Impact of Behavioral Biases on Financial Performance of SMEs and the Moderating Role of Financial Literacy; Evidence of Afghanistan

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Abstract
This study examines the effect of behavioral biases and the moderating effect of financial literacy on financial performance of SMEs in Afghanistan. This study adopted quantitative research design and primary data were collected from 300 SMEs in three provinces of Afghanistan namely Nangarhar, Helmand and Khost through structured questionnaire. The study employed exploratory factor analysis (EFA), correlation analysis, multiple regression and hierarchical regression to establish the effect of biases on the financial performance of SMEs. The study results indicated that overconfidence bias has a significant positive relationship with the financial performance of SMEs while the anchoring effect bias, herding behavior bias and the loss aversion has a significant negative relationship with the financial performance of SMEs. Among these, loss aversion was most strongly related to financial performance. The regression result also suggested that financial literacy has a significant impact in reducing the relationship between behavioral biases and financial performance. That is, it reduces the negative impact of behavioral biases. This study is one of the first to apply the concepts of behavioral finance to a fragile post-conflict setting and offers some suggestions for policy makers, financial institutions and business owners to improve the performance of SMEs by enhancing the financial literacy and awareness of their stakeholders.

Keywords: Behavioral biases, financial literacy, financial performance, SMEs, Afghanistan

Introduction

What can be the reason some entrepreneurs are financially successful and some others are not? Researchers believe the answer involves not only economic considerations but also what economists call "behavioral biases" that affect financial decision-making. Financial decisions are often assumed to be rational, but as many studies have shown, certain cognitive and emotional biases systematically affect how entrepreneurs manage their resources, assess risks, and ultimately succeed or fail financially.

However, the literature on behavioural finance shows that decision-makers systematically deviate from rational decision-making (Karki, Bhatia, & Sharma, 2024). These deviations affect how entrepreneurs estimate risk, allocate capital, read market signals, and make strategic financial decisions. The changing economic order, marked by severe uncertainty and volatility, has become a critical reason for scholars, investors, policymakers and entrepreneurs to understand the behavioural foundations of entrepreneurial finance (Esubalew, 2024).

Behavioural biases are particularly important in SMEs, because, according to research by Alrohaeem et al. (2026) and Quas et al. (2024), entrepreneurs, investors, and professionals rely mostly on intuition and heuristic judgment rather than on financial analysis, and they often ignore these biases in making investment decisions. In the same way, one of the most powerful biases, overconfidence, has been linked to excessive risk-taking, cash-flow overconfidence, and errors in capital budgeting decisions (Karki, Bhatia, & Sharma, 2024; Diaz-Pincheira and Acosta-Antognoni, 2025). Investors and entrepreneurs rely too much on the first financial information or prior assumptions due to anchoring bias. Consequently, the loss and market ambiguity are systematically underestimated by the optimism bias (Esubalew, 2024). Market risk and volatility are also underpriced. Herding behaviour can have the crucial effect of compelling entrepreneurs and investors to follow market trends without proper assessment. It usually occurs in situations of ambiguity and information asymmetry.

Recent studies increasingly focus on the behavioural aspects of SMEs financing and the governance of entrepreneurial organisations (Mukherjee et al., 2024; Firmansyah, Masri, & Anshari, 2024). Funding decisions for entrepreneurial projects often differ due to the representativeness heuristic used by investors, emotional first impressions and the evaluation of founder credibility by policymakers (Raney, 2024; Giuggioli, Pellegrini, & Giannone, 2024). Moreover, firm-level variations in entrepreneurs' and venture capitalists' behavioural biases affect negotiations, monitoring and investment growth strategies (Deb, Sreekumar, Sen, & Duru, 2024). Also, risk aversion bias under ambiguity and ambiguity are hot topics of study in entrepreneurship.

