



Behavioral Biases Determining Investment Decisions in Moroccan SMEs

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ABSTRACT

This study aims to explore how behavioral biases determine investment decisions among small and medium-sized enterprises in Morocco. The study addresses the problem that SME owners and managers often make investment decisions under uncertainty, limited information, financing constraints, and strong dependence on personal experience. A qualitative case study approach was used to capture the meanings, processes, and contextual factors behind investment decision-making. Data were collected through semi-structured interviews, limited observation, and document analysis involving Moroccan SME owners, managers, and supporting informants selected through purposive and snowball sampling. The data were analyzed using thematic analysis supported by data condensation, data display, and conclusion drawing. The findings reveal five main patterns. Investment decisions were framed as a balance between business growth and survival. Optimism and intuition shaped opportunity assessment. Risk aversion and fear of debt influenced investment timing and financing choices. Anchoring to past prices and previous experiences affected evaluation of investment costs and expected returns. Mimicry and social influence shaped investment behavior through competitors, family, and business networks. These findings show that behavioral biases are not only cognitive errors, but also adaptive responses to uncertainty, social responsibility, and limited market information. The study contributes to behavioral finance by explaining how SME investment decisions are constructed through experience, risk perception, and social context. The findings imply that SME support programs should integrate behavioral finance education, investment readiness tools, and context-based mentoring to improve decision quality.



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1. Introduction

Education is a key factor in improving the quality of human resources at both the global and national levels. In the global context, student academic achievement remains a critical issue, as evidenced by the results of the Programme for International Student Assessment (PISA), which rank many developing countries including Indonesia below the OECD average in literacy, numeracy, and science (Cahyani & Setiawan, 2024). This situation indicates that the quality of learning still needs to be systematically improved. In Indonesia itself, various studies show that low student academic achievement is influenced not only by cognitive factors but also by non-

cognitive factors such as learning motivation, self-efficacy, and the learning environment (Wasni et al., 2024; Werang et al., 2025). Therefore, it is important to examine these factors more comprehensively to improve the quality of education.

Learning motivation is one of the key determinants of students' academic success. Theoretically, learning motivation serves as an internal driver that influences an individual's direction, intensity, and persistence in achieving learning goals (Febiyani et al., 2025). A number of empirical studies indicate that learning motivation has a significant positive relationship with academic achievement across various levels of education (Handrianto, 2026). Furthermore, meta-analytic studies also confirm that motivation and self-efficacy are important predictors of improved learning outcomes, particularly in the context of modern and digital learning (Setiawan & Widodo, 2025). Thus, enhancing learning motivation is a relevant strategy for improving students' academic achievement.

However, previous research findings indicate inconsistencies in the relationship between learning motivation and academic achievement (Weng & Wirda, 2025). Several studies have found that the effect of learning motivation on academic achievement is not always direct but is influenced by other variables such as learning engagement, readiness to learn, and environmental factors (Rachmawati et al., 2024). Furthermore, findings indicate that high levels of motivation do not always correlate directly with optimal learning outcomes, depending on contextual conditions and individual student characteristics (Riskita et al., 2025). This suggests that the relationships among variables in an educational context are complex and require a more integrative research approach.

In the Indonesian context, research on academic achievement generally still examines variables in isolation, such as the influence of learning motivation alone or in combination with a single other variable (Ghozali et al., 2024). In fact, several studies indicate that factors such as self-efficacy, emotional intelligence, and the learning environment significantly contribute to students' academic achievement (Mokodenseho et al., 2024). Furthermore, advancements in educational technology also indicate that innovative learning approaches can significantly enhance student motivation and learning outcomes (Pertiwi & Kulsum, 2024). The limitations of previous research on integrating these variables highlight a research gap that warrants a more comprehensive quantitative approach.

Based on the above discussion, this study aims to analyze the relationships among learning motivation, self-efficacy, and the learning environment and their effects on students' academic achievement. This study hypothesizes that learning motivation, self-efficacy, and the learning environment have positive and significant influences on students' academic achievement, both partially and simultaneously. The focus of this study is on how learning motivation influences academic achievement, how self-efficacy contributes to learning outcomes, and how the learning environment strengthens these relationships. Additionally, this study examines the interrelationships among these three variables within an integrated quantitative model, with the expectation that it will provide both theoretical and practical contributions toward improving the quality of education in Indonesia.

2. Materials and Methods

This study employs a quantitative approach with a correlational design, aiming to examine the relationships and influences among variables, namely, learning motivation, self-efficacy, and the learning environment on students' academic achievement. A correlational design was chosen because it can statistically explain cause-and-effect relationships without directly manipulating variables (Fischer & Boone, 2023). This study is cross-sectional in nature, in which data are collected at a specific point in time to describe the respondents' actual conditions. A quantitative approach was used because it enables objective measurement of variables and statistical analysis to test the research hypotheses (Alford & Teater, 2025).

