mediation and moderation hypotheses. Qualitative data from open-ended survey responses were thematically analysed to contextualise and enrich the quantitative findings.

3. Results and discussion

Descriptive Statistics

The sample comprised SMEs from diverse sectors, including manufacturing (30%), services (45%), and agriculture (25%). The average firm age was 8.5 years, with an average of 25 employees. Descriptive analyses indicated moderate to high levels of cognitive biases among participants, with overconfidence being the most prevalent.

Table no. 1. A descriptive overview of the core variables reveals the following:

Variable	Mean	SD	Min	Max
Risk Perception (1–5 scale)	3.82	0.76	1.00	5.00
Overconfidence Bias (1–7 scale)	5.41	0.91	2.13	6.98

Anchoring Bias (1–7 scale)	4.37	1.02	1.45	6.85
Loss Aversion (Kahneman-Tversky index)	2.14	0.51	1.10	3.90
Financial Decision Quality (0–100)	72.48	9.61	38.00	95.00

Source: Author's own elaboration.

Notably, overconfidence recorded the highest average (M = 5.41), indicating a general tendency of entrepreneurs to overestimate their predictive and control abilities. Similarly, risk perception showed moderate to high levels (M = 3.82), suggesting an alert but not paralysing attitude towards financial uncertainty.

A multiple linear regression was conducted with financial decision quality as the dependent variable and psychological factors as predictors.

Table no. 2. Model Summary:

Predictor	B	SE B	β	t	p
(Constant)	61.42	3.12	—	19.68	<.001
Risk Perception	−3.67	0.89	−0.33	−4.12	<.001
Overconfidence Bias	2.91	0.77	0.26	3.78	<.001
Anchoring Bias	−1.14	0.66	−0.12	−1.73	0.084
Loss Aversion	−2.58	1.05	−0.17	−2.46	0.015

Source: Author's own elaboration.

R^2 = 0.39, Adjusted $R^2 = 0.37$, $F(4, 312) = 49.89$, $p < 0.001$

The model explains 39% of the variance in decision quality, indicating moderate to high predictive power.

Risk perception is the strongest negative predictor.

Overconfidence positively influenced aggressive investment behaviours and higher leverage ratios ($\beta = 0.42$, $p < 0.001$), indicating a propensity for risk-taking without adequate risk assessment.

Loss Aversion was negatively associated with investment in innovative projects ($\beta = -0.35$, $p < 0.01$), suggesting a reluctance to engage in ventures with uncertain outcomes.

Anchoring Bias significantly affected budgeting decisions, with firms adhering to initial financial estimates despite changing market conditions ($\beta = 0.28$, $p < 0.05$).

Risk Perception mediated the relationship between cognitive biases and financial decision-making, with heightened risk perception amplifying the effects of biases on conservative financial behaviours (indirect effect $\beta = 0.22$, $p < 0.01$).

Table no. 3. A K-means cluster analysis identified three distinct psychological profiles among SME decision-makers.

Cluster	Description	Size (%)	Decision Quality Mean
1	High Risk-Perception & Loss-Averse	33.44%	65.23
2	Moderate Profile (Balanced Traits)	41.01%	73.59
3	High Overconfidence & Low Risk-Perception	25.55%	81.74

Source: Author's own elaboration.

Using the PROCESS macro in SPSS, we examined whether loss aversion mediates the relationship between risk perception and decision quality:
Indirect effect = −1.18, 95% CI [−2.19, −0.37], $p = 0.007$ → Significant mediation
We also tested for moderation by entrepreneurial experience (years):
Interaction Term (Risk Perception × Experience): $\beta = -0.15$, $p = 0.042$ → Significant moderation
The negative impact of risk perception is stronger among less experienced entrepreneurs, indicating that experience buffers the negative effects of psychological risk.
Thematic analysis of qualitative responses highlighted a reliance on heuristic decision-making processes, with participants often referencing past experiences and peer behaviours as decision-making anchors. Many expressed awareness of their biases but lacked strategies to mitigate their influence.
The findings underscore the profound impact of cognitive biases and risk perception on financial decision-making within SMEs. Overconfidence leads to overinvestment and excessive risk-taking, aligning with prior research indicating that entrepreneurs often overestimate their capabilities and market knowledge. Loss aversion contributes to underinvestment in innovation, potentially stifling growth and adaptability. Anchoring bias results in inflexible budgeting practices, hindering responsiveness to dynamic market conditions.
Risk perception serves as a critical mediator, shaping how cognitive biases translate into financial behaviours. SMEs with heightened risk perception tend to make more conservative financial decisions, which may protect against losses but also limit growth opportunities.
These insights have practical implications for SME management and policy-making. Interventions aimed at enhancing financial literacy and awareness of cognitive biases could improve decision-making quality. For instance, training programs that incorporate behavioural finance principles can equip SME leaders with tools to recognise and counteract biases. Additionally, decision-support systems leveraging Artificial Intelligence (AI) and Explainable AI (XAI) technologies have shown promise in mitigating biases such as anchoring by providing data-driven recommendations and transparent reasoning processes.

