JOURNAL FOR SOCIAL SCIENCE STUDIES
An International Peer-Reviewed Open Access Journal

ISSN (Online): 3006-2071 | ISSN (Print): 3006-2063
Volume 4 • Issue 6 • October 2026

THE ROLE OF FINANCIAL DECISION-MAKING EFFICIENCY IN SME GROWTH AND BUSINESS SUSTAINABILITY IN PAKISTAN

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DOI: https://doi.org/10.5281/zenodo.23760771

Keywords
Financial Decision-Making Efficiency, SME Growth, Business Sustainability, Financial Literacy, PLS-SEM, Pakistan

Article History
Received: *25 June 2026*
Accepted: *16 September 2026*
Published: *29 October 2026*

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Abstract
This study investigates the role of financial decision-making efficiency in SME growth and business sustainability in Pakistan. Although small and medium enterprises (SMEs) contribute to economic development, their performance and long-term viability may depend partly on the effectiveness of their financial management practices. Using a quantitative, cross-sectional survey design, primary data were collected from 320 SME owners and managers operating in the manufacturing, services, and trading sectors in Lahore, Karachi, and Islamabad. Data were analyzed using SPSS and SmartPLS through descriptive statistics, reliability analysis, correlation analysis, and partial least squares structural equation modeling (PLS-SEM). Financial decision-making efficiency was conceptualized through three dimensions: budgeting efficiency, investment appraisal, and working capital management. The findings indicate that financial decision-making efficiency is positively and significantly associated with SME growth ($\beta = 0.487$, $p < 0.001$) and business sustainability ($\beta = 0.523$, $p < 0.001$). Financial literacy also positively moderates both relationships, suggesting that financial knowledge strengthens the association between efficient financial decision-making and business outcomes. The study highlights the importance of effective financial management practices and financial literacy for SME development and provides relevant insights for SME managers and policymakers seeking to strengthen financial capabilities and support sustainable business performance in Pakistan.

1. INTRODUCTION
Small and medium enterprises (SMEs) contribute to economic development through employment creation, entrepreneurship, innovation, and business activity. However, their ability to grow and remain viable depends not only on access to financial resources but also on how effectively those resources are managed

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(Beck & Demirgüç-Kunt, 2006). In Pakistan, the Small and Medium Enterprises Development Authority (SMEDA, n.d.) identifies access to affordable, long-term finance as an important barrier to SME development. Its support initiatives also emphasize financial literacy, accounting practices, and financial management, highlighting the importance of both financial resources and managerial capabilities. Therefore, financial decision-making efficiency represents an important area of investigation for understanding SME growth and business sustainability (Ajzen, 1991; Anwar et al., 2020; Barney, 1991).

Financial decision-making efficiency (FDE) is conceptualized in this study as the ability of SME owners and managers to make timely, informed, and economically sound decisions concerning the allocation and management of financial resources. It involves more than reducing expenditure or accelerating decisions; rather, it concerns making appropriate financial choices that support operational requirements and longer-term business objectives (Berger & Udell, 1998; Brigham & Houston, 2019). This study examines FDE through three dimensions: budgeting efficiency, investment appraisal, and working capital management. Together, these dimensions represent financial planning, investment evaluation, and the management of day-to-day financial operations. Their practical relevance is reflected in SMEDA's provision of financial calculators, accounting software, and financial models intended to support budgeting, performance assessment, liquidity analysis, and informed business decisions (SMEDA, n.d.; Cronbach, 1951; Deloof, 2003).

Budgeting efficiency concerns the preparation, allocation, and monitoring of financial resources in accordance with business priorities. Effective budgeting can help owners and managers plan expenditures, monitor financial performance, and identify potential resource constraints. Investment appraisal involves evaluating potential investments before committing financial resources, including consideration of expected returns, costs, and financial risks (Fornell & Larcker, 1981; Hair et al., 2022; Mahmood-ul-Hasan et al., 2025). Working capital management concerns the coordination of cash, inventory, receivables, and payables to support daily operations and maintain liquidity. These three dimensions form the basis of the multidimensional FDE construct examined in this study. Rather than assuming that individual financial practices automatically produce better outcomes, the study investigates whether FDE is positively associated with SME growth and business sustainability.

SME growth is an important indicator of enterprise development and may be reflected in improvements in business activity, operational capacity, and organizational development. Nevertheless, growth does not necessarily guarantee long-term business continuity. Expansion can increase working capital requirements, investment demands, and exposure to financial risks. Business sustainability is therefore considered a distinct outcome, focusing primarily on the continued financial and operational viability of an enterprise. Examining both outcomes enables this study to investigate whether efficient financial decision-making is associated with business development as well as the capacity to maintain operations over time (Hair et al., 2019; Henseler et al., 2015).