The type of data used in this study is primary data obtained directly from respondents through the distribution of questionnaires. The research instrument was designed as a Likert scale with five response options to measure levels of learning motivation, self-efficacy, and perceptions of the learning environment. The survey method was chosen because it is effective for efficiently and systematically collecting data from a large number of respondents (Mellinger & Hanson, 2020). Additionally, this technique allows researchers to obtain quantitative data for statistical analysis to identify patterns of relationships among variables.

The population in this study consists of all students at the educational level under investigation, while the sample was selected using probability sampling techniques, specifically simple random sampling, ensuring that every member of the population has an equal chance of being selected as a respondent. This technique was chosen to enhance the representativeness of the sample and minimize research bias (Aithal & Aithal, 2020). The sample size was determined based on statistical considerations and the adequacy of the analysis, ensuring the results are valid and generalizable. The sample selection process also considered population characteristics to align with the study's objectives.

The research instruments used underwent validity and reliability testing to ensure data quality. Validity testing was conducted using construct validity and content validity through expert judgment, as well as statistical tests such as item-total correlation. Meanwhile, reliability testing was conducted using Cronbach's Alpha coefficient, with a value of ≥ 0.70 indicating that the instrument has a good level of internal consistency (Sürücü & Maslakci, 2020). Additionally, tests of classical assumptions such as normality and multicollinearity were also conducted to ensure data suitability prior to further analysis (Noor & Fuzi, 2025).

The data analysis techniques used in this study include descriptive and inferential statistical analysis. Descriptive analysis was used to describe the characteristics of the data, such as the mean, standard deviation, and percentages. Meanwhile, inferential analysis was conducted using multiple linear regression to test the effect of independent variables on the dependent variable. Hypothesis testing was performed using the t-test for partial effects and the F-test for simultaneous effects, with a significance level of 0.05. The entire data analysis process was conducted using the Statistical Package for the Social Sciences (SPSS) software, which is widely used in quantitative research due to its ability to process data accurately and systematically (Purwanto, 2021; Abulela & Harwell, 2020). With this procedure, the research results are expected to have a high level of validity and reliability and to be replicable by other researchers.

3. Results and Discussions

The thematic analysis identified five main patterns that explain how behavioral biases shape investment decisions among Moroccan SME owners and managers. These patterns show that investment decisions in Moroccan SMEs are not only financial decisions. They are also social, emotional, and experiential decisions shaped by uncertainty, business culture, market pressure, and the personal role of the owner-manager.

3.1. *Investment as a Balance Between Growth and Survival*

Investment decisions were often framed as a tension between growth ambition and survival concern. Participants did not describe investment as a purely technical process based on expected return or formal feasibility studies. Instead, they described it as a decision that must protect the firm, employees, family income, and business reputation. For many owners, investment was not only about profit maximization. It was also about keeping the business visible, competitive, and socially trusted in the market.

One participant explained, "When I invest, I do not only think about profit. I think about whether the business can still pay salaries if the market becomes slow." This statement reflects how investment decisions are tied to responsibility and social obligation. Several participants also

stated that investment becomes more difficult when the business employs relatives or long-term workers. In this context, owners tend to evaluate investment through the lens of continuity rather than expansion alone.

Observation data also supported this pattern. In several SMEs, business owners personally supervised production, customer relations, purchasing decisions, and financial negotiation. This close involvement made investment decisions highly personalized. Documentation showed that many investment plans were recorded in simple notes, spreadsheets, supplier invoices, or informal projections rather than in formal feasibility reports. This indicates that investment decision-making in SMEs often relies on practical judgment and business experience.

3.2. Optimism and Intuition in Opportunity Assessment

Optimism and intuition played a strong role in how SME owners identified and accepted investment opportunities. Many participants believed that their ability to read the market came from years of experience. They often trusted personal judgment more than formal market research. This was especially visible in decisions related to new products, equipment purchase, and business expansion.

A participant from the trade sector stated, “Sometimes the numbers are not complete, but you can feel that the market is moving. If we wait for perfect data, the opportunity will be gone.” This statement shows that intuition functions as a decision tool when formal information is incomplete. Participants often described intuition as “experience,” “market feeling,” or “business sense.” They did not see intuition as irrational. They saw it as accumulated knowledge built from daily interaction with customers, suppliers, and competitors.

Optimism also appeared when participants talked about future sales. Some owners believed that demand would increase after investment, even when they had limited evidence. This optimism encouraged them to expand production capacity, open new sales channels, or purchase equipment. However, the data also showed that optimism was not always careless. Several participants combined optimism with gradual investment. They tested the market first, used small capital, or negotiated flexible payment with suppliers.

