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JUDGING ELECTION IMPACT ON STOCK MARKET: EVIDENCE FROM INDIA

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ABSTRACT

Purpose- This study tries to evaluate the influence of election's results on India's BSE and NSE exchanges at different election time frames. It assesses efficiency of Indian financial market at the time of election and to enquire into the fact whether there exists any immediate effects in terms of sudden changes in stock prices/returns and market volatility on market dynamics as a result of declaration of election result.
Methodology- The study is purely based on secondary data and the general elections for the year 2004, 2009, 2014, 2019 and 2024 have been considered. The study used descriptive and analytical method to achieve the desired objective. Monthly along with daily closing prices have been used for BSE and NSE and the volatilities of the stock market before and after 30 days, 15 days and 3 days have been considered for analytical purpose. Actual Return has been calculated using the log difference of previous price and current price$R_t = \ln(P_t - P_{t-1})$, where P is the price ,Ln is natural logarithm and t is the time period and R_t is Actual Return. Paired t test is used to measure if there is any significant mean difference between the two paired samples.
Findings- It has been found that market volatility increases before election results are announced and continue to adjust afterward in India. Results indicate that election results have a limited and temporary impact on returns and volatility, with short-term volatility occurring but not long-term impacts.The analysis of variance indicated that variance in both shorter and longer period [(- 3,+3) days (-30,+30) is not so much statistically prominent, although smaller ups and downs are noticed .This suggests that market volatility is transient and corrects itself over time in India. Moreover, SENSEX return declines gradually in different election times commencing from 2004 till 2024 emphasing the fact that political regime change has initially a little bit notewotrthy impact on stock market returns.
Conclusion- This empirical investigation should be construed as an endeavour in understanding stock price, stock return and general election dynamics in the context of the India's parliamentary political backdrop.

Keywords: Election's impact, daily variance of returns, return, volatility, BSE, NSE, Indian Stock Market.
JEL Codes: P16, G14, C41

1. INTRODUCTION

Political uncertainties, based on which party will come in governmental power, who will lead in which states and many other facets of the political backdrop, are some of the key challenges investors need to think about when looking at how elections impact stock markets. Elections and stockprices have a multifaceted affiliation that is impracticable to assess. However, one can assess the trend of the stock market by probing the government's ideology, policies and electionresults.There exist a long-term link between election and the economy of a nation; obviously,the general election has the effect on stock market too. The market becomes more volatile before the election results announcement and continues to adjust after the declaration of results. These challenges are reflected on the mechanism of financial market. From the literature, it is quite evident that it's just not the election's timing that has an effect on stock market but the outcome of election also impacts the market. Research from the 1970s revealed that politicians would frequently pump up the economy prior to elections in order to gain favour, only to impose strict measures like increased interestrates to control inflation thereafter (Nordhaus,1975). Also,before an election, the presence of political uncertainty has a direct impact on the country's economy which eventually impacts the stock market. Changes in governance are frequently linked to shifts in international relations and foreign policy which leads to lower share prices due to shocks to geopolitical risk (Caldara and Iacoviello, 2022, Bekaert et al, 2014)). Moreeconomic policy uncertainty raises risk and reduces the returns on stock in businesses and sectors that are especially vulnerable to government expenditure and regulation. This covers industries like banking, healthcare, and defence (Baker et al, 2016).The voting system has an impact on how big the fluctuations are. Majority of systems are less predictable than proportional representation systems since they have outcomes that are same for losses of 0.5% and 95%, such as the US

Electoral College and the UK's "first-past-the-post." This may have a major impact on stock market results (Lausegger, 2021). The increased volatility of share prices during elections is indicative of this challenge. According to one study, there is more than 20% greater volatility in stock market returns over the 51 days leading upto elections than predicted. Furthermore, it turns out that the reward for taking on this risk is not very high (Bialkowski et al., 2008). Globally speaking, election outcomes have an effect on the stock market. The market's unusual behavior upon the announcement of election results has become a common occurrence. The capital market has experienced remarkable expansion since the introduction and development of behavioral finance. Researchers haved iscovered the abnormality occurring around election time by using the lens of behavioral finance.

Brief overview of Indian economy in different political regime -2004-24: A Look Back

As 'poverty eradication' is a highly politicized issue buzzed around every general election in India, the propinquity to national elections has thrilled the debate over poverty in India which public seeks to know how poorer section of society have been uplifted economically during the reign of a stable government ruling over a substantial period. But economic performance of India is difficult to appraise because the government has not published official data on poverty and employment since 2011. This has led analysts to make use of alternating data sources that are not as dependable as the large and nationally representative consumption and employment surveys of the Indian government's statistical agency.

The lack of household level consumer expenditure survey (CES) data over the last few years have compelled researchers to use the National Accounts Statistics (Bhalla et al, 2022), CPHS data collected by CMIE (Roy and Van der Weide, 2022), and more recently, the Periodic Labour Force Survey (PLFS) data (Ghatak and Kumar, 2024, Himanshu et al, 2024) to come up with synthetic estimates of poverty. Two months before the Parliamentary elections in 2024, a "Fact Sheet" from the 2022-23 NSO survey, was published by the Ministry of Statistics and Programme Implementation in February, providing some summary statistics about consumer expenditure levels based on the 2022-23 NSO Household Consumption Expenditure Survey (HCES) which has ignited spanking new momentum to the poverty dispute. In the nonexistence of comprehensive survey results, as well as newly calculated poverty lines based on updated cost of living and consumer expenditure patterns, it is not possible to come up with updated poverty estimates that are truly comparable to the 2011-12 round data. Conversely, it enables provisional estimates of the headcount ratio of poverty on the basis of poverty lines from the 2011-12 survey, which are updated by the average inflation rate. This suggests that poverty in India had fallen to a historic low in 2022. (e.g., Subramanian, 2024, Rangarajan and Mahendra Dev, 2024, Bansal, Kumar, and Panda, 2024).

Table 1: Poverty Rates

Year	Poverty headcount ratio ($2.15 a day,2017 PPP)
1983	56.6
1993	48.0
2004	40.6
2012	22.9
2022	5(lower bound)

Source: World Bank Databank (World Development Indicator), https://www.databank.worldbank.org

A well-recognised fundamental facet of the process of economic development is that when an economy becomes more affluent, the fraction of its population living under poverty line is estimated to turn down. Therefore, to continue to bring poor people out of poverty line, an economy needs to activate and mobilize its productive forces constantly to drive economic growth.

Table 2: GrowthRates of the Indian Economy

Year	Annualizedgrowth rate of real GDP percapita	Growthelasticity of poverty
1983-1993	2.8%	-3.07
1993-2004	4.3%	-1.72
2004-2012	5.2%	-3.40
2012-2022	4.6%	-3.90

Source: World Bank Databank (World Development Indicator), https://www.databank.worldbank.org

On the basis of the poverty numbers and the corresponding annualized growth rates of GDP per capita between subsequent rounds of the NSO consumer expenditure surveys the growth elasticity of poverty (GEP) which is represented as the percentage decline in poverty rates connected with a percentage change in per capita income, it has been found that the time frame, 2004-2012, was the period where the growth rate of per capita GDP was the maximum and, the drop in poverty in percentage points was the highest, giving the highest growth elasticity of poverty until 2012. In the very last decade, the

growth rate of GDP per capita was moderately good, nevertheless it did not extend, yet the fall in poverty has been very spiky, presenting the highest GEP over the last 4 decades.

Table 3: India's Growth History

Average Growth Rates	UPA regime (2004-14)	NDA regime (2014-2024 onwards)
GDP	7.74%	5.77%
Unemployment rate	2.2%	7.9%
Exportgrowth	18.72%	9.67%
CorporateTaxgrowth	13.09%	11.20%
Incometaxgrowth	16.85%	17.53%
Stock market capitalization	20%	17%
Mutualfundassetsundermanagement(AUM)	19.4%	20.5%
No of stock market participants	18.3%	21.4%

Source: Handbook of Statistics on Indian Economy (several issues,2004-2014 compiled), Reserve Bank of India, https://www.rbi.org.in

In 2004, the Congress-led UPA-I government unpredictably came to ruling in India, guaranteeing to administer for the sake of the *'Aam Aadmi'*. Over the next decade, it initiated quite a lot of rights-based laws and welfare agendas targeting mass poverty. During UPA-I regime under the leadership of Dr Monmohan Singh from 2004 to 2014, Indian economy witnessed a substantial boom, at a growth rate of 7.74% p.a. In 10 years, regime of NDA under leadership of Modi, the GDP grew at 5.77 per cent p.a. While the UPA era battered a global financial crisis during 2008-09, the present NDA government had to fight against Covid-19 induced global pandemic. Analysis of data from the Association of Mutual Funds in India (AMFI) discloses that the aggregate assets under management of the mutual funds industry grew from Rs 1.4 lakh crore as of March 2004 to Rs 8.25 lakh crore as of March 2014, and Rs 53.4 lakh crore as of March 2024. This indicated that the aggregate assets under management of the mutual fund industry grew at an average rate of 20.5 percent p.a under NDA government, slightly quicker than the average annual growth rate of 19.4 percent p.a under UPA government. Available data on the stock market from Indian stock exchanges depicts that the total market capitalisation grew from Rs 74 lakh crore during March 2014 to Rs 415 lakh crore during June, 2024 which indicates the market capitalisation presently is about 5.6 times what it was in the financial year 2014, showing a growth of about 17 percent p.a between 2014 and 2024. On the contrary, data suggests that India's market capitalization in March 2004 stood at just Rs 12 lakh crore, indicating an increase in stock market capitalization by 6.2 times or by 20 percent p.a which was quicker than what was achieved by NDA government. In terms of stock market participants, National Securities Depository and Central Depository Services recorded an average annual growth of 18.3 percent under the UPA and 21.4 percent under the NDA government. The 2019 elections emphasized the market's sensitivity to political events. The BJP's sustained governance guided to a market upswing, driven by expectations of sustained economic reforms and policy stability. Programmes like "Make in India" and strategic tax reforms branded this period. Nevertheless, growth was controlled by worldwide trade tensions and structural issues within fundamental economic sectors. Average annual export growth was higher under UPA regime in comparison with NDA regime. This might be because India is having cheap and abundant labour force, but, of late, it has not been able the attain the economies of scale in its production of many exportable commodities that China has. Moreover, cost of production per unit has increased as increment in wage rate of labourers have not been counterbalanced by superior productivity, leading to the fact that India is losing out to China in many emerging and neighboring markets. Moreover, ASEAN countries like Vietnam, Cambodia and Myanmar have witnessed Chinese FDI inflow into those markets. It might be because of their improved economic commitment with the rest of the world compared to India. This has increased competition for India in sectors like textiles, leather, gems and jewellery, sports goods, agro and processed food products.

On the other hand, unemployment rate is higher (7.9%) in NDA regime of last 10 years (2014-2024) as compared to 2.2% in UPA regime (2004-2014). NDA government has so effective in generating prolific jobs for the larger section of India's unemployed labour force who are unskilled and poor. Around 40% of workers are compelled to remain disguised in agriculture, and around 20% gets employed in manufacturing operations or business services such as IT. Pre-poll ground level investigations revealed that rising joblessness and price rises are sources of anxiety for numerous electorates. The fragile record of the Modi government in generating employment opportunities is shocking although the government no deficiency on its part in initiating several initiatives to kick-start manufacturing. The 'Make in India' programme, which was launched immediately after Modi led NDA government came to power in 2014, which had expectation to diminish the costs of 'doing business' in India. This was followed by the more recent production-linked incentive scheme in November 2023 to boost domestic production in key manufacturing sectors from electronic products to drones. However, manufacturing's share of output remained the same in 2022.

The Sensex is frequently considered to be a yardstick of India's economic wellbeing and investor assurance. By examining Sensex returns under diverse governments ruled in different phases, we can expand important our understanding into how stock market behaves to a variety of economic policies under the ruling of stable government and how political stability of

government relieves and exalts investors' trust and confidence .The examination of Sensex returns in different governments' ruling phase divulges diverse stock market performance, persuaded by their adopted economic policies, worldwide economic scenario , and investors' reaction. The maximum returns were documented during UPA-I regime under the worthy leadership of Prime Minister Dr. Manmohan Singh, revealing a well-built post-liberalisation growth and international economic integration. NDA government's phase has also displayed vigorous performance, strengthened by momentous economic reforms as well as investors' well-built trust and confidence.

Table 4: Sensex Movements during Different Election Phases in India

Government term (result date to result date)	Government	Sensex on Result Date	Closing Price	Sensex Returns
May 13, 2004 to May 16, 2009	UPA-I	5,399.47	14,284.21	164.55%
May 16, 2009 to May 16, 2014	UPA-II	14,284.21	24,121.74	68.87%.
May 16, 2014 to May 23, 2019	NDA	24,121.74	38,811.39	60.90%
Feb 23, 2019 to Jun 5, 2024	NDA	38,811.39	74,382.24	91.65%

Source: https:// www. Bseindia. com stockinfo annpdfopen aspx

UPA-I regime-The UPA-I government was stimulated by a vigorous bull market which endured till 2007, accompanied by GDP growth rate of approximately 8% and FDI attaining a record $34 billion. This phase (2004-09) witnessed the maximum return amongst the observed periods. The Sensex rushed forward from 5,399.47 to 14,284.21, yielding an amazing return of 164.55%. This phase was distinguished by well-built economic growth, the execution of quite a lot of key reforms as well as increased integration of India with the international economy. The global financial crisis occurred in 2008 weighed down the bull run in the stock market, although revival was witnessed by 2009 prior to the subsequent election cycle commenced.

UPA-II regime- In the UPA-II regime (2009-10 to 2013-14),the Indian economy grew up by 6.7% p.a.In the second term of the UPA government, the Sensex improved from 14,284.21 to 24,121.74, posing a return of 68.87%. The market fluctuated due to prevalent scams during UPA's second term. Investor buoyancy diminished, upsetting both domestic and foreign investments ensuing shortened FDI inflows. Policy worries, along with the government's effort to deal with fiscal deficits and high inflation, branded this period, although the Sensex witnessed approximately 15.5% boost in the first 3 years of UPA-II regime.This period also is evidenced by recovery of the global financial crisis later on , reinforced by vigorous domestic consumption. This has been revitalized by momentous policy measures which sought to promote financial inclusion as well as rural development.

First NDA Government's Regime-During first NDA Government's Regime(2014-15 to 2018-19), the Indian economy witnessed a growth of around 7.5% p.a under the prime minister ship of Narendra Modi.During this regime, the Sensex rose from 24,121.74 to 38,811.39, yielding a return of 60.90%. Key schemes during this regime included the beginning of the Goods and Services Tax (GST), the 'Make in India' drive, and a variety of other reforms which aspired to getting better the 'ease of doing business'. The BJP led NDA's 2014 win, carried a revival in market buoyancy, plummeting volatility to 9.1% from 17.96%. It seems that expectations of economic reforms strengthened this reaction. While the market witnessed a considerable upward movement, a growth rate of approximately 40% over 4 years was observed by which was supposed to be influenced by issues like global oil prices and a diluted Indian rupee. A series of highly sophisticated scam and fraud directed towards slaughter of investors' trust and confidence in the Indian economy.

Second NDA Government's Regime- Under the said NDA government led by Prime Minister Narendra Modi, Sensex has seen a considerable ascend. Starting at 38,811.39 on February 23, 2019, the Sensex climbed to 74,382.24 by June 5, 2024, marking a remarkable return of 91.65%. This period has been marked by important economic reforms, a well-built focus on digital infrastructure like Aadhaar-linked bank accountsto distribute benefits to the poor directly through their Aadhaar-linked bank accounts, as well as sizeable foreign investment inflows.Essential goods such as toilets and cooking cylinders, which are normally privately provisioned, were supplied in large numbers by the government[as called by Arvind Subramanian, Indian economist and the former Chief Economic Advisor, 'New Welfarism' in India]

Dynamics of stock market movements and Election- In India, the impact of general elections widened beyond the dominion of politics. It considerably persuades the Indian stock markets and economic backdrop. But economic analysts presume that the expansion and development in macro-economic variables and the government's spotlighted move towards expansion of country's infrastructure, if, of course, being fiscally appreciable and prudent, might gain investors interest. Stock markets is thought to be a barometer of political emotion and economic stability, during the election phase. There is a truism "buy on rumour, sell on news," which most of the watchful and prudent buyers pursue on the belief that the election result, that got reflected in contemporary market values, will not be likely to cause a gigantic upward move. As new information sensitizes stock prices, it is usually believed that potential stakeholders of stock markets, broadly investors, keenly and anxiously watch the elections debacle because pessimistic outcomes can considerably affect market dynamics. Conversely, an upbeat election upshot for the existing administration will make better the stock market because it ensures political stability. Therefore,

general elections, a inveterate event that will transpire after a predetermined time schedule, in any democratic country is anticipated to bring about volatility in stock market owing to uncertainty in unfolding of epicentre of power politics. Favourable election result in favour of existing ruling party which have articulated previously superior economic policies and ensured political stability might stimulate stock market. However, multiple arguments put forth based on logical footing how election results impact stock markets. Common behavioural practice as well as perception of people governing democracy demonstrates that changes in governments or political regime with its existing ideologies might bring about changes in government policies, economic priorities, and regulations, affecting various sectors and companies. While elections gesture creates short-term volatility in stock market with the anticipation of lots of either optimism or pessimism that might be caused by certainty of arriving at a stable government, the long-term effects are mostly shaped by the economic reforms and policies implemented by the government backed by ruling party coming into administrative power through parliamentary election. Government's ideology might have effect on stock market fluctuations in diverse ways. If the winning political party has a thoughtful and visionary sketch for economic growth over tenure of its five-year roadmap enthroned through 'of the people, by the people, for the people' [it is often termed to explain democracy], optimistic market response will result in a boost in stock prices. On the contrary, if a political alliance having diverse political, economic agenda, ambiguous and conflicting platform appears to be coming into power through the election, it will contemptuously have an effect on market reaction and cause share values to drop. This had been exemplified in Indian stock market scenario in past few decades where election results have traditionally had an immense shock on market sentiments. To mention a few, when the BJP led government in India misplaced from political power in 2004, the market dropped; when subsequently the Congress party led UPA government regained political power in 2009, the stock market went- up again. Likewise, in 2014, a pre-election market spike was ignited with the euphoria in favour of Narendra Modi's leadership.

Does personal charisma of country's leader matter in stock market sentiments?

A leader's personal charisma might determine trend in stock market's prices. If the leader has dominance to disseminate a constructive power and a sense of prominence, he / she is well liked and admired; If he/she has magnetic personality, and the capability to instigate and influence other countries' leader, he can exert a pull on more foreign investment and collaborative ventures from aligning foreign countries which will heighten country's economy and excellent market response and steer the stock market growing. Moreover, although he or she has not been directly linked with stock market sentiments, his or her administrative decisions may bring about stimulation or deterrence in macroeconomic scenario of a country. If leader's cabinet takes decision on personal tax cut in form of fiscal stimulus leaving handful liquidity in consumers' pocket, it might augment personal spending resulting optimistic sentiment among potential investors. Decision taken on augmenting interest rate might elevate the cost of borrowing which acts as an obstacle in boosting stock market a well as overall economy. Consumers' growing optimism as a result of bullish stock market can pay tribute to the attractiveness of leader for which ruling political party led by said leader can reap the benefits in election to come and vice versa. But, in the context of Indian stock market, market's response owing to BJP led government's trumpet victory in 2019 might differ from former optimistic patterns. BJP led NDA coalition won more seats than the said government won five years back in 2014. As happened in2019, 6 months before the elections, Nifty50 declared returns of 10.7 percent and in 6 months after the declaration of elections result, a mere return of 2.2 percent had been posted by Nifty**.** Following same trends, Nifty returns before the elections had been higher than that post elections period in 2004,2009 and 2014 respectively.

2. LITERATURE REVIEW

During last couple of years, researchers have been conducting research on examining the impact of general election on stock markets of respective countries across the world. India is no exception to that endeavour which has been well documented in finance literature. This study will examine the performance of the India's to major stock markets around present national election held recently in 2024.

Hensel, C. R. et.al (1995) reveals that small-cap equities perform better under democratic administrations than republican ones. Aggarwal,Reena et al. (1999) analyzed the factors causing significant changes in the volatility of developing stock markets and found that local events were predominant, with the 1987 stock market crisis being the only major international event.Sazali Abidin et.al (2010) revealed that political cycles have a major effect on stock returns in New Zealand. The National party which leanstotheright, has seen stronger returns than itsc ounterpart on the left, indicating that investors may want to consider other options when making investment decisions.Kabiru J.N. et.al. (2015), using event study techniques, looked at how Kenya's general election outcomes affected share performances at the NSE. The market's reaction was shown to fluctuate, with the elections of 1997 and 2007 bearing particular significance. The researchers reached a conclusion that interested parties should keep an eye on the electoral process and take macroeconomic issues like the depreciation of the shilling and the global financial crisis into account. Yan and Wooi, (2016) looked at stock market returns of private and state-owned banks in Thailand, Malaysia, and Indonesia from 2000 to 2013 during election seasons. Results exhibit that both publicly traded and privately held banks show favourable CAAR, with private banks showing smaller and less significant CAAR compared togovernment-owned banks.

Balajiet.al. (2018) in theirstudyanalyzed a 30-day sample from the five-year general electionusing t-test and F-test, finding no significant impact on the Nifty Index and found that the market responds erratically in the near term. (Prakash&Padmasree, (2019) examined the impact of election results announcements on the NSE and BSE indexes. Taking data from five election periods from 1999 to2019, they found a short-term impact, gradually declining in the medium and diminishing in thelong-term. Gour, N. (2020) exploredtheimpactsof theparliamentaryelectionheld2019 on the Indian Stock Market and found that collapsing market returns surrounding election results were offset by encouraging positive returns the next day. The banking industry, SENSEX, and NIFTY were triumphant, but the FMCG sector suffered a thrashing. Ali and Saha (2020) observed the effect of political events, such as the Lok Sabha Elections 2019, on the Indian stock market. Using BSE 100 as a proxy market and daily closing stock prices of 30 companies the study found consistent negative returns following the event, but the non-existence of volatility and insignificant results indicated that the Indian Stock Market is in a semi-strong form, indicating market efficiency.Paritosh, C. S., (2021) examined the correlation between investors' attention to terms in Google searches and India's stock market returns during the 17th Lok Sabha Election. Using the autoregressive distributed lag (ARDL) model, it finds that attention dynamics cointegrated with traded volumes or market returns, indicating investors' attention myopia.

Richa Garg(2022) investigated the impact of Indian general elections on Indian stock market for the period from 2004 to 2014. The study uses DID, RE, and FE models toassess the effect of election on market capitalization and stock returns. The results suggests the affiliation between Lok Sabha elections and stock market dynamics, confering an extended vision and insights towards prospective investors and policymakers.

Kedia and Satpathy (2023) looked into the impact of general elections and government changes on the Indian stock market from 2004 to 2019. It observed high variation in daily stock returns, with both positive and negative noteworthy returns, particularly after election results. Anderson, W et.al (2023) examined real insuations for investors, by critically explaining monthly excess and risk-adjusted returns on 49 industry portfolios for the period 1926–2022 in US economy. The results reflect higher returns around midterm elections all but vanishes after returns are made risk adjusted. It has also been observd that midterm elections are mostly connected with the market factor, and consequently, higher returns seems to only indemnify investors for taking risk.

Pandey,D.K et.al (2024) investigated the very short-run impact of the election results applying event study method for 1546 NSE-listed firms and observed notable adverse market reactions around the counting day. It has been found that the market recovers with expectations of a permanent government. Sectoral analysis displayed differentiated recovery across sectors. Cross-sectional analysis shows that larger firms with superior fundamentals manage uncertainties better, while volatile and highly-priced stocks suffer more which theoretically contribute to the semi-strong form of the efficient market and uncertain information hypotheses.Chadha, M et.al (2024) analyses the complex affiliation between Lok Sabha elections and their effect on the Indian stock market, shareholders' feeling, and financial upshot. It emphasizes how such political actions initiate indecision and guesswork into the market which prioritize sharp unpredictability exemplified by unexpected price instability and improved trading activity. Investors' emotions, predisposed by their perceptions, take part in a critical role during periods of political indecision, determining trading blueprints, asset valuations, and, on the whole, market dynamics. Malav.R(2024) investigated the effect of general election and government transition on Indian stock market from 2014 to 2024 using secondary data of NSE and Event study approach. The study suggests linear affiliation between market index and stock market returns and it has been found that a lot of fluctuations exist in daily stock returns during event study period and also fluctuations found in stock markets owing to shift in political landscape.

Citing some previous research studies, a perception has been built up that election might not have significant effect on stock market just before election and after election. Nevertheless, the long-term trajectory is decided by the government's policy action and capability to uphold an encouraging business environment for the companies. This evidence-based investigation has been provoked to a great extent by the acknowledged substantiation of stock price dependence throughout the political calendar, as well as by the existing literature in contemporary political economy.

In view of the above small prelude based on existing studies on the topic, It has been attempted in the study to assess, in the study, the impact of election result on BSE and NSE Index in Indian stock market and make a comparative analysis of volatility of returns in India's major stock exchanges in the context of the announcement of election results. Thus, the study focuses on the influence of the election results on the stock market indices of India's two main exchanges. This paper will assist investors in being nimble and prudent through out election seasons, making extremely careful investments, and optimizing their returns.

3. DATA AND METHODOLOGY

The study is purely based on secondary data and the general election for the year 2004, 2009, 2014, 2019 and 2024 has been taken. Descriptive and analytical method has been adopted to achieve our objective. Daily closing prices have been used for BSE and NSE and the volatility of the stock market before and after 30 days 15 days and 3 days has been considered for the analysis purpose.

Actual returns have been calculated using the log difference of previous price and current price $R_t = \ln(P_t - P_{t-1})$, where P is the price ,ln is natural logarithm and t is the time period and price in Actual Return. Paired t test is used to measure if there is any significant mean difference between the two paired samples.

$H_{0:}$ There is statistically no significant difference between the two paired samples.

H_1: There is statistically significant difference between the two paired samples.

4. FINDINGS AND DISCUSSIONS

The study in following Table 5 directs that an unwavering governmental rule with an unambiguous command tends to restore confidence of existing and potential investors which ignites optimistic market reactions.

Table 5: Nifty Returns in Different Election Periods

Parliamentary Election held	Index Level and return 6 months before election		Nifty 50 on result declaration date	Index Level and return 6 months after election		1 year return of Nifty 50
	Index level	Return		Index level	Return	
2004	1,550	10.5%	1712	1859	8.6%	19.9%
2009	2,683	36.9%	3672	4999	36.1%	86.3%
2014	6,056	18.09%	7203	8383	16.4%	38.4%
2019	10,526	10.7%	11657	11913	2.2%	13.2%
2024	21,731	19.42%	21,884	25235(upto Sep,2)	1.14%(Upto Sep,2)	14%(Estimated)

Source: https://www.nseindia.com

On the other hand, an uneven or indecisive election upshot may unveil market turmoil. If one observes 6-months and 1-year returns(estimated) after election results declared in 2024, the average one-month return is 0.39%, and one year return is estimated to be 14% because investors always expect permanence in the governmental power.

Table 6: Daily Average Returns of BSE and NSE

Years	Daily average returns of BSE						Daily average returns of NSE					
	Before			After			Before			After		
	30 Days	15 Days	3 Days	30 Days	15 Days	3 Days	30 Days	15 Days	3 Days	30 Days	15 Days	3 Days
2004	-0.074	-0.564	-1.882	-0.213	-0.242	-3.392	0.02	0.03	0.02	0.23	0.18	0.1
2009	1.1725	1.6604	.0422	0.115	0.1758	4.8042	0.14	0.02	0.02	0.03	0.04	0.1
2014	0.2558	0.3533	0.4981	0.1407	0.325	0.2427	0.01	0.01	0.08	0.17	0.11	0.0
2019	-0.0044	-0.029	1.0207	-1.376	-0.081	0.7963	0.01	0.02	0.02	0.58	0.13	0.08
2024	0.1475	0.2999	0.8682	0.3903	0.4977	2.0684	0.09	0.01	0.02	0.28	0.21	0.09

From Table 6, it has been observed that after election results ,returns for NSE indices declined in comparatively shorter period (3 days) and it gradually improves over time. For NSE index, except for 2009, the returns showed increments in terms of average returns with passage of days after declaration of election results. Except for 2009, in all the years under study, the return has decreased after announcement of the election results. But a mixed picture is found in case of BSE. No significant decline of return, after election result period, is noticed in case of 3 days average return in comparison with medium(15 days) and comparatively longer (30days) period, except for 2004 and 2014. Rather return gradually declines over time from 3 days period to 30 days period in 2009 and 2024.

Table 7: Daily Variance of Returns of Sensex BSE) and Nifty (NSE)

Years	Daily variance of average returns of BSE						Daily variance of average returns of NSE					
	Before			After			Before			After		
	30 Days	15 Days	3 Days	30 Days	15 Days	3 Days	30 Days	15 Days	3 Days	30 Days	15 Days	3 Days
2004	0.02	0.03	0.02	0.10	0.18	0.10	0.12	0.13	0.02	0.11	0.22	0.02
2009	0.14	0.02	0.02	0.03	0.04	0.1	0.14	0.22	0.01	0.04	0.04	0.02
2014	0.101	0.09	0.08	0.01	0.01	0.0	0.07	0.06	0.02	0.01	0.01	0.09
2019	0.06	0.09	0.11	0.03	0.01	0.08	0.11	0.09	0.01	0.06	0.01	0.02
2024	0.09	0.01	0.02	0.08	0.03	0.04	0.09	0.02	0.02	0.02	0.01	0.01

Table 7 shows the variances of daily returns for BSE and NSE indices respectively. Variance measures the variability of a data set from its mean value. For investments, variance helps in interpreting the volatility of the security. The larger the variance is, the more spread out the data set is. From the table 7, it has been noticed that variance in both shorter and longer period [(- 3,+3) days (-30,+30) is not so much statistically prominent, although smaller ups and downs are noticed. Thus it indicates

that volatility, if existed, is limited to a specific time period and the market corrects itself within a shorter period of time. The market becomes more unpredictable before the election results announcement and continues to regulate after the declaration of election results.

Table 8: Paired t Test

Years	Daily average returns of BSE			Daily average returns of NSE		
	30 Days	15 Days	3 Days	30 Days	15 Days	3 Days
2004	.316	0.303385	0.385013	.816	.812	0.400798
2009	.186	0.280757	0.266926	.186	.333	0.105942
2014	.312	0.109316	0.236721	.612	.914	0.283632
2019	.326	0.025713	0.426401	.326	.901	0.127737
2024	0.122823	0.056285	0.254593	0.127886	0.075967	0.255402

Table 8 measures the paired t- test for both the indices. Paired t test is used to measure if there is any significant mean difference between the two paired samples. Since the p-value of both the indices in all the period is greater than 0.05, it indicates acceptance of null hypothesis that there is statistically no significant difference between the returns of BSE and NSE in pre and post-election period result declaration. Thus this indicates election results have no significant impact on the returns of both the indices.

5. CONCLUSION AND IMPLICATIONS

The election results have, undoubtedly, some degree of momentary shock on the returns and volatility of BSE and NSE indices in India because every time, declaration of election creates some temporary blow in India's political climate which brings about euphoria among potential investors. The political party that is expected to come to governmental power is likely to make powerful reforms in shaping favourable economic policies but investors can only expect partial favourable outcome owing to election results because market moves are more strappingly connected with fundamental economic factors like GDP growth , government policies, monsoon patterns, and inflation trends, foreign investors' decisions to invest in Indian stocks or withdraw their investments influencing stock market dynamics rather than dependent upon electoral results. In the undertaken empirical study, it has been observed that after election result declared, returns for NSE indices declined immediately in comparatively shorter period (3 days) and it gradually improves over time ,where as, in case of BSE, no significant decline of return ,after election result period, is noticed in case of 3 days average return in comparison with medium(15 days) and comparatively longer (30days) period, except for 2004 and 2014. For NSE index, except for 2009, the average return showed increasing gesture with passage of days after declaration of election results. Except for 2009, in all the years under study, the return has decreased after announcement of the election results. But a mixed picture is found in case of BSE where return gradually declines over time from 3 days period to 30 days period in 2009 and 2024.

The analysis of variance indicated that variance in bothshorter and longerperiod [(-3+3) days (-30+30) is not somuchstatisticallyprominent, althoughsmallerups and downsarenoticed .This suggests that market volatility is transient and corrects it self over time. Investigating the stock market returns in both BSE and NSE during the regime of different prime ministers divulges that election politics do not intensely affect equity returns, although there are variations in different point of time. The overall path of wealth creation remains consistently encouraging, maintaining a long-term upward trend irrespective of the political leadership or party in power.

Our analysis in the above pointed- out that the 3 days pre and post election return outcome demonstrate a variance in path of returns, which indicates that there is short-term volatility around the election date. The one-month pre and post election results show a steady market direction, which assure that the trend for each market is not changed due to several parliamentary elections occurred overlast 20 years.

