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Original Article

The Role of Accounting Information in Improving Decision-Making for Small and Medium-Sized Businesses in Kabul, Afghanistan: Evidence on the Moderating Effect of Financial Literacy

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Abstract

Small and medium-sized businesses (SMEs) are essential to Afghanistan's economy, but their ability to make decisions is frequently hampered by inadequate institutional support, poor accounting systems, and low financial literacy. This study uses a quantitative research methodology to investigate how accounting data affects SMEs' ability to make effective decisions, with an emphasis on the moderating function of financial literacy. A standardized questionnaire was used to gather information from 235 SME owners, managers, and workers in Kabul, Afghanistan. The effects of accounting information quality (AIQ), management accounting practices, adoption of accounting technologies, and institutional and regulatory support on decision-making (DM) were evaluated through the use of multiple regression and moderation techniques, including the PROCESS macro. The results show that the quality of accounting information has the most impact on DM, followed by institutional support and management accounting procedures. Accounting technologies also have a favorable but smaller impact. Crucially, financial literacy greatly enhances the connection between the quality of accounting information and DM, but it has little direct impact on DM. The favorable impact of AIQ increases at higher levels of financial literacy, according to conditional effects analysis, suggesting that the capacity to understand financial data is crucial for making wise decisions. By highlighting the necessity of improving accounting systems, advancing financial literacy, promoting technology adoption, and fortifying institutional frameworks to enable sustainable SME growth, the study offers significant implications for policymakers, educators, and SME practitioners. However, because of the cross-sectional nature of the research design and the study's concentration on SMEs in Kabul, which may restrict generalizability to other areas or contexts, the results should be interpreted cautiously.

Categories: Accounting, SME Entrepreneurship

Keywords: small and medium enterprises (smes), management accounting practices, accounting information, decision-making, financial literacy

Introduction

Small and Medium Sized-Enterprises (SMEs) have been and should be the backbone of Afghanistan's economy, their share of GDP is about 50% and they employ over 75% of workers (Mosavi and Gunawan, 2024). These ventures not only matter for putting food on people's tables but are also the lifeblood of creativity, entrepreneurialism, and inclusive economic development. Regardless of their acknowledged significance, the real size of the SMEs sector's contribution to

the Afghan economy is probably underestimated because most operate as informal or shadow businesses with limited, standardized financial and accounting methods (Mosavi and Gunawan, 2024). Upgrading SMEs from the informal to the formal sector requires sound accounting systems, which promote transparency, contribute to a stronger capital structure, enhance stakeholder confidence, and encourage external investment; factors that are critical for long-term sustainability (Lavia López and Hiebl, 2015), (Quintiliani, 2019), and (Wahyuni, 2023).

The importance of useful accounting information is particularly important for SMEs in markets that are resource-scarce and uncertain (Lavia López and Hiebl, 2015). Afghanistan businesses are facing economic instability and a lack of infrastructure, but accounting information systems (AIS) can be used as a transformative tool for their survivability and expansion (Farhan et al., 2024). Quality information provides managers with accurate financial data to monitor the health of the organization, enable risk identification, optimize resource investment, and capture new market opportunities on time, enabling them to translate organizational resources into a sustainable competitive advantage in their industry, which will create wealth from profitable business operations (Somathilake and Ranathunga, 2021).

However, in Afghanistan, SMEs have encountered significant challenges in using accounting information. A key obstacle is that SME owners and managers have little or no accounting knowledge and technical ability, which results in incomplete or erroneous data (Adhikari, 2020). A significant number of SMEs subcontract accounting work, which adds costs and delays in receiving financial statements (Farhan et al., 2024). Decision-making (DM) is therefore tied to intuition instead of evidence and, in that sense, it is prone to a higher incidence of businesses going under (Mbogo, 2011). Thus, biased, incomplete, or unreliable financial information will almost invariably result in suboptimal managerial decisions, poor strategic choices, and organizational underperformance (Akrumah et al., 2024) (Alattar et al., 2009).

The adoption of modern accounting technologies offers potential solutions. The use of accounting software enhances reporting efficiency, reduces human error, minimizes fraud, and allows SMEs to monitor their performance in real-time (Renaldo et al., 2021) (Thottoli, 2020). However, Mbogo (Mbogo, 2011) claims that the uptake of these technologies in Afghanistan remains limited due to insufficient training, financial constraints, and resistance to organizational change. Promoting financial literacy and embedding professional development initiatives into SME operations could significantly enhance the utility of accounting information (Djou and Lukiastuti, 2021), (Lusardi and de Bassa Scheresberg, 2013), and (Mashizha et al., 2019).

Moreover, Afghanistan's regulatory environment adds complexity to the acceptance of effective accounting methods. Many SMEs lack knowledge of local financial reporting standards, taxation requirements, and compliance obligations, resulting in weak accountability and low levels of financial transparency (Farhan et al., 2024). Transparent regulatory frameworks, linked with accessible training initiatives, could help SMEs not only achieve compliance but also improve internal financial management (Hussain and Stanikzai, 2021).

Prior studies in Afghanistan, such as those by Hussain and Stanikzai (Hussain and Stanikzai, 2021), have highlighted that good accounting and financial practices directly enhance SME performance in Jalalabad City, emphasizing the broader national relevance of accounting reforms. While no exact study has been conducted either globally or in Afghanistan on this specific topic, a few empirical studies have explored the broader relationship between accounting information quality and DM at the global level. In the Afghan context, existing research has primarily concentrated on SME performance challenges, distorted reporting due to staff limitations, the role of AIS, and working capital management in financial performance, as well as factors influencing financial inclusion. Therefore, to address this critical gap, the present study investigates the role of accounting information in improving decision-making for SMEs in Afghanistan.

Accordingly, this study seeks to address this gap by formulating the following research questions and pursuing the following objectives.

To what extent does the quality of accounting information improve DM effectiveness in Afghan SMEs?

How strongly do financial literacy and managerial skills predict the utilization of accounting information in Afghan SMEs?

What is the impact of specific barriers (e.g., cost, lack of expertise, technology constraints) on the adoption rate of accounting information practices among Afghan SMEs?

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To what degree do policy measures and institutional support influence the level of accounting information use in Afghan SMEs?

By addressing these questions, the article contributes to both theory and practice. Theoretically, it applies to the resource-based view and knowledge-based view to conceptualize accounting information as a strategic resource for SMEs. Practically, it provides insights for policymakers, SME owners, and development institutions on enhancing DM capacities through improved accounting practices with a focus on the quality of accounting information.