Researchers have explicitly called for investigations related to investment decisions in fragile states (Boussard et al., 2024; Partaw & Demerew, 2024), given that pressures from behavioural biases, psychological stress, survival heuristics, and 'mistrust of institutions' are likely to be more acute and more consequential in fragile states as compared to stable economies. Financial literacy and behavioural awareness among SME owners and start-up entrepreneurs are still quite low (Choowan, Daovisan & Suwawong, 2024).

Most of the behavioural finance studies have focused on stock market investors, large companies, or high-income countries so far. The main goal of this study is to know the impact of behavioral biases on the financial performance of SMEs in Afghanistan, and to understand the moderating role of financial literacy in this relationship, through empirical research and statistical procedure. Particularly, the study seeks to examine whether emotional and cognitive biases such Herding behavior, Anchoring, overconfidence, and Loss aversion influence the financial performance of SMEs in Afghanistan or not?

This study extends behavioural finance beyond its traditional focus on developed economies by testing the impact of behavioural biases on the financial performance of SMEs in a fragile, post-conflict environment. Furthermore, the study develops an integrated framework that simultaneously addresses multiple behavioural biases, overconfidence, herding behaviour, loss aversion and anchoring bias to describe variations in the financial performance of small and medium enterprises. Finally, the study provides practical insights for practitioners, including entrepreneurs, business support organizations, financial institutions, and policymakers, who want to enhance financial performance that makes post-conflict and low-income economies sustainable. Using real data from Afghan SMEs, the study employs a quantitative analytical approach to provide an evidence-based assessment of how behavioural biases affect the financial performance of SMEs amid uncertainty, resource constraints and institutional weaknesses.

Literature Review

The research on behavioural finance in emerging economies reveals that cognitive and emotional biases systematically affect investment choices and may undermine company performance, particularly in settings with low levels of financial literacy, information, and institutional strength. Although no study specifically addresses Afghanistan, findings from South Asia and other developing markets provide a useful conceptual and empirical framework that can be adapted to Afghan SMEs status. Going a few steps back and tracing the origins of these biases will connect us with the earliest scholars who first articulated them. Kahneman & Tversky (1979) developed prospect theory, which demonstrated that people think about outcomes related to a reference point, are more affected by losses than by equivalent gains, and distort their probability judgments. This theory eventually became the focus of behavioural economics and financial decision-making. In the same way, Shiller (2000) highlighted the role of narratives and social-psychological effects in market behaviour. These studies, combined, laid the foundation for psychological biases to be treated as systematic factors that drive financial behaviour rather than random errors.

Behavioural biases are divided into two categories, cognitive biases and emotional biases (Pompain, 2006), and both of these categories may affect easily the result of making financial decisions in the context of SMEs (Ahmad & Wu, 2024). For instance, research has shown that SME owners, particularly those with lower financial literacy, neglect the general roles of capital budgeting and rely on intuitive methods to evaluate investment choices (Scott et al., 1972; Lozaridies, 2004). It shows the vast role of behavioural biases, such as overconfidence, in financial decision-making. Another study showed that overconfident managers in SMEs, make decisions based on far less information than their risk-averse counterparts (Ayad, 2024; Camerer & Lovallo, 1999). Loss aversion is a central proposition of prospect theory developed by Daniel Kahneman and Amos Tversky in 1979. It significantly influences the financial decisions of SMEs. Emotional responses associated with financial risk lead to irrational decision-making (Loewenstein et al., 2001). Herding behaviour is another behavioural bias, more visible in emerging markets, which are characterised by information asymmetry and market volatility (Bikhchandani et al., 1992). This bias is examined by Ayad et al. (2024), who found that herding behaviour is more pronounced in managers' borrowing decisions in the SME context. Anchoring means relying more on a primary piece of information or reference point when making financial judgments and often leads to irrational investment decisions (Tversky & Kahneman, 1974). Moreover, optimism bias has been identified as an important behavioural bias that influences the financial performance of SMEs. Multiple research studies have shown that optimistic SME owners tend to have greater borrowing and investment due to their willingness to seek higher returns (Landier and Thesmar, 2009). Likewise, Hmieleski & Baron (2009) argued that optimism may stimulate business growth and financing opportunities, but excessive optimism could also make companies more financially vulnerable through wrongful expectations of market performance and their ability to repay. Moreover, Gudmundsson and Lechner (2013) found that cognitive biases such as optimism and overconfidence can negatively affect entrepreneurial survival and the long-term performance of the business when owners ignore warning signals and underestimate risks. Thus, relying vastly on behavioural biases and cognitive shortcuts may create systematic errors in the process