In actual practice, between 1980 and 2023, India's government changed 11 times, with eight being coalitions. Since 2014, the BJP has maintained a clear majority. Since 1980, the average real GDP growth has been 6.2%, and the Sensex has shown compound annual growth of 9.5% in dollar terms and 15.5% in rupee terms up to August 2023. Coalition governance in India allows for consensus-driven decisions, enabling significant reforms. However, it limits the economy's potential pace of growth compared to countries like China. India's long-term real GDP growth potential is projected to be 6.0%-6.5%, implying an 11%-12% nominal GDP growth.

Investors should move towards the stock market with a long-term perception, concentrating on fundamentals and diversification to allay election-related volatility. Besides, keeping themselves well aware regarding election developments and their potential financial repercussions might facilitate investors to take constructive decisions in times of election cycles. Whilst general elections can extensively impact the stock market, a well-thought-out investment strategy and a well thought

out vision on the broader economic backdrop are key to thriving long-term investing decision in this dynamic and vibrant democracy.

India is expected to have one of the world's fastest expanding major economies by 2024, according to a very optimistic economic estimate. This growth is supportedby a combination of persistent external and internal forces. The nation's improved business regulations and political stability are drawing in more foreign direct investments from abroad. India is seeing favourable domestic outcomes due to a surge in governments pending on infrastructure, a flourishing digital economy, and growing consumer demand. This empirical investigation should be construed to be an endeavour in understanding stock price, stock return and general election dynamics in the context of the India's parliamentary political backdrop.

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AN EMPIRICAL ANALYSIS OF THE LINK BETWEEN FISCAL DEFICITS, MONETARY EXPANSION, AND INFLATION IN UGANDA (2007–2020)

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ABSTRACT

Purpose – This study provides an empirical analysis of the relationship between fiscal deficits, monetary expansion, and inflation in Uganda using quarterly data from 2007 to 2020. It seeks to determine both the short- and long-run drivers of inflation and establish causal relationships among the variables.

Methodology – The Autoregressive Distributed Lag (ARDL) bounds testing approach was employed to estimate short- and long-run effects, while Granger causality tests were used to examine causal links. Diagnostic and stability tests were applied to validate the robustness of the model.

Findings – The results demonstrate that, in the long-run, money supply (0.33), fiscal deficit (0.28), and exchange rate (0.32) significantly increase inflation, while GDP (–0.27) and interest rate (–0.018) reduce it. Terms of trade were insignificant. In the short run, both fiscal deficit and money supply exert positive and significant effects on inflation. The error correction term indicates that 67% of disequilibrium is corrected within a quarter. Granger causality results confirm unidirectional causality running from fiscal deficit and money supply to inflation.

Conclusion – The study concludes that fiscal deficit and money supply are the primary sources of inflation in Uganda, while GDP growth helps stabilize prices. Effective coordination of fiscal and monetary policy is essential. Policymakers should reduce fiscal deficits, regulate money supply, and stabilize the exchange rate, while promoting growth-enhancing strategies to ensure long-term price stability.

Keywords: Inflation, fiscal deficit, money supply, ARDL, Uganda
JEL Codes: H62, E51, E31

1. INTRODUCTION

Stabilizing prices has long been a central mission for central banks, which underscores the importance of identifying the main forces behind inflation (Mishkin, 2004). Inflation—defined as a sustained rise in the overall cost of goods and services—is often linked to rapid monetary growth. Likewise, recurring fiscal deficits, where government expenditures consistently exceed revenues, are widely recognized as contributors to inflation, depending on the financing method. The interplay between deficits, money supply growth, and inflation has attracted considerable scholarly and policy debate, especially in developing economies such as Uganda.

The effect of fiscal deficits on inflation largely depends on how they are financed. Short-term deficits may only cause temporary price increases, while prolonged deficits funded by monetary expansion usually create persistent inflationary pressures. By contrast, deficits covered through non-monetary instruments, such as bonds absorbed by non-banking entities, tend to have a weaker effect on price levels (Khieu, 2014). Empirical evidence on the subject remains inconclusive: some studies point to a strong link between fiscal imbalances and hyperinflation, whereas others find negligible or weak connections, often due to structural features, labor market dynamics, or methodological differences (Catão & Terrones, 2003; Ekanayake, 2012).

Monetary expansion is another factor that influences inflation. Persistent fiscal shortfalls often lead to monetization, where deficits are financed through money creation, which in turn raises liquidity and fuels price pressures, undermining macroeconomic stability (Dornbusch & Fischer, 2007). In many developing economies, high inflation is closely tied to fiscal imbalances, with money-financed deficits serving as the primary driver (Lozano-Espitia, 2008). Rising inflation then compounds fiscal difficulties by increasing debt-servicing costs, thereby widening budgetary gaps (Dornbusch & Fischer, 2007).

Uganda has experienced similar challenges. The budget deficit rose from 7% of GDP to 9% in the 2020/21 fiscal year (World Bank, 2020), while the money supply expanded sharply from UGX 1,315.83 billion in 2002 to UGX 22,955.84 billion by 2020 (Bank of Uganda, 2020). Previous studies using the Vector Error Correction Model (VECM) produced mixed or inconclusive findings, largely due to restrictive assumptions regarding stationarity. For this reason, the present study adopts the Autoregressive Distributed Lag (ARDL) model, which accommodates a mix of stationary and non-stationary variables and captures both short-run and long-run dynamics. By re-examining the relationship between fiscal deficits, monetary growth, and inflation using ARDL, this research seeks to provide robust empirical evidence for Uganda and to contribute to wider debates on fiscal-monetary interactions in developing economies.

2. LITERATURE REVIEW

This study draws on three key theoretical frameworks: the Monetary Theory of Inflation, the Fiscal Theory of the Price Level (FTPL), and the Structural Theory of Inflation. From the monetarist perspective, inflation is essentially a result of excessive money supply growth. Friedman and his followers argue that inflation arises when money expands faster than real output, making monetary policy the most effective instrument for price stability (Friedman, 1968; Totonchi, 2011; Parguez, 2011). This view emphasizes that controlling money supply fluctuations is central to curbing inflation.

The Fiscal Theory of the Price Level (FTPL), however, assigns primacy to fiscal policy. According to this framework, government debt, taxation, and spending decisions determine the price level. Persistent fiscal deficits undermine the value of currency, driving inflation, while monetary policy plays a secondary role (Bassetto, 2008). Thus, maintaining sustainable fiscal policy is seen as essential for long-run price stability.

The Structural Theory of Inflation, developed by Myrdal and Straten, focuses on the structural weaknesses of developing economies, such as supply bottlenecks, sectoral imbalances, and limited production capacity. Structuralists argue that while monetary and fiscal policies can trigger inflation in the short run, the deeper causes lie in economic rigidities that restrict supply responses to rising demand (Totonchi, 2011).

Empirical evidence reflects these competing views Eita et al. (2021) in Namibia—also identified a long-term relationship between budget deficits and inflation. Khan et al. (2023) confirmed using ARDL that in Pakistan, fiscal deficits and exchange rate movements fuel inflation both in the short and long run, while money supply had only a long-run effect Similarly, Loate and Viegi (2025) observed in South Africa that prolonged deficit-financed fiscal expansion raised the risk premium and debt levels, eventually exerting contractionary and inflationary pressures .Nguyen (2015) found that fiscal deficits significantly contributed to inflation in Asian economies between 1985 and 2012, while Ekanayake (2012) showed that in Sri Lanka, a 1% rise in the deficit increased inflation by 11%. In Uganda, Bwire and Nampewo (2014) reported that fiscal deficits affected inflation only in the long run. Other African studies—including Solomon & De Wet (2004) in Tanzania, Makochekanwa (2008) in Zimbabwe, and Eita et al. (2021) in Namibia—also identified a long-term relationship between budget deficits and inflation.

Similar findings emerge in relation to money supply. Studies from Tanzania (Mbongo et al., 2014), Ghana (Ofori et al., 2017), China (He, 2017), and Turkey (Gungor & Berk, 2006) confirm that monetary expansion raises inflation in both the short and long run. Yet results remain inconsistent: Amassoma et al. (2018) found little evidence of money supply driving inflation in Nigeria, while Achary (2019) concluded that in Nepal, money supply affected inflation only in the long run.

Taking together, these studies suggest that while theory clearly links fiscal deficits and money growth to inflation, empirical findings vary considerably across contexts. This highlights the need to re-examine the Ugandan case using a flexible approach like ARDL, which can capture both short-term fluctuations and long-term relationships.

3. METHODOLOGY

3.1. Data Source and Type

This research is based exclusively on secondary data. Information on inflation, money supply, interest rates, exchange rates, GDP, and terms of trade (as a proxy for trade openness) was obtained from the *Bank of Uganda*, while fiscal deficit data came from the *Ministry of Finance, Planning, and Economic Development*. The dataset covers quarterly observations from 2007 to 2020, providing sufficient depth for a time series analysis of the fiscal–inflation relationship.

To assess the statistical properties of the series, the Augmented Dickey–Fuller (ADF) test was applied to determine whether the variables were stationary at levels (I (0)) or became stationary after first differencing (I (1)). A summary of variables, proxies, measurement units, and sources is presented in Table 3.1.

Table 1: Variables, Proxies, and Sources

Variable	Proxy	Measurement	Source
Inflation	INFR	general and persistent increase in the price level of goods and services of a country (%).	Bank of Uganda
Fiscal deficit	FD	Fiscal deficit in billions of Ugandan Shillings (UGX).	Ministry of Finance
Money supply	MS	Sum of currency and deposits in circulation (cheque, time, and savings deposits) in billion UGX	Bank of Uganda
Interest rate	IR	Interest rate charged on loans by financial institutions (%).	Bank of Uganda
Exchange Rate	EXR	Exchange rate of Ugandan Shilling to US Dollar (UGX/USD).	Bank of Uganda
Gross Domestic Product	GDP	Total value of goods and services produced (Billions UGX).	Bank of Uganda
Terms of Trade	ToT	(Export price index / Import price index) × 100. Measures trade efficiency (%).	Bank of Uganda

The empirical analysis was carried out using Stata 15 and EViews 9.0. Exploratory plots were used to examine patterns in the data, followed by cointegration tests to establish possible long-run linkages. The Autoregressive Distributed Lag (ARDL) model was then employed to estimate both short-run and long-run dynamics, while Granger causality tests were used to evaluate the direction of causality between fiscal deficits, money supply, and inflation.

3.2. Model Specification

The model was designed to capture the impact of fiscal and monetary variables on inflation in Uganda. Given the mixture of integration orders in the dataset, the ARDL cointegration technique was considered most appropriate. The baseline equation is specified as:

$$lnINFR_t = \beta_0 + \beta_1 lnFD_{t-1} + \beta_2 lnMS_{t-1} + \beta_3 lnIR_{t-1} + \beta_4 lnEXR_{t-1} + \beta_5 lnGDP_{t-1} + \beta_6 lnTOT_{t-1} + \varepsilon_{1t} \quad (1)$$

Where lnINFR denotes the natural logarithm of inflation rate, lnFD stands for the natural logarithm of the Fiscal Deficit, lnMS refers the natural logarithm of Money Supply, lnIR signifies the natural logarithm of Interest rate, lnEXR denotes the natural logarithm of the Exchange rate, lnGDP stands for natural logarithm of Gross Domestic Product and the natural logarithm of trade openness is denoted by lnToT.

Cointegration with ARDL - The ARDL bounds testing procedure proposed by Pesaran et al. (2001) was adopted for three main reasons. First, once the optimal lag length is selected, it enables testing for cointegration using the bounds test, which is more flexible than traditional techniques such as Johansen and Juselius (1990). Second, unlike the Engle–Granger approach (1987), ARDL allows regressors to be a mix of I(0) and I(1). Third, the method performs well with relatively small sample sizes, making it suitable for this dataset.

The ARDL framework also incorporates an Error Correction Mechanism (ECM), which accounts for both short-run adjustments and long-run equilibrium dynamics. By including lags, the method helps minimize endogeneity bias (Pesaran, 1997). These features make ARDL an appropriate and robust approach for exploring the fiscal deficit–inflation nexus in Uganda.

Long Run and Short Run Models - The unrestricted error-correction version of the ARDL model can be expressed as

$$\Delta lnINFR_t = \alpha_0 + \beta_0 + \beta_1 ln\mathrm{FD}_{t-1} + \beta_2 ln\mathrm{MS}_{t-1} + \beta_3 ln\mathrm{IR}_{t-1} + \beta_4 ln\mathrm{EXR}_{t-1} + \beta_5 ln\mathrm{GDP}_{t-1} + \beta_6 ln\mathrm{ToT}_{t-1} + \sum_{i=0}^{p} \delta_1 ln\mathrm{FD}_{t-1} + \sum_{i=0}^{p} \delta_2 ln\mathrm{MS}_{t-1} + \sum_{i=0}^{p} \delta_3 ln\mathrm{INTR}_{t-1} + \sum_{i=0}^{p} \delta_4 ln\mathrm{EXR}_{t-1} + \sum_{i=0}^{p} \delta_5 ln\mathrm{GDP}_{t-1} + \sum_{i=0}^{p} \delta_5 ln\mathrm{ToT}_{t-1} + \varepsilon_t \quad (2)$$

The long-run coefficients are captured by the β_i parameters, while the short-run dynamics are reflected in the δ_i terms. The null hypothesis $H_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$: implies no cointegration, while the alternative assumes the existence of cointegration.

If cointegration is confirmed, the conditional long-run ARDL model is specified as:

$$\Delta INFR_t = \alpha_0 + \sum_{i=0}^{p} \beta_i X_{i-1} + \varepsilon_t \quad (3)$$

The final stage involves estimating the ECM:

$$\Delta INFR_t = \sum_{i=0}^{p} \delta_i \Delta X_{i-1} + \theta_1 ECT_{t-1} + \varepsilon_t \quad (4)$$

Here, δ_i denotes the short-run coefficients, ECT_{t-1} is the error-correction term, p represents the chosen optimal lag length, and θ measures the adjustment speed. A negative and statistically significant θ confirms cointegration and indicates the proportion of disequilibrium corrected in each period.

4. FINDINGS AND DISCUSSION

This section presents the results of the study, beginning with descriptive analysis of the variables through graphs and summary statistics. It then incorporates the outcomes of stationarity and cointegration tests to guide model estimation. Using these foundations, the ARDL framework was applied to capture both the short-run and long-run dynamics between fiscal deficits, money supply, and inflation. In addition, Granger causality tests were employed to examine the direction of influence among the variables. To ensure the robustness of the results, several diagnostic checks were also conducted on the estimated models.

4.1. Descriptive Analysis

Money Supply (Figure 1): Uganda's money supply displayed a steady upward trend throughout the study period, with a sharp acceleration in the third quarter of 2009. This reflects persistent monetary expansion and increasing liquidity levels in the economy. Fiscal Deficit (Figure 2): The fiscal balance consistently deteriorated from Q1 2007 to Q4 2020, reaching its widest gap of 0.088% of GDP in the last quarter of 2020. The narrowest deficit, 0.005% of GDP, was observed in Q1 2007. These results contribute to rising fiscal stress over the study period.

Exchange Rate (Figure 3): The Ugandan shilling experienced repeated fluctuations between 2007 and 2020. A sharp depreciation occurred from Q1 2014 to Q3 2015. The most favorable exchange rate was recorded in Q2 2020, while the weakest occurred in Q3 2008. The volatility largely reflected persistent current account imbalances and the country's import dependence. Interest Rates (Figure 4): Lending rates generally increased over time, though they fell briefly in 2007. The highest rate, 27.2%, was recorded in Q1 2012, largely due to elevated administrative costs, while the lowest, 18.6%, occurred in Q2 2020. Wide interest rate spreads were linked to bank capitalization levels, yields on government securities, and high operational costs in the financial sector.

Gross Domestic Product (Figure 5): GDP maintained an upward trajectory, averaging UGX 27,990.12 billion between Q1 2007 and Q4 2020. The maximum value of UGX 38,597.18 billion occurred in Q4 2020, while the minimum, UGX 11,084.95 billion, was in Q1 2007. This indicates sustained economic expansion despite periodic shocks. Terms of Trade (Figure 6): The terms of trade index exhibited significant instability, especially during 2012–2014 and again from 2017 onward. This volatility reflected Uganda's dependence on imported high-value consumer goods against relatively narrow export earnings dominated by agricultural commodities such as coffee.

Inflation (Figure 7): Inflation was highly variable during the study period. It reached a maximum of 24.2% in Q4 2011 due to food and fuel price spikes, before falling to 1.9% in Q4 2014. Another notable surge occurred in Q1 2009. As Kabundi (2012) observes, Uganda's inflation is strongly influenced by accommodative monetary policy, global commodity price shocks, and structural weaknesses such as low agricultural productivity.

Figure 1: Money Supply (Billions UGX)

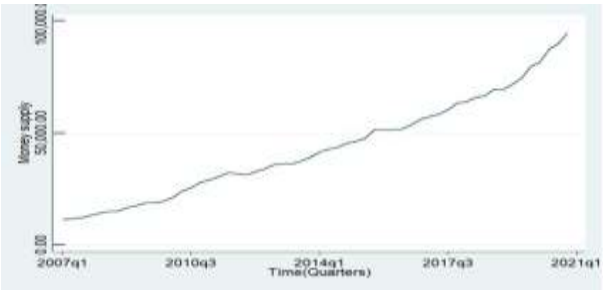


Figure 2: Fiscal Deficit (Percentage)

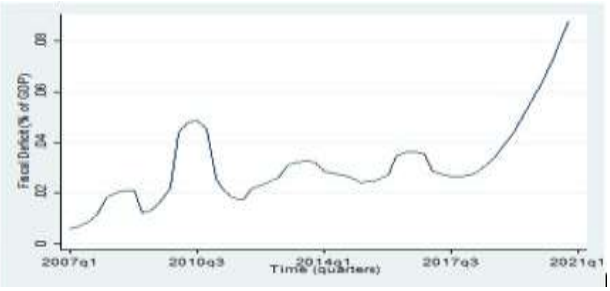


Figure 3: Exchange Rate (UGX/USD)

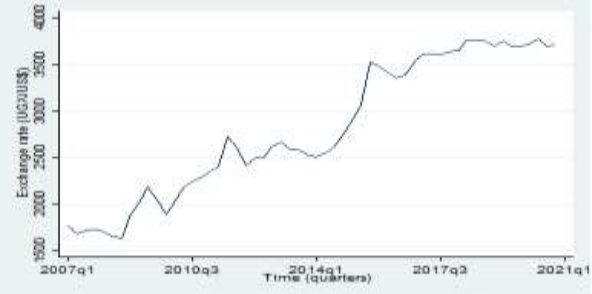


Figure 4: Interest Rate (Percentage)

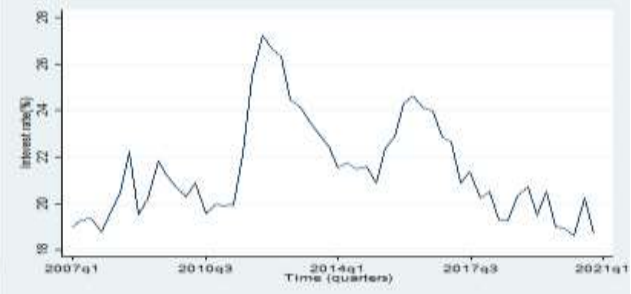


Figure 5: GDP (UGX/USD)

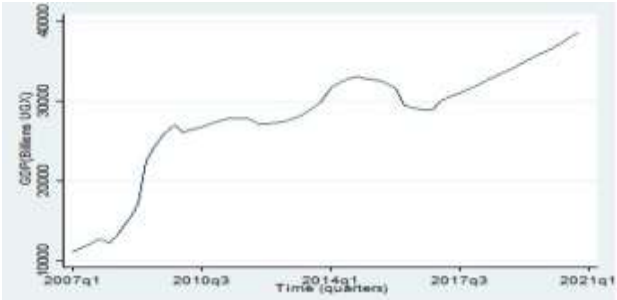


Figure 6: Trade Openness (Percentage)

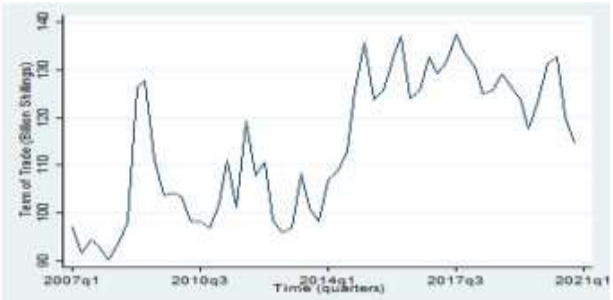
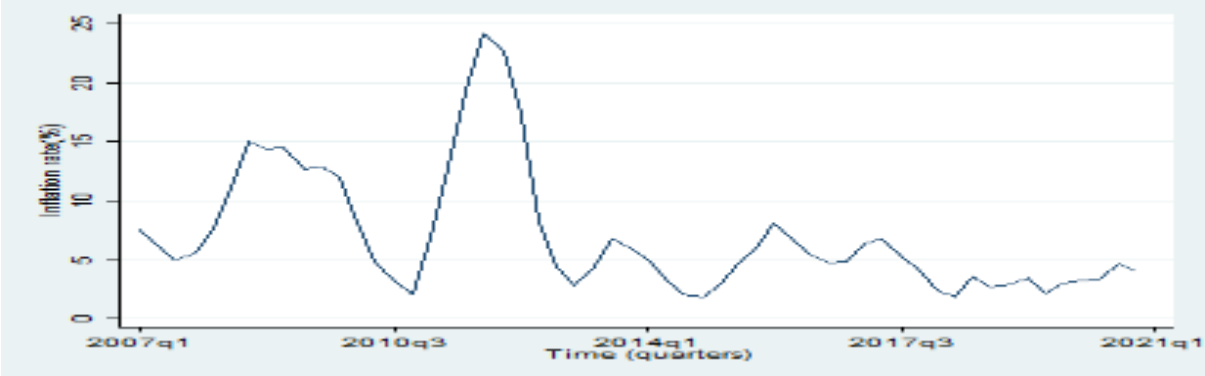


Figure 7: Inflation Rate (Percentage)



4.2 Unit Root Test

Before applying the ARDL bounds testing framework, it was essential to verify the order of integration of the series. The Augmented Dickey–Fuller (ADF) test was used to check whether each variable was stationary or contained a unit root. The hypotheses were specified as follows:

H0: $\delta = 0$ (the series has a unit root / non-stationary)

Ha: $\delta < 0$ (the series is stationary).

The test outcomes are reported in Table 4.1. Results show that the money supply was stationary at level, I(0). In contrast, inflation, exchange rate, interest rate, GDP, terms of trade, and fiscal deficit were non-stationary at levels but became stationary after first differencing, implying integration of order one, I (1). This mixture of I (0) and I (1) variables justify the use of the ARDL approach, which is well-suited for regressors with different integration properties, provided none are integrated beyond I (1).

Table 1: Augmented Dickey–Fuller (ADF) Unit Root Test Results

Variables	ADF test Statistic	5% Critical Value	Conclusion
INFR	-1.049	-2.923	Non-stationary
EXR	-0.508	-2.923	Non-stationary
IR	-1.936	-2.923	Non-stationary
GDP	-1.650	-2.923	Non-stationary
MS	3.145	-2.923	Stationary
ToT	-1.843	-2.923	Non-stationary
FD	1.167	-2.923	Non-stationary
After First Difference			
INFR	-3.939	-2.924	Stationary
EXR	-6.275	-2.924	Stationary
IR	-7.163	-2.924	Stationary
GDP	-3.938	-2.924	Stationary
ToT	-8.206	-2.924	Stationary
FD	-4.299	-2.924	Stationary

4.3. Cointegration Test

The presence of a long-run equilibrium relationship among the variables was assessed using the ARDL bounds testing approach. The results are reported in Table 2. The computed F-statistic for equation (2) was 9.18, which is greater than the upper bound critical value of 3.35 at the 5% significance level. This outcome leads to the rejection of the null hypothesis of *no level relationship*, confirming that the variables are cointegrated.

The implication is that inflation in Uganda is not merely a short-term phenomenon but is structurally linked to fiscal deficit, money supply, exchange rate, GDP, interest rates, and terms of trade in the long run. This provides strong justification for applying the ARDL model to capture both short-run fluctuations and long-run dynamics.

Table 2: ARDL Bound Test for Cointegration

F-Bound Test		Null Hypothesis: No levels relationship		
Test- statistic	Value	Sig. Level	I(0)	I(1)
F-statistic	9.18	5 %	2.26	3.35

4.4. Long-Run and Short-Run Effects

Long-Run Effects- Since the ARDL bounds test confirmed the existence of cointegration (see Table 2), the model was estimated to capture the long-run and short-run effects of fiscal and monetary variables on inflation. The long-run coefficients are summarized in Table 3.

Table 3: Long-run ARDL Estimates

Ind. Variables	Coefficients	Std. Errors	t-Statistics	Prob.
LNMS	0.333	0.088	0.38	0.0006 ***
LNFD	0.28	0.072	0.39	0.0005***
LNIR	-0.018	0.13	-0.014	0.0523*
LNEXR	0.324	0.103	0.31	0.0037***
LNGDP	-0.271	0.076	-0.35	0.0012***
LNTOT	-0.05	0.20	1.63	0.9475
Cons	0.242	0.051	0.473	0.00***
Note: The asterisk ***, ** and * denote significantly at the 1%, 5% and 10% levels respectively.				

The estimates confirm that money supply exerts a strong and positive long-run influence on inflation. A 1% increase in money supply is associated with a 0.33% rise in inflation ($p < 0.01$). This result supports the monetarist position that sustained monetary expansion fuels higher prices and is consistent with evidence from Evans Ovamba (2014), Nguyen (2015), and Ofori et al. (2019).

The fiscal deficit also has a significant positive impact, where a 1% increase leads to a 0.28% rise in inflation ($p < 0.01$). This finding highlights how persistent deficit financing intensifies aggregate demand and price pressures, echoing previous results from Abubakarim & Karim (2015), Ekanayake (2012), Nguyen (2015), and Eita et al. (2021a).

Regarding the control variables, exchange rate depreciation significantly increases inflation, reflecting the pass-through effect of higher import costs. By contrast, GDP growth has a negative and significant effect, suggesting that stronger economic activity and production capacity help reduce inflationary pressures. Interest rates are weakly significant ($p \approx 0.05$) with a negative coefficient, implying only a modest role as a policy tool against inflation in Uganda. Finally, terms of trade show a negative but statistically insignificant effect, indicating limited relevance for long-run inflation dynamics.

Taken together, the findings emphasize that Uganda's inflation is predominantly shaped by fiscal and monetary factors. However, promoting sustained GDP growth and exchange rate stability can act as counterbalancing forces that moderate long-run inflationary pressures.

Short-Run Effects- The short-run dynamics of the model were examined using the Error Correction Model (ECM), and the estimates are reported in Table 4.4. The coefficient of the error correction term (ECT) is negative and highly significant at the 5% level, which confirms that short-run deviations from equilibrium adjust back toward the long-run path over time.

Table 4: Short-Run ARDL Results

Variable	Coefficients	Std. Err.	t-statistics	P-value
C	29.67	3.74	7.94	0.0000
D(LNINIFR(-1))	0.30	0.09	3.21	0.00***
D(LNFD)	1.03	0.31	3.32	0.00***
D(LNFD(-1)).	1.19	0.27	-4.39	0.00***
D(LNFD(-2))	1.15	0.26	-4.43	0.00***
D(LNFD(-3))	1.65	0.28	5.88	0.00***
D(LMS)	3.03	1.10	-2.74	0.00****
D(LNMS(-1))	1.83	1.15	1.59	0.12
D(LNMS(-2))	4.61	1.21	3.82	0.00***
D(LNMS(-3))	2.02	1.17	1.73	0.09
D(LNGDP)	1.38	0.85	1.62	0.11
D(LNIR)	0.035	0.069	0.05	0.96
D(LNIR(-1)	1.32	0.66	2.01	0.05**
D(LNTOT)	0.08	0.03	2.51	0.01***
D(LNTOT(-1))	0.04	0.03	1.53	0.02**
D(LNTOT(-2))	0.03	0.02	1.30	0.01***
CointEq(-1)*	-0.67	0.08	-7.96	0.00***
R-squared 0.77		Adjusted R-squared 0.69		Sum squared resid 1.73
S.E of regression 0.21		F-statistic 9.62		
Prob.(F-statistic) 0.000000		Durbin-Watson stat 2.43		
Note: The asterisk ***, ** and * denotes significances respectively at the 1%, 5% and 10% levels.				

The short-run results indicate: Inflation persistence: The lagged inflation term is positive and significant, showing that current inflation is influenced by past levels. Fiscal deficit: Both the current and lagged values are positively significant, demonstrating that fiscal imbalances have immediate and ongoing inflationary effects. This is consistent with Ssebulime and Edward (2019).

Money supply: The contemporaneous and second-lag coefficients are strongly significant, confirming that monetary expansion rapidly translates into price increases, consistent with findings by Gungor & Berk (2006) and Mbongo et al. (2014). Other lags of money supply are weaker.

Control variables: GDP is positive but insignificant in the short run. Interest rates are mostly insignificant, though the first lag shows a weak positive effect ($p \approx 0.05$). Terms of trade variables are consistently positive and significant, suggesting that worsening trade conditions place upward pressure on domestic prices. Error correction term: The ECT is -0.67 and highly significant, showing that about 67% of short-run disequilibria are corrected within a quarter. This indicates a strong tendency for inflation to revert toward its long-run equilibrium following shocks.

4.5. Granger Causality Test Results

The study further applied the Granger causality test to explore the direction of influence among the main variables. The outcomes are reported in Table 5.

Table 5: Pairwise Granger Causality Test Results

Null Hypothesis	Obs	F- Statistics	Prob
Inflation rate does not Granger cause fiscal deficit	54	0.49145	0.614
Fiscal deficit does not Granger cause inflation rate		3.85254	0.027
Inflation rate does not Granger cause money supply	54	0.60948	0.547
Money supply does not Granger cause inflation rate		8.51134	0.000
* Represent 5% significant level			

At the 5% threshold, the findings indicate a one-way causality running from fiscal deficit to inflation. This means that past changes in government budget deficits help predict future inflation patterns, while inflation itself does not significantly affect fiscal balances. Similar conclusions were drawn by Solomon & De Wet (2004), Makochekanwa (2008), Bwire & Nampewo (2014), and Eita et al. (2021).

In addition, the results show a unidirectional causal link from money supply to inflation. This suggests that monetary expansion plays a crucial role in driving price changes, whereas inflation does not Granger-cause money supply. These findings are consistent with Achary (2019), Sola & Peter (2013), and Narayan et al. (2019), who all emphasized the central role of monetary growth in shaping inflationary dynamics.

4.6. Diagnostic Tests

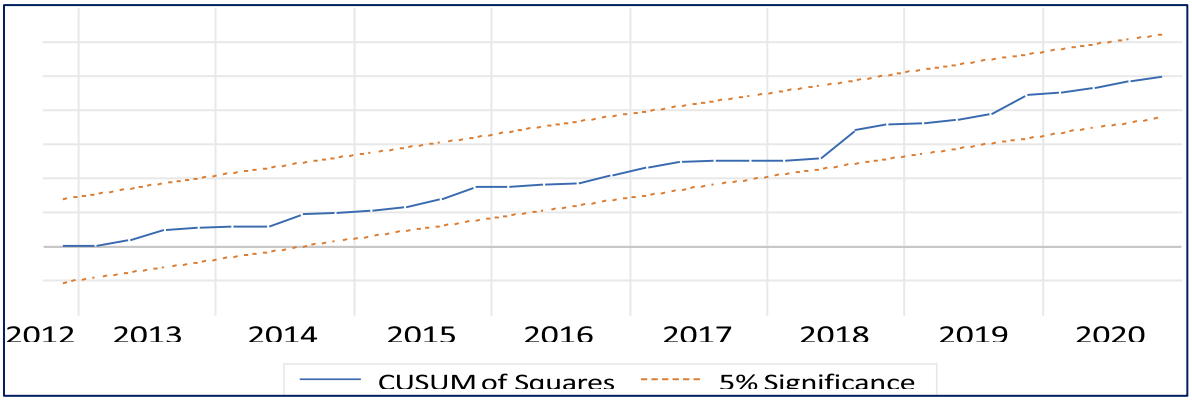
To verify the robustness of the ARDL estimations, a series of diagnostic checks were performed, including tests for normality, heteroskedasticity, autocorrelation, functional specification, and parameter stability. The results are displayed in Table 6.

Table 6: Diagnostic Test Results

Test for	Statistic	Significance
Normality	Jarque-Bera Test	Jarque-Bera=0.43; p = 0.8
Heteroscedasticity	Breusch-Pagan	Obs*R-squared=17.82; p=0.27
Autocorrelation	Lagrange-multiplier test	F-statistics =2.29; p=0.083
Variable Bias	Ramsey RESET test	F-statistics =0.028; p=0.87
Parameter Stability	Cumulative sum test	Recur = 0.81; 5% = 0.95

The results show that the residuals are normally distributed ($p = 0.80$) and there is no evidence of heteroskedasticity ($p = 0.27$) or autocorrelation ($p = 0.083$). The RESET test ($p = 0.87$) suggests the model is well specified. Furthermore, both the CUSUM and CUSUMSQ statistics lie within the 5% significance boundaries, confirming the stability of the estimated coefficients across the sample period. This provides strong support for the reliability of the ARDL model results.

