BFIN
Banking Finance & Insurance Institute of Nepal

ISSN: 2795-1715

JOURNAL OF

BANKING, FINANCE & INSURANCE

VOLUME 4, YEAR 5, AUGUST 2023

Banking Finance & Insurance
Institute of Nepal Ltd. (BFIN)

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On the auspicious occasion of ***5th Anniversary of BFIN,***
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MESSAGE

I express my heartfelt congratulations and best wishes to the Banking Finance and Insurance Institute of Nepal (BFIN) on the release of "Journal of Banking, Finance, and Insurance," Volume IV on the joyous occasion of its fifth anniversary.

To my knowledge, Banking Finance and Insurance Institute of Nepal has been able to enlighten ambitious professionals working in the banking, finance, and insurance sectors for a number of years by organizing conferences,webinars, seminars and delivering needful trainings. Because of this, a skilled human resource has emerged that is attracted to the demands and changes of Universal Digital Financial Systems in addition to having a solid understanding of banking and finance fundamentals. I am sure that the entire situation has helped to advance the nation's financial sector's capacity development.

This organization's fifth anniversary publication of the Journal of Banking, Finance, and Insurance will undoubtedly mark a turning point in the field of research education for the needed professionals and stakeholders.

With these, congratulations to BFIN on its fifth anniversary! I thus wish BFIN continued success and send my best wishes for a promising future.

Neelam.

Dr. Neelam Dhungana Timsina
June 25, 2023

Deputy Governor

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MESSAGE

I express my heartiest congratulations to the Banking, Finance and Insurance Institute of Nepal on the occasion of its fifth anniversary and for publishing Volume IV of "Journal of Banking, Finance and Insurance". This journal involves the compilation of various articles of the institute which supports it in meeting its objectives for knowledge delivery to the employees of the Nepalese financial sector.

In this regard, I would express my best wishes for the continuation of these efforts to develop the capacity of domestic financial system.

I believe that the matters involved in this Journal will be helpful for all the stakeholders to build up their skills and enhance the level of knowledge that will act as a catalyst and contribute for rich discussion.

Finally, I express my best wishes for the continuous progress of the institution.

(Bam Bahadur Mishra)

Date : 13th July, 2023

MESSAGE

I am happy to learn that "Journal of Banking Finance and Insurance" Volume IV is going to be published soon by the Banking Finance & Insurance Institute of Nepal (BFIN) as a part of the celebration of the fifth anniversary of the Institute. Let me congratulate all the professionals, including their leader Dr. Binod Atreya for remaining engaged in this journey of financial knowledge creation and sharing the same with a broader audience by publishing the journal. I find this journal exceptionally well done, providing helpful knowledge products to professionals, particularly the youngest one. I feel privileged to have been associated with this initiative since its inception. I am happy that the journal has been regularly published despite many challenges arising from the global economic crisis originating from the pandemic and the Russian-Ukraine war. The journal has come of an age covering multifaceted aspects of financial services and related human capital development issues promoted by BFIN. Its range of coverage of the issues has been very robust, including leadership challenges, skills development, mental health challenges created by the pandemic, and financial transparency through better audit and financial reporting. I hope it will also focus on digital banking processes that are currently gaining steam. I have been privileged to remain engaged with these professionals in taking the knowledge management journey forward.

I am also happy that they have been publishing the journal reflecting the objectives for which BFIN was created. The young leaders under the strong mentorship of Dr. Atreya have indeed achieved so much within such a short period. They all deserve the highest appreciation from the regulators and other stakeholders.

I wish both BFIN and the journal continued success.

My profound blessings to all of them.

ATIUR RAHMAN
Honorary Professor, Department of Development Studies, Dhaka University.
Chairperson, Unnayan Shamannay
Former Governor, Bangladesh Bank.

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MEMBER, ASSOCIATION OF INDIAN UNIVERSITIES (AIU)

Date : 15th June 2023

MESSAGE

It gives me immense pleasure that the Banking Finance and Insurance institute of Nepal is coming out with Volume IV "**Journal of Banking Finance and Insurance".**

We have long association with BFIN Nepal and we are continuously working together to impart best possible training to Banking and Insurance Sector officers both in Nepal and India.

We wish great success to Banking Finance and Insurance of Nepal.

Anand V. Shukla IPS(Retd.)
Pro- Vice Chancellor
Mewar University Gangrar
Chittorgarh (India)

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MESSAGE

On behalf of the APRACA Secretariat and its member institutions, we would like to congratulate BFIN on this occasion of celebrating its 5th anniversary. It was a wonderful journey of BFIN during the last four years to support the financial institutions in building their capacity through national and international programme. With the dedication of BFIN staff members and providing diverse experiences in modern innovations in the sector to all your clients, which potentially translated to achieve the development objectives.

The partnership of APRACA and BFIN is to go a long way as there are convergence in objectives of both the organization. We sincerely hope that your active role and creativity will bring BFIN to a new height with success in the following years.

Happy anniversary once again and thank you very much for being the partner in development. We look forward to more success and achievements of BFIN in the coming days.

With kind regards,

PRASUN KUMAR DAS
Secretary General
28 June 2023

MCDGI
Maldives Capacity Development and Governance Institute

MESSAGE

On behalf of the Maldives Capacity Development and Governance Institute (MCDGI) , we extend our warmest congratulations to the Banking Finance and Insurance Institute of Nepal (BFIN) on their 5th Anniversary, 14th August 2023. We also send our heartiest felicitations on the 5th Volume of the BFIN Magazine, a leading reference journal in Nepal financial sector.

As your MOU partner, we recognize the value of your service to the local industry and the larger society. We believe BFIN is a national champion in the banking and finance and Insurance sector of Nepal.

I would like to wish BFIN and our friends at BFIN a very blessed and exceptional year ahead and extend our sincere gratitude for making us part of your very inspiring journey.

Once again, our congratulations to the BFIN team for the successful milestones you are achieving. May your institution reach great heights in the years to come.

Best regards,

MS. FATHIMATH SHAFEEGA
Founder
Maldives Capacity Development
and Governance Institute (MCDGI)

Institute for Inclusive Finance and Development (InM)

MESSAGE

On behalf of the Institute for Inclusive Finance and Development (InM) Bangladesh, I express my deep appreciation and warm congratulations to the Banking Finance and Insurance Institute of Nepal Ltd (BFIN) on the occasion of its 5th anniversary in 2023 and publishing the fourth volume of its prestigious journal, 'Journal of Banking Finance and Insurance'.

It is heartening to note that within a short span of time, BFIN has emerged as a pioneering institution for nurturing competent professionals in the banking, finance, insurance, and capital markets in Nepal through providing integrated and comprehensive services in quality education, training, counseling, consultancy, and continuing professional development programmes. In fact, BFIN has emerged as a successful institution in South Asia for the financial sector through facilitating leadership and management skills development and adopting modern technologies in this era of globalisation.

The prudent leadership by Mr. Binod Atreya along with the well qualified BFIN Management Team deserves deep appreciation which has progressively enhanced the brand image of BFIN not only in Nepal but also in South Asia and beyond.

I congratulate BFIN for achieving rapid progress especially for going beyond the national boundaries and developing mutual collaboration with financial sector think tanks in South Asia and other regions. InM has developed mutually beneficial collaboration with BFIN in research and training over the years and would like to deepen the cooperation in the coming years.

Let me once again convey my deepest congratulations to BFIN on its 5th anniversary and bringing out its useful journal on contemporary financial sector challenges for the developing world.

DR. MUSTAFA K. MUJERI

Executive Director
Institute for Inclusive Finance and Development (InM)
Dhaka, Bangladesh

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MESSAGE

It gives me immense pride to announce the release of "Journal of Banking Finance and Insurance, Volume IV" registered under ISSN: 2795 -1715. We aim to create a platform for exchanging ideas, knowledge-sharing, and collaboration between industry professionals, academics, and researchers. We hope that this publication will contribute to the advancement of the financial and banking sectors in Nepal and support the development of a more robust and sustainable financial ecosystem.

Over the past years, BFIN has proved to be one of the leading professional organizations in Nepal that provides training and capacity development programs to individuals working in the banking, finance, and insurance sectors. By offering various courses and programs in areas such as banking, accounting, finance, insurance, risk management, and other related fields, the institute has accomplished its aim to enhance the knowledge and skills of professionals working in these sectors and has helped them stay up-to-date with the latest industry trends and practices. BFIN has successfully conducted various training programs and events providing to the needs of professionals in the banking, finance, and insurance sectors. It has conducted training programs with over 175 diverse titles. It has conducted over 365 national and international programs, along with 9 national conferences, and has trained over 14,000 participants. BFIN has offered training opportunities to more than 265 institutions. BFIN's coverage spans 7 provinces of Nepal, with international exposure in 10 countries and 17 cities. Additionally, it has successfully conducted 15+ online webinars.

BFIN has gone above and beyond in its training efforts, extending its reach to various districts including rural areas in Nepal such as Dadeldhura, Charikot, and Lamjung, and focuses on contributing to their professional development. It has also extended its training programs beyond Nepal's borders, conducting international programs in various locations. These programs have been held in Australia, Philippines, Thailand, Sri Lanka, Hong Kong, UAE, Bangladesh, Maldives, and India, and is looking forward to expanding its reach to Europe and America. BFIN has signed a Memorandum of understanding (MOUs) with 28 global institutions. These MOUs aim to foster collaboration and partnerships, facilitate knowledge sharing and capacity building, expand market presence, and enhance international relations. Through these MOUs, BFIN can leverage resources, exchange expertise, and work towards common goals in the banking, finance, and insurance sectors.

I would like to extend our heartfelt gratitude to our esteemed associates, including banks and financial institutions, partners, and supporters. Your unwavering support, collaboration, and shared expertise have been instrumental in our mission to provide exceptional service. We are deeply grateful for your contributions, including resources and guidance, which have played a crucial role in shaping the success of our programs. Your commitment to excellence and professionalism inspires us, and we look forward to continuing our collaborative efforts with banks and institutions to contribute to the growth and advancement of Nepal's financial industry. Thank you for being invaluable partners and supporters on this remarkable journey. Together, we will continue to make a positive difference in the industry and contribute to the growth and development of Nepal's financial landscape.

This journal is a testament to our commitment to advancing knowledge, promoting research, and supporting professional development in the banking, finance, and insurance sectors in Nepal. It features a range of articles, and research papers, authored by industry experts, scholars, and practitioners. These contributions cover a diverse range of topics related to banking, finance, and insurance, including women's career development in the banking sector, the risk of hyperinflation, the potential growth of NPL in the banking sector, and many more. Each article has been carefully reviewed by a panel of experts, ensuring the highest standards of quality and accuracy. We sincerely hope that this journal will be helpful in enlightening and empowering our readers. Your positive feedback and constructive comments would be greatly appreciated as we continue to strive for excellence in our endeavors.

Lastly, I extend my heartfelt appreciation to the editorial board, staff members of BFIN, and regulatory bodies. The editorial board's dedication has ensured the quality of our journal, while the hardworking staff has been instrumental in delivering exceptional services. Lastly, our esteemed board members deserve special thanks for their strategic insights and firm commitment. Together, these individuals and entities have played a pivotal role in BFIN's growth and success. I am truly grateful for your continued support which has been paramount to our achievements.

DR. BINOD ATREYA
Managing Director, BFIN

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To contribute towards the betterment of the society

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KEY FINANCIAL HIGHLIGHTS (IN NRS.)

Key Indicators	Q2 of FY 2079/80
Paid Up Capital (in NRs.)	4,545,572,100.00
Total Reserves (in NRs.)	2,583,876,638.48
Life Fund (in NRs.)	23,062,981,959.02
Total Investments (in NRs.)	25,869,421,752.8
Gross Premium (in NRs.)	2,674,616,610.21
Total Claims (in NRs.)	920,222,482.55
Net Profit (in NRs.)	284,194,283.59
Earnings Per Share (EPS) (in NRs.)	12.50
Net worth (in NRs.)	7,485,005,823.87
Policyholder Bonus Rate Range (in NRs.)	40-90
Last 180 day's average Share Price (in NRs.)	464.06

AWARDS AND RECOGNITION

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Number of Employees	639
Number of Branches	181
Number of Policy Holders	360,507
Number of Agents	50,401


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Annual Journal

August 2023

POTENTIAL GROWTH OF NON-PERFORMING LOAN:
Causes and Challenges

RAJAN BIKRAM THAPA[1]
DIRECTOR
Nepal Rastra Bank

Rajan Bikram Thapa is pursuing PhD degree from Singhaniya University, Rajsthan, India. He is currently working as Director at Nepal Rastra Bank, Financial Institutions Supervision Department with 26 years long experience in banking. He is MPhil in Management. He has also done Masters in Economics and law graduate (L.L.B.) He has imparted lectures to postgraduate and graduate students of management and economics for over one decade. He has written books "Principles and Practices of Nepalese Banking" and "Principle of Management" associated with different scholars. Further, Mr. Thapa has published many articles on banking and economic issues.

Abstract

Non-performing loan possesses perhaps the greatest risk to banks and financial institutions (BFIs) as it is at the very heart of the BFI's revenue sources and profits. If it is not identified and managed timely, the financial system is more prone to systemic risk. In the context of Nepalese banking sector, the data shows that the level of non-performing loans is insignificant and seems very low over the years. However, it is always questionable and doubtful if this figure really matches with the true picture of the credit market or not. The Nepalese credit market is dependent on the price of assets which is taken as a collateral or security for the loan. The quality of credit relies on the change of price and marketability of those collateralized assets rather than cash flow and real earning of the borrower and project. Due to tight liquidity conditions in the banking sector, high bank interest rates, adverse business cycle, expansion of credit in banking at the time of the Covid transmission and weak performance of credit recovery at present indicates possibilities of increasing NPL in the banking sector. This study also shows that the magnitude of credit risk is increasing due to the dependence on mortgage, credit investment in unproductive sectors and unpredictable external environment. Deteriorated credit quality in the financial system leads to financial crises which often extend to the real area of the economy as the extent and nature of banking crises vary considerably.

KEYWORDS: **Non Performing Loan (NPL), Credit Risk, Provisioning, Banking sector**

Background

Banks and banking loans are the most important sources of funds for the economic development in the nation. Consequently, the quality of the banking loan portfolio and percentage of the non-performing loan (NPL) is a key prerequisite for the economic success and also for the banks' profitability and liquidity. The quality of the loan is classified into two categories, Performing and non-performing loans (NPL). In general, the loans that are being paid regularly are called performing loans, and loans that cannot be paid according to prescribed conditions for any reason are called NPL. There is no standard form and uniform practice to define non-performing loans globally. Variation may exist in terms of the regulation, classification system, scope, and contents as per country. The International Monetary Fund (IMF) and European Central Bank have presented a procedure for classifying good loans and non-performing loans based on exceeding the repayment period provided to the borrower and project. According to European Central Bank (2017), the first phase in the formulation and execution of a fit-for-purpose non-performing loan, NPL, strategy is for the bank to complete an assessment of the following elements:

1. *MrThapa is pursuing a PhD at Singhaniya University Raj, India. He is continuing his study in the management faculty. Email: rbthapa1@hotmail.com*

1. the internal capabilities to effectively manage, i.e. maximize recoveries, and reduce NPLs over a defined time horizon;
2. the external conditions and operating environment; and
3. the capital implications of the NPL strategy.

According to the Unified Directives -2021/22 issued by the Nepal Rastra Bank, the central bank of Nepal, all loans other than pass loans and watch list categories are included under non-performing loans including restructured and bad loans for any reason beyond 90 days (NRB, 2022). The success of banks depends upon methods and strong credit policy for managing Non-Performing Assets (NPA) and keeping them within tolerance level. Dhal (2003) has emphasized that management of non-performing assets (NPA) in banks remains an area of concern, particularly, due to the likelihood of deterioration in the quality of restructured advances. NPL of financial institutions has been considered as a significant issue in the context of Nepal for the last few decades. The immediate consequence of the large amount of NPLs in the banking system is bank failure. Many researches on the cause of bank failures find that asset quality is a statistically significant predictor of insolvency and that failing banking institutions always have high levels of non-performing loans prior to failure. The deteriorating credit quality of borrowers poses risks to the financial sector. The financial system faces a dual challenge which is about how to sustain the flow of financing to the real economy and how to preserve financial resilience. Thus, financial stability has been a key challenge for the central banks around the globe after the insurgence of the COVID-19 pandemic. Rapid credit growth, which was associated with lower credit standards contributed to higher loan losses in the Nepalese banking sector.

There is a growing tendency to provide loans based on the value and marketability of the mortgaged property rather than actual income and future cash flow of the proposed project. As of the latest published report by NRB, BFIs have lent 74.75 percent of their total loans against collateral of fixed assets in mid-July 2021. Commercial banks have lent 73.75 percent (NRB, 2022). NPLs are affected by both bank specific factors and macroeconomic factors. Exploring the determinants of ex-post credit risk is an issue of substantial importance for regulatory authorities concerned with financial stability and for banks' management. The ex-post credit risk takes the form of NPL. Studies show that the failure of banks in Nepal was also the result of the high non-performing assets, lending without differentiating markets, products and borrowers' creditworthiness and excessive loan exposure to real estate (Sapkota, 2011). If NPAs are not properly managed, it can cause financial and economic degradation which in turn signals an adverse investment climate. Therefore, the study attempts to examine the potential causes of increasing non-performing loans and the possible challenges created by NPL in the Nepalese banking sector.

Objectives and Methodology

The aim of this study is to explore possible causes of increasing non-performing loans by describing the present scenario of NPL in the Nepalese banking sector. The study also analyzes the potential impact of increasing NPL in the Nepalese financial system. This study basically focuses on various studies and researches conducted in different countries which explain the reasons for increasing credit risk and non-performing loan, having potential impact in financial system. The study employs data and information collected from the secondary sources viz. central bank's publications, academic journals, corporate journals, websites of regulating agencies and periodicals.

Literature Review

The global banking industry has experienced a number of ups and downs. The quality of the bank's assets also changes as a result of changes in the business cycle, monetary and financial policy, information technology, and the difference between supply and demand. Examples include the 1997 and 2008 Asian financial crises, the 2008 to 2010 global financial crisis brought by the US subprime mortgage crisis, and the most recent example, the tragedy of the Corona outbreak and its effects on the financial industry. The non-performing loan ratio has dramatically increased in the majority of the nations, according to the most recent analysis by the World Bank Group on the credit quality of banks and financial institutions in the East Asia and Pacific area. It appears that non-performing loans from nations like the Philippines, Singapore, and Thailand have increased drastically throughout that time, despite the fact that China's non-performing loan percentage has usually increased. The percentage of gross non-performing loans in India as of March 2021 is 7.3%, according to the most recent information available.

The researches and the studies related to asset quality and overall credit risk management in the banking sector have been conducted in different countries and territories. Causes of deteriorating asset quality and increasing NPL are dependent on country and market specific factors. The international trends, best practices, and fundamentals of credit management help to understand and to predict the potentiality of increase in NPL in Nepalese context as well. Following are the major findings on causes and challenges of NPLs in the banking sectors.

- According to Nepal Rastra Bank, Financial Stability Report (2021), IMF suggested that policymakers are confronted with a challenging trade-off: maintaining near-term support for the global economy while preventing unintended consequences & the medium-term financial stability risks. At the same time, there is increased financial risk-taking and rising fragilities in the nonbank financial institutions sector. The report has also warned that, if left unchecked, these vulnerabilities may evolve into structural legacy problems, putting medium-term growth at risk and testing the resilience of the global financial system.

- Anic and Jeremic (2018) has mentioned that, In the latest global financial crisis, quality of the loans sharply deteriorated, thus increasing the percentage of non-performing loans in banks' balance sheets and causing major problems in business activity for many banks. The events emphasized the importance and potential impact of non-performing loans not just on banks, but on the whole economy and society.

- Reserve bank of India (2010) has stated that "Management of non-performing assets (NPAs) in banks remains an area of concern, particularly, due to the likelihood of deterioration in the quality of restructured advances.

- Non-performing loans affected the economy in a widespread area, at least during the last decade. The phenomenon had never been a concern until the collapse of stock and real estate markets. Considering that those markets accounted for a massive volume of capital, the crisis quickly spread to banking and commercial lending market. (Mimir, 2013),

- It is observed that the bank credit depends upon the activity. As economy grows bank credit accelerates while the slow growth of the economic activity or the decline economic activity results in a decline in bank credit. Hence it is widely accepted that bank credit exhibits pro-cyclicality (Dash &Kabra, 2010).

- Bruche and Llobet (2011) argue that when banks face the threat of bankruptcy, they tend to roll over bad loans in order to increase their chances of recovery.

- A measured view is that banks' lending policy could have a crucial influence on non-performing loans and crucial issues pertaining to credit of Indian banks (Reddy, 2004).

- Poudel (2013) has explained that prudential norms regarding loan classification and provisioning and other initiatives taken by the regulatory bodies has pressurized banks to improve their performance, and consequently resulted in trim down of NPA as well as improvement in the financial health of Nepalese banking system.

- The non-performing loans of financial institutions are considered as a significant issue in the context of Nepal for last few decades and macroeconomic variables such as the real effective exchange rate have significantly negative impact on non-performing loan (Bhattarai S. 2015)

- High level of non-performing loans (NPLs) triggers much wider macroeconomic 8 challenges, such as increase of the systemic risk, higher funding costs, lower supply of loans and finally lower potential GDP growth or even recession (European Systemic Risk Board, 2017, 12).

- Ranjan & Dhal (2003) emphasized that the increasing nonperforming loans (NPLs) possesses a risk to banks' balance sheet health and financial soundness. NPLs reduce interest income, lower profitability, and deplete banks' capital bases. They also require higher risk weights and minimum loss coverage in banks' capital requirements, straining liquidity and increasing funding costs. With less money available to extend new loans, banks' capacity to lend and make profits is further constrained. NPLs also have negative impacts on bank management as their resolution takes time and effort which could be better utilized on core business. In addition, NPLs may cause banks to lose business relationships with customers.

- Erdogdu, (2016) stated that growing non-performing loans negatively affect not only the banking sector, but also the national economy. If the least harmful effects of these problems cannot be overcome, they drag on new crises. To resolve these economic problems in the real sector is as important as keeping non-performing loans under control in the banking sector.

Non-Performing Loan in Nepalese Banking Sector

Under the present Nepalese legal provision, four different categories of financial institutions: commercial banks, development banks, finance companies, and microfinance institutions. They offer various kinds of funded and non-funded loans in the country's banking system. Apart from microfinance financial institutions, commercial banks account for around 88 percent share of the deposits and loans of the whole banking system. Trend of NPL together with some financial indicators for the last five years, are provided in the table below.

Table: Non-Performing Loan in Nepalese Banking Sector *(Amount in Rs. 10 Million)*

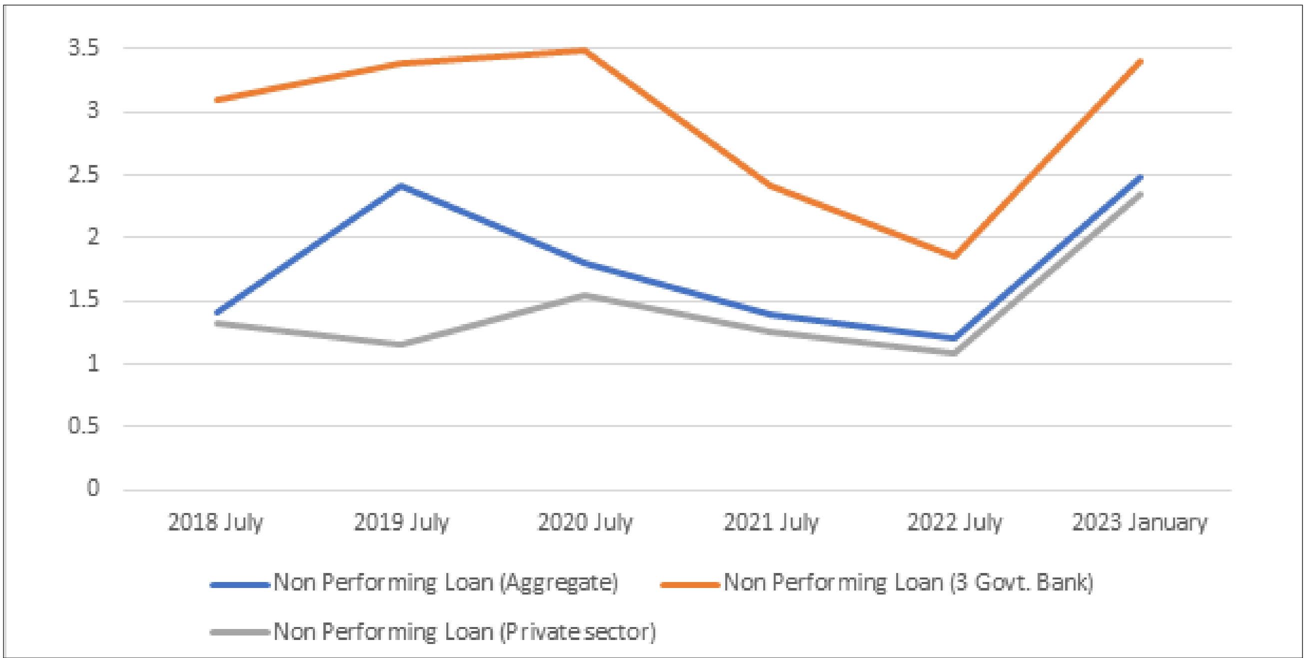
S.N	Description	2018 July	2019 July	2020 July	2021 July	2022 July	2023 January
1	Core Capital	31419	39249	42574	48857	54940	53413
2	Total Deposit	247151	287880	348039	420401	454436	471631
3	Total Loan	210924	249795	290359	371694	417544	427633
4	Non-Performing Loan (Aggregate)	1.41	2.41	1.81	1.4	1.2	2.49
5	Non-Performing Loan (3 Govt. Bank)	3.1	3.38	3.48	2.41	1.86	3.41
6	Non-Performing Loan (Private sector)	1.33	1.16	1.55	1.25	1.09	2.35

Source: Nepal Rastra Bank

From a statistical perspective, the non-performing loan ratio in Nepal's banking industry has not significantly changed for a very long time. According to the public financial statements of commercial banks, non-performing loans appear to be quite low, even if the share of finance companies and development banks with troubled histories is higher than that of other financial institutions. Basically, the low level of non-performing loans in Nepal's banking sector seems very good for the banking system and it will save them from several external difficulties. But the present trend and borrower's behavior shows it is almost impossible to repay their principal and interest from regular sources of income when looking at the present internal and external conditions of the majority of the invested borrowers, and projects. The published data may not reflect actual level of non-performing loan because its measurement method and intention may vary from different stakeholders' perspective.

The real sector of the Nepalese economy, which was weakened by the abnormal increase in real estate and share prices a decade ago, is getting tighter, the long-term load shedding, the earthquake, and more recently the global impact of the corona infection on the industry, business, and people's income. The accuracy of the reporting has also come under scrutiny. The capital, deposits, and credit expansion of the banking industry appear to have increased significantly during the past five years, as seen in the table above.

Figure 1: Trend Non-Performing Loan in Nepalese Banking Sector



Source: Nepal Rastra Bank

Commercial banks' loans doubled during this time, rising from Nrs 2109 billion to Nrs 4276 billion in Jan 2023. However, non-performing loans seem to be steady in all periods. The more intriguing part is that this ratio appeared to be declining following the Corona Crisis and had stabilized at 1.20 percent in the year 2022 July, but in the last three months it has unexpectedly climbed to 2.49 percent.

Reason for Not Visioning NPL

The non-performing loan ratio may not rise in Nepal's banking sector or may be less visible in statistics for a number of reasons. There are both trending factors in the banking industry as well as theoretical and practical ones, the most important of which are presented below.

- The volume of non-performing loans has increased gradually as a result of the banking sector's large credit expansion in Nepal, however the ratio of NPL is declining mathematically as a result of the size of the overall amount of loans.

- Only a very small portion of loan files are selected and examined during audit and supervision. Banks and financial institutions are not encouraged to make proper classification of loans due to the fear of decreasing profit. They forcibly classify the minimum number of loan files as unfavorable after being alerted, the ratio may appear low.

- The loans that exceed the single obligor limit in one financial institution or if problems started in initial FIs may be taken by other new banks and they may be classified in the good category by altering the process due to the unhealthy competition between banks and financial institutions.

- Apart from this, due to the bank management's desire to maximize dividend rate in any adverse situation, it will discourage actual classification of loans in institutions.

Challenges in Nepalese Credit Market

The task of managing credit is difficult and unpredictable. Considering the current state of the borrowers and the lent project shows the number of challenges and hazards for effective credit recovery procedure. Following features and trends of the Nepalese credit market indicates early warnings for increasing NPL in the banking sector.

A. **Inability to Boost Credit in the Productive Sector:** This is a result of a number of factors, including the nation's political unrest and instability, a lack of market infrastructure, high product costs, earthquakes, coronas, and other natural disasters. Because of this, banks are unable to grow credit investment in the productive sector even when they want to. Banking and financial institutions themselves try to limit their investments to collateral and securities rather than project performance-based investments. They are more focused on real estate, shares, vehicles, etc.

