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Integrating AI into Performance Management Systems in a Creative Workspace: A Study on Asiatic Marketing Communications Limited

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Abstract

This study examines employee perceptions of integrating AI into the performance management system at Asiatic Marketing Communications Limited (Asiatic MCL), a leading creative agency in Bangladesh, where evaluations remain largely manual and subjective. Using a quantitative descriptive design, data were collected from 42 employees through an online survey to assess their awareness, expectations, and concerns regarding AI-enabled evaluations. Findings indicate that while employees recognize AI's potential to reduce administrative workload, enhance consistency, and support development, they remain cautious due to limited exposure and doubts about AI's ability to interpret creative and strategic work. Respondents strongly prefer a hybrid model that combines AI-driven insights with human judgment under transparent HR oversight. The study recommends a gradual, HR-led transition supported by better documentation, practical training, and pilot testing, concluding that structured adoption can improve efficiency and fairness while preserving the human-centered evaluation essential to creative organizations.

Keywords: Performance Management Systems, Artificial Intelligence (AI), Employee Perceptions, Advertising Industry, Bangladesh.

1. Introduction

Performance management at Asiatic Marketing Communications Limited is constrained by manual, paper-based evaluation processes and subjective supervisory judgment, resulting in delayed feedback and operational inefficiencies. As the mother organization, Asiatic 3Sixty, moves toward digital transformation through an HRIS initiative, the feasibility of integrating AI into performance management has become a critical consideration. This study is undertaken to examine employee perceptions of AI-enabled performance management within a creative organizational setting. Specifically, it aims to assess employee receptivity to AI-supported evaluation and to identify whether a hybrid framework can balance the efficiency and consistency offered by AI with the contextual judgment required for creative and strategic work.

The study contributes to existing knowledge by providing empirical evidence from Bangladesh's creative industry, an underrepresented context in AI and performance management research, where performance outcomes are largely qualitative and resistant to standardized automation. By doing so, it extends current understanding of how AI-driven systems can be adapted for creative workplaces without undermining human-centered evaluation.

Research Question:

How do familiarity with AI, feedback-related experiences, and concerns regarding fairness and transparency influence employee perceptions and openness toward adopting AI-integrated performance management systems in a creative workspace?

Objectives of the Research:

- i. To assess how employee perceptions of AI in performance management are shaped by familiarity with AI tools, feedback experiences, and concerns related to fairness and transparency.
- ii. To identify the conditions under which employees feel more open and prepared to accept AI-enabled performance management systems.

2. Literature Review

Performance management systems have evolved from annual, compliance-oriented appraisals to continuous, development-focused frameworks emphasizing feedback and strategic alignment (DeNisi & Murphy, 2017). Earlier performance management models largely served administrative purposes and relied on subjective supervisor judgment. In contrast, according to Pulakos et al. (2019), contemporary systems prioritize ongoing documentation and coaching to support employee development and organizational adaptability. Despite these advances, many creative organizations continue to rely on manual and subjective evaluation practices, resulting in inefficiencies and inconsistent feedback. AI-enabled performance management tools are increasingly used to improve evaluative consistency, reduce rater bias, and streamline administrative processes. Platforms such as Lattice and Culture Amp analyze behavioral and performance data to support more objective assessments (Dhanalakshmi et al., 2023). However, concerns persist regarding algorithmic opacity, as limited transparency in AI decision-making can undermine employee trust and perceptions of fairness (Väänänen, 2025). These challenges are particularly relevant for organizations transitioning from paper-based performance management to digital systems.

Creative performance is inherently qualitative and context-dependent, making it difficult to evaluate through standardized or purely data-driven metrics. Existing studies indicate that AI systems struggle to assess originality, strategic contribution, and collaborative processes effectively (Fonder, 2024–2025). Consequently, Ogawa et al. (2025) emphasized that AI should function as a decision-support tool, with human evaluators retaining authority over qualitative judgment to ensure ethical accountability and contextual accuracy. In Bangladesh, AI adoption in

human resource management has primarily occurred in quantitative sectors such as banking and telecommunications (Rabby et al., 2025). Creative agencies often lack structured digital documentation, limiting AI's ability to capture non-visible tasks such as strategic thinking and conceptual development (Nath et al., 2025). This underscores the need for more pragmatic and experimental research on AI-enabled performance management within Bangladesh's creative industry, particularly from the employee perspective.

3. Materials and Methods

This study utilized a quantitative descriptive research design to map employee attitudes toward AI-enabled performance management at Asiatic MCL. A sample of 42 employees was drawn from creative, managerial, and operational roles using purposive and convenience sampling.

Participants represented a wide range of designations, including Directors (19%), Senior Executives (16.7%), and Managers (14.3%). Notably, 35.7% and 23.8% of respondents respectively reported over seven years and over ten years of industry experience. The study examined familiarity with AI tools, performance feedback experiences, concerns related to fairness and transparency, and trust in automated performance evaluation systems. Primary data were collected through a structured online survey administered via Google Forms, consisting of multiple-choice items, five-point Likert scale statements, and one open-ended question. Quantitative data were analyzed using percentage distributions supported by pie charts and bar charts, while qualitative responses were thematically coded to support and contextualize the statistical findings.

4. Results and Discussion

The analysis of the responses in the survey and the qualitative data exploring the employees' opinions on AI-based performance management systems can be categorized into the following key findings:

i. High awareness but low usage of AI tools: There is a significant divide between conceptual knowledge and practical experience. Figure 1 shows that 59.5% of respondents are aware of AI tools for performance management, and Figure 2 shows that 64.3% have never interacted with such features in their professional roles. This lack of exposure leads to a "fear of the unknown," with many employees adopting a cautious or neutral stance.

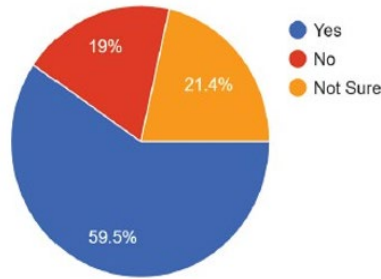


Figure 1: Employees' Awareness of AI in PMS

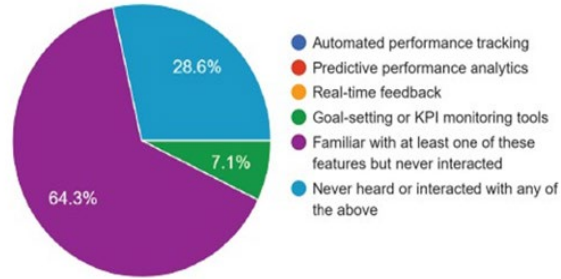


Figure 2: Employees' Interaction with AI in Performance Management Features

According to the respondents,

"It can be initiated. Since I have never experienced it, I cannot comment directly." (Respondent 6)

"As I am not familiar with this process, I don't have much idea. I hope it will have a positive and unbiased impact." (Respondent 40)

ii. Cautious about AI, optimistic about hybrid systems: Trust and acceptance towards AI is not absolute; it is conditional upon human oversight. A combined 78.6% of respondents rated an AI feedback validated by supervisor input, i.e. a hybrid evaluation system, as effective in Figure 3. Furthermore, 66.7% stated they would only trust AI evaluations if HR oversight and transparency were clearly maintained (Figure 4). Lastly, Figure 5 shows that openness to adopting AI increases with the HR's support, as 47.6% would be more willing to use these tools if proper training were provided.

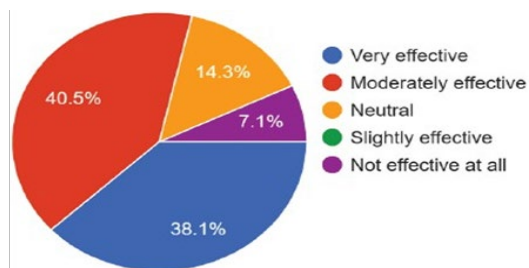


Figure 3: Effectiveness of Combining AI Feedback with Supervisor Input

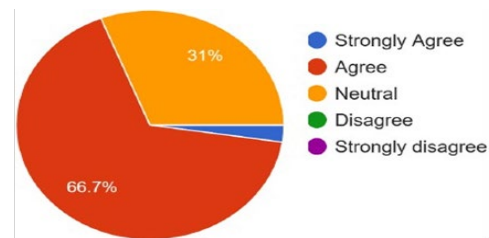


Figure 4: Agreement on Trusting AI in Performance Management with HR Oversight

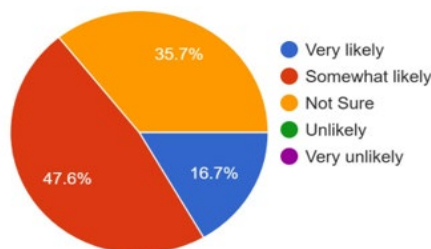


Figure 5: Employees' Openness to AI in PMS if HR Facilitates Proper Training

Two opinions regarding this were:

“AI integration can provide more objective, data-driven insights, but human judgment must always be retained.” (Respondent 19)

“AI integration can help to some extent, but AI alone can’t replace the supervisor’s role in assessment as of yet.” (Respondent 38)

iii. Perceived Value and Major Concerns: While Figure 6 shows 83.3% of employees recognize AI’s potential to enhance efficiency by automating administrative tasks and 59.5% value its ability to identify skill gaps, significant resistance remains regarding its qualitative limitations as Figure 7 shows that 73.8% of the workforce doubts AI’s ability to accurately assess creative tasks, with 64.3% expressing concern over its capacity to evaluate strategic contributions. These findings indicate that while employees are receptive to AI as an operational enhancer, they reject its use as a primary evaluator for subjective, context-heavy creative work.

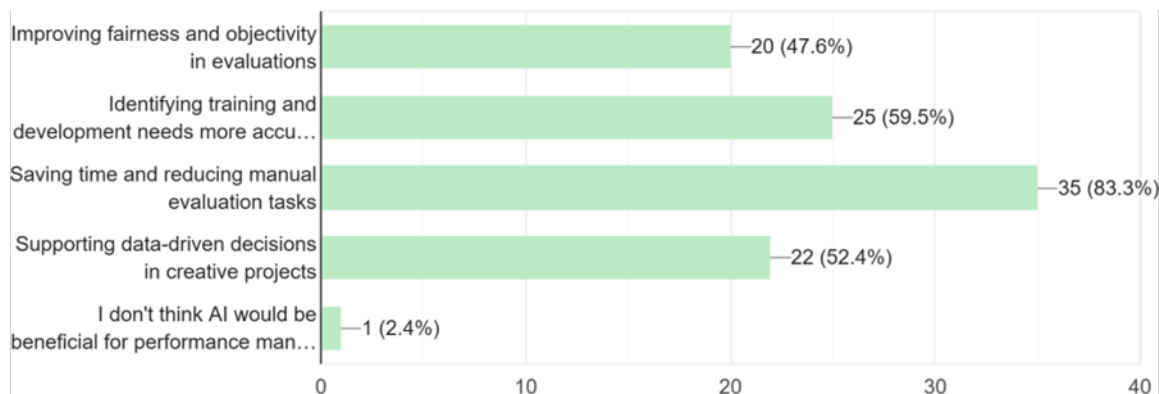


Figure 6: Employees' Perceived Benefits of AI in Performance Management

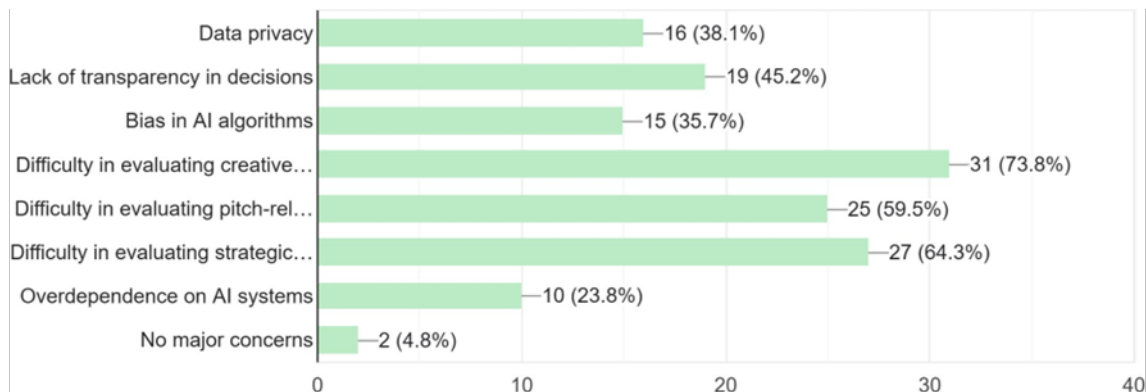


Figure 7: Employees' Perceived Major Concerns about AI in Performance Management

Respondent 14 neatly summarized,

“With AI-powered systems, performance management will be more data-driven; it can find the gap and also suggest the required training for me. However, AI can only assess the finished work

and not have the oversight to assess the process, and with so many variables in the creative landscape, there should be a balance that is difficult to strike.”

5. Conclusion

This study demonstrates that artificial intelligence has significant potential to enhance performance management systems within creative organizations such as Asiatic Marketing Communications Limited. Employees are not resistant to AI integration itself; rather, they are cautious of opaque, unsupervised, and overly automated implementations. The findings indicate that AI is perceived as a powerful tool for improving efficiency, consistency, and administrative support, but as an inadequate substitute for human judgment in evaluating creative and strategic work. Overall, employees favor AI as an enabling mechanism that augments performance management rather than replaces human evaluative authority.

From a managerial and policy perspective, the findings support the adoption of a transparent, HR-led hybrid evaluation model, in which AI is utilized for quantitative tracking and data consolidation. At the same time, supervisors retain responsibility for qualitative assessment. Practical measures such as establishing digital logs to capture invisible creative work, delivering hands-on training to improve algorithmic literacy while addressing the “black box” fear, and introducing phased pilot programs in departments with more quantifiable outputs can help reduce uncertainty and strengthen employee trust in AI-enabled performance management systems.

The study is limited by its focus on a single organization and a relatively small sample size ($n = 42$), which may restrict the generalizability of the findings. Future research should extend this investigation across multiple creative agencies in Bangladesh, incorporate larger samples, and examine the long-term effects of AI-integrated performance management on employee morale, creative output, and organizational culture. Despite these limitations, the study offers valuable empirical insight into human–AI collaboration in performance management within the creative sector of a developing economy.

References

- DeNisi, A. S., & Murphy, K. R. (2017). Performance appraisal and performance management: 100 years of progress? *Journal of Applied Psychology*, 102(3), 421–433.
<https://doi.org/10.1037/apl0000085>
- Dhanalakshmi, R., Cherukuri, D. M., Ambashankar, A., Sivaraman, A., & Sood, K. (2023). Smart analytics and AI for managing modern performance management systems. In *Contemporary Studies in Economic and Financial Analysis* (pp. 243–263).
<https://doi.org/10.1108/S1569-37592023000110B016>
- Fonder, M. (2024–2025). *Exploratory research on how AI is being implemented in HR processes*. Université catholique de Louvain.
<https://www.frontiersin.org/articles/10.3389/fcomp.2025.1672735/full>

- Nath, A., Aziz, F., Fuad, M. N., Nipa, M. N., Khan, S. R., & Barsa, N. J. (2025). AI in performance management: A study on employee perceptions and organizational outcomes. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.5194491>
- Ogawa, S., Okafuji, K., Hatada, K., & Baba, S. (2025). Understanding collaboration between professional designers and decision-making AI: A case study in the workplace. *arXiv*. <https://arxiv.org/abs/2509.24718>
- Pulakos, E. D., Mueller-Hanson, R., & Arad, S. (2019). The evolution of performance management: Searching for value. *Annual Review of Organizational Psychology and Organizational Behavior*, 6, 249–271. <https://doi.org/10.1146/annurev-orgpsych-012218-015009>
- Rabby, S. K. M. A. H., Jubair, A. A., Nizhum, T. Z., & Haque, M. A. (2025). The impact of AI-driven HR technologies on performance management and employee development: A study of the telecommunication sector in Bangladesh. *Social Science and Management*, 2(1). <https://doi.org/10.61784/ssm3033>
- Väänänen, E. (2025). *The impact of artificial intelligence on employee performance management: A literature review of benefits, limitations and future implications*. https://lutpub.lut.fi/bitstream/handle/10024/170500/Bachelorsthesis_Vaananen_Eevaliisa.pdf

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How Do Financial Literacy Campaigns Drive Capital Market Participation? Insights from Prime Bank Investment PLC's Initiatives

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Abstract

This study examines how financial literacy campaigns by Prime Bank Investment PLC (PBIL) influence capital market participation in Bangladesh. Applying a simple linear regression on the quarterly data from 2023 to 2025, the research reveals a strong correlation between the number of literacy sessions and new investor accounts opened at PBIL. The findings indicate that each session is associated with an average increase of about 86 new accounts, with statistically significant results. Overall, PBIL's initiatives are crucial for enhancing understanding and participation in the capital market, highlighting the importance of ongoing financial awareness programs for broader market engagement.