Figure 8: CUSUM Plot of Recursive Residual



5. CONCLUSION AND POLICY IMPLICATIONS

This study investigated how Uganda's fiscal deficit and money supply influence inflation, drawing on quarterly data covering 2007–2020. The evidence consistently showed that both factors exert a positive and statistically significant impact on inflation in both the short and long run. Put simply, increases in fiscal deficits and monetary expansion fuel price growth, confirming their central role as drivers of Uganda's inflation. In addition, Granger causality results revealed a one-way causal relationship from fiscal deficit to inflation and from money supply to inflation, reinforcing their predictive importance for future inflationary movements.

The results suggest several policy directions. First, the Bank of Uganda should maintain a monetary framework that emphasizes careful control of broad money. Tools such as interest rate adjustments, reserve requirements, and prudent currency issuance need to be actively applied to ensure that monetary growth does not exceed the economy's productive capacity. Sustaining moderate inflation is essential not only for long-term growth but also for maintaining the stability of the Ugandan shilling. Second, fiscal discipline is equally critical. The government should minimize reliance on deficit monetization, which directly fuels inflationary pressures. Alternative financing mechanisms—such as domestic bond issuance or borrowing from non-bank sources—should be prioritized to reduce dependence on money creation. Aligning expenditure with available revenue streams will help contain persistent inflation and enhance macroeconomic stability.

In conclusion, the findings underscore the importance of policy coordination. Effective management of fiscal balances combined with prudent monetary policies can help stabilize prices, reduce inflationary volatility, and create a stronger foundation for sustainable economic growth in Uganda

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FACTORS RESPONSIBLE FOR FAILURE OF YES BANK AND LAKSHMI VILAS BANK: ANALYSIS OF PERCEPTION OF CUSTOMERS

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ABSTRACT

Purpose- This study analyzes customer perceptions of the factors leading to the failure of Yes Bank and Lakshmi Vilas Bank. It seeks to identify how issues such as NPAs, weak governance, and regulatory lapses influenced customer trust and confidence, while offering insights to strengthen private bank stability and restore public faith.

Methodology- The research methodology of the present study is descriptive cum exploratory in nature. Descriptive research is also termed as survey-based research which mainly depends on primary data. Exploratory research design seeks the applications of exploratory data analysis techniques such as frequency analysis, measures of central tendency, measures of dispersion etc. The part of the study covered these characteristics. This research was conducted as a survey that analysed the perception of customers (Internal & External) regarding the factors responsible for failure of a bank in India.

Findings- The results demonstrate that out of six major factors, NPAs/ bad loans and bank frauds are the most significant factors and less liquidity is the least significant factor that are responsible for the failure of Yes bank and Lakshmi Vilas Bank.

Conclusion- Bank failures pose a serious threat to the Indian economy, as evident in the collapse of Yes Bank and Lakshmi Vilas Bank (LVB). Their decline was driven by excessive NPAs, weak governance, inadequate regulatory response, and loss of stakeholder confidence. These failures caused financial instability, long-term reputational damage, and erosion of public trust, which proved difficult to restore even after intervention (RBI, 2020).

Keywords: Bank failure, customer perception, NPA, bank frauds, capital inadequacy, Yes Bank, Lakshmi Vilas Bank.
JEL Codes: G21, G28, G33, M31, M38

1. INTRODUCTION

Banks are regarded as the backbone of a nation's financial system, channeling income and savings into productive investments and ensuring the smooth functioning of the economy. In India, the banking system is categorized into public sector banks, private sector banks, payments banks, small finance banks, and foreign banks (Bansal & Singh, 2024). Among these, commercial banks play a particularly crucial role in driving economic growth in a developing economy like India by mobilizing resources and delivering credit to various sectors.

To sustain growth and remain competitive, banks—both public and private—continuously emphasize technological innovation, infrastructure development, human capital efficiency, service quality, and performance benchmarking. However, despite such strategies, the banking sector is exposed to multiple risks such as poor governance, weak asset quality, liquidity crises, and inadequate regulatory oversight. The collapse of a bank therefore poses not only institutional but also systemic risks, shaking depositor confidence, reducing credit flow, and threatening overall economic stability. As Lawrence et al. (2015) argue, the failure of any bank carries severe consequences for shareholders, creditors, customers, and the wider economy.

The Indian banking sector has witnessed two significant episodes of private bank failures in recent years: Yes Bank and Lakshmi Vilas Bank (LVB). Yes Bank, once among the fastest-growing private sector banks, encountered a crisis due to excessive exposure to stressed assets, governance lapses, and weak risk management practices, leading to liquidity pressures and erosion of depositor confidence (Reserve Bank of India [RBI], 2020a). Similarly, LVB, with its long-standing presence in the Indian banking industry, struggled with persistent non-performing assets, deteriorating financial health, and unsuccessful

attempts to raise capital, which ultimately undermined its viability (RBI, 2020b). To safeguard financial stability and protect depositors, the RBI intervened in both cases. A reconstruction scheme for Yes Bank was implemented in March 2020 with capital support from a consortium of banks led by the State Bank of India (Ministry of Finance, Government of India, 2020), while LVB was merged with DBS Bank India in November 2020 under a regulatory moratorium (RBI, 2020c). These episodes underline the importance of strong governance, prudent lending practices, and effective regulatory oversight in ensuring the resilience of the banking system.

These failures not only highlighted structural and managerial inefficiencies but also raised concerns regarding regulatory vigilance and depositor protection. While several studies have examined the financial and regulatory dimensions of these collapses, limited attention has been paid to how customers perceive the factors responsible for such failures. Understanding customer perception is vital because trust and confidence form the foundation of the banking system. Customers' views can provide unique insights into issues of governance, service delivery, risk management, and transparency that may not always be reflected in financial reports alone.

Against this backdrop, the present study seeks to explore customer perspectives on the causes of these failures. By capturing and analyzing these perceptions, the study aims to bridge the gap between institutional explanations and stakeholder experiences, offering a more holistic understanding of private bank collapses in India.

To achieve the objectives of the study, the research is organized into five sections. **Section 1** introduces the background, objectives, scope, and significance of the study. **Section 2** presents a comprehensive review of existing literature on bank failures, with a particular emphasis on the cases of Yes Bank and Lakshmi Vilas Bank. **Section 3** describes the research methodology adopted for the study, including data collection methods, sampling techniques, and analytical tools. **Section 4** discusses the results, interprets the findings, and provides a detailed analysis in light of the research objectives. Finally, **Section 5** summarizes the major findings, draws conclusions, and offers suggestions for policy, practice, and future research.

2. REVIEW OF LITERATURE

This section is one of the most important sections as it helps in exploring the research gap, formulating the methodology of study and finding out the cause-and-effect relationship of the study. Review of literature leads every researcher to look at the subject from a newer and broader perspective, analyse existing ones and add new to extant literature.

Banerjee et al. (2018) discussed in her examination that the administration's decision to assign its own heads to micromanagement has prompted open division banks and other private businesses to suffer from the negative consequences of excessive regulations, with an excessive amount of their advantages being used to make up for the administration's shortcomings. Kaur (2019) analysed the financial status of Punjab and Sind Bank by using Z-score model for the period 2012-2017. The findings of the study revealed that financial distress and bank performance have meaningful relations. Sengupta and Vardhan (2020) analysed the beneficiaries of productivity gains in the Indian banking sector during the period from 1992 to 2019. The findings of the study concluded that the Indian public sector banks experienced steady productivity growth from 1990s till about 2010. The growth presumably helped reduce the burden on the government of capitalising the public sector banks, especially during the 1997-2002 period of sharp rise in non-performing assets. Vani (2020) uncovered in her studies that the more NPAs or bad loads and non-serious investors are the one of the major reasons of the failure of YES Bank during 2020.

Kumar and Upadhyay (2021) discussed the factors responsible for failure of Yes Bank. The findings of the study reveal that Corporate Governance, excessive withdrawal and Bad loans are the main reasons for Yes Bank failure. Lappay et al. (2021) examined the effect of risk and returns on Capital Adequacy Ratio of Commercial Banks in India. The findings of the article reveal that there is a negative correlation between risk and capital adequacy ratio of banks and there is a positive correlation between returns and capital adequacy ratio. Surapalli and Parashar (2021) studied the relationship between corporate governance and the financial performance of the banks in India. The findings of the study reveal that financial performance of a bank and corporate governance are interrelated.

Kanoujiya et al. (2022) studied the bankruptcy and financial distress among 34 Indian banks by using regression analysis. The findings of the study reveal that there is a positive correlation between that financial distress and inadequate liquidity. Raut et al. (2022) examined the relationship between liquidity position and the financial performance of India's banks in both the public and private sectors. The findings of the study reveal that there exists a negative correlation between liquidity position and financial performance of a bank. Bansal and Singh (2024a) analysed by using CAMEL Model for the period of 2009-2020, the financial performance of Yes bank &SBI, and Lakshmi Vilas Bank & DBS Bank India Ltd. The findings of the study concluded that NPAs and bad loans are the major reason for the failure of lakshmi Vilas Bank and Yes bank. Bansal and Singh (2024b) compared the effects of acquisition on financial performance of IDBI bank ltd. for a period of 10 years from 2015 to 2024. The findings of the study show that there is a positive impact of acquision on capital adequacy, Assets quality etc.

3. RESEARCH METHODOLOGY

Research methodology is a systematic approach to problem identification that includes situation assessment, research design selection, appropriate sampling technique selection, appropriate sample size determination, scale determination, data collection and techniques of data analysis. In other words, the goal of research technique is to systematically address the research problem. "Research methodology is a science that deals with how research is conducted" (Kothari, 2004).

The objectives of the research study are to analyze perception of different demographic segments of customers with respect to failure of Yes bank and Lakshmi Vilas Bank, identify the factors of failure of YES bank and Lakshmi Vilas Bank based on perception of customers (Internal & External), and suggest the policy initiatives/ interventions to regulators to avoid failure of a private bank in future.

In relation to above stated objectives, research questions of the present research study are listed in the following. This list of questions is not exhausted but selective. The study is an attempt to find out possible answer to the following research questions.

Research Question 1: What is the different in the perception of customers (internal & external) about the failure of Yes bank and Lakshmi Vilas bank?

Research Question 2: What are the main factors responsible for the failure of commercial bank in general?

Research Question 3: what suggestions are given to regulators to avoiding failure of private bank in future?

This study is based on primary data collected directly from respondents through a structured questionnaire, distributed via e-mail, WhatsApp, and Google Forms. A total of 398 responses were received, of which 13 were rejected due to missing or irrelevant data, leaving 385 valid responses for analysis. The data was examined using exploratory and inferential statistical techniques. Exploratory analysis included factor analysis and frequency distribution, while inferential analysis employed ANOVA, t-test, F-test, and Z-test to test hypotheses and address the research questions.

4. RESULTS AND DISCUSSION

This section presents the result of analysis of data gathered through structured questionnaire. Descriptive analysis, factor analysis, total variance explained, and reliability test are explained in the following sub sections.

4.1. Descriptive Statistics/ Demographic Analysis

This section presents the classification of various demographic factors using the SPSS program. Out of the total respondents, 58.3% (225) were male and 41.7% (161) were female. In terms of age distribution, 16.8% were below 25 years, 20.5% (79) were between 25–35 years, 33.7% were between 35–45 years, and 29% were above 45 years. Regarding education, 39.4% of respondents were graduates, 18.1% were postgraduates, and 21.2% belonged to other categories.

With respect to monthly income, 15.5% earned below INR 10,000, 17.4% between INR 10,000–20,000, 25.1% between INR 20,000–30,000, and 22.3% above INR 40,000. Most respondents (72%) belonged to urban areas, while 28% were from rural areas. A large proportion (96.6%) reported having a bank account, of which 10.6% held savings accounts, 28% current accounts, and 61.4% salary accounts. Additionally, 82.4% of respondents did not hold any shareholding in the same bank. Finally, 63% of respondents were associated with private banks, while the remaining 37% were associated with public sector banks.

4.2. Factor Analysis

This section presents the factor analysis of 31 statements measured on a five-point Likert scale. To reduce a large number of variables into a smaller set of meaningful components, factor analysis was conducted using SPSS with the Principal Component Analysis (PCA) method. The primary objective of PCA is to condense a large set of correlated variables into the fewest possible factors while retaining the maximum explained variance (Malhotra, 2010 and Blunch, 2008).

Table 2: Factor Analysis for 31 Statements on Yes Bank

No	Rotated Component Matrix							
	Statements for Yes Bank	**1**	**2**	**3**	**4**	**5**	**6**	**Communalities**
1	Lack of strong legal action against loan defaulters is one of the reasons responsible for more bad loans.	**.799**	.183	-.160	.049	-.077	.137	0.573
2	High rate of interest leads to more NPA/ bad loans as burden of repayment increases on the borrowers.	**.815**	.281	-.062	.121	.009	.253	0.833

3	Loans given to economically weaker section increases NPA/ bad loans to a great extent.	**.841**	.230	.020	.114	.007	.197	0.774
4	Inadequate staff in banks to manage loan portfolio, supervision and follow-up.	**.803**	.218	.011	.225	-.069	.218	0.779
5	Most of the borrowers don't repay loans wilfully/ intentionally.	**.811**	.182	.035	.247	-.084	.151	0.763
6	Poor monitoring agencies to detect frauds.	**.646**	.187	-.031	.430	-.062	.226	0.712
7	Lack of trained human resources.	.371	.200	.117	**.729**	-.038	.180	0.711
8	Unnecessary political intervention leads to increased frauds.	.253	.206	-.004	**.718**	.134	.255	0.669
9	More Unsecured loans provided to customers.	.219	.176	.105	**.785**	.137	.191	0.702
10	Poor banking governance	.145	.337	.047	**.712**	.257	.158	0.707
11	Lack of rules and guidelines, for managing operational risk available in the bank.	.152	.304	.076	**.696**	.300	.059	0.679
12	Ineffective risk management framework	-.188	.118	.187	.367	**.699**	-.028	0.759
13	The bank does not monitor quality of the credit portfolio on day-to-day basis.	-.188	.034	.233	.248	**.774**	.040	0.710
14	Lack of transparency for assets quality increases credit risk.	-.112	.049	.239	.123	**.836**	.092	0.678
15	Untrained managerial personals wrongly predict market risk.	-.007	.082	.388	.046	**.754**	-.057	0.709
16	Mortgage lending is generally misled by inspecting officers/ valuers /experts which result in poor credit appraisal.	.112	.056	.458	-.040	**.717**	.006	0.686
17	Investment of funds from current account is also the one of the causes of liquidity problem.	.082	-.012	**.686**	.014	.496	-.073	0.674
18	Excessive operational cost and comparative less income also creates liquidity problem.	-.010	.041	**.784**	-.067	.390	.000	0.715
19	Excessive withdrawal by Industrialist is also a reason of less liquidity.	-.079	.045	**.855**	.051	.280	.014	0.757
20	Lack of proper cash flow management is also a reason for less liquidity.	-.100	.048	**.838**	.123	.245	.057	0.720
21	Providing loans to a particular sector is also a reason for less liquidity.	-.112	.069	**.826**	.162	.095	.159	0.667
22	Not proper internal assessment of their capital adequacy against their economic capital.	.344	.218	.151	.194	-.037	**.721**	0.656
23	Not proper internal assessment of their capital inadequacy against their economic capital.	.343	.337	.102	.244	-.046	**.720**	0.741
24	Excessive unsecured loans results in capital adequacy.	.343	.319	.027	.258	-.013	**.754**	0.743
25	Less liquidity is also a reason for capital inadequacy	.322	.508	-.028	.188	.129	**.604**	0.695
26	Less earnings lead to over capitalization	.290	.548	-.043	.169	.103	**.640**	0.750
27	Funding from short term capital rather than permanent capital also cause capital inadequacy	.232	**.685**	.017	.234	.083	.425	0.722
28	Top management includes mainly family members also influence the working of a bank.	.287	**.781**	.038	.264	.079	.213	0.760
29	Decisions made by one dominant individual	.261	**.865**	.071	.199	.034	.185	0.776
30	Unauthorized transactions by management officials.	.254	**.814**	.052	.225	.092	.184	0.746
31	Proving unofficial loans to director's near and dear.	.255	**.790**	.094	.232	.037	.196	0.685

Table 3: Factor Analysis for 31 Statements on Lakshmi Vilas Bank (LVB)

No	**Rotated Component Matrix**							
	Statements for LVB	**1**	**2**	**3**	**4**	**5**	**6**	**Communalities**
1	Lack of strong legal action against loan defaulters is one of the reasons responsible for more bad loans.	.207	**.803**	.172	-.060	-.021	.091	0.680

2	High rate of interest leads to more NPA/ bad loans as burden of repayment increases on the borrowers.	.209	**.808**	.097	.046	.049	.138	0.712
3	Loans given to economically weaker section increases NPA/ bad loans to a great extent.	.192	**.768**	.217	.035	.094	.166	0.720
4	Inadequate staff in banks to manage loan portfolio, supervision and follow-up.	.147	**.736**	.320	-.041	.103	.158	0.678
5	Most of the borrowers don't repay loans wilfully/ intentionally.	.159	**.680**	.436	-.025	.054	.072	0.689
6	Poor monitoring agencies to detect frauds.	.207	**.549**	.492	.024	.083	.197	0.652
7	Lack of trained human resources.	.334	.376	**.687**	-.109	.013	.147	0.755
8	Unnecessary political intervention leads to increased frauds.	.343	.350	**.688**	-.072	-.047	.240	0.752
9	More Unsecured loans provided to customers.	.319	.347	**.725**	-.005	-.045	.205	0.747
10	Poor banking governance	.296	.263	**.768**	.045	-.029	.182	0.709
11	Lack of rules and guidelines, for managing operational risk available in the bank.	.281	.218	**.749**	.089	-.039	.164	0.669
12	Ineffective risk management framework	-.015	-.074	.100	**.821**	.073	.145	0.698
13	The bank does not monitor quality of the credit portfolio on day-to-day basis.	.002	-.050	.018	**.878**	.170	-.003	0.773
14	Lack of transparency for assets quality increases credit risk.	-.008	-.017	-.022	**.855**	.260	-.019	0.715
15	Untrained managerial personals wrongly predict market risk.	-.019	.044	-.035	**.779**	.388	-.176	0.752
16	Mortgage lending is generally misled by inspecting officers/ valuers /experts which result in poor credit appraisal.	-.080	.087	-.116	**.687**	.497	-.119	0.745
17	Investment of funds from current account is also the one of the causes of liquidity problem.	-.005	.149	-.069	.531	**.651**	-.154	0.726
18	Excessive operational cost and comparative less income also creates liquidity problem.	-.007	.128	-.037	.351	**.792**	-.064	0.705
19	Excessive withdrawal by Industrialist is also a reason of less liquidity.	-.058	-.005	.032	.254	**.851**	.016	0.698
20	Lack of proper cash flow management is also a reason for less liquidity.	-.031	.008	.042	.164	**.859**	.161	0.714
21	Providing loans to a particular sector is also a reason for less liquidity.	-.006	.037	-.047	.148	**.760**	.311	0.655
22	Not proper internal assessment of their capital adequacy against their economic capital.	.167	.273	.292	-.141	.324	**.639**	0.691
23	Not proper internal assessment of their capital inadequacy against their economic capital.	.236	.273	.266	-.104	.144	**.762**	0.746
24	Excessive unsecured loans results in capital adequacy.	.306	.258	.231	-.036	.057	**.768**	0.715
25	Less liquidity is also a reason for capital inadequacy	.568	.206	.185	.103	-.056	**.610**	0.701
26	Less earnings lead to over capitalization	.525	.153	.203	.113	-.040	**.632**	0.697
27	Funding from short term capital rather than permanent capital also cause capital inadequacy	**.774**	.152	.235	-.010	-.039	.328	0.727
28	Top management includes mainly family members also influence the working of a bank.	**.824**	.207	.294	-.028	-.005	.152	0.770
29	Decisions made by one dominant individual	**.850**	.280	.215	-.073	-.017	.068	0.792
30	Unauthorized transactions by management officials.	**.847**	.256	.242	-.047	-.040	.094	0.816
31	Proving unofficial loans to director's near and dear.	**.834**	.263	.242	-.043	-.008	.117	0.780

The results of factor analysis are presented in Tables 2 and 3. Factors were extracted using Principal Component Analysis with VARIMAX rotation. Factor loadings and the selection of factors were determined from the rotated component matrix. To cluster the six factors effectively, all variables with loadings between +0.49 and +0.89 were included in the analysis.

4.3. Total Variance Explained

Total variance is the sum of the variance of each distinct primary component. The fraction of variables explained is the ratio of a principal component's variation to the total variance. Table 4 explains the total variance.

Table 4: Total Variance Explained for 31 Statements

Total Variance Explained									
Components	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.886	37.145	37.145	11.886	37.145	37.145	5.090	15.905	15.905
2	5.988	18.713	55.858	5.988	18.713	55.858	4.888	15.276	31.181
3	2.254	7.042	62.901	2.254	7.042	62.901	3.889	12.152	43.333
4	1.914	5.983	68.883	1.914	5.983	68.883	3.877	12.116	55.448
5	1.340	4.186	73.070	1.340	4.186	73.070	3.766	11.770	67.219
6	1.054	3.293	76.363	1.054	3.293	76.363	2.926	9.144	76.363
7	.836	2.611	78.974						
8	.630	1.969	80.943						
9	.562	1.756	82.699						
10	.509	1.592	84.291						
11	.488	1.526	85.817						
12	.435	1.359	87.176						
13	.395	1.235	88.411						
14	.355	1.109	89.520						
15	.337	1.053	90.573						
16	.321	1.002	91.575						
17	.289	.902	92.477						
18	.265	.828	93.305						
19	.233	.728	94.033						
20	.224	.699	94.732						
21	.210	.655	95.387						
22	.189	.591	95.978						
23	.177	.554	96.532						
24	.166	.518	97.050						
25	.153	.480	97.530						
26	.144	.451	97.980						
27	.136	.425	98.406						
28	.122	.380	98.786						
29	.119	.370	99.156						
30	.107	.339	99.565						
31	.075	.235	100.000						
Extraction Method: Principal Component Analysis.									

Based on the factor analysis, six factors emerged that together explained 76.636% of the total variance (Table 4). Factor 1 (NPAs/Bad Loans) accounted for 15.905% of the variation, Factor 2 (Bank Fraud) for 15.276%, Factor 3 (Poor Risk Management) for 12.152%, Factor 4 (Inadequate Liquidity) for 12.116%, Factor 5 (Capital Inadequacy) for 11.770%, and Factor 6 (Insider Abuse) for 9.144%. The communalities indicate that the proportion of variance explained by these six factors differs across variables. The factor loadings show that statements S1–S6 load highly on Factor 1 (NPAs/Bad Loans), S7–S11 on Factor 2 (Bank Fraud), S12–S16 on Factor 3 (Poor Risk Management), S17–S21 on Factor 4 (Inadequate Liquidity), S22–S26 on Factor 5 (Capital Inadequacy), and S27–S31 on Factor 6 (Insider Abuse).

4.4. Factors and their Nomenclature

Six factors and their nomenclature are outlined in this section. The identified six factors are as follows: factor 1: NPAs/ bad loans from statement 1-6, factor 2: Bank fraud from statement 7-11, factor 3: Poor risk management from statement 12-16, factor 4: Inadequate liquidity from statement 17-21, factor 5: capital inadequacy from statement 22-26 and factor 6: Insider abuse from statement 27-31.

4.5. Reliability and Validity Test

In this section, the values for Cronbach's alpha, Kaiser-Mayor-Olkin, the sampling adequacy metric, and the chi-square result of Bartlett's test of sphericity for all the factors were presented with the significant level and degree of freedom.

Table 5: Reliability and Validity test of 31 Statements for Factors Responsible for Failure of Yes Bank

	Yes Bank			Lakshmi Vilas Bank		
	Reliability coefficient- Cronbach's alpha	**KMO**	**Bartlett test: Approx. Chi-Square**	**Reliability coefficient- Cronbach's alpha**	**KMO**	**Bartlett test: Approx. Chi-Square**
NPAs/ Bad Loans	.934	.898	1941.255	.903	.866	1439.383
Bank Frauds	.897	.836	1183.162	.924	.831	1574.639
Poor Risk Management	.895	.812	1199.003	.898	.850	1354.638
Less Liquidity	.912	.828	1418.885	.908	.821	1252.146
Capital Inadequacy	.929	.813	1568.453	.896	.795	1271.227
Insider Abuse	.941	.854	1834.912	.939	.844	1996.143
All Factors	**0.928**	**.916**	**11510.266**	**.918**	**.907**	**11599.039**

In table 5, Cronbach's alpha has excellent value for both Yes bank and LVB, because it is about 0.9. The Kaiser-Meyer-Olkin (KMO) value for the Yes Bank and for LVB is good because it is more than 0.8. Chi- square has a value of 11510.266 for Yes Bank and 11599.039 for LVB with 496degrees of freedom and significant level .000.This indicates that the factor model is appropriate and there is sufficient correlation between items.

4.6. Descriptive Analysis of Newly Derived Factors

This section presents the descriptive analysis of newly derived 6 factors in relation to 11 demographic segments for both Yes bank and Lakshmi Vilas bank (LVB). Results of mean perception along with null and alternative hypothesis are also presented.

4.6.1 Descriptive Statistics of Factors as per Age Group

This section presents the mean perception scores of six factors responsible for failure of Yes Bank and Lakshmi Vilas Bankderived from factor analysis for various age groups i.e. below 25 years, 25- 35 years, 35- 45 years, above 45 years.

$H_0$1: There is no significant difference between mean perception score of age group (below 25 years, 25- 35 years, 35-45 years and above 45 years) for the factor 'NPAs/ Bad loans'.$H_1$1: There is significant difference between mean perception score of age group (below 25 years, 25- 35 years, 35-45 years and above 45 years) for the factor 'NPAs/ Bad loans'.

Likewise, hypotheses will be tested for each of the 6 factors. The mean perception scores along with p- value are shown in the following table 6 and 7.

Table 6: Mean perception score with Standard error of 6 factors responsible for failure of Yes Bank

No	**Factors**	**Mean ± S.E. (M)**				**p- value**
		Below 25	**25 - 35**	**35 - 45**	**Above 45**	
1	NPAs/ Bad Loans	.157 ± .111	-.307 ± .104	-.139 ± .096	.287 ± .084	0.000*
2	Bank Frauds	.211 ± .126	**.310 ± .104**	-.161 ± .082	-.154 ± .098	0.001*
3	Poor Risk Management	**.422 ± .102**	.051 ± .124	-.239 ± .097	-.003 ± .072	0.000*
4	Less Liquidity	.184 ± .146	.076 ± .127	**-.114 ± .075**	-.027 ± .088	0.215
5	Capital Inadequacy	.206 ± .115	-.025 ± .120	-.148 ± .078	.069 ± .103	0.101
6	Insider Abuse	.134 ± .104	-.160 ± .101	-.115 ± .090	**.168 ± .087**	0.044*

Table 7: Mean perception score with Standard error of 6 factors responsible for failure of Lakshmi Vilas Bank

No	**Factors**	**Mean ± S.E. (M)**				**p- value**
		Below 25	**25 - 35**	**35 - 45**	**Above 45**	
1	NPAs/ Bad Loans	-.093 ± .124	-.340 ± .124	**.053 ± .085**	**.231 ± .084**	.001*
2	Bank Frauds	**.347 ± .139**	**.216 ± .109**	-.252 ± .073	-.059 ± .099	.000*
3	Poor Risk Management	.314 ± .086	-.175 ± .126	-.205 ± .094	.181 ± .084	.000*
4	Less Liquidity	.057 ± .128	-.087 ± .118	-.053 ± .085	.091 ± .090	.549
5	Capital Inadequacy	-.010 ± .141	-.121 ± .133	.002 ± .078	.089 ± .083	.563
6	Insider Abuse	-.068 ± .132	.124 ± .108	-.005 ± .090	-.043 ± .090	.628

Tables 6 and 7 present the mean perception scores and standard error values across four age groups (below 25 years, 25–35 years, 35–45 years, and above 45 years). From Tables 5.1a and 5.1b, it can be inferred that, in the case of Yes Bank, the null hypothesis was rejected for four factors—NPAs/Bad Loans, Bank Frauds, Poor Risk Management, and Insider Abuse. For Lakshmi Vilas Bank, the null hypothesis was rejected for three factors—NPAs/Bad Loans, Bank Frauds, and Poor Risk

Management. For the remaining factors, there was no evidence against the proposed null hypothesis. This indicates that perceptions of the factors responsible for the failure of Yes Bank and LVB vary significantly across different age groups.

4.6.2. Descriptive Statistics of Factors responsible for failure of Yes Bank with respect to Gender

This section presents the mean perception scores of six factors responsible for failure of Yes Bank and Lakshmi Vilas Bankderived from factor analysis for gender (male and female). In addition, mean differences are tested using t- test for the following six nulls and alternate hypothesis are presented.

$H_0$1: There is no significant difference between mean perception score of Gender (male and female) for the factor 'NPAs/ Bad loans'.$H_1$1: There is significant difference between mean perception score of Gender (male and female) for the factor 'NPAs/ Bad loans'.

Likewise, hypotheses will be tested for each of the 6 factors. The mean perception scores along with p- value are shown in the following table 8.

Table 8: Mean perception score, standard error and significant value of 6 factors as per gender

No	Factors	Yes Bank			Lakshmi Vilas Bank		
		Mean ± S.E. (M)		p- value	Mean ± S.E. (M)		p- value
		Male	Female		Male	Female	
1	NPAs/ Bad Loans	**.207 ± .058**	-.290 ± .086	.000*	.080 ± .063	-.114 ± .083	.059
2	Bank Frauds	-.189 ± .063	**.264 ± .079**	.000*	-.152 ± .063	**.215 ± .082**	.000*
3	Poor Risk Management	-.004 ± .062	.006 ± .086	.910	**.211 ± .062**	-.298 ± .080	.000*
4	Less Liquidity	.066 ± .062	-.093 ± .076	.121	.121 ± .062	-.173 ± .083	.004*
5	Capital Inadequacy	-.023 ± .065	.033 ± .081	.579	.030 ± .067	-.043 ± .078	.475
6	Insider Abuse	-.050 ± .074	.070 ± .064	.239	.027 ± .068	-.039 ± .074	.516

Table 8 presents the mean perception scores and standard error values for male and female respondents. As shown in Table 8, in the case of Yes Bank, the null hypothesis was rejected for two factors—NPAs/Bad Loans and Bank Frauds. For Lakshmi Vilas Bank, the null hypothesis was rejected for three factors—Bank Frauds, Poor Risk Management, and Inadequate Liquidity. For the remaining factors, there was no evidence against the null hypothesis. These results indicate that gender significantly influences perceptions of the factors responsible for the failures of Yes Bank and LVB.

4.6.3. Descriptive Statistics of Factors with respect to Educational Qualification

This section presents the mean perception scores of six factors responsible for failure of Yes Bankand Lakshmi Vilas Bank derived from factor analysis for four categories of educational Qualification i.e. under gratuate, graduate, post gratuate and others. In addition, mean differences are tested using t- test for the following six nulls and alternate hypothesis are presented.

$H_0$1: There is no significant difference between mean perception score of educational qualifications (under gratuate, graduate, post gratuate and others) for the factor 'NPAs/ Bad loans'.$H_1$1: There is significant difference between mean perception score of educational qualifications (under gratuate, graduate, post gratuate and others) for the factor 'NPAs/ Bad loans'.

Likewise, hypotheses will be tested for each of the 6 factors. The following tables 9 and 10, summarizes mean perception score along with standard error of male and female respondents towards six key factors responsible for failure of Yes bank and LVB.

Table 9: Mean perception score with standard error of 6 factors as per educational qualification for Yes Bank

No	Factors	Mean ± S.E.				p- value
		Under Graduate	Graduate	Post Graduate	Others	
1	NPAs/ Bad Loans	-.195 ± .114	-.079 ± .084	-.321 ± .121	**.618 ± .055**	.000*
2	Bank Frauds	.076 ± .106	**.208 ± .082**	-.013 ± .110	-.451 ± .102	.000*
3	Poor Risk Management	**.379 ± .086**	-.152 ± .095	-.081 ± .126	-.027 ± .072	.001*
4	Less Liquidity	-.146 ± .121	.044 ± .090	-.035 ± .114	.094 ± .069	.410
5	Capital Inadequacy	.058 ± .115	-.147 ± .089	**.099 ± .097**	.129 ± ,093	.131
6	Insider Abuse	.091 ± .123	-.123 ± .080	.010 ± .097	.128 ± .112	.222

Table 10: Mean perception score with Standard error of 6 factors as per Educational Qualification for Lakshmi Vilas Bank

No	Factors	Mean ± S.E.				p- value
		Under Graduate	Graduate	Post Graduate	Others	
1	NPAs/ Bad Loans	-.184 ± .111	-.021 ± .090	-.205 ± .117	.396 ± .070	.000*
2	Bank Frauds	**.166 ± .116**	.114 ± .083	-.037 ± .105	-.343± .101	.003*
3	Poor Risk Management	-.016 ± .092	-.209 ± .094	-.116 ± .120	**.501 ± .066**	.000*
4	Less Liquidity	-.259 ± .123	.083 ± .088	-.239 ± .116	.307 ± .056	.000*
5	Capital Inadequacy	.075 ± .122	-.027 ± .086	-.110 ± .103	.071 ± .097	.607
6	Insider Abuse	-.270 ± .120	**.120 ± .085**	**.044 ± .107**	.008 ± .095	.040

Tables 9 and 10 present the mean perception scores and standard error values across four categories of educational qualification (undergraduate, graduate, postgraduate, and others). The results indicate that, in the case of Yes Bank, the null hypothesis was rejected for three factors—NPAs/Bad Loans, Bank Frauds, and Poor Risk Management. For Lakshmi Vilas Bank, the null hypothesis was rejected for four factors—NPAs/Bad Loans, Bank Frauds, Poor Risk Management, and Inadequate Liquidity. For the remaining factors, there was no evidence against the null hypothesis. This suggests that educational qualification significantly influences perceptions of the factors responsible for the failures of Yes Bank and LVB.