Financial literacy is another important consideration in SME financial management. It concerns the knowledge and understanding required to interpret financial information and apply financial concepts when making decisions. Financial literacy may influence how effectively owners and managers use budgeting information, evaluate investment opportunities, and manage working capital. M. V. et al. (2024), in their study of SMEs in the expanded BRICS context, discuss the relevance of financial literacy and financial access to sustainable economic development. Although findings from that context cannot automatically be generalized to Pakistan, they provide a comparative basis for considering financial knowledge as a potentially important capability in SME management. Similarly, SMEDA's financial literacy training and advisory services reflect institutional recognition of the practical importance of strengthening the financial understanding of

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business owners and managers (SMEDA, n.d; Henseler et al., 2009; Klapper et al., 2013).

In the present study, financial literacy is treated as a **moderator** of the relationships between FDE and the two business outcomes, rather than as a substitute for FDE itself. FDE concerns the efficiency with which financial decisions are made, whereas financial literacy concerns the knowledge that supports the interpretation and application of financial information. These concepts are related but distinct. The proposed framework therefore examines whether financial literacy changes the strength of the association between FDE and SME growth and between FDE and business sustainability (Kline, 2016). This approach recognizes that the relationship between financial practices and business outcomes may differ according to the financial knowledge of the individuals responsible for making those decisions.

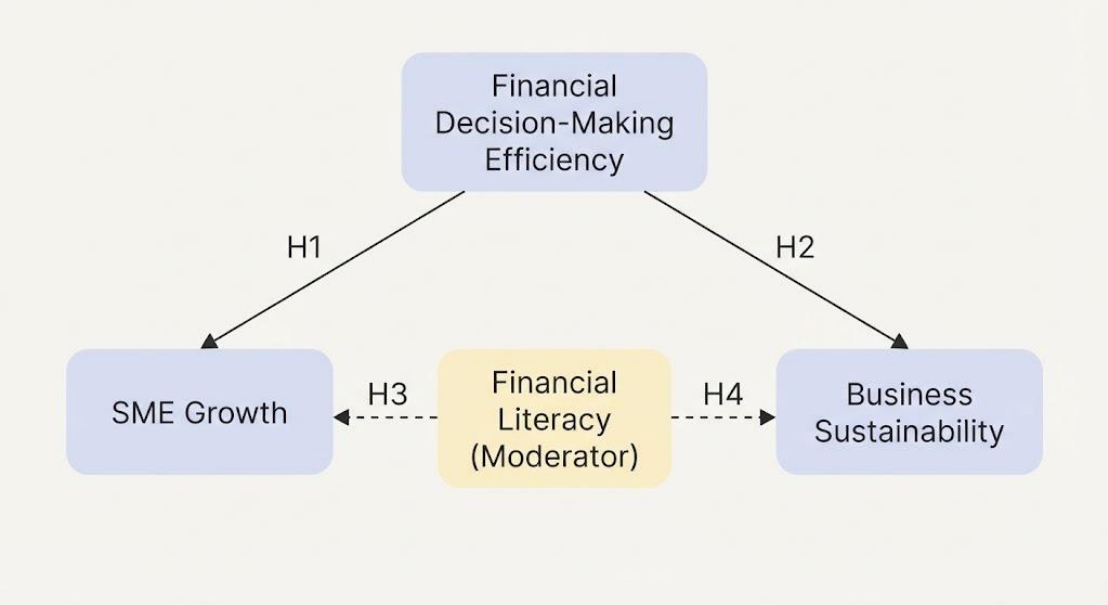


Figure 1. Conceptual Framework Showing the Relationship Between Financial Decision-Making Efficiency, SME Growth, and Business Sustainability, with Financial Literacy as a Moderator.

Despite the practical importance of financial management for SMEs, understanding how financial decision-making efficiency relates to different business outcomes remains relevant to the Pakistani context. In particular, examining budgeting efficiency, investment appraisal, and working capital management within a single FDE construct provides an integrated perspective on financial decision-making (Lusardi & Mitchell, 2014). Distinguishing SME growth from business sustainability further allows the analysis to consider two related but non-identical outcomes. In addition, incorporating financial literacy as a moderator makes it possible to examine whether financial knowledge changes the strength of these relationships (Lusardi & Mitchell, 2023). Accordingly, this study addresses these issues by examining the relationships among FDE, SME growth, business sustainability, and financial literacy among SMEs in selected Pakistani cities.

The study uses a quantitative, cross-sectional research design and data collected through a structured questionnaire from 320 SME owners and managers in Lahore, Karachi, and Islamabad. The sample covers manufacturing, services, and trading enterprises. Data analysis is conducted using SPSS and SmartPLS, with descriptive and preliminary statistical analyses

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undertaken alongside partial least squares structural equation modeling (PLS-SEM) to assess the measurement and structural models and the proposed moderation relationships. Because the data are cross-sectional, the findings are interpreted as statistical relationships rather than definitive evidence of causation (Nunnally & Bernstein, 1994).

1.1. Research Objectives

The main objective of this study is to examine the role of financial decision-making efficiency in SME growth and business sustainability in Pakistan.

The specific objectives are:

1. To examine financial decision-making efficiency as a multidimensional construct comprising budgeting efficiency, investment appraisal, and working capital management.
2. To examine the relationship between financial decision-making efficiency and SME growth.
3. To investigate the relationship between financial decision-making efficiency and business sustainability.
4. To assess the moderating role of financial literacy in the relationship between financial decision-making efficiency and SME growth.
5. To assess the moderating role of financial literacy in the relationship between financial decision-making efficiency and business sustainability.

