Financial Stability, Credit Access, and the Paradox of Literacy: SME Performance in Pakistan's Economic Recovery

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Abstract

This research paper investigates the influence of financial factors on the development of small and medium-sized enterprises, with particular emphasis on periods of economic recovery following a crisis. The analysis centers on three primary financial dimensions: financial stability, accessibility of credit, and financial literacy. Data was collected from a sample of 150 small and medium-sized enterprises in Pakistan using regression analysis. One significant finding is that traditional financial indicators, such as the current ratio, which measures liquidity, and loan approvals, do not have a notable impact on the growth of small and medium-sized enterprises during the post-crisis phase, hence not strong growth drivers. Unexpectedly, financial literacy, often regarded as a critical determinant of business success, also demonstrated minimal effect on the performance of these enterprises. These results challenge conventional assumptions regarding the determinants of small and medium-sized enterprise growth during economic recovery. The study contends that internal financial metrics may be less influential than previously believed, while external and adaptive factors are gaining importance. For example, the research underscores the increasing relevance of digital financial tools, sound management practices, and adaptable financial behaviors that enable businesses to adjust swiftly to dynamic market environments. The findings explain that merely enhancing financial access for small and medium-sized enterprises is insufficient; rather, financial literacy is now more crucial in the modern business context. Consequently, policymakers and business leaders are encouraged to reorient their approaches by placing greater emphasis on adaptability and innovation in financial management practices.
Keywords: Financial Stability, Financial Literacy, Access to Credit, Digital Finance

Introduction

After experiencing major systemic changes, small and medium-sized enterprises typically play a significant role in revitalizing the economy, introducing innovative ideas, and generating substantial employment opportunities. According to Surya et al. (2021) and Schwab et al. (2019), in both advanced and emerging economies, small and medium-sized enterprises account for approximately ninety percent of businesses and contribute nearly half to two-thirds of total employment and economic output. However, small and medium-sized enterprises remain particularly vulnerable to low cash reserves, economic uncertainty, and fluctuations in credit markets following a crisis (Mbatha and Ngibe, 2017). For this reason, policymakers, financial institutions, and entrepreneurs must understand which financial strategies are most effective or detrimental for the recovery of small and medium-sized enterprises.

A company is considered financially stable when it can effectively manage its cash flows, minimize debt exposure, and accurately forecast available funds to address unforeseen challenges. Small and medium-sized enterprises with a strong current ratio (above 1.2) and low debt leverage (around 0.8) tend to perform better and experience growth during periods of economic downturn (Morgan and Pontines, 2018; Schwab et al., 2019). Within the Resource-Based View, the ability to maintain a competitive advantage is linked to possessing rare, unique, and valuable resources such as financial capital (Schwab et al., 2019; Board, 2019). Evidence explains that rapid access to liquid capital enables small and medium-sized enterprises to invest in research and development, introduce new products, and expand their customer base after economic shocks (Pu et al., 2021).

Nonetheless, depending on the circumstances, companies may seek external funding to support continued growth once internal financial resources are depleted. According to the Pecking Order Theory, firms prefer to rely on internal funds and only resort to external debt when necessary due to limited internal resources (Board, 2019). In reality, credit is often less costly and more secure for firms with robust balance sheets, as these firms benefit from lower interest rates and reduced collateral requirements owing to diminished information asymmetry (Wasiuzzaman et al., 2020). Following the 2008 financial crisis, banks largely continued lending to firms with steady cash flows and demonstrated resilience in their financial performance (Degryse et al., 2018).

During times of economic crisis, however, credit markets typically tighten as lenders impose stricter loan requirements and higher collateral demands (Nguyen et al., 2020). This credit rationing disproportionately affects small and medium-sized enterprises, which often lack the information or resources available to larger corporations (Mbatha and Ngibe, 2017; Ali, 2022; Marc et al., 2023). To address these challenges, some regions have implemented credit guarantee schemes in which both lenders and guarantors share the risk if borrowers default. Notable examples include the Credit Guarantee Fund Trust in India and JEREMIE, managed by the European Investment Fund, which demonstrate that guarantee coverage can significantly increase the number and size of loans, by as much as twenty-five percent—when private financial institutions are unable to provide these services (Cheong et al., 2020; Amadasun and Mutezo, 2022). While external financing is important, existing research primarily addresses credit accessibility as a result of financial stability rather than exploring how increased liquidity directly supports business growth. Therefore, comprehensive analyses using panel data that capture multiple periods and a broad range of financial indicators are necessary to better understand the connections

among crisis, finance, and economic expansion, as proposed by Msomi and Maharaj (2022) and Manzoor et al. (2021).

Financial literacy among small and medium-sized enterprise owners is also vital for the efficient use of resources and successful access to external funding. Entrepreneurs with strong financial knowledge are better equipped to budget, secure loans, evaluate interest rates, and assess risk. As a result, they can replenish cash reserves, interpret financial statements accurately, and negotiate more favorable loan terms (Babajide et al., 2023). Studies indicate that each incremental improvement in financial literacy increases access to credit by three percent and reduces default rates by five percent. With the rise of digital learning, business owners increasingly turn to online banks and lending platforms when traditional banks are not accessible (Ali & Rehman, 2015; Shofawati, 2019; Khalid et al., 2025). Failure to account for these factors in research may lead to erroneous conclusions regarding the effectiveness of credit accessibility in achieving policy objectives. Although there is substantial literature on financial health and small and medium-sized enterprise growth, significant gaps remain. Few studies comprehensively consider the roles of credit and alternative sources of finance under varying business conditions (Msomi and Maharaj, 2022; Ammar et al., 2025). Moreover, there is a shortage of research examining how trade credit and financial technology impact business expansion (Marc et al., 2023; Ali, 2022; Cheong et al., 2020; Shofawati, 2019; Zahid et al., 2025), and limited evidence exists on how owners' financial literacy affects their choice of funding sources (Babajide et al., 2023; Khalil et al., 2024). This study utilizes panel data from multiple periods of economic disruption, analyzing credit scores and financial literacy levels to identify detailed relationships among financial stability, financing, and business growth.

Small and medium-sized enterprises are indispensable to economic progress, employment generation, and innovation, especially in developing regions. However, their advancement is frequently constrained by restricted access to financial resources. Key financial challenges, such as high interest rates, insufficient collateral, stringent lending practices, and underdeveloped capital markets, pose significant barriers to accessing credit and investment. These constraints limit the operational potential, competitiveness, innovation capacity, and long-term sustainability of small and medium-sized enterprises. Therefore, understanding the impact of financial factors and financial literacy on the growth of these businesses is essential for crafting targeted policies and financial instruments that can create a more supportive environment for their development.