B. **Weak and Homogeneous Credit Policy:** The majority of Nepal's banks and financial institutions appear to have weak and similar kinds of lending and investment policies in place. No matter how many banks and financial institutions are established, because they all concentrate on the same type of business, industry, and they emphasize traditional loans and investments, and because there aren't any specific studies or research being done. It appears that any loan could become non-performing if new and potential areas aren't identified.

C. **Weak and Unscientific Credit Appraisal and Monitoring Systems:** Banks and FIs are not able to develop and implement rational credit assessment systems that can realistically test the true demands and needs of the borrowers and projects. Banks and other financial institutions may not keep track of how loans are being used and how projects are doing after the loan has been disbursed, in this situation the volume of non-performing loans may also rise.

D. **Fluctuating in Real Estate and Stock Prices:** For a number of reasons, including the sharp decline in real estate and stock values, business has slowed down, there is more mortgage protection, loan recovery is difficult, and the number of non-performing loans appears to be rising.

E. **Increasing Bank Interest and Service Charges:** Continuous increase in the average interest rate and service charge taken from the banking sector and the inflation rate will also be very unstable and comparatively increasing during the same period. Due to increase in cost of funds, borrowers' predicted income will not be sufficient to repay scheduled installment and interest that will adversely impact on credit quality of banks.

F. **Multi-Banking Transactions:** In Nepal's banking system, it is customary and occasionally even required for multiple banks and financial institutions to invest loans in the same borrower, group, and project. Due to the lack of a proper Management Information System (MIS) it is very difficult to trace out the actual debt equity position of the borrower and project. It is always possible to take out loans from various banks and financial institutions for single and group exposure which creates threats for miss utilizing the resources and it ultimately leads to increased NPL in the system.

G. **Poor Governance and Insider Influence:** Inadequate level of good governance is mostly to blame for designation of numerous financial institutions as problematic in the past. When the authorized parties of banks and financial institutions, particularly by increasing their access to the top management and board of directors and influencing the granting process in an unnatural manner, even after the regulatory body has issued clear directives. such practice adversely impacts credit recovery and increases NPL.

H. **Toxic Competition:** It appears that unhealthy rivalry is growing in the banking sector. Banks and other financial institutions mostly concentrate on urban and commercial areas, and in order to benefit from short term credit transactions, they offer the credit product out of provision of existing regulations, policies, rules, and sound financial practices.

I. **Delay in Legal Remedies:** It appears that debt collection is particularly tough because some of the cases that have reached the court procedure are taking a long time to make a final decision. As a result, timely bad debt settlements and efficient management of non-performing loans may be challenging. The debt recovery tribunal, a body that provides speedy mediation and legal remedies in cases of disagreements between the debtor and the bank, has also not been successful.

J. **Other external factors:** Nepal's unstable political situation, quick legislative and policy changes, an unwelcoming environment for investments, natural disasters, the economic downturn, and other external factors and their detrimental effects on business, and loan recovery in the banking sector. It appears to be harmed and the cause of increasing NPL in the banking sector.

Conclusion

Financial resources utilized by banks and financial institutions are very crucial for economic growth of a nation. Efficient and rational credit lending mechanisms enhance economic activity with increasing investment in productive sectors of the economy. The weak and traditional credit assessment process has contributed towards the growth of NPL that adversely affects and harms both an institution and the financial system. Several studies conducted in several regions have focused their attention on this matter and have concluded that the magnitude of credit risk is increasing due to the dependence on mortgage, credit investment in unproductive sectors and the adverse effects in the external environment.

The slow growth of non-performing loans in Nepal's banking sector can be considered as natural as it depends mostly on credit investment based on property value without exploring potential productive sectors with regular income and sufficient cash flow. The study summarizes that the poor credit appraisal system, more focused in unproductive sectors, unhealthful competition, elevated financial costs, etc. have supported the potentiality of increasing NPL in Nepalese banking industry. Various studies and regulatory body report also justified that deteriorated credit quality in financial system not only impact single sector and it might have an impact on all over the economy. Furthermore, any single cause and event is not responsible for deteriorating credit quality in the institutions. The study recommends that the bank and financial institutions must have an explicit credit risk strategy to support by environmental changes, efficient risk management techniques and robust monitoring systems. Banks and financial institutions should use specialized instruments for lowering credit risk to prevent from all negative happening, and they should also strictly adhere to any regulations put in place by regulatory agencies.

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GLASS CEILING AND WOMEN CAREER DEVELOPMENT IN THE BANKING SECTOR: A Case of Birgunj

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Abstract

The study examines the relationship of glass ceiling with women's career progression in the banking sector in Birgunj city of Nepal. The study has used primary sources of data in order to assess the opinions of women bankers of twenty-five commercial banks and central bank's branches regarding study variables. The study has adopted simple random sampling techniques and employed structured questionnaires with the 5-points Likert scale items. The study has undertaken the descriptive and causal-experimental research design. The findings show that individual factors, cultural factors and family factors are negatively related to women's career development. The regression results reveal that cultural factors and individual factors have negative influence on the career progression. The most dominant factor that influences the women's career development is individual factors followed by cultural factors. The major conclusion of the study is that the glass ceiling slows down the women banker's career development. Therefore, this study provides theoretical induction and practical implications to formulate the policies that builds-up self-confidence, unleash gender stereotyping, and promote equitable growth opportunities for women empowerment and their career development.

KEYWORDS: **Workforce diversity, glass ceiling, career development, organizational factors, and individual factors.**

JEL CLASSIFICATION: **M12, O15**

1. Introduction

Women empowerment has been the major issue in the world's geo-politics. Women represent themselves in major economic and political opportunities. An access to education, equitable training & development opportunities and persistence self-efforts to gain necessary qualifications are supporting women to aspire for the senior management jobs. As a result, women are progressively grabbing professions, occupations and managerial jobs, which were believed to be reserved for men (International Labor Organization [ILO], 2004). However, women are still rare on the top level of the businesses (Meyerson & Fletcher, 2000).

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One of the reasons for not having women in higher positions is believed to be linked to unseen barriers termed as a glass ceiling. Hymowitz and Schellhardt (1986) coined the term glass ceiling in a corporate women's report published in a 1986 Wall Street Journal. The concept of the glass ceiling describes the invisible as well as artificial hurdles that have kept women from being promoted to upper management level and other higher leadership positions in the world of business (Maume, 2004).

Glass ceiling is an off-used metaphor for the relative disadvantages related to women's career opportunities along with the growing difficulties for women in moving up to the career ladder (Cotter et al., 2001). According to Tiwari et al. (2019), women are efficient at every position either in superior or mid-level positions. However, they are perceived as an inefficient employee who is burdened with a lot of responsibilities other than the workplace. Sometimes, the hindering obstacles may be self-created perception and beliefs or generated by the organizational system or grown by the contemporary social structure.

Women labor force participation in Nepalese context

Globally, women hold just 34 percent of managerial positions across the countries. On the other hand, women hold less than 7 percent managerial positions in the four worst performing countries viz. Egypt, Saudi Arabia, Yemen and Pakistan. Nepal ranks 106th position out of 156 countries with the global gender gap score of 0.683 for 2021 (World Economic Forum [WEF], 2021). This rank was 105 with a score of 0.671 in 2018 where 1 represents the parity and 0 represents imparity. The rise in several spots is due to narrowing its gender gap in labor force participation as well as greater representation of women in parliament (WEF, 2018).

Table1: Score card of Nepal in global context

Variables	Rank	Score	Average	Female	Male	Female/Male
Economic participation and opportunity	107	0.63	0.583			
Labor force participation rate, percent	5	0.991	0.655	85.3	86.1	0.99
Wage equality for similar work 1-7 (best)	89	0.627	0.628			4.39
Estimated earned income, Int'l $1000	25	0.741	0.494	2.7	3.6	0.74
Legislators, senior officials and managers, percent	142	0.152	0.349	13.2	86.8	0.15
Professionals and technical workers, percent	134	0.429	0.755	30	70	0.43

Source: The Global Gender Gap Report, 2021, WEF.

1.00 Score = Gender parity; 0.00 score = Gender imparity

The above table (see Table 1) reveals Nepal's score card on the various gender-based factors with respect to other 156 countries in the world in March 2021. In Nepal, over 85 percent of women participate in the labor force. Similarly, income earned by a woman is 74 percent of that of a man, which shows a gap lower than 50 percent.

Similarly, the following table (see Table 2) shows the status of females in economic leadership factors in Nepal.

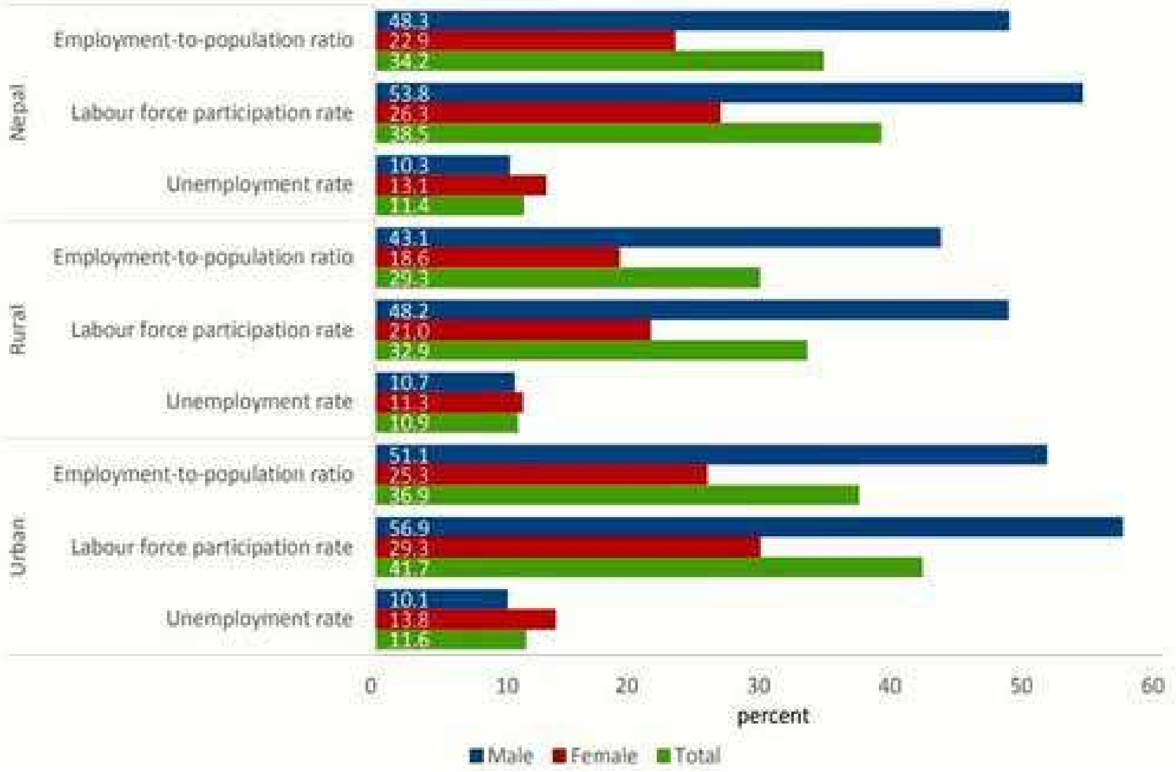
Table 2: Status of Nepalese female in economic leadership

Economic leadership	Female	Male	F/M value
Advancement of women to leadership roles, 1-7 (Best)			4.12
Firms with female majority ownership, percent firms	21.8	78.2	0.28
Firms with female top managers, percent firms	17.2	82.8	0.21

Source: The Global Gender Gap Report, 2021, WEF.

As shown in figure (see Figure 1) below, the data says that there are gender disparities as national Labor Force Participation Rate (LFPR) and Employment to Population Ratio (EPR) were higher than those for females respectively. The LFPR is 53.8 percent for males compared to 26.3 percent for females.

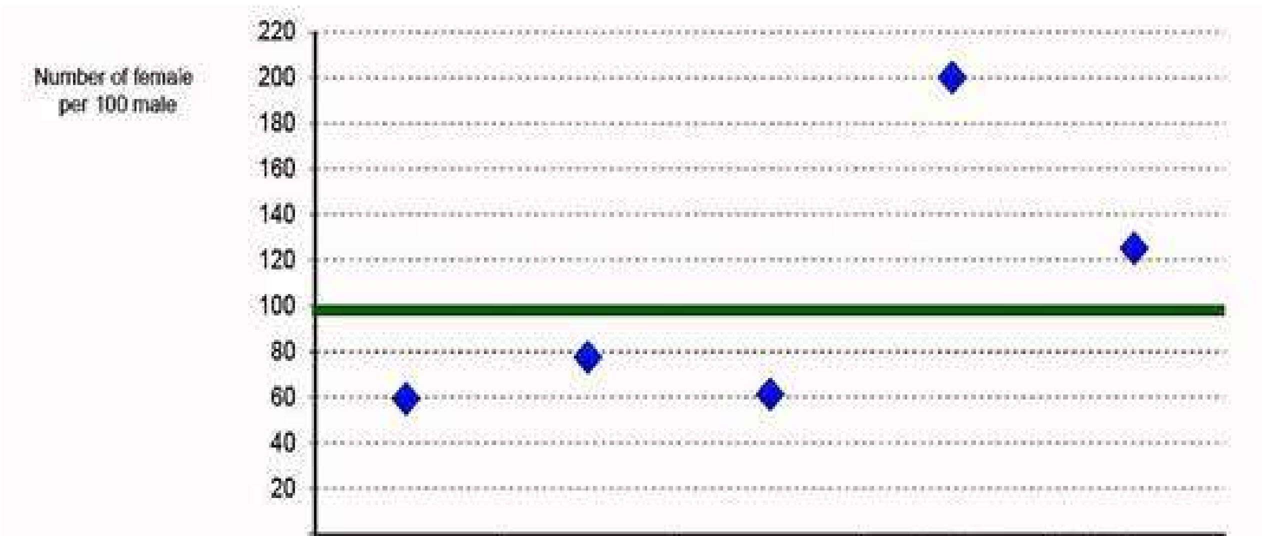
Figure 1: Key labor market indicators by sex and locality



Source: Nepal Labor Force Survey-2017/18, CBS.

Another dimension of the scale of gender inequalities in the Nepalese labor market is the number of females per 100 males in each labor market category which is shown in the below figure (see Figure 2).

Figure 2: Number of females per hundred males in the working-age population



	Employed	Unemployed	Labour force	Not in the labour force	Working age population
◆ Female per hundred male	59	78	61	200	125

Source: Nepal Labor Force Survey-2017/18, CBS.

The data showed that there were 125 females for every 100 males in the working-age population. However, there were only 59 employed females for every 100 employed males when it came to employment. Gender disparities also existed among the unemployed and those who were not in the labor force (Central Bureau of Statistics [CBS], 2017/18).

Nepalese banks have been employing human resources and attempting to make gender diversity as much as possible in the work place.According to CBS (2017/18), at the managers level only 13.2 percent are female managers and rest, 86.8 percent, are the male managers. Financial and insurance activities have provided employment to the 63 thousand of male and 55 thousand women. The Nepalese banking sector has just witnessed Mrs. Anupama Khunjeli, the first ever women Chief Executive Officer, taking charge of Mega Bank Limited on 12th April 2018.

This study therefore helps to understand the present scenario of glass ceiling in women banker's career development in the context of Birgunj city of Nepal. It serves as the base for finding the relationship of glass ceiling and its effect on women's career development in Nepal. This study is important for future researchers, jobholders and aspirants as it provides more knowledge on glass ceiling and career development and lastly, recommendations for overcoming their effects in the Nepalese banking sector.

Further, the organization of the study is as follows: section two summarizes the literature review, section three explains methodology, section four describes the results and discussion, section five elaborates the summary and conclusion, section six yields recommendations of the study and the final section, section seven, sketches the future scope of the study.

2. Literature review

World has witnessed a significant increase in the participation of women in the labor force in the last few decades. However, there is also an argument that this increment is primarily on the proportion of women at entry level, in lower and mid level positions. Similarly, the proportion of women advancing to senior and top positions remains relatively low (ILO, 2002). According to Bal et al. (2013), career advancement means achieving a top position for a particular company through a series of stages. In other words, it is attaining experience in several professional fields to be able to develop their personal career.

Studer and Daisley (2014) revealed that about 55 percent of almost 800 professional women in the world from the financial services sector agree that, "It is harder for women to reach senior leadership roles in financial services than it is for men." There could possibly be many factors responsible for the glass ceiling. According to Fapohunda (2018), there is a moderately negative relationship between the glass ceiling and women's career advancement. The study also concluded that personal dynamics, organizational dynamics and cultural dynamics significantly influence women's career advancement. Similarly, there is a unique challenge posed by the family responsibilities for those who want to advance in their careers.

De and Chatterjee (2017) revealed that there exists a negative relationship between the glass ceiling and women's career development. The study also showed that individual factors, cultural factors and organizational factors have a significant effect on women's career development. The study also concluded that education and skills are the major elements in affecting women's participation in the workforce in India. Similarly, Tharenou (2005) showed that individual factors (e.g. education, work experiences, personality) , social factors (e.g. support and encouragement) and organizational factors (e.g. organizational level) have an important stake in women's advancement.

According to Bombuwela and De Alwis (2013), glass ceiling and women career development are negatively related among the female executive level employees working in Sri Lankan private sector organizations. Similarly, there is a weak negative correlation between family factors and women's career development. In contrast, Wolfinger et al. (2008) revealed that family obligations and reproductive roles are the two potential barriers identified for women's lack of career development and academic achievements.

Family responsibilities are the main challenge for female executives' career advancement. Moreover, family responsibilities are related to other challenges, such as physical mobility, professional experience, educational attainment, and informal networks (Jauregui and Olivos, 2018). Victor and Shamila (2018) revealed that glass-ceiling barriers created by the individual, family and cultural factors have a significant impact on women's career development. However, organizational factors do not have a significant impact on career development of executive level women of the financial sector in Sri Lanka.

Ganiyu et al.(2018) concluded that because of factors that are rooted in cultural, societal, organizational, individual and psychological factors, women are not making it to the very top of their career. The study further concluded that cultural prejudice, religion convictions, family related issues, and individual and organizational influences have induced an insignificant presence of women compared to men in managerial positions.

According to Thapar and Sharma (2017), banks' top-level management somewhere manipulated the things according to their convenience. The study also concluded that there is traditional working style, hierarchical patterns and conservative leadership styles because of which top positions are for men, in almost every sector, especially in public banks. Likewise, Helm (2006) argued that the glass ceiling is nourished by the organizational culture, policies and strategies rather than the women's own inadequacies. Glass ceiling is real, not myth, in the context of retail banks in South Africa.

According to Bhattarai (2001), there is a lack of self-confidence among the women in their own capacity to compete in the Public Service Commission (PSC) examination. In addition, family members also have no confidence in their daughter, sister to compete and think that the PSC examination is very difficult to succeed in Nepal. According to Mathema (2010), salient culture, information ignorance, and economic dependency of the Nepalese women are the dominant factors that have made them indifferent about their participation in gainful employment and subsequent career development.
Therefore, above research findings lack consistency in their results and findings in different contexts including Nepal. The study attempts to fill the literature gap in the field of human resource management and its strategic HR planning in the context of Nepalese banking.

2.1 Statement of problem

Right activists, policy makers and researchers have been focusing on mitigating the gender differences in career development in every economic sector for years. An accusation to the male chauvinist society is that there prevails a prejudice and gender stereotyping about women, restricting them to be promoted to an upper level than men. According to Keenawinna and Sajeevanie (2015), corporate practices, stereotypes about women and family commitment have a negative relationship with women's career development. The study further revealed that the glass ceiling has a negative impact on career development of women bank-branch managers.

However, Rai and Srivastava (2008) concluded that the glass ceiling is a relative term. They argued that it does not exist in reality. It is because women worked for less time, engaged in low-risk jobs and disrupted careers, which leads to lower salaries. In addition, Jones (2014) found that confidence problems after securing leadership positions are one of the major experiences of women employees.

Based on the review of all above literatures related to glass ceiling and women career development, there still exists a research problem that factors; either organizational, individual, family and/or cultural factors have greater influence on the career development of women working in the banks and financial institutions. Therefore, this study deals with the following issues in the context of banking sector in Birgunj, Nepal:

a. What is the demographic profile, status and patterns of women working in banks in Birgunj city?
b. Is there any relationship among glass ceiling factors; organizational, individual, family and cultural factors and women career development in the banking sector?
c. Do organizational, individual, family and cultural factors affect women career development in the banking sector? And to what extent?

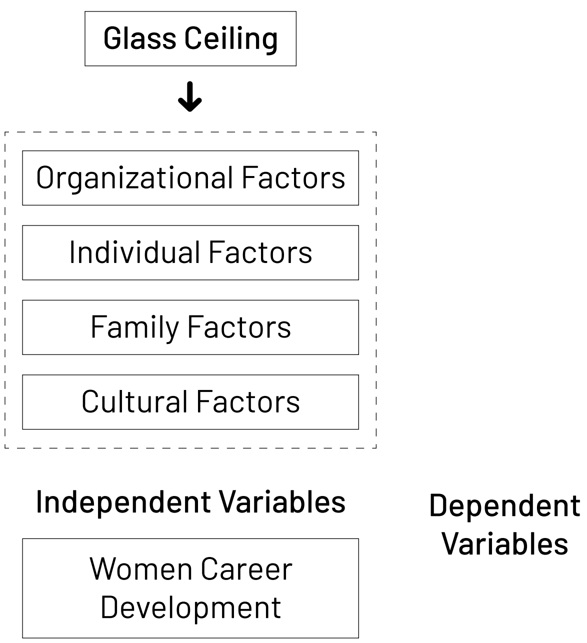
2.2 Objective of the study

The major objective of the study is to examine the impact of the glass ceiling on women career development in the banking sector in Birgunj, Nepal. Besides, the specific objectives of the study are to answer all of the problem statements subsequently.

2.3 Conceptual framework

Based on the literature reviewed above, the study develops the following conceptual framework, which explains the systematic explanation of the relationship among the dependent and independent variables. The schematic conceptual framework (see Figure 3) shows that the organizational, individual, family and cultural factors are the independent variables, which affect women career development, a dependent variable.

Figure 3: Conceptual Framework



Source: Developed by researcher

2.4 Hypothesis of the study

Based on the above research findings and discussions in global contexts and Nepalese context, the study develops following hypotheses:

H1: There is a significant effect of organizational factors and women's career development.

H2: There is a significant effect of individual factors and women's career development.

H3: There is a significant effect of family factors and women's career development.

H4: There is a significant effect of cultural factors and women's career development.

3. Methodology

3.1 Research design

The study undertakes the combination of descriptive and causal-experimental research design. The descriptive research design helps to observe and describe variables in their respective natural environment. The study also employs causal-comparative research design which tests the level of significance and impact of independent variables such as organizational, individual, family, and cultural factors on the women's career development.

3.2 Sample and sampling measures

The study has collected the primary data via questionnaire method, distributing questionnaires to the women employees working in the banks in Birgunj. The study has adopted a simple random sampling technique to take samples of respondents. Self-administered structured questionnaires are used to assess the opinions of women employees' regarding the glass ceiling and its effect on their career development. The questionnaire employed in the study comprises six sections; section (1) addresses the demographic profile of the respondents and section (2) measures the career development factors, which is a dependent variable. Similarly, section (3), section (4), Section (5) and section (6) measure the organizational factors, individual factors, family factors and cultural factors of glass ceiling respectively, which are the independent variables of the study. Each section consists of six items. The study has used 5-point Likert scale items to indicate the extent to which respondents agree or disagree with the statements ranging from 1 = strongly disagree, 2= Disagree, 3= No opinion, 4= Agree to 5= strongly agree respectively. The data collected is analyzed using IBM SPSS 23.0 software program.

3.3 Variables of the study

3.3.1 Dependent variable

Women Career Development - WCD refers to the amount of career focus, job satisfaction, increased self- confidence, growth opportunities and attitudes towards organization of an employee for advancing their career.

3.3.2 Independent variables

An independent variable of the study is a glass ceiling, which is taken as a composite index of organizational, individual, family and cultural factors. The independent variables of the study, inferred from the study of Bombuwela & De Alwis (2013), are defined and explained below:

a. **Organizational factors-** It refers to the extent to which the employees see the organization as being responsible for their lack of performance. Similarly, it explains the extent to which organizational structure and practices, including organizational policy and management style influence the employee development.

b. **Individual factors-** It means the extent to which an individual's lack of confidence, self-belief, personal traits and inability to sell them, which are the barriers coming from themselves influence their career development.

c. **Family factors-** It depicts the extent to which relationships; family responsibilities and housework issues affect the performance of employees.

d. **Cultural factors-** It measures the extent to which the beliefs, traditions, and stereotyping influence the employee development.

3.4 The model

The model of the study has estimated that the women's career development depends on glass ceiling variables. The empirical investigation employs one Ordinary Least Square (OLS) regression approach to give in-depth analysis. The study therefore estimates the following model:

Women career development = f (Glass ceiling)

WCD = f (GC)

WCD = f (OF, IF, FF, and CF)

WCD= $\alpha + \beta_1 OF + \beta_2 IF + \beta_3 FF + \beta_4 CF + \varepsilon_1$

Where,

WCD = Women Career Development, GC = Glass Ceiling, OF = Organizational Factors, IF = Individual Factors, FF= Family Factors, CF = Cultural Factors, α is the constant term and β_1, β_2, β_3, and β_4 are the beta coefficients of variables, and ε_1= Error term

3.5 Reliability of data

The questionnaire's reliability is tested by using statistical tool Cronbach Alpha (CA), which is an estimate of how much variation in scores of different variables is attributable to chance or random errors. As a rule of thumb, a coefficient greater than or equal to 0.70 is acceptable and is a good indication of construct reliability.

4. Results and discussion

4.1 Response rate

The following table (see Table 3) shows the response rate of the questionnaire.

Table 3: Response rate

S.N.	Response	Frequency	Percent
1.	Returned	100	83.33%
2.	Unreturned	20	16.67%
	Total	**120**	**100%**

Source: Researcher's calculation

One hundred and twenty questionnaires are distributed among the women employees working in the banks to avoid receiving less than required minimum number. Finally, the respondents return 100 questionnaires (83.33%).

4.2 Reliability Analysis

The following table (see Table 4) represents the result of the reliability analysis:

Table 4: Reliability Analysis

S.N.	Variables	Cronbach Alpha	Number of items
1	Career development	0.70	6
2	Organizational factors	0.76	6
3	Individual factors	0.73	6
4	Family factors	0.71	6
5	Cultural factors	0.80	6

Source: SPSS 23.0

4.3 Descriptive statistics

Table (see Table 5) below shows the demographic profile of the respondents of the study.

Table 5: Demographic profile of the respondents

Demographic variable	Particulars	Frequency	Percent
Age	18 – 30 years	79	79
	30 – 39 years	20	20
	40 – 49 years	1	1
	50– 59 years	0	0
Total		**100**	**100**
Marital Status	Single	56	56
	Married	43	43
	Divorcee/Separated	1	1
	Widow	0	0
Total		**100**	**100**
Education	School level	2	2
	Intermediate	1	1
	Bachelors	33	33
	Masters	64	64
	Doctorate and above	0	0
Total		**100**	**100**
Experience	0-5 years	81	81

Demographic variable	Particulars	Frequency	Percent
	5-10 years	15	15
	10-15 years	2	2
	15-20 years	1	1
	20-30 years	1	1
Total		**100**	**100**
Department	Front desk/CSD	26	26
	Cash Counter	29	29
	Credit and relationship management	9	9
	Operations and administrations	21	21
	ATM & IT support	0	0
	Legal and Compliance	0	0
	Remittance	8	8
	Trade finance	2	2
	Others	5	5
Total		**100**	**100**
Income level (per month)	<Rs.10000	1	1
	Rs.10000-20000	12	12
	Rs.20000-30000	49	49
	Rs.30000-50000	30	30
	> Rs.50000	8	8
Total		**100**	**100**
Class or category of banks and financial institutions	A	96	96
	B	0	0
	C	0	0
	D	0	0
	Central bank	4	4
Total		**100**	**100**

Source: SPSS 23.0

According to Table 5, the majority (79 percent) of the women respondents have age within 18 to 30 years, followed by 20 percent of respondents have age within 30 to 39 years and only 1 percent of respondents have age within the range of 40-49 years. Likewise, 56 percent of the respondents are single whereas 43 percent of the respondents are married. 1 percent of the respondents are divorced or separated during the study. The table further reveals that the majority (64 percent) of the respondents have an academic qualification of Master's Degree followed by 33 percent of bachelor's degree, 2 percent of school level and 1 percent of intermediate level. Similarly, 81 percent of the respondents have working experience up to 5 years. Likewise, 15 percent, 2 percent and 1 percent of the respondents have work experience of 5 to 10 years, 1 to 15 years, 15 to 20 years and 20 to 30 years respectively.