Hypotheses development

Accounting information is widely recognized as a critical factor in improving the DM capabilities of SMEs, particularly in developing economies. High-quality accounting data supports SMEs in managing resources, forecasting risks, and achieving long-term sustainability (Gunanto and Preda, 2023) (Kareem et al., 2024). However, the extent to which SMEs in Afghanistan utilize accounting information for DM remains underexplored. Based on the reviewed literature, the following hypotheses can be proposed.

First, accounting information quality is essential for reliable decisions. When financial statements and records are accurate, timely, and relevant, they provide a strong foundation for business planning and risk assessment (Somathilake and Ranathunga, 2021), (Khadim and Choudhury, 2024), (Sakhizada and Rasa, 2019), and (Wahab et al., 2023). Conversely, poor record-keeping often results in misleading reports, ultimately leading to suboptimal managerial choices (Adela et al., 2024). The following hypothesis is put forth in accordance with the first aim, which looks at the connection between accounting data and DM:

Objective 1: To examine the relationship between accounting information and SMEs' DM

H1: Accounting information quality has a positive and significant effect on DM in Afghan SMEs.

Second, management accounting practices (such as budgeting, cost accounting, and variance analysis) enable SMEs to transform raw accounting data into actionable insights. These practices provide owners and managers with a framework to compare the actual performance against targets, thereby facilitating strategic alignment (Kaharti, 2023), (Lavia López and Hiebl, 2015), and (Musuhuke, 2024). Taking up the second objective, which relates to accounting tools and managerial procedures:

H2: Management accounting practices positively effect the DM effectiveness of Afghan SMEs.

Third, managerial abilities and financial literacy are central moderators of the quality to which SMEs can make use of accounting data. Higher financial literacy owners are likely to understand financial statements accurately, utilize resources correctly, and make strategic decisions with knowledge (Bongomin et al., 2017), (Lusardi and de Bassa Scheresberg, 2013), and (Awais et al., 2016). In line with the objective of assessing the role of financial literacy:

Objective 2: To assess the role of financial literacy in leveraging accounting information

H3: Financial literacy strengthens the positive relationship between accounting information quality and DM in Afghan SMEs.

Fourth, the use of advanced accounting technologies such as cloud-based accounting software enables real-time financial reporting, improvement in accuracy, and minimizing risks of fraud (Gosal and Nainggolan, 2023) (Renaldo et al., 2021). Despite acceptance barriers in Afghanistan, evidence from other contexts shows that technology implementation significantly improves financial DM. This is consistent with the objective of examining technological adoption:

Objective 3: To examine the role of technology in accounting practices

H4: The adoption of accounting technologies positively affects the DM processes of Afghan SMEs.

Finally, institutional and regulatory support is an essential element. A helpful legal and policy environment can foster compliance, encourage transparency, and boost accounting practices (Farhan et al., 2024) (Hussain and Stanikzai, 2021). SMEs embedded in supportive institutional contexts are better able to leverage accounting information for effective DM

(Chuenpiboon, 2023).

Objective 4: To evaluate the impact of institutional and regulatory support in line with this objective:

H5: Institutional and regulatory support positively influences the relationship between accounting information practices and SME DM.

In order to experimentally investigate the connections between accounting data and DM in Afghan SMEs, this study creates a set of hypotheses based on the previously stated research objectives. The goals of the study are in line with its empirical testing framework because each hypothesis is directly generated from the appropriate objective. When taken as a whole, these theories offer an organized framework for testing empirically how contextual variables and accounting-related elements affect the efficacy of DM in Afghan SMEs.

Theoretical framework

A solid theoretical framework is necessary to explain how accounting information affects DM, given the difficulties SMEs in Afghanistan confront, such as inadequate accounting systems, low financial literacy, and an uncertain institutional context. The Resource-Based View (RBV), Knowledge-Based View (KBV), and Contingency Theory are used in this study to address this issue. By describing how managerial expertise, external environmental factors, and internal resources all work together to influence how well accounting information supports DM in SMEs, these theories offer complementary viewpoints.

The relationship between accounting information and SME decision-making can be explored through multiple theoretical perspectives, each presenting unique insights.

1. Resource-Based View (RBV)

The RBV posits that firms achieve a competitive edge through the ownership and use of valuable, rare, inimitable, and non-substitutable resources (Barney, 1991). Within this framework, accounting information quality can be viewed as an intangible strategic resource. SMEs that maintain accurate and reliable financial records are better positioned to allocate resources, anticipate challenges, and exploit opportunities compared to those with poor records (Aderinto, 2025) (Hussain and Stanikzai, 2021). For Afghan SMEs, where uncertainty is on the ground, the effective use of accounting information represents a critical internal capability for survival and growth and enhances DM. High-quality accounting information is an essential internal resource that can improve DM and organizational performance in the face of environmental risks in Afghan SMEs, where formal systems are frequently neglected.

2. Knowledge-Based View (KBV)

The KBV extends the RBV by emphasizing knowledge as the most strategically significant resource of a firm (Grant, 1996). Financial literacy and managerial accounting competencies fall under this category of knowledge resources. Studies indicate that financially literate managers can interpret financial reports effectively and convert accounting data into strategic decisions and actions (Djou and Lukiastuti, 2021), (Lusardi and de Bassa Scheresberg, 2013), and (Lusardi and Mitchell, 2014). In Afghan SMEs, where technical expertise is often limited, managerial knowledge and skills significantly determine the extent to which accounting information improves DM (Farhan et al., 2024). This is especially important in Afghanistan, where SME managers' inadequate financial literacy limits their capacity to comprehend and apply accounting information, which lessens the information's potential influence on DM.

3. Contingency Theory

Contingency theory argues that organizational performance depends on the fit between internal systems and external environments (Donaldson, 2006). In the context of accounting, this theory implies that the design and effectiveness of an AIS depend on contextual variables such as firm size, industry, and institutional environment (Gordon and Miller, 1976). For Afghan SMEs, the adoption of accounting technologies and practices must align with their resource capabilities and regulatory conditions. A one-size-fits-all approach is unlikely to be effective; instead, accounting systems

must be adapted to the local context to maximize their impact on DM. The efficiency of accounting systems depends on how effectively they mesh with contextual elements like organizational capacities, technology infrastructure, and regulatory support, given Afghanistan's difficult institutional and economic environment.

When combined, these theories offer a comprehensive framework for comprehending the research challenge of the study. While KBV emphasizes the role of financial literacy in improving its usability, RBV stresses the significance of accounting information as a strategic resource, and Contingency Theory clarifies how external circumstances affect its efficacy. The study's examination of how managerial skills, accounting data, and environmental factors interact to influence DM in Afghan SMEs is supported by this integrated viewpoint.