Keywords: Capital market, Financial literacy, Financial inclusivity, Investor behaviour.

1. Background of the Study

Financial knowledge plays a key role in helping people participate in investments and make confident decisions. In Bangladesh, while literacy rates have improved and more people are becoming financially active, many still hesitate to invest in the capital market. This reluctance often comes from a limited understanding of market behaviour, risk factors, and regulatory processes, especially in semi-urban and rural areas. As a result, this gap in knowledge limits investment participation and slows the overall growth of the capital market.

The economy of Bangladesh can be considered an emerging economy with rapid growth. According to World Bank Data, the current GDP stands at \$450.12 billion, which has only increased in the last fifteen years. Compared to this, the capital market is lagging behind. The DSE's market capitalisation is equivalent to \$55.24 billion, and the market cap-to-GDP ratio is 11.68 per cent, considering the latest figure of GDP for FY25 (Mufazzal et al., 2025). This is due to inefficient participation in the capital market and, even more so, investment without proper knowledge. Investors with very little knowledge even pose a greater threat to the overall growth of the capital market.

If the investors are not aware of the risks, they often involve themselves with the risky speculations and rumor-based decision making (Das, 2019, 38). In this context financial education is the process of building knowledge, skills and attitudes to become financially literate (Das, 2019, 38). The sources of a person's financial knowledge can also influence their investment decisions. Information provided by financial advisors could lower cost barriers and encourage participation (Hermansson et al., 2022, 2).

Prime Bank Investment PLC (PBIL), a subsidiary of Prime Bank Limited, has taken steps to promote financial awareness. It conducts financial literacy programs such as university sessions, investment seminars, and corporate visits, led by industry professionals. PBIL has collaborated with notable organisations like Popular Pharmaceuticals and City Group to help improve understanding of investment opportunities, covering topics like capital market basics, taxation, money management and disciplined investment practices. PBIL has also teamed up with Zaytoon, a financial education platform, to reach rural communities near Dhaka by offering sessions on risk management and safe investment practices for first-time investors and small business owners. This initiative promotes inclusive financial development.

While PBIL has held many awareness programs, research on their effectiveness in boosting investor confidence and market participation is limited. This study aims to investigate the impact of PBIL's financial literacy initiatives on capital market participation.

The rest of the paper follows the following flow. Section 2 represents the research objective and problem statement, while Section 3 illustrates the materials and methods. Section 4 discusses the results, and Section 5 concludes the study with some recommendations.

2. Research Objective and Problem Statement

This research focuses on understanding how PBIL's financial literacy and awareness programs are influencing people's involvement in Bangladesh's capital markets. The study aims to:

- Assess how PBIL's initiatives, including university sessions, corporate engagements, investment fairs, rural outreach, and seminars, help individuals understand the capital market.
- Evaluate if these programs increase investor confidence, raise risk awareness, and encourage investment, and
- Compare changes in investor behaviour by analysing the number of accounts opened in PBIL's Discretionary and Non-Discretionary Portfolio Management services.

Therefore, the central question guiding this study is:

Do financial awareness programs conducted by Prime Bank Investment PLC influence and increase capital market participation?

3. Materials and Method

3.1 Variable Definition

This study considers the number of financial literacy sessions conducted by PBIL, including awareness seminars, rural outreach programs, corporate visits, and university sessions as an independent variable; and the total number of accounts opened at PBIL, measured through the combined figures of MSDA (Margin Security Deposit Account), NMSDA (Non-Margin Security Deposit Account), and BDA (Bank Discretionary Account), representing capital-market participation, as a dependent variable.

3.2 Data Collection Process

Secondary data was obtained from Prime Bank Investment PLC's internal database. Quarterly account-opening figures (summation of MSDA, NMSDA, BDA) from 1 January 2023 to 19 November 2025 were collected through PBIL's IT Department. Information on financial awareness sessions, including the number of sessions, locations, and audience size, was collected from the Portfolio Management Department.

3.3 Research Method

This study uses an analytical and quantitative approach to assess how Prime Bank Investment PLC's financial literacy programs influence capital-market participation. The analysis is based on numerical data from PBIL's operational records, including the number of literacy sessions and quarterly investment account openings. Using measurable indicators such as changes in MSDA, NMSDA, and BDA accounts before and after the sessions, the methodology enables a clear evaluation of trends, investor behaviour, and the overall impact of PBIL's initiatives. The simple linear regression used in this study is as follows (Equation 1).

$$Y_t = \alpha + \beta X_t + \varepsilon \quad (1)$$

Where Y_t is the number of accounts opened in time t , X_t represents the number of sessions in time t , α is the intercept, β is the regression coefficient, and ε is the error term.

4. Findings and Discussion

4.1 Trend Analysis

Recognising the growth potential of Bangladesh's capital market, PBIL initiated extensive financial sessions aimed at helping people gain a better understanding of this market, while also building awareness, promoting inclusivity, and teaching wealth management basics. PBIL officially launched its financial awareness sessions in collaboration with Prime Bank, starting with a session for employees and professionals in the Cumilla region. From January 2023 to November 2025, they held numerous sessions at companies like City group, Daraz, New Asia Group, ShareTrip, Transcom Group, and Popular Pharmaceuticals; regional events with Prime Bank; four

university sessions; and a rural "Uthan Baithok with Zoytoon" in Shirajdikhan, Munshiganj. PBIL experts led them, focusing on capital markets, treasury bills, bonds (beyond common DPS/FDR/Sanchaypatra), diversification to cut risk, long-term planning, inflation's toll on savings, and tax-saving strategies. PBIL also offers various tailored incentives and discounts to its attendees to increase participation.

The graph below shows the number of new accounts opened at PBIL in each quarter from Q1 2023 to Q4 2025, indicating a clear upward trend over the quarters. Over time, account openings steadily increased, reflecting growing investor interest and participation.

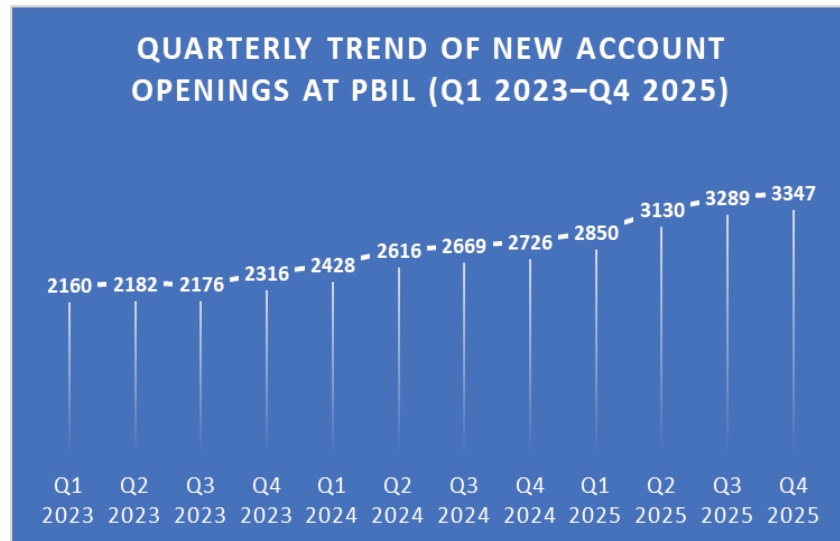


Figure 1: Trend in account opening in PBIL (Q1 2023-Q4 2025)

4.2 Regression Results

The coefficient associated with the financial literacy variable suggests that for every additional session, there is an increase of 86 new accounts, on average. The coefficient is statistically significant as $p = 0.0186 < 0.05$ (Table 1). The intercept is 2467, which represents the number of accounts opened; even if no sessions were conducted, this is due to PBIL's other business operations and external factors. The positive and significant coefficient confirms that the sessions conducted have a measurable and meaningful impact and increase capital market participation through increased account openings.

Table 1: Regression results

Variable	Coefficient	p-value
Intercept	2467.72	0.000
Literacy Program (Sessions)	86.14	0.019
F statistics	8.199	
R^2	0.467	
Observation	11	

The value of $R^2=0.476$ demonstrates that 47.6% of the variation in new accounts is explained by the number of literacy sessions organised by PBIL. A standard error of 318.60 suggests a moderate level of prediction accuracy. On average, actual account openings usually vary from the model's predictions by approximately 318 accounts.

The regression model states that financial literacy sessions have a statistically significant and positive impact on total accounts opened at PBIL and increase capital market participation. Even though external factors such as market conditions and political influence may also play a great role in influencing capital market participation, nearly half the variations are due to financial literacy sessions. Because of the sessions, account opening accelerated in 2024 and 2025. The findings align with established literature showing that informed investors are more likely to engage in the capital market, particularly in emerging economies with limited financial knowledge. In Bangladesh, where retail investors often lack access to investment education, PBIL's targeted literacy campaigns appear to provide a solution to that.

5. Conclusion and Recommendation

This study examines the impact of Prime Bank Investment PLC's (PBIL) financial literacy sessions on capital market participation in Bangladesh using quarterly data from 2023-2025. Regression results show a positive and significant relationship, with each session associated with approximately 86 new accounts and the model explaining 47.6% of the variation in account openings. The findings confirm that literacy initiatives encourage investor participation by reducing knowledge gaps and building confidence. A key limitation is the absence of multiple variables, such as market behaviour, political influence, and investor income level, which restricts deeper analysis. PBIL can conduct future research based on these multiple variables, which will showcase which variable contributes the most to participation, and clearly prove that financial literacy sessions affect capital market participation.

Nevertheless, the study provides a foundation for future research on financial literacy effectiveness.

Based on the results, the following recommendations are put forward.

- PBIL needs to increase the number of sessions,
- It needs to arrange consecutive follow-up sessions
- It is required to improve the digital and social media presence, and
- It is imperative to take feedback and monitor the outcome.

References

- Das, C. (2019, November 20). Significant Issues of Financial Literacy and Application in Stock Market: A Descriptive Study on Bangladesh Capital Market. *International Journal of Business Society*, 38. [OI:10.30566/ijo-bs-2019-11-4](https://doi.org/10.30566/ijo-bs-2019-11-4)
- GDP (current US\$) - Bangladesh | Data. (n.d.). World Bank Open Data. Retrieved December 10, 2025, from <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=BD>
- Hermansson, C., Jonsson, S., & Liu, L. (2022, January). The medium is the message: Learning channels, financial literacy, and stock market participation. *International Review of Financial Analysis*, 79. <https://doi.org/10.1016/j.irfa.2021.101996>
- Mufazzal, M., FARDAUS, F., & Manzur, S. N. (2025, November 16). Market cap shrinks against GDP amid lack of revival reforms. *The Financial Express*. Retrieved December 10, 2025, from <https://thefinancialexpress.com.bd/stock/market-cap-shrinks-against-gdp-amid-lack-of-revival-reforms>

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Financial Challenges Faced by Startups in Bangladesh

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Abstract

This paper looks at the major financial issues that influence the sustainability of startups in Bangladesh. Even though the startup ecosystem in the country has been growing very fast, most of these ventures still experience the structural financial constraints that hinder their existence and growth into larger entities. With a qualitative descriptive research design, the paper is based on the secondary data collected through academic literature, industry reports, policy documents, and reports of agencies like Startup Bangladesh Limited, Bangladesh Bank, the International Monetary Fund, and the World Bank. The discussion has explained that there are four significant contributors to startup sustainability, which include access to finance, financial literacy and management capability, policy and institutional environment, and macroeconomic conditions. The results show that a lack of access to domestic financing and excessive dependence on foreign investment are the most important obstacles. Poor financial management abilities among founders, policy implementation discrepancy, and inflation and currency depreciation worsen these problems and add uncertainty to operations. As noted in the study, these factors are related to one another and not independent of each other, and thus determine the resilience of startups. On the basis of the results, the paper suggests to increase the availability of diversified financing mechanisms, enhance financial literacy, enhance policy implementation, and sustainable business practices. The research adds to the literature on the subject as it presents a Bangladesh-specific view of the startup funding landscape and gives useful information to policymakers, investors, and other stakeholders in the ecosystem to promote sustainable entrepreneurial development.

Keywords: Startups, Financial Challenges, Startup Sustainability, Access to Finance, Bangladesh.

1. Introduction

Bangladesh has witnessed a surge in entrepreneurial activity over the last decade that was propelled by the processes of digitalisation, a young demographic and the growing attention to innovation-led businesses. New startups have surfaced in numerous industries, including fintech, logistics, e-commerce, health-tech, and agri-tech, as well as creating jobs and diversifying the economy. Although this progress has been made, the sustainability of startups is still a significant issue. Most

of these ventures do not last long enough after the initial years of operations because of financial constraints.

Although past research reveals challenges in individual form like lack of funds or regulatory restrictions, minimal research is done on how the restrictions are interconnected and have combined effects on the sustainability of a startup. This paper looks to fill that gap by examining how the various financial problems of startups in Bangladesh are interrelated. The study aims to add to the continuous work on the topic of entrepreneurial finance in developing economies and offer some practical conclusions on developing the ecosystem.

2. Literature review

The most crucial limitation to startups listed in Bangladesh is access to finance. According to research and policy-oriented reports, new ventures at the initial stages are in most cases unable to receive bank financing because of high requirements of collateral, limited prior credit history, and risk perception (Friedrich-Ebert-Stiftung [FES], 2021; International Finance Corporation [IFC], 2023). Despite the signs and reports on ecosystems that point to the growing number of startup initiatives, local investments appear to be provincial and central, thus without leaving numerous startups predisposed to start-up funds and informal ones (Startup Bangladesh Limited, 2023; LightCastle Partners, 2024).

Start up survival is also closely correlated with financial literacy and management ability. Research indicates that poor budgeting, cash flow planning, and financial reporting decrease the efficiency of operations and investor confidence, particularly when taking into account the first-time founders (Uddin et al., 2023; Saleem and Atiq, 2023). The gaps in financial capacities and limited access to structured training are narrated throughout as an obstacle to sustainable scaling, especially when the startups pursue professionalizing internal regulations and governance (UNESCAP, 2022; Karim et al., 2018).

Startup performance is further predetermined by policy and institutional conditions. Although there are numerous reforms and support systems, the complexity of regulations and inconsistencies in their application may expand compliance costs and ambiguity in the face of entrepreneurs (World Bank, 2023; UNESCAP, 2022). The role of central bank direction in increasing the access of credit by CMSMEs is also a policy issue, although the effectiveness of the policy is determined by the clarity of operations and through the smooth enforcement across financial institutions (Bangladesh Bank, 2025; The Business Standard, 2025).

Macroeconomic stability has been cited many times as an external factor which aggravates financial vulnerability. The rising costs of operation, the declining demand among consumers, and the overall economic corrective measures may elevate the operating expenses, decrease the consumer purchasing, and introduce unpredictability in cost, planning, and pricing, particularly when a company requires imported material or finances in foreign currency (International Monetary Fund, 2024). More recent commentary on ecosystems has also attributed to funding

declines and caution by investors to macroeconomic stress, which may constrain runway and postpone growth strategies, sometimes on projects that might otherwise carry high levels of potential (LightCastle Partners, 2024).

3. Materials and Methods

3.1 Type of Research: This is a qualitative and descriptive study. It is just intended to throw some light on the actual financial strains which the startups in Bangladesh have to deal with day to day. Rather than searching under the carpet for variables which are actually concealed or claiming the evidence, this study is interested in the description of the landscape itself as it can be found in practice. The strategy is centered on sympathy regarding local founders and to the best of its ability capture what they are experiencing in their reality, and lay out the financial and policy issues as well as possible in the most humble and transparent way possible.

3.2 Research Design: In the spirit of the qualitative descriptive work, the studies presented in this paper are based on the analysis of established documents, which collects the information about the industry reports, regulatory policies, a collection of academic papers, and journalistic news pieces. All the sources were carefully selected, not only due to credibility, but also by virtue of reflecting the actual texture of Bangladesh startup environment right now. The statistics, and the narratives concealed within them, are pretty candid on what actually contributes to startup survival, without attempting to dress the problems or make them what they are not.