Literature Review

Building on previous research, this study seeks to demonstrate that the financial stability of a nation has a direct effect on the growth of small and medium-sized enterprises, and investment is hindered by limited access to credit, with both of these factors influenced by the financial literacy of small and medium-sized enterprise owners after a crisis. The application of diverse research methodologies produces several important insights in this area. The Resource-Based View is advanced in this study by considering financial stability as a dynamic capability that organizations can develop, furthering its relevance for small and medium-sized enterprise financial management (Board, 2019; Schwab et al., 2019). The analysis extends the field by using mathematical models to determine which types of funding contribute most to a company's development, depending on the ease of obtaining credit (Nguyen et al., 2020). Overall, the research finds that owner financial literacy is

critical in explaining how human capital shapes the external perception of a business (Babajide et al., 2023; Chowdhury and Alam, 2017; Rafique et al., 2025).

The research results offer clear benchmarks for liquidity, credit, and guarantee schemes, and propose digital finance approaches to help small and medium-sized enterprises confront future crises. Such initiatives as the Raast digital payment system in Pakistan show increasing policy interest in inclusion in digital finance. The findings also contribute to the Resource-Based View by demonstrating that financial stability can serve as a dynamic capability in various crisis contexts, thus integrating small and medium-sized enterprises into broader discussions of financial adaptability. Considering liquidity, credit-seeking behavior, and leverage independently provides a more nuanced understanding of how firms leverage their resources, thereby broadening the applicability of the Resource-Based View (Mbatha and Ngibe, 2017). Adjustments for owner-specific factors such as financial literacy and management experience clarify the reasons for these high-level results (Moscalu et al., 2020; Umair et al., 2025). These methodologies position the research at the forefront of small and medium-sized enterprise finance scholarship and offer greater insight into the relationships among financial stability, credit accessibility, and national recovery after crises (Beck and Demirguc-Kunt, 2009; Msomi and Maharaj, 2022; Naeem et al., 2025).

Small and medium-sized enterprises play an essential role in economic reconstruction through employment generation, innovation, and stimulation of domestic activity. Their recovery is enhanced by financial stability and the availability of external financial support. Analysis reveals that two-thirds of new jobs following a crisis are generated by small and medium-sized enterprises, with high-growth enterprises particularly vital to employment recovery during downturns. Morgan and Pontines (2018) emphasize that stable finances are essential for small and medium-sized enterprises, as the absence of financial resources can lead to insolvency, and a lack of financial stability is a primary reason why small and medium-sized enterprises in emerging markets struggle to recover (Manzoor et al., 2021; Ditta et al, 2025).

The Organisation for Economic Co-operation and Development (2020) notes that during the COVID-19 pandemic, small companies benefited from measures such as deferred loan payments, special emergency loans, and increased access to financial technology tools; these benefits reached sixty percent of small and medium-sized enterprises, as also reported by Pu et al. (2021). Cole (2021) found that community banks rapidly issued loans to close temporary funding gaps, and the World Bank (2021) observed that the use of blockchain reduced loan evaluation times by seventy percent. When internal finances were inadequate, small and medium-sized enterprises increased their borrowing by twenty-five percent during the 2008–2010 crisis. Degryse et al. (2018) explain that banks reduced lending to companies perceived as high-risk, further widening credit gaps. During economic downturns, Board (2019) states that organizations deplete their reserves first to avoid risky investments. Research supports the recommendation by Cowling and Mitchell (2015) to develop more effective financing solutions, with Beck et al. (2018) showing that small and medium-sized enterprises using peer-to-peer funding complete projects ten percent faster than those relying solely on banks. This research examines the impact of proposed policy changes for small and medium-sized enterprises operating in different public–private sector contexts. According to the World Bank (2021),

businesses participating in streamlined online lending programs benefit from guarantees that are thirty percent larger and income increases of eight percent.

While previous studies often relied on a single year or a cross-sectional approach, this research traces the evolution of finance patterns among small and medium-sized enterprises as they recover from 2015 to 2025. By combining data from traditional loans with online lending, the study explores the financing methods that small and medium-sized enterprises depend on, and compares the effectiveness of online platforms with that of conventional banks (World Bank Report, 2021; Wasiuzzaman et al., 2020). Beck et al. (2018) highlight that banks are more likely to extend credit to small and medium-sized enterprises with stable earnings and when part of the lending risk is transferred to guarantee funds. Cowling and Mitchell (2015) report that, after the crisis, small and medium-sized enterprises receiving more bank loans invested twenty-five percent more in technology, while Cole (2021) observes that community banks introduced emergency low-interest loans that reduced reliance on internal reserves. By employing a credit index based on standard metrics, this study allows small and medium-sized enterprises to compare bank loans, trade credit, and financial technology options in terms of cost, convenience, and flexibility, aiding them in selecting the most suitable financing method (Kshetri, 2014; Pu et al., 2021; Uong and Nguyen, 2020; Msomi and Maharaj, 2022; Iqbal et al., 2025).

Typically, small and medium-sized enterprises monitor liquidity ratios, solvency indices, and indicators of cash flow changes. Schwab et al. (2019) found that an additional fifteen percent of small and medium-sized enterprises survive recessions if their current ratios exceed 1.2, and Mbatha and Ngibe (2017) note that enterprises experiencing more growth during recoveries usually keep their debt and equity balanced at less than 0.8. Research also demonstrates that without stable earnings, business growth is stunted, highlighting the importance of financial stability in overcoming obstacles (Hossain et al., 2023). Studies by Rupasingha and Wang (2017) show that small and medium-sized enterprises with consistent profits are more likely to experience revenue growth after a crisis. According to Coad and Rao (2020) and Cheong et al. (2020), the relationship between stability and growth is particularly relevant for highly successful small and medium-sized enterprises. Delmar et al. (2016) find that small companies managing their cash flow carefully experience steady growth. Almeida and colleagues (2015) show that enterprises relying more heavily on checks for payments are ten percent more likely to increase investment than those less reliant on such methods.

Amadasun and Mutezo (2022), Pu et al. (2021), Babajide et al. (2023), and Surya et al. (2021) argue that a well-balanced mix of financial resources enables businesses to remain competitive and that improved liquidity supports greater investment in innovation and workforce training. This study specifies where credit significantly influences financing, offering managers practical guidance on how much liquidity is necessary and the most suitable loan terms (Cheong et al., 2020; Chowdhury and Alam, 2017; Ali et al., 2025). Decades of panel data and robust testing provide evidence-based guidelines for balancing the use of reserves and borrowing to maximize resource efficiency (Rao et al., 2023). The availability of credit to small and medium-sized enterprises is shaped by banking ownership and insolvency regulations, as highlighted by Board (2019). Liu et al. (2022) offer a comprehensive approach to strengthening small and medium-sized enterprise resilience and growth through a variety of financial tools, making significant contributions to the

theory and practice of small and medium-sized enterprise finance after a crisis (Abraham and Schmukler, 2017; Ali et al., 2025).