Conceptual model

Drawing from RBV, KBV, and Contingency Theory, the proposed framework conceptualizes Accounting Information Quality, Management Accounting Practices, Financial Literacy, Technology Adoption, and Institutional Support as key factors influencing SME DM Effectiveness. Specifically:

RBV explains the strategic value of high-quality accounting information.

KBV highlights the role of financial knowledge and literacy as intangible assets.

Contingency Theory emphasizes the fit between SME environments and accounting systems.

This interconnected model hypothesizes that Afghan SMEs' DM can be improved by integrating credible accounting information with managerial capability, technology embracement, and institutional encouragement. Figure *1* depicts the conceptual model designed for the study, illustrating the relationships among the major variables.

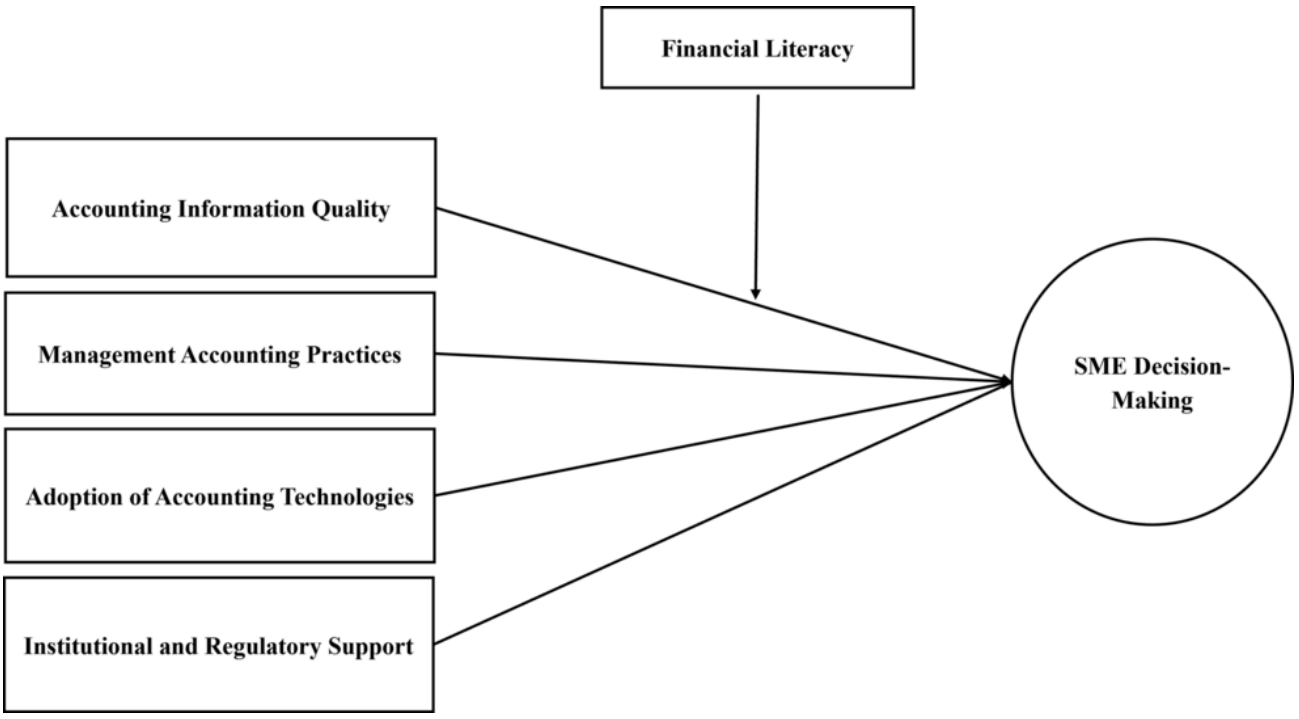


FIGURE 1: Conceptual Model

Source: Authors' own elaboration

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Research Method

Research method and methodology

This study used a quantitative approach to measure and explore inter-variable associations using numerical data. The primary objective was to test the proposed hypotheses and examine how specific factors influence the efficiency of decisions made by Afghan SMEs. Of particular interest, the study investigated how accounting information quality, management accounting, adoption of accounting technologies, and institutional and regulatory encouragement affect DM efficiency. Additionally, financial literacy served as a moderating variable, indicating its potential influence on the relationship between these independent factors and DM efficiency. The data were analyzed using Stata version 18. Through this quantitative approach, the study obtained structured data suitable for statistical analysis, ensuring that the outcomes were based on quantifiable evidence rather than subjective opinion. This facilitated a systematic examination of the proposed associations and provided a coherent structure for testing the research hypotheses in a reliable and reproducible manner. The effects of accounting information quality (AIQ), management accounting practices, adoption of accounting technologies, and institutional and regulatory support on decision-making (DM) were evaluated using multiple regression and moderation techniques, including the PROCESS macro developed by Andrew F. Hayes (Hayes, 2018).

Instrument development

A structured questionnaire with measuring questions taken from earlier research and properly modified for the Afghan SME environment was used to collect data for the study. Four items on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) made up each construct. Simplifying technical terms, rewording items to reflect cash-based and informal business operations, and aligning statements with Afghanistan's limited use of formal accounting systems were the main changes. The contextual realities of Afghan SMEs, such as low levels of financial literacy, incomplete regulatory compliance, and reliance on manual or outsourced accounting methods, made these changes imperative. In order to guarantee respondent comprehension, clear and straightforward language was also used, taking into account cultural and linguistic factors.

Items for Accounting Information Quality were adapted from Somathilake and Ranathunga (Somathilake and Ranathunga, 2021) and Khadim and Choudhury (Khadim and Choudhury, 2024); Management Accounting Practices from Lavia López and Hiebl (Lavia López and Hiebl, 2015), Kaharti (Kaharti, 2023), and Musuhuke (Musuhuke, 2024); Adoption of Accounting Technologies from Renaldo et al. (Renaldo et al., 2021), Thottoli (Thottoli, 2020), and Gosal and Nainggolan (Gosal and Nainggolan, 2023); Institutional and Regulatory Support from Chuenpiboon (Chuenpiboon, 2023), Farhan et al. (Farhan et al., 2024), and Hussain and Stanikzai (Hussain and Stanikzai, 2021); Financial Literacy from Djou and Lukiastuti (Djou and Lukiastuti, 2021), Lusardi and de Bassa Scheresberg (Lusardi and de Bassa Scheresberg, 2013), and Mashizha et al. (Mashizha et al., 2019); and DM from Gunanto and Preda (Gunanto and Preda, 2023), Adela et al. (Adela et al., 2024), and Kareem et al. (Kareem et al., 2024). Despite these contextual modifications, the original construct meanings were preserved to maintain content validity. Utilizing previously validated items enhances the reliability of the instrument, with prior studies reporting Cronbach's alpha values ranging from 0.80 to 0.95, indicating strong internal consistency.