As shown in Table 5, the majority (29 percent) of the respondents work in a cash counter. 26 percent of respondents work in the front desk/CSD and 21 percent of the respondents work in the operation and administration department. Similarly, 49 percent of the respondents earn Rs. 20,000 to 30,000 monthly and 30 percent of the respondents earn Rs. 30,000 to 50,000 per month. Only 1 percent of the respondents of the study earn below Rs. 10,000 per month. Likewise, majorities (96 percent) of the respondents work in a commercial bank and 4 percent of the respondents work in a central bank located in Birgunj.

4.4 Correlation analysis

Pearson's correlation coefficients are computed and the results are presented in the table (see Table 6) below:

Table 6: Pearson's correlation coefficients matrix

	Mean	SD	WCD	OF	IF	FF	CF
WCD	3.877	0.501	1				
OF	3.112	0.567	0.033	1			
IF	3.115	0.643	-0.367**	0.478**	1		
FF	2.923	0.600	-0.182	0.397**	0.456**	1	
CF	3.653	0.743	-0.315**	0.489**	0.606**	0.249*	1

Note: The asterisk signs (**) and (*) indicate that coefficients are significant at 1 percent and 5 percent level of significance.

Source: SPSS 23.0

Table 6 shows that the mean value of career development is 3.877 which reveals that the majority of the respondents agree that their career in the banking sector has developed. Similarly, organizational factors and individual factors have mean values of 3.112 and 3.115 respectively indicating that they have a moderate level of stake in the career development of the women employees. However, family factors have a mean value of 2.923 which is below moderate level. The mean value of cultural factors is 3.653 which imply that respondents agree that cultural factors have a stake in women career development.

The bi-variate analysis, in Table 6, also shows that there is a weak and insignificant relationship between organizational factors and women's career development. However, individual factors have a negative and significant relationship with women's career development having the correlation coefficient of 0.367 significant at 1 percent level of significance. It reveals that women's individual factors are blocking them from reaching the top positions.

Similarly, family factors are negatively related to the women's career development with the correlation coefficient of 0.182. However, the result is not significant at the 1 percent level of significance. Likewise, there exists negative association between cultural factors and women career development having the correlation coefficient of 0.315 significant at 1 percent level of significance. It shows that fewer the cultural factors, which create the barriers, lower would be the women's career development in the banking sector in Birgunj.

Having shown the relationship between individual independent variables and dependent variables, the following table (see Table 7) represents the relationship between glass ceiling, combined variable of four independent variables, and women's career development.

Table 7: Pearson's correlation coefficients matrix

Variables	WCD	GC
WCD	1	-0.286**
GC	-0.286**	1

Note: The asterisk signs (**) and (*) indicate that coefficients are significant at 1 percent and 5 percent level of significance.

Source: SPSS 23.0

Table 7 shows that the glass ceiling is negatively related to women's career development. It indicates that decrease in glass ceiling factors leads to accelerated the career development of the women working in the banks and financial institutions. There is a moderate negative relationship between glass ceiling and career development since the correlation coefficient is 0.286 significant at the 1 percent level of significance.

4.5 Regression analysis

Table below (see Table 8) shows the regression results of organizational factors, individual factors, family factors and cultural factors on women's career development.

Table 8: Estimated regression of OF, IF, FF and CF on WCD.

Dependent Variable: Women Career Development

Method: Least squares

Number of respondents: 100

Variables	Coefficient	Std. Error	t-statistic	Prob.
(Constant)	4.598	0.303	15.155	0.000**
Organizational factors	0.322	0.097	3.313	0.001**
Individual Factors	-0.256	0.097	-2.650	0.009**
Family Factors	-0.092	0.087	-1.059	0.292
Cultural Factors	-0.180	0.0798	-2.253	0.027*
R-squared	0.237	F-statistic		7.361
Adjusted R-squared	0.204	Prob. (F-statistic)		0.000**

Note: The asterisk signs (**) and (*) indicate that coefficients are significant at 1 percent and 5 percent level of significance respectively.

Source: SPSS 23.0

Table 8 shows that the beta coefficient is positive for organizational factors. It reveals that organizational factors have a positive impact on women's career development. However, the beta coefficient is negative for individual factors. It means that individual factors have a negative effect on the women's career development indicating that weaker the individual factors higher would be the women's career development. The result is significant at the 1 percent level of significance. This finding is consistent with the findings of Victor and Shamila (2018) and Kulkarni (2002).

Similarly, the beta coefficient is negative for the family factors indicating that family factors have a negative impact on the women's career development. It also shows that decreasing family related barriers uplifts women to have higher career growth in banking however the result is not significant at the 1 percent level of significance. This finding is similar to the findings of Jauregui and Olivos (2018). Likewise, there is a negative impact of cultural factors on the women's career development since the beta coefficient for cultural factors is negative with the career development. The result is significant at 5 percent level of significance. It also reveals that decrease in toughness in cultural factors leads to career development of women in banking. This result is consistent with the findings of Bombuwela and De Alwis (2013).

The regression model shows F-value of 7.361 with the probability value of 0.000 and it is statistically significant at 1 percent level of significance. According to the R2 value the 23.70 percent of total variation in women career development is explained by the above independent variables.

Following table (see Table 9) presents the regression analysis between glass ceiling as a combined variable of above mentioned four independent variables and women's career development.

Table 9: Estimated regression of GC on WCD

Dependent Variable: Women Career Development

Method: Least squares

Number of respondents: 100

Variables	Coefficient	Std. Error	t-statistic	Prob.
(Constant)	4.815	0.321	14.999	0.000**
Glass Ceiling	-0.293	0.099	-2.956	0.004**
R-squared	0.081	F-statistic		8.738
Adjusted R-squared	0.073	Prob. (F-statistic)		0.004**

Note: The asterisk signs (**) that coefficients are significant at 1 percent level of significance.

Source: SPSS 23.0

Table 9 regression analysis presents an F-value of 8.738 with the probability value of 0.000. It is statistically significant at 1 percent level of significance as the probability value is less than 0.01. This implies that the glass ceiling has a significant impact on women's career development. The coefficient of determination is measured with the R2 and it is 0.081 which reveals that 8.1 percent of the variation in the women's career development is determined by the glass ceiling while 91.9 percent is explained by other factors.

The regression result shows that the beta coefficient is negative for the glass ceiling with women's career development. It means the negative effect of the glass ceiling on women's career development. In other words, lowering or breaking the glass ceiling contributes to the higher career growth of women working in the banking sector in Birgunj and vice-versa. This finding is consistent with the findings that glass ceiling has a negative influence on women career development (Keenawinna and Sajeevanie, 2015; De and Chatterjee, 2017; Fapohunda, 2018; and Victor and Shamila, 2018).

4.6 Test of hypotheses

Under the test of hypotheses, if the p-value, of respective independent variable with the dependent, is equal or less than 0.05, then the null hypothesis is rejected, otherwise accepted. Table (see Table 10) below shows a summary of the accepted or rejected hypotheses of the study.

Table 10: Summary of hypothesis testing

Hypotheses	Accepted	Rejected	Remarks
H1	✓		It is based on p-values of individual correlation and regression coefficients at 5 percent level of significance.
H2	✓		
H3		✓	
H4	✓		

Source: Constructed by the researcher

5. Summary and conclusion

This study attempts to analyze the glass ceiling and its effect on women career development in the banking sector in Birgunj. The results show that individual factors, family factors and cultural factors have negative relationships with career development. The study reveals a significant negative effect of individual factors on career development showing that individual factors like; lack of confidence, lack of technical skills, unbalanced work life etc. are hindering women reaching to top position. Similarly, cultural factors have a significant negative impact on women's career development. It means that cultural factors like; traditions, beliefs, and stereotyping about women have negative impressions regarding women career development. Social support and cultural positive changes help to increase participation of women in top position in the banks.

Likewise, the study shows that the family factors have a negative but insignificant effect on the women's career development. It also reveals that increase in family relationships, responsibilities, and household issues have contributed to women not concentrating on career development. However, there is a positive association between organizational factors and career development indicating that organizational factors are supportive to women career development. The human resource policies are equal to employees irrespective of gender, location since it is always guided by the central office, and the study shows positive HR policies and practices for women career development.

As a combined result of all four glass-ceiling factors, the study concludes that there is a significant and negative relationship between glass ceiling and women's career development. It implies that an increase in the glass ceiling leads to slow down or restrict the career development of women in the banking sector.

6. Recommendations

The study shows that individual factors, among other glass ceiling factors, are the most influencing factors on women career development. Hence, female bankers are recommended to work on developing their capabilities, enhancing their managerial as well as technical skills, increasing self-confidence, working on self-development and so on. Likewise, families are responsible for helping women bankers by sharing household works among themselves and having balanced work family life. However, organizational factors have a positive impact on women's career development. Women find organizational policies and practices are favorable and supportive to their career development and banks are recommended to ensure the fairness, equality, impartiality, and equity in matters related to women career development.

7. Future scope

Future studies can be guided towards banking sectors as a whole, not only limited to particular cities of Nepal. It can also increase the sample size by taking into consideration of employees of development banks, finance companies, micro-finances and co-operatives as well. Similarly, researchers can further analyze other dimensions viz. regulatory requirements, labor policies, international HR practices, etc. and their effect on the women's career development.

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AN ENQUIRY INTO THE RISK OF HYPERINFLATION IN NEPAL

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Abstract

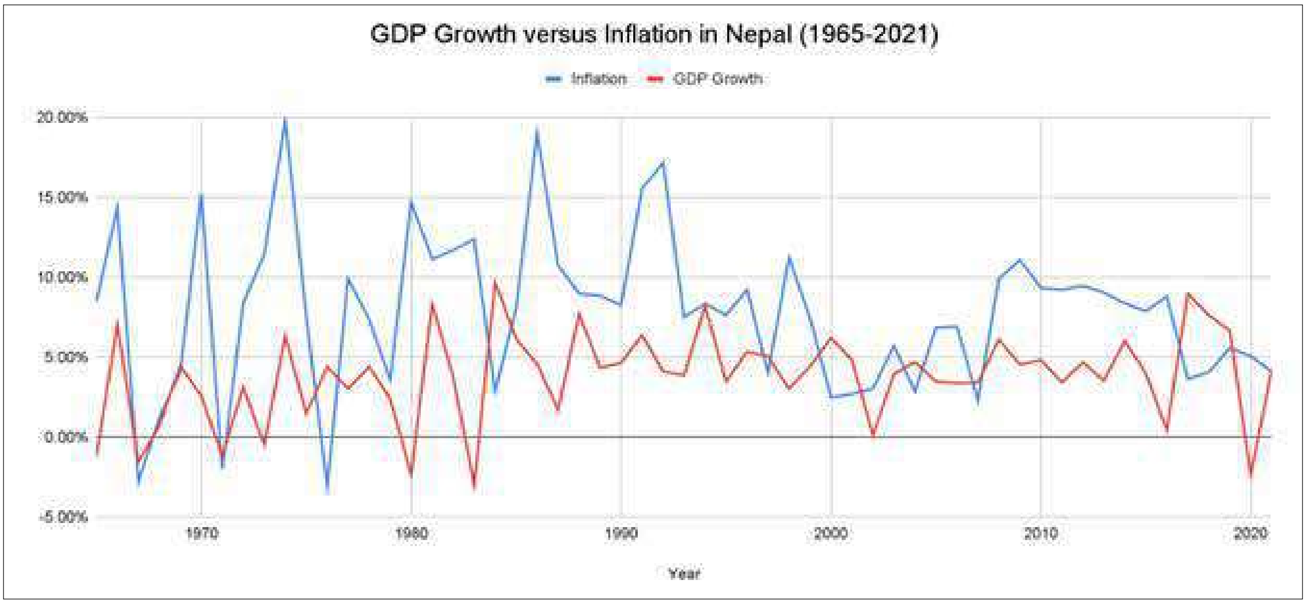
If there is fuel prepared, it is hard to say whence the spark shall come that shall set it on fire. The analogy applies with the spiraling inflation leading to hyperinflation. The history of more than fifty hyperinflation episodes in the world has shown that evil hyperinflation does not come with a particular blunder, but with a constellation of errors in the economic sphere. On that account, this study aims to subjectively enquire the risk of hyperinflation at the contemporary times in Nepal. Qualitative and descriptive study has been conducted to propose a potential transmission mechanism for hyperinflation in Nepal. It has been found that Nepal won't face severe effects of inflation in the short run, but the lack of structural intervention in its economic fundamentals may lead it to a hyperinflationary quagmire in the medium term.

1. Introduction

"The only thing we learn from history is that we learn nothing from history" - **Friedrich Hegel**

High inflation and low economic growth have been the major characteristics of Nepalese economy for more than last five decades. The average GDP growth rate for the last 56 years, for a period between 1965 and 2022, was just 3.82 %, whereas the average annual inflation for the same period remained lurking 8.0%. There is a consensus among economists that high inflation distorts optimal allocation of resources, weakens trade competitiveness, lowers domestic savings, exacerbates inflationary spiral and ultimately retards growth (RBI, 2014). The same had been empirical case for Nepalese economy

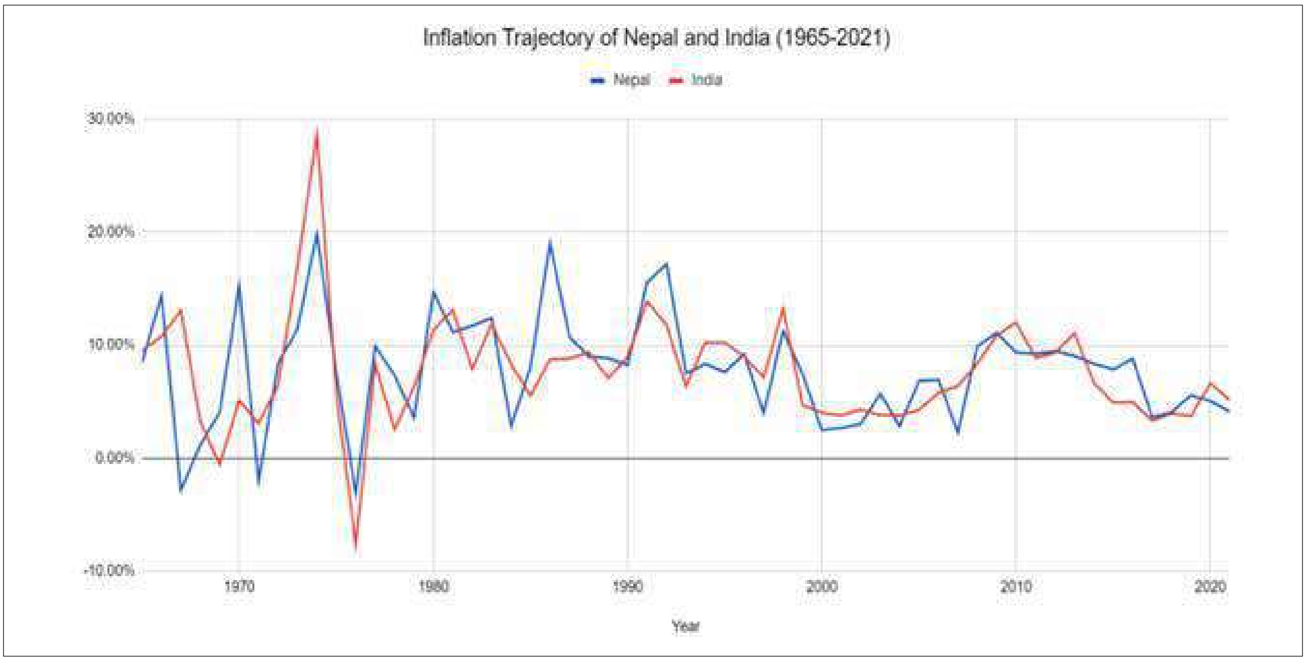
Figure 1: GDP Growth versus inflation in Nepal (1965-2021)



However, an economy needs to maintain a certain level of inflation for attaining high and sustainable economic growth. If prices are allowed to plummet consistently, consumers are expected to learn to hold off purchase for the future better deal, referred to as 'The Paradox of Thrift' (Federal Reserve Bank of St. Louis, 2012). Further, inflation also encourages lending, increasing the level of spending. Also, as there exist an inverse relation between inflation and unemployment according to Philips Curve, rising unemployment could be fought via increased inflation. In this context, what remains the optimal level of inflation for Nepal has been a contending issue. Several studies have estimated around 6 percent inflation as a threshold for Nepal (Sarel, 1996; Khan and Senhadji, 2001; Bhatta, 2015; Nepal Rastra Bank, 2017). So, it's desirable for Nepal to contain its inflation below 6 percent for ensuring sustainable economic growth. But this has rarely been the case.

The causes of inflation are quite peculiar in case of Nepal. As per Chaudhary (2018), money supply, growth rate of GDP and import price are the main determinants of inflation in Nepal. Besides, weather conditions vary agricultural production, in turn leads to stifling food price inflation. Several other studies have also suggested that prices in Nepal are hugely dependent upon Indian inflation because of weak exports and gigantic imports from India. In this context, inflation control is a cumbersome task for Nepal, given the open border with big neighbor and excessive dependence upon imported goods for necessities and daily consumption. So, dominant factor for inflation in Nepal is supply shock generated outside the country and Indian inflation (Nepal Rastra Bank, 2007; Ginting, 2007; Chaudhary, 2018). In this purview, inflation control seems like a herculean task.

Figure 2: inflation trajectory of Nepal and India (1965-2021)



Given the vulnerability of Nepalese inflation control mechanism, Nepal exhibits larger possibility of slipping down into the slippery slope of Hyperinflation in the future, given the status quo. Hyperinflation is the economic condition when prices surge uncontrollably, destroying the fundamentals of economy. Mostly, hyperinflation is caused by unrestrained printing of money to fund government expenses, either via physical printing of new paper money or creating digital currency. Sooner or later, this leads to a collapse in confidence in nation's currency with legal tender. However, the accurate historical account of hyperinflation is void, but there is multitude of lessons that Nepal needs to learn from the mistakes of other emerging economies around the world[1]. The recent anecdotes from Zimbabwe and Venezuela, both being resourceful countries, gives us clues that economic mismanagement, frequent changes in policy decisions and international isolation in the longer term can lead to hyperinflation. Hyperinflation can happen anywhere as it have occurred frequently throughout the world in history from ancient Roman Empire to recent Venezuela.

Nepal, the last Shangri la, has recently transitioned into liberal economy since the mid of 1990's and abolished the long-held monarchy to establish the federal democratic republic since 2006. Its economic tentacles are spreading all over the world, with its approximately 4.4 million citizens spreading in foreign nations. With the aspirations of upgrading itself from Least Developed Countries (LDC) to Developing Country (DC) by 2026, Nepal must be prudent in its policy choices and the way forwards. So, its policies regarding inflation and money supply bears huge significance. As there lacks empirical methodologies applicable to determine the risk of hyperinflation, this study will qualitatively assess the risk of hyperinflation in Nepal.

The study proceeds in the following order. Section 2 presents literature review including both empirical and theoretical review, and section 3 deals with research methodology. Similarly, section 4 presents the excerpts of the data analysis and findings. Going on, section 5 delves into further discussions on the issue. Lastly, conclusions and recommendations are provided to Government of Nepal via section 6.

2. Literature Review

2.1 Theoretical Review

Firstly, it's important to acknowledge here that there are no 'hard and fast' theoretical perspectives developed to explain the cause and effects of hyperinflation. So, very few literatures exist on the topic hyperinflation. Rather, the causes of inflation are often explained as the causes of hyperinflation. This seems logical because hyperinflation is basically inflation being uncontrollable and rising with very high marginal levels in short periods. And, though we use same theoretical perspective to analyze inflation and hyperinflation, the magnitude of the variable causes are more severe in case of hyperinflation. In light of this, the theoretical review aligns to the causes of inflation along with required explanation detailing hyperinflationary situation.

Inflation, as an economic and monetary phenomenon, is defined as a rising trend in the general price level in a country over a period. The definition of inflation is uniform universally, unlike hyperinflation. Hyperinflation is vaguely used to denote a term that describes 'out of control' increase in general price. Amid this ambiguity, Columbia University Professor Philip Cagan (1956) has set two quantitative criteria to consider hyperinflation; increase in general price level by 50 percent or more form one month to the next, and increase in general price level by 500 percent year on year[2]. However, many economists have dissents over this criterion and propose a much lower benchmarks like an annual rise of 100 percent in general prices[3].

The Quantity Theory of Money

One of the most common proximate causes of hyperinflation is movements in the money supply (Friedman, 1992). Money growth has been considered a determinant of explaining price movements since Jophin (1826) stated 'There is no opinion better established, though it is seldom consistently maintained, than that the general scale of prices existing in every country, is determined by the amount of money which circulates in it'.

A century later, Friedman (1992) baptized quantitative relationship between money supply and price level while purporting 'Inflation is always and everywhere a monetary phenomenon'. It has been established that the major cause of hyperinflation is a humongous imbalance between the supply and demand of a currency due to loss of confidence in the currency. This mostly occurs due to excessive money printing, though there are other reinforcing factors. Principally, money printing authority cannot print the money at the rate faster than the rate at which it is devaluing. Keynes (1920) mentioned that even the weakest government can enforce inflation when it can enforce nothing else. Because printing machines have been the government's 'Messiah' for covering governments financial mismanagement, for the time being, but later to be exploded.

Cost-Push and Demand-Pull Theory

This states that prices rise because of the increasing cost of the factors of production. The price of goods and services hike up as wages are pushed up by trade union's bargaining power, or pricing policy of oligopolies or monopolies with huge degree of

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1. *The most comprehensive study of hyperinflation is conducted by professors Steve Hanke and Nicholas Krus, revealing as many as 56 incidences of hyperinflation, all in the last century.*
2. *Throughout this paper, quantitative definition of hyperinflation, 50% monthly or 500% annually, set by seminal paper of Cagan (1956) is applied. Terms such as severe inflation, acute inflation, galloping inflation, runaway inflation, explosive inflation, and extreme inflation are used as synonymous to hyperinflation. Hanke (2013) specified that 50% rate had to persist for at least 30 consecutive days to be considered as hyperinflation.*
3. *Capie (1986, p. 147), and Sachs &Larrain (1993, chapter 23) have preferred 100% annual rise threshold for defining hyperinflation. According to the International Accounting Standards Board, hyperinflation is considered to occur, if a rate of 100 percent is recorded fro three consecutive years. Reinhart and Rogoff (2011) use threshold of annual rate of 500 to talk about modern hyperinflations.*

market power. Thus, labor market rigidities and changes in labor cost are considered a major cause of inflation. Similarly, prices hike up due to the huge cost of acquiring land for business. This adds up to the cost of products produced therein. Another important factor in production cost for any country is imported raw materials. The changes in prices of imports also have an impact on inflation in a country. The impact of labor unions on cost of production is much higher in developed countries. Whereas, in the case of developing and least developed countries, the cost of land, and capital goods, and import price have a bigger impact on the general price level of goods and services. In a hyperinflationary situation, these factors push the cost of production to be priced at a very high level, often at the unaffordable level. Similarly, there is Keynesian version of inflation theory, named as Demand Pull theory of inflation. This school of thought posits that inflationary pressures are created in the economy due to excessive demand for goods and services resulting from the expansionary monetary and fiscal policies.

Inflation and Expectations

Future inflation expectations are one of the most fundamental determinants of hyperinflation. There is a dichotomy to this expectation hypothesis, namely, adaptive expectations and rational expectations. As per rational expectations hypothesis, economic units form the expectations of inflation based on recently observed inflation and this affects the general price level in the economy. The proponents maintain that prices are rising because people expect them to rise as they have seen the price level rising. On the contrary, rational expectations supposes that people use all the available statistics and information including the policies to forecast the future. As per rational hypothesis, economic agents are forward looking, rather than backward looking. In case of hyperinflationary situations, expectations have a much role in setting the price level. Adaptive expectations fuel hyperinflation whereas rational expectations may slow down the detrimental impacts of hyperinflation.

2.2 Empirical Review

Reviewing the global history, it can be found that a significant number of countries have gone through the painful stages of hyperinflation. Not only in modern times, but also in ancient eras, hyperinflations have challenged the rulers of the time. Some of the hyperinflation episodes, along with their lead causes, are mentioned below.

Table 1: Hyperinflationary episodes in the history and their causes.

Country / Time Period	Prominent factors leading to Hyperinflation	Month with high inflation	References
Hyperinflation in the Ancient Regimes.			
Southern Sung Empire in China, 1230 AD	Invention of paper currency printing, Issue of Hui-Tzu (currency) expanded by 48.5 times the level of 1161 AD, funding of war/military.	*	He (2018)
British Colonies in America, 1776-80	Trade deficit with British during the American Revolution, Reliance upon paper currency to finance budget deficit due to war with British, Price Controls.	*	Markham (2002); He (2018)
France, The French Revolution (1789-1796)	Low Harvest, ill designed tax system, Currency Depreciation as inflationary finance, Diversion of resources into Nepoleonic Wars, Default on debts	304 % (Mid-Aug 1796)	Barsheghyan (2004); He (2018)
The First Wave of Hyperinflation in 20th Century.			
Germany, Aug 1922-Dec 1923	War Reparations to the Allies, Resorting to printing money for financing war and reparations, wasteful distortion in functioning of the market via hoarding goods, and black markets.	29,500%	Michael et al (1994); Kindelberger (1984)
Russia, Jan 1922-Feb 1924	The Parallel Currency System, Land Redistribution scheme, Excessive wartime spending, large budget deficits, money printing to finance the expenditures	245%	Efremov (2012); Hanke & Bushnell (2017); Hanke &Krus (2013)
Austria, Oct 1921-Sep 1922	Mounting Public debt, increasing money in circulation, considerable rise in demand for armaments, shortage of food supplies.	129%	Wicker (1986); Hanke &Krus (2013)

Country / Time Period	Prominent factors leading to Hyperinflation	Month with high inflation	References
Hungary, Mar 1923–Feb 1924	The Treaty of Trianon and Political Instability, Huge Budget Deficit due to war, absence of market for international debt, worsening capital flight, foreign exchange controls and black market operation.	97.9%	Hartwell (2019); Hanke &Krus (2013); Lopez & Michener (2018)
Poland, Jan 1923–Jan 1924	Rapid reconstruction process aided by inflationary financing, inevitable credit requirement of polish industry, Negative balance of trade, Crop Failure, Budget deficitm free trade in foreign currency.	275%	Hanke &Krus (2013); Jonszta (2018)
The Second Wave of Hyperinflation in the 20th century.			
Greece, May 1941-Dec 1945	A major revenue source (foreign trade and tariff receipts) shrinked, scarcity of imported raw material plummeted industrial production, increased military expenditures by 10 fold.	13,800% (Oct 1944)	Makinen (1996)
Taiwan, Aug 1945-Sept 1945	War with Japan financed by currency issues, suppressed pent-up demand through price controls, lack of independent central bank capable of refusing government's request for credit.	399% (Aug, 1945)	Makinen& Woodward. (1989); Liu (1995)
Hungary, Aug 1945–Jul 1946	Hungary's agricultural sector was hit hard by Great Depression, and the country's mounting debt forced central bank to devalue the currency to cover costs by loosening financial and monetary policy.	4.19*10^16 (July, 1946)	Bomberger& Makinen (1983);
China, Jul 1943-Aug 1945	War with Japan causes excessive military spending Japanese government set up puppet banks in China to issue currencies, experienced excessive money supply and later banned the use of Fabi (previous currency)	302% (Jun, 1945)	Campbell & Tullock (1954)
The Third Wave of Hyperinflation in the 20th century.			
Yugoslavia, April 1992–Jan 1994	Excessive money supply that monetized large budget deficits, sanctions imposed by international community, participation in war, central banks loss of control over money supply process.	313,000,000% (Jan, 1994)	Stojkovic (2019)
Peru, Jul 1990-Aug 1990	External debt default, sharp economic decline, a large fiscal imbalance, an unsustainable public debt.	397% (Aug, 1990)	Hanke &Krus (2013)
Georgia, 1993-94	Monetary financing of the fiscal deficit, Government attempt to maintain stable prices, Unideal financial Policies.	211% (Sept. 1994)	Wang (1999)
Bolivia, 1984-85	Budget Deficit (~10% of GDP) financed by monetary financing, Rising Foreign Debt, Depleting Foreign reserves to service foreign debt, Foreign Exchange Market crisis.	183% (Feb, 1985)	Bernholz(1995)
Hyperinflation in the 21st Century.			
Zimbabwe, Mar 2007-Nov 2008	Running up debts, large pensions and social security, economic misadventures, debt sweat, financial panic, land raids, taxation gets replaced by money printing.	7.96*10^10% (Nov 2008)	Haslam & Lamberti (2014)
North Korea, Dec 2009-Jan 2011	Command Economy, Foreign Economic Sanctions, Foreign currency black market flourished during famine of 1990's, sortages resulting from state control of agriculture.	926% (March, 2010)	Hanke (2013); Kim, Choi & Lee (2017)

Country / Time Period	Prominent factors leading to Hyperinflation	Month with high inflation	References
Venezuela, Nov 2016-Ongoing	Excessive corruption, economic mismanagement, undiversified nationalized economy with high reliance on oil production, strong dependence on imports for basic necessities, absence of Central Bank Independence.	219% (Nov, 2016)	Hanke & Bushnell (2017)

**No data has been provided in the literature, but authors have indicated that those periods have experienced hyperinflation.*

International Monetary Fund (2018) has published a working paper, in which 62 variables have been studied for 196 countries over 57 years, to study modern hyperinflation cycle and generate insights on empirical regularities. Beyond the usual knowledge, the paper contributes to literature by exploring the context where cycles of hyperinflation often occur. They identify three major factors causing hyperinflation (i) depressed economic freedoms, (ii) deteriorated socioeconomic conditions and rule of law, (ii) high levels of domestic conflict and government instability. Along with this, the role of international financial assistance required for stabilization was studied and showed that the majority of hyperinflationary countries used the assistance, improved their economic freedoms and went for fiscal flexibility.