3.3 Data Sources: The secondary sources have been purposefully chosen and carry a qualitative nuance and are contextual, such as:

- Important ecosystem analysis by other groups such as Startup Bangladesh Limited and LightCastle Partners that assist in mapping the overall picture.
- Financial circulars and regulatory rules of Bangladesh Bank and other governmental authorities providing a better idea of formal frameworks startups should work in.
- The literature in peer-reviewed publications discusses entrepreneurship, financial literacy, and access to finance in new Asian economies, allowing us to relate the situation in Bangladesh to the trends in the region.
- Economic commentaries and news stories by reputable media such as the Financial Express and the Business Standard of recent changing trends, resilience stories, and changes in the policies

3.4 Sampling Technique: In this case, details are selected by means of a purposive, non-probabilistic type of sampling of secondary documents, primarily due to the fact that every selected source must contribute to the information but not simply waste space. The rationale was to concentrate on the reports, stories, and articles that actually take a closer look at the pressure points of the startup life i.e. the holes, the disappointments and the black holes that founders usually fall down to. That way, the process is more interested in careful analysis rather than quantity with the

goal of achieving a layered, narrative-based comprehension of the current state of affairs of the Bangladesh startup ecosystem.

3.5 Sample Size: 22 key documents including established research papers, reliable news articles, financial circulars, etc.

3.6 Data Collection and Analysis: The central concern of this study is a methodical collection of both public and official texts, and the analysis based on the content and themes. The main problems like the access to credit, financial literacy, the pressure of the regulations and the macroeconomic instability are coded and organized with great care leading them to create a more honest and clearer image of the current situation. The patterns and stories are cross-referenced as themes start to emerge. It is not aimed at imposing a conclusion but to allow the findings to be a way of directly growing out of the data itself, producing a narrative of what is actually happening to startups in Bangladesh.

3.7 Key Hypotheses: Statistical hypothesis testing is neither asked for nor sought in descriptive qualitative research, but this paper will be guided by theoretical constructs such as:

1. Lack of finance continues to limit startups.
2. The financial literacy and management skills of the startup will determine how it approaches adversity.
3. Policy and institutional support deficits are barriers.
4. Macroeconomic instability increases startup risk.
5. Startup sustainability in Bangladesh is the confluence of finance, admin, policy and general economy.

These hypotheses organize the descriptive investigation and ensure that the analysis is connected to the essential research questions and real ontological experiences both the founders and policy-makers share.

4. Results and Discussion

Through the analysis, it is proven that a combination of financial, managerial, institutional, and macroeconomic factors determines startup sustenance in Bangladesh instead of a single limitation. Out of the four variables studied, access to finance is the most influential determinant. The results suggest that limited access to the domestic funding options, dependence on the foreign capital, and restrictive lending to the startups significantly reduce the likelihood of expanding and overcome operational risk. Such reliance on the external capital subjects startups to financing instability and diminishes their ability to conduct detailed financial planning.

The findings also indicate the significance of financial literacy and management capability. The founders of the startups that lack knowledge in budgeting, cash flow management, and financial reporting have a greater likelihood of leading their respective firms inefficiently and could cause financial distress. Based on the analysis, poor financial controls internally not only impact daily operations of the company but also decrease the confidence of investors, which further strengthens financing limitations. The interaction shows that the access to external funding directly depends on the managerial capability.

Policy and institutional factors are identified to be a moderate determinant of the performance of start ups. Despite the supportive policies and financing structures, they are poorly implemented and restricted by high regulatory complexity. The results suggest that uncertainty in the policies leads to a higher compliance cost and deteriorates formal financial involvement especially among start-up ventures. Consequently, startups can be informal or undercapitalised, which impedes sustainability further.

Lastly, macroeconomic factors also increase existing vulnerabilities. Operation costs are high and the foreseeability of revenue and pricing is decreased by inflationary pressures, fluctuation of exchange rates and overall instability in the economy. According to the findings, such circumstances disproportionately affect startups with narrow margins or those that use imported goods and assets and/or financing in a foreign currency. Together, these results indicate that the condition of sustainability of startups in Bangladesh relies on the combination of internal capabilities and external environments. The solutions to the challenges associated with reducing these issues will hence be a coherent intervention of access to finance, effectiveness in management, performance of regulations and stability of the macroeconomy.

5. Conclusion

5.1 Main Findings

A qualitative analysis of secondary data was conducted to investigate the issue of the sustainability of startups in Bangladesh and its financial problems. The results suggest that environmental factors which drive the sustainability of startups at a broader level are a combination of a few factors, namely, access to finance, financial literacy and management capability, policy and institutional environment and macroeconomic conditions. Of them, the internal financial management weakness and limited access to domestic financing emerged as the most serious drawbacks. These problems are further increased by gaps in policy implementation and macroeconomic instability. Notably, the results indicate that these factors do not contribute individually but they are complementary and make startups financially vulnerable, especially during its initial phases.

5.2 Policy Implications

This study has significant implications on the policy makers, the financial institutions and the stakeholders of the ecosystem. Increasing access to diversified financing instruments, such as venture capital, venture debt, and other sources of funds is critical in decreasing excessive dependence on foreign investment. Simultaneously, specialized programs aimed at enhancing the level of financial literacy and management skills of founders can enhance the level of internal controls and investor confidence. One more area that the policy makers ought to work on is to ensure that regulatory processes are streamlined, and that implementation of the current policies is consistent to cut down on compliance burdens. A supportive policy environment has the potential to be very instrumental in enhancing resilience and long term sustainability in start-ups.

5.3 Limitations

This research is limited in a few ways. The secondary analysis is solely based on secondary data and thus may not fully represent the firm level diversification or real time financial decision-making at individual start-ups. Moreover, the qualitative character of research does not make it possible to place the relative contribution of each variable into a statistical capacity even though credible and recent sources are used to support the analysis.

5.4 Future Directions

The research can be extended by future investigations using primary data through surveys or interviews with the founders of startups, investors, and policymakers to confirm and enlarge the results. The strength of relationship between the financial variables and the performance of start-ups could also be measured using quantitative methods. Additional industry-specific research can offer more detailed information about variances in financial problems of various industries. Such a study would add to the overall knowledge about startup sustainability in Bangladesh, and help in formulating more focused policy interventions.

References

- Abadeen, S. J. (2021). Problems and prospects of startups in Bangladesh. School of Business and Economics, United International University. Problems and Prospects of Startups in Bangladesh.docx
- Startup Bangladesh Limited. (2023). *Bangladesh Startup Investment Report 2023 (Short Version)* (pp. 2–3, 10–12). <https://www.startupbangladesh.vc/wp-content/uploads/2023/08/Bangladesh-Startup-Investment-Report-2023-Short-Version.pdf>
- LightCastle Partners. (2024). *Bangladesh Startup Investments Report 2024: A Year in Review* (“State of Funding Landscape,” paras. 2–4). <https://lightcastlepartners.com/bangladesh-startup-investments-report-2024-a-year-in-review/>

- The Business Standard. (2025, March 15). *Bangladesh Bank's new Master Circular can revise ICMSME financing and boost Bangladesh's startup credit access*.
<https://www.tbsnews.net/thoughts/bangladesh-banks-new-master-circular-can-revised-icmsme-financing-boost-bangladeshs>
- Singh, A. (2024). Financial constraints and funding solutions for small startups in emerging markets. *International Journal of Social Science and Economic Research*, 9(9), 3813–3839. Financial Constraints and Funding Solutions for Small Startups in Emerging Markets .pdf
- Rana, S., Amrithesh, S., Tyagi, S., & Beniwal, T. (2025). Breaking down the financial challenges of startups: A comprehensive study of failures. *Preprints.org*.
<https://doi.org/10.20944/preprints202505.1576.v1>
- Bangladesh Bank. (2025, September 5). *Master Circular on CMSME Financing* [PDF]. Scribd.
<https://www.scribd.com/document/847899770/Master-Circular-on-CMSME-Financing>
- International Finance Corporation (IFC). (2023). *SME finance gap report: Bangladesh country overview*. World Bank Group.
https://www.smefinanceforum.org/sites/default/files/Data%20Sites%20downloads/IFC%20Report_MAIN%20Final%203%2025.pdf
- International Monetary Fund (IMF). (2024, June 23). *Bangladesh: Second reviews under the extended credit facility arrangement and the arrangement under the extended fund facility and request for a modification of performance criteria (IMF Country Report No. 24/186)*. <https://doi.org/10.5089/9798400281433.002>
- Friedrich-Ebert-Stiftung (FES). (2021). *Policy Paper – Access to finance for SMEs in Bangladesh*. https://bangladesh.fes.de/fileadmin/user_upload/pdf-files/211219_Policy_Paper_-_Access_to_finance_2021_SMEF.pdf
- Uddin, U. M., Nahar, L., Rahman, M. M., & Saad, N. B. (2023). *The determinants of financial literacy among micro, small, and medium-sized enterprises (MSMEs) in Bangladesh and Malaysia*. *Journal of Entrepreneurship Education*, 26(S1), 1–13.
<https://www.abacademies.org/articles/the-determinants-of-financial-literacy-among-micro-small-and-medium-sized-enterprise-msmes-in-bangladesh-and-malaysia-15354.html>
- UNESCAP. (2022, May 15). *Bangladesh Startup Ecosystem Assessment Report*. United Nations ESCAP. https://www.unescap.org/sites/default/d8files/knowledge-products/Bangladesh%20Startup%20Ecosystem%20Assessment%20Report_May%202022.pdf
- The Financial Express. (2024, November 28). *MSMEs in Bangladesh face \$2.8 b financing gap: IFC*. <https://thefinancialexpress.com.bd/home/msmes-in-bangladesh-face-28b-financing-gap-ifc>
- Innovision Consulting Ltd. (2024). *Startup ecosystem in Bangladesh: Trends and survival patterns*. “Bangladesh’s Startup Ecosystem: Overcoming Challenges and Fostering Sustainable Growth”

- Azad, T. (2022). *Difficulties in setting up startups in Bangladesh: Business challenges in Bangladesh*. *Inverge Journal of Social Sciences*, 1(1), 78–99. <https://doi.org/10.63544/ijss.v1i1.10>
- Friedrich-Ebert-Stiftung (FES) Bangladesh. (2021). *Policy paper on access to finance for SMEs in Bangladesh*. Friedrich-Ebert-Stiftung Bangladesh Office. https://bangladesh.fes.de/fileadmin/user_upload/pdf-files/211219_Policy_Paper_-_Access_to_finance_2021_SMEF.pdf
- LightCastle Partners. (2020). *Bangladesh startup ecosystem report 2020: A landscape analysis of innovation and entrepreneurship*. <https://lightcastlepartners.com/wp-content/uploads/2020/07/Bangladesh-Startup-Ecosystem-Report-2020-1.pdf>
- Saleem, M., & Atiq, M. (2023). *Challenges faced by startups in accessing external financing*. *International Journal of Business and Management Sciences*, 4(2), 193–202. 416-Article+Text-1859-1-10-20230630.pdf
- Uddin, M. M., Chowdhury, M. M., & Ullah, M. M. (2015). *Barriers and incentives for youth entrepreneurship start-ups: Evidence from Bangladesh*. *Global Journal of Management and Business Research (B: Economics and Commerce)*, 15(4), 29–38. [Barriers_and_Incentives_for_Youth_Entrep.pdf](#)
- Karim, I. U., Khurshid, I. N., & Huq, S. N. (2018). *Critical success factors of tech-based startup ecosystem in Bangladesh*. *Journal of Entrepreneurship and Management*, 7(2). [Critical_Success_Factors_of_Tech_Based_D.pdf](#)
- Singh, S., Singh, M., & Singh, S. (2024). *Comparative analysis of legal challenges faced by startups in India and Bangladesh: The way forward*. *Educational Administration: Theory and Practice*, 30(2), 1279–1288. <https://doi.org/10.53555/kuey.v30i2.6603>
- World Bank. (2023). *Doing business in Bangladesh 2023: Regulatory environment and entrepreneurship*. World Bank Group. <https://thedocs.worldbank.org/en/doc/cf07cf58f2c345063c972a47209b8c11-0310012023/original/Bangladesh-Development-Update-October-2023.pdf>

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The Relationship Between Credit Risk Management and Financial Performance of Southeast Bank PLC

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Abstract

This report evaluates the effect of credit risk management (CRM) practices on the financial performance of Southeast Bank PLC based on ten years of quantitative data of 2015-2024. The research analyzes the impacts of main CRM indicators on the key financial dimension of profitability, stability, and operational efficiency. These results indicate that there is a close positive relationship between the good management of credit risks and the enhancement of financial performance, which highlight CRM as a crucial aspect of the long-term viability of the bank. The outcomes of regression show that the aspect of credit quality and loan portfolio management are key determinants of the performance of the bank. The report based on these insights recommends the improvement of technological integration, improvement of staff training, diversification of the loan portfolio and the use of advanced analytical tools to assist the proactive risk assessment. In general, the research outlines that the importance of good CRM practices in the achievement of financial resilience, enhancement of decision-making, and sustenance of sustained growth in an ever evolving and competitive banking environment is paramount.

Keywords: Credit Risk Management, Financial Performance, Southeast Bank PLC, Profitability, Regression Analysis, Risk Assessment.

1. Introduction

The banking sector in Bangladesh has changed significantly over the past few years due to globalization, rapid technological development, and continuous changes in regulatory policies. With this kind of dynamic environment, dealing with credit risk has turned out to be one of the greatest concerns of commercial banks. Credit risk occurs when the borrowers are not able to pay back the loans at their due time, it can have a direct impact on the stability and profitability of the bank. Thus, effective credit risk management (CRM) is critical to keeping the banks afloat and competitive in terms of their finances.

Southeast Bank PLC is one of the leading private commercial banks in Bangladesh and operates within this challenging and competitive banking environment. The management of credit risk is

crucial to the financial performance of the bank, which may result in financial losses in case of poor quality of loans and inability to manage risks of poor loan quality. CRM can be used effectively to decrease non-performing loans, increase quality of assets and sustainable growth. The most common indicators to assess the financial performance are the following: return on assets (ROA), return on equity (ROE), and net interest margin (NIM), which indicate profitability and efficiency of a bank.

Though the significance of credit risk management in the banking sector is well-known, there is limited empirical studies on the direct effect of this risk on the financial performance of a banking sector in the context of Bangladesh. The majority of the current research focuses on the international or regional outlook and does not give much attention to domestic market circumstances, regulatory environment, and bank-specific behavior. This produces a research gap in comprehending the impact of CRM on the performance of particular banks that are in operation in Bangladesh.

This paper will fill this gap by focusing on the correlation between credit risk management and financial performance in the Southeast Bank PLC. The analysis is based on the quantitative methods using the secondary data gathered as the annual report of the bank over a certain period to determine the impact of the chosen credit risk indicators on the financial performance. The research offers a specific and practical insight into the CRM practices and their results due to its concentration on a single bank. The results should be applicable to the management and the regulator of banks and other stakeholders in enhancing effective management of credit risk and financial stability in the long term.

The objectives of this study are to examine how credit risk management practices of Southeast Bank PLC affect key financial performance indicators (ROA, ROE, and NIM), to quantitatively assess the impact of selected credit risk variables (LDR, CAR, LLPR, NPLR) on these performance measures, and to provide practical recommendations for strengthening CRM practices to ensure sustainable financial performance. The study is guided by the following research questions: (1) What credit risk management practices are followed by Southeast Bank PLC? (2) How do credit risk management indicators affect the financial performance of Southeast Bank PLC? (3) How can the bank improve its CRM practices to enhance financial outcomes?

2. Literature Review

Credit risk management (CRM) has become an essential area of focus in the global banking industry, especially in economies where financial institutions play a central role in economic development. Many scholars have argued that effective CRM practices help banks minimize unexpected losses and improve their financial performance. According to Ahmed and Malik (2015), credit risk arises when borrowers fail to meet their loan repayment obligations, which can affect major financial indicators such as ROA and ROE. They found that the increased NPLs have a negative effect on the profitability of a bank, and good CRM practices are effective.

Several studies have focused on the relationship between CRM and financial performance by analyzing variables such as Loan-to-Deposit Ratio (LDR), Capital Adequacy Ratio (CAR), Loan Loss Provision Ratio (LLPR) and Non-Performing Loan Ratio (NPLR). Kargi (2011) observed that poor credit assessment procedures and weak monitoring increase credit risk, which ultimately results in higher NPL ratios. These factors reduce the overall efficiency and profitability of commercial banks. His findings indicate that effective CRM is highly important for maintaining stability in financial performance.