Population and sampling

Owners, managers, and staff of private businesses in Kabul, Afghanistan, make up the study population. Since SMEs make up a sizable portion of Afghanistan's private sector and rely heavily on accounting data for planning, DM, and expansion, these respondents were chosen. In order to investigate the relationship between accounting information quality, management accounting practices, adoption of accounting technologies, and institutional and regulatory support in influencing DM, the study specifically targeted people who are directly involved in financial management and accounting-related activities. A non-probability sampling technique (purposive and convenience sampling) was used since there was no complete and easily accessible sampling frame of SMEs in Kabul. The survey was circulated

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electronically, and respondents were found and contacted via web resources, business contacts, and professional networks. Only those with relevant experience and engagement in accounting or administrative DM were included; participation was entirely voluntary.

For quantitative analysis and hypothesis testing, a total of 235 valid replies were gathered, which is deemed sufficient. Despite efforts to reach a wide range of SMEs in many industries, it was not possible to ascertain the exact size of the population, making a totally random sample technique impractical. Because the sample strategy may restrict representativeness, the results should be regarded with caution.

Additionally, although Kabul provides a pertinent urban representation of SME activity, the sample might not accurately reflect the variety of SMEs operating in other parts of Afghanistan, especially rural or less developed areas, which could restrict how broadly the results can be applied.

Data analysis

The data collected were uploaded into STATA Version 18 for statistical analysis. Reliability and validity tests (factor loadings, composite reliability, Cronbach's alpha) were done to measure the quality of the measurement instrument. The study hypothesis was tested using regression and moderation analysis.

$$DM = \beta_0 + \beta_1(AIQ) + \beta_2(MAP) + \beta_3(AAT) + \beta_4(IRS) + \beta_5(AIQ \times FL) + \epsilon$$

This model of regression indicates how Afghan SMEs' decision-making effectiveness (DME) is affected by such variables as accounting information quality, management accounting practices, the use of accounting technologies, and regulatory and institutional support. It further incorporates an interaction between accounting information quality and financial literacy to determine if financial literacy reinforces or changes such a relationship.

· Decision-Making (DM): This is the dependent variable. It represents how effective the decisions made by SMEs are when they use accounting information and related practices.

· Accounting Information Quality (AIQ): This shows how accurate, reliable, and useful the accounting information is for making decisions.

· Management Accounting Practices (MAP): This refers to the use of budgeting, cost control, variance analysis, and other accounting tools that managers apply to guide their decisions.

· Adoption of Accounting Technologies (AAT): This measures how much SMEs use modern accounting technologies, such as accounting software, to make financial reporting easier and more accurate.

· Institutional and Regulatory Support (IRS): This reflects the extent to which government policies, training programs, and institutional support help SMEs to use proper accounting practices in their operations.

· Interaction between Accounting Information Quality and Financial Literacy (AIQ × FL): This term shows whether financial literacy makes the effect of accounting information quality on decision-making stronger. For example, if managers are more financially literate, they may be able to use high-quality accounting information more effectively to improve their decisions.

· Intercept (β_0): This is the expected level of decision-making effectiveness when all the other factors are equal to zero.

· Regression Coefficients (β_1, β_2, β_3, β_4, β_5): These values show how much each factor contributes to DME. For instance, β_1 shows the effect of accounting information quality, β_2 shows the effect of management accounting practices, β_3 shows the effect of adopting accounting technologies, β_4 shows the effect of institutional support, and β_5 shows the effect of the interaction between accounting information quality and financial literacy.

· Error Term (ϵ): This represents other factors not included in the model that may still influence DM in SMEs.

Pilot study

To ensure applicability to the Afghan SME environment, slight contextual adjustments were performed even though the measuring items were taken from previously validated studies. Thus, before the major survey, a pilot study was carried out with 25 respondents from private companies in Kabul. In order to ensure that participants had the expertise required to assess the questionnaire, the pilot sample was made up of SME owners, managers, and staff who were directly involved in financial and accounting-related operations. The pilot sample size of 25 is deemed appropriate for an initial evaluation of clarity, reliability, and contextual applicability due to the exploratory nature of the study and the use of established measuring scales. The pilot study's main goal was to find possible problems with the items' language, comprehension, and cultural appropriateness rather than full-scale validation. Minor wording changes were made in response to respondent feedback in order to increase clarity and decrease ambiguity. Participants from a variety of business roles were included in the pilot sample, which helped guarantee the instrument's practical relevance even if it might not be entirely representative of Kabul's larger SME population. With Cronbach's alpha, composite reliability, and AVE scores meeting the suggested thresholds, the pilot also offered preliminary proof of validity and reliability. It is noted, nonetheless, that a larger pilot sample may offer more reliable validation, and this restriction is taken into account when evaluating the results.

Construct	Items	Cronbach's α	CR	AVE	Mean Loading
AIQ	4	0.88	0.91	0.72	0.8
MAP	4	0.87	0.9	0.7	0.79
AAT	4	0.91	0.92	0.75	0.82
IRS	4	0.88	0.91	0.71	0.8
FL	4	0.9	0.92	0.74	0.81
DM	4	0.92	0.93	0.76	0.83

TABLE 1: Reliability and Validity Results

AIQ, Accounting Information Quality; MAP, Management Accounting Practices; AAT, Adoption of Accounting Technologies; IRS, Institutional and Regulatory Support; FL, Financial Literacy; DM, Decision-Making; CR, Composite Reliability; AVE, Average Variance Extracted.
Source: Authors' own calculations based on survey data (analyzed using Stata 18).

The findings in Table *1* indicate that all constructs reached the required thresholds. Cronbach's alpha values for the constructs ranged from 0.87 to 0.92, comfortably exceeding the accepted minimum of 0.70 and demonstrating strong internal consistency of the items within the constructs (Nunnally and Bernstein, 1994) (Taber, 2018). The Composite Reliability scores for all constructs were also high, ranging from 0.90 to 0.93, indicating that the constructs were reliably measured and can be considered reliable moving forward for the main study (Hair et al., 2010). As for validity, the AVE values for all constructs were above 0.70, which is higher than the suggested cut-off of 0.50 for convergent validity (Fornell and Larcker, 1981). This indicates that each construct explains a significant amount of variance in its items. Additionally, the mean factor loadings for all constructs were strong, between 0.79 and 0.83 means that the questionnaire items were closely correlated with their constructs (Hair et al., 2010). Overall, from the pilot study, we established that the measurement tool is reliable and valid. This gives us confidence to use the questionnaire in the full-

scale survey with 235 respondents to provide increasingly trustworthy results on the relationship between accounting information quality, management accounting practices, adoption of accounting technology, institutional and regulatory support, financial literacy, and decision effectiveness in Afghan SMEs (Tabachnick and Fidell, 2019).