of decision-making that may significantly affect the financial performance of SMEs.

While there has been growing interest in behavioural finance in the academic literature, most empirical research has been conducted in the context of stock markets, formal financial markets, and developed economies. Few studies have investigated the impact of behavioural biases on SMEs in fragile and post-conflict economies, particularly in entrepreneurial environments such as Afghanistan, so far. Therefore, the primary objective of this paper is to examine the impact of psychological biases such as herding behaviour, anchoring bias, loss aversion, and overconfidence on the financial performance of SMEs in Afghanistan. This research gap is evident in SMEs' struggles with high levels of political instability, financial uncertainty, and limited institutional support. Since SMEs play a crucial role in job creation and economic development, few empirical studies have examined how psychological biases influence SMEs' financial performance in Afghanistan. Therefore, a causal study of behavioural biases, and their effect on financial performance of SMEs with the controlling role of financial literacy is a critical issue to be investigated from both theoretical and practical perspectives in Afghanistan.

Theoretical and Conceptual Framework

The theoretical model of this study is grounded in prospect theory and the broader literature of behavioural finance, which argues that financial decision-makers are not always rational, especially when they are uncertain, risk-averse, and information is limited. The framework suggests that behavioural biases such as overconfidence, anchoring bias, herding behaviour, and loss aversion play a key role in the financial performance of SMEs in Afghanistan. These behavioural biases influence risk perception, opportunity assessments, market interpretation and the allocation of financial resources by entrepreneurs and investors. The model also suggests that financial literacy moderates the relationship between behavioural biases and financial performance, indicating that lower levels of financial literacy may ultimately impact the financial performance, growth, sustainability, and financial stability of SMEs. The proposed conceptual model thus generates a comprehensive understanding of how cognitive and emotional biases influence the financial performance of SMEs in Afghanistan.

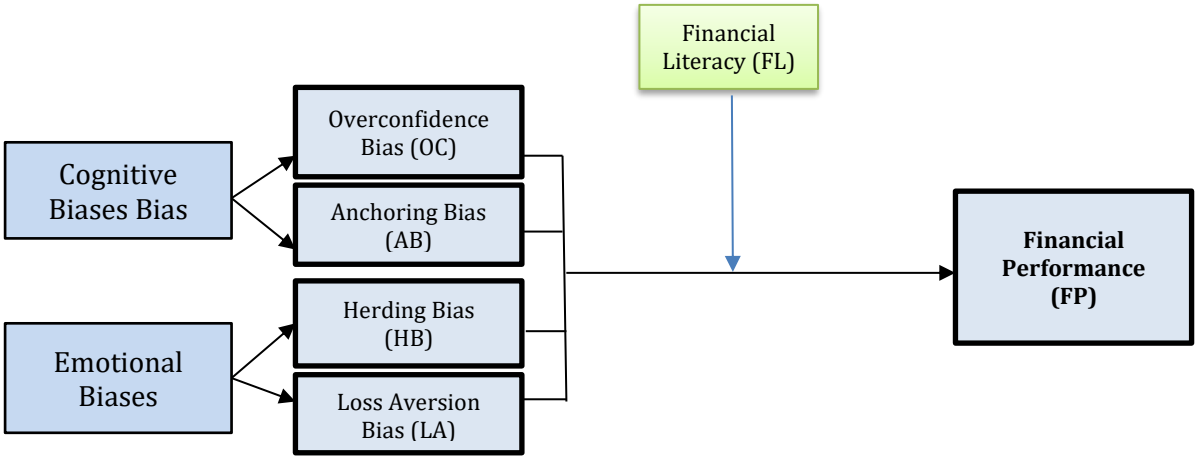

Figure 1: Conceptual Framework

Objectives:

To the influence of behavioural biases on the investment decisions and financial performance of SMEs in Afghanistan. However, the more specific objectives of the study are as follows:

1-To examine the effect of behavioural biases on the financial performance of SMEs in Afghanistan.

2-To investigate the moderating role of financial literacy in the relationship between behavioural biases and financial performance of SMEs in Afghanistan.

Hypothesis of the Study

According to the objectives and research framework, the study developed the following hypotheses to examine the relationship between behavioral biases and financial literacy with the controlling role of financial literacy of SMEs in Afghanistan.

Hypothesis number one argues that; Behavioral biases significantly influence the financial performance of SMEs in Afghanistan, is subdivided into:

H1a- Overconfidence bias significantly influences the financial performance of SMEs in Afghanistan.

H1b- Anchoring bias significantly influences the financial performance of SMEs in Afghanistan.

H1c- Herding behavior significantly influences the financial performance of SMEs in Afghanistan.

H1d- Loss aversion significantly influences the financial performance of SMEs in Afghanistan.

Hypothesis2: Financial literacy significantly moderates the relationship between behavioral biases and financial performance among SMEs in Afghanistan.

Research Methodology

Population and Sample:
The target population for the study, which used a purposive sampling method, consisted only of SME owners and employees involved in financial decision-making from three provinces of Afghanistan, and the data were also collected from SMEs operating in Nangarhar, Helmand, and Khost provinces. A total of 300 respondent's data were collected and used for the final analysis. The study adopted a quantitative research approach, using a Likert-scale questionnaire design, to examine the impact of behavioural biases on the financial performance of small and medium-sized enterprises in Afghanistan and to analyse the moderating role of financial literacy. The study used a purposive sampling technique because it specifically considered SME owners and employees with experience in business operations, financial decisions, and organizational performance.
This study used primary as well as secondary data sources, where Primary data were collected through a structured questionnaire from SME owners and employees from three provinces and Secondary data were collected from academic journal articles, books, conference papers, reports, and other related behavioural finance, financial literacy, and SME financial performance books. The Primary data were collected using a structured questionnaire comprising four sections: demographic information, behavioural biases, financial literacy, and financial performance.

Method of Analysis:
The data were analyzed using SPSS software. Several statistical techniques were adopted to achieve the study objectives and test the proposed hypotheses, including:

- Reliability Analysis (Cronbach's Alpha)
- Exploratory Factor Analysis (EFA)
- Correlation Analysis
- ANOVA
- Multiple Regression Analysis
- Hierarchical Regression Analysis for testing the moderating role of Financial Literacy

Conceptualization of Research Variables:
To achieve objective 1 "Influence of Behavioral biases on financial performance of SMEs", the research concentrated on four biases. To measure the impact of these biases, a structured 5-item Likert-scale questionnaire was distributed to SMEs owners in 3 major provinces (Helmand, Khost & Nangarhar) of Afghanistan.