Long-standing relationships with banks and regulatory stability help enterprises secure preferred credit terms, though weak regulatory environments can prompt banks to alter their lending practices, according to Schwab et al. (2019). Despite extensive research, the evolution of small and medium-sized enterprises through multiple crises remains poorly understood. Surya et al. (2021) advocate for long-term studies, and Manzoor et al. (2021) explain incorporating trade credit and crowdfunding into future analyses. Hair et al. (2018) recommend refining structural equation models to assess mediating and moderating factors, while Preacher et al. (2007) outline advanced methods for identifying moderated mediation (Degryse et al., 2018; Pu et al., 2021; Ali et al., 2025). By integrating banks, trade credit, and features of financial technology, the credit index developed in this research provides a comprehensive view of primary financing options for small and medium-sized enterprises (Cheong et al., 2020; Amadasun and Mutezo, 2022; Ali et al., 2025). Research by Eniola and Entebang (2017) and Babajide et al. (2023) confirms that greater financial knowledge leads to more stable cash flows and better credit terms. Shofawati (2019) and Kshetri (2014) also conclude that developing skills in finance and technology can increase the use of financial technology lenders in rural areas by as much as twenty-five percent.

Despite the considerable body of research highlighting the critical importance of financial stability, access to credit, and financial literacy for the growth of small and medium-sized enterprises (SMEs) in both emerging and developed economies (Schwab et al., 2019; Surya et al., 2021; Mbatha and Ngibe, 2017; Morgan and Pontines, 2018; Ali et al., 2025), there remain significant gaps in understanding how these factors interact during post-crisis economic recoveries, particularly in Pakistan. Existing studies have typically emphasized the relevance of liquidity, current ratios, and credit accessibility as key determinants of SME growth (Board, 2019; Pu et al., 2021; Beck and Demirguc-Kunt, 2009; Msomi and Maharaj, 2022; Wang & Huang, 2024; Ali et al., 2025). However, recent empirical evidence questions the effectiveness of traditional financial indicators and even financial literacy in predicting SME performance during periods of economic turbulence (Cheong et al., 2020; Amadasun and Mutezo, 2022; Babajide et al., 2023; Kar & Dasgupta, 2024; Manzoor et al., 2021). Notably, while the literature acknowledges that improved financial literacy can facilitate better access to credit and resource allocation (Babajide et al., 2023; Chowdhury and Alam, 2017; Iqbal & Hayat, 2025), there is limited empirical research specifically examining the mechanisms by which financial literacy translates into tangible performance outcomes for SMEs in developing countries recovering from crisis (Shofawati, 2019; Kshetri, 2014; Marc, 2025). Furthermore, most prior analyses have overlooked the potential impact of digital finance tools and adaptive management behaviors, which may now play a more prominent role in driving SME resilience than static financial metrics (Pu et al., 2021; World Bank, 2021; Wasiuzzaman et al., 2020; Cowling and Mitchell, 2015; Liu et al., 2022; Ali & Mohsin, 2023). Theoretical perspectives such as the Resource-Based View and Pecking Order Theory have been applied to SME finance (Schwab et al., 2019; Board, 2019; Roy & Madehswaran, 2020), yet there is a paucity of longitudinal studies using panel data to investigate how financial stability, credit sources, and financial literacy interact over multiple crisis periods (Zubair & Hyat, 2020; Msomi and Maharaj, 2022; Manzoor et al., 2021; Surya et al., 2021). Additionally, the literature tends to

focus on single-country, cross-sectional, or one-year analyses, thereby failing to capture the evolving nature of SME finance and performance through multiple business cycles and crises (World Bank, 2021; Beck et al., 2018; Pu et al., 2021). Research addressing the effects of alternative funding sources such as fintech lenders, peer-to-peer platforms, and trade credit on SME growth in the Pakistani context is particularly scarce (Kshetri, 2014; Shofawati, 2019; Cheong et al., 2020; Bozic & Bozic, 2025). There is also insufficient exploration of how regulatory, technological, and behavioral factors mediate or moderate the relationship between financial literacy and SME outcomes (Hair et al., 2018; Ahmad & Rehman, 2019; Preacher et al., 2007; Rao et al., 2023; Dahmani & Makram, 2024; Mbodi & Laye, 2025). Therefore, this study seeks to address these gaps by employing a robust panel dataset of Pakistani SMEs, assessing the interplay among financial stability, access to credit, and financial literacy during periods of economic disruption. By integrating the effects of digital finance adoption, regulatory context, and adaptive financial behaviors, this research advances the understanding of what truly drives SME performance in the contemporary, crisis-prone business environment.

Theoretical Framework

According to financial constraints theory, credit challenges faced by SMEs in developing countries are significantly worsened by information asymmetries, which hinder lenders' ability to fully assess borrowers; this lack of transparency can reduce SME growth by as much as 30% (Batrancea et al., 2022). Empirical evidence underscores that access to credit—measured by the number of bank loans secured in the past year—emerges as the key driver for converting available financial resources into tangible company growth (Batrancea et al., 2022; Xiong, 2024). Consistent with Pecking Order Theory, more financially secure firms typically rely on internal funds before seeking external debt, thereby minimizing information asymmetry and financing risks (Board, 2019). Studies by Nguyen et al. (2020) demonstrate that SMEs can achieve a 5% increase in revenue growth with each additional loan acquired, while Msomi and Maharaj (2022) further show that lenders tend to favor firms with robust financial positions, supporting Uong's assertion that debt financing has played a vital role in SME expansion. The degree of stability and growth realized by SMEs is closely tied to the financial knowledge of their managers, often measured using standardized quizzes on budgeting, leverage, and interest (Quartey et al., 2017). Drawing from entrepreneurial human capital theory, skilled managers can leverage resources more efficiently to maximize firm performance. Babajide et al. (2023) found that even modest improvements in financial literacy can significantly boost earnings growth. Financially literate entrepreneurs are also more likely to seek out alternative banking relationships and adopt innovative financial technology solutions at opportune times, thereby enhancing both business growth and security. In contrast, limited financial literacy often leads SMEs to miss critical investment opportunities and beneficial banking offers (Basha et al., 2023). Based on Schwab et al. (2019), Board (2019), and Eniola & Entebang (2017), the mode of our study becomes:

$$SMEGrowthit_{it} = \beta + \beta_1 Saleit + \beta_2 \text{ Current Assets} + \beta_3 \text{Financial Literacy it} + \beta_4(Control\ variables + Ui.$$

Small and medium-sized enterprise growth, measured through the annual revenue growth rate, is utilized as the primary dependent variable in the case of Pakistan. Key independent variables include current assets, accessibility to credit, and the number of new bank loans successfully obtained by the firm in the past twelve months, regardless of loan size.

Additional control variables encompass firm age, organizational size, and bank loan history. The financial literacy of owners is measured using a five-item Likert scale survey designed to assess knowledge and skills relevant to financial management.

This research employs a quantitative, cross-sectional survey approach to examine how financial stability influences the growth of small and medium-sized enterprises by facilitating access to credit, and how the owner's financial literacy moderates these effects. All data collection and statistical analysis will be conducted using the Statistical Package for the Social Sciences, version 26.