4.6.4. Descriptive Statistics of Factors with respect to Monthly Income Level

This section presents the mean perception scores of six factors responsible for failure of Yes Bankand Lakshmi Vilas Bank derived from factor analysis for five categories of monthly income level. In addition, mean differences are tested using t- test for the following six nulls and alternate hypothesis are presented.

$H_0$1: There is no significant difference between mean perception score of monthly income level (below INR 10 K, 10K- 20 K, 20 K- 30 K, 30 K- 40 K and above 40 K) for the factor 'NPAs/ Bad loans'.$H_1$1: There is significant difference between mean perception score of monthly income level (below INR 10 K, 10K- 20 K, 20 K- 30 K, 30 K- 40 K and above 40 K) for the factor 'NPAs/ Bad loans'.

Likewise, hypotheses will be tested for each of the 6 factors. The following tables summarize mean perception score along with standard error of male and female respondents towards six key factors responsible for failure of Yes bank and LVB.

Table 11: Mean perception score with standard error of factors as per monthly Income Level for Yes Bank

No	Factors		Mean ± S.E.				p-value
		Below 10k	10k – 20k	20k– 30k	30k-40k	Above 40k	
1	NPAs/ Bad Loans	-.047 ± .123	-.017 ± .125	-.249 ± .108	-.041 ± .113	.364 ± .091	.001*
2	Bank Frauds	.153 ± .120	.202 ± .125	**.098 ± .100**	-.070 ± .116	-.313 ± .103	.007*
3	Poor Risk Management	**.421 ± .116**	**.327 ± .087**	-.218 ± .117	-.204 ± .120	-.121 ± .093	.000*
4	Less Liquidity	.086 ± .150	-.147 ± .137	-.069 ± .083	**.105 ± .140**	.038 ± .073	.501
5	Capital Inadequacy	.313 ± .117	-.086 ± .117	-.160 ± .113	-.079 ± .118	.099 ± .093	.036*
6	Insider Abuse	.047 ± .122	-.184 ± .115	-.065 ± .097	-.221 ± .126	**.380 ± .101**	.001*

Table 12: Mean perception score with standard error of factors as per monthly Income Level for Lakshmi Vilas Bank

No	Factors		Mean ± S.E.				p-value
		Below 10k	10k – 20k	20k– 30k	30k-40k	Above 40k	
1	NPAs/ Bad Loans	-.131 ± .129	-.045 ± .126	-.112 ± .102	-.045 ± .122	**.290 ± .092**	.043
2	Bank Frauds	**.287 ± .136**	**.276 ± .132**	-.035 ± .094	-.125 ± .108	-.262 ± .100	.002*
3	Poor Risk Management	.186 ± .105	.009 ± .105	-.308 ± .115	-.014 ± .129	.221 ± .093	.004*
4	Less Liquidity	-.086 ± .132	-.161 ± .137	-.072 ± .107	**.120 ± .119**	.158 ± .079	.203
5	Capital Inadequacy	-.236 ± .144	.110 ± .126	.111 ± .104	-.087 ± .112	.029 ± .092	.201
6	Insider Abuse	-.274 ± .151	-.056 ± .113	**.157 ± .102**	.101 ± .110	-.034 ± .100	.093

Tables 11 and 12 show the mean perception scores and standard errors across five monthly income categories (below INR 10,000; INR 10,000–20,000; INR 20,000–30,000; INR 30,000–40,000; above INR 40,000). For Yes Bank, the null hypothesis was rejected for five factors—NPAs/Bad Loans, Capital Inadequacy, Insider Abuse, Bank Frauds, and Poor Risk Management. For Lakshmi Vilas Bank, it was rejected for two factors—Bank Frauds and Poor Risk Management. These results indicate that monthly income level significantly influences perceptions of the factors contributing to the failures of Yes Bank and LVB.

4.6.5. Descriptive Statistics of Factors with respect to Residential Area

This section presents the mean perception scores of six factors responsible for failure of Yes Bankand Lakshmi Vilas Bank derived from factor analysis for residential areas (urban area and rural area). In addition, mean differences are tested using t- test for the following six nulls and alternate hypothesis are presented.

$H_0$1: There is no significant difference between mean perception score of residential area (urban area and rural area) for the factor 'NPAs/ Bad loans'.$H_1$1: There is significant difference between mean perception score of residential area (urban area and rural area) for the factor 'NPAs/ Bad loans'.

Likewise, hypotheses will be tested for each of the 6 factors. The following table summarizes mean perception score along with standard error of male and female respondents towards six key factors responsible for failure of Yes bank and LVB.

Table 13: Mean perception score, standard error and significant value of 6 factors as per residential area

No	Factors	Yes Bank			Lakshmi Vilas Bank		
		Mean ± S.E.		p- value	Mean ± S.E.		p- value
		Urban Area	Rural Area		Urban Area	Rural Area	
1	NPAs/ Bad Loans	.052 ± .059	-.134 ± .097	.099	**.069 ± .057**	-.181 ± .106	.027
2	Bank Frauds	-.029 ± .060	.074 ± .095	.360	.013 ± .060	-.035 ± .093	.670
3	Poor Risk Management	.003 ± .056	-.008 ± .109	.919	.061 ± .057	-.159 ± .104	.052
4	Less Liquidity	-.384 ± .058	**.098 ± .102**	.226	-.020 ± .058	.053 ± .104	.517
5	Capital Inadequacy	**.053 ± .058**	-.136 ± .102	.094	-.057 ± .057	.149 ± .104	.068
6	Insider Abuse	.004 ± .061	-.010 ± .091	.893	-.059 ± .059	**.153 ± .097**	.061

In Table 13, mean perception score as well as standard error values of the two categories of residential area (urban area and rural area) were presented. It can also be inferred from table 13 that, in case of residential areas, for all six factors, there is no evidence against the proposed null hypothesis for both banks i.e. Yes Bank and Lakshmi Vilas Bank. This means that the residential area has no statistically significant influence on the perception of factors responsible for the failure of Yes bank and LVB.

4.6.6. Descriptive Statistics of Factors with respect to having a Bank Account

This section presents the mean perception scores of six factors responsible for failure of Yes Bank and Lakshmi Vilas Bank derived from factor analysis for having a bank account (yes or no). In addition, mean differences are tested using t- test for the following six nulls and alternate hypothesis are presented.

$H_0$1: There is no significant difference between mean perception score of having a bank account (yes or no) for the factor 'NPAs/ Bad loans'.$H_1$1: There is significant difference between mean perception score of having a bank account (yes or no) for the factor 'NPAs/ Bad loans'.

Likewise, hypotheses will be tested for each of the 6 factors. The following table summarizes mean perception score along with standard error of male and female respondents towards six key factors responsible for failure of Yes bank and LVB.

Table 14: Mean perception score, standard error and significant value of 6 factors as per having a bank account

No	Factors	Yes Bank			Lakshmi Vilas Bank		
		Mean ± S.E.		p- value	Mean ± S.E.		p- value
		Yes	No		Yes	No	
1	NPAs/ Bad Loans	-.024 ± .051	**.701 ± .190**	.010*	-.021 ± .052	**.616 ± .112**	.004*
2	Bank Frauds	-.008 ± .051	.235 ± .339	.389	-.016 ± .051	.459 ± .373	.002*
3	Poor Risk Management	-.004 ± .052	.118 ± .178	.665	-.015 ± .052	.447 ± .172	.101
4	Less Liquidity	**.007 ± .052**	-.205 ± .136	.452	-.001 ± .052	.031 ± .189	.909
5	Capital Inadequacy	-.018 ± .051	.544 ± .246	.046*	**.001 ± .052**	-.056 ± .169	.835
6	Insider Abuse	-.010 ± .052	.314 ± .221	.250	-.003 ± .052	.094 ± .205	.730

Table 14 presents the mean perception scores and standard error values for the two categories of having a bank account (yes and no). The results indicate that, for Yes Bank, the null hypothesis was rejected for two factors—NPAs/Bad Loans and Capital Inadequacy—while for Lakshmi Vilas Bank, it was rejected for NPAs/Bad Loans and Bank Frauds. For the remaining factors, no evidence was found against the null hypothesis. This suggests that having or not having a bank account influences perceptions of certain factors contributing to the failures of Yes Bank and LVB.

4.6.7. Descriptive Statistics of Factors responsible with respect to Type of Bank Account

This section presents the mean perception scores of six factors responsible for failure of Yes Bank and Lakshmi Vilas Bank derived from factor analysis for type of bank account (savings, current, salary). In addition, mean differences are tested using t- test for the following six nulls and alternate hypothesis are presented.

$H_0$1: There is no significant difference between mean perception score of type of bank account (savings, current, salary) for the factor 'NPAs/ Bad loans'.

$H_1$1: There is significant difference between mean perception score of type of bank account (savings, current, salary) for the factor 'NPAs/ Bad loans'.

Likewise, hypotheses will be tested for each of the 6 factors. The following table summarizes mean perception score along with standard error of male and female respondents towards six key factors responsible for failure of Yes bank and LVB.

Table 15: Mean perception score, standard error and significant value of 6 factors as per various types of bank account

No	Factors	Yes Bank				Lakshmi Vilas Bank			
		Mean ± S.E.			p-value	Mean ± S.E.			p-value
		Savings	Current	Salary		Savings	Current	Salary	
1	NPAs/ Bad Loans	-.110 ± .146	**.033 ± .105**	.003 ± .062	.735	-.097 ± .140	.057 ± .095	-.009 ± .066	.684
2	Bank Frauds	.160 ± .135	-.056 ± .100	-.001 ± .065	.495	.099 ± .144	-.062 ± .098	.011 ± .065	.652
3	Poor Risk Management	-.173 ± .151	-.070 ± .092	**.062 ± .066**	.259	-.128 ± .165	.009 ± .094	**.018 ± .065**	.683
4	Less Liquidity	.029 ± .183	-.001 ± .098	-.004 ± .062	.979	-.033. .155	**.074 ± .095**	-.028 ± .065	.658
5	Capital Inadequacy	.059 ± .138	-.008 ± .093	-.006 ± .067	.923	.039 ± .123	-.043 ± .089	.013 ± .069	.859
6	Insider Abuse	**.351 ± .160**	.030 ± .074	-.074 ± .069	.038*	**.229 ± .152**	-.069 ± .085	-.008 ± .068	.262

Table 15 presents the mean perception scores and standard error values across three categories of bank accounts (savings, current, and salary). The results show that, for Yes Bank, the null hypothesis was rejected only for Insider Abuse, while for Lakshmi Vilas Bank none of the factors showed rejection. For the remaining factors, no evidence was found against the null hypothesis. This suggests that the type of bank account held has a limited but noticeable influence on perceptions of factors contributing to the failure of Yes Bank, while it shows no significant impact in the case of Lakshmi Vilas Bank.

4.6.8. Descriptive Statistics of with respect to Relationship with Bank

This section presents the mean perception scores of six factors responsible for failure of Yes Bank and Lakshmi Vilas Bank derived from factor analysis for relationship with the bank (customer only and customer & employee both). In addition, mean differences are tested using t- test for the following six nulls and alternate hypothesis are presented.

$H_0$1: There is no significant difference between mean perception score of relationship with bank (customer only and customer & employee both) for the factor 'NPAs/ Bad loans'.

$H_1$1: There is significant difference between mean perception score of relationship with bank (customer only and customer & employee both) for the factor 'NPAs/ Bad loans'.

Likewise, hypotheses will be tested for each of the 6 factors. The following table summarizes mean perception score along with standard error of male and female respondents towards six key factors responsible for failure of Yes bank and LVB.

Table 16: Mean perception score with standard error of factors as per relationship of respondents with the bank

No	Factors	Yes Bank			Lakshmi Vilas Bank		
		Mean ± S.E.		p-value	Mean ± S.E.		p-value
		Customer only	Customer & employees both		Customer only	Customer & employees both	
1	NPAs/ Bad Loans	**.134 ± .060**	-.256 ± .089	.000*	.100 ± .061	-.194 ± .087	.006
2	Bank Frauds	-.078 ± .063	**.149 ± .082**	.033*	-.082 ± .062	**.159 ± .085**	.024
3	Poor Risk Management	-.071 ± .063	.136 ± .084	.052	.027 ± .065	-.052 ± .080	.462
4	Less Liquidity	.010 ± .064	-.020 ± .083	.775	**.131 ± .057**	-.253 ± .096	.000*
5	Capital Inadequacy	-.002 ± .059	.004 ± .095	.949	.011 ± .055	-.021 ± .104	.765
6	Insider Abuse	.097 ± .061	-.186 ± .087	.008*	-.045 ± .065	.088 ± .080	.214

Table 16 presents the mean perception scores and standard error values for two categories of relationship with the bank (customer only, and customer & employee). The results show that, for Yes Bank, the null hypothesis was rejected for three factors—NPAs/Bad Loans, Bank Frauds, and Insider Abuse—while for Lakshmi Vilas Bank, it was rejected only for Inadequate Liquidity. For the remaining factors, no evidence was found against the null hypothesis. This indicates that the type of relationship with the bank has a varying impact on perceptions of the factors contributing to the failures of Yes Bank and LVB.

4.6.9. Descriptive Statistics of Factors with respect to Shareholding in the Same Bank

This section presents the mean perception scores of six factors responsible for failure of Yes Bank and Lakshmi Vilas Bank derived from factor analysis for shareholding in the same bank (yes or no). In addition, mean differences are tested using t-test for the following six nulls and alternate hypothesis are presented.

$H_0$1: There is no significant difference between mean perception score of shareholdings in the same bank (yes or no) for the factor 'NPAs/ Bad loans'.

$H_1$1: There is significant difference between mean perception score of shareholdings in the same bank (yes or no) for the factor 'NPAs/ Bad loans'.

Likewise, hypotheses will be tested for each of the 6 factors. The following table summarizes mean perception score along with standard error of male and female respondents towards six key factors responsible for failure of Yes bank and LVB.

Table 17: Mean perception score, standard error and significant value of 6 factors as per shareholding

No	Factors	Yes Bank			Lakshmi Vilas Bank		
		Mean ± S.E.		p- value	Mean ± S.E.		p- value
		Yes	No		No	Yes	
1	NPAs/ Bad Loans	-.036 ± .116	**.007 ± .056**	.744	-.022 ± .111	.004 ± .057	.839
2	Bank Frauds	-.015 ± .115	.003 ± .056	.885	-.036 ± .116	.007 ± .056	.739
3	Poor Risk Management	.040 ± .117	-.008 ± .056	.713	-.020 ± .117	.004 ± .056	.854
4	Less Liquidity	**.041 ± .081**	-.008 ± .059	.717	-.049 ± .103	.010 ± .057	.656
5	Capital Inadequacy	.031 ± .120	-.006 ± .056	.778	**.008 ± .123**	-.001 ± .056	.937
6	Insider Abuse	.110 ± .119	-.023 ± .056	.315	-.001 ± .051	**.048 ± .137**	.659

In table 17, mean perception score as well as standard error values of the two categories of shareholding with the same bank (yes and no) were presented. It can also be inferred from table 17 that, in case of shareholding with the same bank, for all six factors, there is no evidence against the proposed null hypothesis. This means that shareholding with the same bank has different impact on various factors responsible for failure of Yes bank and LVB.

4.6.10. Descriptive Statistics of Factors with respect to Years belonging to Banking Industry

This section presents the mean perception scores of six factors responsible for failure of Yes Bank and Lakshmi Vilas Bank derived from factor analysis for four categories of years belong to banking industry i.e. below 5 years, 5-10 years, 10-15 years and above 15 years. In addition, mean differences are tested using t- test for the following six nulls and alternate hypothesis are presented.

$H_0$1: There is no significant difference between mean perception score of years belonging to banking industry (below 5 years, 5-10 years, 10-15 years and above 15 years) for the factor 'NPAs/ Bad loans'.$H_1$1: There is significant difference between mean perception score of years belong to banking industry (below 5 years, 5-10 years, 10-15 years and above 15 years)for the factor 'NPAs/ Bad loans'.

Likewise, hypotheses will be tested for each of the 6 factors. The following tables summarizes mean perception score along with standard error of male and female respondents towards six key factors responsible for failure of Yes bank and LVB.

Table 18: Mean perception score with standard error of factors as per years belong to banking industry for Yes Bank

No	Factors	Mean ± S.E.				p-value
		Below 05 years	05-10 years	10-15 years	Above 15 years	
1	NPAs/ Bad Loans	-.126 ± .140	-.025 ± .102	**.064 ± .079**	.001 ± .108	.678
2	Bank Frauds	.077 ± .127	-.010 ± .096	.002 ± .087	-.044 ± .109	.925
3	Poor Risk Management	.107 ± .144	.097 ± .092	-.133 ± .083	.040 ± .112	.217
4	Less Liquidity	-.090 ± .144	.039 ± .090	-.045 ± .092	**.096 ± .087**	.661
5	Capital Inadequacy	**.135 ± .135**	-.006 ± .092	-.062 ± .085	.036 ± .112	.649
6	Insider Abuse	-.180 ± .159	**.212 ± .082**	-.103 ± .082	.013 ± .117	.038*

Table 19: Mean perception score with Standard error of factors as per years belong to banking industry for Lakshmi Vilas

No	Factors	Mean ± S.E.				p-value
		Below 05 years	05-10 years	10-15 years	Above 15 years	
1	NPAs/ Bad Loans	-.055 ± .133	-.082 ± .097	**.097 ± .084**	-.029 ± .110	.500
2	Bank Frauds	.088 ± .144	-.005 ± ..96	.003 ± .082	-.068 ± .112	.860
3	Poor Risk Management	.082 ± .134	-.016 ± .091	-.047 ± .088	.059 ± .112	.809
4	Less Liquidity	-.271 ± .145	.010 ± .090	.093 ± .088	-.009 ± .098	.162
5	Capital Inadequacy	-.024 ± .114	**.104 ± .100**	-.079 ± .084	.017 ± .114	.003*
6	Insider Abuse	**.126 ± .113**	-.086 ± .093	-.044 ± .082	**.130 ± .132**	.398

Tables 18 and 19 present the mean perception scores and standard error values across four categories of years of experience in the banking industry (below 5 years, 5–10 years, 10–15 years, and above 15 years). The results show that, for Yes Bank, the null hypothesis was rejected only for Insider Abuse, while for Lakshmi Vilas Bank (LVB), it was rejected only for Capital Inadequacy. For the remaining factors, there was no evidence against the null hypothesis. This suggests that years of experience in the banking sector have a limited but distinct influence on perceptions of factors contributing to the failures of Yes Bank and LVB.

4.6.11. Descriptive Statistics of Factors with respect to Classification of Bank

This section presents the mean perception scores of six factors responsible for failure of Yes Bank and Lakshmi Vilas Bank derived from factor analysis for the classification of bank (private bank and public bank). In addition, mean differences are tested using t- test for the following six nulls and alternate hypothesis are presented.

$H_0$1: There is no significant difference between mean perception score of classification of bank (private bank and public bank) for the factor 'NPAs/ Bad loans'.

$H_1$1: There is significant difference between mean perception score of classification of bank (private bank and public bank) for the factor 'NPAs/ Bad loans'.

Likewise, hypotheses will be tested for each of the 6 factors. The following table summarizes mean perception score along with standard error of male and female respondents towards six key factors responsible for failure of Yes bank and LVB.

Table 20: Mean perception score, standard error and significant value of 6 factors as per classification of bank

No	Factors	Yes Bank			Lakshmi Vilas Bank		
		Mean ± S.E.		p- value	Mean ± S.E.		p- value
		Private bank	Public bank		Private bank	Public bank	
1	NPAs/ Bad Loans	.033 ± .062	-.056 ± .088	.391	.050 ± .064	-.085 ± 0.083	.195
2	Bank Frauds	-.061 ± .063	.104 ± .084	.114	-.113 ± .059	**.191 ± .091**	.004*
3	Poor Risk Management	-.123 ± .065	**.209 ± .077**	.002*	-.002 ± .065	.003 ± .083	.955
4	Less Liquidity	.032 ± .063	-.054 ± .084	.412	.051 ± .062	-.086 ± .086	.192
5	Capital Inadequacy	.007 ± .064	-.012 ± .082	.855	-.036 ± .064	.061 ± .083	.351
6	Insider Abuse	**.043 ± .063**	-.073 ± .084	.271	**.083** ± .064	-.140 ± .083	.033

Table 20 presents the mean perception scores and standard error values for the two categories of bank classification (private and public). The results show that, for Yes Bank, the null hypothesis was rejected only for Poor Risk Management, while for Lakshmi Vilas Bank, it was rejected only for Bank Frauds. For the remaining factors, there was no evidence against the null hypothesis. This indicates that bank classification has a limited but distinct influence on perceptions of factors contributing to the failures of Yes Bank and LVB.

5. SUMMARY AND SUGGESTIONS OF THE STUDY

This section briefly summarises the perception of respondents on 31 different statements and latent Identified factors based on responses of customers (Internal & External) related to the causes of failure of Yes Bank and Lakshmi Vilas Bank (LVB). It also presents suggestions based on the study's outcomes to address the identified issues effectively.

5.1. Summary of Perception of Customers (Internal & External) related to the Causes of Failure

In this sub section mean perception values along with their standard errors are presented. Table 6shows the comparative perception of customers (Internal & External) on 31 different statements related to the causes of failure of Yes Bank and Lakshmi Vilas Bank (LVB), based on their mean scores (M) and standard errors (S.E.).

Table 21: Mean perception score of 31 statements with their standard error (M) of Yes Bank and Lakshmi Vilas Bank

No	Statements	Yes bank	LVB
		Mean ± S.E. (M)	
1.	Lack of strong legal action against loan defaulters is one of the reasons responsible for more bad loans.	3.54 ± .083	3.28 ± .062
2.	High rate of interest leads to more NPA/ bad loans as burden of repayment increases on the borrowers.	3.43 ± .086	3.37 ± .061
3.	Loans given to economically weaker section increases NPA/ bad loans to a great extent.	3.55 ± .084	3.37 ± .060
4.	Inadequate staff in banks to manage loan portfolio, supervision and follow-up.	3.48 ± .085	3.36 ± .061
5.	Most of the borrowers don't repay loans wilfully/ intentionally.	**3.59 ± .081**	3.42 ± .063
6.	Poor monitoring agencies to detect frauds.	3.56 ± .079	3.52 ± .065
7.	Lack of trained human resources.	3.47 ± .071	3.78 ± .070
8.	Unnecessary political intervention leads to increased frauds.	3.50 ± .072	3.81 ± .067
9.	More Unsecured loans provided to customers.	3.56 ± .069	**3.89 ± .069**
10.	Poor banking governance	3.55 ± .070	3.80 ± .066
11.	Lack of rules and guidelines, for managing operational risk available in the bank.	3.49 ± .070	3.76 ± .070
12.	Ineffective risk management framework	2.83 ± .079	2.85 ± .076
13.	The bank does not monitor quality of the credit portfolio on day-to-day basis.	2.61 ± .075	2.60 ± .074
14.	Lack of transparency for assets quality increases credit risk.	2.54 ± .074	2.56 ± .073
15.	Untrained managerial personals wrongly predict market risk.	2.46 ± .071	2.41 ± .074
16.	Mortgage lending is generally misled by inspecting officers/ valuers /experts which result in poor credit appraisal.	2.45 ± . 071	2.40 ± .073
17.	Investment of funds from current account is also the one of the causes of liquidity problem.	2.36 ± . 071	**2.38 ± .069**
18.	Excessive operational cost and comparative less income also creates liquidity problem.	2.28 ± . 072	2.45 ± .067
19.	Excessive withdrawal by Industrialist is also a reason of less liquidity.	2.28 ± . 073	2.48 ± .068
20.	Lack of proper cash flow management is also a reason for less liquidity.	**2.21 ± . 070**	2.43 ± .069
21.	Providing loans to a particular sector is also a reason for less liquidity.	2.28 ± . 076	2.54 ± .068
22.	Not proper internal assessment of their capital adequacy against their economic capital.	3.34 ± . 079	3.26 ± .072
23.	Not proper internal assessment of their capital inadequacy against their economic capital.	3.48 ± . 078	3.45 ± .070
24.	Excessive unsecured loans results in capital adequacy.	3.51 ± .076	3.50 ± .069
25.	Less liquidity is also a reason for capital inadequacy	3.53 ± .075	3.54 ± .067
26.	Less earnings lead to over capitalization	3.59 ± .074	3.58 ± .068
27.	Funding from short term capital rather than permanent capital also cause capital inadequacy	3.50 ± .076	3.62 ± .067
28.	Top management includes mainly family members also influence the working of a bank.	3.42 ± .073	3.63 ± .072
29.	Decisions made by one dominant individual	3.40 ± .074	3.65 ± .072
30.	Unauthorized transactions by management officials.	3.46 ± .072	3. 65 ± 071
31.	Proving unofficial loans to director's near and dear.	3.45 ± .072	3.72 ± .069

Table 21 shows For Yes Bank, S5 (Most of the borrowers don't repay loans wilfully/intentionally) received the highest mean score (3.59), indicating a strong belief among respondents that wilful default by customers was a significant reason for failure of Yes bank. This reflects a perceived lack of borrower integrity and suggests that the bank may have failed to adequately assess creditworthiness or enforce strict recovery mechanisms. For LVB, S9 *(*More unsecured loans provided to customers) received the highest mean score (3.89), pointing to a perception that the bank's liberal and risky lending practices—especially without sufficient collateral—substantially increased its vulnerability to credit defaults.

5.2. Summary of Latent Identified Factors based on Responses of Customers (Internal & External)

This sub section presents the summary of six latent identified factors responsible for failure of Yes bank and Lakshmi Vilas Bank (LVB) based on responses of Customers (Internal & External) collected by a scheduled questionnaire.

Table 22: Overall mean of responses of customers (Internal & External) of Yes Bank & Lakshmi Vilas Bank (LVB)

No	Factors responsible for failure of a bank	Overall average of responses of respondents of Yes Bank	Overall average of responses of respondents of LVB
1.	NPAs/ Bad loans	**3.53**	3.69
2.	Bank Frauds	3.51	**3.81**
3.	Poor Risk Management	2.58	2.57
4.	Less Liquidity	**2.30**	**2.46**
5.	Capital Inadequacy	3.50	3.47
6.	Insider Abuse	3.45	3.49

Table 22 indicates that Bank Frauds and NPAs/Bad Loans were perceived as the most significant factors behind the failures of both banks. Lakshmi Vilas Bank scored higher (3.81 for Bank Frauds, 3.69 for NPAs) than Yes Bank (3.51 and 3.53,

respectively). Insider Abuse also ranked notably high (3.49 for LVB, 3.45 for Yes Bank), aligning with literature that highlights governance lapses as hidden drivers of distress (Sharma & Roy, 2019). In contrast, Poor Risk Management (2.58 for Yes Bank, 2.57 for LVB) and Inadequate Liquidity (2.30 and 2.46) received lower scores, suggesting these were viewed as less critical by respondents.

5.3. Suggestions to Overcome the Failures

Transparency and customer trust are critical drivers of growth in any industry, and the banking sector is no exception. To safeguard the interests of investors, depositors, and consumers, regulators enforce stricter credit appraisal and risk management practices, such as real-time monitoring of large exposures, regular stress testing, and lending limits for specific sectors. Banks must also conduct periodic internal assessments of capital adequacy and key financial parameters. Mortgage lending should be evaluated by qualified valuers, while timely legal action against defaulters must be ensured without political interference.

Further, independent directors, full-time directors, and audit committees should actively oversee management decisions, with transparent and ethical governance made mandatory and backed by strict penalties for non-compliance. The Reserve Bank of India (RBI) should adopt real-time monitoring and strengthen Prompt Corrective Action (PCA) frameworks with timely, graded responses. Leveraging advanced technologies such as AI-driven risk analytics can further enhance supervision. Adoption of these measures, as highlighted in secondary sources and reports, can significantly improve the stability and integrity of private sector banks in India.

5.4. Conclusion

The failure of any bank or financial institution represents a severe setback for the Indian economy. The collapses of Lakshmi Vilas Bank (LVB) and Yes Bank underscore the importance of strong governance, prudent lending, timely regulatory oversight, and transparent stakeholder engagement in maintaining stability in private commercial banks. This study identifies excessive NPAs, weak internal controls, inadequate regulatory response, and loss of stakeholder confidence as key factors contributing to their decline. The findings highlight the need for regulators to adopt a more vigilant and proactive approach, ensuring early detection of distress signals and timely corrective actions. Bank failures also trigger a sharp erosion of public trust, which is difficult to fully restore even after regulatory intervention or restructuring (RBI, 2020). In the cases of Yes Bank and LVB, financial instability led to long-term reputational damage, further undermining depositor and investor confidence.

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MANAGERIAL INSIGHTS FOR THE MANAGEMENT OF GREEN BONDS: CASE OF SAJIDA FOUNDATION IN BANGLADESH

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ABSTRACT

Purpose - Green bonds have emerged as an innovative financial tool to combat climate change. Unlike normal bonds, the proceeds of green bonds can't be used for any other purpose except for the purpose they are raised. In this paper, we explore practical managerial insights from the first-hand experience of a finance manager who was directly involved in the issuance of Bangladesh's first-ever green bond.
Methodology – An one-on-one in-depth interview was conducted with a key personnel who was directly involved in this whole process. A written permission was obtained from the organization to conduct this interview. Content analysis method was used for data analysis.
Findings – It is identified that companies that are interested in raising funds through green bonds should make sure they have enough green projects to channel the funds, have proper documentation and smooth financial track record, offer competitive interest rates, put together a competitive team, have a well-reputed arranger and trustee, and set a strategic payment schedule and follow through.
Conclusion - The findings of this paper are particularly insightful for finance managers of companies/organizations interested in working with green bonds. Besides, the governments with no green bonds in their economy can take inspiration and follow Bangladesh as an example that even developing economies can issue green bonds. Future research can be done to explore the challenges faced in managing green bonds.

Keywords: Green bond market, green bond, green finance, sustainable finance, structural model
JEL Codes: G23, M1, O16,

1. INTRODUCTION

The year 2015 witnessed the adaptation of two major global environmental commitments by world leaders. The first was the United Nations Sustainable Development Goals (SDGs) held in New York, and the second was the Paris Agreement, held in Paris. At their core, both programs aim to mitigate climate change impacts and create a better future for the planet and the people. It is estimated that an investment of $ 5-7 trillion is required to achieve the SDGs by 2030 (Abhilash et al., 2023), and an annual investment between $ 1.6 and 3.8 trillion in the energy sector to reach the goals of the Paris Agreement (Yamahaki et al., 2022).

Such financial requirements increased the importance of sustainable financing. (Cunha et al., 2021) defined Sustainable Finance and Investment (SFI), as *'the management of financial resources and investments with the aim of promoting long-lasting, positive, and measurable social and environmental impacts.'* Meaning, the focus of businesses needs to shift from shareholder wealth maximization to the creation of sustainable wealth which calls into account the associated environmental and social costs and benefits (Fatemi & Fooladi, 2013). The next natural question is, how can businesses and financial institutions practice sustainable finance; what are the potential tools and techniques?

Among others, Green Bonds (GB) have been identified as a sustainable financial instrument for the attainment of 'Net Zero Emission' (CBI, 2021). What makes green bonds different from normal bonds that empower them to achieve such results? Simply put, while the proceedings of normal bonds can be used for any purpose as seems fit by the management, the proceedings of green bonds are exclusively used to finance eco-friendly projects (Maltais & Nykvist, 2021; Park et al., 2020). Thus, green bonds have a positive environmental impact that plays a major role in *greening* the economy.

The concept of green bonds is not a new one. The green bonds market emerged around 2007-2008 with the World Bank and the European Investment Bank issuing their first green bonds (Hadaś-Dyduch et al., 2022). Since then, the green bond market has seen exponential growth. As of 2021, GBs worth USD 1 trillion were globally issued, with the USA being the top issuer, followed by Germany, France, and China (Abhilash et al., 2022).