Table 1: Item scale of variables

		Item's Code	Items Description	Cronbach's α	Adopted from studies of
Overconfidence	1	OC1	I am confident in making business decisions even under uncertain financial conditions.	0.81	Hmieleski and Baron (2009); & Pompian (2006)
	2	OC2	I believe I can make better investment decisions than most other business owners.		
	3	OC3	I believe my business judgments are generally accurate.		
	4	OC4	I rely more on my own financial judgment than on external advice.		
Anchoring	1	AB1	Initial financial information strongly influences my business decisions.	0.79	Tversky and Kahneman (1974); Pompian (2006)
	2	AB2	I tend to base new financial decisions on initial market estimates.		
	3	AB3	I often rely on past financial performance when evaluating new opportunities.		
	4	AB4	Earlier expectations influence my current investment decisions.		
Herding	1	HB1	Initial financial information strongly influences my business decisions.	0.83	Bikhchandani, Hirshleifer, and Welch (1992); Luong and Ha (2011)
	2	HB2	I tend to base new financial decisions on initial market estimates.		
	3	HB3	I often rely on past financial performance when evaluating new opportunities.		
	4	HB4	Earlier expectations influence my current investment decisions.		
Loss Aversion	1	LA1	Fear of financial loss affects my investment decisions.	0.86	Kahneman and Tversky (1979); Pompian (2006)
	2	LA2	I prefer safer investment opportunities over risky alternatives.		
	3	LA3	Potential losses influence my decisions more than potential gains.		
	4	LA4	I avoid financial decisions that may result in business losses.		
Financial Literacy	1	FL1	I understand the basic concepts of financial management	0.88	Lusardi and Mitchell (2011, 2014); OECD (2018/2020)
	2	FL2	I regularly use financial information when making business decisions		
	3	FL3	I am able to interpret the financial performance of my business		

	4	FL4	My financial knowledge helps me evaluate investment opportunities effectively.		
	5	FL5	I understand the financial risks associated with business investments.		
Financial Performance	1	FP1	My business has achieved steady growth in profitability	0.90	Venkatraman and Ramanujam (1986), Dess and Robinson (1984)
	2	FP2	The financial performance of my SME has improved over recent years		
	3	FP3	My business performs competitively compared to other firms in the industry		
	4	FP4	The sales revenue of my business has increased consistently		
	5	FP5	The overall financial stability of my business is satisfactory		

Data Analysis

Table 2 shows the results of the reliability analysis conducted to analyze the internal consistency of the research instrument. The questionnaire was distributed to 300 SME owners and managers, and all responses were found to be valid for analysis. The instrument consisted of 25 items measuring behavioral biases and financial performance. The overall Cronbach's Alpha coefficient value was 0.887, means a Cronbach's Alpha value above 0.80 indicates excellent reliability. So, the measurement instrument indicates strong internal consistency and reliability, confirming its suitability for subsequent statistical analyses, including correlation analysis, EFA (exploratory factor analysis), and multiple regression analysis.

Table 2: Reliability analysis

Component	Value	Interpretation
Total Respondents	300	Adequate sample size
Valid Responses	300	No missing responses
Number of Items	26	Covers all study constructs

Source: Primary data

The correlation analysis in Table 3 indicates a statistically significant positive relationship between Overconfidence Bias and Financial Performance ($r = .294$, $p < .01$), showing that higher levels of managerial confidence are associated with improved financial outcomes. Conversely, Anchoring Bias ($r = -.438$, $p < .01$), Herding Behavior ($r = -.512$, $p < .01$), and Loss Aversion ($r = -.603$, $p < .01$) present a significant negative relationship with Financial Performance. Among these variables, Loss Aversion shows the strongest negative association, suggesting that excessive concern about potential losses may substantially hinder business performance. The findings provide preliminary support for the proposed relationships and justify proceeding with factor and regression analyses.

Table 3: Correlation Analysis

Variables	Mean	SD	OCB	AB	HB	LA	FP
Overconfidence Bias (OCB)	3.84	0.71	1				
Anchoring Bias (AB)	3.57	0.75	.421	1			
Herding Behavior (HB)	3.63	0.68	.398	.446	1		
Loss Aversion (LA)	3.72	0.73	.352	.391	.417	1	
Financial Performance (FP)	3.29	0.77	.294	-.438	-.512	-.603	1

Source: Primary data

Exploratory Factor Analysis (EFA)

Table 4 indicates that Kaiser-Meyer-Olkin measure of sampling adequacy is 0.874, mean more than the recommended standard value of 0.60, showing that the sample was adequate for factor analysis. Furthermore, Bartlett's Test of Sphericity was statistically significant ($\chi^2 = 2864.517$, $p < 0.001$), confirming the existence of sufficient correlations among the variables. Therefore, the dataset was considered appropriate for Exploratory Factor Analysis (EFA).