The target population consists of owners or financial managers of registered small and medium-sized enterprises in the selected country or region that remained active following the most recent economic crisis (Quartey et al., 2017). Stratified random sampling is employed to ensure comprehensive representation from manufacturers, service providers, retailers, and firms of varying sizes. The study aims to collect no fewer than 300 valid responses, consistent with the guideline of obtaining ten to fifteen observations per predictor for robust regression analysis (Tabachnick and Fidell, 2019). The survey questionnaire will be distributed through small and medium-sized enterprise associations and chambers of commerce. The accompanying cover letter will outline the purpose of the study, guarantee confidentiality, and encourage participation. To increase the response rate, two follow-up reminders will be sent at one-week intervals (Ayyagari et al., 2018).

Empirical Results and Discussion

The descriptive statistics presented in Table 1 reveal that the sampled small and medium-sized enterprises maintain a robust liquidity buffer, as indicated by a mean current ratio of 1.92. This finding aligns with the perspective of Schwab et al. (2019), who emphasize the importance of short-term assets in fostering growth resilience. The substantial variance in annual revenue change (mean 4.52 percent, standard deviation 14.27) reflects considerable volatility, a characteristic commonly observed in emerging markets as noted by Mbatha and Ngibe (2017). The average financial literacy score of 3.0 explains a moderate level of financial literacy among small and medium-sized enterprise managers, consistent with the observations of Babajide et al. (2023) regarding the influence of financial knowledge on decision-making. The firms in the sample are relatively mature, with an average age of approximately ten years and an average workforce size of 105 employees, corroborating the findings of Morgan and Pontines (2018) that financial management tends to improve with firm age and size. The sample's balanced representation across various sectors, including services, manufacturing, and retail, enhances the generalizability of the results and supports the conclusion of Cheong et al. (2020) concerning the sector-specific challenges faced by small and medium-sized enterprises in financial management.

Table 1: Descriptive Statistics

Variable	Mean	Std Dev	Min	Median	Max
Current Assets (PKR)	556,623	268,945	100,404	527,170	998,860
Current Liabilities (PKR)	439,038	214,045	51,062	437,952	791,426
Revenue Growth (%)	4.52	14.27	-19.55	5.24	29.74
Current Ratio (CA/CL)	1.92	2.25	0.14	1.28	18.93
Financial Literacy (1-5)	3.0	0.82	1.0	3.0	5.0
Firm Age (Years)	10.1	6.3	1.0	9.0	20
Firm Size (Employees)	105	61	6.0	102	200
Bank Loans Approved	1.4	1.5	0.0	1.0	6.0

| Bank Loans Approved | 1.4 | 1.5 | 0.0 | 1.0 | 6.0 |

The results of the correlation analysis, presented in Table 2, indicate that small and medium-sized enterprises with a higher number of bank loans tend to experience greater revenue growth (correlation coefficient = 0.22), highlighting the value of external financing as emphasized by Rupasingha and Wang (2017). A modest positive correlation between the current ratio and revenue growth (correlation coefficient = 0.18) explains that effective liquidity management contributes to improved performance, consistent with the observations of Schwab et al. (2019). Notably, financial literacy is more strongly correlated with the availability of bank loans (correlation coefficient = 0.31) than with direct revenue growth, mirroring the findings of Hussain et al. (2018), who observed that financial knowledge enhances access to financing rather than directly driving higher growth levels. While the association between firm assets and growth is minimal yet positive (correlation coefficient = 0.14), this supports Agyei (2018), who noted that firm assets contribute to business expansion.

Table 2: Correlation Matrix

Variables	Revenue Growth	Current Ratio	Fin. Literacy	Bank Loans	Firm Size
Revenue Growth	1.00				
Current Ratio	0.18	1.00			
Fin. Literacy	0.05	0.12	1.00		
Bank Loans	0.22	-0.07	0.31	1.00	
Firm Size	0.14	-0.09	0.08	0.19	1.00

Two ordinary least squares models were used to predict revenue growth (Model 1) and current ratio (Model 2). The results of the regression analysis indicate that bank loans (2.95) and firm size (0.04) are the principal contributors to revenue growth, as reported in Tables 3 and 4. These findings are consistent with the work of Morgan and Pontines (2018) and Surya et al. (2021), who identified financing and organizational scale as key accelerators of growth. However, neither financial literacy nor industry type appears to have a significant direct impact on revenue growth, which may be due to the presence of mediating or indirect effects. None of the variables in the model exhibit substantial predictive power regarding the current ratio (0.06), explaining that liquidity is more likely shaped by broader market conditions and shocks, in alignment with Board (2019). These findings underscore that, for small and medium-sized enterprises, the factors that promote growth differ from those that drive liquidity. The analysis highlights the importance of tailoring support for small and medium-sized enterprises to match their specific size and requirements. For smaller firms, simplifying loan application processes and reducing collateral requirements are vital measures that can help them progress effectively (Iqbal et al., 2018). Larger, small, and medium-sized enterprises can benefit from advanced financial training programs, enabling them to optimize their existing financial infrastructure (Nkwabi and Mboya, 2019). Initiatives that enhance market access and provide technical support should be complemented by improved financial knowledge, as this combination is more effective in improving outcomes for individuals with limited access to banking services than financial literacy alone (Yeboah, 2021). While cross-industry strategies are increasingly viable as industry boundaries blur, it is crucial to integrate liquidity management best practices into such advisory services to prevent small and medium-sized

enterprises from engaging in unnecessary speculative activities (Reddy, 2019). By adopting these multifaceted strategies, financial literacy can catalyze long-term growth (Susan, 2020).

Table 3: Revenue Growth Rate for Model-1

Variables	Coeff	p-value
Financial Literacy	0.87	0.12
Bank Loans	2.95	0.01
Firm Size	0.04	0.03
Firm Age	-0.21	0.15
Industry (Services)	Ref.	-
Industry (Retail)	-1.82	0.22
Industry (Manufacturing)	-0.93	0.45
R^2	0.18	

Table 4: Current Ratio for Model-2

Variables	Coeff	p-value
Financial Literacy	0.15	0.28
Bank Loans	-0.12	0.41
Firm Size	-0.003	0.65
R^2	0.06	

Mediation analysis using PROCESS Model 4 is applied in this study to determine whether bank loans serve as a mediator in the relationship between financial literacy and revenue growth. PROCESS Model 4 is commonly employed in research to examine simple mediation, where an independent variable influences a dependent variable through a mediating factor. This approach enables researchers to assess indirect effects and gain deeper insights into the underlying mechanisms or processes that drive the observed relationships.

Table 5: Mediation Analysis (PROCESS Model 4)

Path	Effect	Bootstrapped 95% CI
Indirect (X→M→Y)	1.04	[0.31, 1.92]
Direct (X→Y, controlling for M)	0.41	[-0.22, 1.05]
Total (X→Y)	1.45	[0.15, 2.75]

The mediation analysis reveals that bank loans fully mediate the relationship between financial literacy and revenue growth, with an indirect effect of 1.04. This finding supports the resource-based theory proposed by Barney (1991), indicating that financial literacy itself does not directly drive growth. Instead, its value is realized through its influence on access to credit, as highlighted by Hussain et al. (2018) and Babajide et al. (2023). The lack of a significant direct effect underscores the importance of policy and institutional support in expanding financing opportunities, affirming the observations of Okello et al. (2017) and Pu et al. (2021) regarding the necessity of accessible financial channels for translating knowledge into business performance.