In the context of South Asia, researchers have pointed out that managing credit risk is a major challenge for commercial banks. Rahman and Islam (2018) studied Bangladeshi banks and found a strong negative relationship between NPL ratios and profitability. They argued that when credit risk increases, financial indicators such as ROA, ROE and NIM decline. The focus of their work was the necessity of improved credit screening, credit monitoring and credit providing practices to minimize possible losses.

Kolapo, Ayeni and Oke (2012) investigated selected West African banks and discovered that CRM indicators, mainly NPL and LLPR, have significant negative effects on ROA. They have concluded that the credit risk has a direct impact on the performance of the banks and that the effective CRM can be used to guarantee the long-term profitability. Their study supports the use of regression models to evaluate the relationship between CRM metrics and financial indicators, which aligns with the present study's methodology.

In addition to regional research, international research is also in favor of the concept that CRM leads to sustainable financial performance. Epure and Lafuente (2013) analyzed banking sectors in Europe and Costa Rica and found that efficient risk management helps banks maintain profitability even in periods of economic uncertainty. Their work demonstrated that good CRM practices reduce the negative impact of non-performing loans and improve financial ratios like ROA and NIM.

In Bangladesh, Alam and Jahan (2021) evaluated commercial banks listed on the stock exchange and found that NPL ratios and loan loss provisions have significant adverse effects on ROA and ROE. Their study suggested that banks must improve their credit monitoring and capital adequacy levels to ensure financial growth. The findings closely apply to Southeast Bank PLC because private commercial banks in Bangladesh often face similar credit-related challenges that affect long-term competitiveness.

Overall, the literature demonstrates that CRM plays a vital role in determining the financial performance of commercial banks. Most studies conclude that CRM variables such as LDR, CAR, LLPR and NPLR have measurable effects on ROA, ROE and NIM. Since profitability represents one of the main measures of a financial strength, such an understanding of the impact of CRM on these ratios allows the banks to embrace improved strategic decisions. Based on previous research, it is clear that effective CRM enhances profitability, strengthens financial stability and reduces the

risk of credit losses making it highly relevant for evaluating Southeast Bank PLC's performance over the 2015–2024 period.

3. Materials and Methods

This study adopts a quantitative research approach to examine the relationship between credit risk management and the financial performance of Southeast Bank PLC. Quantitative analysis is appropriate for this research as it allows for objective measurement of financial variables and enables statistical examination of the relationship between credit risk indicators and performance measures.

The study is based on secondary data collected from the published annual reports of Southeast Bank PLC over a ten-year period from 2015 to 2024. Annual reports are regarded a reputable and legitimate source of financial information since they are created in accordance with regulatory requirements and audited on a regular basis. Using secondary data improves consistency and comparability throughout the research period.

There are three commonly used financial performance indicators, including return on assets (ROA), return on equity (ROE), and net interest margin (NIM). ROA is used to measure how efficiently the bank uses its total assets to generate profit, whereas ROE reflects the profit made on the equity of the shareholders and provides an indication of overall profitability. NIM is used to assess the effectiveness of the bank's core lending activities by measuring the difference between interest income and interest expense relative to earning assets.

Credit risk management is measured using four variables: loan-to-deposit ratio (LDR), capital adequacy ratio (CAR), loan loss provision ratio (LLPR), and non-performing loan ratio (NPLR). The LDR displays how much deposits are borrowed, indicating credit use efficiency. CAR is used to assess the bank's ability to absorb potential losses while remaining afloat. The LLPR is a measure of the amount of provisions retained to cover potential loan defaults, whereas the NPLR is an indicator of loan portfolio quality and credit risk coverage.

In the research, descriptive statistics are used to explain the nature of the data, followed by correlation analysis to determine the strength and direction of the associations between the variables. Multiple regression analysis is then applied to assess the impact of credit risk management variables on financial performance indicators. Three regression models are developed, each using one financial performance measure (ROA, ROE, and NIM) as the dependent variable. This study approach will allow for a more extensive examination of the influence of credit risk management techniques on Southeast Bank PLC's financial performance.

3.1 Model Specification

The linear regression models are specified as follows and the expected impact on ROA, ROE and NIM:

$$ROA_{it} = \beta_0 + \beta_1(LDR)_{it} + \beta_2(CAR)_{it} + \beta_3(LLPR)_{it} + \beta_4(NPLR)_{it} + \epsilon_{it}$$

$$ROE_1 = \beta_0 + \beta_1(LDR)_{it} + \beta_2(CAR)_{it} + \beta_3(LLPR)_{it} + \beta_4(NPLR)_{it} + \epsilon_{it}$$

$$NIM_1 = \beta_0 + \beta_1(LDR)_{it} + \beta_2(CAR)_{it} + \beta_3(LLPR)_{it} + \beta_4(NPLR)_{it} + \epsilon_{it}$$

Each independent variable is expected to have a distinct influence on ROA, ROE and NIM, with the model coefficients (β_1 to β_4) quantifying the sensitivity of ROA, ROE and NIM to changes in each predictor, holding other factors constant.

3.2 Research Hypothesis

The following hypothesis was formulated for this study

Regression Model 1 (Dependent Variable: ROA):

- **H₀**: There is no significant relationship between credit risk management and the ROA of Southeast Bank PLC.
- **H₁**: There is significant relationship between credit risk management and the ROA of Southeast Bank PLC.

Regression Model 2 (Dependent Variable: ROE):

- **H₀**: There is no significant relationship between credit risk management and the ROE of Southeast Bank PLC.
- **H₁**: There is significant relationship between credit risk management and the ROE of Southeast Bank PLC.

Regression Model 3 (Dependent Variable: NIM):

- **H₀**: There is no significant relationship between credit risk management and the NIM of Southeast Bank PLC.
- **H₁**: There is significant relationship between credit risk management and the NIM of Southeast Bank PLC.

3.3 Data Analysis Techniques

Descriptive Statistics: In the descriptive statistics analysis, the study will summarize the data using measures of central tendency (mean, median), dispersion (range, variance, standard deviation), and shape (skewness, kurtosis). This step aims to outline the main trends, variability and distribution patterns in Southeast Bank PLC's financial data related to CRM practices, preparing the groundwork for accurate correlation and regression analysis.

Correlation Analysis: Prior to regression, a correlation matrix will be produced in order to evaluate the linear relationship magnitude among the independent variables. This would be a critical step in identifying any multicollinearity which could then affect the model's prediction accuracy.

Regression Analysis: This study leverages MS Excel to conduct linear regression analysis, determining the relationship between the dependent and independent variables. Excel's comprehensive tools is used to calculate model coefficient and interpret the findings effectively.

4. Results and Discussion

In this section the empirical linear regression models can be applied to identify the relationship between credit risk management and financial performance of Southeast Bank PLC. For this, the dependent variables of the three linear regression models are respectively:

- ROA (Y1)
- ROE (Y2)
- NIM (Y3)

The independent variables that may affect the dependent variables are respectively:

- LDR (X1)
- CAR (X2)
- LLPR (X3)
- NPLR (X4)

The regression equation can be expressed as:

$$Y = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon_{it}$$

Here,

- α represents the intercept.
- β_1 to β_4 represents the coefficients associated with each independent variable.
- Y represents the dependent variable, for regression model 1 it is ROA, for regression model 2 it is ROE and for regression model 3 it is NIM.
- X1 to X4 represent independent variables

Correlation Analysis, Descriptive Statistics and Regression analysis are conducted here.

4.1. Correlation Analysis

	<i>ROA</i>	<i>ROE</i>	<i>NIM</i>	<i>LDR</i>	<i>CAR</i>	<i>LLPR</i>	<i>NPLR</i>
ROA	1						
ROE	0.99	1					
NIM	0.90	0.86	1				
LDR	-0.60	-0.51	-0.68	1			
CAR	-0.71	-0.70	-0.77	0.74	1		
LLPR	-0.53	-0.49	-0.39	0.30	0.02	1	
NPLR	-0.13	-0.14	-0.04	-0.27	-0.53	0.41	1

Figure 1: Correlation Matrix Table

Analysis of the Southeast Bank PLC integration reveals relations between various financial data. A very high direct correlation (0.99) between ROA and ROE signifies that enriching profitability from assets is closely connected with enriching profitability from shareholders' equity. As to ROA and ROE, these ratios also demonstrate the same pattern of positive correlations with NIM, therefore, income efficiency and profits reinforce each other.

However, the loan-to-deposit ratio is negatively correlated with the ROA, ROE, and NIM ratio, implying the inverse relationship between deposits and ROA, ROE, and NIM performance. While this ratio and the CAR positively correlate, this suggests that banks with higher capital adequacy might leverage or indulge in lending.

CAR itself demonstrates a strong inverse association with profitability metrics like ROA, ROE, and NIM, meaning more capital may impede profitability. On the side, from slightly negative correlations between the LLPR and the NPLR with profitability metrics, an inference can be drawn that moderately higher anticipated or existing loan defaults have a slight dampening effect on profitability. The LLPR's low positive association with the NPLR implies that both can be identical, with loans of higher expected loss associated with higher non-performing loans.

Overall, the analysis reveals intricate relationships between profitability, liquidity, capital adequacy, and risk measures in financial institutions, highlighting the balance between achieving high profitability and managing risks effectively.

4.2. Regression Model 1: Dependent Variable ROA

Descriptive statistics

	ROA	LDR	CAR	LLPR	NPLR
Mean	0.90	80.49	12.68	0.87	5.26
Standard Error	0.12	1.08	0.45	0.07	0.55
Median	0.69	80.23	12.46	0.84	4.93
Standard Deviation	0.38	3.40	1.42	0.23	1.75
Sample Variance	0.14	11.59	2.03	0.05	3.07
Kurtosis	-1.26	-0.56	-0.77	-0.69	-0.93
Skewness	0.94	0.08	0.33	-0.16	0.18
Range	0.89	10.69	4.36	0.71	5.46
Minimum	0.60	75.45	10.56	0.47	2.55
Maximum	1.49	86.14	14.92	1.18	8.01
Sum	9.01	804.90	126.78	8.66	52.65
Count	10	10	10	10	10

Figure 2: Descriptive Statistics of Regression Model 1

The ROA average of 0.90% shows the bank's ability to earn a return from its assets, however, the standard deviation of 0.38 points to the bank's fluctuating effectiveness. The LDR with a mean of 80.49%, shows that the bank lends out a huge portion of its deposits which is on a moderate

variability with signs of standard deviation of 3.40. The CAR is at an average of 12.68%, which was a general indicator of the bank's capital base and capacity to absorb any future losses, notwithstanding some fluctuations (standard deviation of 1.42). The LLPR has a mean of 0.87%, reflecting the bank's preparedness for potential loan losses, with relatively low variation (standard deviation of 0.23). Finally, the NPLR averages 5.26%, highlighting the portion of loans likely to default, with a significant standard deviation of 1.75 indicating variability in loan portfolio quality.

Regression Analysis

<i>Regression Statistics</i>	
Multiple R	0.97
R Square	0.94
Adjusted R Square	0.89
Standard Error	0.12
Observations	10

Figure 3: Regression Statistics for Model 1

From the above table, the values of Multiple R, R square, and Adjusted R square are obtained. The degree of relationship between the dependent and independent variables is shown by multiple R. It indicates if there is a positive or negative correlation between the variables. The multiple R value in the above table is 0.97. This indicates that there is a strong positive relationship between the chosen dependent and independent variables.

The value R squared measures how much proportion of the dependent variable's variance is defined by independent variables. From the table above, the value of R squared is found to be 0.94. This indicates that the chosen independent variables explain 94% variance of the dependent variable. The rest 6% variation is explained by factors outside of these data.

Adjusted R square takes into account the number of independent variables included in the model and give a more accurate picture of the correlation. So, to put it simply, this result gives a more accurate version of the original R square value by analyzing how many independent variables have been used in the regression. The adjusted R-value in the table 0.89, which is very close to the actual R-value.

ANOVA Table

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	1.21	0.30	19.39	0.003
Residual	5	0.08	0.01		
Total	9	1.29			

Figure 4: ANOVA Table for Model 1

The ANOVA table is used to determine the F value and the significance of F or the P value. Initially, the sum of the square of regression and the sum of residual is calculated first. Then these values are divided respectfully by regression degree of freedom and residual degree of freedom to obtain the mean square of regression and mean square of residual. Then the values are divided by each other to determine the F value. In this table, the F value is 19.39 and the significance F or P value is 0.003. The significance F or P value is less than the common alpha level of 0.05. It can be said that the model is statistically significant and it is a better fit than the null hypothesis. So, the null hypothesis is rejected.

Coefficient Table

	Coefficients	P-value
Intercept	3.91	0.02
LDR (X1)	0.02	0.2
CAR (X2)	-0.30	0.002
LLPR (X3)	-0.57	0.04
NPLR (X4)	-0.11	0.01

Figure 5: Coefficient Analysis for Model 1

If the values of all the independent variables are zero, then the ROA (Y1) will be 3.91. According to the regression, if the LDR (X1) increases by 1 unit, then the ROA (Y1) will increase by 0.02 unit. If the CAR (X2) increases by 1 unit for the measure, then the ROA (Y1) will decrease by 0.30 units. If the LLPR (X3) increases by 1 unit of the measure, then the ROA (Y1) will decrease by 0.57 unit. Lastly, if the NPLR (X4) increases by 1 unit of the measure, then the ROA (Y1) will decrease by 0.11 unit.

All the variables presented in the table have p-values below the significance level of 0.05, indicating that their relation with the dependent variable is statistically significant.

4.3. Regression Model 2: Dependent variable ROE

Descriptive Statistics

	ROE	LDR	CAR	LLPR	NPLR
Mean	11.37	80.49	12.68	0.86	5.26
Standard Error	1.14	1.08	0.45	0.07	0.55
Median	9.77	80.22	12.46	0.84	4.93
Standard Deviation	3.60	3.40	1.42	0.23	1.75
Sample Variance	12.97	11.58	2.02	0.05	3.07
Kurtosis	-1.18	-0.56	-0.77	-0.69	-0.93
Skewness	0.94	0.08	0.32	-0.16	0.18
Range	8.67	10.69	4.36	0.71	5.46
Minimum	8.4	75.45	10.56	0.47	2.55

Maximum	17.07	86.14	14.92	1.18	8.01
Sum	113.7	804.9	126.78	8.66	52.64
Count	10	10	10	10	10

Figure 6: Descriptive Statistics of Regression Model 2

The average ROE is 11.37%, indicating the typical profitability from the shareholders equity during the analyzed period, with a standard deviation of 3.60%, pointing to variability in profitability. The LDR averages at 80.49%, showing how much the bank lends out of the deposits it receives, and has a standard deviation of 3.40%, reflecting the spread of this ratio's values. The CAR has an average of 12.68%, which demonstrates the bank's average buffer against risk-weighted assets, with a fluctuation level indicated by a standard deviation of 1.42%. The LLPR's mean stands at 0.86%, suggesting the average proportion of loans set aside for potential losses, and its consistency is highlighted by a standard deviation of 0.23%. Lastly, the NPLR has a mean of 5.26%, pointing to the average share of loans at risk of default, with a variability indicated by a standard deviation of 1.75%.

Regression Analysis

<i>Regression Statistics</i>	
Multiple R	0.96
R Square	0.93
Adjusted R Square	0.88
Standard Error	1.26
Observations	10

Figure 7: Regression Statistics for Model 2

From the above table, the values of Multiple R, R square, and Adjusted R square are obtained. The degree of relationship between the dependent and independent variables is shown by multiple R. It indicates if there is a positive or negative correlation between the variables. The multiple R-value in the above table is 0.96. This indicates that there is a strong positive relationship between the chosen dependent and independent variables.

The value R squared measures how much proportion of the dependent variable's variance is defined by the independent variables. From the table above, the value of R squared is found to be 0.93. This indicates that the chosen independent variables explain 93% variance of the dependent variable. The rest 7% variation is explained by factors outside of these data.

Adjusted R square takes into account the number of independent variables included in the model and gives a more accurate picture of the correlation. So, to put it simply, this result gives a more accurate version of the original R square value by analyzing how many independent variables have been used in the regression. The adjusted R-value in the table is 0.88, which is very close to the actual R-value.

ANOVA Table

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	108.75	27.19	16.98	0.004
Residual	5	8.00	1.60		
Total	9	116.75			

Figure 8: ANOVA Table for Model 2

The ANOVA table is used to determine the F value and the significance of F or the P value. Initially, the sum of the square of regression and the sum of the square of residual is calculated first. Then these values are divided respectfully by regression degree of freedom and residual degree of freedom to obtain the mean square of regression and mean square of residual. The values are divided by each other to determine the F value. In this table, the F value is 16.98 and the significance F or P value is 0.004. The significance F or P value is less than the common alpha level of 0.05. It can be said that the model is statistically significant and it is a better fit than the null hypothesis. So, the null hypothesis is rejected.