1.2. Research Questions

The study addresses the following research questions:

1. How is financial decision-making efficiency associated with SME growth in Pakistan?
2. How is financial decision-making efficiency associated with business sustainability in Pakistan?
3. Does financial literacy moderate the relationship between financial decision-making efficiency and SME growth?
4. Does financial literacy moderate the relationship between financial decision-making efficiency and business sustainability?

1.3. Research Hypotheses

Based on the study's conceptual framework, the following hypotheses are proposed:

H1: Financial decision-making efficiency is positively associated with SME growth.

H2: Financial decision-making efficiency is positively associated with business sustainability.

H3: Financial literacy moderates the relationship between financial decision-making efficiency and SME growth.

H4: Financial literacy moderates the relationship between financial decision-making efficiency and business sustainability.

1.4. Contribution and Scope of the Study

This study contributes to the understanding of SME financial management by examining financial decision-making efficiency as a multidimensional construct comprising budgeting efficiency, investment appraisal, and working capital management. It distinguishes SME growth from business sustainability and incorporates financial literacy as a moderator of both relationships. This integrated framework provides a basis for examining not only whether FDE is associated with business outcomes but also whether financial literacy changes the strength of those associations.

The empirical scope covers 320 SME owners and managers from manufacturing, services, and trading enterprises in Lahore, Karachi, and Islamabad, Pakistan. The study employs a structured questionnaire using a five-point Likert scale. SPSS is used for data screening, descriptive statistics, and preliminary analyses, while SmartPLS is used to evaluate the measurement and structural models through PLS-SEM. The analysis includes assessment of reliability and validity, direct relationships between FDE and the two business outcomes, and the moderating effects of financial literacy (Organisation for Economic Co-operation and Development [OECD], 2020); later: (OECD, 2020).

The study's cross-sectional design limits the extent to which causal conclusions can be drawn, and its geographical and sectoral coverage defines the context within which the findings should be interpreted. Within these boundaries, the findings may inform discussions of financial capability development, managerial financial practices, and SME support initiatives in Pakistan.

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2. RESEARCH METHODOLOGY

This chapter presents the methodological framework used to examine financial decision-making efficiency, SME growth, and business sustainability in Pakistan, including the moderating role of financial literacy. Details not established by the material supplied such as the precise sampling procedure, questionnaire sources, data-collection dates, and ethical approval are identified as items requiring confirmation rather than described as completed procedures.

2.1. Research Approach and Design

The study adopts a quantitative approach to examine the relationships between financial decision-making efficiency, SME growth, and business sustainability, together with the moderating role of financial literacy. The constructs are operationalized through questionnaire indicators and evaluated using statistical analysis.

A cross-sectional survey design is used, with information collected from SME owners and managers at one period of observation (Podsakoff et al., 2003). This design permits examination of differences in financial practices and reported business outcomes across participating enterprises. It does not establish the temporal sequence between financial decision-making and subsequent business performance; findings are therefore interpreted as statistical associations rather than conclusive evidence of causation.

The study follows a deductive analytical structure. Financial decision-making efficiency is the principal predictor, SME growth and business sustainability are the outcomes, and financial literacy is the proposed moderator.

2.2. Study Setting and Target Population

The geographical scope comprises Lahore, Karachi, and Islamabad. The target population consists of SME owners and managers operating in manufacturing, services, and trading.

Respondents are intended to have sufficient knowledge of their enterprise's financial practices to answer questions about budgeting, investment decisions, working capital, and business outcomes. The SME is the unit of analysis, while the owner or manager is the reporting respondent (Small and Medium Enterprises Development Authority [SMEDA], n.d.)

The final study record should specify the SME classification criteria used during recruitment and confirm whether each questionnaire represents a separate enterprise. If more than one respondent represents the same business, responses should not automatically be treated as independent enterprise-level observations.

2.3. Sample Size and Sampling Procedure

The study sample comprises 320 SME owners and managers, as reported in the study abstract. Respondents are drawn from the three selected cities and the manufacturing, services, and trading sectors.

The exact sampling technique is not specified in the supplied material. It should therefore be named only after checking the recruitment records (Wiklund & Shepherd, 2005). The final account should document the source of the sampling frame, eligibility criteria, participant-selection or approach procedure, city- and sector-level distribution, and the numbers of questionnaires distributed, returned, excluded, and retained.

The manuscript should clarify whether 320 is the number of questionnaires collected or the final usable sample after screening. A response rate cannot be calculated without the number of eligible enterprises invited. Sample adequacy should be justified in relation to the specified structural model and an appropriate statistical power assessment, rather than from sample size alone.

2.4. Research Instrument

Primary data were collected using a structured questionnaire with a five-point Likert response format. For agreement-based items, the coding is as follows:

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Table 2.1. Five-Point Likert Response Coding

Response category	Score
Strongly disagree	1
Disagree	2
Neutral	3
Agree	4
Strongly agree	5

The questionnaire covers respondent and enterprise characteristics and the study constructs. Background information may include respondent position, business sector, city, enterprise age, and business size, but only variables actually included in the administered questionnaire should be reported.