Table 6: Moderation Analysis (PROCESS)

Term	Coeff (β)	p-value
Financial Literacy (X)	0.79	0.18
Firm Size (W)	0.03	0.04
Interaction (X × W)	0.11	0.03

R^2		0.21

The moderation analysis demonstrates that financial literacy positively influences revenue growth, and this relationship is further strengthened by firm size (0.11), in accordance with the theory of organizational learning (Cohen and Levinthal, 1990). While smaller enterprises do not exhibit a significant effect of literacy on growth, larger firms, specifically those in the ninetieth percentile, show a marked benefit (1.92), indicating that managers of larger firms possess a greater ability to effectively implement financial knowledge. This finding confirms the assertions of Agyei (2018) and Yeboah (2021), who noted that scale enhances the utilization of resources. The evidence explains that policymakers should expand the scope of financial literacy initiatives to ensure these programs reach firms of varying sizes and are tailored to exploit their full potential. This study reveals that financial literacy influences growth indirectly, primarily through improved access to bank loans, and that the effect differs for small and large enterprises. It is not significant when considered in isolation, nor is there any industry-specific effect, indicating a need for further exploration of financial literacy in the context of small and medium-sized enterprises (Katnic et al., 2024). These findings advocate for the adoption of a comprehensive theoretical framework that considers the interplay between individual cognition, organizational structure, culture, and behavior (Yates, 2019).

Essentially, financial literacy facilitates resource acquisition and organizational growth, but does so indirectly; its main strength lies in enhancing the resourcefulness of decision-makers (Grohmann et al., 2018). This perspective is consistent with resource orchestration theory (Sirmon et al., 2011), which argues that a manager's financial expertise is most effective when integrated with other organizational competencies. Owners of smaller businesses who are financially literate often bridge informational gaps in credit markets and can attract lenders by submitting more competitive loan applications (Manzoor et al., 2021). However, some educational initiatives may conflate knowledge acquisition with practical application without assessing how well individuals are able to use these resources. Therefore, financial literacy should be viewed as a dynamic process that evolves alongside skills both within and beyond the organization (Hasan et al., 2021). According to absorptive capacity theory (Cohen and Levinthal, 1990), the impact of financial literacy on growth in large enterprises has not been fully addressed. This theory maintains that individuals assimilate new information by building on prior knowledge, yet this study finds that when managing complex or resource-scarce environments, more experience is required (Hussain et al., 2018). Effective financial management in large firms is facilitated by robust finance teams, efficient systems, and access to supplementary resources (Babajide et al., 2023). Owners of small and medium-sized enterprises may struggle to translate new knowledge into business decisions due to information overload (Hussain et al., 2018). The existence of organizational structure is as vital as knowledge itself, as larger structures are better positioned to utilize available information. Future learning models should consider how the benefits of literacy vary according to organizational and community size (Bongomin et al., 2017).

The lack of significant industry effects in this analysis contrasts with Institutional Theory, which posits that sector-specific rules guide corporate financial decisions. The growing use of financial technology across sectors explains that technological convergence is diminishing institutional differences. If retail small and medium-sized enterprises can employ the same artificial intelligence tools for cash flow management as manufacturers,

institutional homogenization is likely to occur (Kodongo, 2018). Consequently, theoretical models should increasingly account for the transformative influence of technology and internal organizational governance, rather than focusing solely on industry classification. Behavioral agency theory also aligns with these findings, as small and medium-sized enterprise owners often prioritize autonomy and reputation over purely economic objectives (Gorbachev and Luengo-Prado, 2019). Some financially aware business owners may overextend themselves in pursuit of growth, relying on their skills to overcome temporary financial setbacks (Rupasingha and Wang, 2017; Berger and Udell, 1998). This demonstrates that knowledge alone is insufficient for effecting change; instinct and behavior frequently outweigh formal education in major decision-making (Agyei, 2018; Cole et al., 2011). Therefore, theoretical frameworks are more effective when they incorporate psychological and behavioral factors that explain how literacy influences financial reasoning (Widyastuti et al., 2023).

Finally, the modest effect of financial literacy supports complementarity theory (Milgrom and Roberts, 1995), which asserts that organizational features yield value only when they are combined with complementary resources. Digital technologies, mentoring, and immediate market access all play vital roles (Srithirath and Sukcharoensin, 2022). Traditional literacy interventions that focus solely on foundational skills are inadequate for those who require advanced and digital competencies to fully leverage their education (Pu et al., 2021). This challenges the assumption that a single approach can address all needs, highlighting instead that financial literacy achieves its greatest impact when combined with other supportive elements (Raza et al., 2023). The financial literacy–embedded dynamic capability perspective regards literacy as a construct built through teamwork and social interaction, rather than merely through instruction or isolated practice. For example, an owner may secure a loan not only because of individual skills but also due to how well the business is structured and integrated within networks (Agyei et al., 2020). Future research should explore this concept across diverse economic contexts, especially in regions where collaboration among different sectors of the education system is essential (Frank et al., 2020).

Discussion

Business owners with strong financial knowledge should be able to articulate how effectively managing cash flows and maintaining healthy balance sheets have contributed to smoother business operations (Burchi et al., 2021). With improved procurement understanding, companies can avoid up to fifteen percent of inventory losses, which in turn strengthens their ability to service debt and achieve more favorable credit evaluations (Babajide et al., 2023). For micro businesses that often lack sufficient collateral, blockchain technology can facilitate the opening of new credit accounts, as seen in Indonesia, where digital finance systems have supported the expansion and financial inclusion of small and medium-sized enterprises (Shofawati, 2019). While small and medium-sized enterprises of every size should improve liquidity protection by utilizing algorithms to set aside a portion of daily sales, larger enterprises must ensure that departments such as sales, procurement, and finance are well-coordinated for optimal liquidity management (Morgan and Pontines, 2018).

Public authorities can now incorporate blockchain into their infrastructure to record intellectual property and projected earnings, enabling these intangible assets to be used as collateral for loans at a loan-to-value ratio ranging from forty to seventy percent

(Dewi et al., 2020). Regulations should also ensure that banks do not impose excessive charges on small businesses with ten or fewer employees and should allow such enterprises to submit simplified financial statements, thereby helping them build experience (Manzoor et al., 2021). These findings encourage banks to modernize and adapt their services. For example, customers with limited credit history may initially be offered a thirty percent lower credit limit, which can be increased after they complete online training about inventory financing (Caplinska and Ohotina, 2019). Educational curricula should be updated to avoid focusing solely on general topics. Short voice tips and mobile-based questionnaires delivered via platforms such as WhatsApp can support workers in small firms who have limited time for financial management (Nguyen et al., 2020). Larger enterprises benefit from strategic financial guidance that covers issues such as leveraging debt for market entry and understanding environmental, social, and governance obligations. Practical training, such as comparing laptop loans, helps reduce overconfidence, a barrier to realizing the full benefits of financial literacy (Mbatha and Ngibe, 2017). Measuring outcomes should focus on the number of training hours completed and the effectiveness of capital management rather than simply tracking course completion rates.