Results And Discussion

Findings

Variable	Obs	Mean	Std. Dev.	Min	Max
DM	235	3.357	.752	1	5
FL	235	3.506	.628	2	5
IRS	235	3.479	.641	2	5
AAT	235	3.504	.652	1.75	5
MAP	235	3.511	.629	1.25	5
AIQ	235	3.517	.627	1.75	5

TABLE 2: Descriptive Statistics

AIQ, Accounting Information Quality; MAP, Management Accounting Practices; AAT, Adoption of Accounting Technologies; IRS, Institutional and Regulatory Support; FL, Financial Literacy; DM, Decision-Making.
Source: Authors' own calculations based on survey data (analyzed using Stata 18).

The study variables' descriptive statistics are shown in Table *2*. On a scale of 1 to 5, the mean scores for DM and AIQ are 3.357 and 3.517, respectively. The fact that these values are only slightly above the middle (3) suggests that respondents' perceptions are at a moderate level across all dimensions rather than being either high or low. As a result, the previous inference of "relatively high levels" has been changed to reflect a more correct interpretation because the data does not support it.

The standard deviations (0.628-0.752) show a moderate degree of answer variability, indicating some variation in respondents' perceptions. The replies cover a wide range of the scale, representing the diverse experiences of SMEs, as indicated by the minimum and maximum values. Overall, the findings point to potential for improvement rather than high or advanced conditions, suggesting that accounting-related habits and competencies are present at a reasonable level but are not yet fully developed.

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Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) DM	1.000					
(2) FL	-0.069	1.000				
(3) IRS	0.215	0.045	1.000			
(4) AAT	0.161	-0.039	0.086	1.000		
(5) MAP	0.120	0.001	-0.042	0.036	1.000	
(6) AIQ	0.312	-0.162	-0.034	0.047	-0.164	1.000

TABLE 3: Matrix of Correlations

AIQ, Accounting Information Quality; MAP, Management Accounting Practices; AAT, Adoption of Accounting Technologies; IRS, Institutional and Regulatory Support; FL, Financial Literacy; DM, Decision-Making.
Source: Authors' own calculations based on survey data (analyzed using Stata 18).

The correlation coefficients between the research variables are shown in Table *3*. IRS (r =.215), AAT (r =.161), MAP (r =.120), and AIQ (r =.312) all have positive associations with DM. These correlations show weak linear linkages rather than strong ones, even if they are in the predicted direction. Although it is still within a moderate range, AIQ shows the greatest connection with DM among the predictors.

AAT and DM, for instance, have a rather weak association (r =.161), indicating that technology adoption by itself may not have a significant impact on decision-making results in this situation. This could be a result of practical limitations in Afghan SMEs, like low levels of digital literacy, incomplete technology adoption, or dependence on rudimentary systems that do not adequately support strategic DM.

These results demonstrate the minimal bivariate influence of accounting-related parameters, despite their positive association with DM. This further supports the use of multivariate regression analysis to gain a deeper understanding of their conditional and combined impacts.

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	Adj Chi^2 (2)	Prob > Chi^2
Residual	235	0.2	0.542	2.03	0.362

TABLE 4: Normality Test

Source: Authors' own calculations based on survey data (analyzed using Stata 18).

The skewness and kurtosis test for normality was conducted on the residuals of the regression model. The results as shown in Table *4* indicated that neither skewness (p = 0.200) nor kurtosis (p = 0.542) was statistically significant. Additionally, the joint test was not significant (adj $\chi^2(2) = 2.030$, p = 0.362), suggesting that the residuals do not

significantly deviate from a normal distribution. These findings indicate that the assumption of normality of residuals is satisfied, which supports the validity of the regression estimates and inferences. In other words, the model residuals are approximately normally distributed, meeting one of the key assumptions for linear regression (Ghasemi and Zahediasl, 2012) (Kim, 2013).

Multicollinearity

	VIF	1/VIF
AIQ	1.033	.968
MAP	1.032	.969
AAT	1.012	.988
IRS	1.012	.988
Mean VIF	1.022	.

TABLE 5: Variance Inflation Factor

AIQ, Accounting Information Quality; MAP, Management Accounting Practices; AAT, Adoption of Accounting Technologies; IRS, Institutional and Regulatory Support; VIF, Variance Inflation Factor.
Source: Authors' own calculations based on survey data (analyzed using Stata 18).

Table *5* shows the variance inflation factor (VIF) values for the independent variables. The VIF values for AIQ (1.033), MAP (1.032), AAT (1.012), and IRS (1.012) were all close to 1, with a mean VIF of 1.022. Since all values are well below the common cut-off thresholds of 5 (Hair et al., 2019) or 10 (Kutner et al., 2005), there is no evidence of multicollinearity among the predictors. This indicates that the independent variables are statistically distinct from one another, and multicollinearity is not a concern in this model.

Heteroskedasticity

The Breusch-Pagan/Cook-Weisberg test was conducted to assess the assumption of homoskedasticity in the regression model. The null hypothesis states that the variance of the error terms is constant across observations. As presented in Table *6*, the test results revealed a non-significant statistic ($\chi^2(1) = 1.44$, $p = .230$). Since the p-value exceeds the conventional threshold of 0.05, the null hypothesis cannot be rejected. This indicates that there is no evidence of heteroskedasticity in the model, and the assumption of constant variance is satisfied. Therefore, the regression estimates can be considered reliable in terms of variance consistency (Wooldridge, 2016).

Breusch-Pagan/Cook-Weisberg test for heteroskedasticity

Test	Null Hypothesis	Dependent Variable	χ^2 (df)	p-value	Decision
Breusch–Pagan/Cook–Weisberg	Constant variance (Homoskedasticity)	DM	1.44 (1)	0.2299	Fail to reject H_0

TABLE 6: Breusch–Pagan/Cook–Weisberg Test for Heteroskedasticity

Source: Authors' own calculations based on survey data (analyzed using Stata 18).