While GBs have been issued in many parts of the world, the green bond market in Bangladesh is very new. Thus far, about three green bonds have been issued. The first was issued by the SAJIDA Foundation in April 2021, named Green Zero-Coupon Bond worth BDT 1 billion (SAJIDA Foundation, 2021; Star Business Report, 2021). The second one was issued by PRAN Agro Ltd. in November 2021, valued at BDT 1.5 billion to finance its sustainable agricultural initiatives (bdnews24.com, 2021; Rahman, 2021b). Finally, the third one was issued in December 2021 by Beximco Ltd., named Beximco Green-Sukuk Al Istisna, worth BDT 30 billion (Rahman, 2021a; TBS Report, 2022).

This study aims to gather insights from the first green bond issuers in Bangladesh and make recommendations for companies, policymakers, investors, and researchers from a managerial perspective. Primarily, the findings of this study will have insightful managerial implications for top and middle-level managers of organizations that are interested in raising capital through the issuance of green bonds. In addition, we shed light on the current status of the Bangladeshi green bond market. The countries that do not yet have the presence of green bonds can learn how to encourage organizations to issue green bonds for green initiatives. The example of Bangladesh is ideal, as this was the first green bond in the country, meaning all the parties involved started from scratch and built the whole thing up. Next, the Bangladeshi authorities will get a better idea about the challenges and grey areas that need improvement for the betterment of the green bond market in Bangladesh. Finally, the study proposes a conceptual model for the green bond market mechanism, in addition to analyzing the current and future state of the green bond market in Bangladesh.

2. LITERATURE REVIEW

The concept of *Socially Responsible Investing* (SRI), which originated and gained popularity between the 1970s and 1990s, constitutes the idea of ethical and environmental investing that screens sectors and companies either positively or negatively based on their impact on the society and environment (Torvanger et al., 2021). Following this line of ideology, green bonds are a new class of fixed-income financial instruments that raise funds like normal bonds: debt capital, and channel the fund into renewable and energy efficiency projects to transit to a low-carbon economy (Khamis & Aassouli, 2023). These bonds are considered *Socially Responsible Investment* (SRI) instruments as they take into account the environmental and societal impact of the investment done through the proceeds of these bonds (Oguntuase & Windapo, 2021).

In the initial years, green bonds were mainly issued by supranational issuers – multilateral development banks, like the World Bank, and the European Investment Bank, which might have been due to the lack of a globally agreed-upon definition and common standards for setting this new financial instrument (Cortellini & Panetta, 2021). However, in 2014, the International Capital Market Association (ICMA) released the Green Bond Principles, a set of guidelines and non-prescriptive recommendations for the best practices in the green bond market (Hadaś-Dyduch et al., 2022). The recommendations of ICMA specifically address four aspects, namely, the use of proceeds, the process for project evaluation and selection, management of proceeds, and reporting (International Finance Corporation, 2021). With the coming of these guidelines, the green bond market grew exponentially. In addition, the Climate Bond Initiative developed certain guidelines for a project to qualify as 'green', stating that a project needs to invest in assets that ensure low carbon emissions in the areas of renewable energy, low-carbon buildings, transport, waste and pollution management, industry, agriculture, and water management.

Abhilash et al. (2022) conducted an extensive literature review and found that the current themes/topics of green bond market research include sustainability, sustainable finance, sustainable investment, climate finance, green economy, clean energy, bond yield, and ESG, among others. Other trends in current research include studies on market growth and maturity (Demski et al., 2025; Plé, 2025), regional issuance trends (Lund & Syzdykov, 2025; OECD, 2025), financial performance and market dynamics (Khan & Vismara, 2025; Tang et al., 2025), and regulatory frameworks. These topics led researchers to study the overall benefits, both financial and non-financial, of green bonds to all stakeholders.

However, the present study focuses on the Bangladeshi green bond market to explore the practical managerial insight and factors contributing towards the development of the green bond market in the country. Therefore, we concentrate our review of the literature on exploring these aspects *only*.

The Bangladeshi bond market is the smallest in Asia, about 11.63% of the country's GDP (Prince & Alo, 2024), where government treasury bonds constitute 11.45% and corporate bonds constitute 0.19% of the bond market (FE Report, 2024). As per the FY 2023-24 reports by Bangladesh Bank (2024) on its securities, the net issuance of T-bonds was BDT 41,749.21 crore (approximately USD 3.56 billion as of June 30, 2024), and that of T-bills was BDT 9,765.37 crore (approximately USD 831.75 million as of June 30, 2024). However, this is nothing compared to the requirement of USD 608 billion from 2016 to 2040, to finance various nationwide mega infrastructure projects like Cox's Bazar Airport, Rooppur Nuclear Power Plant, and Matarbari Coal-Fired Power Project, among others (LightCastle Analytics Wing, 2022). According to recent data, the Bangladeshi bond market has only been able to accumulate USD 417 billion, leaving a gap of almost USD 192 billion

(LightCastle Analytics Wing, 2022). Green bonds can help bridge this gap and raise the funds required to finance these projects.

Simply put, green bonds are basically the same as normal bonds, except that these bonds are issued to invest in environmentally friendly projects. In a recent study, Arshad et al. (2024) found that green bonds are effective in reducing carbon dioxide emissions. That is because one of the primary distinctive aspects of green bonds is that proceeds from green bonds are to be used only to fund eco-friendly projects, which in turn reduces CO_2 emissions. Therefore, by investing in green bonds, which fall under the broad category of green financing, Bangladesh can transition into a low-carbon economy with the help of banks and other financial institutions (Monira, 2024). Bangladesh needs to make more investments in renewable energy projects like solar, wind, biomass, biofuels, and hydropower energy, which produce green energy while reducing greenhouse gas emissions (Tanchangya et al., 2024). This is one potential way to raise the required $192 billion.

However, in another recent publication, Rahat et al. (2024) found that the Bangladeshi green bond market is lagging in comparison to its neighboring nations, as it is in its infancy stage. They also found that the major challenges hindering the development of the green bond market include a lack of standardization, a lack of awareness among investors, regulatory ambiguity, and a narrow approach to the use of proceeds from the green bond. To address these challenges, Hasan et. al. (2024) identified that well-established legal frameworks, well-developed institutional infrastructures, and well-formulated monetary and fiscal policies of the central bank are the main requirements for the green bond market in Bangladesh to flourish. Nevertheless, as the market is still developing, it is basically a trial-and-error period. Market participants need to understand the challenges, loopholes, and opportunities of the green bond market so they can decide whether to work in this sector or not. This study will contribute towards such understanding.

As of mid-2025, only three green bonds have been issued in Bangladesh. The first green bond in Bangladesh was issued by the SAJIDA Foundation in 2021 (TBS Report, 2021; SAJIDA Foundation, 2021). The Bangladesh Securities and Exchange Commission (BSEC) approved SAJIDA to raise BDT 100 crore (USD 10 million) in green bonds, which were non-convertible, unsecured, and fully redeemable, for a tenure of two years. Founded in 1993, the SAJIDA Foundation is a value-driven, non-government organization with the aim to empower communities, catalyze entrepreneurship, build equity, and establish enterprise for good with an overarching vision of ensuring health, happiness, and dignity for all (SAJIDA Foundation, n.d.).

PRAN Agro Ltd issued the second set of green bonds worth BDT 150 crore. The proceeds will be used in projects like recycling water waste, preserving life on land, waste management, and building sustainable communities through employment opportunities (Star Business Report, 2021a). PRAN was established in 1981 by the Late (Maj. Gen.) Amjad Khan Chowdhury as a food processing industry (PRAN Foods, 2025). At present, the company operates in 145 countries with its ten different agro-food categories, including confectionery, snacks, mineral water, drinks, carbonated beverages, culinary, and others. Since its inception, PRAN has been working for the betterment of rural livelihood and national economies by creating employment and exporting. PRAN is committed to the betterment of society and the environment by reducing its environmental footprint for a greener earth (PRAN Foods, 2025a).

Finally, the third green bond was issued by Beximco, named Beximco Green Sukuk Bonds, in 2021 (Rahman, 2021a). They were authorized to issue green sukuk bonds worth BDT 3,000 crore (USD 300 million), to be used to construct solar projects of Teesta and Korotoa Solar Power Plant, respectively, and to refinance machinery and equipment to expand BEXIMCO's textile division. Founded in the 1970s, it is the largest private sector group in Bangladesh. At present, it has operations and investments across a wide range of industries like pharmaceuticals, real estate development, media, textiles, financial services, and energy, to name a few. It has four publicly traded companies and seventeen privately traded companies. With such a diversified presence across industries, BEXIMCO accounts for nearly 75% of Bangladesh's GDP (BEXIMCO, n.d.).

In our search through relevant literature, we identified that there are no papers that explored the experience of Bangladeshi green bond practitioners. In addition, no paper discussed the structure of the Bangladeshi green bond market. We aim to fill this gap by exploring the practical managerial insight that future green bond practitioners, especially finance managers, can learn from the experience of the first green bond issuers in Bangladesh.

3. DATA AND METHODOLOGY

This study aims to understand the underlying practical managerial insights that the respondent gained through his experience of the issuance and management of green bonds, in addition to analyzing the green bond market development in Bangladesh. Similar studies in the past have adopted a qualitative approach, primarily employing the interview method for data collection and thematic analysis for data analysis (Golenko et al., 2012; Magale, 2021; Yamahaki et al., 2022).

The present study adopted the case study method. *A case study is a research approach used to explore an event or phenomenon in depth and in its natural context* (Crowe et al., 2011). Among the various types of case studies, the *instrumental* case study approach seeks to understand a specific phenomenon within a broader context by thoroughly examining one particular case to gain insights applicable to similar situations or issues (Giunti & Doherty, 2024; Holland et al., 2018).

Thus far, only two organizations have issued green bonds in Bangladesh, namely, Beximco Ltd., and SAJIDA Foundation; we interviewed the latter. Hence, while the sample size accounts for 50% of the population, it's not adequate for a quantitative study, as there would be only one respondent. Owing to the small population size, we employed the purposive sampling technique in selecting the participant (sample) for the interview (data collection).

The reason for selecting the SAJIDA Foundation is that it is an NGO that provides micro-credit services to its members, who are primarily farmers. Thus, their fund allocation was more diverse and made a significant contribution towards the greening of the Bangladeshi economy, in comparison to Beximco who used the money for building two solar power plants and expansion of their textile unit.

Primary data was obtained through in-depth and semi-structured interviews with the key personnel of the SAJIDA Foundation, Mr. Imran Hossain, Assistant General Manager - Finance & Accounts. Mr. Hossain was directly engaged in the whole green bond initiative from the organization's side. Written permission was obtained from the concerned authorities of the SAJIDA Foundation for conducting this interview.

The study aimed to understand the qualitative aspect of management that comes with experience, so open-ended questions were asked. This allowed the respondent to fully share his perspectives and experiences and also gave the flexibility to the researcher to ask follow-up questions in case of ambiguity (Golenko et al., 2012). A total of 17 questions were asked to explore the various aspects of the entire green bond initiative. The questions aimed to understand the purpose, the process, the profitability, the current and future market scenario, and the managerial insights gained from the management of green bonds.

The interview questions were emailed to the respondent two weeks in advance, giving him time to gather his thoughts and formulate his line of response. The interview was held over a Zoom call on November 6, 2024. The entire interview lasted for about 51 minutes, and it was conducted in Bangla. The interview was recorded digitally and translated (transcribed) into English, then given to Mr. Hossain for proofreading to ensure no meaning was lost during translation.

4. FINDINGS

4.1. The Purpose

A few aspects led to the organization's decision to issue green bonds. Firstly, the SAJIDA Foundation welcomes creative financial ideas and is environmentally conscious. They have many climate-conscious programs through which they promote sustainable development in achieving a green economy. In addition, the authorities in Bangladesh and the central bank are encouraging organizations to work with these innovative and green financial tools to achieve the targets of the SDGs and the Paris Agreement.

> *"SAJIDA Foundation (SF) encourages innovation and is a pioneer in experimenting with new financial tools. Although not entirely, the idea of issuing green bonds emerged in line with its various climate-conscious programs. As green bonds aim to protect the environment while fostering economic growth, SF decided to issue Bangladesh's first-ever green bonds."*

> *"In addition, the government, through the Bangladesh Security Exchange Commission (BSEC), is promoting these types of creative and innovative financial tools and wants (encourages) organizations and corporations to come forward with these initiatives. SF has always been keen on exploring and pioneering innovative financing sectors. Not forgetting our financing partners, Standard Chartered Bank, advised us that there is a good opportunity in the market to raise funds through the issuance of green bonds. It would be feasible if we wanted to explore this opportunity in terms of diversifying our financing."*

However, since it is a financial matter for the organization, the economic aspect is the primary reason for issuing green bonds. The green bonds were issued to diversify the financial mix of its micro-financing program. The micro-financing program is financed by capital funds, members' savings, and bank loans. With the COVID-19 pandemic, it was not possible for them to increase their funds in terms of capital funds and members' savings. So, the next option was bank loans. Bank loans are seldom a costly source of funding and can be risky for the organization in case of loan defaults. Therefore, to reduce the risk and promote overall financial sustainability, the SAJIDA Foundation decided to issue green bonds. He added,

> *"Bank borrowing puts higher dependency on a single source; thus, we wanted to diversify our financing mix. This helps in financial risk management and promotes overall financial sustainability. This line of thinking put the idea of issuing bonds in SF's pipeline."*

Finally, green initiatives help build a good brand image, which is an added benefit and not the purpose. Given the global climate crisis that threatens our very existence, financial institutions are looked upon to channel their funds toward sustainable financing.

> *"Undoubtedly green bonds are a noble initiative, that helps create a good brand image besides protecting the environment."*

4.2. The Process

The first step towards the issuing of green bonds is finding an *arranger*. The arranger is a financial institution (preferably a bank) with expertise, connections, legal understanding, and resources to raise funds through green bonds. Much like a lawyer who represents and works on behalf of their client. The organization expresses its desire to raise funds through green bonds in the initial meetings. If the arranger thinks that the organization can pull off the whole project, they will send a *mandate* to the organization. The organization will review the mandate and if they feel positive about it, concerned authorities of the company will sign and send it back to the arranger.

> *"First and foremost, the organization would require an 'arranger. If, after due assessments, the arranger feels positive about the proposal, they will give a 'mandate' to the organization. The company will review the mandate, and if they agree to the proposal, the key personnel from the organization will sign the documents and send them back to the arranger."*

Next, the arranger will send a list of documents to the organization that are needed to prepare the *Information Memorandum* (IM). The arranger will help the organization in drafting the IM which is needed to get approval from concerned authorities and to present before investors. These documents provide essential information about the issuing organization.

> *"Next, the arrangers will send a list of documents (about the organization) required by them to prepare the Information Memorandum. Based on this, they will take approvals from concerned regulatory authorities and pitch it to potential investors. Basically, the arranger will provide the guidelines (formatting) for preparing the IM, but the organization has to provide the information."*

Alongside this, some other additional documents like the *Credit Rating Certificate* are needed to get various permissions from the Micro-credit Regulatory Authority (MRA).

> *"Some of the documents required to obtain the NOC are IM, justification for the use of funds, forecasted finances, organization's regulatory documents and organizational memorandum, and others. This NOC is required to get approval from BSEC, as this is one of the compulsory documents. Another important step to be done while preparing for the IM is to conduct a credit rating of the issuing organization."*

Meanwhile, the issuer needs to arrange for a trustee to serve as the middleman between the investors and the issuer for security purposes. The trustee guarantees the dividend payment should the issuer fail to make the dividend payment. The trustee will collect the money from the investors and give it to the issuers. Similarly, the issuer will give the dividend to the issuer, and the issuer will give it to the investors. This ensures that the investors are paid their dividends on time.

> *"The issuer will also be required to have a trustee who will undertake (take responsibility) the whole endeavor and serve as the link between the investors and the issuing organization. This is done to ensure that the investors receive their dividends on time."*

Finally, after arranging all the necessary documents as per the arranger's direction, the issuing organization needs to make two applications to MRA and BSEC, respectively. The BSEC will review the application and return it to the organization if additional documents are required. Once the BSEC is satisfied with all the documents they will approve the application, and the organization can issue the said green bonds. The arranger will pitch the idea to potential investors and collect the money for the issuer in the issuer's bank account.

> *"After securing all these documents (made into a set) the issuing organization needs to make two applications, first to the MRA, who will issue an NOC, and finally to the BSEC with all the documents and the NOC. Finally, if all the paperwork proves to be satisfactory, they will approve issuing bonds."*

After receiving the money, the issuing organization will invest the raised money into various green projects as per their proposal. Regular reports will have to be submitted to the Bangladesh Bank and the *arranger* about the fund usage and investments. Lastly, the investors will have to be paid the dividend along with the principal amount. Thus, concluding the entire operation of raising funds through green bonds.

> *"Then the issuer can withdraw that money and invest in green initiatives as per their proposals. A summary report will have to be submitted to the Bangladesh Bank outlining the total money that has been utilized in various green initiatives."*

4.3. Market Challenges

Since green bonds are new in Bangladesh, the authorities are cautious in giving approvals to organizations. The SAJIDA Foundation has a good reputation and has been operating in Bangladesh for the past 31 years. They have a proven track

record in micro-financing and financial ventures. These are all contributing factors that convinced the authorities to approve SF to issue green bonds, and not only the noble ideology that green bonds promote.

> *"SAJIDA has a good credit history, and surely after assessing other associated risks, and not only owing to the 'greenness' of the bonds, but we were also issued the funds."*

However, many organizations might not have this kind of impressive history and expertise in microfinancing. Also, even though green bonds are meant to be purpose-driven rather than profit-driven, both the authorities and investors consider the credit history and past performance before investing in an organization. So, for a new organization, this can become a challenge to convince the authorities and investors of their capability to issue and manage green bonds.

At the same time, it can be challenging to attract potential investors who would be willing to invest in such green projects. While green bonds are a noble initiative to save the planet, not everyone is motivated by such ideologies. Therefore, an organization can face challenges in getting investors.

> *"Because no matter how 'green' an initiative might be, no investor would want to invest their money into a business without any knowledge about the finances and prior experience of the organization. So, a new firm might face this kind of challenge in attracting investors."*

Another potential challenge could be the management of investors. SF had only two investors. So, it was easier for them to receive the funds and also pay back; and keep track of the investors. However, if an organization has, say, 100 investors, it can become challenging to receive the funds on time and also to keep track of each of them. This is an operational challenge that an issuing organization should keep in mind.

> *"… suppose we had 500 investors to pay, we would have a huge amount of processing-related back-office work, which would have been burdensome for us."*

The market challenge in terms of competitors is considerably low, or practically absent as there are not many issuers. Thus far only 3 green bonds have been issued. Also, the gap between issuance is vast. Meaning, not many green bonds are offered for subscription at the same time. So, issuers are not very likely to face any competition.

Overall, the Bangladeshi authorities are positive about green bond initiatives and currently, there are not many major market challenges that issuers are likely to face. Companies are encouraged to try this innovative financial tool.

> *"We didn't face many challenges in this endeavor, rather we received exceptional cooperation from all parties."*

4.4. Future Market Scenario

The current green bond market in Bangladesh is in its initial stage, i.e. infancy. As of the end of 2024, there are only three green bonds issued in the country. However, the future of the green bond market in Bangladesh is promising. Following SAJIDA's lead other organizations have issued green bonds. SAJIDA herself has plans to issue its next green bond, named *SAJIDA Second Zero Coupon Bond*. They even plan to offer these bonds to individual investors for subscription.

> *"To encourage public involvement, a portion of SF's next bond, named SAJIDA Second Zero Coupon Bond, which is currently being processed, will be made available for individual subscriptions."*

The authorities in Bangladesh are very encouraging and supportive of this kind of initiative. However, with the issuance of the first green bonds the regulators are now aware of the grey areas and potential loopholes that need policy upgradation and implementation. So, organizations can expect stricter rules and requirements when getting approval from the authorities.

> *"…gradually the regulators are also understanding the grey areas that need checking and are imposing the required rules and regulations in place."*

Overall, the green bond market in Bangladesh is expected to see considerable growth in the years to come.

4.5. Profitability

When asked if the whole endeavor was profitable to the SAJIDA Foundation, Hossain said,

> *"You see, profit in itself is subjective, and it's not always measured quantitatively but rather qualitatively. Overall, it can be said that this endeavor was 'positively' profitable for SAJIDA."*

From the financial (quantitative) perspective, they were able to pay back the investors on time and in full. So, yes, it was profitable. In addition, the qualitative benefits are worth noticing. SAJIDA Foundation gained a very positive brand image that gave them good industry coverage. Because they were the first to take on such an initiative, other organizations have shown an interest in working with them in these lines. They gained valuable experience and have the advantage of being the *first mover* in the market. Overall, the management is content with the outcomes of this whole endeavor. So, considering both the qualitative and quantitative aspects of profit, the issuing organization considers themselves to have made a profit.

In addition, the purpose of green financing is to encourage green and sustainable projects. Through this initiative, they were able to provide financial assistance to farmers. This in turn helped the environment, which is the ultimate profit achieved through this kind of initiative.

4.6. Managerial Insights

Channeling the Funds – the Bangladesh Bank has categorized and laid down a total of 68 categories that qualify to receive green financing (Bangladesh Bank, 2020). Funds raised as 'green' can't be channeled into other sectors other than those categorized as green by the Bangladesh Bank. This is why it is of paramount importance that the issuing organization identifies potential options for channeling the funds into projects that qualify as green projects as per the categories laid down by the BB. Otherwise, the issuing organization might not have enough projects to channel the raised funds and face difficulties in paying back the investors, which can turn disastrous for the organization.

> *"Although it is easier to avail sustainable finance, funds raised as 'green' can't be channeled into any sector other than those categorized as 'green' by the Bangladesh Bank."*

Smooth Financial Documents – the issuing organization should have all their legal documents in order, especially the financial documents. An experienced (older) organization with a sound financial track record is likely to get the approvals rather smoothly and attract good investors, and vice versa. However, that doesn't mean newer organizations should not try and venture out in this area. What they need to make sure of is that all their documentation is authentic, transparent, and trustworthy.

> *"The organization needs to have smooth financial documents, and a sound financial track record is favorable."*

The Arranger and the Trustee – the arranger is the institution that guides the issuing organization through the entire green bond operation especially the financial aspect, while the trustee is the institution that facilitates the collection and payment of funds serving as the surety between the investor and the issuer. Getting a top-level arranger ensures the authorities that the issuing company is serious about the green bond venture and that they will have the required professional financial expertise at their disposal to guide them in the entire venture. At the same time, a well-reputed trustee ensures the investors that their money is secure and that they will be paid back. These two institutional representatives highly influence the chances of getting approvals from authorities and attracting good investors.

> *"Personally, my best advice would be to get a top-level (good) arranger and a well-reputed trustee. The reason is, ultimately both authorities and investors consider the arranger and trustee before giving approval and investing, respectively."*

A Competent Management Team – a venture of this nature involves quite a few stakeholders. To begin with, the top management needs to be positive about this kind of new initiative. Being too skeptical can become a major barrier. The management needs to appoint a *key* personnel member from the organization's side who will coordinate with the stakeholders and facilitate the entire operation. The person should be preferably from a finance background with a working understanding of finance, have a good command of English, and excellent communication skills. A lot of documents need to be prepared to obtain various permissions and approvals. Providing wrong or unprofessional write-ups will not help in getting the required approvals, rather creates a negative impression about the organization.

Also, the representatives of the arranger and trustee institutions, respectively, are part of the management team of the issuing organization who appear before the MRA and BSEC to seek approvals. During these meetings, the authorities raise questions about their proposal and plans. If the team fails to provide satisfactory answers, the chances of getting approvals are reduced substantially. Therefore, it is very important to put together a competent team, comprised of representatives from the issuing organization, the arranger, and the trustee.

> *"Ultimately, it is the organization's manpower that represents the organization. Therefore, it becomes much easier to pull off this kind of job by putting together a qualified and competent team."*

Payment Schedule – simply put, a payment schedule is a pay-back plan, detailing the amount of money and time on which dividends will be paid to the investors. It is important to have a proper payment schedule and stick to that plan. As soon as the bonds are issued and money has been received from the investors, the issuer is under the obligation to pay back the investors. The authorities can take disciplinary measures against the issuing organization if there is any disruption in the dividend payment by the issuer. Therefore, the organization should collect their money from their debtors, i.e. the projects they invested in, before their dividend payment dates.

To be able to stick to the said payment schedule, the organization will need to have a proper cash flow plan. Since the dividends will have to be paid at regular intervals, the organization must make sure that it has the required amount of cash with it. Otherwise, they might face difficulties in paying the dividends, which can give rise to regulatory complications.

Interest Rates – the organization should offer well-calculated interest rates. The market rates can fluctuate over time.

> *"For instance, if you predict that an 8% rate is currently feasible and take approvals from regulatory bodies on that basis but later find that there are better investment options at 10%, you won't be able to sell your bonds. Similarly, if you offer at 8% but market rates fall to 7%, you will end up paying more to the investors."*

Again, if the market rates indicate an upward trend, it will be profitable for the organization to lock the deal while the market rates are lower. This way, they can invest the raised money for higher rates, while they would pay the dividend at the fixed lower rate. At the same time, if the market rates fall in the future, they might end up incurring a loss. Therefore, it is advised to consider the market movement and offer rates accordingly.

> *"Since the interest rates are fixed, they will not have to pay higher dividends when the market rates increase. However, if the market rates drop in the future, the organization will incur a loss."*

However, there is no relation between the interest rates and the 'greenness' of the bonds. Interest rates are determined by market forces/factors, and these factors can change overnight. The associated risks in regard to the fluctuation in market interest rates are the same for green bonds, as normal (brown) bonds. The only benefit of being 'green' is that it's easier to get regulatory approvals. In addition, being involved in green initiatives portrays a positive eco-friendly brand image for the organization. This positive image helps them in getting further investors and other regulatory approvals.

> *"However, there is no relation between the nature of the bond (green) and interest rates….the only way being 'green' helped us was in getting quick and smooth regulatory approvals….the only influence of a bond being green is that investors, both individual and institutional, are likely to take the advantage of a positive eco-friendly branding opportunity."*

5. DISCUSSION

The present study set out to understand the practical managerial insights gained from the personal experience of a key team member who was engaged in the issuance of the first-ever green bond in Bangladesh. In addition, the paper also explored the current state of the green bond market in the country, challenges and opportunities, and the probable trend of the green bond market in Bangladesh.

To begin with, it is advised that the issuing organization identifies potential green projects before raising funds through green bonds. Since the funds raised by issuing green bonds can't be used for any sector other than those categorized as 'green' by the authorities, raising funds without having projects to channel them into will result in idle funds with the issuer. If the issuer fails to put the raised funds to work, they will end up paying dividends to the investors without making any profit but incur losses.

In addition, to address the first research question; the current state of the green bond market in Bangladesh, the Bangladeshi green bond market is in the debut market stage. To better explain this, we propose a model that shows the stages of green bonds market development. With the help of this model, we will be able to identify the current stage of the green bond market in Bangladesh, thereby making suitable recommendations. Based on the review of literature and other readings on the topic, the authors propose the model in Figure 1, as the Stages of Green Bond Market Development Model.

Figure 1: Stages of Green Bond Market Development

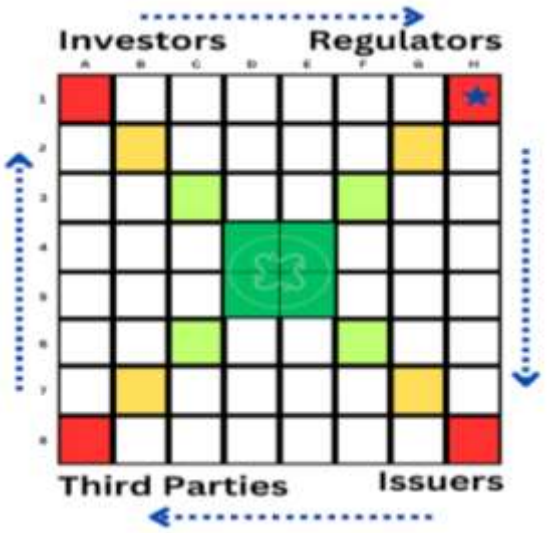


Figure 1 shows a conceptual model of how the green bond market develops over time with each player influencing each other. Four major parties are involved in the development and operation of the green bond market: the regulatory authorities, the issuers, the third party, and the investors. In this proposed model, information flows in all directions, with each party communicating with each other through feedback and suggestions. However, the order of influence is constant and follows a specific order. It originates from the *regulators* to the *issuers*, then from the issuers to the *investors* through the mediating role of the *third party*.

The reason why the development of the green bond market begins with the regulatory authorities is explained in the pioneering work of Lin & Hong (2022). Taking the case of China's green bond market development, the second-largest green bond market globally, they identified that the government and other regulatory authorities 'play an instrumental' role in the initial development of the green bond market by 'designing a conducive regulatory environment through law and policy, providing the necessary financial infrastructure and appropriate incentives for investors and the green bond issuers.' Thus, the starting point in our model is the regulators.

Regulatory authorities refer to any government-appointed (affiliated/formulated) body with judicial authority to develop policies and guidelines and take corrective action against any lawbreaker within their jurisdiction. Some examples are the government, the central bank of the country, bond regulatory authorities, stock market regulatory authority, micro-finance regulatory authorities, and the NGO regulatory authorities, among others. Additional regulatory bodies may be appointed, or existing bodies can be dissolved by competent authorities as per the need.

The *issuer* refers to the organization that raises funds to be invested in green projects by issuing green bonds. The capital raised through this avenue can't be used for any other purpose or be invested in brown projects. They make a decent profit and offer an attractive dividend to the investors.

A *third party* refers to any mediating institution that helps facilitate the entire green bond operation. The need for a third party arises out of their expertise in certain areas/aspects of the entire green bond operation. Some prominent examples are the arranger, trustee, credit rating agency, and green bond certifiers, among others. They can provide complete assistance or assist in one particular aspect of the entire operation. For example, while the arranger guides the issuer in the whole process, a credit rating agency will only do a credit rating assessment for the organization, whereas a certifier will only assess if the issued bonds are indeed 'green', which benefits the investors.

The demand for a third party arises with a *need* for identification. As the market matures, practitioners, i.e., issuers and investors, will need more specialized and tailored services, which market experts will start providing as per their expertise, creating more business opportunities (Chen & Long, 2023). This way, the range and services offered by third parties will expand.

Finally, the *investors* are the people or organizations that purchase the said green bonds as an investment. They receive a competitive dividend and make use of the positive eco-friendly brand image.

According to the authors, the formation and development of the green bond market can be categorized into four stages, namely, No Market (red), Debut Market (yellow), Mid-Market (light-green), and Superior Market (green).

A *No Market* ($H_1H_8A_8A_1$) is a stage when there are no regulations in place by the government or concerned authorities on the matter of green bonds. Thus, no green bond is issued whatsoever, by private or public concerns. Since no such financial tools exist in the economy, the third parties are not in the country and there is no investment from the general public or entities.

Such markets (economies) are characterized by a poor environmental commitment by the authorities, a lack of knowledge among people about green bonds, no financial regulations on green bonds, a lack of technological and physical infrastructure to support the undertaking of green projects, and an underdeveloped economy as a whole. The distance between the parties is highest in this market, indicating a lack of collaboration, trust, innovation, and environmental commitment.

Next, a *Debut Market* ($G_2G_7B_7B_2$) is a stage where the regulators start taking initiatives by formulating laws and making policy changes to address the issue of climate change by adopting green finance tools. More specifically, regulations regarding the development, issue, and monitoring of green bonds to raise money to invest in green projects. The policies governing the green bond market are not at their best, but merely some guidelines.

With the authority's encouragement and initiative, and maybe out of their sincere concern for the environment, a few firms consider trying out this new financial avenue. Green bonds are issued for the first time to raise capital for green projects. Dependence on third parties, especially the arranger and the trustee, is highest in this market, as both issuers and investors are new in this market. It is generally assumed that they lack the understanding and expertise needed to participate in the bond market.

The third stage is the *Mid-Market* ($F_3F_6C_6C_3$). This is the most crucial stage of green market development because at this stage the market can either flourish or collapse. At this stage, thanks to be brave 'few' that issued green bonds in the debut market, the regulatory authorities now have a somewhat better idea about the practical implications of operating the green bonds

market in the economy. They have experienced the impact of the policies in terms of ease of operation, profitability, investors' demand, identified some loopholes and grey areas, opportunities, threats, and data to access the economic and environmental impact of the green bond market both domestically and globally. So, they bring in new policies to help the market grow and check the grey areas and encourage new issuers and investors to join the market.

With the updated regulations and experience, pioneering firms either leave the market or continue to operate in this sector, i.e. issue more green bonds. New firms join the market and take on massive green projects to be able to compete with the existing players. They have both the privilege of learning from the mistakes of their predecessors and the opportunity to be more creative. More issuers mean more projects, which means the economic growth of the country.

Similarly, the third party too has gained experience and identified new areas where the market participants might need expert assistance. With the updated regulations and their experience more expert firms emerge in this sector, with better services which raise confidence among the issuers and investors. Finally, new investors are attracted to invest in green bonds both for economic benefits and their environmental concerns.