3. Methodology

In this study, the exploratory research design is applied to assess the risk of hyperinflation, as there are no prior studies conducted within the purview of Nepalese economic sphere. The study analyzes the economic figures for the period after FY 1973-74, from when reliable macroeconomic statistics are recorded in Nepal, and until FY 2021-22. Explanatory variables include nominal money supply, nominal interest rate, nominal inflation rate, foreign exchange rate, budget deficit, debt-to-gdp ratio, nominal wages, central bank independence, governance index and political rights index. All of these variables are typical of those applied in several other empirical and theoretical analyses of hyperinflation.

Given the fact that data available for Nepal are not adequate and reliable enough to conduct empirical analysis via econometric modeling, exploration has been the main motto of this paper. Majorly, secondary data available in national archives have been used in this study to propose the hypothesis. Further, extensive literature review supports the assumptions implied for several other variables of interest.

4. Data Analysis and Findings

The citizens all over the globe, including Nepal, are now troubled by excessive inflation due to Russia-Ukraine war, oil price hike and COVID-19 pandemic (The World Bank, 2022). For Nepal, the inflation threshold set by Nepal Rastra Bank was 7%, but it has already reached 8.5% in mid-October 2022[5]. As one of the major causes of inflation is import price and fluctuating weather conditions, Nepalese inflation control mechanism is not fully under the control of the central bank. Thus, a careful enquiry is required to assess the risk of hyperinflation in Nepal.

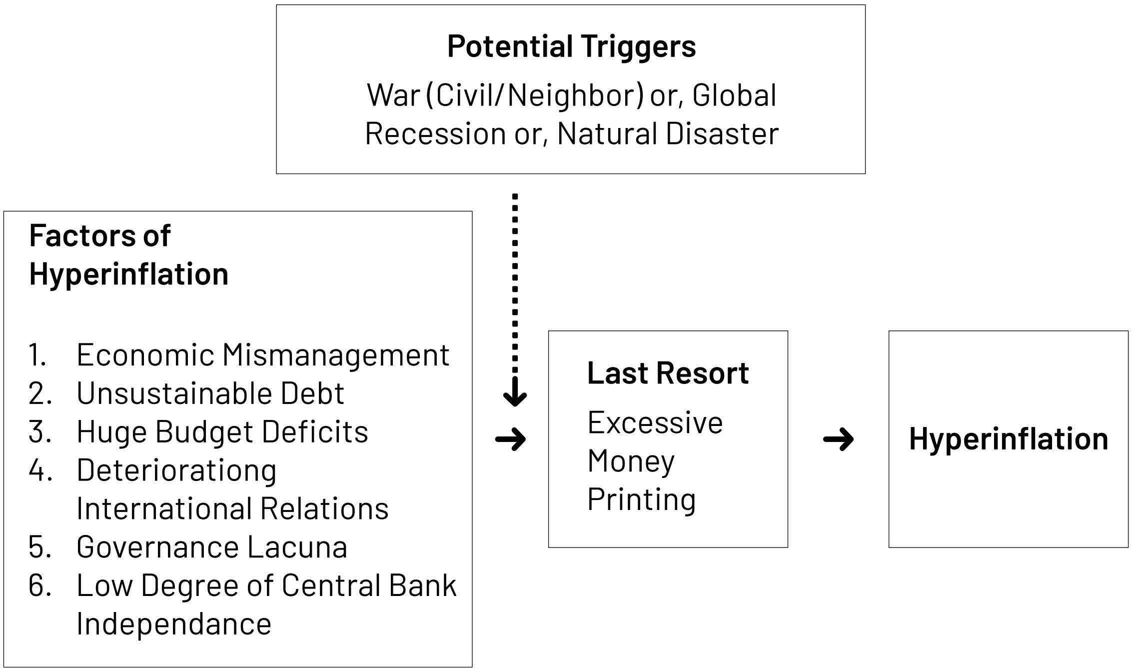
Hyperinflation is the condition when prices of goods hike up uncontrollably, equivalent to almost doubling of prices within a couple of days or months. More specifically, it is a situation where prices of goods and services increase with 50% per month or 500% per year, according to Professor Cagan of Columbia University. Economists often purport that living in the country with hyperinflation is the perfect simulation of life in Hell.

The economic history of world and recent episodes of hyperinflation in Zimbabwe (2008) and Venezuela (2016) shows a commonality in causes of hyperinflation. Liping He, professor at Beijing Normal University, in his book 'Hyperinflation- A World History' pinpointed its three major causes; extreme economic mismanagement, deterioration in international relations and haphazard policy decisions. So, fitting the contemporary Nepalese economic fundamentals and political scenario, it is a no brainer to say that Nepal is slowly sliding into the slippery slope of hyperinflation.

In this study, the below mentioned transmission mechanism is tested by presenting facts and figures and benchmarking with the international practices.

4. *The inflation rates are calculated from the movements in the average black-market North Korean Won/US dollar exchange rate in three North Korean cities: Pyongyang, Sinuigu, and Hyesan. See: Steve Hanke and NicholosKrus, "World Hyperinflations" in Randall Parket and Robert Whaples (2013) The Handbook of Major Events in Economic History. London: Routledge Publishing.*
5. *The inflation target is based on Monetary Policy published in July 2022 by Nepal Rastra Bank for FY 2022/23. And mid-October inflation rate of 8.5% is as per Nepal Rastra Bank's monthly update of Current Macroeconomic and Financial Situation for mid-October 2022.*

Figure 3: Transmission Mechanism for Hyperinflation in Nepal



Factors of Hyperinflation

The factors of hyperinflation that we use in this study are extracted from the history of hyperinflation episodes in major economies and available literature. In this section, each of these factors would be examined.

4.1 Economic Mismanagement

Economic mismanagement has been one of the major causes of hyperinflation in each of the countries mentioned in empirical review. In ancient as well as recent times, rulers' profligate policies have led to shortage of resources in the country for much-needed investments in the structural transformation of the economy. This is one of the building blocks of hyperinflation.

The reality of Nepalese economy is the revenue constraints fuelled by its geographical limitations, frequent natural disasters, and erratic weather conditions. The resource pie of the country has hardly crossed 1068 billion in 2021/22. But equitably managing this pie has always been a challenge, given the exploitative nature of social polity. Be it an individual or government, it's advisable to live within its means. However, Government of Nepal, being a resource deficit country, has its own constraints to resort to deficit financing. For the year 2021/22, GoN had revenue of Nrs. 1068 billion while it incurred expenses of Nrs. 1296 billion. This is not a big issue, if the government revenues are invested in profitable projects that generate income or public welfare over the longer term. But a huge chunk (90%) of the hard-earned revenue has been spent on recurrent expenditure alone. And capital expenditure has to rely almost on foreign debts and grants. The grant amount can be expected to reduce further, as we march towards 2026, the year when we are planning to get upgraded from LDC status. In this stature, the nation cannot afford to mishandle its hard-earned revenue.

Capital projects are the revenue boosters for any economy. They set up the fundamental infrastructures in the economy, upon which further economic welfare could be thought of. But Nepalese experience with capital projects has not been so satisfactory. First, the portion of capital expenditure is so miniscule that rapid economic growth is near to impossible. Second, the big projects are never completed on time, and thus piling up the investment amount due to inflation and other changes. Third, corruption and red tape bureaucracy leads to untimely completion of projects. These examples demonstrate that Nepal lags its development need not only due to resource constraint but also rampant corruption and bureaucratic hurdles.

Table 2: Few government projects with their descriptions.

Project Name	Timeline	Task Completed (%)	Investment Amount	Description (Reason for delay)
Sikta Irrigation Project	Initiated on FY 2005/06, supposed to end by FY 2014-15, but date extended to FY 2032-33.	70% completed till date.	Initial budget: Rs. 12.8 billion Proposed Budget: Rs 50 billion	Problems related to land acquisition, forest clearance and disputes with contractors. Further, corruption cases amounting 2 billion delaying the project.
Kathmandu Terai Fast Track	Initiated on FY 2016/17, supposed to end by FY 2020/21, but date revised to FY 2024/25.	Only 16.10% of work completed	Budget Rs 175 billion	The government has not been able to acquire 411 ropanis of land for expressway. Locals have been refusing to hand over their land.
Postal Highway	Initiated on 2009/10, expected to complete on FY 2022/23.	About 80% completed.	Initial Budget: Rs 47 billion Revised Cost: 65.2 billion	Contractors' negligence, along with other bureaucratic hurdles.
Melamchi Drinking Water Project	Initiated on 1998 and completed on 2021.	Completed, but damaged by flood.	Initial budget: USD 464 million	Agencies withdrew their funding, multiple contractors changed, corruption charges, and flood in 2021.

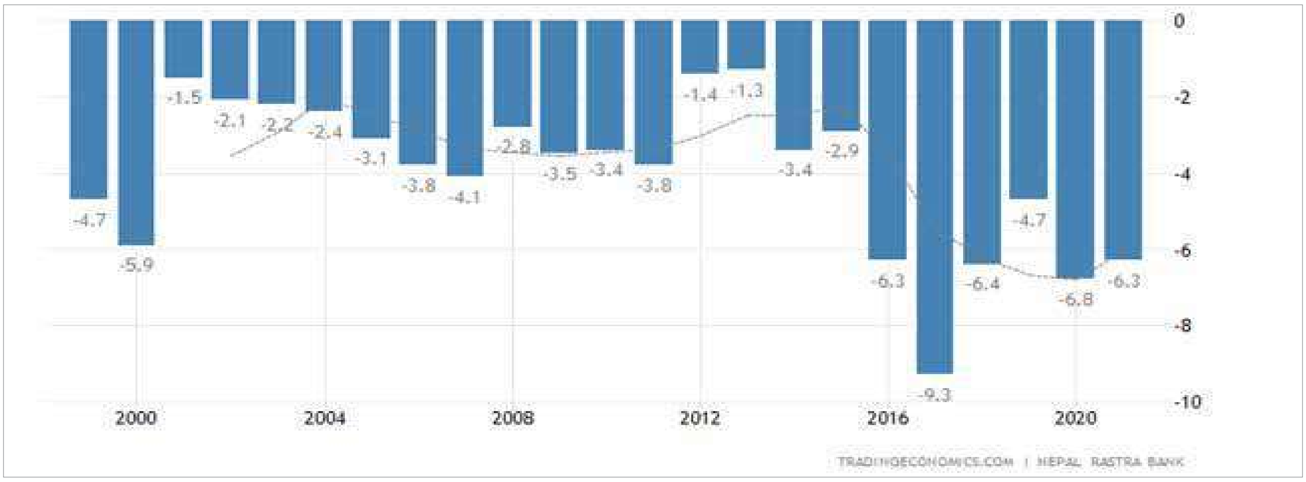
Another instance that government is living beyond its means is the profligate social security allowances. There are about 35 lakhs 70 thousand beneficiaries who receive direct cash transfer from Government. About 68 billion were distributed in FY 2020-21 alone. Now, due to lowering of the eligibility age by current government, more than 113 thousand beneficiaries have increased, and 105 billion allocated for the 2022-23 budget. This amounts to almost 10% of the estimated government revenue. This sort of populist policy, with a blind eye to the economic reality, is leading us to quagmire.

Further, politicians pet projects are another curse to economy of Nepal. The projects should have been prioritized and selected based on the return on investment (ROI) or on maximum public welfare basis ideally. But there is multitude of cases where loads of money has been spent on profligate baby projects of politicians. Some of the ambitious projects undertaken but lagging seriously on ROI are Chovar Dry Port, Bhairahawa International Airport, Dang as Province Capital and View towers as tourist destinations. The opportunity cost for these 'not so needed' projects are huge. These examples demonstrate the height of our economic mismanagement.

4.2 Burgeoning Budget Deficits

There has never occurred a hyperinflation in history which was not caused by a huge budget deficit of the state. A deficit occurs when the government's spending exceeds its revenues. The same has been the case for Nepal for quite a long period of time.

Figure 5: Budget Deficit of Nepal



The consistent budget deficit in the last two decades shows that there is a need for structural intervention in the revenue management aspect. The rate of increase in deficit should be checked properly and immediate actions are required to increase the revenue base and decrease unnecessary current expenditure. This demonstrates the burgeoning need to get funds for generating adequate demands in the economy.

Comparing the budget deficit with that of past hyperinflations, the reason for budget deficit in Nepal is quite different. The majority of countries that have faced hyperinflations had budget deficits due to their expenses in war, military expenses and such confrontation. But Nepalese economy faces budget deficit due to trade deficit, faulty tax system, near to zero production and haphazard investment on projects with very low rate of return.

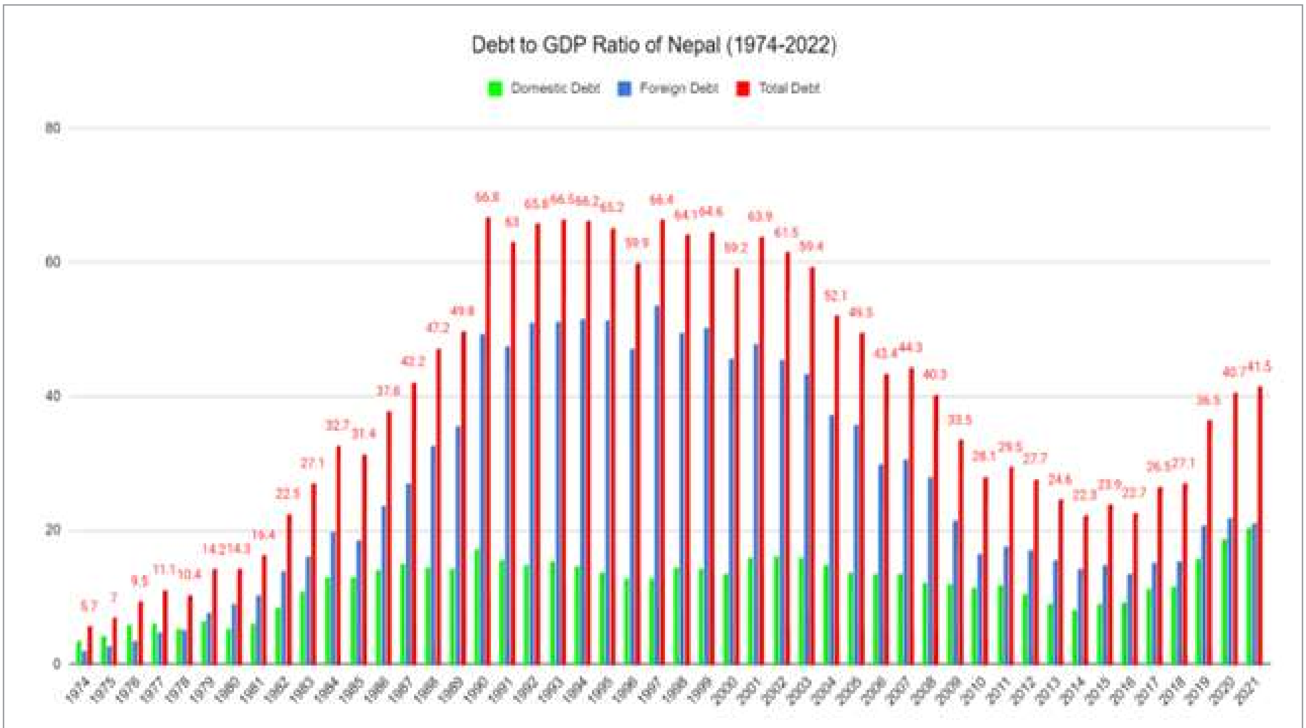
4.3 Unsustainable Debt

Natural Resource trap is one of the curses of Nepalese economy, as per Collier (2007) in his book The Bottom Billions. The four traps of the poor nations as per British Economist are the Conflict Trap, the natural resource trap, landlockedness and poor governance. Until a few decades ago, the country was into conflict, and recently it has managed it through home grown peace process. But three other traps remain till today. So, managing sufficient resources to fund the government has been a challenge. As it cannot generate enough revenue, it has been relying upon external debt for very long.

There is no universal threshold for debt that can apply to countries in a blanket. However, each nation havea different nature of revenue source, investment avenues, cost of capital which determines the optimal level of debt. The Reinhart-Rogoff hypothesis suggests that public debt can positively affect economic growth if debt to GDP level is lower than 90%. (Reinhart, Reinhart, & Rogoff, 2015). However, the threshold of debt can range from 15% (Butkus &Seputiene, 2018) to 2000% (Pegkas, 2018). There are studies that found threshold to be 90% and above for countries like Lebanon (Taher, 2017), Israel (Shahor, 2018) and Greece (Pegkas, 2019). In contrast, the threshold has been found to be lower than 50% for the case of European countries (Gomez-Puig &Sosvilla- Rivero, 2017) and other developed countries (Lee, Park, Seo& Shin, 2017).

On this theme, Adam Smith (1776) rightly quoted 'When national debts have once been accumulated to a certain degree, there is a scarce, I believe, a single instance of their having been fairly and completely paid. The liberation of public revenue, if it has ever been brought about at all, has always been brought about by a bankruptcy ... frequently by a pretended payment.'

Figure 4: Debt to GDP Ratio of Nepal (1974-2922)



Several studies have been done to estimate optimum growth maximizing public debt threshold for Nepal. Bhatta & Mishra (2020) have performed a quadratic bivariate model based on ARDL coefficients and found that optimum public debt to GDP rati is 33 percent. Similarly, a joint debt sustainability analysis (DSA) study conducted by World Bank and the International Monetary Fund also indicates that one of the DSA critical rations, present value of debt to export ratio is projected to be very close to the threshold. The report suggests that Nepal needs to implement sound macro-economic policies, by making effort to improve business climate and competitiveness via high quality public investment and structural reforms. The report forecasted that Nepal's debt to GDP ratio would meet 35 percent in the medium term and 48 percent in the long run. But, as of October 2022, Nepal's debt figure has already reached 41.5 percent of GDP. Thus, the pace of accumulation of debt signals risk.

Further, the history of debt in Nepal shows that government relied upon excessive debt (mostly foreign debt) since 1990 till 2004. The economy was performing sub-optimal during that time due to debt sweat. (Bhatta, 2003). The recent amortization schedule shows that we are required to pay almost 10% of our total revenue for debt repayment So, authorities must be cautious of this rapid increment.

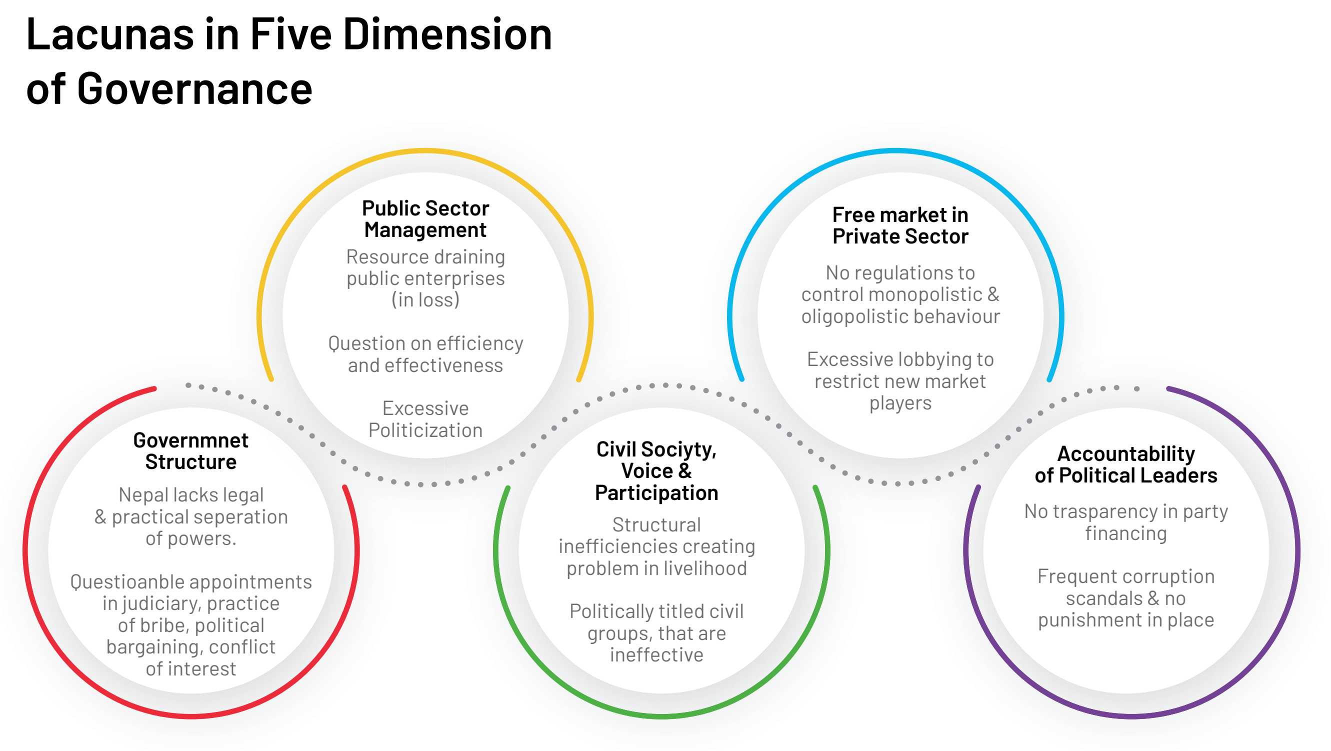
4.4 Deteriorating International Relations

With the shifting of 'economic centre of gravity' towards the Himalayas, it's inevitable that geopolitical struggle will take place among the west and South East Asia to influence Nepal and keep on their side. Without delicate balance in the relations with India, China and its neighbor of the sky (USA) through excellent diplomacy, Nepal will be in the risk of international isolation. The recent episodes of criticism to MCC project of USA, controversial boundary debate of Kali River with India, criticism for increasing influence of China to Nepal's Communist Parties denotes our vulnerable position. Nepal is now excessively dependent upon imported goods for consumption, remittance for income and foreign debts for covering budget deficit. So, the sudden deterioration of international relations by any cause would severely impact its demand and supply of goods in the market, scarcity of debt will occur and add pressure in the government coffer. For a country that produces literally nothing to sell, such a scenario is a push into the abyss of hyperinflation.

4.5 Governance Lacuna

As per the World Bank, there are five dimensions of governance. And the most severely detrimental aspect in Nepalese polity is lacuna in good governance. The five dimensions are elaborated in the figure below.

Figure 6: Five lacunas in governance, adapted from World Bank's dimensions of governance.



Further, rampant corruption is one of the ailments that have been scaled to precarious level in recent times. Nepal ranks 110 among 180 countries in Transparency International's 2022 Corruption Perception Index. The score has been kind of consistent over the last decades, which shows that corruption has scaled up in Nepal. There are 18 governmental bodies and agencies operating to curb out corruption in Nepal, but they are not functioning well. The primary body to curb inflation, Commission for the Investigation of the Abuse of Authority, is defunct partially. The current chief of CIAA, while submitting the recommendations to government for corruption control along with the reasons of corruption and anomalies, often recite that their recommendations are not being implemented from political level. This demonstrates the level of corruption and existing governmental inefficiency in controlling it. Most of the countries with previous hyperinflations have high degree of corruption, as it distorts the maximum possible use of limited resources.

Table 3: Governance Indexes and Nepal's Status

Index	Rank	Score	Year	Publication Agency
Corruption Index	110/180	33	2022	Transparency International
Rule of Law Index	69/140	6 index point	2022	The Global Economy
Government Effectiveness Index	157/192	-0.87	2021	World Bank
Democracy Index	73/176	0.603 (Deficient Democracy)	2022	Universitat Urzburg
Economic Freedom Index	142	51.4	2023	The Heritage Foundation

Glancing over some of the indexes mentioned above, there is a lot of space to question the current status of polity. Governance has been deteriorating year after year, that adds up more concern on the trust that citizens have upon their government. As the economic system is mostly balanced by trust of citizens upon their rulers and their policy making, the trust going away from rule of law questions the monetary system too. The loss of confidence and trust of citizens on the country's currency is one of the major causes of hyperinflation.

4.6 Central Bank Independence

There is a policy consensus that central bank independence, allowing central bank to control monetary instrument without political interference, is an effective tool for controlling inflation. (Garriga & Rodriguez, 2020; Goodfriend, 2007; Acemoglu et al., 2008; Bodea & Hicks, 2015; Klomp and Haan, 2010). If governments undertake discretionary control over monetary instruments, they can prioritize other goals than price stability throughout their regime period. Politicians are tempted to use monetary policy to produce short term boost in employment and output for political reasons, raising inflation over the long run (Kydland & Prescott, 1977). This way, higher central bank independence is associated with lower inflation rates. So, majority of central banks in the world have explicitly mentioned the price stability as its prime objective, with some exceptions[6].

Cukierman, Webb & Neyapti (1992) have developed three indicators of measuring the independence: the rate of turnover of central bank governors, an index based on questionnaire and an aggregation of legal index and rate of turnover. They found that legal independence score is inversely related to inflation in industrial countries and rate of governor turnover is inversely related to inflation in developing countries. The same tools are applied in this study to compare and assess the Central Bank Independence Score of Nepal Rastra bank.

Table 4: Central Bank Independence Calculation

Years	Legal Central Bank Independence (CBI) Score	Average Turnover of CB's Governor	Average Inflation
1972-1979	0.18	0.18	8.12%
1980-1989	0.18	0.19	10.84%
1990-2000	-[7]	0.20	9.64%
2000-2010	0.43*	0.98	5.74%
2010-2020	0.43*[8]	0.80	6.34%

Cukierman (1992) calculated legal CBI score to be 0.18 during 1980's and authors calculation for recent CBI score shows a remarkable improvement, with a score of 0.43. But this score is a suitable proxy of independence for industrial nations only. However, there have been significant decline in the independence of Nepal Rastra Bank, with the turnover rate increment from 0.18 to 0.80[9]. Cukierman suggests turnover rate as a better proxy for devleoping country. Thus, it can be concluded that, NRB is independent de jure, but government intervention distorts NRB's objective, de facto, reflected by rate of turnover. This proves central bank's limited role in curbing out the inflation.

6. *Federal reserve has been given a dual mandate; maximum employment and price stability.*
7. *No calculation has been performed for this time period.*
8. *Central Bank Independence Score for decade 2000 to 2010 and 2010 to 2020 is authors calculation, and scores for earlier two decades are calculated by Cukierman (1992).*
9. *Turnover rate of governor is calculated by reciprocating the number of years tenured by a particular governor. Higher the turnover rate, shorter is the tenure of the governor and vice versa.*

5. Further Discussions

i. Policy failures are leading to Quagmires.

Firstly, the policy makers are found to be careless with basics of project management, given the Return of Investment (ROI) and Payback Period (PBP) of some big investments like Gautam Buddha International Airport (Nrs 40 billion), Chovar Dry Port (Nrs 1.6 billion), and many more. The infinite extension of deadlines in projects such as Melamchi Drinking Water Project (started in 1998), Budi Gandaki Hydorpower Project (prefeasibility study in 1984), Kathmandu Ringroad Improvement Project (started in June 2013) etc showcases the inefficiency in investment policy.

Further, there are many hurdles for international investors to invest in Nepal, thanks to the impractical Foreign Investment policy. The threshold of 5 crore is recently reduced to 2 crores, as an example of carelessness in the previous policy. Next, Government's populist policy decision to increase social security, despite its shrinking revenue, is like digging thy grave. Further, the promotion of foreign employment to the youths by the state authorities itself is the height of governmental policy failure, instead of creating opportunities for employment within the national boundary. The country literally produces nothing except its young citizens, only to export them in the Gulf of Deaths. In these dire times too, no serious policies are put and formulated to attract its skilled citizens around the globe. Economically, it depends largely upon its southern neighbor sharing 60% of its total trade. And, with the history of blockades time and again (2019, 2027, 2045, 2072 BS) from India, we cannot avoid the possibility of deadly ramifications if geopolitical turmoil ignites any time. Given our excessive dependence upon the neighbor of the South, it also has another key, pegged exchange rate, to choke our economy whenever it wants. No policy homework is done by authorities to deal with these possible scenarios.

ii. Brewing up a Storm.

Fiscal discipline is a fairytale for the drivers of the Nepalese economy. Misuse of government revenue is rampant, aided by corruption. Meagre sources of revenue and very poor productivity ails the government budget. In recent times, the government is relying on debt financing to fill up the gap of budget deficit. But, until when? Next, policies are frequently tampered with the change in governments. Long term consequences are not considered while making investment decisions. Also, our independent institutions are being constantly weakened by government intervention for political cause, be it Nepal Rastra Bank, the judiciary, and many more. Adding insult to the injury, Nepal's relation with its international financial partners is deteriorating due to diplomatic weakness, and political ambition of few elite politicians.