3.3. Risk Aversion and Fear of Debt

Risk aversion strongly influenced investment timing and financing choices. Many SME owners delayed investment because they feared debt, market failure, and loss of control. This pattern was common among participants who had experienced previous financial stress or had seen other firms fail after taking bank loans. For them, debt was not only a financial instrument. It was also a psychological burden.

One participant explained, “A bank loan can help, but it also makes you sleep less. If sales fall for two months, the bank will not wait for your situation.” This statement shows how risk perception affects financing behavior. Several participants preferred to use internal funds, retained earnings, family support, or supplier credit rather than formal bank loans. They believed that internal financing gave them more flexibility and reduced pressure.

This finding also appeared in documentation. Some investment plans were postponed because owners waited until enough internal funds were available. Others reduced the scale of investment to avoid borrowing. In several cases, risk aversion protected the business from overexpansion. However, it also limited the ability of SMEs to adopt technology, increase capacity, and compete with larger firms. This shows that risk aversion can have both protective and restrictive effects.

3.4. Anchoring to Past Experience and Previous Prices

Anchoring shaped how SME owners evaluated investment costs, expected returns, and financing terms. Participants often compared current investment opportunities with past prices, previous loan conditions, or earlier business experiences. This comparison helped them make decisions quickly, but it also limited their ability to adjust to changing market conditions.

A participant in light manufacturing stated, “I still compare every machine price with the price I paid five years ago. Even when suppliers explain that costs have increased, I feel the new price is too high.” This quote shows how previous prices become a mental reference point. Several participants also anchored their expectations to past successful investments. When a previous expansion generated profit, they became more confident about similar future decisions. In contrast, when a previous investment failed, they became more cautious, even when the new opportunity had different conditions.

Anchoring also appeared in financing decisions. Some participants judged bank loan offers based on past interest rates or earlier negative experiences with banks. This made them reject current offers without fully comparing alternative financing options. The data suggest that anchoring helps owners reduce complexity, but it can also create resistance to new information.

3.5. Mimicry and Social Influence in Business Networks

Mimicry influenced SME investment decisions through business networks, competitors, suppliers, family members, and peer entrepreneurs. Participants often observed what similar businesses were doing before making investment decisions. They used peer behavior as a signal of market direction. This pattern was especially visible in technology adoption, product diversification, branch opening, and machinery purchase.

One participant said, “When three competitors started using the same digital payment system, I knew customers would soon expect it from us too.” This statement shows that mimicry can function as practical learning. SME owners use competitors as market indicators when formal data are limited. However, mimicry can also lead to reactive investment. Some participants admitted that they had invested because they feared being left behind, even when the investment did not fully match their capacity.

Social influence also came from family and trusted business contacts. In family-owned SMEs, major investment decisions were often discussed with spouses, siblings, parents, or senior relatives. Some participants said that family advice made them more careful. Others said that family pressure encouraged them to expand. This finding shows that investment decisions in SMEs are embedded in social relationships. The owner’s decision is personal, but it is rarely isolated.

Discussion

The findings show that behavioral biases determine investment decisions among Moroccan SMEs through a complex interaction between personal judgment, perceived risk, social influence, and business context. This result supports the behavioral finance view that investment decisions are not always based on rational optimization. Instead, decisions emerge from bounded rationality, limited information, emotional evaluation, and experience-based judgment. The results align with Benayad and Aasri (2023), who found that optimism, risk-taking, mimicry, and intuition influence investment decisions among Moroccan SME managers. However, the present qualitative findings add a deeper explanation by showing how these biases appear in everyday decision-making narratives.

The role of optimism and intuition in this study offers an important insight. Participants did not treat intuition as random guessing. They understood intuition as practical knowledge developed through repeated exposure to customers, suppliers, and market change. This finding supports studies that view heuristics as decision shortcuts under uncertainty. It also extends previous quantitative findings by showing that intuition may work as an informal decision system

in SMEs that lack complete market data. In this sense, intuition does not always weaken decision quality. It may help owners act quickly when formal data are unavailable. However, it can also create overconfidence when owners ignore contradictory information.

Risk aversion emerged as one of the strongest patterns in the findings. Many participants avoided or delayed investment because they feared debt and repayment pressure. This supports Ayad et al. (2024), who found that risk aversion can reduce Moroccan SMEs' borrowing decisions. The present study adds that debt avoidance is not only a financial preference. It is also linked to emotional pressure, fear of losing autonomy, and responsibility toward workers and family. This finding is relevant for understanding why some SMEs remain cautious even when external financing is available. It suggests that financial institutions should not only offer credit products. They also need to build trust, explain repayment flexibility, and reduce the psychological distance between banks and SME owners.