This market stage is expected to be the lengthiest. At this stage, the distance between the parties in this market has reduced and there is a high level of collaboration between the parties in the form of feedback and dialogs. Regulatory authorities observe the market, collect data, and formulate policies. With each new policy, the entire regulatory framework becomes better and more polished. However, making too stringent policies will discourage issuers and investors from entering this market.

The market either develops or collapses due to the entry and exit of issuers and investors, the success and failure of projects, the movement of interest rates, the due influence of the global green bond market, and the overall influence of the economy. Any economy that wishes to progress to the next stage should spend a considerable amount of time at this stage and let the market mature.

The final stage is the *Superior Market* ($E_4E_5D_5D_4$). In this stage, the market is highly developed. The policies are well-framed and all-encompassing. The regulators have a rich understanding of the factors, challenges, opportunities, nature, and participants influencing the green bond market. Especially, they have a unique understanding of their domestic green bond market and its relation to the global green bond market.

At this stage, there are numerous green bonds in the country. Firms are aware of this financial avenue for raising funds. Green bonds have become a normal part of their financial mix, and issuers are more confident about using this tool. Almost all bonds have a 'green' label on them. Therefore, all investments are *almost* by default *green investments*.

The services provided by the third parties are at their best. Services are tailored to meet the specific needs of the customer, and the processing is very smooth. There is a high level of trust and collaboration among the parties.

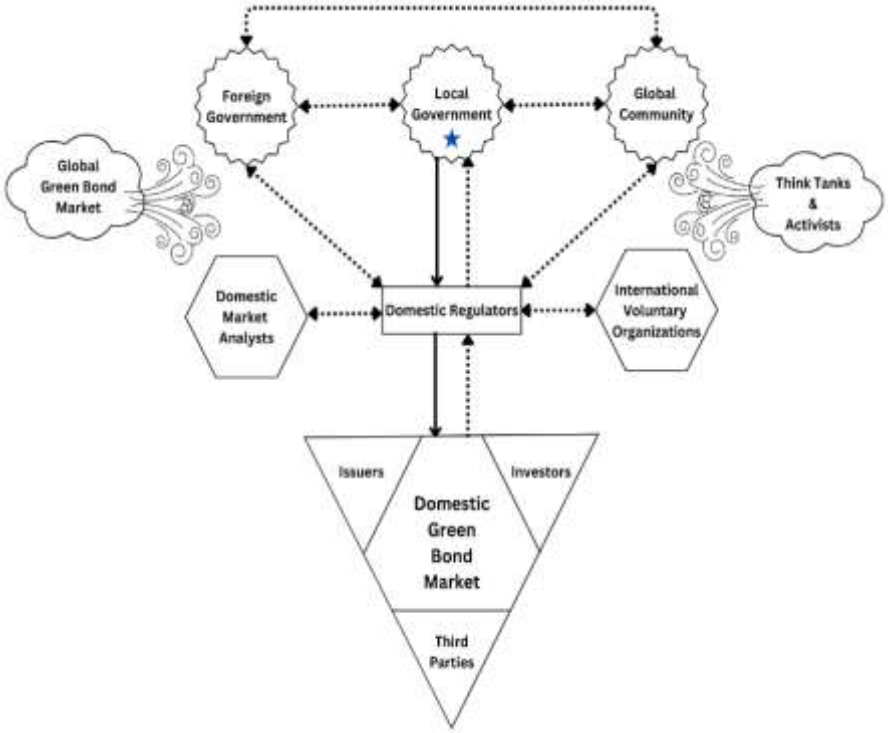
The most important characteristic of the green bond market is continuous evaluation and evolution, respectively. The market participants continue to learn from their experience and upgrade their policies, mode of operations, and expert services, whereby the cycle goes on in a loop. Having said that, there is a possibility that eventually, in the far future, the 'green bond' market will become partly obsolete. As all bonds will be 'green' in nature, there will be nothing special about them, so new, more innovative, and more sustainable financial tools will evolve.

Maltais & Nykvist (2021) pointed out that only the Chinese and Indian authorities have listed the criteria for making a bond 'green'. However, our study found that the Bangladeshi authorities through the Bangladesh Bank have also listed 68 categories/criteria for green bonds, and issuers can't use the raised funds in any other sector other than these.

Based on our interview with Hossain, and review of relevant works of literature (Banga, 2019; Frecautan, 2022; Lin & Hong, 2022; Xu et al., 2024; Zhao et al., 2023), we propose a framework depicting the various parties involved in the operation of a national-level green bond market, such as Bangladesh. The proposed model shows the nature and direction of the flow of information, influence, and chain of command.

In Figure 2, we present a framework showing the various national and international parties involved in the development and functioning of the green bond market in a country. At the top level of this framework are the local government of a country, foreign governments, and the global community of government, e.g. UN, NATO, EU, ASEAN, etc. These apex bodies influence each other through trade and commerce and the exchange of information. A country's leaders can decide to promote green bonds in their respective countries on their own, or the decision can be influenced by the directives of global communities and fellow governments. For example, in 2015 the UN adopted the *2030 Agenda for Sustainable Development* to which all the member countries have agreed to participate. Now, as a response to this global decision, countries are coming forward to implement actions to achieve the 17 SDGs and 169 targets, green bonds being one of them.

Figure 2: Framework of a National-level Green Bond Market Ecosystem



These apex bodies are also influenced by the *think tanks* and *activists*. Think tanks refer to ideologists, like academicians and environmental activists, who study the realms of finance and its impact on the environment and come up with novel ideas to make the world a better place. These novel ideas are presented in conferences and seminars, talk shows, interviews, journals, etc., and they gain public knowledge. These people exert an indirect influence on world leaders and institutions to embrace new ideas and methods for making the world a better place. On the other hand, the existing *global green bond market* also indirectly influences the local governments to want to become part of the green bond market. The global communities and governments take the expert opinion of the think tanks and the green bond market practitioners in developing global plans and directives.

At the next level are the domestic bond regulators, international voluntary organizations, and domestic market analysts. The local government gives directives (orders) to the concerned regulatory authorities to develop a framework, laws, and policies for the development of the green bond market in the country. Upon receiving such directives, the regulatory authorities appoint experts in this area to study the framework, policies, and laws of existing green bond markets. In addition, they (can) also take suggestions and recommendations from international voluntary organizations on best practices, tips, challenges, and professional guidelines. In addition, domestic market analysts, like economists and bankers of that country, can be consulted for expert advice on the matter. Finally, after consulting related parties and studying various global statutes, the domestic regulators develop and lay down a framework for the green bond market in the country.

Finally, at the operational level, the green bond market is made up of the issuer, investor, and third parties. The issuer is the organization that raises funds through the issuance of green bonds. The investor is the one who purchases those bonds and invests in the projects. Finally, the third parties are the arranger, trustee, credit rating agency, risk assessment agency, certifiers, and any other institution that helps in facilitating the green bond operation between the issuer and the investor.

The flow of commands is downward, from the local government to the domestic regulators, and from them to the parties involved in the domestic green bond market. In this hierarchy, the one at a higher position gives directives and acts as the supervisor over the one at a lower level. Each lower level implements the directives given by the higher level in their operations. At the same time, the flow of feedback and recommendations is upward, from the parties involved in the domestic market to the domestic regulators, and from them to the local government. Each higher authority uses this feedback for policy development to smoothen the green bond market operations. The rest of the parties in the framework don't exert any direct authoritative influence over each other but indirectly influence each other through the flow of information.

Next, we have explored the practical insights for managing green bonds. To begin with, organizations are advised to get an experienced arranger and reputed trustee. The arranger is of great importance as they are the ones who guide the

organization through the entire operations by giving them tailored financial advice and direction. Since the organization is venturing out into this area for the first time, selecting the wrong guide can prove to be catastrophic. On the other hand, the backing of a reputed trustee helps gain the investor's confidence in the organization. Next, organizations must identify enough green projects before issuing green bonds. Otherwise, if they fail to channel the raised funds, they will run into loss. Because, in Bangladesh, funds raised through green bonds can't be used for any other purposes.

Other managerial insights are to offer competitive interest rates, maintain a sound financial track record, and make regular payments. No matter how noble green bonds are, investors are here for business. So, it is advisable that organizations offer good interest rates. In addition, making regular and steady payments helps the organization gain the investor's confidence. In return, this gives the organization a good financial track record which helps them attract new investors for future projects.

Finally, the growth of the green bond market depends on the combined willingness of regulators, issuers, and investors to work with green bonds. As pointed out in this paper there are only selected fields in which the proceeds can be used, issuers are reluctant in many cases. If the regulators widen the areas of investment, then it is hoped that more issuers and investors will come forward and work with green bonds. Nevertheless, according to the data in this interview, there is a huge potential for the growth of the green bonds market in Bangladesh.

6. CONCLUSION AND IMPLICATIONS

In general, Prakash & Sethi (2022) identified that the participation of the private sector is of paramount importance in Asian countries for the achievement of the SDGs. On that note, the first step taken by the SAJIDA Foundation is highly commendable. However, Bangladesh is still far behind in achieving the SDGs by 2030, in terms of greening the economy (Azad et al., 2022). Therefore, we strongly recommend that the banking sector, NGOs, and other financial institutions from both private and public come forward and take up more eco-friendly energy-efficiency projects through the issuance of green bonds in Bangladesh.

In this paper, we explored some practical managerial insight for organizations interested to raise funds through the issuance of green bonds. This was the first research of this kind in relation to Bangladesh, as we gathered data from the very first organization that actually issued the very first green bond in the country. The major findings of this paper are that organizations interested in raising funds through the issuance of green bonds should first identify enough green projects to channel the raised funds, do proper documentation to show a sound financial track record, get a qualified arranger and a trustworthy trustee, put together a competent management team, offer competitive interest rates, and set a proper payment schedule and follow through. We identified that the Bangladeshi green bonds market is currently in its debut market stage, with a high development scope. In addition, we developed a framework for all the parties involved in the development of the green bonds market. Countries that haven't yet issued green bonds can take Bangladesh as an example and work towards issuing green bonds. Future research can be done to understand the challenges faced by issuers, as our respondent said that they didn't face many challenges as this was the first green bond in the country and all the parties were very supportive. As more green bonds will likely to be issued in the future, such research could be conducted in the future.

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FINANCIAL INTERMEDIATION MODELLING FOR ECONOMIC DEVELOPMENT IN NIGERIA: INSIGHT FROM ARDL

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ABSTRACT

Purpose- The shallowness of Nigeria's financial system hinders the financial intermediation process. Thereby impeding economic development. This observation provides the rationale for an examination of the impact of financial intermediation on economic development in Nigeria.

Methodology- The study utilized data spanning from 1981 to 2023, sourced from the Central Bank of Nigeria (CBN) statistical bulletin and World Bank Data base, and employed the Autoregressive Distributed Lag (ARDL) method of analysis.

Findings- The overall results show that both the short and long-run relationships exist between financial intermediation and economic development in Nigeria. The coefficient of ECM of -3.855712 which is 1% significance level, indicating a strong relationship between financial intermediation and economic development. Also, this very high speed of adjustment indicates that 385.57% adjustment back each year to long-run equilibrium after a shock in the short-run.

Conclusion- The study concluded that for proper development of financial system that can promote effective financial intermediation, it is necessary to encourage higher levels of savings and investment, which will, in turn, enhance the efficiency of capital accumulation. Among its recommendations, the study highlighted the need to improve and extend credit facilities to the private sector of the economy.

Keywords: Economic development, financial deepening, financial intermediation, financial repression, investment, savings
JEL Codes: G30, G31

1. INTRODUCTION

Globally, financial intermediation is recognized as a key driver to economic growth by facilitating capital accumulation through efficiency channeling savings to productive investments, thereby fostering business development and accelerating economic progress. This is supported by extensive research, including from World Bank, which demonstrates a strong correlation between a well-functioning financial system and a country's rate of development (World Bank, 2019).

Typically, financial intermediation in developing countries is characterized by dualism: formal and informal financial intermediation (Collins, Morduch, Rutherford and Ruthven, 2009). Formal financial intermediation, through institutions like banks, increases the capacity to leverage domestic financial resources, strengthen its investment climate, and improve asset management (Aryeetey and Gockel 1991; Aziakpono, 2005; Beck, Demirgüç-Kunt and Martinez Peria 2008 & Unvan andYakubu, 2020).

According to Sundaresan (2008), providing access to basic financial services like credit, savings, and insurance is likely to develop entrepreneurial skills and opportunities for the poor who are currently outside these financial markets. This, is turn, would help address the low levels of financial intermediation in the informal economy (UN Report 2009).

Informal financial intermediaries are highly relevant, especially for mobilizing resources through family and friends, as well as informal savings clubs. Furthermore, due to the informal nature of the African economies, the use of cash for economic activities cannot be understated. This reflects the significant importance of financial intermediation in the economic growth process.

The well-established literature by Levine (2005) and Pasali (2013) suggests that under normal circumstances, the degree of financial intermediation is not only positively correlated with growth and employment, but also causally impacts growth. The main mechanisms for doing so are lower transaction costs and better distribution of capital and risk across the economy.

Broader access to bank deposits can positively affect financial stability by strengthening financial intermediation process. McKinnon (1973) and Shaw (1973) argued that removing controls of financial markets is crucial to allowing the real interest rate to properly allocate funds for investments, which mobilizes savings and accelerates economic growth. They proposed that a higher deposit rate encourages savings, and when these savings are invested, the resulting decline in real cost of capital promotes growth.

Building on the analysis, Sulaiman and Aluko (2015) observed that financial resources promote economic growth through efficient financial intermediation. However, this relationship is not universal. Some research indicates that the positive growth effect from financial intermediation is diminished in economies with weak institutional frameworks, such as poor financial regulation, or in extremely high-inflation environments (Rousseau and Wachtel 2002 Demetriades and Law, 2006). Studies also find that while a positive long-run relationship exists, financial liberation and development can be associated with short-run financial fragility and crises (Loayza and Ranciere 2006, Cecchetti and Kharroubi 2012 & Muhoza, 2019).

According to research by the World Bank (Han and Melecky 2013), while broader financial inclusion can potentially lead to increased financial stability, determining the exact causal relationship between two remains complex. However, it seems reasonable to suggest that wider access to bank deposits could strengthen the funding base of banks, making them more resilient during financial crises (Demirgüç-Kunt, and Levine, 2007 & Jahan and McDonald 2011).

In Nigeria, the financial system, particularly during the decades following independence, experienced a period of financial repression. This was characterized by government policies such as mandatory credit ceilings, directed credit allocation, high reserve requirements, and artificially low interest rates, which were often negative in real terms (Mc. Kinmon, 1973 and Shaw, 1973).

Additionally, banking sector seems to be making no effort to address deficiencies that worsen the domestic savings and investments. This is significant because, given the sector's dominant role in Nigeria's financial market, it was expected to boost these areas. Adebiyi (2004) observed further that financial market's underdevelopment has led to a large informal financial sector, which makes savings less responsive to real interest rates in Nigeria.

Some challenges affecting the efficiency of financial intermediation in development countries, particularly Nigeria, were examined by King and Levine (1992), Oyejide (1994) and Yaron et al (1998). These challenges include inadequate mobilization of surplus funds for deficit units, high interest rate spread, with a low savings rate of 5% and a high lending rate of 26% or more. This discourage savings, diverts funds into unproductive investments, and inhibits economic growth by creating an impediment to investment.

In the light of these challenges, it is necessary to examine the impact of financial intermediation on economic growth in Nigeria. The rest of this paper consists of the following sections: a literature review in section two, methodology in section three, section four covers findings; and section five contains conclusion and recommendations.

2. LITERATURE REVIEW

2.1. Theoretical Review

This study theory is based on Schumpeter's (1911) finance-growth theory, which considers finance a vital element of economic growth. The theory proposes that a scarcity of financial resources hinders the real sector from engaging in productive activities that foster economic growth. This can be overcome by a dynamic financial system with efficient financial intermediaries that will stimulate economic growth. This postulation was supported by McKinnon (1973) work, which posits that financial intermediation promotes growth in developing countries through financial development (Akpokodje, 1998). Similarly, Levine (2005) and Pasali (2013) suggest a positive correlation between financial intermediation and growth. Therefore, in a well-functioning system, financial intermediaries are not simply neutral channels; by shifting money from savers to borrowers, they facilitate economic growth. They improve economic development by ensuring that borrowed funds are allocated to the productive investments (Goldsmith, 1969). This is emphasized further by McKinnon (1973) and Shaw (1973) that financial liberalization, achieved through higher interest rates, promotes increased household savings and more efficient financial intermediation, ultimately leading to faster economic growth. Remarkably, in their financial repression hypothesis, they argued further that government controls on the financial system significantly discourages savings, distorts the flow of credits, and consequently undermines the impetus for economic growth by preventing efficient ollocation of capital, ultimately hindering economic development Rother (1999) assertion is that amongst the variables that influence financial intermediation interest rate (interest rate spread) and deposits rates have significant impact. These, further induce investment and economic growth. Levine (2005) and Pasali (2013) insight is that financial intermediation and growth are positively correlated through the strategy of lowering transaction costs and improving the allocation of capital and risk across the economy (Ouma, Odongo, Were, 2017). Research by Demetriades and Law (2006) suggests that in economies with weak institutional frameworks, such as unregulated markets, financial intermediation may not drive positive economic outcomes. Additionally, Rousseau and Wachtel (2002) found that high inflation (above specific thresholds) significantly impairs financial

deepening and limits its contribution to economic growth. In their work on endogenous growth theory, Bencivenga and Smith (1991); Greenwood and Jovanovic, (1990) and King and Levine (1993) all highlighted financial intermediaries channel capital formation and provide the services that reduce investment risks and facilitate diversification. In his own view, Schumpeter (1911) stressed the importance of financial services in promoting economic growth, particularly the role of financial institutions in creating credit to fund the productive investments of entrepreneurs. This process of innovation and credit provision was seen as driver of future growth and highlights the importance of financial intermediation in facilitating high levels of economic growth (Kamal, 2013 and Babajide, Adegboye, and Omankhanlen, 2015). Robinson (1952) argued further, that as the economy grows, the demand for financial services also grows, which positively affects financial development, suggesting that the causality starts from economic growth to financial development. That is, a well-developed financial sector increases access to financial services and offers a full range of financial products and services to different economic sectors (Chavula, Tefera, Kedir and Awe, 2017). This makes financial development a crucial component in promoting financial inclusion for sustainable economic development. Hence, this informs Patrick (1966) two hypothesized theories that were based on financial development and economic growth causality. The first is demand pull (finance-led growth), which explains that financial development is driven by economic growth; that is, the expansion of the financial system occurs as result of growth. This is consistent with Coccorese (2008), and Odhiambo (2011) empirical studies that economic growth granger cause financial development. The second aspect is Schumpeter's (1911) supply-leading hypothesis, which posits that financial sector development is a key driver of economic growth. This is affirmed by empirical studies of Kar, Nazlioglu and Agir (2011), and Bangake and Eggoh (2011) that financial development granger cause economic growth. The Lewis (1955) two way causal relationship hypothesis argues that financial development and economic growth are interconnected. This is in contrast with the neutral hypothesis which asserts no significant relationship between financial development and economic growth (Apergis and Levine, 2007). Essentially, the Lewis model suggests a feedback loop where both factors influence each other, driving overall economic progress. Additionally, the concept of resource transfer from less-productive sectors to more growth-oriented is implied within this framework.

2.2. Conceptual Review

Financial intermediation emerges and evolves due to the presence of market imperfections, that is, the absence of perfect information and perfect competition. These frictions create transaction costs associated with information acquisition, the exchange of goods and services and the enforcement of contracts (Levine, 1997). In overcoming or reducing such market frictions the financial sector provides specific financial services, thereby reducing the associated transaction costs (Levine, 1997). Ultimately, the emergence and development of financial intermediation ought to contribute to more beneficial economic outcomes vis-`a-vis a world with-out financial markets (Saint-Paul, 1992; Levine, 1997).

According to Acha (2011) and Gurr (2021) financial intermediation facilitates easy channeling of funds from surplus unit of the economy to deficit unit through financial institutions. In the same vein, Dare and Ogunyemi (2019) perceived financial intermediation as the medium by which deposits liabilities of banks and non-banks institutions are transformed into assets such as loans and overdraft. Olomola (1977) described the financial intermediation as the catalyst for and driver of economic growth. In this process, financial intermediation accept deposits and lend them for economically productive purposes, which ultimately leads to economic growth (Andrew and Osuji, 2013 & Manasseh, 2021).

Consequently, economic growth is defined by Antwi, Mills & Zhao (2013) as the constant rate at which the productive capacity of the country and its economy is increasing overtime to bring about rise in the levels of national income. Bakang (2014) described economic growth as the provision of input that leads to greater output, which ultimately improve quality of human life. Kolawole, Ijaiya, Sanni and Aina. (2019) & Kimberly (2019) defined economic growth as an increase in the production of goods and services over a specific period of time.

Adegboyega (2018) submits that economic growth should ideally ensure that economic and financial progress permeating through all cross-sections of the society, resulting in balanced, democratically sustainable and optimal growth.

For the purpose of this study, economic growth is conceptualized as the process of sustainable growth that can generate economic activities through easy channeling of funds from surplus unit to deficit unit of the economy (Adegboyega, Forthcoming).

2.3. Empirical Review

There is no universal consensus on direction of causality between financial intermediation and economic growth in most of the studies reviewed. In their studies, Acha (2011a), Shittu (2012), Agbada and Osuji, (2013), Efayena (2014), Nguyen (2017) and Markjackson, Timinipre, Nelson and Okoyanstudies (2017) results reveal that financial intermediation contributes to economic growth in Nigeria. Ayadi, Arbak, Ben-Naceur and De Groen (2013) study established that credit to the private sector and bank deposits are negatively associated with growth, which confirms deficiencies in credit allocation in the northern and southern Mediterranean countries and suggests weak financial regulation and supervision. Iwedi and Igbanibo (2015) study found that credit to the private sector has negative and insignificant impact on GDP in the short run, while bank deposit

liabilities have a positive relationship with GDP and also insignificant. Ünal and Hakan empirical evidence suggests that in low and middle-income countries banking development has a positive impact on economic growth but the impact is negative in high-income countries. Furthermore, Iwedi, Okey-Nwala, Kenn-Ndubuisi and Adamgbo (2016) study result shows that indicators of financial intermediation development exhibit positive and negative impact on economic growth and also insignificant. In their own study, Andabai and Tonye, (2014) and Adediran, Ekejiuba, Matthew and Adegboye (2017) found that financial intermediation has a long-run relationship with economic growth in Nigeria. Agbélénko and Kibet (2015) found that well-functioning financial sector improved economic growth in West African region. As for Ibe (2017) study it reveals that financial intermediation has no positive but significant impact on human development in sub Saharan Africa. Muhoza (2019) study results indicate that financial intermediation has a positive and significant effect on economic performance of the East African Community countries in the long run. In the same vein, Yakubu, Abokor and Balay (2020) study using ARDL technique finds that financial intermediation significantly influences economic growth in both short and long run. The effect is positive only in the short run and in line with supply-leading hypothesis. From another perspective, Yang and Chang (2020) study results show an asymmetric relationship between financial intermediary development and economic growth. Yeboah (2020) study reveals a negative long-run relationship between financial intermediation and economic growth in Ghana. Futhermore, Alimi and Adeoye (2020) study results reveal that financial intermediation has positive and significant impact on economic growth. In their own view, Manasseh (2021) study show that bank deposits, bank credit and bank liquidity reserve have positive and significant effect on economic growth in Nigeria. In another perspective, Toby and Dibiah (2022) findings indicate that financial intermediation components: bank deposit, commercial bank loans to rural customers, commercial bank deposits from rural customers and gross national savings have no effect on economic growth in Nigeria. Valery, Roland and Messomo (2022) findings indicate that through credit and money supply channels deposits rate has positive impact on financial intermediation but through the intermediation margin channel it has negative effect in Cameroon. Konstantakopoulou (2023) study established that financial intermediaries improve fund allocation and concluded that financial intermediation is significant for economic growth. Olufemi, et al. (2024) results revealed that private credit, market capitalization and total volume of shares traded have positive and significant impact on economic growth in Nigeria. While broad money supply and lending rate are also significant but have negative effect on economic growth in Nigeria.

The literature on the causal relationship between financial intermediation and economic growth presents mixed and inconclusive findings, with some studies showing a positive effect, others negative or no effect, and some a bidirectional causality. The study's contribution is unique combination of the variables used, particularly the ratio of currency outside the banking sector to the narrow money supply (COBS_M2), to address a specific context, such as explaining the impact of financial intermediation on economic growth. This approach represents a valid contribution by offering a new perspective or methodology, but it does not represent the first time these variables have been considered in the broader literature.

3. METHODOLOGY

The study investigates the impact of financial intermediation on economic growth in Nigeria using ARDL method of analysis on data between 1981 and 2023 collected from Central Bank of Nigeria statistical bulletin and World Bank database. The variables of the study are: economic growth proxy by growth rate (GDPGR), while financial intermediation (FI) is proxy by private sector credit to GDP ratio (PSC_GDP), financial deepening ratio (FD), currency outside the banking sector to the narrow money supply (COBS_M2), prime lending rate (LR), and savings rate (SR).

3.1. Model Specification

Following the theoretical review in this study, we utilize aspects of the Schumpeterian endogenous growth literature, including the models developed by Aghion, Howitt, and Mayer-Foulkes (2005) and Acemoglu, Aghion, and Zilibotti (2006). This approach emphasizes innovation and creative destruction as drivers of growth, rather than solely on an aggregate production function given as:

$$x = \gamma * \delta * q \tag{1}$$

Where technological progress (x) is defined as a function of research and development (R&D) (q), while the two parameters define the probability that each unit spent on R&D yields a successful innovation (γ) and the extent to which each innovation raises the productivity parameter (δ), respectively. The economic determinants of the R&D are assumed to be taken as exogenous by the entrepreneur. Thus, these may include; the discounted value of expected returns, the real interest rate, capital per efficiency unit, and institution features of the economy.

$$q = q\{\gamma, \delta, r, comp, ppr, \varepsilon\} \tag{2}$$

From the equation (2) above; the R&D intensity (q) is assumed to be positively related to the discounted value of expected return as measured by γ and δ, negatively related to real interest rate (r), and positively related to capital per efficiency unit (k), while product market competition (comp.) and property right (ppr) are examples of institutional features within the

economy. $\mathcal{E}$ depicts all other institutional features of the economy not cited in the equation. From equations 1 and 2, the "Schumpeter finance-growth relationship" can be derived as:

$$x = x\{k\} \tag{3}$$

This states that since the rate of technology (x) depends on q, which in turn, depends on k, x is a function of k, the capital efficiency per unit. A positive relationship also exists between the two variables. Thus, an increase in the saving rate in the economy will increase the capital efficiency per unit, which in turn stimulates more R&D activities via innovation. This will bring about growth in the economy. Thus, in a steady state, x is similar to economic growth, Yt below.

3.2. Model of the Study

Following a detailed review of previous studies and improving upon the theoretical postulate described in equation (3) above and also in line with the endogenous growth model of Bencivenga and Smith (1991) & King and Levine (1993) which assumes that financial intermediaries are the channels of capital formation which promotes growth, therefore economic growth (Yt) is expressed as a function of financial intermediation, FIt, and a set of control variables, Z.. The adopted production function model in equation (3) above can be rewritten and specified in line with the major variables of the study as follows:

$$Yt = f\{FIt, Zt\} \tag{4}$$

Following the empirical specifications in Yeboah (2020) & Alimi and Adeoye (2020), the equation (4) above is expanded to accommodate the indicators of financial intermediation (FIt), as well as control variables (Zt) which are determinants of traditional growth. Thus, in line with our study, the model is stated as follows:

$$GDPGR = PSC\_GDP, FD, COBS\_M2, LR, SR \tag{5}$$

Therefore, following the adopted modified models of Yeboah (2020) & Alimi and Adeoye (2020) methods of analysis that used a time subscript (t) and first difference operator (Δ), we therefore model the relationship between financial intermediation and economic growth as follows:

$$\ln\Delta GDPGR_t = f(\ln\Delta PSC\_GDP_t, \ln\Delta FD_t, \ln\Delta COBS\_M2_t \ln\Delta LR_t \ln\Delta SR_t) \tag{6}$$

In order to empirically test the long-run relationship between financial intermediation and economic growth the transformation of equation (6) into a linear equation then becomes:

$$ln\Delta aGDPGR_t = \alpha + \psi\ ln\Delta PSC\_GDP_t + \gamma\ ln\Delta FD_t + \varphi\ ln\Delta COBS\_M2_t + \phi ln\Delta LR_t + \mathcal{Q}\ ln\Delta SR_t, \tag{7}$$

where, ln is the natural logarithm of the variables, and the estimates of ψ, $\boldsymbol{\gamma}$, φ, ϕ and $\mathcal{Q}$ represent elasticities. The error term ε_t is assumed to be white noise normally and identically distributed. The reasons for using ARDL technique are the followings: it has advantage of not requiring a specific identification of the order of the underlying data because it allows a mixture of I(1) and I(0) variables as regressors, that is, the order of integration of appropriate variables may not necessarily be the same. Also, it circumvents the low power of unit root tests and the resulting degree of uncertainty regarding the order of integration of the underlying variables. Additionally, it is also suitable for small or finite sample size (Pesaran, Shin and Smith, 2001).

In order to conduct the bounds test, equation (7) is converted into an unrestricted error correction model (UECM) form:

$$\begin{aligned} ln\ \Delta GDPGR_t = {} & \alpha + \sum_{k=1}^{n} \delta_1 ln\Delta GDPGR_{t-k} + + \sum_{k=0}^{n} \delta_2 ln\Delta PSC\_GDP_{t-k} \\ & + \sum_{k=0}^{n} \delta_3 ln\Delta FD_{t-k} + \sum_{k=0}^{n} \delta_4 ln\Delta COBS\_M2_{t-k} + \sum_{k=0}^{n} \delta_5 ln\Delta LR_{t-k} \\ & + \sum_{k=0}^{n} \delta_6 ln\ \Delta SR_{t-} + \psi\ ln\ PSC\_GDP_{t-1} + \gamma\ ln\ FD_{t-1} + \varphi\ ln\ COBS\_M2_{t-1} \\ & + \phi lnLR_{t-1} + \mathcal{Q}\ ln\ SR_{t-1} + \varepsilon_t \end{aligned} \tag{8}$$

where, $\boldsymbol{\alpha}$ is the drift component, $\boldsymbol{\Delta}$ represents the first difference operator, and $\boldsymbol{\varepsilon_t}$ are white noise errors. In this setup, the short-run effects are inferred by the sign and significance of the estimates of $\boldsymbol{\delta_1, \delta_2, \delta_3, \delta_4}$ and $\boldsymbol{\delta_5}$ while the long-run effects are inferred by the sign and significance of the estimates of $\boldsymbol{\psi, \gamma, \varphi, \phi}$ and $\mathcal{Q}$**.** Equation (8) indicates that economic growth tends to be influenced and explained by its past values. The structural lags are established by using minimum Akaike's information criteria (AIC). The Wald test (F-statistic) was also computed to differentiate the long-run relationship between the concerned variables.

Since all the variables in the model appear to be trended, a second ARDL-UECM including a trend term **(ξt)** is presented in the form:

$$\begin{aligned} ln\ \Delta GDPGR_t = {} & \alpha + \xi_t + \sum_{k=1}^{n} \delta_1 ln\Delta GDPGR_{t-k} + \sum_{k=0}^{n} \delta_2 ln\Delta PSC\_GDP_{t-k} + \sum_{k=0}^{n} \delta_3 ln\Delta FD_{t-k} \\ & + \sum_{k=0}^{n} \delta_4 ln\Delta\ COBS\_M2_{t-k} + \sum_{k=0}^{n} \delta_5 ln\Delta LR_{t-k} + \sum_{k=0}^{n} \delta_6 ln\ \Delta SR_{t-k} \end{aligned}$$

$$+ \psi \ ln\ PSC\_GDP_{t-1} + \gamma \ ln\ FD_{t-1} + \varphi \ ln\ COSB\_M2_{t-1} \phi lnLR_{\ t-1}$$

$$+ \mathcal{Q} \ ln\ SR_{t-1} + \xi_t \quad (9)$$

In this case, the null hypothesis of no cointegration, that is, no long run relationship ($H_0 = \psi = \boldsymbol{\gamma} = \varphi = \phi = \mathcal{Q} = 0$) is tested against the alternative of long run relationship ($H_1: \psi \neq \boldsymbol{\gamma} \neq \varphi \neq \phi \neq \mathcal{Q} \neq 0$) using the familiar F-test with critical values tabulated by Pesaran, Shin, and Smith (2001). Accordingly, it is hypothesized that the estimates of ψ, $\boldsymbol{\gamma}$, φ, ϕ and $\mathcal{Q}$ are positive and statistically significant, thus confirming the diversification-led growth hypothesis.