In this juncture, let's imagine a scenario, if our debt to GDP ratio rises to unsustainable level or war incurs on the neighborhood, or climate change causes devastating effect, one of them being a probable trigger in the next decade. Then, the credibility of Nepal will degrade, and creditors will either stop lending or charge us high interest rate. The repayment obligation would balloon by then and the governmentwould not have sufficient revenue to fund itself and repay the loans. In that case, if international agencies or countries stop lending us the much-needed money, the last resort is money printing either physically or digitally, which is actually the theft of money by government from citizen's pocket. Then there comes the cancer of the economy, hyperinflation. Remember, you have millions of rupees, but are not able to buy necessities too. Prices double instantly and there is no motivation for doing work or trade or anything except barter.

iii. Potential Triggers shall not be ignored.

In previous hyperinflations, there has always been a trigger that boosted the rate of inflation further higher into hyperinflation. Previously, majority of the hyperinflations have been caused due to budget deficits led by war expenses. The event of war had been the factor triggering the deterioration of the nation's economy. But there are three major potential triggers that could evoke hyperinflation in the current scenario.

A. Global Recession: As Nepal is now interconnected with the global economy, the global recession event, if occurs, will surely hit highly. As the country is now excessively depending upon income from remittances, accounting for almost 25% of GDP, layovers will roll out Dutch disease. Further, Nepal imports basic commodities and exports its products to many other countries. The disturbance in the demand for and supply of goods with its trade partners may deteriorate its deficits.

B. War on the Neighborhood: The rise of world polity, mostly in the form of multipolar power distribution, wars could be thought of. Not within the country but also if the giant neighbors go into some sort of war, Nepal will face severe economic ramifications.

C. Natural Disaster/Climate Change: Nepal is highly prone to natural disasters. It ranks 4th most vulnerable to impacts of climate change, 11th most vulnerable to the earthquake. Similarly, flashfloods, landslides, GLOF (Glacial Lake outburst flood) are frequent, leading to severe impacts in the local economy. These disasters are turning into huge resource drainer for Nepal.

iv. Sliding slowly into the slippery slope of hyperinflation

There is no immediate possibility that Nepal will sink soon into the hyperinflation. But it seems that Nepal is sliding slowly into the slippery slope of hyperinflation. Diagnosing the factors of hyperinflation, it has been found that economic fundamentals are moving towards an alarming level. And governmental intervention is required sooner. Mostly, budget deficit shall be checked out immediately and measures for improvement shall be put. Debt levels have almost reached the theoretical thresholds, with less flexibility. Central bank independence has been severely undermined, which shows that monetary mismanagement could be a serious issue. Lastly, while the geopolitics is at flux, Nepal shall pursue economic diplomacy and maintain equidistance with the world powers.

6. Conclusion

As Alfred Marshall has dictated 'Natura non facit saltum' in his 1890 magnum opus Principle of Economics, nature does nothing in jumps. This analogy is applicable to the event of hyperinflation. Hyperinflation does not occur simply due to a single event. It is caused due to long held constellations of deteriorating economic fundamentals. It takes time to evolve. If there is fuel prepared, it is hard to say whence the spark shall come that shall set it on fire. In this scenario, what a nation can do is to dynamically analyze the factors of hyperinflation and improve the factors that are flagging danger. For instance, in contemporary Nepalese economy, budget deficit, increasing debt level, poor revenue management, very low production base and potential impact of natural disasters should be taken care of, to decrease the risk of hyperinflation.

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APPENDICES

Appendix 1: List of Governors of Nepal Rastra bank with turnover rate calculation.

	Governor	In office	Years	Turnover Rate
1	Himalayan S.J.B. Rana	April 26, 1956 – February 7, 1961	4.83	0.21
2	Laxmi Nath Gautam	February 8, 1961 – June 17, 1965	4.33	0.23
3	Pradyumna Lal Rajbhandari	June 18, 1965 – August 13, 1966	1.17	0.86
4	Bhekh Bahadur Thapa	August 14, 1966 – July 26, 1967	0.92	1.09
5	Yadav Pant	April 24, 1968 – April 28, 1973	5.58	0.18
6	Kul Shekhar Sharma	April 29, 1973 – December 12, 1978	5.58	0.18
7	Kalyana Bikram Adhikary	June 13, 1979 – December 8, 1984	5.42	0.18
8	Ganesh Bahadur Thapa	March 25, 1985 – May 22, 1990	5.17	0.19
9	Hari Shankar Tripathi	August 10, 1990 – January 17, 1995	4.50	0.22
10	Satyendra Pyara Shrestha	January 18, 1995 – January 17, 2000	5.00	0.20
11	Tilak Bahadur Rawal	January 18, 2000 – January 17, 2005	5.00	0.20
12	DeependraPurushDhakal	August 29, 2000 – April 27, 2001	0.67	1.50
13	Bijay Nath Bhattarai	January 31, 2005 – January 15, 2009	5.00	0.20
14	Deependra Bahadur Kshetry	January 15, 2009 – July 26, 2009	0.50	2.00
15	Bijaya Nath Bhattarai	July 26, 2009 - January 31, 2010	0.50	2.00
16	Yuba Raj Khatiwada	March 22, 2010 – March 19, 2015	5.00	0.20
17	Chiranjibi Nepal	March 19, 2015 – April 6, 2020	5.00	0.20


BANK SPECIFIC FACTORS AND BANK STABILITY: EVIDENCE FROM NEPAL

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Abstract

Maintaining financial stability is vital for all financial institutions, as it fosters public trust and confidence in the entire system, while also contributing to a healthy and well-operating economy in a country. This study investigates the relationship between bank-specific factors and the stability of banks in Nepal. The study utilizes panel data of commercial banks in Nepal over a period of 22 years from 2001 to 2022. The research employs both descriptive statistics and econometric techniques to analyze the data. The Z-score is the indicator signaling the bank stability for the identity of bank soundness, as proposed in the empirical prior research. The findings of the study suggest that bank-specific factors such as capital adequacy, profitability, and liquidity have a positive and significant impact on the stability of banks in Nepal. However, the study also finds that asset quality and interest rate have a negative and significant influence on bank stability. The results of the study have important implications for policymakers and bank management in Nepal, highlighting the need to prioritize the improvement of bank-specific factors to enhance the stability of the banking sector.

KEYWORDS: **Bank stability; commercial banks; bank-specific variables; VECM approach**

JEL CLASSIFICATION CODE: **E63, G21, G28**

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1. Introduction

Financial resources are vital for setting up new businesses, as they provide opportunities for expansion, hiring staff, and supporting other companies and local, state, and federal government entities. They are the key to establishing a solid foundation for entrepreneurship. Individuals, businesses, organizations, and even government agencies need financial resources to meet a variety of needs. Currently, ordinary people have greater challenges in obtaining financial loans than corporations, organizations, or governmental agencies. At the business, industry, and macroeconomic levels, it is essential for promoting economic growth (Mittal and Garg, 2021). The history of banking has shown that this industry is susceptible to a number of risks and instabilities, and it may be the only one in which many risks are managed simultaneously (Cebenoyan and Strahan, 2004). There have been significant changes in this industry over the past several decades in terms of deregulation, inventions, diversification, competitiveness, and financial globalization. The banking industry's influence has currently spread across the globe, making it more inclusive, lively, and dynamic. The prospects of the financial market have multiplied due to greater financial globalization, but this has also created dangers and instability worries. Macro-prudential standards are receiving more attention from regulatory bodies throughout the world in an effort to keep financial systems stable. Furthermore, given the extensive global interconnection of financial systems today, volatility in the financial systems has the potential to do enormous harm to the global economy (Alshubiri, 2017).

The economic process of determining prices, distributing funds, and managing risks operate effectively in a state of financial stability, which is essential for promoting economic growth in a country. Therefore, financial stability plays a crucial role in a nation's economy. The distribution of money will not operate properly if the financial system is unstable and inefficient, which might impede the nation's economic progress. Investigating the variables that contribute to instability will help one better understand financial system stability (Gwachha, 2022). Instability in the financial system may be brought on by a wide range of variables and changes, which are typically a mix of market failures brought on by structural or behavioral issues. Pressures from both domestic and foreign sources might contribute to market failure. Based on the aforementioned circumstances, actions to prevent or minimize the danger of potential financial system instability are required, especially to prevent another enormous loss (Beck et al., 2013). Theoretically, a number of variables, including capital flows, currency rates, interest rates, inflation, the proportion of bad loans (non-performing loans), and others, might affect the stability of the financial system.

The financial sector of Nepal, a developing economy, is dominated by banks, just like that of other emerging nations. The NEPSE is the only stock exchange in Nepal, and its capital market is undeveloped. As a result, Nepal's banking industry is crucial to financial intermediation. Commercial banks are expanding rapidly in Nepal and have a big impact on the country's financial sector (Singh, 2021). Increasing NPAs, the concentration of lending into a few industries, and poor credit screening are just a few of the issues that the Nepali banking industry is now dealing with. It is crucial to maintain stability in this sector given the importance of the banking sector in Nepal as well as current industry-specific and macroeconomic difficulties. Concerns over post-crisis bank stability and the significant role that Nepal's commercial banks, in particular, have played in the country's economic development, serve as the study's primary motivations. The purpose of this research is to assess the bank-specific factor and banking financial stability of commercial banks in Nepal. In light of these research concerns, the study seeks to evaluate the commercial bank stability in Nepal during the years 2001–2022.

2. Review of literature

Chand et al. (2021) investigate the structural, microfinance, and bank-specific factors that influence bank stability in Fiji. The study's conclusions showed that bank stability is positively correlated with credit risk, liquidity risk, non-performing loans, and bank size. The study discovered that inflation rate and economic expansion had a favorable effect on bank stability. Alshubiri (2017) evaluates the element that may affect banks' financial stability. The study examines macroeconomic and bank-specific factors. The Z-score method was used in the study to evaluate bank stability. The analysis shows that only bank-specific characteristics have a substantial influence on the financial stability of the banks, but macroeconomic and external governance variables have little bearing on the financial stability of Oman.

Chiaramonte and Casu (2017) examine the impact of structural liquidity on bank stability in the European Union using bank-level data. The study discovers that larger liquidity holdings reduce the risk of bank collapse and hardship, whereas capital ratios only matter for large banks. Furthermore, maintaining appropriate levels of both capital and liquidity ratios is necessary to ensure the stability of banks. The investigation provides evidence in support of the Basel III framework regarding structural liquidity, as well as an increased regulatory focus on large and systemically important banks. The study suggests that adhering to the Basel III liquidity and capital regulations significantly reduces the likelihood of bank insolvency.

Laeven and Tong (2016) examine the financial stability (use three key indicators-tier 1 capital, loan-to-asset ratio, and deposit-to-asset ratio) status of banks operating in 32 countries. The study discovered that banks with enough capital are less vulnerable to systematic risk and that the capital base has a substantial impact on coping with uncertainty. The study discovered a conflict between bank stability and size. Swamy (2014) investigates the connection between numerous banking stability indicators. The study's findings show that, in financial systems dominated by banks, liquidity is inversely correlated with capital sufficiency, asset quality, and profitability. Further examination indicates that a disturbance in one stability-related factor can influence other factors due to the dynamic nature of their relationship.

Diaconu & Oanea (2015) examines the factors influencing bank stability in Africa utilizing the Z-score as a proxy of financial stability. The study finds that some of the most important predictors of bank stability include the size of the banking sector, bank concentration, efficiency, and the participation of international banks. The study also found that institutional factors that affect banking stability in Africa include government efficiency, political stability, institutional quality, macroeconomic policy, and unemployment rates. Fielding and Rewilak (2015) examine the relationship between financial instability in the United States from 2012 to 2015. According to the study, neither boom nor fragility may increase the likelihood

of a crisis on their own, but rather, the two factors working together may produce the crisis-causing circumstances. The study also revealed a significant finding: as long as a bank's assets provide an average annual return of more than 1.5%, fluctuations in liquidity do not affect the banking system.
Ahmad and Mazlan (2015) build a bank stability index for Malaysian banks in this way by using several economic risks such as credit, liquidity, and market risk. Credit, market, and liquidity risk are simulated in the study using ratios of time-interest-earned, actual deposits, financial leverage, and bank loans to the local private sector. The study reveals that the vulnerability of foreign-based banks remains unaffected by either bank-specific or macroeconomic factors at the individual level. However, the fragility of locally-based banks is influenced by factors such as asset quality ratio, bank asset size, and management competence. The study shows that the return on assets is severely impacted negatively by the size of the bank. The study discovered that the return on assets had a detrimental effect on operational effectiveness. Subsequent investigation revealed a conflict between interest revenue and operational effectiveness.

Singh (2021) examines the determinants of bank stability in Nepal's banking industry by employing the system GMM on a panel of bank-level data spanning from 2004 to 2018. The findings indicate that the banking industry's stability in Nepal showed improvement during the early years of the study period (2004-2007), but it demonstrated a declining trend for the rest of the period. The analysis reveals that the major factors contributing to this downturn are capital adequacy, asset quality, and earnings of the banks. Although most of the dimensions demonstrated enhancements in the initial years of the study period, the estimation results suggest a positive persistence of bank stability in the Nepalese banking industry. The study also indicates that credit growth has an adverse impact on the banks' stability.

According to Shrestha (2020), the financial performance of Nepalese commercial banks is examined with the influence of bank-specific variables. The study's conclusions showed that the financial performance of commercial banks is highly impacted by bank-specific characteristics. Studies also reveal that asset quality, management effectiveness, and operating efficiency all have a favorable effect on the financial success of banks. The study found that credit risk has a negative effect on banks' financial performance. Thagunna and Poudel (2013) evaluated the efficiency of banks operating in Nepal during the period of 2007-08 to 2010-11 using Data Envelopment Analysis (DEA). Their findings indicate a generally stable and increased level of efficiency among Nepalese banks. Furthermore, the study revealed no noteworthy correlation between ownership structure and efficiency level.

The literature analysis makes it evident that the researchers have put a lot of work into their research to gauge bank stability. The study has tried to evaluate bank stability using different metrics such as Z-score, ROA, and NPAs. Some researchers have employed a camel-based methodology. In the instance of Nepal, research has looked at efficiency and profitability; however, we were unable to locate any studies that evaluated the stability of the banking industry. The researcher only came across a small number of papers that used a thorough approach to examine the stability of the banking system in emerging countries. Given this context, the current study adds to the body of knowledge by evaluating the stability of Nepalese commercial banks. The bank's stability is crucial for ensuring the safety and credibility of the banking system. It also supports international trade, especially in countries experiencing rapid economic growth, by predicting financial crises. The purpose of this study is to examine the bank-specific factors that influence bank stability in Nepal.

3. Research Methods

Construction of Bank Stability

Several central banks and monetary authorities are worried about sustaining financial system safety and financial stability in the present trend of the global financial system. Global social and economic growth now depends on financial stability and sustainable development (Ali & Puah, 2018). There are many different forms of theoretical and empirical studies that have been done in relation to the study of the key factors that affect a bank's stability. The Z-score is the indicator signaling the banking financial stability for the identity of bank soundness, as proposed in the empirical prior research of Adusei (2015), Ali & Puah (2018), and Klingelhofer and Sun (2019). The Z-score was calculated using the following indicators: ROA (return on assets), Total Equity / Total Assets ratio, and ROA standard deviation. The Z-score is calculated as follows:

$$\mathrm{Z-score} = \frac{\mathrm{ROA} + {}^{\mathrm{TE}}/_{\mathrm{TA}}}{\sigma(\mathrm{ROA})} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

Data description and variables

The information on bank-specific variables and financial factors has been gathered from Nepal Rastra Bank's publications e.g. quarterly economic bulletin and database on the Nepalese economy. The study utilizes panel data of all commercial banks in Nepal over a period of 22 years from 2001 to 2022 with 198 observations. The literature, based on both theoretical and empirical perspectives, has identified several factors that impact the stability of commercial banks in Nepal. Some of the key bank-specific variables that contribute to financial stability in banking are:

Capital Adequacy Ratio (CAR): The CAR is a measure of a bank's capital relative to its risk-weighted assets. A higher CAR indicates that a bank has a stronger financial position and is better able to absorb losses. A higher CAR indicates that the bank has more capital to absorb losses, and therefore, is more financially stable. Banks with higher CARs are more likely to survive financial shocks and downturns and are better able to protect depositors' funds.

Asset Quality (AQ): The quality of a bank's assets is a crucial determinant of its financial stability. High-quality assets are less likely to default, which reduces the risk of losses and improves the bank's financial position. Asset quality refers to the quality of a bank's loan portfolio, i.e., the ability of borrowers to repay their loans. A bank with a high-quality loan portfolio has a lower risk of loan defaults, while a bank with a poor-quality loan portfolio has a higher risk of loan defaults.

Liquidity (LIQ): Liquidity refers to a bank's ability to meet its short-term obligations. Banks with adequate liquidity are better equipped to handle unexpected demands for cash withdrawals and repayments of loans. Liquidity is the ability of a bank to meet its financial obligations as they become due, without incurring significant losses or disrupting its normal operations. Banks require liquidity to fund their daily operations, pay depositors' withdrawals, and honor their financial obligations, such as paying interest and principal on loans and bonds.

Profitability (NIM): A bank's profitability is a key factor in its long-term viability. A profitable bank is better able to absorb losses and maintain its financial stability. Profitability is a measure of a bank's ability to generate profits from its operations. A profitable bank can generate earnings that can be used to grow the bank's capital base, improve its financial position, and provide returns to its investors.

Interest Rate Risk (EIR): Interest rate risk is the probability that a bank may face losses in its earnings due to fluctuations in interest rates. Banks that have efficient strategies to manage interest rate risk can better safeguard their financial stability. Interest rate risk refers to the possibility that changes in interest rates might have an effect on a bank's financial health and the value of its assets and liabilities. Banks are vulnerable to interest rate risk in different ways, including loans, deposits, and investments.

Table 1: Summaries of explanatory variables

Variables	Symbol	Proxies /Financial ratio	Expected Sign
Banking Financial Stability	Z-score	$\frac{(ROA+TE/TA)}{\sigma(ROA)}$	
Capital adequacy ratio	CAR	$\frac{(\text{Core Capial+Capital Funds})}{(\text{Risk-Weighted Assets})}$	±
Asset quality	AQ	$\frac{(\text{Non-Performing Assets})}{(\text{Total Loan and Advances})}$	-
Liquidity	LIQ	$\frac{(\text{Liquid Assets})}{(\text{Total Assets})}$	±
Profitability	NIM	$\frac{(\text{Net Interest Income})}{(\text{Earning s Assets})}$	+
Interest rate risk	IR	Interest rate	±

Source: From key financial indicators of NRB and the literature review

Model specification

The study employs the dynamic VAR/VEC model and Granger causality method to examine the co-integrating relation between bank-specific factors and bank stability from 2001 to 2022. The Nepal Rastra Bank provided the yearly time series data, which was subjected to a stationarity pre-test before the estimation procedure. The use of the VAR/VEC model is reliant on the result of the co-integration test, as it considers all variables in both dynamic and static models as a priori endogenous and adjusts for interactions between endogenous and exogenous components. Occasionally, exogenous variables may be included in the VAR/VEC model. The VECM model is frequently used to investigate the long- and short-term equilibrium linkages and co-integration variables. Assuming that the variables in this study are co-integrated, the VECM equation is as follows.

$$Z-score_t = \alpha_0 + \sum_{i=0}^{q} \delta_1 \Delta Z-score_{t-i} + \sum_{i=0}^{q} \delta_2 \Delta CAR_{t-i} + \sum_{i=0}^{q} \delta_3 \Delta AQ_{t-i} + \sum_{i=0}^{q} \delta_4 \Delta LIQ_{t-i} + \sum_{i=0}^{q} \delta_5 \Delta NIM_{t-i} + \sum_{i=0}^{q} \delta_6 \Delta EIR_{t-i} + \delta_8 ECT_{vt} \dots\dots\dots (2)$$

Equations (2) will be used for estimating the dynamic vector error correction model in panel data, which represents the model's long-run and short-run dynamics through coefficients $\delta 1, \delta 2, \delta 3, \delta 4, \delta 5, \delta 6$, and $\delta 7$. The divergence or convergence towards long-run equilibrium is represented by coefficient $\delta 8$. A positive coefficient indicates divergence, while a negative coefficient indicates convergence.

4. Empirical Results and Discussion

Descriptive statistics

Descriptive statistics were utilized to define the stability characteristics of banks and bank-specific conditions over the research period. Mean, median, minimum, maximum, standard deviation, skewness, and kurtosis were used as descriptive statistics to explain the values of the variables investigated. Table 2 provides an overview of the descriptive statistics and economic time series data for the bank-specific factors examined in this study from 2001 to 2022.

Table 2: Descriptive statistics of variables, 2001-2022

	Z-score	CAR	AQ	LIQ	NIM	EIR
Mean	0.1051	0.1166	0.0328	0.1039	0.0854	0.0989
Median	0.1199	0.1207	0.0280	0.1115	0.0785	0.0986
Maximum	0.1511	0.1670	0.0730	0.1384	0.1384	0.1247
Minimum	0.0153	0.0627	0.0114	0.0586	0.0490	0.0654
Std. Dev.	0.0370	0.0358	0.0172	0.0239	0.0269	0.0171
Skewness	-0.7549	-0.2552	0.9145	-0.4942	0.5502	-0.1951
Kurtosis	2.7199	1.6432	2.7916	1.9294	2.1788	2.2713
Jarque-Bera	2.1613	1.9261	3.1063	1.9462	1.7282	0.6263
Probability	0.3394	0.3817	0.2116	0.3779	0.4214	0.7312

Source: Authors' computations from EViews 12 output.

The stationarity tests

In time series analysis, it is crucial to check the stationarity of variables before conducting any tests. Additionally, the variables should not have unit root problems, and only one of their integration orders must be I(0) or I(1) to use the vector error correction model (VECM) technique (1). This study utilized unit root testing to determine the integration order of all variables. The research employed the PP and ADF tests to achieve this objective. Table 4 shows the results of these tests at both the level and first difference.

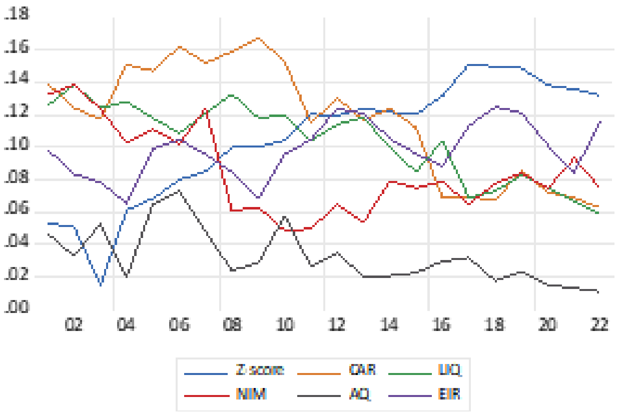
Table 3: Panel unit root test

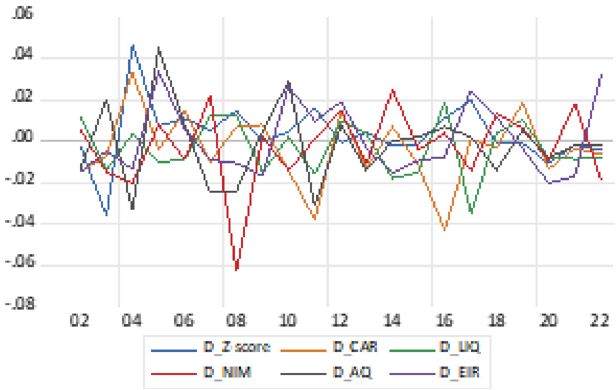
Variables	Level		First difference		Order of integration
	Augmented Dickey-Fuller	Philips-Person	Augmented Dickey-Fuller	Philips-Person	
Z-score	-1.99605	-1.98969	-5.45189*	-5.55501*	I(1)
CAR	-2.08857	-2.03915	-5.03779*	-5.03779*	I(1)
AQ	-2.82789	-2.82789	-4.72911*	-4.99869*	I(1)
LIQ	-2.74412	-2.74781	-5.32932*	-5.50541*	I(1)
NIM	-2.22915	-2.14248	-5.60695*	-5.68380*	I(1)
EIR	-2.40552	-2.54207	-6.68441*	-6.33317*	I(1)

Source: Based on Authors' computations from EViews 12 output.

Table 3 displays the outcomes of the ADF and PP tests. The bank stability and the bank-specific variables are not statistically consistent. However, at a 1% level of significance, all variables are stationary in the first difference. Therefore, every variable has an integration order of I(1). Additionally, Figure 1 illustrates the trend lines for selected variables.

Figure 1: Trend line of research variables at the level and first difference





Lags selection and determinations

The analysis is following Pesaran et al. (2001), which promoted the lowest Schwarz information criterion SC/HQ/AIC value as the primary concern for choosing the appropriate lag order selection criteria. The multicollinearity, heteroskedasticity, serial correlation, and normality issues will be greatly reduced by the justification for choosing the optimal lag.

Table 4: Optimal lag length test

Lag length	Akaike Information Criteria (AIC)	Schwarz Bayesian Criterion (SBC)	Hannan-Quinn information criterion (HQ)
0	-15.39016	-15.24104	-15.36493
1	-18.63317*	-18.03669*	-18.53222*
2	-18.38355	-17.33969	-18.20689
3	-18.61813	-17.21691	-18.45576

Source: Based on Authors' computations from EViews 12 output.

Table 4 shows the results of the studies in terms of AIC, HQ, and SBC to determine the optimal lag length, the lag length with the lowest critical value for each criterion must be selected. According to the table, lag 1 has the smallest AIC, HQ, and BIC criteria for the bank-specific variables. Johansen's cointegration test may be used to confirm if the variables are co-integrated.

Johansen's cointegration test

The cointegration test will determine if the model's variables have long-term connections or not. On this premise, this test applies Johansen's method while examining the level of cointegrating vectors. The Johanson cointegration test utilizes a maximum Eigenvalue test and a trace test as its two probability estimators for the cointegration rank. The cointegration test results for the Johansen technique are displayed in Table 5.

Table 5: Results of Johansen's cointegration test

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**0.05 Critical Value**	**Prob.****
None *	0.954100	91.54277	47.85613	0.0000
At most 1 *	0.679887	32.99835	29.79707	0.0207
At most 2	0.384204	11.35582	15.49471	0.1905
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level.				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**0.05 Critical Value**	**Prob.****
None *	0.954100	58.54442	27.58434	0.0000
At most 1 *	0.679887	21.64253	21.13162	0.0424
At most 2	0.384204	9.211956	14.26460	0.2689
Max-eigenvalue test indicates two cointegrating eqn(s) at the 0.05 level.				

Source: Authors' computations from EViews 12 output.

The Johanson cointegration test utilizes the Trace statistic and Eigenvalue to determine the number of cointegrating equations with a critical value of 5%. The results indicate that there are two cointegrating equations under Trace statistic and Max Eigenvalue at a 5% level of significance. The presence of cointegrating equations suggests that there are long-run correlations among the variables in the system, as the null hypothesis is rejected at a 5% level of significance.

Dynamic Causality Analysis Using a VECM Approach

The study first established the relationship of cointegration among the variables and then proceeded to use a Granger causality test to create relevant bank-specific factors for the bank stability index. Since the variables exhibited cointegration, the study employed the vector error correction model (VECM) framework discussed earlier. VECM is the appropriate tool for exploring causation between the series if the variables are integrated at I(1). Therefore, to determine the causal direction between the bank stability index and bank-specific variables, the study utilized Engle and Granger's VECM Granger causality test.

The Short-run causality test using the vector error correction model

This study employs the dynamic causality test to examine the causal relationships between variables obtained through VECM. The results of the test are presented in Table 6 and Table 7, which distinguish between short-term and long-term causal connections.

Table 6: Estimated short-run coefficients by using the Vector Error Correction Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ECT(-1)	-0.259390	0.017364	14.93836	0.0000
d_CAR(-1)	0.188375	0.183030	1.029206	0.3170
d_AQ(-1)	-0.302428	0.249415	-1.212551	0.2410
d_LIQ(-1)	0.823893	0.175907	4.683699	0.0002
d_NIM(-1)	0.655149	146450	-4.473535	0.0003
d_IR(-1)	-0.244063	0.283383	-0.861248	0.3998
Constant	0.122950	0.046030	2.671109	0.0156

Source: Authors' computations from EViews 12 output

Table 6 presents the findings of the VECM analysis on short-term causality. The error correction term (ECT) for time t-1 is -0.2593, which is statistically significant at a 1% level. This indicates that any deviation from long-run bank stability in the short-run is corrected at a rate of 25.93% per year, with bank-specific variables included in the analysis accounting for 25.93% of the previous year's deviation from long-run stability. The observed difference between short-run and long-run bank stability may help explain the financial system's fragility, which is attributed to the inefficiency of the financial system's information flow in the short run. Moreover, the study discovered liquidity, and profitability has a significant positive impact on bank stability. However, the capital adequacy ratio, assets quality, and interest rate had insignificant effects on short-term bank stability.