Table 4: KMO and Bartlett's Test

Test	Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.874
Bartlett's Test of Sphericity Approx. Chi-Square	2864.517

df	300
Sig.	0.000

Source: Primary data Outcome

From the data, only five components recorded as the eigenvalues greater than 1.0 and were therefore retained according to Kaiser's criterion. As shown in Table 5, together the five factors explained 75.928% of the total variance, which exceeds the recommended limit of 60%, highlighting a strong explanatory power of the extracted factors.

Table 5: Total Variance Explained

Component	Initial Eigenvalues (Total)	Variance %	Cumulative %	Rotation Sums of Squared Loadings (Total)	Variance %	Cumulative %
1	6.814	27.256	27.256	4.632	18.528	18.528
2	4.367	17.467	44.723	4.281	17.124	35.652
3	3.281	13.124	57.847	3.842	15.368	51.020
4	2.574	10.296	68.143	3.541	14.164	65.184
5	1.946	7.785	75.928	2.686	10.744	75.928

Source: Primary data

Regression Analysis

Table 6 shows the result of multiple regression analysis, where correlation coefficient (R) of 0.781, indicating a strong relationship between the independent variables and financial performance. The R^2 is 0.610, showing that 61.0% of the variation in financial performance is explained by Overconfidence Bias, Anchoring Bias, Herding Behavior, and Loss Aversion, and the Adjusted R^2 value of 0.605 confirms the stability and explanatory power of the regression model.

Table 6: Model Summary

Model	R	R2	Adjusted R Square	Std. Error of the Estimate
1	0.781	0.610	0.605	0.41327

Source: Primary data

The ANOVA analysis in Table 7 indicates that the regression model is statistically significant at the F = 131.542, p < 0.001. This finding confirms that the independent variables collectively explain a significant ratio of the variance in financial performance. So, the regression model is considered suitable for hypothesis testing.

Table 7: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	89.864	4	22.466	131.542	0.000[b]
Residual	50.387	295	0.171		
Total	140.251	299			

Source: Primary data

Through this, the Table 8 explains regression coefficient analysis, says that only Overconfidence Bias positively affects financial performance, whereas Anchoring Bias, Herding Behavior, and Loss Aversion negatively affect the financial performance, where among them Loss Aversion emerging as the strongest predictor of SME financial performance in the above three province of Afghanistan.

Table 8: Multiple Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.118	.226		18.221	.000
Overconfidence Bias	.241	.049	.228	4.918	.000

Anchoring Bias	-.187	.046	-.176	-4.065	.000
Herding Behavior	-.314	.051	-.291	-6.157	.000
Loss Aversion	-.402	.054	-.381	-7.444	.000

Source: Primary data

To achieve the second Objective of the study which is the moderating role of financial literacy in the relationship between behavioral biases and financial performance among SMEs in Afghanistan, the study used hierarchical Regression analysis. According to Table 9, Model summary of hierarchical regression results shows that the explanatory power of the model increased after adding Financial Literacy and the interaction terms, the final model explained 72.1% of the variance in Financial Performance. The increase in R^2 shows that Financial Literacy contributes additional explanatory power beyond the direct effects of behavioral biases.

Table 9: Hierarchical Regression Model Summary (Source: Primary data)

Model	R	R2	Adjusted R2	R2 Change
Model 1 (Behavioral Biases)	.781	.610	.605	-
Model 2 (+ Financial Literacy)	.826	.682	.675	.072
Model 3 (+ Interaction Terms)	.849	.721	.713	.039

Moderated regression coefficients shows that Financial Literacy has a significant positive effect on Financial Performance with the β = .312, and significant (p < .001). Also, all interaction terms are statistically significant, confirming that Financial Literacy controls the relationship between behavioral biases and Financial Performance. Therefore, H2 is accepted.