Variable	Coef.	Std. Err.	t-value	p-value	[95% Conf. Interval]	Sig
IRS	0.412	0.052	7.92	0	0.309 – 0.515	***
AAT	0.298	0.056	5.32	0	0.187 – 0.409	***
MAP	0.371	0.058	6.4	0	0.257 – 0.485	***
AIQ	0.524	0.055	9.53	0	0.416 – 0.632	***
Constant	-0.189	0.328	-0.58	0.562	-0.834 – 0.456	
Mean dependent var	3.357	**SD dependent var**	0.752			
R-squared	0.72	Number of obs	235			
F-test	146.52	Prob > F	0			
Akaike crit. (AIC)	412.237	Bayesian crit. (BIC)	429.534			
*** p < .01, ** p < .05, * p < .1						

TABLE 7: Linear Regression

AIQ, Accounting Information Quality; MAP, Management Accounting Practices; AAT, Adoption of Accounting Technologies; IRS, Institutional and Regulatory Support.
Source: Authors' own calculations based on survey data (analyzed using Stata 18).

All four independent variables - Institutional and Regulatory Support (IRS), Adoption of Accounting Technologies (AAT), Management Accounting Practices (MAP), and Accounting Information Quality (AIQ) - are positive and statistically significant predictors of DM, according to the regression results shown in Table *7*. Strong explanatory power is shown by the model's overall significance ($F(4,230) = 146.52$, $p < .001$) and its ability to explain a considerable percentage of the variance in DM ($R^2 = 0.720$).

The magnitude of the coefficients indicates significant practical consequences that go beyond statistical significance, especially in the context of Afghan SMEs. The greatest predictor was found to be AIQ ($\beta = 0.524$, $t = 9.53$, $p < .001$; 95% CI [0.416, 0.632]). According to this coefficient, DM effectiveness increases by about 0.52 units for every unit increase in AIQ (on a five-point Likert scale). Considering that the DM mean value is 3.357, this is not a slight shift but rather a significant and practically significant improvement. In practical terms, this implies that SME owners are likely to see considerable gains in cost control, strategic planning, and budgeting accuracy when they improve the timeliness, correctness, and

dependability of their financial data. This result is consistent with earlier studies that highlight the importance of high-quality accounting data as a basis for logical and data-driven DM (Al-Debei and Avison, 2010) (Somathilake and Ranathunga, 2021).

There was also a significant positive impact from IRS (β = 0.412, t = 7.92, p <.001; 95% CI [0.309, 0.515]). From a practical standpoint, this implies that SMEs' DM quality can be significantly improved by improvements in institutional frameworks, policy assistance, and regulatory clarity. Even little increases in institutional support can help managers make more organized and knowledgeable decisions in settings like Afghanistan, where regulatory frameworks are still developing. This outcome is in line with Khan et al. (Khan et al., 2020), who emphasize how important institutional quality is to improving the effectiveness of financial DM in developing countries.

Additionally, there is a significant beneficial influence from MAP (β = 0.371, t = 6.40, p <.001; 95% CI [0.257, 0.485]). This suggests that using techniques like cost analysis, budgeting, and performance evaluation significantly improves the quality of decisions. Practically speaking, SME managers who use structured accounting methods are better able to organize, oversee, and manage company operations, which results in more sensible operational and strategic choices. This result supports the claim made by Al-Omiri and Drury (Al-Omiri and Drury, 2007) that management accounting systems improve organizational control and cost efficiency, which in turn improves decision quality.

Lastly, DM and AAT are positively and significantly correlated (β = 0.298, t = 5.32, p <.001; 95% CI [0.187, 0.409]). This effect shows that using accounting software and digital technologies enhances the speed, accuracy, and accessibility of financial information, even though its magnitude is relatively smaller. Practically speaking, even in settings with limited resources, SMEs using such technology may make more prompt and knowledgeable decisions. Rosmala et al. (Rosmala et al., 2024), who show that digital revolution in accounting improves analytical capacities and overall decision performance, corroborate this conclusion.

Overall, the study's effect estimates indicate that accounting-related variables have both practical and statistical significance. These findings demonstrate that even small improvements in accounting information quality, practices, technology adoption, and institutional support can result in significant improvements in managerial DM effectiveness in the context of Afghan SMEs, where DM is frequently limited by formal systems and reliance on intuition.

Moderation analysis

Predictor	Coefficient (β)	SE	t-value	p-value	LLCI	ULCI
Constant	8.3658	1.2663	6.6063	0	5.8708	10.8609
AIQ	-1.4361	0.3569	-4.0238	0.0001	-2.1393	-0.7329
FL	-1.8148	0.3541	-5.1249	0	-2.5125	-1.1171
AIQ × FL	0.5221	0.101	5.1672	0	0.323	0.7212

TABLE 8: Moderating Role of Financial Literacy on the Relationship between AIQ and Decision-Making

AIQ, Accounting Information Quality; FL, Financial Literacy; LLCI, Lower Limit of Confidence Interval; ULCI, Upper Limit of Confidence Interval.
Source: Authors' own calculations based on survey data (analyzed using Stata 18).

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The moderation analysis in Table 8 was conducted using PROCESS Model 1 to examine whether FL moderates the relationship between AIQ and DM. The overall model was significant (R^2 = 0.1911, F (3,231) = 18.1919, $p < 0.001$), indicating that the predictors explain a meaningful proportion of variance in DM. The interaction term between AIQ and FL was positive and statistically significant (β = 0.5221, $p < 0.001$), confirming the presence of a moderation effect. The inclusion of the interaction term resulted in a significant increase in explained variance (ΔR^2 = 0.0935, $p < 0.001$), demonstrating that FL meaningfully strengthens the relationship between AIQ and DM. Although the main effect of AIQ appears negative (β = -1.4361), this coefficient represents the effect of AIQ when FL is at zero, which is not a meaningful value in this context. The conditional effects provide a clearer interpretation: at higher levels of FL, the effect of AIQ on DM becomes positive and increasingly stronger. Specifically, the effect of AIQ is insignificant at low levels of FL (β = 0.1303, $p > 0.05$), but becomes positive and significant at medium (β = 0.3914, $p < 0.001$) and high levels (β = 0.6525, $p < 0.001$). These findings indicate that FL enhances the ability of SME managers to utilize high-quality accounting information effectively, thereby improving DM outcomes.

Financial Literacy (FL)	Effect	SE	t	p	Lower Limit of Confidence Interval	Upper Limit of Confidence Interval
Low (3.0)	0.1303	0.0856	1.5223	0.1293	-0.0384	0.299
Medium (3.5)	0.3914	0.072	5.4331	0	0.2495	0.5333
High (4.0)	0.6525	0.0903	7.2249	0	0.4745	0.8304

TABLE 9: Conditional Effects of AIQ on Decision-Making at Different Levels of Financial Literacy

AIQ, Accounting Information Quality.
Source: Authors' own calculations based on survey data (analyzed using Stata 18).