Innovative funding structures can integrate bank guarantees, lender behavior, and literacy-linked bonds that reimburse private investors only after students receive loans (Xu et al., 2020). Illustrating potential losses from not adhering to liquidity protocols (for example, "Most small and medium-sized enterprises that do not use liquidity protocols lose twenty-two thousand dollars annually") may encourage better financial planning (Pu et al., 2021). By adopting these strategies, financial literacy becomes central to an ecosystem that supports small and medium-sized enterprises, fostering progress by aligning financial knowledge with essential resources, disciplined practices, and tailored organizational structures for strategic capital access (Msomi and Maharaj, 2022). Understanding the distinct needs of small and medium-sized enterprises allows for more effective support. Rather than recommending basic financial literacy programs alone, this research advocates for a comprehensive approach that incorporates key elements such as access to loans, consideration of firm size, and integration of complementary resources (Martinez et al., 2019). Finding innovative funding solutions remains a major challenge for business owners (Agyei et al., 2020).

Conclusion and Recommendations

To assess the financial position of a company, it becomes clear that financial education forms the backbone of an effective growth system, yet it yields optimal results only when integrated with sound organizational strategies, adequate resources, and constructive behavioral practices. The key finding that access to loans contributes more substantially to growth than financial education alone highlights the shortcomings of focusing solely on financial literacy enhancement. Small and medium-sized enterprises with robust financial knowledge are better positioned to navigate the complexities of the credit market, present compelling credit histories to lenders, and obtain essential funding for business activities. Nonetheless, the clear differentiation between large and small enterprises underscores that only larger organizations are fully able to leverage financial knowledge, due to their greater resources and organizational frameworks supporting scalable growth. Consequently, smaller enterprises often encounter more significant obstacles in translating financial understanding into effective action.

The limited effect of industry sector on financial outcomes reflects a transition toward an era in which digitalization enables small and medium-sized enterprises from manufacturing, retail, and service industries to implement similar financial and business practices. One of the most notable findings is the weak correlation between liquidity and growth, illustrating that the decisions of small and medium-sized enterprise owners are predominantly influenced by social behavior, rather than by purely rational calculation. This research concludes that the health and development of small and medium-sized enterprises depend on the interplay of knowledge, organizational structure, resources, and psychological factors, all of which should be addressed through comprehensive and structural interventions. To convert these insights into sustainable growth, stakeholders should adopt a four-pillar framework based on orchestration, tailored to the distinct needs of each context. Owners of small and medium-sized enterprises must move beyond mere comprehension of financial principles, actively applying financial literacy in routine management tasks such as inventory and debt management, and using financial technology-driven tools to communicate financial competencies to creditors. Financial institutions should implement accountability mechanisms rooted in financial literacy, provide step-up credit lines that expand in conjunction with further training, and use up-to-date performance metrics informed by financial technology, accurate forecasting, and continuous skills development. Thus, educators and ecosystem developers must establish integrated platforms that facilitate access to diagnostics, financing, and additional services, including marketplaces for artificial intelligence tools and partnerships for environmental, social, and governance guidance, all within a cohesive, user-friendly environment.

References

Abraham, F., & Schmukler, S. L. (2017). Addressing the SME finance problem. *World Bank Research and Policy Briefs*, (120333).

Agyei, J., Sun, S., & Abrokwah, E. (2020). Trade-off theory versus pecking order theory: Ghanaian evidence. *Sage Open, 10*(3), 2158244020940987.

Ahmed, F., & Rahman, F. U. (2019). Impact of government borrowing on financial depth: Evidence from Pakistan. *Journal of Business and Economic Options*, 2(2), 88-94.

Ali, A. (2022). Financial liberalization, institutional quality and economic growth nexus: panel analysis of African countries. *Bulletin of Business and Economics (BBE), 11*(3), 27-36.

Ali, A. (2022). Foreign Debt, Financial Stability, Exchange Rate Volatility and Economic Growth in South Asian Countries. *Journal of Business and Economic Options*, 5(4), 26-34.

Ali, A., & Rehman, H. U. (2015). Macroeconomic instability and its impact on gross domestic product: an empirical analysis of Pakistan. *Pakistan Economic and Social Review*, 285-316.

Ali, A., Anjum, R. M. A., & Irfan, M. (2025). Impact of Exchange Rate Regimes on Financial Stability in Developed and Developing Economies. *Advance Journal of Econometrics and Finance, 3*(2), 236-246.

Ali, A., Asim, M., & Ahmad, K. (2025). Macroeconomic Drivers of Foreign Capital Inflows: Revisiting Taxation and Foreign Direct Investment Nexus in Pakistan. *Indus Journal of Social Sciences, 3*(3), 20-34.

Ali, A., Butt, M. H., & Ismail, S. (2025). Decentralised Finance as a Catalyst for Financial Inclusion: Evidence from Emerging Economies.

Ali, A., Iram, W., & Alam, M. (2025). Financial Globalization, Entrepreneurship, and Economic Growth: Evidence from Asian Countries

Ali, A., Jabeen, R., & Ahmad, K. (2025). Hidden Drivers of Financial Success: Exploring the Role of Trade Secrets in U.S. Corporate Performance.

Ali, A., Umrani, Z., & Jadoon, A. K. (2025). Macroeconomic and Financial Determinants of Equity Market Value: Evidence from the UK Listed Firms.

Ali, S. B., & Mohsin, A. (2023). Exploring financial soundness and economic growth dynamics in Pakistan. *Journal of Business and Economic Options*, *6*(1), 1-15.

Almeida, H., Campello, M., Laranjeira, B., & Weisbenner, S. (2009). *Corporate debt maturity and the real effects of the 2007 credit crisis* (No. w14990). National Bureau of Economic Research.

Amadasun, D. O., & Mutezo, A. T. (2022). Influence of access to finance on the competitive growth of SMEs in Lesotho. *Journal of Innovation and Entrepreneurship*, *11*(1), 56.

Ammar, M., Ali, A., & Audi, M. (2025). The Impact of Financial Literacy on Investment Decisions: The Mediating Role of Peer Influence and The Moderating Role of Financial Status. *Journal for Current Sign*, *3*(2), 379-411.

Ayyagari, M., Demirgüç-Kunt, A., & Maksimovic, V. (2018). Financing SMEs and economic development. In *Handbook of Finance and Development* (pp. 503-533). Edward Elgar Publishing.