Table 10: Moderation Regression Coefficients

Variables	Beta	t-value	Sig.
Overconfidence Bias	.176	3.981	.000
Anchoring Bias	-.149	-3.426	.001
Herding Behavior	-.228	-4.972	.000
Loss Aversion	-.297	-6.113	.000
Financial Literacy	.312	6.784	.000
OCB × FL	.101	2.215	.028
AB × FL	.133	2.856	.005
HB × FL	.145	3.118	.002
LA × FL	.188	3.884	.000

Source: Primary data

Table 11 shows the R^2 change statistics that the addition of Financial Literacy increased the explanatory power of the model by 7.2%, while the inclusion of interaction terms contributed an additional 3.9%. The significant F-change values which is 0.000 (p < .001) shows that these improvements are statistically significant, providing evidence of a moderating effect.

Table 11: R^2 Change Statistics

Model Comparison	ΔR^2	F Change	Sig. F Change
Model 1 → Model 2	.072	33.521	.000
Model 2 → Model 3	.039	12.846	.000

Source: Primary data

Discussion

This study analyzed the effects of behavioral biases on the financial performance of small and medium size enterprises in Nangarhar, Helmand and Khost provinces of Afghanistan and also examined the moderating role of financial literacy in the study.

The findings of the above factors revealed that only overconfidence Bias has a positive and significant effect on financial performance where its β = 0.228, and significant value (p < 0.001), this shows that SMEs who are more confident in their business and investment decisions lied to achieve better financial Results than others. Moreover, the finding suggests that confidence encourages a positive decision making and supports business growth. This finding is aligned with the studies of (Camerer & Lovallo, 1999; Hmieleski & Baron, 2009; and Ayad, 2024), which said

that businesses and the organizational performances can grow with entrepreneurial confidence.

Furthermore, anchoring Bias β = -0.176, and sig value ($p < 0.001$), Herding Behavior β = -0.291, and sig ($p < 0.001$), and Loss Aversion β = -0.381, and sig ($p < 0.001$) were found to have significant but negative effects on financial performance of SMEs. It says that, a negative coefficient of Anchoring Bias shows that excessive reliance on initial information may reduce decision quality. Thus, SMEs who rely their decisions more on outdated information, will affect their performances and may not be able to respond effectively to the market volatility. This outcome supports the systematic error theory of Kahneman & Tversky (1974) caused by anchoring bias. Similarly, Herding Behavior also indicates a negative influence on financial performance. Because following competitors without independent evaluation may lead to poor financial decisions. In the context which is characterized by uncertainty and information asymmetry, this outcome supports the studies of (Bikhchandani et al., 1992 and Ayad et al, 2024). Among all biases, Loss Aversion emerged as the strongest factor where the β = -0.381, suggesting that fear of potential losses discourages SMEs owners from pursuing profitable opportunities and strategic investments. In Afghanistan, where SMEs and entrepreneurs might become prudent and may avoid taking of possible risks related to their businesses. This is aligned with the prospect theory of Kahneman and Tvressky presented in 1979. Moreover, the regression model explained 61.0% of the variance in financial performance ($R^2 = 0.610$), highlights those behavioral biases are the most important determinants of SME performance in Afghanistan.

In the second objective, the results confirmed that Financial Literacy significantly moderates the relationship between behavioral biases and financial performance. Financial Literacy itself positively influenced financial performance where β = 0.312, and sig value is < 0.001, indicating that financially knowledgeable SMEs owners are highly able to evaluate opportunities and make effective financial decisions. This finding aligned with the previous studies which said that financially literate SMEs owners are more able in making rational and logical financial decisions.