The conditional effects analysis further clarifies how FL influences the relationship between AIQ and DM at different levels of the moderator. As shown in Table 9 at low levels of FL (FL = 3.0), the effect of AIQ on DM is positive but statistically insignificant (β = 0.1303, p = 0.1293), as the confidence interval includes zero. This suggests that when SME owners or managers possess limited financial knowledge, improvements in accounting information quality do not significantly translate into better DM outcomes.

At moderate levels of FL (FL = 3.5), the effect of AIQ becomes positive and statistically significant (β = 0.3914, $p < 0.001$). This indicates that as FL improves, individuals are better able to interpret and utilize accounting information, leading to more effective managerial decisions. At high levels of financial literacy (FL = 4.0), the effect of AIQ on decision-making becomes even stronger and highly significant (β = 0.6525, $p < 0.001$). This demonstrates that financially literate SME managers can fully leverage high-quality accounting information to make informed, accurate, and strategic decisions. The results reveal a clear pattern: the positive impact of accounting information quality on DM strengthens as financial literacy increases. This finding provides strong empirical support for the moderating role of financial literacy, confirming that accounting information alone is not sufficient-its effectiveness depends on the user's ability to understand and apply it.

Discussion

The study's conclusions shed light on how accounting data and associated skills affect decision-making in Afghan SMEs, but they also show significant distinctions when compared to previous research from different settings.

First, the findings support earlier research, such as Khadim and Choudhury (Khadim and Choudhury, 2024) and Wahab et al. (Wahab et al., 2023), which found that timely and accurate financial information improves managerial effectiveness, by confirming the importance of AIQ in enhancing decision-making. However, the significance of AIQ in the Afghan setting seems more conditional than generally direct, in contrast to findings from more stable and industrialized economies. The current findings show that the association between AIQ and DM is highly dependent on FL, despite the fact that research conducted worldwide generally demonstrate a consistently positive influence of AIQ on DM. This implies that Afghan SMEs need both high-quality information and the capacity to properly understand it, in contrast to industrialized markets where systems and abilities are more standardized.

Second, research from nations like Indonesia and Rwanda (Kaharti, 2023) (Musuhuke, 2024) shows that budgeting, cost control, and performance analysis enhance organizational planning and efficiency. These findings are consistent with the positive and significant impact of MAP on DM. However, Afghan SMEs seem to embrace such techniques at a more fundamental level than these environments. This suggests a difference in the relationship's depth and application rather than its direction. Afghan SMEs are still moving from informal to structured financial management systems, which may limit the full potential of MAP in improving DM, whereas businesses in other nations use management accounting as a strategic tool.

In a similar vein, research on the AAT reveals a favorable but comparatively smaller impact on decision-making. This lends credence to earlier studies conducted in Oman and Indonesia (Thottoli, 2020) (Renaldo et al., 2021), which found that digital accounting systems greatly increase productivity, accuracy, and decision quality. However, a significant contextual difference is highlighted by the lesser effect found in this study. Afghanistan's use of technology is hampered by issues like poor infrastructure, high implementation costs, and low digital literacy. In Afghan SMEs, technology functions more as a supportive tool whose efficacy depends on human competence and accessibility, in contrast to more developed settings where it serves as the main driver of efficiency.

In line with Hussain and Stanikzai (Hussain and Stanikzai, 2021) and Chuenpiboon (Chuenpiboon, 2023), who stress the significance of supportive policy settings in improving business practices, the role of IRS was also found to be important and favorable. But once more, the Afghan setting offers a different picture. Afghan SMEs operate in a very poor regulatory environment with little enforcement and advice, whereas institutional support in industrialized countries frequently guarantees compliance and transparency through well-established mechanisms. As a result, although while the relationship's direction is constant, its practical influence is more limited, suggesting that strengthening institutional frameworks could produce even better results.

The moderating role of FL, which demonstrates a more complex grasp of how accounting information influences DM, is a significant addition of this study. This study concludes that FL does not significantly influence choice quality on its own, in contrast to a number of earlier studies, especially from developed economies, where FL directly improves DM (e.g., Lusardi and de Bassa Scheresberg, 2013). Rather, it greatly improves the connection between DM and the quality of accounting information. This conclusion is further supported by the conditional effects analysis, which demonstrates that the influence of AIQ is modest and negligible at low FL levels but is stronger and more important at moderate and high levels.

This result is in contrast to studies conducted in countries like Zimbabwe and the United States, where it has been demonstrated that FL alone has a direct impact on financial behavior and decision outcomes. However, rather than being a stand-alone factor, FL functions more as an enabling capability in the Afghan setting. This suggests that knowledge without trustworthy information is inadequate, and on the other hand, excellent information without the capacity to analyze it has few advantages. Effective DM is therefore driven by the interplay of knowledge and information.

Both the Resource-Based View (RBV) and the Knowledge-Based View (KBV) are theoretically expanded by these discoveries. This study shows that the value of accounting information depends on the availability of supporting knowledge resources, such FL, even if RBV highlights accounting information as a useful organizational resource. In a similar vein, KBV is strengthened by demonstrating how knowledge improves information's usability and strategic value, especially in settings with limited resources like Afghanistan.

Overall, the study supports the literature's general consensus that accounting information and related practices enhance SME DM, but it also draws attention to an important distinction: these relationships are capability-driven and context-dependent in developing and uncertain environments. Afghan SMEs need a combination of high-quality information, financial expertise, and institutional support to make good decisions, in contrast to more developed economies where systems alone might be adequate.

Conclusions

The purpose of this study was to investigate how accounting information might help SMEs in Kabul, Afghanistan, make better decisions, with a focus on the moderating effects of FL. The results show that, while their relative effects vary, AIQ, MAP, AAT, and IRS all positively contribute to improving managerial DM.

The most significant determinant among these variables was AIQ, highlighting the vital significance of precise, timely, and trustworthy financial data for efficient decision-making. This demonstrates that high-quality accounting data is not only helpful but also necessary for business survival and expansion in a setting like Afghanistan that is marked by uncertainty and informality. Through budgeting, cost analysis, and performance evaluation, management accounting techniques were also shown to be crucial in helping SMEs convert financial data into useful insights. Their use is still somewhat restricted, though, which highlights the need for more education and training in this field.

The adoption of accounting technologies showed a positive but relatively weaker effect, indicating that although digital tools can improve accuracy and efficiency, their efficacy in the Afghan context is limited by issues like low digital literacy, high costs, and infrastructure constraints. The importance of a supportive policy environment in promoting transparency, compliance, and improved financial practices among SMEs is highlighted by the fact that institutional and regulatory support has been demonstrated to have a major impact on DM.