Babajide, A., Osabuohien, E., Tunji-Olayeni, P., Falola, H., Amodu, L., Olokoyo, F., ... & Ehikioya, B. (2023). Financial literacy, financial capabilities, and sustainable business model practice among small business owners in Nigeria. *Journal of Sustainable Finance & Investment*, *13*(4), 1670-1692.

Basha, S. A., Bennasr, H., & Goaied, M. (2023). Financial literacy, financial development, and leverage of small firms. *International Review of Financial Analysis*, *86*, 102510.

Batrancea, L. M., Balcı, M. A., Chermezan, L., Akgüller, Ö., Masca, E. S., & Gaban, L. (2022). Sources of SMEs financing and their impact on economic growth across the European Union: Insights from a panel data study spanning sixteen years. *Sustainability*, *14*(22), 15318.

Beck, T., Demirgüç-Kunt, A., & Levine, R. (2009). Financial institutions and markets across countries and over time-data and analysis. *World Bank policy research working paper*, (4943).

Board, F. S. (2019). Evaluation of the effects of financial regulatory reforms on small and medium-sized enterprise (SME) financing. *FSB, Basel. https://www. fsb. org/2019/11/evaluation-ofthe-effects-of-financial-regulatory-reforms-on-small-and-medium-sized-enterprise-sme-financingoverview-of-responses-to-the-consultation*.

Bozic, I., & Bozic, A. (2025). Commercial banking and financial stability: evaluating internal and external determinants. *Journal of Business and Economic Options*, *8*(1), 1-14.

Burchi, A., Włodarczyk, B., Szturo, M., & Martelli, D. (2021). The effects of financial literacy on sustainable entrepreneurship. *Sustainability*, *13*(9), 5070.

Caplinska, A., & Ohotina, A. (2019). Analysis of financial literacy tendencies with young people. *Entrepreneurship and Sustainability Issues*, *6*(4), 6.

Cheong, C. W., Lee, M. H., & Weissmann, M. A. (2020). Credit access, tax structure and the performance of Malaysian manufacturing SMEs. *International Journal of Managerial Finance*, *16*(4), 433-454.

Chowdhury, M., & Alam, Z. (2017). Factors affecting access to finance of small and medium enterprises (SMEs) of Bangladesh. *USV Annals of Economics and Public Administration*, 2(26), 55.

Coad, A., & Rao, R. (2020). *Firm growth and innovation: What have we learned?* In J. P. Cunningham & S. E. Green (Eds.), *The Oxford Handbook of Managerial Economics* (pp. 125–145). Oxford University Press.

Cole, R. A. (2021). The role of community banks in providing emergency credit to small businesses during the COVID-19 pandemic. *Journal of Banking & Finance,* 134, 106367.

Cowling, M., & Mitchell, P. (2015). *The evolution of UK SME finance: A demand-side perspective. Venture Capital, 17*(4), 289–311.

Dahmani, L., & Makram, H. (2024). Fostering economic growth through financial stability in Sub-Saharan Africa. *Journal of Business and Economic Options*, 7(4), 13-22.

Degryse, H., Matthews, K., & Zhao, T. (2018). SMEs and access to bank credit: Evidence on the regional propagation of the financial crisis in the UK. *Journal of Financial Stability, 38*, 53-70.

Delmar, F., McKelvie, A., & Wennberg, K. (2013). Untangling the relationships among growth, profitability and survival in new firms. *Technovation, 33*(8-9), 276-291.

Delmar, F., McKelvie, A., & Wennberg, K. (2016). Untangling the relationships among growth, profitability and survival in new firms. *Technovation,* 36–37, 33–44.

Dewi, V. I., Febrian, E., Effendi, N., Anwar, M., &Nidar, S. R. (2020). Financial literacy and its variables: The evidence from Indonesia. *Economics & Sociology*, 13(3), 133-154.

Ditta, K. Ali, A., & Audi, M. (2025). Macroeconomic Determinants of Foreign Direct Investment in the GCC: A Panel Data Approach. Policy Journal of Social Science Review, 3(2), 391–412.

Eniola, A. A., & Entebang, H. (2017). SME managers and financial literacy. *Global Business Review*, 18(3), 559-576.

Frank, M. Z., Goyal, V., & Shen, T. (2020). The pecking order theory of capital structure. *In Oxford Research Encyclopedia of Economics and Finance.*

Hair Jr, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). Multivariate data analysis. In *Multivariate data analysis* (pp. 785-785).

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford publications.

Hossain, M. M., Ibrahim, Y., & Uddin, M. M. (2023). Finance, financial literacy and small firm financial growth in Bangladesh: The effectiveness of government support. *Journal of Small Business & Entrepreneurship,* 35(3), 336-361.

Hussain, J., Salia, S., & Karim, A. (2018). Is knowledge that powerful? Financial literacy and access to finance: An analysis of enterprises in the UK. *Journal of Small Business and Enterprise Development,* 25(6), 985-1003.

Iqbal, M. A., Ali, A., & Audi, M. (2025). Venture Capital and Macroeconomic Performance: An Empirical Assessment of Growth and Employment Dynamics. *Contemporary Journal of Social Science Review*, 3(3), 785-807.

Iqbal, M., Kazmi, S. H. A., Manzoor, A., Soomrani, A. R., Butt, S. H., & Shaikh, K. A. (2018). A study of big data for business growth in SMEs: Opportunities & challenges. In 2018 *International conference on computing, mathematics and engineering technologies* (iCoMET) (pp. 1-7). IEEE.

Iqbal, Z., & Hayat, M. (2025). Determinants of Financial-Technology Adoption: The Roles of Social Influence and Financial Inclusion in the Banking Sector. *Journal of Business and Economic Options*, *8*(2), 20-30.

Kar, S., & Dasgupta, S. (2024). Strategies to mitigate financial fraud through intellectual capital management. *Journal of Policy Options*, *7*(4), 38-47.

Khalid, U., Ali, A., & Audi, M. (2025). Understanding Borrowing Behaviour in the EU: The Role of Mobile Payments, Financial Literacy, and Financial Access. *Annual Methodological Archive Research Review*, *3*(5), 41-66.

Khalil, A., Shahid, M., Bhatti, M. K., & Ali, A. (2024). Global Perspectives on Fiscal Policy and Labor Income-Leisure Choices: Theoretical and Practical Insights. *Journal of Asian Development Studies*, *13*(2), 537-554.

Kshetri, N. (2014). The emerging role of Big Data in key development issues: Opportunities, challenges, and concerns. *Big Data & Society*, *1*(2), 2053951714564227.

Manzoor, F., Wei, L., &Sahito, N. (2021). The role of SMEs in rural development: *Access of SMEs to finance as a mediator. Plos one*, 16(3), e0247598

Marc, A. (2025). Linking Openness to Inclusion: A Cross-Regional Analysis of Economic Integration and Financial Access in Emerging Markets. *Journal of Business and Economic Options*, *8*(2), 31-38.

Marc, A., Ehsan, R., & Ali, A. (2023). *Does Globalization Promote Financial Integration in South Asian Economies? Unveiling the Role of Monetary and Fiscal Performance in Internationalization* (No. 119365). University Library of Munich, Germany.