The long-term causality test using the vector error correction model

When the co-integration of the variables had been established, the long-run coefficients of the VECM model were calculated in order to assess the long-term influence of bank-specific factors on the bank stability index. The VECM method was used in this work to calculate the variable's long-run coefficients. The findings of the long-term association between bank-specific indicators and the bank stability index are shown in Table 7.

Table 7: Estimated Long- run coefficients by using the VECM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CAR(-1)	0.544178	0.114002	4.773406	0.0001
AQ(-1)	-0.741473	0.307230	-2.413414	0.0267
LIQ(-1)	0.654615	0.251295	2.604964	0.0179
NIM(-1)	0.850181	0.151620	5.607302	0.0000
IR(-1)	-0.507222	0.375889	-1.349393	0.1931
Constant	0.131963	0.050149	2.631421	0.0164
R^2 = 0.832247,	Adj. R^2 = 0.804288,	F-statistic = 29.76677 [0.0000],	D/W stat = 1.790134	

Source: Authors' computations from EViews 10 output

The stability of the banks appears to be positively impacted by the capital adequacy ratio (CAR). This seems to imply that the bank has more capital to absorb losses, and therefore, is more financially stable. Banks with higher CARs are more likely to survive financial shocks and downturns and are better able to protect depositors' funds. The study reveals that liquidity is showing a positive and statistically significant influence on bank stability. A bank with adequate liquidity is more financially stable, while a bank with inadequate liquidity is less financially stable. This is because a bank with adequate liquidity can meet its financial obligations as they become due and avoid disruptions to its normal operations. The variable net interest margin (NIM) shows a positive association with bank stability, indicating the strengthening of a bank's ability to generate profits from its operations. A profitable bank can generate earnings that can be used to grow the bank's capital base, improve its financial position, and provide returns to its investors.

In addition, the study reveals that asset quality is showing a negative and statistically significant influence on bank stability. This is because a bank with a high-quality loan portfolio is more financially stable, while a bank with a poor-quality loan portfolio is less financially stable. This is because a bank with a high-quality loan portfolio is less likely to suffer losses due to loan defaults, which can erode the bank's capital and lead to insolvency. However, the effective interest rate has a negative but insignificant impact on bank stability, which indicates that A bank with high levels of interest rate risk is less financially stable, while a bank with low levels of interest rate risk is more financially stable. Furthermore, the absence of autocorrelation is suggested by the D/W value of 1.7901. The adjusted R2 value of 0.8043 and F-statistics of 29.7667 (with a p-value of 0.0000) depicted in Table 7 indicate that the model of this study is the most suitable one, considering a significance level of 1%. Hence, the study concludes that the overall model of this study is the best fit. Finally, the dynamic causality of the VECM demonstrates that there is a significant relationship between bank stability and bank-specific variables including capital adequacy, liquidity, assets quality, and profitability. These findings suggest that these variables have strong explanatory power in understanding the stability of banks in Nepal.

Diagnostic tests for vector error correction model

In this study, various diagnostic tests were employed to evaluate the dependability of the estimated VECM approach. The study employed various tests to evaluate serial correlation, heteroscedasticity, normality, and model stability. Specifically, the BG serial correlation LM test, BPG heteroscedasticity test, Jarque-Bera normality test, and recursive CUSUM test were utilized. The results of the heteroscedasticity and serial correlation tests are presented in Table 8, while Figures 2 and 3 show the outcomes of the CUSUM test and model stability, respectively. These tests were conducted to ensure that the VECM model was statistically robust and reliable.

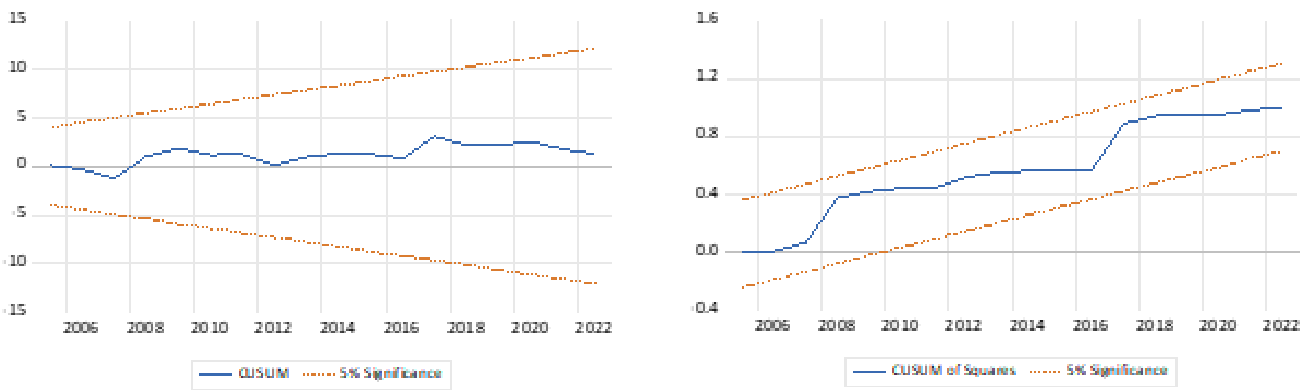
Table 8: Diagnostic tests for VECM approach

	F-version		Breusch-Godfrey LM-version	
	Statistics	P-Value	Statistics	P-Value.
A: Serial Correlation	F (1,17) = 0.63668	0.4359	$X^2(1) = 0.758095$	0.3839
D: Heteroscedasticity	F (2,18) = 0.716452	0.5019	$X^2(2) = 1.548455$	0.4611
C: Normality	Jarque-Bera		0.9837	0.61147

Source: Authors' computations from EViews 12 output

The results presented in Table 8 indicate that the F-statistics and Chi-Square p-values for the LM test are greater than 0.05, indicating that the VECM approach used in the study is not impacted by serial correlation and heteroscedasticity. Furthermore, the normality of the residual terms was evaluated using the Jarque-Bera statistics, with Table 8 displaying a JB test statistic of 0.9837 (with a p-value of 0.6114>0.05). This suggests that the residual series obtained from the model has a normal distribution. Consequently, the study concluded that the VECM approach used in the analysis is statistically robust and reliable.

Figure 2: CUSUM test and CUSUM square stability test



To confirm the long-term stability of the model, the CUSUM test and CUSUM square stability test were utilized. Figure 2 demonstrates the results of these tests, showing the CUSUM and CUSUM of the square tests along with the critical boundary line at a 5% significance level. Both tests' plots fall within the critical boundaries, as depicted in Figure 2. Thus, the model's stability has been verified throughout the study period, allowing it to be used for determining causality and long-run relationships.

5. Conclusions

The study examined bank-specific factors and bank stability in Nepal by using panel data from 2001 to 2022. The study employed the vector error correction model estimation technique and found that net interest margin (NIM) has a significant positive effect on bank stability. Therefore, the study recommends that authorities encourage banks to prioritize NIM and monitor interest rate risk by implementing appropriate interest rate risk management standards and conducting regular monitoring and supervision. Similarly, the study revealed that liquidity has a positive impact on bank stability. As a result, the authorities are advised to establish appropriate liquidity standards, conduct regular monitoring and supervision, and take necessary measures to address liquidity-related issues. Additionally, the study also discovered that the capital adequacy ratio (CAR) has a positive and significant effect on bank stability. Consequently, the study recommends that the authorities should conduct stress tests regularly to evaluate the resilience of banks' CAR under various scenarios. The study's findings were consistent with the concentration stability theory, which contends that increased concentration reduces excessive risk-taking and hence enhances bank stability.

However, the study also found that asset quality has a negative and significant impact on the stability of the Nepalese banking industry. Therefore, the authorities should focus on strengthening credit risk management frameworks to decrease the likelihood of non-performing loans. Moreover, the study discovered that effective interest rates have a negative but insignificant impact on bank stability. As a result, the study suggests that the authorities should encourage banks to diversify their revenue streams by expanding their fee-based income or creating new products and services. Additionally, promoting competition in the banking industry could encourage innovation and diversity in the range of financial services offered by banks.

Acknowledgment: The author declares that this paper is a part of his Small Research Development and Innovation Grant (SRDIG) which was funded by the University Grants Commission Nepal in the fiscal year 2022/23 (Award number: SRDIG-79/80-Mgmt-01).

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SEGMENTING THE NON-ADOPTER IN THE DIFFUSION OF MOBILE BANKING IN NEPAL

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Abstract

This study aims to investigate whether it is appropriate to segregate “non-adopters”, "consistent non-adopters", and "prospective adopters" based on their adoption intention. It also tries to understand why people adopt mobile banking by analyzing the factors influencing their behavior. The primary data was collected through questionnaires and interviews, and selected diffusion factors (i.e. perceived attribute, perceived risk, and service offering compatibility) were identified to analyze the adoption process using statistical tools like correlation and regression analysis. The results show there is a perceptual distinction between “current adopters” and “non-adopters”. Factor like ‘convenience’ was the significant motivator for adopters, whereas ‘convenience’, ‘monetary benefit’, ‘location’, and ‘prior experience with computer technologies’ influenced consistent non-adopters. Banks can implement the findings to design an efficacious business model, plan for marketing communication, and address issues about the regulation of mobile banking implementation, thus contributing to increasing financial inclusion from the mobile channel in Nepal.

KEYWORDS: **Mobile Banking, Adoption, Consumer Behaviour, Financial Inclusion**

1. Introduction

Banks worldwide strive for customer loyalty and productivity, which is their primary goal. They have developed innovative products and, in recent years, have provided a broader range of banking services. More recently, banks have been offering services through electronic distribution channels. The transformation is induced by network technology that has sparked a revolution in the banking sector focused on Information Technlogy (IT), which has fundamentally changed the service delivery modality of the financial industry. Primary network technology, which has revolutionized, relates to internet technology. This sector has rapidly improved technology utilization and thus provides a valuable backdrop for implementing technical interfaces such as mobile banking and Internet banking. Competition, innovation, and leverage in technology as well as customer preferences and needs, have brought significant changes in the financial service industry. Initially, these changes were seen in retail banking; however, this has also moved on to corporate banking.

This technology-based service delivery has moved customers from a counter-based banking service to a self-service modality. This offers advantages for both the bank and the customer, as it reduces transaction costs and improves customer comfort. So, customers perform their financial activity through electronic networks, and in this online environment, given the infiltration, adaptation, and rapid propagation that the mobile phone has achieved across the world, it is appropriately acclaimed as the new service frontier. The cell phone has contributed to a profound societal transformation due to its social and economic effects.

Many papers on global technology diffusion have divided consumers into adopters and non-adopters (see Dickerson & Gentry, 1983; Gatignon & Robertson, 1989). But the division between adopters and non-adopters is comprehensive in itself. Every Company's one the main tasks in growing its customer base and revenue is often the product of one of the following (in different ways):

i. To enter the new business.
ii. The existing consumer use of the commodity.
iii. Transform non-adopters into adopters.

This research paper will concentrate on the last issue above, i.e., the emphasis on non-adopter segregation. In the service sector, the advancement of technology is evaluated as an enabler in efforts to achieve the desired goals for both staff and customers. While technology injection may cause adverse effects and may not be welcomed by all customers (Bitner et al., 2000); this is where the research will be based, but based on the mobile banking offered by banks and financial institutions.

Banks' investment in delivering services through technology is high because it needs investment in infrastructure, too. Still, it lowers costs compared to other types of banking and offers more accurate and comprehensive customer information. This helps banks and financial institutions reduce transaction costs with improved service quality. Because of the non-adopter consumer group, banks, and financial institutions do not gain this gain. Banks need to tailor their marketing campaigns to two groups of customers: both existing retention adopters and non-adopters.

But the issue here is there will be non-adopters who will become potential adopters in the coming days, and yet another category may remain non-adopters at all times. As such, if the bank and financial institution had knowledge or information about such a specific category of customer base and the factor that acts as a catalyst for mobile technology propagation, then marketing campaign effectiveness can be accomplished quickly with the least waste of effort on those groups that will never embrace mobile banking.

Three adopter segments are listed for this analysis, based on the intentions of individuals to accept M-banking services and adoption actions in disseminating mobile banking services. The adoption category represents the three phases of customer adoption. The level of adoption has been categorized into "current adopter", "prospective adopter", and categories of "consistent non-adopters". The study will use these categories as a mediating variable to analyze the perceived attributes of Innovation, Perceived Risk, and Service Offering Compatibility with existing service.

1.1 Rationale of the Study

Firstly, the current research aims to provide valuable knowledge to the professional of the banking industry of Nepal regarding the diffusion of M-banking. This research helps to identify the factor that would impact the mobile banking adoption process for the service provider so that they could design a marvelous business model, plan for marketing communication, and create awareness among the public. This will also help policymakers tackle the problem of regulating M-banking implementation and application. Similarly, the insights from the research can be used to increase financial inclusion from the mobile channel in Nepal.

Second, the report will recognize the gaps in knowledge and real-life situations through interviews with banking professionals. This will build a foundation for future research in this field.

Third, the finding would help the banks & financial institutions segment the market based on the adoption level of M-banking. Further, appropriate strategies can be built on for the retention and attraction of customers. Finally, the study would contribute to the current body of information that can be used for purposes of decision-making.

1.2 Introduction to Mobile Banking

Mobile banking is any banking operation requiring the electronic device to be connected to a network through mobile technology, enabling an economic transaction to be completed (Carrasco et al., 2012), and the primary mobile banking delivery channels are smartphones and personal digital assistants (Saleem & Rashid, 2011). The innovations in network technology have allowed bank customers to access banking facilities without requiring them to go to the branches physically or even going to them. Many studies by authors such as Porteous & Neville (2006) have stated that banks are equipped with an electronic branch represented by online banking services, a rich medium for banking services. The wireless service delivery platform provides enhanced value to consumers by offering access to banking services anytime, anywhere.

Using cell phones has encouraged the growth of developed and developing countries' economies, social enterprises, and public services (Smith et al., 2011). This system provides a range of benefits that help banks increase efficiency, shorten processing times, enhance business transaction flexibility, and minimize costs associated with physically serving customers by staff (Ayo et al., 2011). Lin (2011) believes that mobile banking has become increasingly relevant in financial services because of rapid developments in mobile technologies. Porteous (2006) classified mobile banking as transformational and additive M-banking. Transformational is the one that offers financial services using a cell phone to meet the public who has not yet accessed banking services. In additive M-banking, the cell phone is used as an additional platform for banking services.

Mobile banking provides a range of advantages over other banking networks. Above all, it reduces the fund transfer charge (Anyasi & Otubu, 2009; Donner & Tellez, 2008). It also brings more consumers into the established financial services network (Anyasi & Otubu, 2009). Besides, mobile banking consumers are motivated by the ease of deposit, withdrawal, and payment technology (Masinge, 2010). Mobile banking provides convenience as consumers can transact from home comfortably (Johnson et al., 2012). Therefore, this system offers a decent opportunity for structured financial providers to fulfill low-income rural citizens. Mobile banking accelerates a faster and simpler monetary transfer, thus increasing trade volumes and access to finance in growing economies.

People using mobile banking can perform transactions anywhere with minimal requirement of mobile coverage; just for transactions involving depositing or withdrawing cash, they have to go to a retail agent. According to Porteous and Neville (2006), mobile banking in growing nations can reduce the requirement of the expensive infrastructure of finance technology. The development in mobile technology and devices has led to the consideration of mobile banking as a salient framework because it involves elements such as ubiquity, simplicity, and interactivity, as Turban et al.(2006) described in their book. Nowadays, users can perform banking services regardless of time and location and conveniently connect and gain access to banking services with mobile devices as quickly as possible.

1.3 Mobile Banking in Nepal

Nepal is a geographically rich country ranging from Terai to hilly and mountainous regions. But the infrastructure is weak in many areas of this developing country. Due to the lack of infrastructure, banks and other financial institutions have a weak presence in the country's hilly and mountainous part though banks extended their branches to 752 local levels (out of a total of 753 local levels) as of mid-February 2023 (NRB, 2023). Operating in rural areas with limited infrastructure has been arduous and expensive for banks though they opened their branches in rural parts due to regulatory requirements. Thus, most bank branches are clustered in and around cities, leaving a considerable chunk of the Nepalese with no easy access to finance.

An era of technical progress is underway for the Nepalese financial system. The changes involve a substantial increase in alternative financial service delivery channels. Mobile banking is the most lucrative delivery channel due to improved technology and high mobile density. Nepal's banking history has taken a rapid leap with mobile banking and Internet banking introduced. Technological advances have also allowed people to use banking services better. As of mid-Feb 2023, the Nepalese banking system has 20.036 Million mobile banking customers, while the number of deposit accounts is 48.775 Million (NRB Monthly Statistics, Feb 2023). In Nepal, Kumari Bank Ltd. was the Internet Banking initiator in 2002 A.D., whereas Laxmi Bank Ltd. started mobile (SMS) banking in 2004 A.D. (Banstola, 2007). In 2010, F1 Soft International introduced eSewa to the Nepalese market, the first mobile wallet of Nepal that started envisioning the need for a payment gateway in Nepal, though the Nepal Rastra Bank (Central Bank of Nepal) began licensing mobile wallets as Payment Service Provider (PSP) from 2017 A.D. only. Increasing mobile SIM card subscription and internet & data services penetration makes Nepal's mobile banking market more lucrative to banks. The services that can be availed, but not limited to, from Mobile banking are balance inquiries, mini statements, merchant payments, top-ups, fund transfers, loan applications, etc. It is an essential platform for supplying customers from brick-and-mortar to reduce bank operational costs (Peevers et al., 2008). The expansion of financial services via mobile technology has a significant household effect. Nepal's unbanked households will not only have a simpler, cheaper, and safer way to conduct financial transactions but will also improve their resilience, as shown by the expansion of mobile financial services in other countries.

Though showing bright prospects and progression, the mobile financial sector in the country still has major obstacles to conquer. There is a need for additional changes to simplify regulations for reporting unbanked households. Banks need to extend their service area so more rural households can access the network. Despite these challenges, mobile banking is expected to transform from transaction-based service delivery to non-transaction-based banking, providing exponential value to Nepal's rural population. Mobile financial services are here to stay, and in Nepal, rural households, demography, and the economy are changing.

1.4 Mobile Banking Adoption

Diffusion of M-banking is a process that requires time. As Rogers (1995) has pointed out, the acceptance of new products takes place over time, and there are different adopters in due course of time, ranging from innovators to laggards. When a new product or service that relies on technology at an early delivery stage is innovated or created, acceptance can be seen only in a few people. As such, this study has looked into the market segmentation of mobile banking into the adopters and non-adopters categories, where non-adopters are further segregated into 'Prospective Adopters' and 'Consistent non-adopters for granulation which are defined as follows;

i. **Current Adopters:** Customers who have already subscribed to mobile banking are termed as current adopters.

ii. **Prospective Adopters:** Customer who is not subscribed to mobile banking, but there is a high likelihood that will soon be converted to current adopters of mobile banking.

iii. **Consistent Non-adopters:** The customer who is currently not subscribed to mobile banking and there is less chance that they will ever use mobile banking in the future.

There are a lot of factors which has a crucial role in the adaptation of mobile banking. Other factors influence mobile adaptation among the different adaptation levels. In this section, we look into the variables that affect the subscription of M-banking services.

1. Perceived Attribute:

The perceived attribute are the features of the product that the customer perceives. These features are the bases for the acceptance and rejection of any product. Individuals' Perceptions and beliefs affect the event of endorsement of the product in the case of prospective adopters (Chatterjee & Eliashberg, 1990). This matches with the notion of the Theory of Reason Action (Fishbein & Ajzen, 1975). Rogers (1995) argues that customers are more likely to follow the invention if they perceive relative innovation advantages compared to old business methods. The primary determinant that customers use Internet banking is the product's perceived benefit (Polatoglu & Ekin, 2001; Kim et al., 2009; Murdifin et al.,2021). Similarly, Lee (2009) found that customers' intention to use online banking is mainly impacted by perceived benefit, perceived usefulness, and attitude.

a. **Convenience:** Convenience can be defined as the comfort the customer receives by mobile banking. A positive association exists between convenience and the perceived benefit of acceptance of technological products (Dabholkar, 1996). One of the researches related to Internet banking also states that the significant advantage of online banking is the convenience to the customer (Gerrard & Cunningham, 2003).

b. **Quick Service:** Quick service delivery has a compelling positive association with adopting technology products. The benefit of adoption is fast service due to adopting technology products compared to branch-based banking (Kluglak, 1997). Thus, customers who perceive ease and speedy service are essential qualities of online banking are morally likely to follow the new technology or prospect to the customer.

c. **Monetary Benefit:** The monetary benefit is used as a marketing tactic to attract customers to the mobile banking app (Blattberg & Neslin, 1990). The economic benefit is given in reward points, cashback, and more value on top-up. In the study by Gerrard & Cunningham (2003), it was observed that both the adopters and non-adopters were indifferent to monetary benefits. The technology is believed to enhance competence and productivity, bringing down the cost of operation, which will also be passed down to the customers. Consumers' view of monetary benefits as a significant feature of online banking goes hand in hand with their adoption positively.

d. **Location of Service Provider:** The physical location of the service provider of mobile banking has an influence on the customer's decision-making about the adaptation of mobile banking and directly impacts the customers' confidence level as well (Kluglak, 1997). In other words, even though the physical barrier is removed and the presence of the physical outlet of the bank still increases the confidence and trust in the adoption of the mobile banking app.

2. Perceived risk

The perceived risk is uncertainty where customer decisions would result in a favorable outcome (Dowling & Staelin, 1994). Roger's innovation diffusion theory does not include the risk as to the factor, but it is crucial in the case of new technology (Walker et al., 2000).According to Bauer (1967), marketing views perceived risk as the primary factor negatively impacting product adaptation and purchase behavior. Featherman & Pavlou (2002) study reveals an adverse association of perceived risk with new technological adoption.

a. **Transaction Security:** Zeithaml (1981) proposed that perceived risk is higher in purchasing services than physical products. Loss of social interaction in performing transactions in Internet banking also intensifies the perception of financial risk and increases the concern about information privacy (Milne & Boza, 1999). Security and trust are other primary issues that come along with online banking services. Perception of risk in online banking has two dimensions: the security of information transmission over information and the capacity of merchants to handle sensitive customer information. So, both dimensions, related to the protection and confidence of the seller, stated that they would not benefit from the customer's weakness (Geyskens et al., 1996).

Studies conducted in developed countries like Singapore have shown that security is not a significant hindrance in online banking transactions(Gerrard & Cunningham, 2003). But in general, the perceived risk factor has been negatively related to the acceptance of fintech and techfin. Hence, in the context of developing countries, we see a negative association of transaction security with the diffusion of mobile banking.

b. **Bank Size:** Buyers tend to search for surrogate signals when there is information ambiguity and no visual cues to trust the product (Nayyar, 1993). In the case of the bank, when customers trust to do transactions by visiting the branch location and lack trust in Mobile Banking, they tend to search for surrogate signals such as the size of the bank, presence of the bank, and brand of the bank, etc. in context of the internet-store, the customer tends to believe on those stores whose perceived size is more prominent (Jarvenpaa et al., 1999). Similar is the case with mobile adoption because customers tend to rely on their belief in the size of the bank.

c. **Familiarity:** Familiarity can be defined as context when a particular person, entity, or brand is known to the other party. Familiarity helps to build trust in the market. As said earlier, the customer searches for a surrogate signal to trust the product and service. Customers will use the mobile banking app easily and with greater trust when the bank is familiar to customers. But lack of familiarity is the distinct drawback of click-only web banks (Murray, 2000). Familiarity is easily generated when the bank is close to the customer. So this means that the physical outlet of the bank has additional advantages, i.e., making the customer feel that the bank is close to them and building trust and familiarity based on proximity. Customer understanding of familiarity is directly associated with mobile banking acceptance (Durvasula et al., 1992).

3. Compatibility

Compatibility can be defined as the condition where two or more individuals or entities or technology or a combination of these work with ease and without problem or conflict.

a. **Prior Usage of Similar Service:** Previous interactions of customers with the Internet or their existing use of the Internet as a service medium have been found to increase the probability of one embracing online banking technologies (Lee & Lee, 2001). Hence, the ability of a customer to accept new technology is influenced by its previous history of embracing similar technologies. Adopting technology is expected to be easier when people have the experience of such kind of technology, making both technologies compatible (Bayus, 1987). If seen in detail, using M-banking involves using other varied technologies that are complementary to each other. To ease the adoption of mobile banking, the customer must be well aware of mobile technologies and usage of data service or Wi-Fi, etc.

b. **Prior experience with service medium:** Using an Automated Teller Machine and online payment experience helps build a positive attitude toward accepting banking with the Internet as a service medium (Karjaluoto et al., 2002). The consumer using the Internet as a service medium for shopping tends to be compatible due to previous experience with the service medium (King & Xia, 1997). Thus, ATMs, telephone banking, and Internet users are likely to be more positive towards adopting mobile banking quickly than others because they will see compatibility in the service medium employed.

c. **Prior experience with computer technology:** Dee Dickerson & Gentry (1983) found that personal computer owners had more experience and were quick adopters of new technological products than those who do not own personal computers. Hence, this technology-related experience will help customers quickly embrace the latest innovation (Dabholkar, 1996). In the study by Karjaluoto et al. (2002), they argued that the computer factor is prominent in encouraging people to adopt Mobile banking.

1.5 Research Hypothesis

Alternate hypotheses have been drawn to identifythe relationship between the dependent and independent variables in this study. These hypotheses were drawn from the theoretical framework of the study.

H1a:There is a significant relationship between convenience and adoption level of mobile banking.

H1b: There is a significant relationship between quick service and the adoption level of mobile banking.

H1c:There is a significant relationship between monetary benefit and adoption level of mobilebanking.

H1d:There is a significant relationship between the location of the service provider and the adoption level of mobile banking.

H2a: There is a significant relationship between Transaction Security and the adoption level of mobile banking.

H2b: There is a significant relationship between the size of the bank and the adoption level of mobile banking.

H2c: There is a significant relationship between the familiarity of the bank and the adoption level of mobile banking.

H3a: There is a significant relationship between prior usage of similar servicesand the adoption level of mobile banking.

H3b:There is a significant relationship between prior experience with service medium and the adoption level of mobile banking.

H3c: There is a significant relationship between prior experience with computer technology and the adoption level of mobile banking.

1.6 Limitations of the Study

This study is not free from limitations, like many others. This limitation allows for a new idea and further extends the research horizon. So, some of the limitations of this research are presented below:

- There have been time limitations in conducting this research.
- This research is performed using samples and interviews from the profession of the banking industry hence cannot be applied in other service industries.
- This research has been surveyed with a limited sample size due to resource constraints. Hence, the focus of the study has been narrowed down.
- The variables used are based on prior literature, but many prospective influencing factors in mobile banking adoption may not have been used.

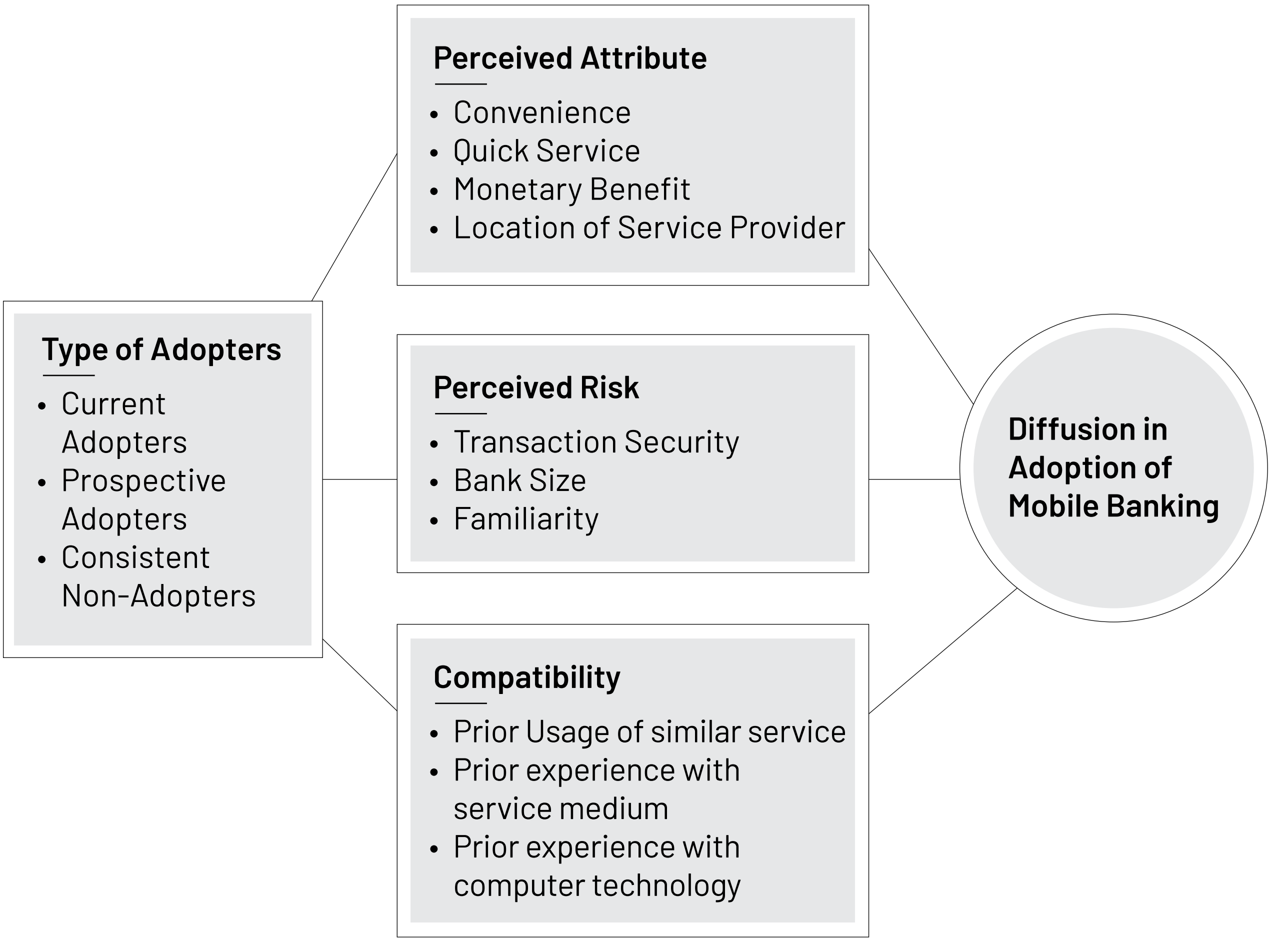
1.7 Organization of the Study

The remaining sections are in the following order. Section 2 discusses prior literature in the area and Theoretical framework, followed by Research Methodology & Data. Section 4 presents the study's results and discussion, and section 5 concludes by providing a recommendation.