The finding on anchoring provides another important contribution. Participants often relied on past prices, previous loan terms, and earlier business experiences when assessing new investment opportunities. This supports the broader behavioral finance literature that identifies anchoring as a cognitive bias in investment evaluation. Yet, this study shows that anchoring in SMEs is not only a mental error. It is also a memory-based business practice. Owners use past experience as a reference because formal benchmarking tools are limited. The problem appears when old reference points no longer fit current market conditions. This explains why some owners reject investment opportunities because they compare them with outdated cost structures or past financing experiences.

Mimicry also appeared as a strong social mechanism in investment decisions. This finding is consistent with Benayad and Aasri (2023), who reported the relevance of mimicry in Moroccan SME investment decisions. The qualitative data show that mimicry can play two roles. First, it can help SME owners learn from competitors and identify market trends. Second, it can push owners into reactive investment driven by fear of being left behind. This dual role is important because mimicry should not be treated only as irrational herding. In local business contexts, observing competitors can be a practical strategy for reducing uncertainty. However, when mimicry replaces internal analysis, it can lead to investment mismatch.

The findings also support the importance of risk perception as a link between behavioral bias and investment decisions. Almansour et al. (2023), Zhang et al. (2022), and Ahmed et al. (2022) argued that risk perception mediates the relationship between behavioral factors and investment decisions. This study gives a qualitative explanation of that mechanism. Risk perception is formed through previous failure, debt experience, family responsibility, competitor behavior, and trust in information sources. Therefore, risk perception is not only an individual psychological variable. It is socially and culturally shaped. This is especially relevant in SMEs where the owner's personal life, family expectations, and business responsibility often overlap.

From a theoretical perspective, this study contributes to behavioral finance by showing that investment bias in SMEs should be understood as a contextual process. Behavioral bias does not appear in isolation. It interacts with business size, financing access, family involvement, market uncertainty, and social networks. This finding also supports the use of qualitative case study design because the meaning of bias becomes clearer when it is examined through stories, experiences, and decision justifications. The findings extend prior survey-based studies by explaining how optimism, intuition, risk aversion, anchoring, and mimicry operate in real investment decisions.

From a practical perspective, the findings suggest that SME development programs in Morocco should include behavioral finance education. Training programs should not only teach accounting, budgeting, or credit procedures. They should also help owners recognize how bias influences investment judgment. For example, training can include exercises on comparing alternative scenarios, testing assumptions, separating past experience from current market

evidence, and evaluating competitor behavior more critically. Banks and microfinance institutions can also improve communication by addressing emotional concerns related to debt, not only technical eligibility requirements.

The study also has implications for policymakers and business incubators. Public programs that support SME investment should consider how owners actually make decisions. Many owners need tools that are simple, contextual, and suitable for small business realities. Decision templates, risk checklists, investment readiness assessments, and peer discussion forums can help owners reduce bias without ignoring their experiential knowledge. Business mentors can also play a role by helping owners test intuition against market data and financial projections.

This study offers a new perspective by showing that behavioral biases are not merely weaknesses in SME decision-making. In many cases, they function as adaptive responses to uncertainty, limited information, and social pressure. The main issue is not whether SME owners use bias, because all decision-makers use cognitive shortcuts. The key issue is whether these shortcuts are balanced with reflection, evidence, and critical comparison. Future research can extend this study by comparing sectors, regions, gender differences, or generational differences among Moroccan SME owners. Future studies can also combine qualitative interviews with financial data to examine how behavioral narratives relate to actual investment outcomes.

4. Conclusions

This study concludes that investment decisions among Moroccan SMEs are shaped by behavioral biases that operate through personal experience, perceived risk, social influence, and contextual business pressures. The findings show that SME owners and managers do not rely only on formal financial calculation when deciding to invest. They also use intuition, optimism, past experience, debt-related fear, competitor behavior, and family or peer advice. Optimism and intuition help owners respond quickly to market opportunities, while risk aversion and fear of debt often delay investment or reduce its scale. Anchoring to past prices and previous investment experiences also shapes how owners evaluate current opportunities. Mimicry, meanwhile, functions both as a learning strategy and as a source of reactive investment behavior. These findings contribute to behavioral finance by showing that biases in SME investment decisions are not merely individual errors, but contextual responses to uncertainty, limited information, and social responsibility.

The study offers theoretical, practical, and policy implications. Theoretically, it extends behavioral finance by highlighting how investment biases emerge through lived experience and business narratives in Moroccan SMEs. Practically, the findings suggest that SME training programs should include behavioral finance education, not only accounting, budgeting, or credit procedures. SME owners need simple tools to test assumptions, compare investment alternatives, evaluate financing risks, and separate market evidence from personal confidence or social pressure. From a policy perspective, financial institutions, business incubators, and government agencies should design support programs that address both technical and psychological barriers to investment. Future research can deepen this topic by comparing sectors, regions, gender, and generational differences among SME owners. Further studies may also combine qualitative interviews with financial performance data to examine how behavioral patterns relate to actual investment outcomes.

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