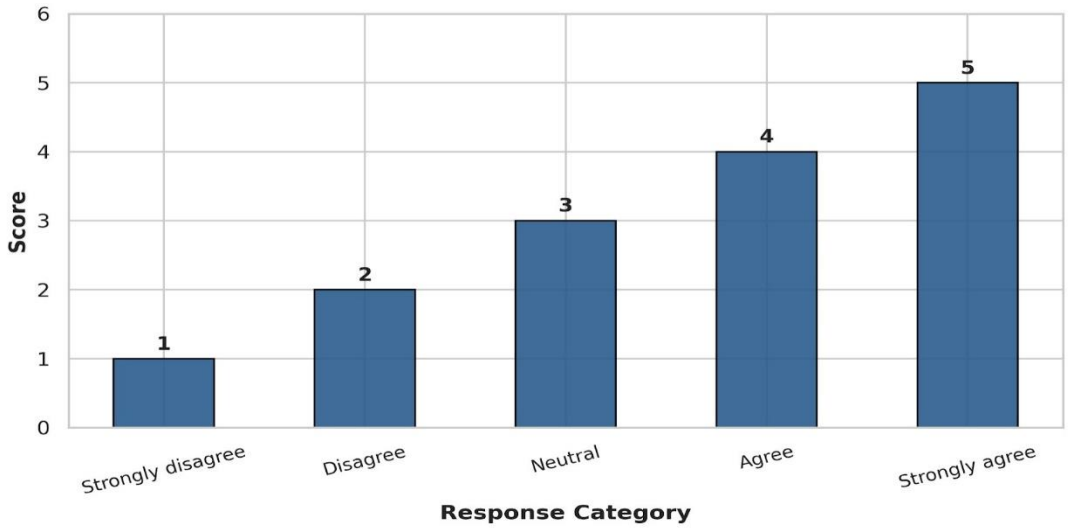


Figure 2: Likert Scale Scoring System showing numerical values assigned to response categories ranging from Strongly Disagree (1) to Strongly Agree (5).

The main constructs are financial decision-making efficiency, SME growth, business sustainability, and financial literacy (Ali et al., 2025; World Bank, n.d.). The final manuscript should identify published sources for any adapted scales and describe modifications made for the Pakistani SME context. Those sources were not provided in the supplied text, so the scale origins cannot yet be verified.

2.5. Operationalization of Variables

2.5.1. Financial Decision-Making Efficiency

Financial decision-making efficiency refers to an enterprise's capacity to make timely, informed, and resource-conscious financial decisions. It comprises three dimensions: (a) budgeting efficiency, covering financial planning, resource allocation, and budget monitoring; (b) investment appraisal, covering evaluation of proposed investments before financial commitments; and (c) working capital management, covering short-term financial resources and obligations (Ahangar, 2021).

In the model described in Chapter 3, these dimensions contribute to a higher-order financial decision-making efficiency construct. The final manuscript should ensure that this higher-order specification matches the model actually estimated in SmartPLS and explain whether the dimensions are treated as

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formative/composite components or reflective dimensions.

2.5.2. SME Growth

SME growth refers to improvement in enterprise activity or scale. Depending on the administered questionnaire, indicators may cover sales, customers, employment, or business expansion (Kumar et al., 2026). The instrument should specify a common reference period. If respondents reported perceptions rather than verified financial records, the construct should be described as perceived SME growth.

2.5.3. Business Sustainability

Business sustainability refers primarily to the enterprise's capacity to maintain financially and operationally viable activities over time. Indicators should distinguish continuity and resilience from immediate expansion. Environmental or social sustainability should not be claimed unless those dimensions were explicitly measured. Growth and sustainability indicators should remain conceptually distinct.

2.5.4. Financial Literacy

Financial literacy represents the financial knowledge and understanding available to the owner or manager (Manoj Kumar et al., 2024). The final manuscript should clarify whether the questionnaire measures perceived financial literacy or objectively assessed knowledge. Self-reported agreement with statements about financial understanding should not automatically be described as an objective knowledge test.

2.6. Instrument Review and Data Collection

The study should document how questionnaire clarity and relevance were assessed. Expert review, pilot testing, translation, and back-translation should be reported only if these procedures actually occurred (Jabed, 2024). The data-collection account should specify the administration mode, collection period, language, recruitment procedure, and participation arrangements, including whether respondents completed the questionnaire independently or with researcher assistance. These details remain to be confirmed from the study records.

2.7. Data Preparation and Preliminary Analysis

SPSS was used for data coding, screening, descriptive statistics, and correlation analysis, while SmartPLS was used for partial least squares structural equation modeling, as stated in the study description.

Before analysis, the dataset should be checked for missing responses, duplicate records, out-of-range values, inconsistent coding, and potentially invalid response patterns. Any exclusions or missing-data treatments should be explained and quantified. Unusual observations should be investigated rather than deleted solely because they differ from the rest of the sample (Saeed et al., 2025).