2. Theoretical Framework and Literature Review

2.1 Theoretical Framework

The conceptual framework below illustrates the interaction between predictor and dependent variables helps to establish the association of perceived attribute, perceived risk, and compatibility that user feels with technology and the diffusion of mobile banking.



2.2 Finding from other literature

Gerrard & Cunningham (2003) investigated the reason for the adoption of Internet banking in Singapore and examined the variables, namely, "Social desirability", "Compatibility", "Convenience", "Complexity", "Confidentiality", "Accessibility", "Economic benefits", and "Computer proficiency". Data was collected from the primary source using a questionnaire. The study revealed that both adopters and non-adopters were indifferent about the economic benefit, accessibility, confidentiality, and social desirability, but they had different views about Computer knowledge and convenience.

Another study, "Mobile-banking Adoption by Iranian bank clients" by Hanafizadeh et al. (2014), investigated mobile banking adoption in Iran. This study analyzed the aspects that encouraged customers to adopt mobile banking and factors that gave negative motivation to adopt. The researchers looked into the nine variables to study the adaptation of mobile banking, which are "perceived usefulness", "perceived ease of use", "trust", "perceived cost of use", "perceived risk", "need for personal interaction", "credibility", "compatibility with lifestyle", and "needs". All of these factors were significant and positively related to the adoption of mobile banking among the students at Qazvin Islamic Azad University. Among these, "compatibility with lifestyle" and "needs" were highly significant.

Akkermans J. (2018) investigated the case of Thailand in the diffusion of online banking. They checked into the factors such as “attitude” (“features”, “perceived usefulness”, “risk”, “adoption”, “personal preference”), “perceived behavioral control”, and “subjective norms”. Data was collected from six hundred small and medium enterprises’ employees in Thailand using a questionnaire. They observed that the feature of a website and perceived usefulness was the most significant factor.

Bach et al. (2020) examined the impact of mobile banking on the bank's reputation. The study's key findings were safety, simplicity, and variability positively impact the perceived quality of mobile banking services. Increased perceived quality helps retain current adopters and attracts prospective clients. The research found that the bank's reputation results from perceived mobile banking quality, which comes from mobile banking safety, m-banking simplicity, and variability in mobile banking services.

The adaptation of mobile banking is also impacted by the gender variable i.e. the factor that influences males may not be an influential factor for females or vice versa (Riquelme & Rios, 2010). Researchers looked into the factors such as “perception of risk”, “perceived ease of use”, “perceived usefulness”, “relative advantages”, and “social norms”. The findings pointed out that males are influenced by the “relative advantage” and “perceived usefulness,” whereas females are inspired by the “ease of use” and “social norms”. Besides, it identified that “perception of risk” is negatively related to the adoption of online banking channels. “Perceived usefulness”, “social norms”, and “risk” are highly influential in the mobile banking adaptation process.

A study by Clemes et al. (2012) looked into the factors that influence the customer's decision-making when adopting internet banking. The researcher looked into the factors such as “convenience”, “user-friendly website”, “internet access/ familiarity”, “marketing communication”, “perceived risk”, “word of mouth”, “self-image”, and “demographic characteristics”. This study found that all the factors were positively related to the adaptation of mobile banking except risk and marketing communications. Marketing communication, risk, and price were highly influential factors, whereas young customers and high-income groups were more likely to adopt internet banking quickly.

3. Research Methodology & Data

Both qualitative and quantitative research designs are used in this study. The semi-structured personal interviews and questionnaires are used to collect primary data to find the M-Banking adoption and adoption level based on the perceived attributes, perceived risk, and compatibility factors. Multiple choice question was used in the survey, requiring respondents to reply within the scope of a six-point Likert scale answer ranging from “Strongly Disagree” to “Strongly Agree”. The interview comprised questions that focused on identifying the factors that currently slow the adoption of mobile banking from both banks and the customer’s end, ways to encourage adoption, and finally, advantages customers see in adoption.

Initially, the online survey questionnaire was sent to 150 students and working professionals, and they were segregated into adopters, prospective adopters, and consistent non-adopters. Ninety-nine responses, among the complete responses, proceeded with data analysis making 33 in each of the three categories of adopters. For research, the respondents who stated that they would be using mobile banking in the coming 12 months are identified as prospective adopters; else, consistent non-adopters, while adopters are existing users. In the case of interviews, various professionals from different banks were interviewed using Zoom and Messenger. The interviewee was selected based on the current capacity of the job, such as Branch Manager, Relationship Manager, Business Center Manager, Business Development Officer, Central Card Sales Unit In-charge, and Customer Service Executive. To check the consistency of the questionnaire, a pilot test was conducted among thirteen samples, and Cronbach alpha was calculated.

Once the raw data were collected, they were coded, and software like SPSS and excel were used to perform both descriptive and inferential analysis. Cronbach’s alpha was calculated for the reliability test, resulting in a value greater than 0.80 for the perceived attribute, perceived risk, and compatibility, indicating the reliability of for study.

4. Results and discussion

4.1 Descriptive Statistics

Average and standard deviation is computed as part of descriptive analysis. As Likert scale with six-point was used to gather the response i.e., “Strongly Agree” represented by 6 and “Strongly Disagree” represented by 1. The answer collected between 1 and 6 was input for generating the average and standard deviation.

Table 1: Descriptive Statistics

Predictor Variables	Current Adopter		Prospective Adopter		Consistent Non-Adopter	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Diffusion	5.018	0.671	4.606	0.834	2.339	1.202
Convenience	5.318	0.549	4.765	0.906	3.129	1.299
Quick Service	5.182	0.653	4.750	1.050	3.189	1.097
Monetary Benefit	4.192	1.077	4.293	1.114	2.646	1.344
Location	4.828	1.014	4.313	1.239	3.303	1.075
Transaction Security	3.485	0.625	3.439	0.843	2.962	0.668
Size of Bank	4.202	1.130	4.465	1.070	3.929	1.369
Familiarity	4.778	0.836	5.020	0.916	3.960	1.490
Prior Usage	4.030	0.929	3.788	1.148	2.626	1.490
Prior Experience	5.114	0.632	5.008	0.764	3.614	1.298
Prior Experience in Computer Technology	5.455	0.447	5.111	0.873	3.899	1.490

Table 1 shows the result of descriptive statistical analysis separately for three categories of adopters, i.e. Current Adopters, Prospective Adopter, and Consistent Non-Adopter. There are ten predictor variables used to ascertain the diffusion variable. The mean value of responses to every variable range from 3.48 to 5.45 for current adopters. Similarly, for prospective adopters, responses to each variable range from 3.43 to 5.11, meaning there are mixed responses. For consistent non-adopters, the mean values range from 2.62 to 3.95.

In the case of the consistent adopters, the mean is highest for convenience, quick service, prior experience with service medium, and previous experience with computer technology as the highest mean, which shows that these factors are influencing consistent adopters in the diffusion of mobile banking. The highest mean of familiarity of the service provider, prior experience with service medium, and prior experience with computer technology in prospective adopters show that potential customers must have strong brands of the bank, an idea of internet usage, and knowledge of computer technology is a must for the adoption of mobile banking. For Inconsistent adopters, the size of the bank, the familiarity of the service provider, and prior experience with computer technology scored the highest mean, which shows that adoption can be influenced by a strong brand image of the bank, increasing the size of the bank, and gaining knowledge on usage of mobile technology.

4.2 Correlation Analysis

In this study, to measure the correlation, Pearson's correlation is used, which varies as positively, neutral, or negatively related. The result of Pearson's correlation is presented in the below table:

Table 2: Correlation Analysis

Variables		Current Adopters	Prospective Adopters	Consistent Non-Adopters
		Diffusion of Mobile Banking	Diffusion of Mobile Banking	Diffusion of Mobile Banking
Convenience	Pearson Correlation	.526**	.507**	.722**
	Sig. (2-tailed)	0.002	0.003	0.000
	N	33	33	33
Quick Service	Pearson Correlation	.359*	.496**	.533**
	Sig. (2-tailed)	0.040	0.003	0.001
	N	33	33	33
Monetary Benefit	Pearson Correlation	0.197	.509**	.709**
	Sig. (2-tailed)	0.273	0.002	0.000
	N	33	33	33
Location	Pearson Correlation	0.096	.573**	.408*
	Sig. (2-tailed)	0.593	0.000	0.018
	N	33	33	33
Transaction Security	Pearson Correlation	0.183	0.200	.385*
	Sig. (2-tailed)	0.308	0.263	0.027
	N	33	33	33
Size of Bank	Pearson Correlation	.481**	.620**	0.271
	Sig. (2-tailed)	0.005	0.000	0.127
	N	33	33	33

Variables		Current Adopters	Prospective Adopters	Consistent Non-Adopters
		Diffusion of Mobile Banking	Diffusion of Mobile Banking	Diffusion of Mobile Banking
Familiarity	Pearson Correlation	.508**	.501**	0.308
	Sig. (2-tailed)	0.003	0.003	0.081
	N	33	33	33
Prior Usage of Similar Service	Pearson Correlation	0.129	.578**	.544**
	Sig. (2-tailed)	0.473	0.000	0.001
	N	33	33	33
Prior Experience with Service Medium	Pearson Correlation	.470**	.578**	.368*
	Sig. (2-tailed)	0.006	0.000	0.035
	N	33	33	33
Prior Experience with Computer Technology	Pearson Correlation	.381*	.626**	.419*
	Sig. (2-tailed)	0.029	0.000	0.015
	N	33	33	33
Diffusion of Mobile Banking	Pearson Correlation	1	1	1
	Sig. (2-tailed)			
	N	33	33	33

elation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Correlation analysis has been conducted to see the relationship between the variables for the diffusion of mobile banking at various levels of adoption. The correlation results show that all the variables are positively related to the diffusion of mobile banking at all adoption levels. The adoption of mobile banking among the current adopters is highly correlated with "convenience" and "familiarity" with the service provider. Similarly, in the case of prospective adopters, the service provider's location and bank size have a higher correlation. Finally, consistent non-adopters were found to relate the adoption with convenience and monetary benefit.

4.3 Hypothesis Testing

Hypothesis testing is testing the relationship between variables in a population based on sample observation. The sample data are used to infer the population from hypothesis testing, a tool of inferential statistical analysis. Hypothesis testing based on Pearson's correlation is presented below:

Table 3: Testing of Hypothesis

Individual Variable	Hypothesis	Current Adopters	Prospective Adopters	Consistent Non-Adopters	Condition Obtained at 5% significance level
Convenience	"There is a significant relationship between convenience and adoption level of mobile banking."	0.002	0.003	0.000	Reject Ho
Quick Service	"There is a significant relationship between Quick Service and the adoption level of mobile banking."	0.040	0.003	0.001	Reject Ho
Monetary Benefit	"There is a significant relationship between Monetary Benefits and the adoption level of mobile banking."	0.273	0.002	0.000	Mixed Result.
Location of Service Provider	"There is a significant relationship between the Location of Service Provider and the adoption level of mobile banking."	0.593	0.000	0.018	Mixed Result.
Transaction Security	"There is a significant relationship between Transaction Security and the adoption level of mobile banking."	0.308	0.263	0.027	Mixed Result.
Size of the Bank	"There is a significant relationship between the size of the Bank and the adoption level of mobile banking."	0.005	0.000	0.127	Mixed Result.

Individual Variable	Hypothesis	Current Adopters	Prospective Adopters	Consistent Non-Adopters	Condition Obtained at 5% significance level
Familiarity with the Bank	"There is a significant relationship between the Familiarity of the Bank and the adoption level of mobile banking."	0.003	0.003	0.081	Mixed Result.
Prior Usage of Similar Service	"There is a significant relationship between Prior Usage of Similar Service and the adoption level of mobile banking."	0.473	0.000	0.001	Mixed Result.
Prior experience with service medium	"There is a significant relationship between Prior experience with service medium and the adoption level of mobile banking."	0.006	0.000	0.035	Reject Ho
Prior experience with computer technology	"There is a significant relationship between Prior experience with computer technology and the adoption level of mobile banking."	0.029	0.000	0.015	Reject Ho

In the case of current adopters, the study found out that "convenience", "quick service", "size of the bank", "familiarity with the bank", "prior experience with service medium", "prior experience with computer technology" has a substantial connection with the discussion of mobile banking. In the case of prospective adopters, it was observed that all the variables were found to have a considerable link except transaction security.

Similarly, in the case of consistent non-adopters, it was inferred that there is a noteworthy association of "convenience", "quick service", "monetary benefit", "location of the service provider", "transaction security", "prior usage of similar service", "prior experience with service medium", "prior experience with computer technology" with the "diffusion of mobile banking".

4.4 Regression Analysis

Regression analysis is the tool that helps develop the model, which helps predict the dependent variable. Unlike correlation which only states that either there is a relationship or not between the variables, regression analysis finds out the degree of relationship as a whole and on one to one basis. So, to further drill down the information on "Segmenting the non-adopters in the diffusion of mobile banking", the flowing multiple regression model has been used separately for each category of adopters.

$$\hat{Y} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + e_i.$$

Where,

$\hat{Y}$ = Diffusion of Mobile Banking (Dependent variable)

X1 = Convenience

X2 = Quick Service

X3 = Monetary Benefit

X4 = Location of Service Provider

X5 = Transaction Security

X6 = Size of the Bank

X7 = Familiarity of the Bank

X8 = Prior Usage of Similar Service

X9 = Prior Experience with Service Medium

X10 = Prior Experience with Computer Technology

i = Coefficient of the slope of the regression model

ei = Error term

β_i = Coefficient of the slope of the regression model

4.4.1 Current Adopters

As depicted in table 4, in the case of current adopters of mobile banking, the adjusted R Square is 0.449 interprets that dependent variables explain a 44.9% difference in the diffusion of mobile banking. The standard error of the estimate of 0.498 means that the deviation of diffusion data from the regression line is 0.498 units.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.788[b]	0.6212	0.449	0.49845
a. Type = Current Adopter				
b. Predictors: (Constant), Prior Experience Computer Technology, Monetary Benefit, Size of Bank, Transaction Security, Convenience, Location, Prior Usage of Similar Service, Quick Service, Familiarity, Prior Experience with service medium				

Based on ANOVA, the significance level is higher than the p_value for current adopters. This reflects that the relationship between the diffusion of mobile banking and independent variables, altogether, is significant.

Table 5: ANOVA

ANOVA[a,b]					
Model	Sum of Squares	Df	Mean Square	F	Sig.
1. Regression	8.963	10	0.896	3.608	.006[c]
Residual	5.466	22	0.248		
Total	14.429	32			
a. Type = Current Adopter					
b. Dependent Variable: Diffusion					
c. Predictors: (Constant),b. Predictors: (Constant), Prior Experience Computer Technology, Monetary Benefit, Size of Bank, Transaction Security, Convenience, Location, Prior Usage of Similar Service, Quick Service, Familiarity, Prior Experience with service medium					

Table 6: Regression Coefficients

Coefficients[a,b]								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-2.001	1.545		-1.296	0.209		
	Convenience	0.573	0.237	0.469	2.421	0.024	0.459	2.180
	Quick Service	-0.280	0.212	-0.273	-1.322	0.200	0.404	2.476
	Monetary Benefit	0.102	0.098	0.164	1.046	0.307	0.701	1.427
	Location	0.091	0.100	0.137	0.913	0.371	0.761	1.314
	Transaction Security	0.203	0.155	0.189	1.309	0.204	0.829	1.207
	Size of Bank	0.242	0.122	0.407	1.984	0.060	0.409	2.447
	Familiarity	0.176	0.160	0.220	1.100	0.283	0.432	2.312
	Prior usage of similar service	-0.107	0.113	-0.149	-0.954	0.351	0.710	1.409
	Prior experience with service medium	-0.041	0.223	-0.039	-0.186	0.854	0.391	2.555
	PriorExperience with Computer Technology	0.483	0.261	0.322	1.853	0.077	0.570	1.754
a. Type = Current Adopter								
b. Dependent Variable: Diffusion of Mobile Banking								

The coefficient table also shows that convenience is the significant independent variable. Convenience (perceived attribute) also has the highest beta at 0.469, reflecting it has the most dominant positive influence in the diffusion of mobile banking among current adopters. In contrast, the other nine independent variables are not significant. If we check the significance of variables at 10% significance level, then the Size of the Bank, Prior experience with computer technology are significant.

4.4.2 Prospective Adopters

In the case of prospective adopters, the adjusted R Square is 0.593, meaning a 59.3% difference in the diffusion of mobile banking is explained by dependent variables.

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.849b	0.7204	0.593	0.53210
a. Type = Prospective Adopter				
b. Predictors: (Constant), Prior Experience with Computer Technology, Monetary Benefit, Size of Bank, Transaction Security, Convenience, Location, Prior Usage of Similar Service, Quick Service, Familiarity, Prior Experience with service medium				

The ANOVA result signifies that the ten dependent variables, altogether, are significant in explaining the variation in the diffusion of mobile banking among prospective adopters.

Table 8: ANOVA

ANOVA[a,b]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	16.050	10	1.605	5.669	.000c
	Residual	6.229	22	0.283		
	Total	22.279	32			
a. Type = Prospective Adopter						
b. Dependent Variable: Diffusion of mobile banking						
b. Predictors: (Constant), Prior Experience with Computer Technology, Monetary Benefit, Size of Bank, Transaction Security, Convenience, Location, Prior Usage of Similar Service, Quick Service, Familiarity, Prior Experience with service medium						

Table 9: Regression Coefficients

Coefficients[a,b]								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-0.251	0.894		-0.281	0.781		
	Convenience	0.281	0.186	0.305	1.512	0.145	0.311	3.211
	Quick Service	-0.126	0.194	-0.159	-0.651	0.522	0.214	4.680
	Monetary Benefit	-0.050	0.151	-0.067	-0.330	0.745	0.312	3.204
	Location	0.110	0.144	0.164	0.764	0.453	0.277	3.607
	Transaction Security	0.215	0.138	0.217	1.556	0.134	0.650	1.538
	Size of Bank	0.255	0.183	0.326	1.393	0.178	0.231	4.323
	Familiarity	-0.100	0.193	-0.109	-0.515	0.612	0.282	3.548
	Prior usage of similar service	0.184	0.109	0.254	1.694	0.104	0.566	1.766
	Prior experience with service medium	-0.172	0.260	-0.158	-0.664	0.514	0.225	4.448

Coefficients[a,b]							
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
Prior Experience with Computer Technology	0.517	0.263	0.541	1.964	0.062	0.168	5.962
a. Type = Prospective Adopter							
b. Dependent Variable: Diffusion of mobile banking							

The coefficient table also shows that all the independent variables are insignificant based on p_values (p > 0.05). If we check at 10% significance level, then Prior experience with computer technology is a significant variable. Convenience, Transaction Security, and Prior Usage of Similar Services have a slightly larger value than 0.10, which can be considered an evident trend in prospective customers. Prior experience with computer technology has the highest value of 0.541; it is the leading influencer in the diffusion of mobile banking among prospective adopters and can thus be considered a significant factor among all other factors.

4.4.3 Consistent Non-Adopters

As shown in table 10, the adjusted R Square is 0.695, which can be interpreted as 69.5% variability in the diffusion of mobile banking is explained by dependent variables.

Table 10: Model Summary

Model Summarya[a]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.889[b]	0.7899	0.695	0.66408
a. Type = Consistent Non-Adopter				
b. Predictors: (Constant), Prior Experience with Computer Technology, Monetary Benefit, Size of Bank, Transaction Security, Convenience, Location, Prior Usage of Similar Service, Quick Service, Familiarity, Prior Experience with service medium				

Table 11: ANOVA

Based on ANOVA, we can say that dependent variables are significant in explaining the variation in the diffusion of mobile banking among current adopters.

ANOVA[a,b]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	36.497	10	3.650	8.276	.000[c]
	Residual	9.702	22	0.441		
	Total	46.199	32			
a. Type = Consistent Non-Adopter						
b. Dependent Variable: Diffusion						
c. Predictors: (Constant), Prior Experience with Computer Technology, Monetary Benefit, Size of Bank, Transaction Security, Convenience, Location, Prior Usage of Similar Service, Quick Service, Familiarity, Prior Experience with service medium						

Table 12: Regression Coefficients

Coefficients[a,b]									
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-0.140	0.799		-0.175	0.863		
	Convenience	0.555	0.163	0.600	3.394	0.003	0.306	3.272
	Quick Service	-0.019	0.264	-0.017	-0.070	0.945	0.164	6.086
	Monetary Benefit	0.385	0.155	0.431	2.479	0.021	0.316	3.166
	Location	-0.495	0.229	-0.442	-2.159	0.042	0.227	4.396
	Transaction Security	0.163	0.222	0.090	0.733	0.471	0.628	1.593
	Size of Bank	0.249	0.296	0.284	0.840	0.410	0.084	10.946
	Familiarity	-0.554	0.305	-0.687	-1.818	0.083	0.067	10.975
	Prior usage of similar service	0.186	0.150	0.231	1.246	0.226	0.277	3.606
	Prior experience with service medium	0.069	0.212	0.075	0.328	0.746	0.183	5.471
	Prior experience with computer technology	0.361	0.170	0.448	2.127	0.045	0.215	4.645

a. Type = Consistent Non-Adopter

b. Dependent Variable: Diffusion in Mobile banking

The coefficient table shows that monetary benefit, location of the service provider, and prior experience with computer technology are significant variables, while other variables are not. If we check at 10% significance level, then, Convenience, Quick Service, Monetary Benefit, Location, Familiarity, and Prior experience with computer technology are the significant variables. Convenience has the highest Beta value of 0.600; it has the most prominent influence on the diffusion of mobile banking among consistent non-adopters.

4.5 Discussion from the questionnaire survey analysis

This part discusses the study of the diffusion of mobile banking among different adoption levels and the interrelationships of each factor derived from these larger constructs. Discussion is based on the significance of variables from regression analysis:

i. **Convenience:** The study found that convenience is a significant variable in adoption level, and it is in line with the findings of Gerrard & Cunningham (2003), who argued that the major advantage of online banking is convenience only. This also supports the study made by Dabholkar (1996), who shared his result of a positive relationship between perceived benefit and convenience.

ii. **Quick Service:** The research did not find any relation between mobile adoption and quick service. However, Kluglak (1997) presented the idea that fast service is an advantage felt due to technology adoption, which could not be established in Nepal with the collected sample.

iii. **Monetary Benefit:** The study by Gerrard and Cunningham (2003), shows people in the adopters and non-adopters category are not concerned with monetary benefits in adoption, which supports our finding in the study with current adopters and potential adopters. But consistent non-adopters value the economic benefit of motivating mobile banking usage.

iv. **Location of Service Provider:** The study observed that the consistent non-adopters are more likely to go for diffusion with the presence of the location of the branch nearby, unlike adopters and potentials. This was somewhat supported by the study of Donney and Cannon (1997), which stated that physical location helps t build trust in service banking, such as through mobile technology.

v. **Transaction Security:** Transaction security has been found non-significant among all levels of adoption, which was validated by the study of Gerrard and Cunningham (2003) in Singapore, which determined that transaction security is not an issue to slow down the adoption of online banking channels.

vi. **Size of the Bank:** As stated by Nayyar (1993), in-service industry customer searches for cues such as bank size, presence, brand, etc., but our study did not support it because it was not found significant with all adopter's category.

vii. **Familiarity with the Bank** Familiarity did not influence all three adopter's categories in the study, but Murray (2020) stated that familiarity tends to be a non-advantageous factor for click-only web banks.

viii. Prior Usage of Similar Service: Lee and Lee (2001) proposed that customers who have been using the Internet for taking service tend to be easy adopters of mobile banking, but our findings in the case of Nepal did not validate it.

ix. Prior experience with service medium: The prior experience with service medium did not influence both adopters and non-adopters in the study in the study, but the research by King and Xia (1997) went the other side than our finding, which stated that customers using online shopping tend to be converted quickly.

x. Prior experience with computer technology: Prospective and non-consistent adopters agree that "prior experience with computer technology" is helping to leap towards mobile banking. It was aided by the study by Dickerson and Gentry (1983), the customer with knowledge of computer technology are quick adopters of technological products.

4.6 Interview Analysis

Apart from the questionnaire survey, the study has also focused on interviewing professional bankers (9 respondents, six banks) responsible for Mobile banking sales. The question revolved around the adoption process of mobile banking. Respondents were asked about the slowness in adopting mobile banking from the banks' and customer end and the encouragement factor for adoption.

4.6.1 Obstruction in M-Banking Adoption from Bank's end

Respondents were asked about the reasons for the slow growth rate in a mobile banking application. The top ten factors revealed were as follows;

Table 13: Factors slowing adoption from Bank's end

a.	Aggressive Push Marketing creates the wrong image.
b.	Application by the physical paper-based.
c.	Application Design
d.	Conceptual Barrier
e.	Delay in Transaction Alert
f.	Delay in Troubleshooting
g.	The gap in Banks' processes and customer preference
h.	High Annual Subscription Charge
i.	Increasing Annual Subscription charge
j.	Lack of Learning environment by the Bank

4.6.2 Obstruction in the adoption from the customer's end

The list of the top ten factors that were extracted during the Interview has been presented in the table below:

Table 14: Customer's factors obstructing the adoption

a.	Age Factor
b.	Audit System
c.	Cash-based preference
d.	Challenging to adopt technology
e.	Difficult to remember credential
f.	Expensive Data service
g.	Fear of Technology
h.	Hassle in follow-up in transaction failure for refund
i.	High Annual Subscription Charge
j.	Higher time in searching for the feature

4.6.3 Factors Encouraging Adoption

Respondents were asked about encouraging the mobile banking customer in the bank and factors that impact encouragement. They primarily focused on increasing the awareness of M-banking services. The top 10 reasons stated by the respondents have been listed below in the table.

Table 15: Factors required for encouraging adoption

a.	Age Factor
b.	Awareness of Mobile Banking App
c.	Better Build the Perception of Security
d.	Broadening The M-Banking W/O Transaction Alert
e.	Confidence Boosting
f.	Constant Persuasion About the Benefit
g.	Creating Awareness
h.	Improvement of Settlement Process
i.	Building Trust
j.	Increasing the Perceived Benefits

4.6.4 Perceived Advantage by Current Adopters

Respondents were highly in line while stating the advantages perceived by the current adopters. The top ten benefits listed by the respondents are presented below:

Table 16: Perceived Advantages by current adopters

a.	Avoid Branch Visit
b.	Avoid the queue in Branch
c.	Balance Inquiry
d.	Convenience
e.	Direct Top Up
f.	Fund Transfer
g.	Merchant payment
h.	Mini Statement
i.	QR Payment facility
j.	Quick Service

4.6.5 Conversion of Prospective Adopters into Current Adopters

As stated by the respondents, there are many cases when customers return to the branch requesting a mobile banking subscription request. Based on the response, it is evident that social influence is the primary factor in converting Prospective into current adopters. The complete list of reasons is shown below in the table.

Table 17: Conversion of Prospective Adopters into Current Adopters

a.	Advertising
b.	Attractive Cash Back
c.	Constant Persuasion about the benefit
d.	Corona Pandemic (currently)
e.	Cost Factor
f.	Ease in Merchant Payment
g.	Increase in confidence
h.	Increase in perception of security
i.	Lack of Time
j.	Realization of M-banking Service

4.6.6 Retention and Attraction for Different Adopters

After discussing the elements that impact the embracing of M-banking and the conversion of prospective into current adoption, the bank needs to focus on retaining current adopters and prospective adopters. Respondents were asked about a unique selling proposition or value addition that may help retain and attract. There was a mixed response about how the value addition can be done. Some of the exciting ideas is presented in table 18.