Coefficient Table

	<i>Coefficients</i>	<i>P-value</i>
Intercept	30.18	0.03
LDR (X1)	0.40	0.01
CAR (X2)	-3.20	0.001
LLPR (X3)	-5.33	0.03
NPLR (X4)	-1.15	0.02

Figure 9: Coefficient Analysis for Model 2

If the values of all the independent variables are zero, then the ROE (Y2) will be 30.18. According to the regression, if the LDR (X1) increases by 1 unit, then the ROE (Y2) will increase by 0.40 unit. If the CAR (X2) increases by 1 unit of the measure, then the ROE (Y2) will decrease by 3.2 units. If the LLPR (X3) increases by 1 unit of the measure, then the ROE (Y2) will decrease by 5.33 units. Lastly, if the NPLR (X4) increases by 1 unit of the measure, then the ROE (Y2) will decrease by 1.15 units.

All the variables presented in the table have p-values below the significance level of 0.05, indicating that their relationship with the dependent variable is statistically significant.

4.4. Regression Model 3: Dependent Variable NIM**Descriptive Statistics**

The NIM with 1.91% average is signaling the normal margin of profit which can be earned from assets that generate interest earnings.

The LDR averages at 80.49% show how the bank lends compared to the deposits ratio, which shows that the bank did a lot of lending against deposits.

	NIM	LDR	CAR	LLPR	NPLR
Mean	1.91	80.49	12.68	0.86	5.26
Standard Error	0.43	1.08	0.45	0.07	0.55
Median	1.47	80.22	12.46	0.84	4.93
Standard Deviation	1.35	3.40	1.42	0.23	1.75
Sample Variance	1.82	11.58	2.02	0.05	3.07
Kurtosis	0.11	-0.56	-0.77	-0.69	-0.93
Skewness	1.01	0.08	0.32	-0.16	0.18
Range	4.06	10.69	4.36	0.71	5.46
Minimum	0.49	75.45	10.56	0.47	2.55
Maximum	4.55	86.14	14.92	1.18	8.01
Sum	19.1	804.9	126.78	8.66	52.64
Count	10	10	10	10	10

Figure 10: Descriptive Statistics of Regression Model 3

The Bank's CAR averaged 12.68, as an indicator of its capital reserve. The LLPR is equal to 0.86% on average which shows the provision for possible loan losses. This means they are following the risk management strategy. The NPLR has an average of 5.26%, the percentage of loans that are in delinquency whereas the ratio is a critical measure of credit measure of credit quality and risk.

The Standard Deviation for these metrics, NIM at 1.35%, Loan to Deposit Ratio at 3.40%, CAR at 1.42%, Loan Loss Provision Ratio at 0.23% and NPL Ratio at 1.75%, indicates the variability in the bank's financial performance and risk management practices.

Regression Analysis

<i>Regression Statistics</i>	
Multiple R	0.94
R Square	0.88
Adjusted R Square	0.79
Standard Error	0.62
Observations	10

Figure 11: Regression Statistics for Model 3

From the above table, the values of Multiple R, R square, and Adjusted R square are obtained. The degree of relationship between the dependent and independent variables is shown by multiple R. It indicates if there is a positive or negative correlation between the variables. The multiple R value

in the above table is 0.94. This indicates that there is a strong positive relationship between the chosen dependent and independent variables.

The value R squared measures how much proportion of the dependent variable's variance is defined by the independent variables. From the table above, the value of R squared is found to be 0.88. This indicates that the chosen independent variables explain 88% variance of the dependent variable. The rest 12% variation is explained by factors outside of these data.

Adjusted R Square takes into account the number of independent variables included in the model and gives a more accurate picture of the correlation. So, to put it simply, this result gives a more accurate version of the original R square value by analyzing how many independent variables have been used in the regression. The adjusted R-value in the table is 0.79, which is very close to the actual R-value and still a very good fit.

ANOVA Table

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	14.45	3.61	9.39	0.01
Residual	5	1.92	0.38		
Total	9	16.37			

Figure 12: ANOVA Table for Model 3

The ANOVA table is used to determine the F value and the significance of F or the P value. Initially, the sum of the square of regression and the sum of the square of residual is calculated first. Then these values are divided respectfully by regression and mean square of residual. Then the values are divided by each other to determine the F value. In this table, the F value is 9.39 and the significance F or P value is 0.01. The significance F or P value is less than the common alpha level of 0.05. It can be said that the model is statistically significant and it is a better fit than the null hypothesis. So, the null hypothesis is rejected.

Coefficient Table

	Coefficients	P-value
Intercept	17.15	0.04
LDR (X1)	0.003	0.02
CAR (X2)	-0.99	0.01
LLPR (X3)	-0.87	0.04
NPLR (X4)	-0.40	0.03

Figure 13: Coefficient Analysis for Model 3

The values from the above table give numerical information regarding how much changes in one independent variable impact the dependent variable. If the values of all the dependent variables are zero, then the NIM (Y3) will be 17.15. According to the regression, if the LDR (X1) increases

by 1 unit, then the NIM (Y3) will increase by 0.003 unit. If the CAR (X2) increases by 1 unit of measure, then the NIM (Y3) will decrease by 0.99 unit. If the LLPR (X3) increases by 1 unit, then the NIM (Y3) will decrease by 0.40 unit.

However, all the variables presented in the table have p-values below the significance level of 0.05. It indicates that their relation with the dependent variable is statistically significant.

5. Conclusion

5.1. Findings

This section will explain the significant role CRM performs in helping the financial stability and sustainability of Southeast Bank PLC. This study is based on a detailed examination of Southeast Bank's CRM over ten years (2015-2024). The study reveals the complexity of the relationships between various CRM results and financial results.

- A key finding of this report is the strong correlation between CRM practices of Southeast Bank's financial performance. These correlations illustrate that credit risk is a factor with an effect on profitability and its different forms. However, good CRM practices increase the productivity of assets and the profitability of equities.
- These regression analysis in addition, provides more support to the fact that some CRM indicators, in particular, have a significant influence on financial outcomes. Variables, including the CAR, LLPR and NPLR are proven significant in terms of the impact on ROA, ROE, and NIM.
- The CRM practices analyzed for ten years proved to be a stable core for navigating financial challenges through the years. The strategic management of credit risk allowed Southeast Bank the safeguard the financial health of the bank and it also positioned the bank for growth and profitability in the future.
- CRM plays a dual role in safeguarding against financial uncertainties while also acting as a lever for financial performance optimization. These leading risks contained in CRM practices, announcements, as well as risk mitigation methods serve as pillars of financial reliability in Southeast Bank. On the other hand, these business actions can also allow the bank to maybe benefit from fruitful opportunities and help it grow financially.
- Furthermore, the report highlights the factor of regulation that influences its CRM. The regulation includes the Basel Accords. Meeting the standards further translates into a bank's advanced risk management and is a clear symbol of its financial integrity and powerful market position on the global scene.

5.2. Recommendations

With the analysis given that is comprehensive, CRM practices can form several targeted recommendations that can lead to better financial performance and competitiveness. These recommendations are geared towards solving the problems and maximizing the achievements. It

will help Southeast Bank refine its framework depending on its strategic objectives and the banking environment.

- Southeast Bank should always update and modify its CRM framework aimed to be relevant to the ever-changing situations linked to the market environment, policy-making, as well as trending risks. For this purpose, it is necessary to apply the most advanced risk estimation tools, and analysis, involves AI and machine learning in the predictive modeling of threats, and develop a risk management mechanism that would be flexible and quickly react to new threats.
- To reduce the risk associated with credit and achieve better overall performance, Southeast Bank should follow the strategy of loan portfolio diversification. This involves the exploration of new and less volatile market segments and industries, and also geographic diversification as a risk management measure.
- The balance between putting capital invested in operations as per regulatory rules and the necessity to achieve maximum returns on investments is a key aspect. The efficient allocation of capital is an important issue for Southeast Bank which should explore different ways of optimizing it.
- The bank has to strengthen its operations in navigating and addressing the credit risk. The bank should regularly review its credit approval process through the implementation of detailed procedures and regulations, introducing stricter lending criteria and adopting detailed borrower assessment techniques.
- It is very important to invest in training sessions regularly for employees who are responsible for risk management and the lending process. This will enable those employees to maintain the whole procedure very smoothly. Training programs like recent CRM methods, regulatory requirements and progressive changes in the finance and banking industry should be conducted.
- Finally, Southeast Bank should start implementing modern innovations and technologies with the credit risk management capabilities. This involves blockchain applications for secure and transparent transactions, AI for prediction analytics, and fintech partnerships to promote financial inclusion and the reach of new market segments.

5.3. Conclusion

The complex relationship between credit risk management (CRM) and financial performance at Southeast Bank PLC shows the pivotal role of strategic risk management in bank operational success. However, the research based on the 10 years data of Southeast Bank PLC concludes that CRM not only protects financial stability but also promotes profitability as well as sustainable development.

For Southeast Bank, a complete approach to CRM is an essential practice that forms the basis for the system of coping with financial instability. It consists of vulnerability assessment, monitoring, and risk mitigation process. The quantitative results indicate a direct connection between the CAR,

the LLPR and the NPLR and financial performance indicators like ROA and ROE. These correlations show the impact of CRM on Southeast Bank's financial health, making risk management a strategic asset, rather than just a regulator compliance way.

However, this analysis clarifies the counterbalance that financial institutions must adhere by in being strict in their risk controls and at the same time, keeping room for growth opportunities. The parallel contribution of CRM as both a preservative measure and a tactical tool highlights the need for an evolving risk management framework in sync with markets, legal changes and technology developments.

Ultimately, the investigation into Southeast Bank's CRM function demonstrates how important risk management is to the banking sector's quest for financial fitness and strength. For institutions like Southeast Bank and other significance financial players, the best approach will be the unswerving adherence to CRM best practices to ensure strong positions in the dynamic world of finance.

References

- Akther, T., Rahman, M., & Rahman, M. M. (2023). Factors influencing commercial bank profitability in Bangladesh: a panel data approach. *Future Business Journal*, 9(1), 66.
- Banu, M. H., Sayaduzzaman, M., & Sil, S. C. (2021). The Impact of Credit Risk Management Indicators on Profitability Attributes: Evidence from the State-Owned Commercial Banks in Bangladesh. *American Journal of Trade and Policy*, 8(3), 215-224.
- Bülbül, D., Hakenes, H., & Lambert, C. (2019). What influences bank's choice of credit risk management practices? Theory and evidence. *Journal of Financial Stability*, 40, 1-14.
- Ewanchuk, L., & Frei, C. (2019). Recent regulation in credit risk management: A statistical framework, *Risks*, 7(2), 40.
- Gupta, M., & Sikarwar, T. S. (2020). Modeling credit risk management and bank's profitability. *International Journal of Electronic Banking*, 2(2), 170-183.
- Hosen, M. Z. (2020). Internal factors influencing the profitability of commercial banks in Bangladesh. *International Journal of Economics and Financial Research*, 6(7), 192-200.
- Islam, K. M., Alam, M. B., & Hossain, M. M. (2019). Impact of Credit Risk Management on Bank Performance: Empirical Evidence from Bangladesh. *South Asian Journal of Management*, 26(2).
- Lalon, R. M., & Morshada, F. (2020). Impact of credit risk management on profitability of commercial banks in Bangladesh: An estimation of dynamic panel data model. *International Journal of Finance & Banking Studies* (2147-4486), 9(3), 131-147.

- Naili, M., & Lahrichi, Y. (2022). The determinants of banks' credit risk: Review of the literature and future research agenda. *International Journal of Finance & Economics*, 27(1), 334-360.
- Yeasin, H. M. (2022). Impact of credit risk management on financial performance. A study of commercial banks in Bangladesh. *Interdisciplinary Journal of Applied and Basics Subjects*, 2(1), 14.

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Investigating the Roles and Challenges of NBFIs in Loan Syndication: Strategies for Enhancing Efficiency and Risk Management

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Abstract

This paper discusses the increased role of Non-Banking Financial Institutions (NBFIs) in syndicated lending in Bangladesh, their contribution, difficulties, and risk management techniques. With the rise in demand of financing of major projects, NBFIs have become major players and arrangers in syndication transaction particularly in infrastructure, manufacturing, telecommunications, real estate and hospitality. Therefore, the increasing role of NBFIs should also be considered since it contributes to financing large-scale projects and delivering funds when banks fail to supply them. They facilitate long-term financing and facilitate critical areas of the economy. The awareness of their role contributes to risk control and enhancing the financial system as well.

The key problems are the constant revision of the regulatory needs, the coordination issues between different syndicate members, unequal credit evaluation criteria, the inability to access long-term funds, liquidity stress, and the absence of unified documentation. These barriers notwithstanding, NBFIs use effective risk management initiatives, including thorough due diligence, collective credit diligence, compliance oversight, and post-disbursement oversight.

It is a mixed-method study, which involves qualitative interviews with the professionals in the industry and quantitative survey answers of the workers who have been engaged in the syndication activities. The results indicate that even though NBFIs have become a vital financial institution to mobilize big amounts of capital as well as fund long-term projects, it has a number of limitations.

The use of digital tools is on the rise, and the use of digital tools has enhanced efficiency though it is not uniformly implemented in institutions. These themes are also supported by the results given by the survey, which indicates that there is a strong agreement among the practitioners on the significance of NBFIs, the importance of risk-sharing, and the necessity of improved technology and processes in the syndication. The paper presents the conclusion that more efficient working of digital collaboration systems, standardization of documentation, better support of regulations, and international best practice are the main aspects of the improvement of the efficiency and loss reduction of the syndicated lending market in Bangladesh. Altogether, the

results point out the growing yet changing role of NBFIs in funding the development-related and large-valued projects in Bangladesh.

Keywords: Non-Banking Financial Institutions (NBFIs); Syndicated Lending; Risk Management Practices; Project Finance; Regulatory Framework; Digital Financial Infrastructure.

1. Introduction

The contribution of Non-Banking Financial Institutions (NBFIs) in Bangladesh cannot be downplayed these days, as they have become integrated with the financial system of Bangladesh, providing diversity to traditional banking institutions through diversified financial products and services. Over the last decade, NBFIs have been a pillar of financing industrial, infrastructural, and mega development schemes through syndicate loans, an associative financing arrangement where various financial institutions finance one borrower collectively. This approach allows for sharing of risk and resources among several lenders to allow financing of projects that are beyond one institution's lending power (Gadanecz, 2004).

All-time leading NBFIs such as IDLC Finance Limited, LankaBangla Finance Limited, and United Finance Limited have increasingly adopted syndicated lending to remain in tune with the rising demand for long-term project finance. Despite this trend, syndication of lending operations in Bangladesh has become more complicated over the years. Project delays in implementing projects, coordination problems among the institutions involved, and adapting regulator requirements have hindered the smooth operation of syndicated financing activities (Islam, 2020).

In addition, the recurring issues of the financial sector—i.e., rising levels of non-performing loans (NPLs), tight access to long-term financing, and declines in liquidity positions—have hindered NBFIs from operating efficiently and containing associated risks effectively. In particular, inefficiencies in implementation as well as increased default risk result from poor coordination between lead arrangers and participant institutions, coupled with the lack of standardized documentation and credit assessment processes (Khan & Chowdhury, 2022).

These concerns highlight the need for proper research on improving the functions of NBFIs and improving operational effectiveness in loan syndication. If these problems go unchecked, NBFIs will be faced with declining investor confidence, profitability issues, and limited involvement in major projects, which will eventually slow down the overall economic growth in Bangladesh.

So, this study will investigate the role and problems of NBFIs in loan syndication and study how efficiency and risk management in the process can be enhanced. Employing a mix of qualitative and quantitative research, this research will bring to light syndicated lending's operational mechanisms and provide feasible recommendations for its effectiveness.

2. Literature Review

Concept of Loan Syndication

Loan syndication refers to the exercise where two or more institutions lend money simultaneously to a borrower, primarily for funding large-size projects involving significant levels of capital investments. The exercise allows lenders to spread financial exposure and minimize credit risk, with borrowers enjoying access to larger sources of finance (Gadanecz, 2004). Syndicated loans are typically arranged by a lead arranger who structures the terms of finance, negotiates with the borrower, and provides coordination with participant institutions. In developing countries like Bangladesh, syndicated lending has emerged as an important means of financing infrastructure, power, and industrial projects given that most commercial banks are bound by capital adequacy and single borrower limits of exposure (Rahman & Alam, 2021).