Frequencies and percentages summarize categorical characteristics, while means and standard deviations summarize scale scores. Correlations provide preliminary evidence of association but do not replace structural model analysis.

2.8. Measurement Model Assessment

The study uses partial least squares structural equation modeling in SmartPLS. Its suitability should be justified in relation to the study's analytical and predictive objectives and the specification of the constructs, rather than by software availability alone.

For reflectively specified first-order constructs, measurement assessment includes indicator loadings, internal consistency reliability, composite reliability and, where appropriate, rho_A, average variance extracted for convergent validity, and discriminant validity using the heterotrait–monotrait ratio (HTMT) and relevant bootstrap confidence intervals. If a construct is specified formatively, its assessment should follow the requirements of that specification rather than automatically applying reflective reliability criteria. Indicator retention

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or removal should be explained (Ali et al., 2025; Jabed et al., 2026).

The reported measurement statistics in Chapter 3 are retained as supplied. Before submission, they should be checked against the relevant SmartPLS output, including the exact construct specification and confidence intervals.

2.9. Structural Model and Moderation Analysis

Following measurement-model assessment, the structural model evaluates path coefficients, bootstrap confidence intervals, statistical significance, and explanatory performance. The proposed relationships are: (1) financial decision-making efficiency is positively associated with SME growth; (2) financial decision-making efficiency is positively associated with business sustainability; (3) financial literacy moderates the first relationship; and (4) financial literacy moderates the second relationship.

The moderation models are expressed as:

$$G = \alpha_0 + \alpha_1 FDE + \alpha_2 FL + \alpha_3 (FDE \times FL) + \varepsilon_1$$

$$S = \delta_0 + \delta_1 FDE + \delta_2 FL + \delta_3 (FDE \times FL) + \varepsilon_2$$

Here, G denotes SME growth, S denotes business sustainability, FDE denotes financial decision-making efficiency, and FL denotes financial literacy. The interaction coefficient indicates whether the association between FDE and an outcome varies with financial literacy (Gomes et al., 2025). A positive significant interaction indicates a strengthening association, subject to interpretation of conditional effects. Bootstrapping settings, confidence levels, and the interaction estimation procedure should be reported exactly as implemented.

2.10. Ethical Considerations and Methodological Limitations

The final chapter should document informed consent, voluntary participation, confidentiality, data protection, and any institutional ethical approval actually obtained. It must not imply that approval or consent procedures occurred without supporting records.

The principal methodological limitations include the cross-sectional design, reliance on self-reported measures, geographical coverage, and the sampling procedure once confirmed (Rahman et al., 2025). Collecting predictors and outcomes from the same respondent may also introduce shared-method response influences. These limitations should inform interpretation, particularly concerning causality and generalization beyond the sampled SMEs.

CHAPTER 3: RESULTS AND FINDINGS

This chapter reports respondent characteristics, descriptive statistics, measurement-model results, correlations, structural relationships, explained variance, and the moderating role of financial literacy (Al Kium et al., 2023). The study comprises 320 SME owners and managers from manufacturing, services, and trading enterprises in Lahore, Karachi, and Islamabad. SPSS and SmartPLS were used for the analyses described in the study.

3.1. Respondent and Enterprise Characteristics

Table 3.1 summarizes the reported distribution of respondents across cities, sectors, and managerial roles.

Table 3.1. Respondent and Enterprise Profile

Characteristic	Category	Frequency	Percentage
City	Lahore	120	37.50%
City	Karachi	120	37.50%
City	Islamabad	80	25.00%
Business sector	Manufacturing	100	31.25%
Business sector	Services	120	37.50%
Business sector	Trading	100	31.25%
Respondent role	Owner	180	56.25%

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Respondent role	Manager	140	43.75%
Total respondents	—	320	100.00%

According to the reported distribution, Lahore and Karachi each account for 37.50% of respondents, while Islamabad accounts for 25.00%. Services represent 37.50% of respondents, manufacturing 31.25%, and trading 31.25%. Owners comprise 56.25% of the sample and managers 43.75%. These percentages describe the reported sample and do not by themselves establish representativeness.

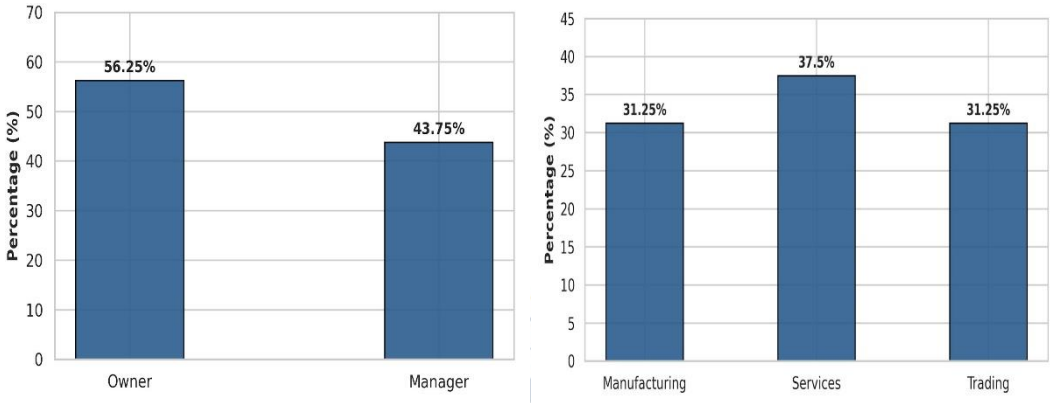


Figure 3: Percentage distribution of respondents based on job role. The majority (56.25%) were business owners, while 43.75% were managers. Figure 4: Percentage distribution of respondents by business sector. The Services sector represents the largest share at 37.5%, while Manufacturing and Trading each account for 31.25% of the sample.