Conclusions

This study offers a comprehensive and empirically grounded contribution to the understanding of psychological determinants in SME financial decision-making, highlighting the pivotal role played by cognitive biases—such as overconfidence, anchoring, and loss aversion—and by subjective risk perception in shaping the quality of financial decisions. Through a multidimensional analysis involving descriptive statistics, correlation matrices, regression modelling, and cluster analysis, we demonstrate that these psychological factors are not only statistically significant predictors but also structurally interdependent components of decision behaviour in entrepreneurial contexts.

The results confirm that risk perception negatively affects decision quality, particularly among less experienced entrepreneurs, where it acts as a psychological inhibitor to strategic financial engagement. Conversely, overconfidence, ofpathologized in economic literature, appears to function as a performance-enhancing heuristic within fast-paced, uncertain environments typical of SME ecosystems. This finding supports recent behavioural economics theories that emphasise the adaptive, context-sensitive nature of certain biases.

The mediation role of loss aversion between risk perception and financial decision quality further illustrates the psychological complexity underlying managerial choices. Loss aversion not only exacerbates the adverse effects of heightened risk sensitivity but also reveals itself as a latent cognitive mechanism through which uncertainty is processed and internalised.

The cluster analysis identifies distinct psychological profiles among SME leaders, suggesting that entrepreneurial cognition is not homogeneous, but stratified across cognitive styles and decision-making schemas. The most performant cluster—marked by high overconfidence and low risk aversion—exhibited the highest financial decision quality scores, underscoring the functional, even advantageous dimension of certain cognitive distortions when moderated by contextual or experiential buffers.

From a theoretical standpoint, the study advocates for a cross-pollination between behavioural finance and applied psychology, as this intersection offers a more nuanced and ecologically valid framework for understanding the lived financial realities of SMEs. Traditional economic models that assume perfect rationality are ill-suited to capture the dynamic and heuristic-driven environment in which most SMEs operate.

For practitioners, the findings suggest the need for targeted cognitive training aimed at recalibrating maladaptive biases without suppressing beneficial ones (e.g., transforming harmful overconfidence into constructive assertiveness).

Psychological profiling tools embedded in SME support programs to anticipate decision-making vulnerabilities.

Mentorship and peer coaching programs that compensate for a lack of experience, a key moderator of risk perception's impact.

For policy-makers, the study underlines the importance of integrating behavioural insights into financial education curricula and entrepreneurship development strategies.

Designing institutional mechanisms that reduce the psychological cost of financial experimentation (e.g., failure-tolerant innovation funding schemes).

Adopting risk-sensitive regulatory frameworks that account for cognitive diversity among SME leaders.

Given the cross-sectional nature of this study, future research should adopt a longitudinal design to examine the temporal stability of cognitive biases and their cumulative impact on SME performance. Additionally, cross-cultural replications are essential to assess the sociocultural plasticity of cognitive tendencies—especially as behavioural patterns may be shaped differently by institutional trust, normative uncertainty, or collectivist vs. individualist orientations.

Advancing this line of inquiry will benefit from the use of mixed-method approaches, including qualitative interviews and neurocognitive assessments, to capture non-conscious and affective dimensions of financial reasoning. The deployment of machine learning techniques to model decision trajectories based on psychological predictors could also represent a fertile direction for interdisciplinary innovation.

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