NBFIs' Functions in Loan Syndication

NBFIs in Bangladesh serve multiple functions in syndicated lending including acting as arrangers, participants, and underwriters. As arrangers, they structure the transaction, assess the credit quality of the borrower, and facilitate coordinating amongst participants. As participants, they bring in a fixed percentage of the loan amount and contribute to monitoring post-disbursement performance.

According to Rahman and Alam (2021), NBFIs have become key intermediaries of investment finance in sectors where banks are constrained by capital rationing or sectoral-exposure capping. Leveraging their flexibility and expertise in structured finance, NBFIs mobilize funds into massive infrastructure and industrial projects critical to economic development.

Challenges Faced by NBFIs in Syndicated Financing

Though growingly active, NBFIs face numerous institutional and operational challenges in syndicated financing. Liquidity shortages, access to long-term capital being restricted, and rising cost of funds have a tendency to confine their ability to participate in big-ticket deals (Islam, 2020). In addition, differences in regulatory perceptions, poor credit risk analysis tools, and poor coordination of syndicate members also impede easy implementation of syndicated loans.

Khan and Chowdhury (2022) reported that inadequate post-loan monitoring, non-standardized documentation, and information asymmetry between arrangers and participants are some causes of payment delays and increased default risk. The absence of advanced digital platforms to exchange information also cuts down transparency and effective communication, which is important for timely decision-making in syndicated financing.

Efficiency and Risk Management Strategies

Today's research emphasizes the significance of sound risk management frameworks and electronic collaboration tools towards efficient syndicated loans. Ahmed and Sultana (2023) are of

the view that the use of electronic monitoring systems and standardized templates has the potential to enhance the flow of information among participants, thus reducing operational risks.

And on top of this the application of full due diligence procedures, robust credit appraisal systems, and regular post-disbursement monitoring and the quality and stability of syndicated finance can be significantly improved. International best practice also recommends enhanced information-sharing systems, regular performance reviews, and cooperative decision-making to allow effective risk spreading and project success.

Accordingly, the literature shows that though NBFIs are now unavoidable intermediaries in syndicated lending, their long-run success hinges on improving coordination efficiency, risk-sharing mechanisms, and regulatory compliance. This research builds on these findings by empirically examining the Bangladesh experience of NBFIs, emphasizing the key bottlenecks, and recommending actionable policies for increasing efficiency and risk management in syndicated loan activities.

3. Materials and Methods

Research Design

The research shall adopt a mixed-method research design incorporating both qualitative and quantitative approaches. The qualitative component shall be applied to explore the activities, experience, and issues faced by Non-Banking Financial Institutions (NBFIs) in loan syndication. This will help us understand the operational challenges and the situation more clearly and in detail. The quantitative part will measure how big these challenges are and how effective different strategies are in improving efficiency and managing risks. The utilization of the mixed approach will provide rich descriptive information as well as statistical information, leading to enhanced understanding of the topic under investigation. Method of Data Collection

The study utilizes primary and secondary sources of information.

Primary Data

Qualitative Method: Primary qualitative data will be collected via in-depth semi-structured interviews with the people in the structured finance and loan syndication department of NBFIs such as IDLC Investments Limited and other organizations. Their problems, experiences, and solutions regarding syndicated financing will be examined through interviews.

Quantitative Method: Quantitative primary data will be collected through a standardized survey questionnaire that will be requested to be filled out by NBFIs' concerned departmental employees. This will include employees from IDLC Investments Limited and other NBFI. The survey will consist of close-ended questions in order to measure respondents' perceptions and attitudes towards efficiency, coordination, and risk management of loan syndication.

Secondary Data

Annual reports, Bangladesh Bank publications, regulatory guidelines, and previous academic research on syndicated loans and NBFIs will be used to collect background information.

Sample Size and Sample Selection Method: For the qualitative part, information will be collected from about 2 to 3 employees, such as relationship managers, credit analysts, and structured finance executives who work with syndicated loans. For the quantitative part, around 10 to 12 respondents from NBFIs will be selected using a non-probability purposive sampling method, as the study targets people with relevant experience and expertise. This two-level sampling approach helps collect both detailed insights (qualitative) and wider opinions (quantitative) effectively.

Data Analysis Technique

- Qualitative Analysis:

Interview answers will be analyzed thematically and coded to identify the most important patterns and recurring themes regarding NBFIs' strategic actions, challenges, and roles in loan syndication.

- Quantitative Analysis:

Survey questions answered will be statistically examined using descriptive statistical techniques of analysis (e.g., mean, percentage, and frequency) to quantify and report trends in respondents' attitudes. Findings from both methods will be compared and combined to develop comprehensive findings and actionable recommendations.

4. Results and Discussion

Qualitative Analysis

The responses of the employees working in IPDC Finance, LankaBangla Finance, and City Bank Capital indicate that there are some general themes of the role, challenges, as well as the strategic priorities of NBFIs in the field of syndicated lending, in Bangladesh. The three institutions concurred that NBFIs are increasingly involved in the organization and the involvement in large syndicated loans, particularly in large infrastructure, manufacturing, telecommunications, real estate, and hospitality loans. Their participation assists in funding big projects which an individual bank might not be in a position to do singly, and each institution comes with its own strength of IPDC and its focus on innovative financing structure, LankaBangla and its capability to provide both Islamic and conventional financing, and City Bank capital and its participation in big high value deals.

In all institutions, there are common problems. The Bangladesh bank has regulatory requirements which often vary resulting in compliance issues. **The problem of the coordination** between the members of the syndicate is also problematic as the risk appetite, the standards of due diligence and the approval schedules differ among the syndicated members. One of the biggest industry

barriers is the lack of standardized documentation that slows down the process of the deals. The other problems involve the restriction of access to long-term funds, liquidity problems, and the growing competition over projects that can be viable. The institutions were also similar regarding the risk management practices. Each of them is based on adequate due diligence, effective compliance, shared credit ratings, and ongoing post-disbursement controls. The timeliness of information sharing and communication between the members of the syndicate was mentioned by the respondents as crucial. Digital tools and electronic documentation have brought about some gains in efficiency although they are not applied uniformly. Individual actions have also been made by institutions: LankaBangla has created a synthetic syndication department, City Bank Capital has invested in automation, and IPDC is based on standard templates and tracking systems.

In general, the aspects of trust, transparency, and good institutional relationship were found to be the most significant to be successful in syndication. Regardless of the delay in operations, which is brought about by the variation of internal processes, respondents have the impression that joint credit evaluation results in improved lending processes. In an effort to boost the syndicated loan market, they noted the necessity of standardized documents, increased use of digital collaboration systems, enhanced regulatory backing, and international best practice experiences, which include centralized digital systems and enhanced risk-sharing models.

Quantitative Analysis

According to the results of the survey, the majority of the participants also represent Relationship Managers with minor portions of Structured Finance Executive and Risk Management Officer.

- This is to show that the results include mostly the opinion of the front-office professionals who are directly engaged in originating, structuring, and monitoring syndicated loans. The respondents were also an equal representation of experience levels with less than one year to more than five years, which makes the respondents less biased by one group of tenure.

The answers point out that NBFIs are participants and significant participants in the syndicated loan market. Most of the institutions are often the Lead Arrangers although they are also other times the members of the syndicate, also underwriters and advisors.

- Majority of them strongly believe that due to syndication, NBFIs are able to finance large-scale projects that they would have not been able to finance on their own. They also admit that syndication enhances access to long-term funds, in particular infrastructural and development projects. Majority of the respondents hold that risk-sharing in syndicates is very effective in distributing credit exposure even though a small neutral group has considered that the advantages are not always ideal in practice.

The operational issues analysis demonstrates regular trends.

- The key barriers identified by the respondents were regulatory compliance, the lack of a standardized documentation, and delays in approvals of members. There was also liquidity

and digital capabilities disparity, which were considered somewhat minor. The regulatory guidelines are often perceived to be time-consuming, and the lack of uniformity in the methods of credit assessment among the institutions complicates the process of coordination.

- Another issue associated with the implementation of standardized documentation templates, though not equally, is the unequal use of standardized documentation templates, whereby some NBFIs have formal documentation templates and others use ad-hoc documentation templates. In spite of these difficulties, the respondents reported slow efficiency gains. There is general consensus that digital workflow tools help in enhancing coordination whenever present, but there is wide disparity in the rate of adoption across institutions. It is considered that joint credit scoring and information sharing have a positive effect on the better risk assessment. Nonetheless, the post-disbursement monitoring practices vary among institutions with a majority of the NBFIs being strong and the rest of the institutions being average in their practices. Risk-management structures are seen to be rated as satisfactory, though requiring further improvement.

When questioned on the way of improvement, digital collaboration platforms, centralized syndication, standardized documentation, and regulatory training were ranked as the most important responses by the respondents. Another point which they highlighted was the necessity of more powerful credit scoring instruments. These priorities demonstrate that practitioners would like to see technological, process, and regulatory enhancements stronger that would improve the environment of the syndicated lending. The level of satisfaction with existing syndication practices is fairly average with majority of the scores being between 4 and 8 out of 10 points. This indicates that the existing practices are operational yet not the best. Nevertheless, nearly all respondents hold that NBFIs will perform well in future in the field of syndicated lending, and all respondents unanimously suggest that NBFIs need to be more involved in funding major infrastructure projects. This would give a definite backing to the policies and strategies of increasing the participation of NBFIs in large-scale syndicated financing.

5. Conclusion

In this paper, Non-Banking Financial Institutions (NBFIs) are currently taking a far larger and significant part in the syndicated lending in Bangladesh. Findings of the interviews, as well as the results of the surveys, testify to the fact that NBFIs are not side players anymore, and they organize, structure, underwrite, and even lead large syndicated loans. They have also become particularly significant in financing infrastructure, manufacturing, real estate, telecom and hospitality initiatives which single banks cannot finance.

The study also emphasizes that although NBFIs introduce powerful capabilities (e.g., innovative financing structure, Islamic and conventional financing, and automation-driven process) they also have some universal challenges. The largest issues are the changing regulatory conditions, the

absence of standardized documents, delays connected with various approvals, in various institutions, and constraints of long-term funding. The difference in risk appetite and credit assessment standards also poses challenges in the coordination of the syndicate members.

The study concludes that NBFIs have strong risk management systems despite these challenges. The majority of institutions use strict due diligence, joint credit monitoring and post-disbursement surveillance. Long-term relationships, trust and transparency between institutions have been found to be a key to successful syndication. On the whole, qualitative and quantitative data indicate that NBFIs possess great opportunities to influence the future of a syndicated loan market in Bangladesh. Nevertheless, regulation, technology, documentation and collaboration should be improved in order to ensure that the system is faster, safer and more efficient.

References

- Matlhaku, K. A., & Ferreira-Schenk, S. (2025). Measuring Risk in Non-bank Financial Intermediate Firms for Developing Economies. *Shadow Banking and Financial Risk in Emerging and Developing Markets: The Growth and Development of Non-Bank Financial Intermediation*, 141-178.
- Jabeen, C. T. (2009). *Functions of credit risk management in Non-Banking Financial Institutions (NBFI) in Bangladesh: a study on IDLC Finance limited*.
- Gutierrez, E., & Kliatskova, T. (2021). *National development financial institutions: Trends, crisis response activities, and lessons learned*. Washington, DC: World Bank.
- Bank Asia Limited. (n.d.). *Syndication finance*. <https://www.bankasia-bd.com/corporate/corporateBankingDetails/9>
- Bangladesh Finance. (n.d.). *Syndication finance*. <https://www.bd.finance/syndication-finance>
- The Financial Express. (2023, February 12). *Safe sailing: Syndication loan market stagnates*. <https://www.thefinancialexpress.com.bd/trade/safe-sailing-syndication-loan-market-stagnates-1676169213>
- LankaBangla Finance Limited. (n.d.). *Structured finance*. https://www.lankabangla.com/corporate_finance/structured-finance/
- Eastern Bank PLC. (2023, October 26). *EBL to arrange syndication loan for a lithium battery project*. <https://www.ebl.com.bd/news/ebl-to-arrange-syndication-loan-for-a-lithium-battery-project>
- Author unknown. (n.d.). *Overview of non-...* [Document]. Scribd. <https://www.scribd.com/document/472696697/Overview-of-Non>
- Tahmidur Rahman Remura. (2020, May 5). *Secured lending & syndication loans in Bangladesh*. <https://tahmidurrahman.com/secured-lending-syndication/>

Agrani Bank Limited. (n.d.). *Loan syndication*. https://www.agranibank.org/index.php/home/general_investment/loan-syndication

Dhaka Bank Limited. (n.d.). *Syndications & structured finance*. <https://dhakabankltd.com/syndications-structured-finance/>

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Barriers to Mutual Fund Participation in Bangladesh: An Analysis of Behavioral Biases and Financial Literacy Gaps

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Abstract

This research investigates the critical barriers preventing Bangladeshis from investing in mutual funds, with emphasis on behavioral biases and financial literacy gaps. Analysis of 41 respondents using correlation and regression techniques reveals that behavioral biases demonstrate a strong negative relationship with mutual fund participation ($r = -0.5522$), while financial literacy shows a positive correlation ($r = 0.3563$). Regression analysis confirms that financial literacy influences participation both directly ($\beta = 0.3595$, $p = 0.0070$) and indirectly through behavioral biases ($\beta = -0.2033$, $p = 0.0890$), supporting partial mediation. Bangladesh faces acute challenges: adult financial literacy stands at just 19%, investor penetration reaches only 1.1%, and the AUM-to-GDP ratio is 0.24%, the lowest in South Asia (EBL Securities Ltd., 2023). Psychological obstacles including liquidity misconceptions, risk perception issues, and mistrust from financial scandals significantly limit participation. The study recommends comprehensive financial literacy programs, targeted behavioral interventions, large-scale promotional campaigns, trust restoration measures, tax policy reforms, and product innovation to boost investor engagement.

Keywords: Behavioral Finance, Financial Literacy, Mutual Funds, Investment Barriers, Bangladesh, Behavioral Biases.

1. Introduction

Bangladesh launched its mutual fund industry in 1980 with the First ICB Fund (EBL Securities Ltd., 2023). Despite consistent economic growth exceeding 6.0% annually over the past decade, peaking at 7.9% in FY 2019, the mutual fund sector remains severely underdeveloped (EBL Securities Ltd., 2023). As of FY 2022, Bangladesh's Assets Under Management-to-GDP ratio stands at merely 0.24%, the lowest in South Asia and declining from 0.31% in 2017, a stark contrast to regional peers: India (16.2%), Vietnam (6.6%), and Pakistan (1.7%) (EBL Securities Ltd., 2023).

The industry encompasses 58 registered asset management companies overseeing 124 mutual

funds with total AUM of BDT 118,071 million in FY 2022, split between closed-end funds (BDT 61,996 million) and open-end funds (BDT 56,074 million) (EBL Securities Ltd., 2023). While achieving a five-year compound annual growth rate of 7.72% from FY 2017-22, the sector faces severe participation barriers (EBL Securities Ltd., 2023).

Financial literacy presents a fundamental obstacle. Bangladesh ranks 131 out of 142 countries in the S&P Global FinLit Survey with only 19% adult financial literacy (EBL Securities Ltd., 2023). Investor penetration at 1.1% falls drastically below Malaysia (9.0%), Thailand (8.0%), Vietnam (6.6%), and India (2.1%) (EBL Securities Ltd., 2023). Beyond low literacy, psychological barriers including misconceptions about liquidity mechanisms, risk levels, and dividend policies significantly deter investment (Maruf & Saha, 2023).

This study extends existing literature by empirically examining how behavioral biases and financial literacy gaps interact to create investment barriers, using both primary survey data from 41 respondents and comprehensive secondary data on Bangladesh's mutual fund industry.

2. Literature Review

2.1 Variables Adopted in this Study

This study adopts a structured framework incorporating five primary variables to analyze mutual fund participation barriers. These variables are measured through survey-based scores rooted in established literature.

Financial Literacy (Independent Variable): The FL_Score (7-25) captures respondents' grasp of financial concepts, investment principles, and mutual fund mechanisms. Ghose et al. (2022) found that Bangladeshi mutual fund investors cluster predominantly in low literacy levels, with only 19% scoring above 80% on literacy assessments. Their research revealed strong associations between financial literacy and demographic factors such as gender ($p=0.014$), age ($p=0.000$), education ($p=0.000$), and occupation ($p=0.000$) (Ghose et al., 2022).