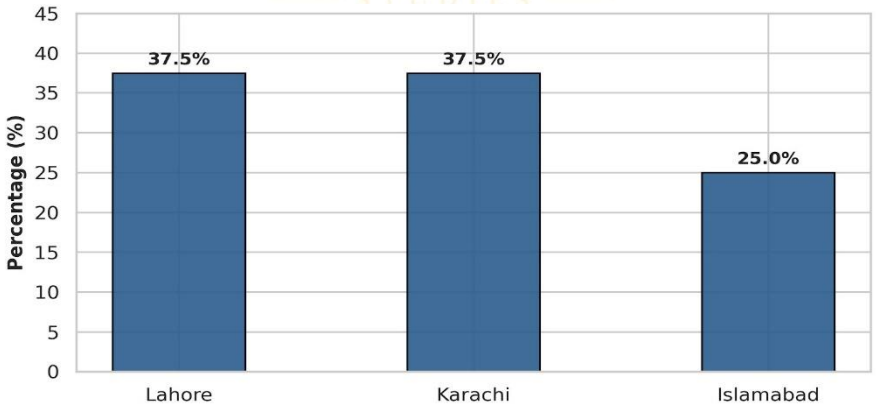


Figure 5: Percentage distribution of respondents by city. Lahore and Karachi each represent 37.5% of the sample, while Islamabad accounts for the remaining 25.0%.

3.2. Descriptive Statistics

Table 3.2 reports the means and standard deviations supplied for the study variables. Higher scores represent more favorable assessments on the five-point response scale.

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Table 3.2. Descriptive Statistics

Construct or dimension	Mean	Standard deviation
Budgeting efficiency	3.72	0.71
Investment appraisal	3.55	0.79
Working capital management	3.81	0.68
Financial decision-making efficiency	3.69	0.64
Financial literacy	3.61	0.75
SME growth	3.66	0.73
Business sustainability	3.77	0.69

Working capital management has the highest mean among the three financial decision-making dimensions (M = 3.81), followed by budgeting efficiency (M = 3.72) and investment appraisal (M = 3.55). Business sustainability has a mean of 3.77, compared with 3.66 for SME growth. These descriptive differences should not be interpreted as statistically significant without an appropriate comparison test.

3.3. Measurement Model Assessment

The measurement model described in the supplied results treats budgeting efficiency, investment appraisal, working capital management, financial literacy, SME growth, and business sustainability as reflective first-order constructs, with financial decision-making efficiency represented as a higher-order composite formed by its three dimensions. This specification must match the model actually estimated in SmartPLS (Ponduru, 2023).

3.3.1. Internal Consistency and Convergent Validity

Table 3.3. Reliability and Convergent Validity

Construct	Indicator loading range	Cronbach's alpha	Composite reliability	Average variance extracted
Budgeting efficiency	0.75–0.86	0.83	0.89	0.67
Investment appraisal	0.73–0.85	0.81	0.88	0.65
Working capital management	0.77–0.88	0.86	0.91	0.71
Financial literacy	0.74–0.87	0.85	0.90	0.69
SME growth	0.76–0.87	0.84	0.90	0.69
Business sustainability	0.78–0.89	0.87	0.91	0.72

The reported indicator loading ranges are positive, while Cronbach's alpha and composite reliability estimates range from 0.81 to 0.87 and 0.88 to 0.91, respectively. Average variance extracted ranges from 0.65 to 0.72. These values are consistent with commonly used reporting criteria, but final claims about measurement quality should be made only after checking the underlying output and the measurement specification.

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3.3.2. Discriminant Validity

Table 3.4. Heterotrait–Monotrait Ratio (HTMT)

Construct	BE	IA	WCM	FL	G	Business sustainability
Budgeting efficiency (BE)	—					
Investment appraisal (IA)	0.72	—				
Working capital management (WCM)	0.76	0.70	—			
Financial literacy (FL)	0.64	0.68	0.62	—		
SME growth (G)	0.69	0.66	0.73	0.63	—	
Business sustainability	0.71	0.68	0.77	0.66	0.79	—

The reported HTMT values range from 0.62 to 0.79. Discriminant validity conclusions should be based on the full observed matrix, the criteria adopted for the study, and any associated bootstrap confidence intervals.