This study's finding of FL as a critical moderating element is one of its main contributions. The findings show that FL considerably improves the association between AIQ and DM rather than having a major impact on DM on its own. This suggests that only when SME owners and managers have the requisite financial expertise to properly evaluate and implement high-quality accounting data will its benefits be fully realized. As a result, FL increases the value obtained from accounting information by acting as an enabling capability.

The study's overall conclusion is that enhancing DM in Afghan SMEs necessitates an integrated strategy that incorporates improved FL together with high-quality accounting data, efficient management techniques, technological adoption, and strong institutional backing. When combined, these components can greatly increase SMEs' ability to make strategic, sustainable, and well-informed business decisions.

However, because the study is based on cross-sectional data gathered from SMEs in Kabul, the results should be interpreted cautiously because they may not be as applicable to other areas or situations. To gain a greater understanding of the long-term effects of accounting knowledge and FL on SME performance, further research is urged to investigate these linkages in various geographic contexts and using longitudinal methods.

Study limitation

There are a number of limitations to this study that should be noted. First, as the study is based on cross-sectional data gathered from 235 SME respondents in Kabul, the results should be evaluated cautiously. As a result, the findings could not accurately reflect SMEs in other parts of Afghanistan, especially rural or less developed areas with distinct institutional, infrastructure, and economic circumstances. Second, because the data record perceptions at a particular point in time, the use of a cross-sectional design restricts the capacity to demonstrate causal links among the variables. Third, the study uses self-reported data, which could be influenced by social desirability effects or response bias. Notwithstanding these drawbacks, the study offers insightful information about how accounting data affects SME DM in Afghanistan, especially in cities like Kabul.

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Future research directions

While this research contributes significantly to understanding the role of accounting information in SMEs DM in the Afghan context, several directions can be pursued in further research. First, future studies can explore not only Kabul but also SMEs in more rural or lesser developed areas of the country where access to accounting aids and institutional assistance would likely be more limited. The comparison of urban and rural contexts would be valuable for uncovering various challenges and for developing more targeted solutions. Second, a qualitative approach may supplement the quantitative results of this research, exploring the lived experiences of SME owners and managers, particularly with respect to interpretations of financial information in conditions of uncertainty. Third, research could take a cross-national comparative approach with Afghanistan and other developing countries, in order to identify limitations and in the ways accounting information is used, which could inform policymakers of best practices in use of accounting information elsewhere. Finally, future research may also explore a longitudinal study of the impact of technology adoption and FL on the financial performance of SMEs, since it may take some time before a measurable impact is realized following training and use of adopted technology.

Recommendations

The study's conclusions indicate that while all five suggestions are crucial for enhancing SME DM, they should not be given equal weight, especially in settings with limited resources like Afghanistan. A distinct prioritizing can be made based on the respective effect sizes found in the regression study.

First, since it showed the greatest influence on DM ($\beta = 0.524$), improving AIQ ought to be the first priority. This suggests that the biggest increases in managerial performance come from enhancing the timeliness, correctness, and dependability of financial records. Therefore, basic bookkeeping training and straightforward reporting methods for SMEs should be given top priority by policymakers and development organizations.

Second, since IRS has a rather large influence ($\beta = 0.412$), it should be strengthened. Enhancing financial guidance, compliance assistance, and regulatory clarity can foster an atmosphere that supports improved DM.

Third, encouraging MAP ($\beta = 0.371$) should come next, since these tools enable SMEs to use budgeting, cost control, and performance monitoring to convert financial data into useful insights.

Fourth, a longer-term priority should be to promote the AAT ($\beta = 0.298$). Although advantageous, technology adoption should be gradual and backed by fundamental advancements in accounting procedures due to its relatively smaller effect size and current obstacles like cost, infrastructure, and digital literacy.

Lastly, rather than being a stand-alone goal, increasing FL should be viewed as a cross-cutting priority. The moderating results show that rather than directly affecting DM, FL improves the efficacy of accounting information. Therefore, in order to optimize their impact, FL initiatives should be implemented in tandem with improvements in the integrity of accounting information.

All things considered, this prioritizing guarantees that few resources are given to the most significant regions first, allowing for a more effective and context-sensitive strategy to improve SME DM in Afghanistan.

Appendices

The Role of Accounting Information in Improving Decision-Making for SMEs in Afghanistan: Evidence on the Moderating Effect of Financial Literacy

Welcome, and thank you for your time!

This questionnaire is part of a research study on how accounting information and related practices support decision-making in small and medium enterprises (SMEs) in Afghanistan. The purpose is to understand how financial literacy, technology use, and institutional support affect business decisions.

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Your responses are confidential and will only be used for academic research. There are no right or wrong answers; please answer honestly based on your experience. The survey should take about 10-15 minutes to complete.

Response Scale:
1 = Extremely Disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Extremely Agree

Thank you for helping us with this important research!

Independent Variables

1. Accounting Information Quality (AIQ)

The financial information used in my business is accurate and reliable.

The accounting reports I use are timely and up-to-date.

The information provided by accounting records is relevant to decision-making.

The accounting information in my business is complete and sufficient for planning.

2. Management Accounting Practices (MAP)

My business prepares regular budgets for planning and control.

We use cost accounting techniques to manage resources effectively.

We compare actual performance with planned targets.

Variance analysis (comparing expected vs. actual costs) is applied in our business decisions.

3. Adoption of Accounting Technologies (AAT)

My business uses accounting software for recording financial transactions.

Technology adoption has improved the accuracy of our financial reporting.

Accounting technologies help us reduce errors and fraud.

Real-time financial information from technology supports our decisions.

4. Institutional and Regulatory Support (IRS)

Government policies encourage SMEs to adopt proper accounting practices.

Training and workshops on accounting practices are provided by institutions.

Taxation and reporting regulations are clear and understandable.

Institutional support helps my business comply with accounting standards.

5. Financial Literacy (FL) Moderation

I can read and understand financial statements of my business.

I know how to interpret profit and loss accounts and balance sheets.

I can make financial decisions based on accounting data.

I understand key financial concepts such as interest, credit, and taxation.

6. SME Decision-Making (SME DM) DV

Accounting information helps me make better investment decisions.

My business decisions are based on financial evidence rather than intuition.

Using accounting information has improved our risk management.

Decision-making effectiveness in my business has improved due to reliable accounting information.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

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Disclosures

Human subjects: Consent was obtained or waived by all participants in this study. **Animal subjects:** All authors have confirmed that this study did not involve animal subjects or tissue. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

Data Availability Statements

The datasets (and/or code) supporting this study are available from the corresponding author upon reasonable request.

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