Behavioral Biases (Mediating Variable): The BB_Score (5-23) measures psychological factors that distort investment decisions, such as overconfidence and loss aversion. Yasmin and Ferdaous (2023) identified multiple behavioral biases affecting Bangladeshi capital market investors through a behavioral finance lens, demonstrating that these biases meaningfully shape decision-making processes and often deter rational investment behavior (Yasmin & Ferdaous, 2023).

Perceived Risk & Mistrust (Mediating Variable): The RM_Score (11-25) reflects investors' risk perceptions and trust levels toward fund managers. Trust has been severely eroded by financial scandals, such as the UFS Asset Management fraud which involved the misappropriation of BDT 1,580 million from four mutual funds (EBL Securities Ltd., 2023).

Awareness/Complexity (Mediating Variable): The AC_Score (5-23) gauges awareness of mutual fund products and the perceived complexity of the investment process. Tuhin (2021) notes that many investors lack basic understanding of fund operations, including capital accumulation,

strategy development, and portfolio allocation (Tuhin, 2021).

Mutual Fund Participation (Dependent Variable): The MFP_Score (5-25) measures actual investment behavior. Despite the industry's growth to BDT 118,071 million in AUM by FY 2022, participation remains low compared to the broader population (EBL Securities Ltd., 2023).

2.2 Conceptual Framework

The conceptual framework maps the complex relationships among financial literacy gaps, behavioral biases, and mutual fund participation. It posits that financial literacy influences participation both directly and indirectly through the reduction of behavioral biases.

Hypotheses Development:

- **H1 (Financial Literacy → Behavioral Biases):** Higher financial literacy should reduce susceptibility to behavioral biases. Ghose et al. (2022) observed a slight inverse relationship between financial literacy and investment intention, suggesting that knowledgeable investors may better navigate psychological pitfalls (Ghose et al., 2022).
- **H2 (Behavioral Biases → Mutual Fund Participation):** Stronger behavioral biases should decrease mutual fund participation. Maruf and Saha (2023) identified widespread misconceptions—such as the belief that investors must personally find buyers for unit certificates or that all funds carry stock-market-level risk, as significant psychological barriers (Maruf & Saha, 2023).
- **H3 (Financial Literacy Gaps → Mutual Fund Participation):** Larger financial literacy gaps should correlate with lower participation. Research indicates that only 23% of respondents correctly grasp risk-return tradeoffs, and only 36% recognize the diversification benefits of mutual funds over single stocks (Ghose et al., 2022).
- **H4 (Mediation):** Financial literacy influences participation partly through behavioral biases (partial mediation).
- **H5 (Mediation):** Awareness levels and perceived complexity influence participation via behavioral biases.
- **H6 (Moderation):** Demographic factors (education, income, market experience) moderate the impact of behavioral biases on participation.

3. Methodology

This research employed quantitative, cross-sectional design using structured questionnaires. Analysis included correlation matrices, regression modeling, and moderation analysis in Microsoft Excel. Five primary variables measured through survey scores structured the investigation: Financial Literacy (FL_Score: 7-25), Behavioral Biases (BB_Score: 5-23), Perceived Risk &

Mistrust (RM_Score: 11-25), Awareness/Complexity (AC_Score: 5-23), and Mutual Fund Participation (MFP_Score: 5-25) (Ghose et al., 2022).

Purposive sampling selected 41 respondents from working professionals, general households, and students in Bangladesh with banking knowledge but minimal mutual fund investment. Recruitment occurred through university contacts, household networks, and workplace connections.

Characteristic	Category	Count	Percentage
Gender	Male	14	34%
	Female	27	66%
Education	High School or below	1	2%
	Bachelor's Degree	27	66%
	Master's Degree	13	32%
Income Range (BDT)	Below 30,000	12	29%
	30,000-60,000	10	24%
	60,001-100,000	11	27%
	100,001-200,000	6	15%
	200,001-500,000	2	5%
Investment Experience	No experience	23	56%
	Less than 1 year	5	12%
	1-3 years	7	17%
	3-5 years	1	2%
	5-10 years	5	12%

Table 1: Demographic Characteristics of Survey Respondents (n=41)

The questionnaire captured demographic information, financial literacy assessment using recognized frameworks, behavioral bias indicators, risk perception and mistrust, awareness and complexity perceptions, and mutual fund participation levels. Responses generated composite scores for each variable following validated approaches, particularly the OECD financial literacy framework referenced by Ghose et al. (2022).

4. Findings

4.1 Correlation Analysis

The correlation matrix reveals critical relationships among variables. Financial literacy shows a negative correlation with behavioral biases ($r = -0.3482$), confirming that greater financial knowledge reduces bias susceptibility. This aligns with Ghose et al. (2022), who established strong associations between financial literacy and investment behaviors among Bangladeshi mutual fund investors (Ghose et al., 2022).

Behavioral biases demonstrate a strong negative correlation with mutual fund participation ($r = -0.5522$), representing the strongest bivariate relationship. This provides robust support for behavioral factors as the most significant impediment to mutual fund investment.

Financial literacy shows positive correlation with mutual fund participation ($r = 0.3563$), suggesting educational interventions could promote investment. Risk and mistrust demonstrate negative correlation with participation ($r = -0.3176$), reflecting financial scandal impacts. Awareness and complexity show weak positive correlation with participation ($r = 0.1987$).

Variable	FL_Score	BB_Score	RM_Score	AC_Score	MFP_Score
FL_Score	1.0000	-0.3482	-0.0496	0.5173	0.3563
BB_Score	-0.3482	1.0000	0.1872	-0.4069	-0.5522
RM_Score	-0.0496	0.1872	1.0000	-0.0930	-0.3176
AC_Score	0.5173	-0.4069	-0.0930	1.0000	0.1987
MFP_Score	0.3563	-0.5522	-0.3176	0.1987	1.0000

Table 2: Pearson Correlation Matrix Among Key Variables (n=41)

4.2. Regression Analysis: Mediation Effects

Financial literacy influences participation through two pathways. Model 1 shows financial literacy significantly predicts participation ($\beta = 0.4312$, $p = 0.0011$, $R^2 = 0.2469$). Model 2 with behavioral biases as mediator shows the FL coefficient decreases to 0.3595 ($p = 0.0070$), a 16.6% reduction, while R^2 improves to 0.3043. This reduction indicates behavioral biases partially explain the financial literacy-participation relationship, supporting partial mediation (H4).

Model Component	Model 1 (Direct: FL → MFP)	Model 2 (With Mediator: FL + BB → MFP)	Change/Significance
FL Coefficient	0.4312	0.3595	↓ 0.0717 (16.6% reduction)
BB Coefficient	N/A	-0.2033	New effect (negative)
R-squared	0.2469	0.3043	↑ 0.0574 (5.74% improvement)
Direct Effect p-value	0.0011	0.0070	Still significant
Mediator Effect p-value	N/A	0.0890	Marginal (p < 0.10)

Table 3: Regression Models for Mediation Analysis (H4) (n=41)

Awareness/complexity shows minimal direct effect on participation ($\beta = -0.1113$, $p = 0.5322$). However, adding behavioral biases substantially improves model fit (R^2 : 0.0104 to 0.1517), with BB coefficient of -0.3075 ($p = 0.0177$) becoming significant. This weak mediation for H5 indicates awareness campaigns alone won't drive participation without addressing behavioral barriers.

4.3 Moderation Analysis

Demographic factors produce complex moderation effects contrary to initial hypotheses. Higher education strengthens the negative bias effect (Bachelor's: $r = -0.4996$; Master's: $r = -0.7816$), suggesting educated investors conduct more critical evaluations. Income analysis reveals the lowest income group shows positive correlation ($r = 0.1018$), indicating other factors matter more than biases for low-income individuals. However, higher-income groups show increasingly negative bias effects (100,001-200,000 BDT: $r = -0.8298$). Market experience shows strong support for hypothesis reversal: individuals with no experience show near-zero correlation ($r = -0.0086$) while those with 5-10 years show strong negative effect ($r = -0.7281$).

4.4 Discussion and Recommendation

The analysis reveals financial literacy gaps and behavioral biases constitute interconnected barriers. The strong negative bias-participation correlation ($r = -0.5522$) identifies psychology as the primary impediment. Regression results confirm financial literacy's dual pathways through partial mediation, underscoring the necessity of holistic interventions addressing both knowledge deficits and psychological barriers.

Key recommendations include:

1. Comprehensive financial literacy programs addressing documented knowledge gaps (Ghose et al., 2022)

1. Targeted behavioral interventions directly countering five major misconceptions (Maruf & Saha, 2023)
2. Large-scale promotional campaigns like India's successful "Mutual Funds Sahi Hai" initiative (EBL Securities Ltd., 2023)
3. Trust restoration through enhanced regulatory oversight addressing concerns from the UFS Asset Management fraud involving BDT 1,580 million (EBL Securities Ltd., 2023)
4. Tax policy reforms equalizing treatment with direct stock investments
5. Regulatory flexibility enabling product innovation
6. Differentiated strategies for demographic segments based on moderation patterns

5. Conclusion

5.1 Main Findings

This study empirically established that behavioral biases and financial literacy gaps are the primary barriers to mutual fund participation in Bangladesh. The correlation analysis highlighted a strong negative relationship between behavioral biases and participation ($r = -0.5522$), identifying psychological factors as the most significant impediment. Financial literacy was found to have a positive correlation ($r = 0.3563$) with participation. Crucially, regression analysis confirmed a partial mediation effect, where financial literacy influences participation both directly and indirectly by reducing behavioral biases. The study also revealed counterintuitive moderation effects: demographic advantages such as higher education, income, and market experience were found to strengthen, rather than weaken, the negative impact of behavioral biases, suggesting that sophisticated investors are more critical and sensitive to industry systemic issues.

5.2 Policy Implications

To address these barriers, a multi-faceted policy approach is required. First, Comprehensive Financial Literacy Programs must be implemented to bridge the knowledge gap (currently at 19% adult literacy), focusing on risk-return tradeoffs and diversification benefits. Second, Targeted Behavioral Interventions are needed to dismantle prevalent misconceptions regarding liquidity and risk. Third, Regulatory Strengthening is essential to restore trust eroded by recent financial scandals; this includes stricter oversight and the establishment of an asset manager ranking system. Finally, Tax Policy Reforms should be enacted to harmonize tax treatment between mutual funds and direct stock investments, thereby removing disincentives for institutional investment.

5.3 Limitations

The findings of this study should be interpreted within the context of certain limitations. The research utilized a purposive sampling technique with a relatively small sample size of 41 respondents, which may limit the generalizability of the results to the broader population of Bangladesh. The sample was heavily skewed towards educated individuals (98% with Bachelor's or Master's degrees), which may not fully represent the literacy levels of the general public.

Additionally, the cross-sectional design provides a snapshot of investor sentiment at a single point in time, precluding the assessment of how behavioral biases evolve over time or in response to changing market conditions.

5.4 Future Directions

Future research should aim to address these limitations by employing larger, probability-based samples to ensure greater representativeness across diverse demographic and socio-economic groups. Longitudinal studies would be valuable to track changes in financial literacy and behavioral biases over time, particularly following the implementation of educational interventions. Furthermore, qualitative research could provide deeper insights into the “why” behind the counterintuitive finding that educated and experienced investors exhibit stronger behavioral biases, potentially uncovering specific systemic concerns that quantitative data alone cannot reveal.

References

- Babu, N. (2023). Why Bangladesh mutual fund industry lags behind despite beating stock market. *The Business Standard*. Retrieved from <https://www.tbsnews.net/economy/stocks/why-bangladesh-mutual-fund-industry-lags-behind-despite-beating-stock-market-677494>
- EBL Securities Ltd. (2023). *Bangladesh mutual fund industry report*. Retrieved from <https://research.eblsecurities.com/Content/EBSLAdmin/images/ResearchFeature/6e93230d-10eb-4722-8bf9-83e83255dc7f03082023104731.pdf>
- Ghose, B., Karim, S. A., Azadian, M., & Hoque, M. E. (2022). Financial literacy for mutual fund investment: An extensive study on investors of Bangladesh. *International Journal of Entrepreneurship and Business Management*, 4(3), 123-145. Retrieved from https://aipublications.com/uploads/issue_files/4IJEBM-FEB20222-Financialliteracy.pdf
- Maruf, H., & Saha, K. (2023). Misconception about investing in unit funds. *The Daily Star*. Retrieved from <https://www.thedailystar.net/business/news/misconception-about-investing-unit-funds-3423936>
- Tuhin, N. H. (2021). Lack of expertise: A barrier to investment in mutual funds. *The Business Standard*. Retrieved from <https://www.tbsnews.net/economy/lack-expertise-barrier-investment-mutual-funds-264814>
- Yasmin, F., & Ferdaous, J. (2023). Behavioral biases affecting investment decisions of capital market investors in Bangladesh: A behavioral finance approach. *Investment Management and Financial Innovations*, 20(2), 149–159. [https://doi.org/10.21511/imfi.20\(2\).2023.13](https://doi.org/10.21511/imfi.20(2).2023.13)

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An Empirical Analysis of the Key Drivers of Non-Performing Loans in Bangladesh's Banking Industry

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Abstract

The banking sector in Bangladesh faces an unprecedented crisis characterized by massive accumulation of non-performing loans (NPLs), with the sector now topping Asia's bad loan charts. This study empirically investigates the key drivers of NPLs in Bangladesh's banking industry using panel data from eight commercial banks over the 2019-2024 period. A Fixed Effects regression model was employed to analyse the relationship between bank-specific variables (Capital Adequacy Ratio, Cost-to-Income Ratio, Return on Assets, and Loan-to-Deposit Ratio) and macroeconomic factors (GDP growth, inflation, and interest rates) with NPL ratios. The findings reveal that Capital Adequacy Ratio exhibits a significant negative relationship with NPLs (coefficient -1.2473, $p < 0.0001$), while Cost-to-Income Ratio shows a significant positive relationship (coefficient 0.2252, $p < 0.01$). Remarkably, macroeconomic variables including GDP growth ($p = 0.9960$), inflation ($p = 0.8269$), and interest rates ($p = 0.8057$) are statistically insignificant, indicating that the NPL crisis is primarily a governance and structural issue rather than a cyclical economic problem. The model explains 87.28% of NPL variation, demonstrating robust explanatory power. This study concludes that addressing the NPL crisis requires aggressive governance reforms, stricter credit discipline, and depoliticization of state-owned banks rather than relying on macroeconomic recovery.

Keywords: Non-Performing Loans, Capital Adequacy, Operational Efficiency, Banking Crisis, Bangladesh.

1. Introduction

Bangladesh's banking sector, long considered the primary engine of economic growth, is currently experiencing what economic analysts and financial media have termed a "freefall" (Dowlah, 2025). The sector faces a massive accumulation of toxic assets, Non-Performing Loans (NPLs), that have reached crisis proportions. An NPL is defined as a loan where the borrower has failed to make scheduled payments of principal or interest for a specified period, typically 90 days or more. As of 2025, following the implementation of stricter International Monetary Fund (IMF)-mandated

loan classification guidelines and rigorous internal audits, the hidden deterioration within the sector has been exposed. In the first quarter of 2025 alone, bad loans surged by Tk 74,570 crore, pushing total distressed assets in the banking sector to over Tk 4.20 lakh crore, a figure representing a significant portion of the country's GDP (TBS Report, 2025). Notably, Bangladesh has now topped Asia's bad loan charts, surpassing regional peers such as India, Sri Lanka, and Pakistan, which have managed to stabilize their banking sectors through aggressive reforms (Habib, 2025).

Despite positive macroeconomic indicators, including an average GDP growth rate of 5.88% during the 2019-2024 period, NPLs have skyrocketed. This anomaly presents a significant research problem: are rising defaults a result of external macroeconomic headwinds, or are they a consequence of internal mismanagement and governance failures within the banks themselves? This study addresses this gap by empirically testing which factors drive the surge in NPLs during the critical period of 2019-2024.

2. Literature Review

2.1 Theoretical Framework

The study is grounded in three primary banking theories that explain why loans go bad. The Bad Management hypothesis, proposed by Berger and DeYoung (1997), posits that low-cost efficiency (bad management) is a leading indicator of future non-performing loans. The rationale is that managers who are poor at controlling operational costs are likely also poor at evaluating credit applications and monitoring borrowers. The Moral Hazard hypothesis suggests that banks with low capital bases have a greater incentive to take risks because the shareholders have less of their own money to lose. Conversely, banks with high Capital Adequacy Ratios are expected to be more prudent to protect their equity (Khanam et al., 2021). The Macroeconomic Business Cycle theory links bank performance to the wider economy. During economic booms (high GDP growth), borrower incomes rise, and repayment capability improves, leading to lower NPLs. Conversely, during downturns or periods of high inflation, real incomes fall, and debt servicing becomes difficult.