4.0 FINDINGS AND DISCUSSIONS

4.1. Descriptive Statistics

Table 1 below show that all the series are in high level of consistency as all the mean and median values are within the max and min values of the series. Also, all the variables have positive mean values, which indicate that the growth rate of GDPGR (3.23%), PSC_GDP (9.55%), COSB_M2 (17.84%), FD (15.90%), LR (17.12%) and SR (6.87%) are evident of positive trend. The highest mean value of COB_M2 calls for concern, which indicates informal nature of Nigerian economy and highly cash-based economy. This corroborated the widely held view that financial exclusion rate in Nigeria is high. The policy implication of this is to facilitate financial intermediation process with adequate financial infrastructure which has the potential to reduce the use of cash for economic activities. In addition, the significant variation in the trends of variables over the sample period is shown by a large difference between maximum and minimum values of the series. This large difference shows that all these variables exhibit a greater impact on economic growth in Nigeria during the period of the study. The Skewness coefficient indicates normal curves for all the variables with the values ranging between -3 and +3. Only three variables: COSB_M2, FD and LR are normally distributed because their probability values are higher than the Jacque Bera chi-square at the 5% level of significance but GDPGR, PSC_GDP and SR are not normally distributed. The positive Kurtosis indicates too few cases at the tail of the distribution. Also, all variables had their entire kurtosis coefficient >0 which shows that they are leptokurtic. The standard deviations reveal that gross domestic product growth rate (GDPGR, 7.02) has highest fluctuation and in contrast, the private sector credit to GDP ratio (PSC_GDP, 3.69) has lowest fluctuation. Also, the low standard deviation of all the data shows that the deviations of the actual data from their mean values are small.

Table 1: Descriptive Statistics Results

	GDPGR	PSC_GDP	COSB_M2	FD	LR	SR
Mean	3.229442	9.548837	17.83721	15.90116	17.11651	6.872326
Median	3.300000	8.200000	20.00000	13.02000	17.26000	4.800000
Maximum	33.70000	19.60000	33.90000	27.56000	29.80000	18.80000
Minimum	-13.10000	4.900000	4.400000	8.460000	7.750000	1.410000
Std. Dev.	7.020395	3.687648	9.097541	5.684939	4.617081	4.940382
Skewness	1.398879	0.974035	0.049054	0.492069	0.346094	0.966204
Kurtosis	10.17875	3.368656	1.650378	1.636003	3.496922	2.587318
Jarque-Bera	106.3566	7.042833	3.280732	5.068652	1.300852	6.995573
Probability	0.000000	0.029558	0.193909	0.079315	0.521823	0.030264
Observations	43	43	43	43	43	43

4.2. Correlation Matrix Tests

In the table 2 below the negative correlation of COSB_M2, LR and SR to FD shows that financial deepening is shallow, which indicates low level of financial intermediation in Nigeria. In contrast, there is a positive and strong correlation between PSC_GDP and FD, which is an indication that private sector credit contributed to financial deepening that drives financial intermediation, which promotes growth in Nigeria. Also, the positive but weak correlation of PSC_GDP to GDPGR is consisted with theoretical expectation. In addition, the negative but very weak correlation of COB_M2 and SR to GDPGR shows both currency outside the banking industry and savings rate have negative impact on economic growth in Nigeria during the period of the study. The high prevalence of cash transactions in Nigeria provides evidence of its cash-based economy, while low savings rate is a significant factor that discourages the savings habit. Theses supported the widely held view that there is high rate of financial exclusion and a low level of savings in Nigeria. Overall there is absence of multi-collinearity between the data set.

Table 2: Correlation Matrix Test Results

	GDPGR	PSC_GDP	COSB_M2	FD	LR	SR
GDPGR	1.000000					
PSC_GDP	0.141853	1.000000				
COSB_M2	-0.086543	-0.744840	1.000000			
FD	0.028402	0.831942	-0.894233	1.000000		
LR	0.331640	-0.118743	0.306001	-0.193115	1.000000	
SR	-0.143705	-0.645963	0.626071	-0.605197	0.402515	1.000000

4.3 Unit Root Tests

The results in table 3 below indicate that the variables under the study were integrated at either I(0) or I(1). Thus, as the variables were integrated not in the same order, the findings justified the use of ARDL approach to detecting the short and long-run relationship.

Table 3: Unit Root Tests Results

Variables	ADF Test Statistic	Critical Value of ADF	Order of Integration	Remarks
GDPGR	-5.262351*	-3596616	I(0)	Level Stationary
PSC_GDP	-5.275397*	-3.610453	I(1)	Difference Stationary
COSB_M2	-3.940425*	-3.600987	I(1)	Difference Stationary
FD	-5.634911*	-3.600987	I(1)	Difference Stationary
LR	-6.123285*	-3.605593	I(1)	Difference Stationary
SR	-6.343814*	-3.600987	1(I)	Difference Stationary

4.4. Bound Tests

The results in the table 4 below show the Bound F-test for Co-integration along with the asymptotic critical values. The results indicate that F-statistics is greater than the lower critical bound value at 5% significance level and there is existence of cointegration among the variables. Therefore, there is a long run relationship among the variables in the presence of structural breaks stemming in the series for period 1981 to 2023 in Nigeria. This is also confirmed by the high COINTEQ coefficient in the error correction regression, which is highly significant (Table 6 below)

Table 4: ARDL Bounds Test Results

Test Statistic	Value	K
F-statistic	3.277828	5

Bounds Critical Values	Sample Size	10%	5%	1%
I(0)	35	2.331	2.804	3.900
I(1)	35	3.417	4.013	5.419
I(0)	40	2.206	2.734	3.657
I(1)	40	3.353	3.390	5.256
I(0)	Asymptotic	2.080	2.390	3.060
I(1)	Asymptotic	3.000	3.380	4.150

* I(0) and I(1) are respectively the stationary and non-stationary bounds

4.5. Long Run Estimate

In the table 5 below, all the variables under consideration are significant except currency outside the banking industry (COSB_M2) which also exerted negative impact on economic growth (GDPGR) in Nigeria. This shows the informal nature of the Nigerian economy in terms of use of cash for economic activities. It also indicates that the informal financial intermediaries are thriving in resource mobilization through family and friends, and informal savings clubs. This is consistent with general evidence in the literature by Adebiyi (2004) that the underdeveloped of financial markets paved way for a large size of informal financial intermediation in Nigeria. Also, in the last two and three year the growth rate had reduced to 0.75% and 1.15% respectively, which might have been caused by the Central Bank of Nigeria (CBN) high imposition control on the financial system since the present government came into power over two years ago. This is what Mckinnon (1973) and Shaw (1973) referred to as financial repression hypothesis: that is, imposition of control on financial system interrupts and destroys instinct to economic growth. In the current year the private and sector credit (PSC_GDP) is positively related to economic growth (GDPGR). This indicates that a 1% increase in private sector credit increases growth rate by 3.51%. This is conforms

to the findings of Manasseh (2021) and Olufemi, et al. (2024) which revealed that private sector credit have positive and significant impact on economic growth in Nigeria. Financial deepening (FD) current and the past two years have negative impact on economic growth. The negative sign contradicts the theoretical expectation. This indicates that a 1% increase in financial deepening reduced economic growth by 5.30% in the current period and 4.03% in the past two year. This shows that there is a shallow financial system, which is evidence that financial intermediation in Nigeria is low. The lending rate (LR) of one past year have positive impact on economic growth (GDPGR). This implies that a 1% increase in lending rate increases economic growth rate by 1.49%, which indicates that the lending rate is moderate and encouraged large number of borrowers for investment purposes. This is also corroborated by positive effect of private sector credit on economic growth which serves as sinew to engine of growth. The savings rate have positive impact on economic growth in the past three year but negative impact in the past two and four year. The negative effect of savings rate might have been caused by the low savings rate which is the typical of Nigerian financial markets. This might have discourage savings and reduced mobilization of funds from households to investors, that is, lack of financial intermediation. The policy implication of this, is for the government to embark on mechanism that will encourage savings and improve financial intermediation process. Overall, there is a long run relationship between financial intermediation and economic growth in Nigeria.

Table 5: Long Run Results

Variable	Coefficient	Std. Error	Prob.*
GDPGR(-2)	-0.746702**	0.302961	0.0359
GDPGR(-3)	-1.152116**	0.401463	0.0185
COSB_M2(-2)	-1.352344	1.480754	0.3849
PSC_GDP	3.509631**	1.087681	0.0104
FD	-5.300891***	1.067755	0.0008
FD(-2)	-4.026788 **	1.397550	0.0181
LR(-1)	1.493626**	0.526718	0.0195
SR(-2)	-2.809453**	1.224646	0.0475
SR(-3)	2.227266**	0.766397	0.0174
SR(-4)	-2.583052**	1.135293	0.0489
R-squared 0.861123		Prob(F-statistic) 0.000806	

***1%significant level, **5%significancelevel,*10%significancelevelSource:

4.6. Short Run Estimate

The results in table 6 below contain the short-term dynamics of the estimated parameter of the error correction term. The growth rate of 2.25% in the economy in the past one year indicates that there was an improvement in the economy during period of the study. Also, private sector credit (PSC_GDP) have a positive impact in the current period and last three year. This is consistent with the long run results. In contrast to the long run results, the currency outside the banking industry (COSB_M2) positively impacted on economic growth, which is also a contradiction to theoretical expectation. Despite this, the provision of affordable financial services, most especially in the rural areas is still inadequate. Financial deepening (FD) have positive impact on economic growth in the current year but negative impact in the last one and three year. This indicates that there is a little progress in financial intermediation in Nigeria because financial deepening supposed to be driving financial intermediation. In contrast to the results of long-run estimate, lending rate (LR) impacted economic growth negatively in the past one and three year. This might have been caused by high lending rate, which tends to discourage borrowings. Savings rate has positive impact on economic growth in the current year but negative impact in the past one and three year. The positive impact conforms to McKinnon (1973) and Shaw (1973) argument that saving rises with an increase in the deposit rate, and investing the increased savings with a decline in the real cost of borrowing promotes growth. The coefficient of ECM of -3.855712 is significant at 1percent level. This is a very high speed of adjustment and indicates that 385.57 percent adjustment back each year to long-run equilibrium after a shock in the short-run.

Table 6: Short Run Results

Variable	Coefficient	Std. Error	Prob.*
D(GDPGR(-1))	2.257540**	0.666040	0.0040
D(PSC_GDP)	3.509631***	0.758837	0.0003
D(PSC_GDP(-3))	2.158840**	0.748535	0.0114
D(COSB_M2(-1))	4.681586**	1.235933	0.0018
D(COSB_M2(-2))	3.329242**	0.995458	0.0044
D(COSB_M2(-3))	2.672558**	0.953697	0.0134
D(FD)	-5.300891***	0.773269	0.0000
D(FD(-1))	4.203933***	0.856641	0.0002

D(FD(-3))	-1.515898**	0.607340	0.0247
D(LR(-1))	-2.123273**	0.606677	0.0032
D(LR(-3))	-1.372110**	0.469750	0.0105
D(SR)	-1.387059**	0.479350	0.0111
D(SR(-1))	3.165239**	0.934196	0.0041
D(SR(-3))	2.583052***	0.541427	0.0002
COINTEQ	-3.845712***	0.813180	0.0003
R-squared	0.913141	Prob(F-statistic)	0.000183

***1%significant level, **5%significancelevel,*10%significancelevel

The overall results show that both the short and long-run relationship exist between financial intermediation and economic growth in Nigeria. This is also confirmed by the goodness of fit of the estimated equation, which is very high and the F-statistical probability is also significant at 1 per cent.

4.7. Post Estimation Diagnostic Tests

The post estimation diagnostic tests were carried out to determine if the variables used are jointly significant in explaining the effect of financial intermediation on economic growth in Nigeria. The results in table 7 below affirmed that the model is free from auto-correlation, homoscedastic and that the variables are normally distributed. The Ramsey RESET specification test also showed that the model does not suffer from the problem of omitted variables and linearity assumption at 10% level of significance. So the model is stable for policy implication.

Table 7: Serial Correlation LM, Homoscedasticity Jarque-Bera and Ramsey Tests Results

Test	F-Statistic	t-Statistic	Obs.*R-Square	Prob. Value
Breusch-Godfrey				
Serial Correlation				
LM Test	0668852	-	6,257174	0.5422
Heteroskedasticity Test				
Breusch-Pagan-Godfrey	0.540576	-	24.77605	0.8987
Jarque-Bera	0.832716	-	39	0.6594
Ramsey Stability Test	3.803595	1.950281	-	0.0870

4.8. Granger Causality Tests

The results in table 8 show that there is unidirectional causality between COSB_M2 and the following variables: PSC_GDP, FD and LR. These indicate that the currency outside the banking industry affected the private sector credit, financial deepening and lending rate during the period of the study. This is manifested by the negative correlation of COSB_M2, FD and LR. This indicates that excess money outside banking industry causes shallow of financial market and high lending rate, which discouraged borrowings. Similarly, there is one way causality between SR and COSB_M2, which also displayed by the negative correlation between COSB_M2 and SR. Also, there is a unidirectional causality between SR and PSC_GDP. This indicates that low savings rate in Nigeria discourages savings habit and this is obvious by the negative correlation of SR and PSC_GDP. In addition, FD granger cause LR. This indicates that shallow financial market as a result of scarce funds increases lending rate. This is apparent by the negative correlation between FD and LR. More so, LR granger cause SR. This is inconsistence with the theoretical expectation because high savings rate reduces financial intermediation margin and discourages lending. Non granger causality of all these components with economic growth, most especially FD requires concern. The policy implication is that all the findings must be thoroughly addressed.

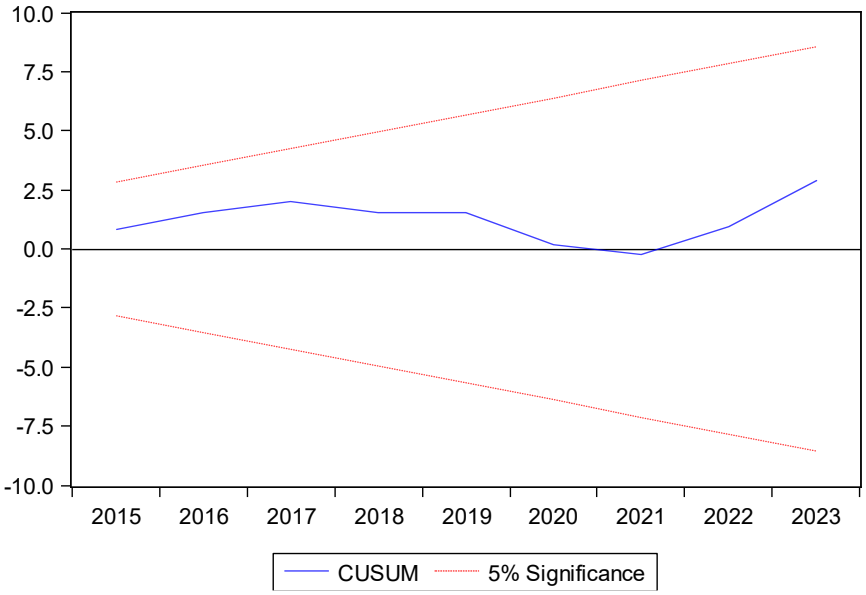
Table 8: Granger Causality Tests Results

Null Hypothesis	Obs	F-Statistic	Prob.
COSB_M2 does not Granger Cause PSC_GDP	41	5.33815	0.0093
SR does not Granger Cause PSC_GDP	41	3.32897	0.0471
COSB_M2 does not Granger Cause FD	41	5.42107	0.0087
COSB_M2 does not Granger Cause LR	41	3.26777	0.0496
SR does not Granger Cause COSB_M2	41	12.2044	0 0000
FD does not Granger Cause LR	41	3.75782	0.0329
LR does not Granger Cause SR	41	6.00983	0.0056

4.9. CUSUM Tests

The CUSUM plot in Figure 1 below showed that the curve for the model is within 5%, therefore the obtained model is considered stable and the results are reliable.

Figure 1: CUSUM



5. CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

The study examined the impact of financial intermediation on economic growth in Nigeria. The overall results show that both the short and long-run relationships exist between financial intermediation and economic growth in Nigeria. While efforts to enhance financial intermediation have been made, financial deepening does not granger cause economic growth. Also, in the short run, the currency outside the banking industry (COSB_M2) positively impacted on economic growth. All these raise concerns. The positive impact of private sector credit (PSC_GDP) on economic growth confirms the influence of real sector as the engine of economic growth. This demands for more credits to be channeled into the real sector of the economy with proper monitoring of lending rate, which has to be moderate. In conclusion there is a need for proper development of financial system that can promote effective financial intermediation, which can encourage higher level of savings and investment and enhance the efficiency of capital accumulation. Our findings have some important implications for the current debate on financial intermediation strategies with particular reference to developing countries

5.2. Recommendations

In line with the study discussions and outcomes the followings recommends are made:

- Improvement and extension of credit facilities to the private sector of the economy.
- Moderate lending rate that will encourage producers to borrow more for the expansion of their production capacity.
- Reasonable savings rate that will promote savings habit.
- Reduction in the high volumes of funds outside the banking industry.

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STRUCTURAL TRANSFORMATION AND LABOR MARKET ADJUSTMENTS IN AFGHANISTAN: EMPIRICAL EVIDENCE FROM ECONOMIC DEVELOPMENT AND EMPLOYMENT TRENDS (2017–2024)

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ABSTRACT

Purpose – This study examines Afghanistan's structural transformation and labor market dynamics from 2017 to 2024, focusing on the disruptions caused by the 2021 political transition. It aims to identify how institutional fragility, return migration, and the collapse of the formal sectors have reshaped employment structure and productivity across the economy.

Methodology – Using cross-sector data from the World Bank, the ILO, and national sources, the research applies a mixed analytical approach combining descriptive trend analysis and structural interpretation. The study traces employment movements across agriculture, industry, and services to uncover the phenomenon of reverse structural transformation, where labor shifts from high- to low-productivity sectors during crises.

Findings – Results show that Afghanistan experienced a sharp 27% contraction in GDP after 2021, with about 2.6 million jobs lost, female employment declining by two-thirds, and informality expanding to 74% of total GDP. Labor reallocation was mainly driven by survival mechanisms rather than productivity gains, leading to increased unemployment, gender inequality, and reliance on subsistence agriculture.

Conclusion – Afghanistan's labor market adjustments after 2021 reflect structural regression rather than progress. Sustainable recovery needs employment-focused diversification, financial revitalization, and gender-inclusive labor policies to turn short-term subsistence resilience into long-term productive growth.

Keywords: Structural transformation, labor market dynamics, reverse structural change, informality, economic fragility, gender inequality.
JEL Codes: O14, J21, O17

1. INTRODUCTION

The global labor markets have experienced significant structural changes over the last 10 years, including the decline of traditional sectors, automation, and the growing significance of service-oriented and knowledge-based sectors (OECD, 2025; Sevinc, 2019; Jung and Choi, 2006). Even though overall productivity and employment are growing, most developing and conflict-affected economies remain characterized by high rates of informality, underemployment, and gender inequality (Bonnet, 2018). These problems are even more complicated in weak states, where frequent shocks—including political instability, migration crises, and external economic shocks—compromise labor market stability and institutional strength (I. Shtunder & Shkuropadska, 2024). Afghanistan is one of the most dramatic examples of the fragility of the labor market in the post-conflict period, the employment system of which is heavily influenced by decades of aid dependency, migration flows, and the instability of regional trade (Pooya, 2025b; Loschmann and Marchand, 2020; World Bank, 2018).

One of the most important factors of sustainable economic development is structural transformation, i.e., transfer of labor and resources to low-productivity sectors (such as agriculture) to higher-productivity sectors (such as industry and modern services) (Lukalo & F. Kiminyei, 2021; Diao et al., 2019). During successful transitions, it not only increases productivity but also widens formal job opportunities and income distribution (Sevinc, 2019). But in weak and aid-dependent economies, the process may be manipulated and even be inverted (Sevinc, 2019). In Afghanistan, recurring security shocks, institutional fragility, and external dependencies have hindered the natural evolution of productive sectors. As a result, labor shifts often occur from formal to informal or subsistence activities rather than toward higher-value sectors, reflecting a phenomenon of "reverse structural transformation" (World Bank, 2025; Farahi, 2024).

Mass job losses, the departure of foreign institutions, and a contraction of the service and trade industries were caused by political and economic shock following the 2021 regime change (Mowahed et al., 2025). At the same time, the agricultural

sector absorbed laid-off workers, serving as the so-called shock-absorbed livelihoods, but also contributed to underemployment and a decrease in production (Farahi, 2024). Besides, the mass repatriation of Afghan refugees from Iran and Pakistan added more pressure on home labor markets, and the further contraction of aid further reduced the possibility of creating formal employment. This interplay of shocks in the structure and labor displacement highlights the vulnerability of Afghanistan's employment system (Pooya, 2025a; Loschmann and Marchand, 2020; Kamminga and Zaki, 2018).

While the global literature has extensively explored structural transformation in developing economies, there is a notable gap in understanding how these processes unfold in fragile, post-conflict, and aid-dependent contexts such as Afghanistan. Few empirical studies have systematically analyzed the post-2021 transformation of the Afghan labor market, notably how economic disruptions, migration flows, and sectoral contractions have reshaped employment composition. This study addresses this gap by offering an evidence-based, sectoral analysis of Afghanistan's labor market evolution between 2017 and 2024.

This research paper adds value to the literature in three major scenarios. (1) It presents one of the earliest complete sets of data on the changes in employment in Afghanistan in the course of political transformation and economic turmoil. (2) It also presents the notion of reverse structural transformation that explains the retrogressive pattern of labor reallocation that occurred in the period after 2021. (3) It provides policy-oriented information regarding the strategies of facilitating productive employment and inclusive recovery in fragile states through the exploitation of emerging sectors like construction, mining, and digital services. Overall, this study adds to the knowledge of the interaction between structural transformation and labor market dynamics in crisis-affected economies. It has implications for both Afghanistan and the similarly vulnerable countries.

The rest of this paper is structured as follows. Section 2 reviews the theoretical and empirical literature on structural transformation and labor market dynamics, especially as applied to developing and fragile economies. Section 3 outlines the data sources and research methodology used to examine the economic and employment developments in Afghanistan between 2017 and 2024. Section 4 presents the empirical results and discusses in detail the structural changes observed across sectors and labor market segments. Lastly, a conclusion is made at the end of Section 5 summarizing the main lessons, policy implications, and future research directions.

2. LITERATURE REVIEW

The concept of structural transformation has long been considered the foundation of economic development, which means the systematic redistribution of labor and output in the low- and high-productivity sectors (such as agriculture and manufacturing and services, respectively) (Cevik et al., 2019; Nanga et al., 2024; Broeck et al., 2023). The process changes the sectoral structure of output but also reforms employment patterns, productivity levels, and the overall growth path of the economy (Beylis et al., 2020). The classical pattern of development remains predictable: as agricultural production increases, surplus labor is directed to other sectors of production and, finally, to the service sector, which becomes predominant at more advanced stages of development (Cevik et al., 2019).

Theoretically, the framework of structural transformation is based on the interplay among technological advancements, capital accumulation, and sector-specific productive differentials, which collectively drive changes in output and the composition of employment (Kongsamut et al., 2001; Cevik et al., 2019). In reality, though, the empirical data indicate that. In contrast, the process of output transformation may be relatively quick, but employment transformation usually takes even longer because modern industries are more capital- and knowledge-intensive (Fox et al., 2018). Therefore, the contribution of agriculture to GDP can decrease sharply in lower-middle-income countries, even though most workers still work in agriculture (Fox et al., 2018).

Empirical analyses of the world show significant diversity in the rates and patterns of structural change across regions. The movement of labor, especially in low-productivity agriculture, to more productive manufacturing and services, especially in East and Southeast Asia (especially in South Korea, Malaysia, and Vietnam), has been highly growth encouraging (Nissanke, 2019; Baymul et al., 2019). Long-term investments in manufacturing capacity and human capital make the Asian model stand out, as income transitions much faster than in non-Asian economies (Foster-McGregor et al., 2016). Conversely, in most economies in Sub-Saharan Africa and Latin America, structural transformation has been productively reducing in nature, whereby employment is moving out of agriculture too soon and directly into low-productivity service sectors, skipping the manufacturing phase that is essential to continue driving productivity (Sen, 2019; Baymul et al., 2019; Nissanke, 2019).

The international experience indicates that transformation effectiveness is determined by both macroeconomic and institutional factors, such as trade transparency, infrastructure levels, population changes, and human capital development, as well as microeconomic factors, including labor mobility and company-level dynamics (Cevik et al., 2019). The high rate of population growth has the potential to decelerate employment change despite the ongoing output diversification process, which is why employment-intensive growth policies are necessary (Fox et al., 2018). In addition, trade and technological

shocks may entail high adjustment costs, especially when labour mobility is low, and displaced workers and new industries may experience long-term mismatches (Hollweg et al., 2014).

Wage employment relations provide a different, critical perspective on the transformation to be considered. Evidence from India and other developing economies shows that during structural transformation, workers leave agricultural self-employment and transition to wage employment in industry and services, resulting in gains in earnings (Hasan et al., 2019). The larger, urban-based companies are more likely to pay higher wages and provide better working conditions, which is where the emphasis lies on policies that can help promote the growth of the formal sector and urban jobs. The role of labor-market institutions is crucial and complicated in this process: flexible yet protective policies can promote the welfare and facilitate transformation, like severance payments that work to ensure the worker but not limit their mobility, whereas the strictness of dismissal legislation tends to force the workers to informality (Ranjan et al., 2018).

There is additional cross-country evidence of distinct labor-market patterns in developing and developed economies. In low-income countries, employees work longer hours, experience greater informality, and have reduced sector mobility than those in advanced economies (Lagakos et al., 2023; Bick et al., 2021). The replacement of self-employment by wage employment is a sign of effective structural change, which explains much of the increase in total working hours observed with increasing economic development (Lagakos et al., 2023). There is also the process of occupational upgrading: alongside development, service-oriented and knowledge-intensive jobs are gaining momentum across industries, which signals a more profound technological and organizational transformation (Duernecker et al., 2021; Dinkelman et al., 2024).

Recent technological changes, such as automation, digitalization, and the ascendancy of the platform economy, have brought new forces of structural change. Such trends have changed the face of conventional employment relations, shifting from stable wages to more mobile, often precarious work (Li et al., 2022). Automation in developing nations is also an intriguing problem because it reduces the labor-intensive nature of the production process and can lead to premature deindustrialization (Autor et al., 2020). As developing and advanced economies polarize in different ways, middle-skill jobs are being lost, and developing countries tend to polarize incompletely, as opportunities for low-skilled workers do not accompany the growth of high-skilled jobs.

Nevertheless, the transfer of excess labor from the agricultural and informal sectors to more productive sectors is a critical channel for sustainable development despite these challenges (Basole, 2022). This is a process that occurs as a result of the simultaneous action of within-sector productivity gains (the Solow process), intersectoral labor transfer (the Kuznets process), and the shift out of subsistence and into profit-seeking activities (the Lewis process), leading to virtuous growth cycles (Donovan et al., 2023). Nevertheless, unremedied labor-market frictions, such as skills mismatches, low mobility, and sectoral wage differentials, continue to slow this process, especially in low-income economies (Donovan et al., 2023).

The service sector, once considered a late-stage driver of change, has become an engine of productivity growth not only in developed economies but also in developing ones. Trade services, including information technology, finance, and business process outsourcing, were the key sources of post-1990 growth in India (Avdiu et al., 2022; Salimova, 2021). Likewise, education and infrastructure investment have been essential to advancing this transformation by facilitating labor mobility and upgrading technology (Laurente, 2022; Martins, 2018). However, the shift toward the majority of the service sector has also been shown to decrease labor productivity when labor markets become less flexible and require more skilled workers (Abbott et al., 2017; Laurente, 2022).

The complexity of structural transformation stems from the need to balance the following interdependent areas: industrialization, urbanization, demographic transition, and human capital accumulation (Degu et al., 2019). A lack of advancement in a single dimension can bring the entire transformation process to a standstill. The problem of skills mismatch and low absorption capacity in industries is especially acute across various developing nations, as agricultural output tends to push workers out of the farming sector faster than non-agricultural industries can absorb them (Palmtag, 2023; Degu et al., 2019). They are also external shocks, such as conflicts and prolonged instability, which disrupt the pathways of transformation by destroying human capital and discouraging investment (Adelaja et al., 2021).

As policy implications, effective structural change requires interventions that increase labor mobility, facilitate skill upgrading, and enhance institutional capacity (Pasieka et al., 2020). Education and vocational training investments remain the key to preparing workers for modern areas. Meanwhile, labor-market policy will have to be more flexible than protectionist, promoting labor mobility without compromising security. Transport, telecommunications, and financial infrastructure investments are also critical for facilitating diversification and connecting rural workers to the urban and digital markets. In addition, developing nations should anticipate the consequences of automation and artificial intelligence, which can transform comparative advantage and alter employment patterns (Venkat & Kirshna Kumar Balaraman, 2025).

Although global research has extensively examined structural transformation and labor-market dynamics, significant empirical gaps remain concerning fragile and aid-dependent economies. Afghanistan, characterized by a weak productive base, aid-driven growth, and a volatile labor market, has received little scholarly attention within this framework. Despite

economic and employment shifts between 2017 and 2024, the country lacks systematic, evidence-based studies that analyze how sectoral transformations have affected employment composition, productivity, and income dynamics. This research, therefore, fills a critical gap by providing an empirical examination of Afghanistan's structural transformation and labor-market evolution, offering valuable insights into how fragile economies can achieve sustainable, inclusive growth under conditions of persistent external dependency and institutional fragility.

3. DATA AND METHODOLOGY

3.1. Data

As shown in Table 1, the present paper relies on combined data gathered from various institutional and international sources to provide a solid basis for comparison. The primary sources of data are the World Bank Group to represent national accounts and sector production, the International Labor Organization (ILO) to model unemployment and labor participation (2018-2024), and CEIC Data (2024) to represent macro-labor indicators. The additional data were obtained from ACAPS (2024) on the informal economy, as well as from the National Statistics and Information Authority (NSIA, 2024), which provides accessible, recent data on the labor market and demographic distributions. Further, Farahi (2024) and Akbari (2025) conducted domestic empirical studies to capture the post-2021 forces of job loss, the reversal of structural transformation, and gender-based job inequality. The combination of these cross-verified datasets helps dampen the discrepancies in the disjointed post-shock statistical system in Afghanistan, especially in agricultural employment estimates. All indicators were computed at constant prices and for international comparisons of employment, making their analysis coherent across sources and time (2017-2024).

Table 1: Summary of Datasets and Sources Utilized in the Study

Categories	Main Indicators / Variables	Source
Macroeconomic Indicators	- *GDP (Constant Prices)* - *GDP Growth* - *Sectoral Output* - *Inflation Rate*	WDI *CEIC Data* *WDI* *CEIC Data*
labor Market and Employment	- *Employment by sector* - *Unemployment* - *Labor force participation* - *Youth NEET rate* - *Gender Employment Gap* - *Sectoral Employment Structure* - *Demographics* - *Wages*	WDI *ILO*
Informal Economy Indicators	- *Employment Rate* - *Informal Sector Share of GDP* - *Informal Employment Rates*	*NSIA* *CEIC Data*
Socioeconomic and Structural Factors	- *Job Losses* - *Gender Inequality* - *Post − 2021 Structural Changes*	*ACAPS* *Farahi, Akbar*i

3.2. Methodology

This study uses a mixed-methods analytical approach, combining quantitative trend analysis and a qualitative structural interpretation. The first step was a sectoral breakdown of GDP and employment quotas to track labor movements in agriculture, industry, and services in the pre- and post-2021 regimes. This comparative and descriptive evaluation was supplemented with a temporal analysis (2017- 2024) to quantify labor displacement, increases in unemployment, and growth in informality. At the second stage, the research applied an evidence-based interpretive model grounded in structural transformation theory, with a focus on the interplay among macro shocks, labour mobility, and institutional fragility. The analysis model presents the term "reverse structural transformation," which refers to the regression of labor in the high- and low-productivity sectors during crisis conditions. The combination of micro-level and macro-level dynamics (youth NEET rates and gendered labor outcomes) and macro-level indicators (GDP contraction, informality rates, unemployment) allows the

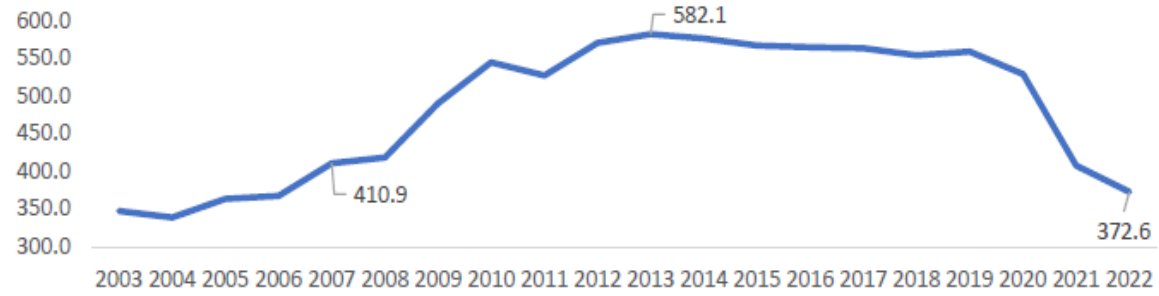
approach to understand multidimensional labor adjustment in Afghanistan following 2021. Such a mixed-methods approach is consistent with the requirements of comparative development research and enhances the explanatory power of the results for fragile and conflict-affected economies.