Similarly, the interaction terms between Financial Literacy and behavioral biases were statistically significant, shows overconfidence Bias × Financial Literacy β = 0.101, and sig value = 0.028, Anchoring Bias × Financial Literacy β = 0.133, sig value ($p = 0.005$), Herding Behavior × Financial Literacy β = 0.145, and sig value = 0.002, and Loss Aversion × Financial Literacy β= 0.188, sig value $p < 0.001$. These findings shows that Financial Literacy decrease the negative effects of Anchoring Bias, Herding Behavior, and Loss Aversion while strengthening the positive effect of overconfidence Bias on financial performance, and the explanatory power of the model increased as the R^2 value changed from $R^2 = 0.610$ to $R^2 = 0.721$ after incorporating Financial Literacy and interaction terms, this showing that Financial Literacy contributes substantially to explaining SMEs financial performance. In Summary, the findings support both Hypotheses, showed that while behavioral biases significantly affect SMEs financial performance, the presence of financial literacy helps entrepreneurs make more rational decisions and reduce the disadvantageous consequences of behavioral biases.

Conclusion

The analysis of the effect of behavioral biases on the financial performance of small and medium enterprises in Afghanistan and to investigate the moderating role of financial literacy. The outcomes provide empirical evidence that behavioral biases significantly effect SME financial performance in Afghanistan. The study also found that among all only overconfidence Bias positively affects financial performance, whereas other such as Anchoring Bias, Herding Behavior, and Loss Aversion negatively affect financial performance, whereas, Loss Aversion was identified as the most influential factor affecting SME performance. These findings suggest that psychological and behavioral factors are important determinants of business outcomes and should not be neglected while financial decision making.

Moreover, the study established that financial literacy significantly moderates the relationship between behavioral biases and financial performance of SMEs. It means SMEs owners with higher levels of financial literacy are better armed to evaluate financial information, assess risks, and make rational decisions, thereby reducing the negative impact of behavioral biases on business performance. The study concludes that improving financial literacy among business owners can contribute significantly to better financial decision making and develop business performance. The findings also extend the application of behavioral finance theory to the context of businesses operating in a developing countries like Afghanistan.

Suggestions

Based on the findings of the study, the following recommendations are suggested:

Develop Financial Literacy Among SME Owners: Government, financial institutions, NGOs and business support organizations should enhance financial literacy programs for the improving of financial insights and decision making capabilities for SME owners.

Enhance Data Driven Decision-Making: SMEs owners should be encouraged to rely on financial analysis, business planning, and market information rather than intuition or subjective judgments when making investment decisions, where it can help reduce the influence of anchoring bias and herding behavior.

Empowering Risk Assessment Practices: SMEs should adopt formal risk management and financial planning mechanisms to decrease the adverse effects

of loss aversion, proper risk evaluation can help business owners identify profitable opportunities while maintaining acceptable levels of risk.

Promote Financial Advisory Services: Government should support financial institutions and business development centers where it will provide advisory and consultancy services to SMEs, so as professional guidance can assist entrepreneurs in overcoming behavioral biases and making more informed financial decisions.

Develop Continuous Financial Training: Business owners and managers should participate regularly in workshops, seminars, and training programs related to financial management, investment evaluation, and business strategy to improve their financial decision making skills.

Future Research

From the above data research the following areas are recommended for future research:

Consider other Moderating Variables: Future research can examine the moderating or mediating role of Demographics such as Gender, entrepreneurial experience, education level, firm size, and organizational culture.

Geographical Expansion: Future studies may include SMEs from different provinces of Afghanistan or conduct nationwide studies to improve the generalizability of the findings.

Additional Behavioral Biases: Future studies may investigate other behavioral biases, such as optimism bias, mental accounting, representativeness bias, and confirmation bias.

Cross-Country Comparisons: Comparative studies between Afghanistan and other developing economies can provide broader evidence regarding the impact of behavioral biases on SME financial performance.

Future studies can examine the influence of behavioral biases on different types of businesses, such as new start-ups and large companies, to determine how these biases affect their financial performance.

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