Marc, A., Poulin, M., & Ali, A. (2023). Determinants of Human Wellbeing and its Prospect Under the Role of Financial Inclusion in South Asian Countries. *Journal of Applied Economic Sciences*, *18*(4).

Mbatha, N., &Ngibe, M. (2017). Factors affecting financial stability of small and medium enterprises: A case study of emerging markets. Risk governance & control: *financial markets & institutions*, 7(1).

Mbodj, A., & Laye, S. (2025). Reducing Poverty Through Financial Growth: The Impact of Financial Inclusion and Development in Emerging Economies. *Journal of Business and Economic Options*, *8*(1), 61-76.

Morgan, P. J., &Pontines, V. (2018). Financial stability and financial inclusion: The case of SME lending. *The Singapore Economic Review*, 63(01), 111-124.

Moscalu, M., Girardone, C., & Calabrese, R. (2020). SMEs' growth under financing constraints and banking markets integration in the euro area. *Journal of Small Business Management*, 58(4), 707-746.

Msomi, T. S., & Maharaj, A. (2022). Credit accessibility and viability of Small and Medium Enterprises in South Africa. *The Journal of Accounting and Management,* 12(1).

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187–221.

Naeem, H. Ali, A., & Audi, M. (2025). The Impact of Financial Stability on Environmental Degradation: Mediating Role of Green Investment and Moderating Role of Environmental Awareness. *Policy Journal of Social Science Review*, 3(1).

Nguyen, P. A., Uong, T. A. T., & Nguyen, Q. D. (2020). How small-and medium-sized enterprise innovation affects credit accessibility: *The case of Vietnam. Sustainability,* 12(22), 9559.

Nkwabi, J., & Mboya, L. (2019). A review of factors affecting the growth of small and medium enterprises (SMEs) in Tanzania. European *Journal of business and management,* 11(33), 1-8.

Okello CandiyaBongomin, G., MpeeraNtayi, J., Munene, J. C., & Akol Malinga, C. (2017). The relationship between access to finance and growth of SMEs in developing economies: Financial literacy as a moderator. *Review of International Business and strategy*, 27(4), 520-538.

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, 42(1), 185–227.

Pu, G., Qamruzzaman, M. D., Mehta, A. M., Naqvi, F. N., & Karim, S. (2021). Innovative finance, technological adaptation and SMEs sustainability: *the mediating role of government support during COVID-19 pandemic. Sustainability*, 13(16), 9218.

Quartey, P., Turkson, E., Abor, J. Y., & Iddrisu, A. M. (2017). Financing the growth of SMEs in Africa: What are the contraints to SME financing within ECOWAS?. *Review of development finance,* 7(1), 18-28.

Rafique, A., Ali, A., & Audi, M. (2025). Impact of Liquidity Risk Management on Profitability of Canadian Banks. *Annual Methodological Archive Research Review*, 3(1), 1-20.

Rao, P., Kumar, S., Chavan, M., & Lim, W. M. (2023). A systematic literature review on SME financing: Trends and future directions. *Journal of Small Business Management*, 61(3), 1247-1277.

Raza, A., Tong, G., Sikandar, F., Erokhin, V., & Tong, Z. (2023). Financial literacy and credit accessibility of rice farmers in Pakistan: *Analysis for Central Punjab and Khyber Paktunkhwa regions. Sustainability,* 15(4), 2963.

Reddy, D. P. S. (2019). Financial literacy and stability of the financial system. *GIS Business,* 14(4), 163-169.

Roy, S., & Madheswaran, S. (2020). The Nexus between Financial Sector Development and Economic Growth: Evidence from Asian Countries. *Journal of Business and Economic Options*, 3(2), 39-45.

Rupasingha, A., & Wang, K. (2017). Access to capital and small business growth: evidence from CRA loans data. *The Annals of Regional Science,* 59, 15-41.

Schwab, L., Gold, S., & Reiner, G. (2019). Exploring financial sustainability of SMEs during periods of production growth: A simulation study. *International Journal of Production Economics, 212, 8-18.*

Shofawati, A. (2019). The role of digital finance to strengthen financial inclusion and the growth of SME in Indonesia. *KnE Social Sciences,* 389-407.

Srithirath, V., &Sukcharoensin, P. (2022). Financial literacy, asymmetric information, and credit accessibility: case study of SMEs in the lao PDR. *Development Economic Review,* 16(1).

Surya, B., Menne, F., Sabhan, H., Suriani, S., Abubakar, H., & Idris, M. (2021). Economic growth, increasing productivity of SMEs, and open innovation. *Journal of Open Innovation: Technology, Market, and Complexity,* 7(1), 20.

Susan, M. (2020). Financial literacy and growth of micro, small, and medium enterprises in west java, indonesia. In *Advanced issues in the economics of emerging markets* (pp. 39-48). Emerald Publishing Limited.

Tabachnick, B. G., & Fidell, L. S. (2019). *Using multivariate statistics* (7th ed.). Pearson.

Umair, S. M., Ali, A., & Audi, M. (2025). Financial Technology and Financial Stability: Evidence from Emerging Market Economies. *Research Consortium Archive*, 3(1), 506-531.

Wang, J., & Huang, M. (2024). Dynamics of South Asian stock exchanges and their global interactions during and after the financial crisis. *Journal of Policy Options*, 7(3), 20-29.

Wasiuzzaman, S., Nurdin, N., Abdullah, A. H., & Vinayan, G. (2020). Creditworthiness and access to finance: a study of SMEs in the Malaysian manufacturing industry. *Management Research Review*, 43(3), 293-310.

Widyastuti, M., Ferdinand, D. Y. Y., & Hermanto, Y. B. (2023). Strengthening formal credit access and performance through financial literacy and credit terms in micro, small and medium businesses. *Journal of Risk and Financial Management*, 16(1), 52.

World Bank. (2021). *Blockchain for inclusive and sustainable finance*. World Bank Group.

Xiong, L. (2024). Driving Growth for SMEs in Laos' Commercial Sector Challenges and Opportunities. *Journal of Business and Economic Options*, 7(1), 10-18.

Xu, N., Shi, J., Rong, Z., & Yuan, Y. (2020). Financial literacy and formal credit accessibility: Evidence from informal businesses in China. *Finance Research Letters*, 36, 101327.

Yeboah, M. A. (2021). Determinants of SME growth: An empirical perspective of SMEs in the Cape Coast Metropolis, Ghana. *The Journal of Business in Developing Areas & Nations*, 14, 1-31.

Zahid, H. Ali, A., & Audi, M. (2025). Cryptocurrency Regulation and Financial Disclosure: Cross-Jurisdictional Evidence on Corporate Reporting Practices. *Bulletin of Management Review*, 2(2), 348–377.

Zubair, I., & Hayat, A. (2020). Financial Development and Poverty Reduction: Insights from Pakistan. *Journal of Business and Economic Options*, 3(4), 187-194.