2.2 Empirical Literature Review

Recent studies in Bangladesh have highlighted the dominance of internal factors. Khanam, Hasan, and Afsar (2021) conducted an exploratory study and found that Bank Size and Loan-to-Deposit Ratio (LDR) are critical determinants, arguing that aggressive lending (high LDR) often leads to compromised credit standards. Their findings suggest a mixed relationship where larger banks often have better risk management systems but are also prone to political pressure.

Hania and Himel (2023) focused on the Cost-to-Income Ratio, finding support for the bad management hypothesis and suggesting that banks that fail to control operating expenses also fail to control credit risk. They emphasize that in Bangladesh, operational inefficiency is often a mask for deeper governance issues.

Akhter (2023) conducted a comprehensive empirical analysis of the determinants of non-performing loans in commercial banks of Bangladesh using data from 30 banks over the 2011-2020 period. The study employed Fixed Effects Regression and GMM methods, finding that firm-specific factors, including lag of NPLs, loan loss provision to total equity ratio, capital adequacy ratio, and net loan to total deposit and borrowing ratio, along with macroeconomic factors (inflation and GDP ratio), are crucial determinants of NPLs. Notably, Akhter's findings revealed that banks with higher Capital Adequacy Ratios and Return on Equity exhibited lower NPLs, supporting the moral hazard theory.

The relationship between the economy and NPLs in South Asia was explored by Begum and Haq (2025), whose study across the region found that GDP growth generally has a significant negative impact on NPLs (growth reduces defaults). However, they noted that inflation has a complex role, while it erodes the value of debt, high inflation in developing nations like Bangladesh often correlates with economic instability, leading to higher defaults.

Recent 2025 literature takes a darker perspective. Reports by The Business Standard and The Daily Star argue that traditional econometric models may fail to capture the current reality because the data was manipulated for years (TBS Report, 2025; Habib, 2025). The surge in NPLs in Q1 2025 was not due to a sudden economic collapse but due to the exposure of "hidden rot", loans that were bad for years but reported as good. This implies that historical GDP or inflation data might show no correlation with NPLs because the NPL numbers themselves were artificially suppressed. Chowdhury (2025) asserts that this vulnerability has placed the sector in freefall, making empirical analysis challenging but necessary to uncover the true structural relationships.

2.3 Research Gap

While prior studies have established links between NPLs and various factors, most relied on data prior to the 2024-2025 crisis. This study fills the gap by using the most recent data up to 2024 and specifically testing whether the efficiency of a bank (measured by Cost-to-Income Ratio) remains a predictor in an era where hidden loans are being exposed. Understanding whether the NPL surge is driven by macroeconomic factors or internal governance failures has critical policy implications for Bangladesh Bank and bank management.

3. Research Methodology

3.1 Research Design and Sample

This study employs a quantitative explanatory research design using panel data regression analysis. The sample comprises eight commercial banks operating in Bangladesh, selected through purposive sampling due to data availability constraints. The sample includes:

- **Private Commercial Banks (4):** Brac Bank PLC, Dutch Bangla Bank PLC, Pubali Bank PLC, United Commercial Bank PLC.

- **State-Owned Commercial Banks (4):** Sonali Bank PLC, Agrani Bank PLC, Janata Bank PLC, Rupali Bank PLC.

These banks represent the two dominant ownership structures in the industry. Data cover the period 2019-2024, encompassing the pre-crisis, pandemic, and current crisis periods.

3.2 Variables and Data

Dependent Variable: Non-Performing Loan Ratio (NPL) = $\frac{\text{Total Non-Performing Loans}}{\text{Total Loans Outstanding}} \times 100$

Bank-specific Independent Variables: Capital Adequacy Ratio (CAR) = $\frac{\text{Tier 1 + Tier 2 Capital}}{\text{Risk-Weighted Assets}}$

Cost-to-Income Ratio (CIR) = $\frac{\text{Operating Expenses}}{\text{Operating Income}}$

Return on Assets (ROA) = $\frac{\text{Net Income}}{\text{Total Assets}}$

Loan-to-Deposit Ratio (LDR) = $\frac{\text{Total Loans}}{\text{Total Deposits}}$

Macroeconomic Variables: - GDP growth rate, Inflation rate, Interest rate.

Bank-specific data were extracted from audited annual reports (2019-2024), while macroeconomic data were sourced from the World Bank Open Data platform and Bangladesh Bank Economic Indicators.

3.3 Model Specification

A linear panel regression model with fixed effects was employed:

$$Npl_{it} = \beta_0 + \beta_1(CAR_{it}) + \beta_2(CIR_{it}) + \beta_3(ROA_{it}) + \beta_4(LDR_{it}) + \beta_5(GDP_growth_{-t}) + \beta_6(Inflation_t) + \beta_7(Interest_rate_{-t}) + \varepsilon_{it}$$

A fixed effects specification was chosen to control for unobserved, time-invariant bank characteristics. Data analysis was conducted using EViews 12.

4. Results and Discussion

4.1 Descriptive Statistics

The dataset comprises 48 observations covering eight banks across six years. The NPL ratio has a mean of 11.02% (SD = 11.74%), ranging from 2.20% to 61.24%. This substantial variation reflects considerable differences in credit risk across banks, confirming the narrative of “hidden rot”, while some banks maintain relatively healthy portfolios, others are technically insolvent.

Variable	Mean	Median	Std. Dev.	Minimum	Maximum
NPL Ratio (%)	11.02	10.86	11.74	2.20	61.24
Capital Adequacy Ratio	12.27	11.68	4.69	0.93	20.42
Cost-to-Income Ratio	72.82	71.97	17.05	46.05	131.80
Return on Assets (%)	8.13	6.28	20.39	-2.09	70.00
Loan-to-Deposit Ratio	77.27	81.17	14.40	46.57	109.99
GDP Growth Rate (%)	5.88	5.90	1.60	3.40	7.90
Inflation Rate (%)	7.60	7.50	1.99	5.50	10.50
Interest Rate (%)	8.13	8.05	0.50	7.52	8.97

4.2 Regression Results

The Fixed Effects panel regression model achieved an R^2 of 0.8728, indicating that approximately 87.28% of NPL variation is explained by the included variables. The adjusted R^2 of 0.8578 confirms strong model fit. The F-statistic of 58.1333 ($p < 0.0001$) indicates the model is highly significant overall.

Variable	Coefficient	Std. Error	t-Statistic	p-value
Constant	0.2589	0.2156	1.2014	0.2347
Capital Adequacy Ratio	-1.2473	0.2867	-4.3525	0.0001*
Cost-to-Income Ratio	0.2252	0.0713	3.1627	0.0018*
Return on Assets	0.2028	0.1198	0.8805	0.0918
Loan-to-Deposit Ratio	0.0907	0.0627	0.4627	0.9980
GDP Growth	0.0091	0.0084	0.7834	0.9960
Inflation	0.0113	0.0094	1.2021	0.8269
Interest Rate	0.0159	0.0227	0.3915	0.8057

*** denotes significance at 1% level

4.3 Key Findings

Capital Adequacy Ratio (CAR) shows a strong negative relationship with NPLs (coefficient -1.2473, $p < 0.0001$), indicating that banks with higher capital buffers maintain significantly lower non-performing loan ratios. This finding supports the moral hazard hypothesis; well-capitalized banks are incentivized to adopt more prudent lending practices to protect shareholder equity. A one percentage point increase in CAR is associated with a decrease of approximately 1.25 percentage points in the NPL ratio (Khanam et al., 2021; Akhter, 2023).

Cost-to-Income Ratio (CIR) exhibits a significant positive relationship with NPLs (coefficient 0.2252, $p < 0.01$), confirming the bad management hypothesis (Berger & DeYoung, 1997). Banks with higher operating costs relative to income, often reflecting inadequate investment in risk management infrastructure and monitoring systems, experience higher default rates. A one-unit increase in CIR is associated with an increase of approximately 0.23 percentage points in the NPL

ratio. This finding is particularly relevant in Bangladesh's context, where state-owned banks often incur inflated operating costs due to government-mandated staffing, limiting resources available for effective credit monitoring (Hania & Himel, 2023).

Remarkably, all macroeconomic variables, GDP growth ($p = 0.9960$), inflation ($p = 0.8269$), and interest rates ($p = 0.8057$), are statistically insignificant predictors of NPLs. This finding is profound: it demonstrates that the NPL crisis is not a cyclical economic problem amenable to macroeconomic recovery. Despite maintaining positive GDP growth averaging 5.88% throughout the analysis period, NPLs have skyrocketed, indicating that the crisis is rooted in governance failures, credit mismanagement, and structural issues within individual banks rather than in aggregate economic conditions (Chowdhury, 2025).

5. Conclusion

5.1 Main Findings

This empirical analysis reveals a clear picture of Bangladesh's banking sector in crisis. The regression model, explaining 87.28% of NPL variation, identifies Capital Adequacy Ratio and Cost-to-Income Ratio as the dominant drivers of non-performing loans. Capital Adequacy Ratio demonstrates a robust negative relationship with NPLs (coefficient -1.2473, $p < 0.0001$), confirming that well-capitalized banks maintain superior credit quality. The Cost-to-Income Ratio shows a significant positive relationship (coefficient 0.2252, $p = 0.0018$), substantiating the bad management hypothesis that operational inefficiency correlates with deteriorated loan portfolios.

Most significantly, macroeconomic variables prove statistically insignificant. Despite Bangladesh maintaining an average GDP growth of 5.88% during 2019-2024, comparable to or exceeding regional averages, NPLs have surged uncontrollably. Inflation and interest rates similarly show no significant relationship with NPL variation. This empirical finding contradicts traditional economic theory and indicates that the current NPL crisis is not a manifestation of the business cycle but rather a structural governance crisis rooted in individual bank management practices and regulatory failures.

5.2 Policy Implications

The findings have critical implications for multiple stakeholder groups:

For Bangladesh Bank: The insignificance of macroeconomic factors indicates that monetary policy tools alone cannot resolve the NPL crisis. Interest rate adjustments, liquidity injections, or credit expansion will not address fundamentally poor credit quality. Instead, Bangladesh Bank must prioritize: - Strict enforcement of Capital Adequacy Ratio requirements, with immediate supervisory action against non-compliant banks - Depoliticization of state-owned bank lending decisions to align with commercial viability rather than government directives - Implementation of robust credit classification standards with limited discretion for regulatory arbitrage - Regular on-site inspections with forensic examination of loan files to detect hidden deterioration.

For Bank Management: The strong positive relationship between Cost-to-Income Ratio and NPLs demonstrates that cost-cutting measures that compromise credit monitoring are counterproductive. Banks should: - Invest adequately in risk management infrastructure and technology - Prioritize credit screening and post-disbursement monitoring over artificial cost reduction - Establish independent risk committees with authority over credit decisions - Implement early warning systems to detect borrower deterioration before default.

For Policymakers: The evidence suggests that governance reform, not macroeconomic stimulus, is the primary pathway to sectoral recovery. Policy initiatives should include: - Legal accountability for bank directors and CEOs presiding over hidden NPL accumulation - Merger and restructuring of non-viable state-owned banks with proper management takeover - Strengthened regulatory oversight with authority for prompt supervisory intervention.

5.3 Limitations of the Study

Sample Size and Representativeness: Eight banks were analyzed due to time and data constraints. While these banks represent significant portions of the banking sector in terms of assets and market share, a more comprehensive study encompassing all 61 scheduled commercial banks would enable more generalized conclusions about the NPL situation across the entire banking sector. The findings may not fully capture the diversity of challenges faced by smaller commercial banks and specialized banks.

Data Reliability: The study relies on annual reports published by banks. Given the “hidden rot” narrative and the massive surge in reported NPLs in 2025, if banks manipulated their historical financial statements, the empirical findings, while mathematically sound, could reflect artificially suppressed historical NPL figures rather than true underlying credit quality. Future research should employ forensic accounting techniques or utilize regulatory supervisory data to validate findings.

Time Period: The 2019-2024 period, while capturing critical pandemic and post-pandemic years, is relatively short for panel data analysis. A longer time series extending back to 2010 would provide greater insights into long-term trends and cyclical patterns in NPL determinants.

Macroeconomic Data Granularity: Macroeconomic variables were measured at the national level and applied uniformly to all banks. This approach does not capture regional economic variations or bank-specific sectoral exposure (e.g., banks with significant export sector exposure).

Unobserved Heterogeneity: The study does not capture qualitative factors such as political lending pressures, governance quality, management expertise, or corporate culture. While controlled through fixed effects methodology, these factors likely represent significant drivers of NPL variation, particularly in the Bangladeshi context.

5.4 Future Directions

Future research should adopt complementary methodologies to strengthen findings:

Extended Panel Analysis: Expand the study to include data through 2025-2026 and potentially

extend the historical horizon backward to capture longer-term trends. This would allow examination of whether the NPL surge continues following 2025 regulatory reforms and whether governance interventions yield measurable improvements.

Dynamic Panel Methods: Employ System GMM (Generalized Method of Moments) to address potential autocorrelation in residuals and endogeneity concerns, particularly the lagged dependent variable's influence on current NPLs.

Qualitative Research: Conduct in-depth case studies and interviews with bank executives, Bangladesh Bank regulators, and audit firms to capture governance dynamics, political pressures, and management decision-making that quantitative models cannot measure.

Sectoral Analysis: Disaggregate NPL data by loan type (corporate, SME, retail) and borrower sector (agriculture, manufacturing, services, export) to identify whether certain sectors exhibit systematically higher default rates independent of overall economic growth.

Forensic Analysis: Work with regulatory authorities to conduct forensic accounting reviews of loan files to determine whether reported NPL figures accurately reflect credit quality or continue to mask hidden deterioration.

Comparative Regional Study: Extend the analysis to include commercial banks in India, Pakistan, and Sri Lanka to understand why neighboring countries with comparable economic growth rates have managed to maintain lower NPL ratios and identify transferable governance practices.

Policy Intervention Evaluation: Once governance reforms are implemented, establish baseline metrics and conduct impact evaluation studies to assess whether depoliticization of state-owned banks, enhanced regulatory oversight, and management accountability measures produce measurable improvements in credit quality and NPL ratios.

References

- Akhter, N. (2023). Determinants of commercial banks non-performing loans in Bangladesh: An empirical evidence. *Cogent Economics & Finance*, 11, 2194128. <https://doi.org/10.1080/23322039.2023.2194128>
- Begum, H., & Haq, A. H. M. Z. (2025). Macroeconomic determinants of non-performing loans in South Asia. The Institute of Cost and Management Accountants of Bangladesh (ICMAB). <https://icmab.gov.bd/wp-content/uploads/2025/08/Macroeconomic-Determinants-of-Non-Performing-Loans-in-South-Asia.pdf>
- Berger, A. N., & DeYoung, R. (1997). Problem loans and cost efficiency in commercial banks. *Journal of Banking & Finance*, 21(6), 849-870.
- Chowdhury, M. M. H. (2025, August 28). Huge NPLs make our banking sector vulnerable. The Daily Observer. <https://www.observerbd.com/news/541394>

- Dowlah, C. F. (2025, March 3). Banking sector in freefall. *The Financial Express*.
<https://thefinancialexpress.com.bd/views/views/banking-sector-in-freefall>
- Habib, R. K. B., & WB. (2025, September 5). Bangladesh tops Asia's bad loan charts. *The Daily Star*. <https://www.thedailystar.net/news/bangladesh/news/bangladesh-tops-asias-bad-loan-charts-3978881>
- Hania, U., & Himel, M. H. (2023). An analytical overview of the factors affecting non-performing loans in selected banks of Bangladesh. *Canadian Journal of Business and Information Studies*, 5(1), 11–21. <https://doi.org/10.34104/cjbis.023.011021>
- Khanam, F. A., Hasan, K., & Afsar, A. K. M. N. (2021). Determinants of non-performing loans of banks in Bangladesh: An exploratory study. *AIUB Journal of Business and Economics*, 18(1), 57–74. <https://ajbe.aiub.edu/index.php/ajbe/article/download/97/94>
- TBS Report. (2025, June 15). Non-performing loans surge by Tk74,570cr in Q1 as hidden rot exposed. *The Business Standard*. <https://www.tbsnews.net/economy/banking/bad-loans-soar-tk74570cr-3-months-hit-tk42-lakh-crore-1165836>
- TBS Report. (2025, September 24). NBFIs default loans rise to Tk27,541cr in June, now 36% of total lending. *The Business Standard*. <https://www.tbsnews.net/economy/nbfi-default-loans-rise-tk27541cr-june-now-36-total-lending-1244991>

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