3.3.3. Higher-Order Financial Decision-Making Efficiency

Table 3.5. Higher-Order Construct Results

Dimension	Outer weight	95% confidence interval	VIF
Budgeting efficiency	0.36	[0.21, 0.50]	1.84
Investment appraisal	0.29	[0.14, 0.43]	1.67
Working capital management	0.44	[0.29, 0.58]	1.96

The three dimensions have positive reported outer weights. Working capital management has the largest weight (0.44), followed by budgeting efficiency (0.36) and investment appraisal (0.29). These weights describe the dimensions' contributions to the higher-order construct; they are not separate estimates of their effects on SME growth or business sustainability.

3.4. Correlation Analysis

Table 3.6. Correlation Matrix

Variable	1	2	3	4
1. Financial decision-making efficiency	1.00			
2. Financial literacy	0.48	1.00		

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3. SME growth	0.59	0.46	1.00	
4. Business sustainability	0.63	0.51	0.61	1.00

The reported correlations are positive, ranging from 0.46 to 0.63 for the off-diagonal values. Financial decision-making efficiency correlates 0.59 with SME growth and 0.63 with business sustainability. These bivariate correlations are distinct from the structural path coefficients and should not be interpreted as causal effects.

3.5. Structural Model Results

The abstract reports positive and statistically significant relationships between financial decision-making efficiency and both business outcomes. Table 3.7 reproduces the reported coefficients and significance levels.

Table 3.7. Direct Structural Relationships

Hypothesis	Structural relationship	Standardized coefficient (β)	Reported significance	Decision
H1	Financial decision-making efficiency → SME growth	0.487	$p < 0.001$	Supported
H2	Financial decision-making efficiency → Business sustainability	0.523	$p < 0.001$	Supported

3.5.1. Financial Decision-Making Efficiency and SME Growth

The reported relationship between financial decision-making efficiency and SME growth is positive ($\beta = 0.487$, $p < 0.001$), supporting H1. This indicates that higher financial decision-making efficiency is associated with stronger SME growth in the reported model. The coefficient concerns the overall construct and does not identify the separate effects of budgeting efficiency, investment appraisal, and working capital management. The standardized coefficient should not be described as a 48.7% increase in growth.

3.5.2. Financial Decision-Making Efficiency and Business Sustainability

The reported relationship between financial decision-making efficiency and business sustainability is positive ($\beta = 0.523$, $p < 0.001$), supporting H2. The sustainability coefficient is numerically larger than the growth coefficient, but the available results do not establish whether the difference between them is statistically significant. Both findings should be interpreted in light of the cross-sectional design.

3.6. Explanatory Performance of the Model

Table 3.8. Explained Variance

Outcome variable	R^2	Adjusted R^2
SME growth	0.42	0.41
Business sustainability	0.47	0.46

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The reported R^2 values indicate that the model explains 42% of the variance in SME growth and 47% of the variance in business sustainability. Adjusted R^2 values are 0.41 and 0.46, respectively. Explained variance should not be equated with out-of-sample predictive accuracy; predictive assessment requires its own evidence.

3.7. Moderating Role of Financial Literacy

The supplied chapter reports that financial literacy moderates the relationships between financial decision-making efficiency and both outcomes. Table 3.9 retains the interaction coefficients and confidence intervals provided in the text.

Table 3.9. Moderation Results

Hypothesis	Interaction relationship	Interaction coefficient	95% confidence interval	Decision
H3	FDE × Financial literacy → SME growth	0.14	[0.05, 0.23]	Supported
H4	FDE × Financial literacy → Business sustainability	0.17	[0.08, 0.26]	Supported

The positive interaction coefficients indicate that the association between financial decision-making efficiency and each outcome becomes more positive as financial literacy increases, provided that the coefficients and confidence intervals are confirmed by the actual model output. The final report should identify the interaction-estimation procedure, bootstrap settings, confidence level, and relevant conditional effects or interaction plot. The main effects should also be included in the model specification.

3.8. Summary of Hypothesis Testing

Table 3.10. Summary of Hypothesis Testing

Hypothesis	Relationship	Evidence-based conclusion
H1	Financial decision-making efficiency → SME growth	Positive and significant (β = 0.487, $p < 0.001$)
H2	Financial decision-making efficiency → Business sustainability	Positive and significant (β = 0.523, $p < 0.001$)
H3	Financial literacy moderates the growth relationship	Positive interaction reported (β = 0.14; 95% CI [0.05, 0.23])
H4	Financial literacy moderates the sustainability relationship	Positive interaction reported (β = 0.17; 95% CI [0.08, 0.26])

JOURNAL FOR SOCIAL SCIENCE STUDIES
An International Peer-Reviewed Open Access Journal
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Volume 4 • Issue 6 • October 2026