4. RESULTS AND DISCUSSION

4.1. Structural Fragility and Uneven Recovery

On August 15, 2021 (24 Asad 1400), the Islamic Emirate of Afghanistan took over the country. The political transition in Afghanistan was a sudden turning point that had a significant impact on the economy and society. After this date, Afghanistan could no longer use the international banking system or its foreign exchange reserves, and the central bank's assets were frozen. The drop in foreign aid and the resulting uncertainty led to a sharp decline in overall demand, which in turn triggered capital flight and a significant drop in investment confidence (World Bank Group, 2024; Afghanistan, 2023; Sahibzada et al., 2021).

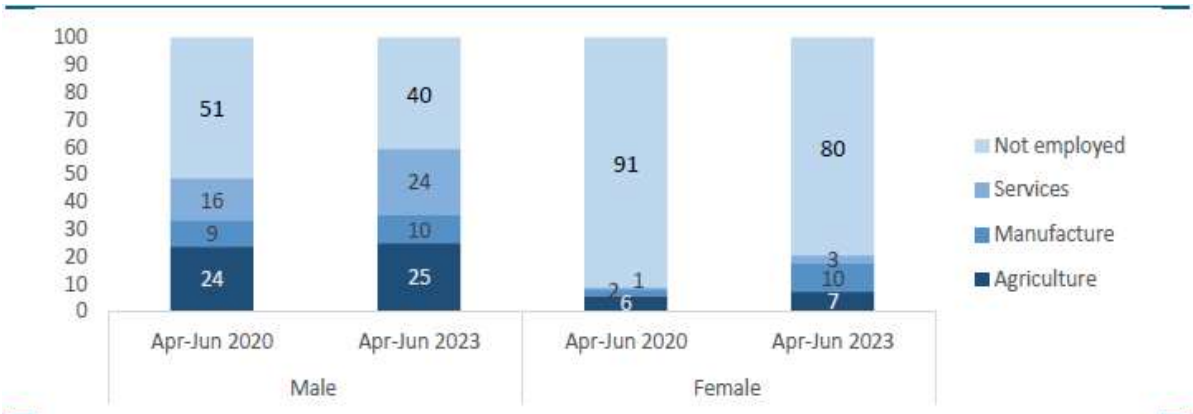
Figure 1: Long-Term Fluctuations in Afghanistan's GDP per Capita (Constant 2015 US$), 2003–2022



Source: https://databank.worldbank.org/source/world-development-indicators?locations=AF.

Figure 1 shows that Afghanistan's GDP per capita grew steadily from 2003 to 2012, reaching a high of US$582.1 in 2012, after ten years of high aid inflows and growth driven by rebuilding. But in the years that followed, the average growth rate fell below the population growth rate. In 2021, the Islamic Emirate of Afghanistan took over, and GDP per capita fell sharply to US$372.6 in 2022, its lowest level since 2008. These changes represented a 27% decrease in total production. As a result, Afghanistan's gross domestic product (GDP) immediately fell by 27.0%. This event brought the modern parts of the economy to a halt, which had previously accounted for a large share of total output. In 2016, estimates indicated that the services sector accounted for 55.9% of GDP, industry for 21.1%, and agriculture for 23.0%. The financial shock caused a drop in overall demand and a liquidity freeze, hurting the services and manufacturing sectors significantly. The impact of this economic shock forced workers into low-productivity subsistence and informal activities (Afghanistan, 2023; Sahibzada et al., 2021).

Figure 2: Sectoral Distribution of Youth Employment in Afghanistan by Gender, 2020–2023

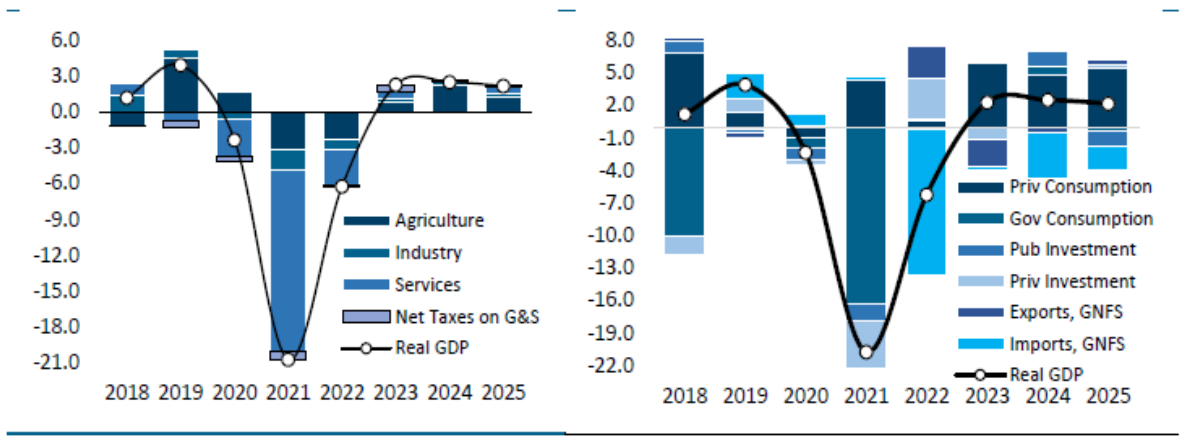


Source: World Bank. (2025a). Afghanistan development update: Unlocking youth potential for resilience and economic recovery. The World Bank Group. https://thedocs.worldbank.org/en/doc/71dd45bbb425564ee41e22e1dc2c2f57-0310012025/original/Afghanistan-Development-Update-April-2025-Final.pdf?utm.

As shown in Figure 2, from 2020 to 2023, there were significant changes in the structure of youth employment in Afghanistan, with both sectoral and gender gaps identified. The male occupation was still comparatively diversified, with the agriculture sector (25 percent), manufacturing (10 percent), and services (24 percent) being the primary ones. On the other hand, female

employment was skewed towards non-employment (although somewhat better), namely, 91% in 2020 and 80% in 2023. This transformation signifies the relegation of women to low-productivity activities, especially agriculture and informal services, primarily driven by economic need rather than the expansion of formal opportunities. In 2024, the country's GDP was predicted to increase by 2.5%, marking the second year of economic growth. This growth is primarily due to progress in the agricultural, mining, construction, and trade sectors. Nevertheless, the manufacturing and services industries still face severe problems due to an unfavorable business environment, export restrictions, and a decline in foreign aid (Group, 2025; World Bank Group, 2024).

Figure 3: Sectoral and Demand-Side Drivers of Afghanistan's Post-Shock Growth: Evidence of Uneven Recovery and Structural Fragility (2018–2025)



Source: World Bank. (2025a). Afghanistan development update: Unlocking youth potential for resilience and economic recovery. The World Bank Group. https://thedocs.worldbank.org/en/doc/71dd45bbb425564ee41e22e1dc2c2f57-0310012025/original/Afghanistan-Development-Update-April-2025-Final.pdf?utm.

Figure 3 shows how Afghanistan's growth by sector and demand changed from 2018 to 2025, indicating a weak, uneven recovery. Agriculture has become the primary driver of real GDP growth, taking in workers who have lost their jobs and helping them find new jobs. At the same time, the industrial and service sectors remain weak due to trade barriers, low investment, and institutional constraints. On the demand side, private consumption—bolstered by remittances and lower domestic prices- has driven short-term expansion, though rising imports have deepened external imbalances. The trends reflect a recovery shaped more by subsistence resilience than by structural transformation, underscoring Afghanistan's persistent dependence on agriculture and vulnerability to external and policy shocks.

Table 2: Sectoral Contributions and Economic Performance in Afghanistan

Economic Sector	Share in GDP (2016)	Estimated Performance (2024)	Analytical Note
Agriculture	23.0%	Main driver of recovery growth	Stabilization of domestic demand played a key role
Industry (including mining and construction)	21.1%	Primary source of growth (investment in infrastructure)	Revitalization of mining and infrastructure projects
Services	55.9%	Facing persistent challenges and stagnation	Contraction is due to reduced foreign aid and an unfavorable business climate.

Source: World Bank Group. (2024, April 18). The World Bank in Afghanistan. World Bank. https://www.worldbank.org/en/country/afghanistan/overview.

Table 2 provides the structure and sector performance of the Afghanistan economy and compares the pre-crisis GDP shares in 2016 with projected sectoral dynamics in 2024. According to the data, agriculture (previously accounting for 23% of GDP) is returning to the forefront of the recovery, primarily due to the stabilization of domestic demand and its role as a livelihood shock absorber following the 2021 political transition. The industrial sector, logging, and construction account for 21.1 percent of GDP, and they have emerged as the major drivers of short-term growth through investment in infrastructure, especially mining expansion and the Qosh Tepa Canal. On the other hand, the services sector, which formerly accounted for 55.9% of GDP, is still experiencing severe stagnation due to lower foreign aid, low institutional activity, and a poor business environment.

In addition, tens of thousands of high-quality Afghans have fled the country, which has become a severe blow to the human capital in the country. This brain drain compromises the economy's ability to return to a path of modern structural transformation and renders future growth reliant on low-productivity models (Rahmat, 2025).

Table 3: Sectoral Dynamics of Afghanistan's Real GDP Growth, 2020–2023

Sectors	2020	2021	2022	2023
Agriculture	4.4	-9.8	-6.6	2.1
Industry	-5.6	-12.8	-5.7	2.6
Mining & Quarrying	1.4	1.7	4.1	6.9
Manufacturing	-7.2	-10.3	-10	1.7
Food and Beverages	2.7	2.2	-9.5	1.7
Non-Food Manufacturing	-19.2	-29.4	-11.1	1.6
Electricity, Gas, and Water	-3.4	-5.8	-3	5
Construction	-6.4	-35.4	-0.8	-0.9
Service	-4.6	-30.1	-6.5	2.3
Wholesale & retail trade	-2.1	-14.8	-8.6	17.9
Transport, Repair of Vehicles & Storage	-18	-37.4	-0.4	5.9
Restaurants & hotels	-38.1	-42.8	-4.9	1.6
Post and telecommunications	1	-18.6	-4.7	1.4
Finance and Insurance	-9	-30	-6.6	1.6
Real Estate	-0.2	-12.9	-5.2	-5
Other Service	-2	-37.9	-7.7	-0.8
Plus, Import Duties	-5.4	-16.5	-3	11.4
Totals / GDP at Market Prices	-2.1	-20.7	-6.2	2.7

Source: World Bank. (2025a). Afghanistan development update: Unlocking youth potential for resilience and economic recovery. The World Bank Group. https://thedocs.worldbank.org/en/doc/71dd45bbb425564ee41e22e1dc2c2f57-0310012025/original/Afghanistan-Development-Update-April-2025-Final.pdf?utm (2019=100).

As Table 3 illustrates, the Afghan economy's performance from 2020 to 23 shows that all sectors have become highly volatile. The economy declined considerably in 2021 (-20.7%), with the steepest declines in agriculture (-9.8%) and industry (-12.8%). Small recoveries occurred in 2023, and total GDP growth was 2.7%, driven by rebounds in mining (+6.9%), utilities (+5.0%), and trade-related services (+17.9%). Nevertheless, the main sectors of the economy, such as construction and real estate, remained flat or continued to decline, indicating an uneven recovery.

Figure 4: Sectoral and Aggregate GDP Growth Trends in Afghanistan (2003–2023): A Comparative Analysis of Agriculture, Industry, and Services Before and After the Islamic Emirate Takeover

Note: The black figure represents agriculture output (% change year-on-year), the red figure shows industry growth (% change year-on-year), and the green figure depicts services growth (% change year-on-year).

Source: World Bank. (2025a). Afghanistan development update: Unlocking youth potential for resilience and economic recovery. The World Bank Group. https://thedocs.worldbank.org/en/doc/71dd45bbb425564ee41e22e1dc2c2f57-0310012025/original/Afghanistan-Development-Update-April-2025-Final.pdf?utm (2019=100)

The volatility and structural break in Afghan economic growth between 2003 and 2023, as shown in Figure 4, reveal both sectoral and aggregate trends amid significant political and economic changes. The period between 2003 and 2012 witnessed strong growth in Afghanistan, averaging about 9 percent per year, primarily driven by international aid, reconstruction funds, and security-related inflows. Nevertheless, the rate of growth slowed significantly after 2013, falling below the population growth rate, indicating the depletion of the aid-based model.

Agricultural production (black figure) exhibits sharp cyclic variation associated with climatic shocks and is highly reliant on rain-fed production. The growth of industries (red figure) follows an unstable, downward curve, constrained by poor investment, declining construction, and decreased external funding. The services sector (green figure), which was traditionally dependent on foreign aid, experienced a sustained decline after 2012 due to reduced aid and weaker urban demand.

The fact that all industries went into a synchronized breakdown in the aftermath of the political transition in August 2021 can be attributed to the deep-seated economic shock caused by the change of regime, the isolation, and the sanctions imposed by the international community. Although it has seen a slight 2.7 percent recovery in 2023, the overall GDP is still about 70 percent of what it was in 2021, indicating structural stagnation and a weak state of low-growth equilibrium in Afghanistan's post-transition economy.

4.2. Macroeconomic Dynamics of the Labor Market: Unemployment, Participation, and Demographic Pressure

Over the past few years, unemployment in Afghanistan's labor market has increased, and the labor force participation rate has changed significantly. The general unemployment rate (calculated by the ILO) rose by 13.28 per cent in 2021 to 14.1 per cent in 2022 and to 15.4 per cent in 2023. It was estimated that the unemployment rate would remain high in 2024 and 2025 (Akbari, 2025; CEICdata.com, 2024).

With the increasing unemployment, the economy of Afghanistan has been experiencing intense pressures due to high rates of poverty of up to at least half of the population and due to food insecurity, which challenges a large proportion of about 15 million people. These have led to forced labor participation, as households are forced to enlist more labor, especially youth, to sustain themselves. This influx of involvement, coupled with a shortage of employment opportunities, has compounded labor-market pressures, thereby increasing unemployment. Workers in these conditions of survival can hardly choose their employment: they are forced to accept any available job, most of which are in the informal sector (World Bank, 2024; Farahi, 2024; Afghanistan, 2023).

Figure 5: Employment Type Distribution among Afghan Youth by Gender, 2019–2023

Source: World Bank. (2025a). Afghanistan development update: Unlocking youth potential for resilience and economic recovery. The World Bank Group. https://thedocs.worldbank.org/en/doc/71dd45bbb425564ee41e22e1dc2c2f57-0310012025/original/Afghanistan-Development-Update-April-2025-Final.pdf?utm.

Figure 5 shows a significant change in the gender makeup of youth employment from 2019–20 to 2023. The percentage of men who were self-employed rose slightly (from 17% to 23%), while the rate of men who worked for wages, especially in the private sector, fell (from 45% to 29%). For young women, the structural change is even more apparent: unpaid family work went from 54% to 30%, and self-employment went from 2% to 49%. This rise is due to a shift toward low-productivity activities done at home, such as handicrafts and small businesses, rather than more formal entrepreneurship.

4.3. Youth Unemployment

One of the most significant problems in Afghanistan's job market is that young people can't find work. In 2021, 52.7 percent of young people were NEET (not in employment, education, or training). This unemployment rate is much higher than the regional and income-group averages. The World Bank (2025) reports that 16.4% of young people aged 15 to 24 are unemployed, underscoring the vulnerability of this group.

Table 4: Key Labor Market indicators of Afghanistan: Trends from 2018 to 2023

Indicator	2018	2021	2022	2023
Overall unemployment rate (ILO estimation)	8.4%	13.28%	14.1%	15.4%
Youth unemployment rate (ages 15–24)	17.7%	16.4%	N/A	N/A
Youth NEET rate (%)	N/A	52.7%	N/A	N/A

Source: Afghanistan, S. (2023). Outlook. https://www.undp.org/sites/g/files/zskgke326/files/2023-04/SEO%202023-Executive%20Summary_Farsi.pdf. CEICdata.com. (2024). Afghanistan AF: Unemployment: Modeled ILO Estimate: % of Total Labour Force. Ceicdata.com; CEICdata.com. https://www.ceicdata.com/en/afghanistan/employment-and-unemployment/af-unemployment-modeled-ilo-estimate--of-total-labour-force.

Table 4 presents the significant indicators of labor markets in Afghanistan between 2018 and 2023, along with the overall trend of an increasing employment crisis during and after the 2021 political transition. Economic decline, institutional breakdown, and decreased investment led to an overall rise in the unemployment rate from 8.4% in 2018 to 15.4% in 2023. Youth unemployment remained at 16.4 percent in 2021, and the number of young people not in education, employment, or training (NEET) rose to 52.7 percent, indicating that the majority of the Afghan population's largest cohort is not connected to the labor market.

4.4. Return of Migration Pressure and Regional Disruption

Return migration dynamics have emerged as a defining factor in shaping the post-2021 process of labor-market adaptation and structural transformation in Afghanistan. The massive repatriation of Afghan refugees, especially those of Iran and Pakistan, over the last few years has exacerbated the domestic labor-market strains and revealed some deep structural vulnerability in the efficiency of employment absorption and institutional capacity. These return flows, which have already reached the millions since 2016 and rapidly increased after 2021, have overwhelmed the already weak humanitarian infrastructure in Afghanistan and burdened the country with an unusual burden on its limited productive areas (Kamminga & Zaki, 2018; Farahi, 2024).

Weaknesses in Afghanistan's infrastructure have been accompanied by a shrinkage in formal employment positions and a surge in returning workers, creating an acute imbalance between labor demand and supply. The informality and low productivity that have already defined the labor market in Afghanistan lack the mechanisms to absorb such returnees into the wage sector. Accordingly, labor repositioning has manifested as a retrogressive adjustment, forcing a large number of employees into subsistence farming, day-to-day wage labor, and informal urban services. Workers moving from the service and industrial sectors to the agricultural industry is an ideal example of reverse structural change, where shocks) external and internal) hasten the relocation of labor back into low-productivity sectors rather than increasing upward mobility. Its consequences are far-reaching: rather than contributing to the diversification of the country and the expansion of productivity, return migration has strengthened Afghanistan's reliance on agriculture and informal survival (World Bank, 2024; Loschmann and Marchand, 2020).

In the regional sense, the deportation and voluntary repatriation of the Afghan workers have had disproportionate labor-market impacts on the economies of neighboring countries. The decrease in the supply of Afghan migrant labor in Iran has caused high wage inflation, doubling the income of unskilled workers and raising skilled labor wages to up to 2.5 times (Afghan Paper, 2025). This wage increase highlights the structural reliance of major industries in Iran, such as construction, agriculture, and low-end services, on the Afghan labor force. The phenomenon reveals a localized labor interdependence that has developed over decades, in which Afghanistan has both served as a source and a recipient of labor mobility shocks. Dislocation of this system has therefore had a twofold impact: shortage of labor and increased cost in the host nations, and unemployment and underemployment in Afghanistan.

The lack of institutional coordination between migration management and domestic labor policy has hindered the reintegration of returnees in Afghanistan, not to mention the skill mismatches. Numerous returning migrant workers have specific sector experience abroad, especially in construction and manufacturing. However, the local demand for these skills is low because industrialization and urban investment are stagnant. The absence of vocational requalification initiatives or reemployment assistance has fueled the depreciation of this human capital to the extent that it counterbalances the possible productivity spillovers that a process of returning migration would have produced (Garrote Sanchez, 2018; Farahi, 2024).

4.5. Sectoral Transformation of Employment: Reverse Shift and Data Inconsistencies

The labor market in Afghanistan before the 2021 political shock (government transition) followed the general trend of developing economies, with the agricultural sector as the largest employer, accounting for 45.7 percent of total employment —roughly 2.6 million jobs. Social and public services (16.7) followed the retail and hospitality sector (10.8). This kind of composition in the industry leads to the conclusion that the country depends heavily on low-productivity and informal jobs before the institutional shocks of 2021 (Farahi, 2024).

Nonetheless, recent data on employment show significant inconsistencies across employment sources. Whereas some datasets indicate 44.3% in agricultural employment in 2017 and 45.7% in 2020, a comparatively newer source estimates it at 78%. This dramatic difference suggests the loss of uniform definitions of employment and the large-scale movement of labor to subsistence and self-employment actions in the informal sector of agriculture. This divergence highlights the structural shocks that have forced the labor force out of productive areas into survival-based livelihoods (Akbari, 2025; Farahi, 2024).

This sharp increase in reliance on agriculture is a strong indication of a reversal of structural change, or the process by which labor moves out of more productive sectors into less productive activities as a kind of shock absorber for household demand in an unstable economy. In that regard, the displaced and unemployed labor force has found new shelter in agriculture and in subsistence self-employment. This shift from the tertiary sector to the primary sector is not only a reversal of general economic productivity but also a representation of the failure of the formal labor market to create sufficient and sustainable employment opportunities (Sen, 2019; Boone and Wilse-Samson, 2021).

The financial and institutional crises induced by the economic and institutional shocks that followed the 2021 political transition led to a mass breakdown of formal employment in Afghanistan. It was estimated that around 2,640,454 jobs had been lost in 2021-2023. The worst shrinkage was in the services sector, which had previously been the most significant contributor to GDP. The exit of international organizations, the drastic reduction in external assistance, and the curtailing of public sector operations drove it. This slump has severely weakened the sector's ability to retain a skilled workforce, thereby limiting overall job creation and accelerating the skilled exodus. In turn, such developments have exacerbated structural imbalances and undermined the prospects for an inclusive labor market recovery (Group, 2025; Farahi, 2024).

Unlike the disintegration of the formal labor market, the informal economy in Afghanistan has grown rapidly. According to estimates published as of July 2024, informal sector activities account for 73.6 percent of the country's total GDP, almost twice the rate in neighbouring Pakistan (35.7 percent). This growth has been mainly due to internal displacement, the shrinking of formal jobs, and increased reliance on low-barrier-to-entry jobs, such as seasonal work, petty trade, and self-employment. The dominance of the informal sector constitutes a significant policy challenge, as it impedes the government's ability to raise domestic revenue and enforce labor policies, such as social protection and minimum wage policies. This course indicates a shift toward chronic formalization, with long-term consequences for productivity, fiscal sustainability, and an inclusive economic recovery (Group, 2025; ACAPS, 2024).

Table 5: Sectoral Employment Structure and Post-2021 Labor Market Transformation in Afghanistan

Sector/Category	Total employment (IELS2020)	Share in Employment (IELS 2020)	Job loss rate (2021–2023)	Structural Transformation Status
Agriculture	2.6 million	45.7%	N/A	Increased dependency after the 2021 shock (up to 78%)
Industry	N/A	18.1% (2017)	N/A	Recession in industries except construction services
Services	N/A	37.6% (2017)	N/A	Severe contraction of the formal sector employment
Total estimated job losses	N/A	N/A	2.64 million	Sharp decline in formal sector employment
The proportion of the informal economy of GDP (2024)	N/A	N/A	N/A	73.6% (2024)

Source: ACAPS. (2024). ACAPS ANALYSIS HUB. https://www.acaps.org/fileadmin/Data_Product/Main_media/20240730_ACAPS_Afghanistan-Mapping_informal_economies_in_informal_settlements.pdf; Akbari, S. (2025, May 3). Afghanistan's labor market: Unemployment status, employment, and prospects. IRAF – Afghanistan and Iran News. Retrieved from https://iraf.ir/61191 ; Farahi, A. (2024). Assessing key trends in the Afghan economy three years into the Taliban rule: A policy paper.Princeton School of Public and International Affairs. Retrieved from https://spia.princeton.edu/sites/default/files/2024-11/Farahi2024.pdf.

Table 5 provides an overview of the structural reorganization of the Afghan labor market following the 2021 political and economic shock. This information shows a clear trend of reverse structural change, as labor moved back towards low-productivity agriculture and the share of employment rose to almost 78 per cent in 2024, compared to 45.7 per cent in 2020. Meanwhile, industry shrank, unless there was some recalcitrance in construction. The services sector, which had been a major employer, was hit hardest as international bodies pulled out and aid-based operations collapsed. The fact that about 2.64 million formal jobs were lost between 2021 and 2023 indicates the extent of the economic disruption. Meanwhile, the informal sector had grown to 73.6 percent of GDP, reflecting the influence of unregulated, subsistence-based employment. Overall, the table shows that the labor market in Afghanistan has reverted to informality and subsistence employment, compromising productivity growth and the stability of the labor market institutions.

4.6. Capacity Building through Emerging and Infrastructure Sectors

Despite the broader economic decline, other industries such as mining and construction have been singled out in 2024 as possible sources of GDP growth. This trend is primarily fuelled by the introduction of large national and regional-level infrastructure projects that will incrementally restart the economy. For example, the Mes Aynak copper project, when fully realized, is expected to create about 40,000 direct and indirect employment opportunities and to provide the government with an estimated USD 350 million in tax revenue each year. When well-coordinated, these initiatives would become important capacity-building levers, economic diversification levers, and could provide a means of reinstating formal jobs in Afghanistan (Group, 2025; World Bank Group, 2024; Gouhari, 2014).

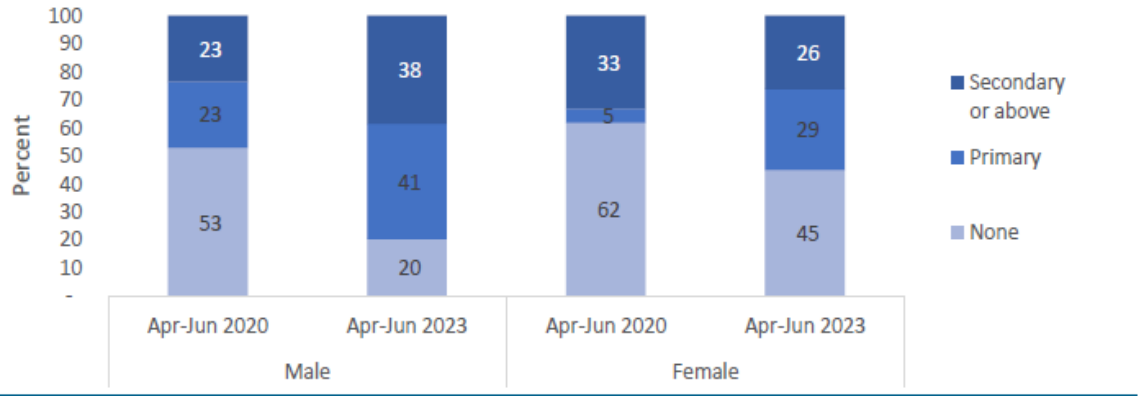
The massive infrastructure projects, including the Qosh Tepa Canal (285 km long), that will be used to re-use about 550,000 hectares of desert lands under farming and the development of major highways (e.g., the Salang corridor) and regional connectivity projects (e.g. the Khaf-Herat railway and TAPI gas pipeline) are central to the facilitation of trade and the economic integration of the region. In addition to facilitating trade, these projects also create large numbers of jobs in construction, transportation, and agriculture, thereby boosting dynamism and reducing unemployment in Afghanistan (Hussaini, 2024; Contemporary Economics, 2024).

Nevertheless, this type of growth, which focuses on infrastructure and extractive sectors, tends to lead to low sustainability and temporary jobs unless it is supplemented by broader private-sector participation and modern services. The high dependence on these industries exposes the economy to changes in commodity prices on the world market, climate changes threatening the agriculture sector, and political instability that makes it challenging to attract stable foreign direct investment in the mining sector. Therefore, in the absence of structural diversification and more robust interpectoral connections, such a growth trajectory will not be translated into sustainable and inclusive economic change (Farahi, 2024).

4.7. Structural Inequalities: The Youth and Gender Employment Crisis

The result of the 2021 institutional shock has been the severe gender division of the labor market in Afghanistan, one of the most notable consequences. The massive deprivation of women in terms of their economic and social involvement in life has resulted in an unequal loss of jobs among women employees. This trend has not only led to a tremendous loss of women's human capital and their role in national production but also significantly compromised the economy's ability to achieve inclusive, sustainable, and profitable productivity (Akbari, 2025; World Bank Group, 2024).

Figure 6: Educational Attainment of Unemployed Youth (Aged 15–29) by Gender in Afghanistan, 2020–2023



Source: World Bank. (2025a). Afghanistan development update: Unlocking youth potential for resilience and economic recovery. The World Bank Group. https://thedocs.worldbank.org/en/doc/71dd45bbb425564ee41e22e1dc2c2f57-0310012025/original/Afghanistan-Development-Update-April-2025-Final.pdf?utm.

Figure 6 demonstrates inconsistent changes in the educational profile of unemployed Afghan youth between 2020 and 2023. Among males, the patterns show a tangible educational boost: the number of people with no education is dropping significantly (53 percent to 20 percent), whereas the proportion with secondary education or more is growing significantly (23 percent to 38 percent). In the case of women, it is a more subtle image. Even though the proportion of women with no schooling was significantly lower (it decreased by half to 45), this did not imply a higher proportion of highly educated women in the unemployed population. Instead, the rate of women with secondary or higher education decreased to 26% from 33%. These statistics show that the educational process for young women has been mostly limited to the primary level, and they are not enjoying the same opportunities for higher education and the avenues to higher education that lead to employment as their male counterparts.

It was also seen that in the years 2021-2023, most women lost their jobs, with 67 percent of their careers at risk, compared to 42 percent for men. That is, women had 1.6 times the chance of being laid off than men, and as a result, approximately 641,028 job opportunities were lost among women. This extreme constriction has effectively barred half of the potential labor force in Afghanistan from the formal economy, with a devastating impact on the country's human capital base and family-level economic capacity (Farahi, 2024; Afghanistan, 2023). Usually, the problem of female unemployment in Afghanistan is significantly more significant than that of men, which is primarily explained by the institutional barriers, the absence of social support, and the inability to receive vocational education. In 2021, young women had an unemployment rate of 21.4%, indicating that many were locked out of the formal labor market (World Bank, 2025).

Gender disparities are also further highlighted by the sectoral distribution of youth employment. Although young men show a more balanced representation across industry (30%) and services (29%), young women remain highly concentrated in subsistence-based sectors. Some 66 percent of women employed in agriculture work in agriculture, versus 41 percent of men (World Bank, 2024). The fact that women are highly concentrated in the agricultural sector and have very little representation in the industry and services (only 17% of farming, 17% of industry, and 17% of services) portrays an extreme structural chasm. The shift to industry and services as the primary drivers of productivity growth has been a significant challenge for women, leaving them in enterprises operating outside formal regulation and with the lowest incomes and productivity (World Bank, 2024)

5. CONCLUSION AND RECOMMENDATIONS

The empirical results show that Afghanistan's structural transformation has taken a backward step since 2021, characterized by the collapse of formal employment and a rapid increase in informality. The economy shrank by nearly 27% immediately after the political shift, resulting in the loss of about 2.6 million jobs. Labor shifted mainly toward subsistence farming, with employment in this sector rising to nearly 78%, indicating a reversal of structural development. The informal sector now makes up around 74% of total GDP, highlighting the dominance of low-productivity, unregulated activities. At the same time, gender exclusion worsened: between 2021 and 2023, women lost nearly two-thirds of their jobs, reducing their participation in the formal economy to very low levels. Youth unemployment and NEET rates remain alarmingly high, pointing to serious structural issues. Although some signs of recovery appear in agriculture, mining, and construction, these sectors lack the productivity connections and institutional support needed for lasting growth. Overall, the findings suggest that Afghanistan's labor market is stuck in a cycle of increasing informality, demographic pressures, and skill loss—conditions that block human

capital development and long-term economic resilience. Sustainable recovery, therefore, requires a coordinated policy approach focused on diversification, gender inclusion, and strengthening institutions.

Building on the findings, this study proposes a set of evidence-based policy directions to reduce labor-market frictions and initiate a sustainable structural transformation pathway. First, gender labor market stabilization and social investment are essential. Policy barriers that restrict women's participation should be removed, and targeted incentives for women's entrepreneurship and equal access to vocational training, especially in small-scale manufacturing and agribusiness, must be prioritized to prevent overconcentration in subsistence agriculture, where 66% of employed young women currently work. Second, revitalizing financial infrastructure for the private sector is crucial. Reforms in the banking system, for example, tackling non-performing loans (NPLs), regaining liquidity, and strengthening regulatory oversight, are necessary to attract both foreign direct investment (FDI) and domestic capital into productive industries and services. Third, promoting quality investment and value chain integration is needed to move beyond short-term infrastructure projects. Economic policy should focus on developing value-added sectors, such as textiles and food processing, with high labor-absorption potential. Multi-year partnerships with organizations like the ILO could ensure employment-centered growth strategies. Finally, enhancing rural labor absorption capacity through large-scale agricultural and infrastructure initiatives such as the Qosh Tepa Canal, which could generate about 200,000 jobs, should form a key pillar of transformation policy. These initiatives must be coupled with targeted training programs that equip rural workers with skills relevant to mechanized agriculture and construction. Together, these strategies can gradually shift Afghanistan's labor market from survival-oriented informality toward productive, inclusive, and resilient economic development.

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