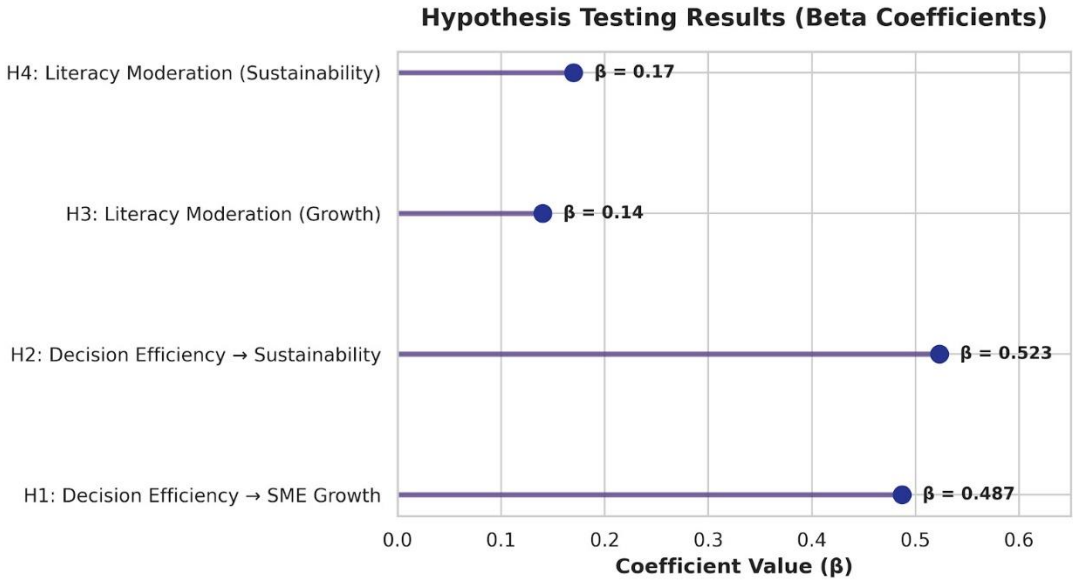


Figure 6: Hypothesis Testing Results (Beta Coefficients) showing H1: β = 0.487, H2: β = 0.523, H3: β = 0.14, and H4: β = 0.17.

Overall, the reported results support positive associations between financial decision-making efficiency and SME growth and business sustainability. The supplied moderation estimates also indicate positive interaction effects for both outcomes. These conclusions remain subject to verification against the underlying output and should be interpreted as associations given the cross-sectional design.

5. Discussion

The findings indicate that financial decision-making efficiency (FDE) is positively associated with both SME growth and business sustainability in Pakistan (Anwar et al., 2020; Beck & Demirgüç-Kunt, 2006; Berger & Udell, 1998). The results show a positive relationship between FDE and SME growth (beta = 0.487, $p < 0.001$) and between FDE and business sustainability (beta = 0.523, $p < 0.001$). These findings suggest that efficient budgeting, investment appraisal, and working capital management are important financial practices associated with improved business outcomes (Ahangar, 2021; Brigham & Houston, 2019; Deloof, 2003). The slightly stronger coefficient for business sustainability indicates that FDE has a comparatively stronger estimated association with sustainability than with growth in this sample.

The explanatory power of the structural models further supports the relevance of FDE and the study framework. The model explains 42% of the variance in SME growth ((R^2 = 0.42)) and 47% of the variance in business sustainability ((R^2 = 0.47)). These results suggest that the proposed framework accounts for a meaningful proportion of variation in both outcomes, although other organizational and external factors may also influence SME performance (Barney, 1991; Hair et al., 2019, 2022; Wiklund & Shepherd, 2005).

The moderation results indicate that financial literacy strengthens the relationship between FDE and SME growth (beta = 0.14), 95% CI [0.05, 0.23]) and between FDE and business sustainability (beta = 0.17), 95% CI [0.08, 0.26]). Because both confidence intervals exclude zero, the reported interaction effects support the proposed moderating relationships. This suggests that financial knowledge may help owners and managers apply financial practices

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more effectively (Anwar et al., 2020; Klapper et al., 2013; Lusardi & Mitchell, 2014). Overall, the findings support the study's argument that financial decision-making efficiency and financial literacy are relevant to understanding SME outcomes. However, given the cross-sectional design, these relationships should be interpreted as associations rather than definitive causal effects.

6. Conclusion

This study examined the relationships between financial decision-making efficiency, SME growth, and business sustainability in Pakistan, while assessing the moderating role of financial literacy. Using data from 320 SME owners and managers in Lahore, Karachi, and Islamabad, the analysis found positive and statistically significant relationships between FDE and both business outcomes. The results also supported the moderating role of financial literacy in both relationships.

The findings highlight the importance of budgeting efficiency, investment appraisal, and working capital management as dimensions of financial decision-making (Ahangar, 2021; Brigham & Houston, 2019; Deloof, 2003). They also suggest that financial literacy may enhance the association between efficient financial decisions and business outcomes (Anwar et al., 2020; Klapper et al., 2013; Lusardi & Mitchell, 2014). For SME owners, managers, and support institutions, the results point to the potential value of strengthening practical financial management skills alongside financial knowledge (Small and Medium Enterprises Development Authority [SMEDA], n.d.; World Bank, n.d.). Nevertheless, the cross-sectional design and geographical scope limit causal interpretation and generalizability. Future research could use longitudinal data and broader samples to examine how these relationships develop over time. In conclusion, financial decision-making efficiency, considered alongside financial literacy, provides a useful framework for understanding SME growth and business sustainability in Pakistan.

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