Table 18: List of USPs for attraction and retention

a.	An account opening from Social Media
b.	All information within application
c.	Extension from Transaction Banking
d.	Extension of M-Banking as a Loan application platform
e.	Extension of mobile banking to other banking activities
f.	Feature addition (FD, loan summary)
g.	Free subscriptions
h.	Lower transaction limits
i.	Merchant addition
j.	Personalized Mobile banking

Overall, the interview revealed that creating awareness and teaching customers about M-banking usage was crucial to increase the adoption level. It was clear that adopters and prospects found the M-banking application convenient, time-saving, and easy to use. However, users have always been concerned about security and privacy issues.

One exciting finding through the interview was the generation of people entering the bank as customers. The retail sector's most significant banking business volume consists of technologically slow-paced people. When the millennial generation enters professional life and becomes part of the income-generating life cycle, the boom in mobile banking will be seen, and this will be disrupted because current attributes offered by mobile banking will not be able to suffice their requirement. It has been restricted to small payments, and the adoption level is constrained. On the part of the bank, the effort of promoting the M-banking is showing the result. Still, they need to ensure proper communication with the customer and increase the service quality of the M-banking service so that it could qualify the perceived cost from the customers' minds.

Finally, the smart support system was found to be another issue that brings the perception of unreliability among the users. Until the bank can address the customer's issue while using mobile banking from a remote location or without requiring the customer to visit the branch, the adoption will not be efficient, and rapid growth in adoption will not be seen. So, the use of modern technology, such as integrating AI for predicting the customer need inside the app and helping the customer to troubleshoot the problem with the use of AI must be enrolled in the product improvement plan of the mobile banking application.

5. Conclusion, Implication, and Recommendation

5.1 Conclusion

M-banking is one of the revolutions in the banking service distribution channel. This service has been regarded as an alternative delivery channel and the Nepalese banking industry's non-interest revenue source. Of late, Nepalese banks have realized that the future lies in alternate delivery channels, and M-banking is the best way to deliver the banking service to customers. In this perspective, this study primarily started with whether the bank should segregate customers into different categories of adoption in diffusion in Mobile banking. The study has categorized the adoption category into three parts, namely, "current adopters", "prospective adopters", and "consistent non-adopters". It was seen that the bank should segment its target market based on adoption segmentation because various factors at different magnitudes influence different categories.

In the case of the current adopters, the convenience factor was significant because current adopters are the one who wants banking 24/7 in their hand. They want to avoid visits to the branch and queueing in the branches. They prioritize the time factor and save the cost of moving for conducting banking transactions. The benefit of making payments to merchants, utility payments, top-up facility, transaction alerts, fund transfers, applying for FD accounts, personal loans, credit cards, and viewing statements in real-time. These facilities bring a sense of convenience to the current adopters.

Similarly, the regression model could not bring up any significant variable for prospective adopters. However, based on the beta value, "prior experience with computer technology" was seen to be significant in the case. People with lower knowledge of computer technology tend to perceive that it requires high-tech knowledge to use the M-banking service.

Response from the Interview showed that the social influence and subjective norms caused the conversion from prospect occurs. Persuasion from the bank staff also helps quickly convert potential clients to current adopters. Lastly, in the case of the consistent non-adopters, regression identified the variables such as convenience, monetary benefit, location of the service provider, and prior experience with computer technology as significant variables.

Even though they are not users, they perceive convenience as a benefit, but it is also evident that for conversion, push like monetary benefit will help to form their positive attitude towards mobile banking. This category is reluctant because they think a knowledge of computer technology is required for using mobile technology. One of the interesting facts that came up was the location of the service provider is necessary for consistent non-adopters because it helps to build trust if the banks are closer to them. So, the bank requires the physical outlet to impact this category positively. It is because of the sense of security as well. The closer location of the bank increases the perception of safety, confidence, and trust.

Apart from this, the interview also pointed out a few interesting facts about the diffusion of mobile banking. The sense of security is not only related to technical issues such as hacking. It was related to the family member's use of their own money. In Nepal, the mobile of a family member is easily accessible, so one instance shared by a respondent was a case of a husband and wife whereby the husband transferred the wife's money using the M-banking service without the wife's knowledge. Similarly, in the case of a joint family where the family is in facing difficulty in staying together, people tend to think that other family members will know their privacy of balance or additional account information. This security and privacy issue must be addressed by educating people about security tips such as non-sharing PIN, not leaving the mobile unattended, etc.

Another issue pertains to the cost factor, M-banking has an annual subscription charge which is one of the sources of fee-based income for BFIs. But this factor easily creates a barrier in M-banking adoption because the customer perceives that the cost is higher than the benefit. It is due to the lack of total usage of M-banking due to a lack of awareness and knowledge on the customer's end.

From the regulator's perspective, the mobile payment limit is defined at a lower level and frequently changed. The lower limit has restricted M-banking usage as a medium for lower-value payment, but Internet banking gives a significantly higher limit than mobile Banking. However, if there is any large payment requirement more than limit prescribed, people still must visit the branch. Until the M-banking is interfaced with the national payment gateway for retail payment and the RTGS system, the larger payment barrier remains, limiting M-banking usage.

On the other hand, the changing limit of M-banking creates confusion among customers and makes the perception of M-banking less secure. When the central bank keeps on changing the limit, the market tends to lose confidence in Mobile payment for a large volume. It continuously gives the impression that there are still security issues with the M-Banking. The customer also would not have knowledge of the payment limit. This tends to degrade the perception of M-banking itself and questions the reliability of M-Banking.

Hence, M-banking is a boon for banking in reducing costs and enriching the customer experience in service delivery. The entry of Omnichannel has been a landmark in the Nepalese banking industry. So, the bank should also investigate market segmentation based on adoption level and try to convert all into adopters. It would be easy to convert the prospect as the difference between adopters and prospective adopters is just about the perception and more effort will be devoted to the conversion of consistent non-performers. Segmentation of non-adopters will help the bank to target the group with a unique and effective strategy to sell Mobile banking.

5.2 Implication to Banks

Banks and Financial Institutions have been focusing more on alternate delivery channel for cost reduction and higher service delivery consistency. For this to materialize, the bank must be able to reach those customers who are non-adopters and be able to convert them. So, it has been evident that the segmentation of the non-adopters category is based on the motivation to use M-Banking and perception towards M-Banking. Consolidating the non-adopters category will not help adoption as there is a massive difference between "prospective adopters" and "consistent non-adopters". So, the marketing effort should be directed towards the non-adopters category effectively. For quick conversion, prospective adopters should be marketed through storytelling and role modeling.

Similarly, consistent non-adopters must be dealt with in different approaches in marketing. The study has found that the bank's location is essential for changing the mindset of this group. Bank must take the current opportunity of the branch expansion regulatory requirement to give the consistent non-adopter the cue of location factor for conversion. This strategy will have a more prolonged impact. When the regulatory requirement is lifted, the branch closure decision can be quickly taken in the future with a substantial bank footprint with service delivery via M-Banking.

Further, knowledge and information about the monetary benefit must be communicated to the non-adopter group. This information will give a positive push to the potential for the adoption of M-banking. Overall, the bank needs to change the attitude of users and potential users about the knowledge of computer technology requirements. People are seen to be under the impression that M-banking usage requires knowledge of computers. Knowledge of using mobile is enough for this. This perception of technological know-how barrier shall be removed by effective communication i.e., through personal influence from the front-line staff as they will have a more significant effect.

5.3 Recommendations

After arriving at the interpretation of data and conclusion, the study has the following recommendation for different stakeholders:

i. The Bank should segregate the market by adoption level so that the needs and concerns of each adopter category can be addressed. Marketing and communication for each class can be precisely designed to attract a more extensive customer in the pool of mobile banking.

ii. The mobile banking service provider must leverage the technology by implementing AI, a means to predict the customer's behavioral pattern to support them and can be used to enrich the customer experience.

iii. M-banking is the means to realize the government's mission to achieve a cashless society. The government should ensure at least minimum technological infrastructure, such as Internet accessibility, mobile phone towers, etc., to promote digital Nepal.

iv. Nepal has almost fallen into the grey zone of the Financial Action Task Force due to high cash usage. As mobile banking is done by account-to-account transfer, it will help to reduce the risk of money laundering and terrorist financing, which is a crucial requirement for Nepal as of now.

v. Both banks and the government sector should be involved in creating awareness about Mobile banking services. On the one hand, it is cost-efficient for banks, whereas it will help promote the e-governance of the government.

vi. The Central Bank must increase the limit on Mobile payments. The increment will help to build trust and confidence among the people. Frequently changing the limit on the mobile amount will create confusion among the customer and will deteriorate the sense of reliability on Mobile banking.

vii. The central Bank must ensure that the cost factor of M-banking is kept at the lower end to increase M-banking adoption. The banks must work on improving the perceived benefit in the mind of the customer regarding mobile banking so that the cost factor would not be an issue in adoption.

viii. Provision of regulatory requirements such as technical audits, security audits, and ISO standards must be levied on M-banking applications to enhance security and minimize the risk of fraud from Mobile channels.

ix. Awareness about security must be generated to manage and avoid fraud from the customer's end. Customers must also be made aware of the privacy issues as well.

5.4 Prospects for future studies

This research paves the way for more work in the area in the Nepalese context. Future research can be done by using more sample sizes, even segregating them based on geography, like rural, semi-urban, and urban areas. The adoption process based on this distinction using more samples would make the research more reliable and add significant value to the literature. In addition, other than the factors analyzed in this study, many other factors might be important in the mobile banking adoption process and can be used in future research. For example, for current adopters, intuitively, factors like faster payment, cashback, loyalty schemes, etc., are equally important and are not used in our study. Ozdemir & Trott (2009) find that the users' socioeconomic, demographic, situational, perceptual, and experience-related characteristics impact the adoption process.

Similarly, Laukkanen (2016) sees the significance of the age and gender of customers in Mobile Banking adoption versus rejection decisions. In addition, Zhou (2018) finds the importance of social influence in switching to Mobile banking, which can be another area for future research. Further, new studies can be made using other types of methodologies also. Studies like Yiu et al.(2007), Ozdemir et al. (2008), Ozdemir & Trott (2009) use Technology Acceptance Model (TAM) to identify the perceptual differences between adopters and non-adopters. Mobile banking adoption in the Nepalese context using TAM can significantly contribute to the arena.

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APPENDIX A: QUESTIONNAIRE

QUESTIONNAIRE

Segmenting the Non-Adopter in the Diffusion of Mobile Banking

Part A: Demographic Profile

Gender
- Male
- Female

Marital Status
- Married
- Unmarried
- Divorced/Widowed

Age
- Below 20
- 20-30
- 30-40
- 40-50
- Above 50

Education
- Secondary
- Intermediate
- Bachelor degree
- Master degree or above

Occupation Status
- Government
- Private
- Self-employed

Income Level (in NRs.)
- Below Rs.20,000
- Rs.20,000 – Rs.40,000
- Rs.40,000 – Rs.60,000
- Rs.60,000 and above

Work Experience
- Less than a year
- 1-2 years
- 2-4 years
- 4-5 years
- 5 years and above

Type of organization (eg. Bank, Hotel, etc.)
....

Part B: How long have you used a mobile?
- Never
- Less than a year
- 1-2 years
- 2-5 years
- More than 5 years

Are you subscribed to mobile banking services?
- Yes
- No

If your answer in the previous question is No,
- Do you intend to use Mobile Banking in the coming 12 months?
- Yes
- No

If your answer in the previous question is Yes,
- How long have you used mobile banking?
- Never
- Less than 1 year
- 1-2 Years
- 2-5 years
- More than 5 Years

How often do you check your bank balance or do bank transactions per week using Mobile Banking?
- None
- Once
- Twice
- Three Times
- More than Three Times

What do you use mobile banking usually for? (You can tick more than one)
- Checking bank account balance
- Paying utility bills(phone bills, electricity bills, recharge, etc.)
- Transferring money between own accounts
- Making payments to other people
- Changing my bank PIN

Part C: Survey Question

Please indicate the level of agreement with the following statements.

Table 10: Model Summary

Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1	2	3	4	5	6

Please mark (√) below the option. All questions are mandatory.

Table 10: Model Summary

S.N.	Statement	1	2	3	4	5	6
1.	**Convenience** I feel that Mobile banking provides convenience since it is available 24 hours. I like that Mobile banking enables transactions to be conducted from home. My interaction with Mobile banking is clear and understandable. I find Mobile banking flexible to interact with.						
2.	**Quick Service** I feel that Mobile banking saves time as compared to conventional banking. I feel that transactions are completed in seconds instead of minutes. I think that I find it easy to choose the banking service I need in Mobile Banking. I think I can save more time while performing mobile banking operations (E.g. Opening accounts, Making Payment, etc.).						
3.	**Monetary Benefit** Mobile banking charges a lower transaction fee. I like to earn loyalty points from Mobile banking transactions. Mobile banking is the cheapest way of making banking transactions.						
4.	**Location of Service Provider** I think the physical presence of a branch is not necessary for Mobile Banking usage. The absence of the physical location of the bank near my area of convenience will not affect my decision of adopting Mobile Banking. I think Mobile Banking will reduce my visit to the branch.						
5	**Transaction Security** I feel that transactions conducted through mobile banking are secure. I am concerned that PINs obtained by fraud may allow others to access Mobile banking accounts. I am concerned that hackers may be able to gain access to my banking accounts. I believe that banking institutions keep customers' information private and confidential.						
6.	**Size of Service Provider** The size of the bank assures my trust in Mobile banking services. I feel that a large bank provides more facilities on Mobile Service than smaller banks.						

S.N.	Statement	1	2	3	4	5	6
	I subscribe to Mobile banking when my bank has the strength of an international bank.						
7.	**Familiarity with Service Provider** I feel at ease in using Mobile Banking when I feel good about the bank. I subscribe to Mobile banking when I trust banks. I subscribe to Mobile banking when the bank has an overall good reputation.						
8.	**Prior Usage of Similar Service** I frequently use Automated Teller Machines for cash withdrawal. I recharge my phone from the Kiosk machine. I use a digital wallet for paying utility bills.						
9.	**Prior experience with service medium** I tend to purchase products from online stores. I use social site such as Facebook, Instagram, etc. I use messaging applications such as Messenger, Viber, or Whatsapp, etc. It is easy to find information (e.g. Location) from the internet.						
10.	**Prior experience with computer technology** I use computer/mobile technology in my daily life. I think computer/mobile technology will ease my life. I am familiar with current technology.						
11.	**Adaptation on Mobile Banking** I am more likely to use Mobile Banking when I have banking to do. To the extent possible, I would like to take advantage of mobile banking for my banking activities. I feel safe while using Mobile banking. Given that I have access to a web-enabled mobile phone, I predict that I would use M-banking. I intend to increase my use of mobile banking in the future.						

APPENDIX B: INTERVIEW QUESTION

1. What do you think slows down the rate at which Mobile banking is being adopted from Bank's end?
   Answer:

2. What obstructs the adaptation of Mobile Banking services in customers' end?
   Answer:

3. What do you think would encourage more consumers to adopt mobile banking?
   Answer:

4. What advantages do adopters perceive who possess Mobile banking? (for adopters)
   Answer:

5. What influenced the decision of non-adopters to use Mobile Banking in later times?
   Answer:

6. What selling proposition influences you as your customer to subscribe to Mobile Banking?
   Answer:

7. How strong are the influences you mentioned (please prioritize if possible)?
   Answer:

THE IMPACT OF FINTECH - BASED SOLUTIONS ON CUSTOMER EXPERIENCE IN THE MALDIVES

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Abstract

The ever-changing and advancing digital improvements such as blockchain, smart contracts, quantum computing, adaptive intelligence and big data increase the use of FinTech to a whole new level. FinTech has become an inevitable element in the banking and finance industry. Especially post COVID-19, where banks and financial institutions were forced to ensure that customers can conveniently do their transactions at any given time, any place, from any of their devices.

This research aims to analyse the impact of FinTech-based solutions on customer experience at two banks with state shares in the Maldives. Specifically, the study investigates customer experience associated with their use of why customers would be satisfied by using fintech- based solutions as opposed to traditional banks, the perceived advantages, and disadvantages of FinTech for customers and whether FinTech has revolutionized customer experience in the banking sector. The data for this survey was collected through primary and secondary sources, and all procedures were followed for the research. A self-administered questionnaire hosted using Google Form, consisting of general personal information, FinTech-based solution infrastructure, channels and tools and customer experience-related questions for the primary data collection was used.

Note: *For the purpose of this study, terms such as "the banking industry of the Maldives" refers to two banks -Bank of Maldives Plc (BML) and Maldives Islamic Bank Plc (MIB).*

1. Introduction

The Maldives, at 298 square kilometres is Asia's smallest country in terms of land mass, and one of the world's most geographically dispersed. In 2020, although only 62% of Maldivian households were reported to have internet access (The World Bank, 2020) , the Maldives has one of the highest account ownership and digital payment usage in South Asia (Financial Inclusion in the Maldives Findex 2018 Survey, 2019).

However, about 1in 5 Maldivians do not have a bank account and are therefore considered unbanked. But Maldives also has the highest rate of mobile phone ownership in South Asia and is close to the mobile phone ownership rates of economies with higher incomes (Financial Inclusion in the Maldives Findex 2018 Survey, 2019).

The Maldives's financial sector consists of banks, non-bank financial institutions, and payment service providers. The banking sector consists of eight commercial banks, three locally incorporated banks, four branches of foreign banks and one subsidiary of a foreign bank (Maldives Monetary Authority , n.d.). Of the 8 banks in the Maldives, two are banks with state shares, BML and MIB, are both publicly listed companies.

BML, established in 1981 is the largest retail bank in the Maldives, and it is a "full-service bank offering the complete spectrum of personal, business and corporate and financial services, alongside Shari'ah compliant Islamic Banking" (Bank of Maldives, 2021). As the market leader in the banking sector, the bank has a customer base of over 280,000 (International Finance Corporation, 2020) .

MIB, founded in 2011, provides its services across the nation through a digital banking platform and physical branches in the most populous 5 atolls, and is the only fully Shari'ah compliant bank in the country (Maldives Islamic Bank, 2019). MIB started operating in 2011 and their customer base stands at 71,000 (Maldives Islamic Bank, 2019).

Traditional banking transactions for payments and other services involve costly, time- consuming and lengthy processes to furnish the transactions. Locally, the digitalization of banking is hampered by the lack of a single platform to link banks and mobile service providers, an effective infrastructure for the payment system, and its regulatory framework.

FinTech solution providers and firms offer a wide range of disruptive and innovative financial services, including the traditional banking service providers, to interact with the larger customer base and provide simple, affordable options with a better customer experience. Thus, it enables the FinTech-based solution providers to gain a competitive advantage.

According to the World Bank the digital transformation wave that is happening presents huge opportunities as well as challenges for all stakeholders and policy makers. As per the World Bank report, FinTech though innovative should be considered with the appropriate tactical and governance structures to reap its full benefits (Feyen, Natarajan and Saal, 2019).

A study by Jesuthasan (2021) states that through customer service, banks can communicate with their customers and strengthen the relationship, leading to a better customer experience. However, they also note that the degree to which banks utilise FinTech varies from institution to institution, which will impact the FinTech-based customer experiences of the customers.

However, when customer experience is viewed through a business lens, businesses presume they can construct the type of experience that customers will have by design. Nevertheless, when viewed through a customer's lens, one learns that businesses cannot always deliver a standardised experience as they cannot ensure that the perception from the customer's side will

be the same. Customers take into account personal experiences, interactions with the employees, senses and many other factors into considerations (Teugels, 2021).

Moreover, a country with dispersed islands becomes a humongous task for transaction fulfilment. Therefore, the impact of FinTech-based solutions on customer experience needs to be researched in order to understand the variables and their influences in the banking and finance sector of Maldives for sustainable economic development.

Fintech

FinTech refers to financial innovation driven by technology and transforms how financial institutions provide financial services and how consumers and companies utilise those services. The degree to which companies in certain sectors use FinTech varies; however, in the financial industry, there has been an ever-increasing competition between traditional banks and FinTech providers blurring the boundaries between banks and FinTech firms (Central Bank of Ireland, 2014). Financial services are being transformed by technological advancement. Markets have the potential to become more competitive, varied, and efficient as a result of these advances. Especially in developing nations, innovation has boosted inclusiveness and ushered in competition. (Feyen et al., 2021).

According to Paul et al., (2022), by offering first-rate services, banks can attract and keep customers in the world's expanding and dynamic marketplace. Customers' demands must be continuously identified by banks, who must develop effective strategies to address those needs by providing the right services. FinTech can help make banking more accessible and easier to use.

According to Safiullah and Paramati (2022), in a study done in Malaysia, says by investing in their own digital innovations, banks can avoid the negative impact that a competitor's product would have. Additionally banks can also provide a better service to their existing and future customers while having a competitive product. It is also said that when compared to FinTech companies, banks are lacking in automation.

In the Maldivian banking context, FinTech based solutions refer to internet banking (referring to banking carried out on any device with internet access) or mobile banking applications (referring to banking services carried out on specific devices using an app) that allow customers to view their account balances, transfer money and perform other services online.

The Maldives is still a country entrenched in traditional banking, and most customers prefer traditional banking methods such as cheques for inter-bank transfers (Naseer, 2018) over online ones.

However, there is very little research done into the Maldivian case. As such, cases have been taken from Sri Lanka, a country that is culturally similar to the Maldives. A study conducted in the Kurunegala district of Sri Lanka shows that there is a negative relationship between perceived risk and the adoption of FinTech based solutions such as mobile banking. Additionally, the study finds that the perceived usefulness of mobile banking increases adoption. Overall, the authors state that there should be an increased focus on bettering the security and the user-friendliness in order to persuade customers into adopting mobile banking (Ravichandran and Madana, 2016)

Considering the above, one of the hypotheses to be tested is:

H1: *There is no significant relationship between FinTech-based solutions and customer experience in the banking sector of the Maldives.*

Infrastructure facilities

In the context of this research, infrastructure facilities refer to the perceived safety of the banks' fintech-based solution, whether it is safer than traditional banking methods, and the cost- effectiveness from the customer's perspective. In developing nations, FinTech is a fairly new phenomena, and many financial institutions are only recently attempting to incorporate it into their business and organisational structures. An example of a developing nation with high mobile phone and internet penetration, and a large populous is India.

According to Bamoriya, Dr. Prerna and Singh (2013), in India some of the most concerning aspects of mobile banking were safety concerns, the lack of support from the banks, and the inadequate operating guidance given. Additionally, the study found that even among the customers that do use mobile banking, the application was used more for checking account balances rather than conducting bank transfers etc. Due to this, mobile banking has failed in its objective of increasing ease of use, and decreasing the amount of in person banking.

However, Deshwal (2015) states that the ease of access and time saving are two of the biggest reasons Indian customers use mobile banking. To increase mobile banking, Indian banks have sought to win over the confidence of their clients. If the customer does not feel that the bank is trustworthy, they will not be inclined to adopt internet banking. Additionally, it is stated that mobile banking can increase financial inclusivity in India by helping unbanked people, as India has a high mobile phone market saturation. To do this, there needs to be more awareness of mobile banking (Das et al., 2021).

Considering the above, one of the hypotheses to be tested is:

H2: *There is no significant relationship between FinTech infrastructure facilities and customer experience in the banking sector of the Maldives.*

FinTech channels and tools

In the context of this research, FinTech channels and tools refer to the perceived mode of communication, interaction or service delivery made available by the FinTech solution provider, such as the mobile apps, web portal and such tools from the customer's perspective.

This variable is about how easy the application is to download, or how easy the user interface is for customers to use. A difficult to navigate application may put off customers from wanting to use mobile banking.

Many complaints that people have about mobile banking applications are that they have slow loading times, issues with notifications, issues setting up accounts, making payments etc.

In order for a company to compete, they must fully understand how consumers perceive quality, and the way that it is influenced. In order to achieve this, businesses must attempt to match the service that customers perceive and the service they expect in order to achieve customer satisfaction (Seth, Deshmukh and Vrat, 2005). Eventually, if this level of service is consistently maintained, it may lead to improved customer experience as well.

While attitudes have a great impact on behaviour, but once an individual becomes used to such technology, the benchmarks for continuity changes. It may be difficult to get customers to use banking platforms, however banks can encourage them via their attitude (Ho et al., 2020).

In a study conducted with 12 hypotheses on the X effect on mobile banking applications, almost all hypotheses had been proven statistically significant. One of the hypotheses was "Users' attitude toward using the proposed m-banking apps has a positive effect on their intention of using it". They state that it is "desirable" for banks to attempt to increase customers' attention to use mobile banking applications via attitude. The likelihood of someone using or adopting a technology grows in direct proportion to how much they believe it to be user-friendly and advantageous to them (Mazhar et al., 2014)

Considering the above, one of the hypotheses to be tested is:

H3: *There is no significant relationship between FinTech channels and tools and customer experience in the banking sector of the Maldives.*

As the financial services industry continues to become more competitive, traditional banks must continue advancing their internet and mobile banking by promoting customer adoption. Understanding of customer specific components can allow banks to improve their customer service by acknowledging and working on the varying needs of different customers (Yousafzai and Yani-de-Soriano, 2012).

Banking is an evolving business and with the advent of FinTech, and other digital tools, customer experiences have become more important and significant than even the products or channels, hence budgeting for customer experience, and attempting to provide the best customer experience is one the main priority of banks (Kulbytė, 2022).

Customer Experience

While customer experience is not a new concept, it has been somewhat overlooked for the past few years as researchers focused on the consumption experience. This was because until recently, customer experience was not as important (Rageh Ismail et al., 2011)

According to a study done by PwC, customer experience is "everything". When customers feel appreciated by the business they frequent, businesses gain benefits. Customers are more willing to spend their money at a business they feel valued at. The large amounts of money and resources businesses invest into "design that pops and cutting-edge technology" in order to draw customers could be better spent elsewhere as customers want more user friendly interfaces (PwC, 2018).

Because it involves people and their emotions, customer experience is highly complicated and frequently involves the customer's views, which are impacted by the strength of the brand, past interactions, the cost, and the connections between the consumer and the business (Chauhan, Akhtar and Gupta, 2021).

On the other hand, a shortcoming that businesses seem to face is how to ensure that customer experience is good for customers, employees, and the business itself, meaning making sure that a good customer experience is guaranteed for the customers while ensuring that costs are kept to a minimum on their end (Johnston and Kong, 2011).

As many companies have their own metrics when it comes to measuring customer satisfaction, and if workers are meeting those goals and customer satisfaction is high, some businesses are still confused as to why some customers are still unhappy.

While customer experience is not dependent on customer satisfaction, customer satisfaction is dependent on good customer experiences.

Recent studies have shown that customer experience has been rising in importance for businesses. The relationship that a company has with their customers' goes beyond product ratings and wait times. Companies face lesser costs and more loyalty from customers' that are satisfied. As such, it is in the companies' best interest to understand what customers go through from the minute they consider purchasing a good, and making that process as clear, enjoyable, and easy as possible (McKinsey & Company, 2016).

As customer experiences hugely impact the bottom line of companies, banks give much focus and attention to serving the customers and make them happy for the purpose of maintaining a loyal customer base and influence the acceptance of new products and services (Kulbytė, 2022). A study by Saleem and Rashid (2012) studied the dimensions of technology adoption that influenced customer satisfaction in the financial institutions of Pakistan. The survey found that customers had more trust in the banking services when routine transactions made on mobile devices carried less risk.

Methodology

Studies show numerous methodologies for customer experience in research conducted around the globe. Most popularly customer experience and customer satisfaction research is conducted with a combination of qualitative and quantitative research methods.

The ideal way to do research has been the subject of an ongoing epistemological argument. Positivism and interpretive science, two radically different paradigms, were at the centre of the discussion (Professor Dilanthi Amaratunga et al., 2002).

This research takes a positivist approach due to its quantitative nature.

According to positivists, knowledge can and must be created objectively, free from the biases of the researchers or participants. It is a sincerely held belief that the robustness of the positivist research paradigm depends on quantitative underpinnings that use statistical inference to evaluate the effects of a specific experiment. To identify relevant impact sizes using the appropriate statistical tests, this quantitative approach requires a sufficiently large sample size and statistical power. (Park, Konge and Artino, 2020).

Lowhorn (2007) says that many researchers believe that quantitative research is more effective than qualitative research at determining causality because experiments can be precisely measured and conducted in a controlled environment. However, qualitative research can also be utilised to demonstrate causation while having less external validity.

Population of the Study and Sample Size

The population of this study consists of customers and BML and MIB, which consists of an estimated 280,000 customers and 71,000 plus customers as of 2019 respectively.

Based on the population size, for this study the appropriate sample size of 384 respondents were chosen. This is consistent with the sample size proposed by Krejcie and Morgan (1970). In past studies, in order to compensate for non-response rates, some researchers commonly increase the sample size to gather sufficient data (Sekaran & Bougie, 2010). Specifically, some researchers suggest increasing the sample size by at least 30% to compensate for the likely non-response (Israel, 2009). Accordingly, the sample size of this study was increased to 500 respondents to overcome the problem of the likely non-response rate.

Sampling Technique

According to Sekaran (2003), sampling is the procedure of selecting an appropriate sample from the population in order to generalize the population's characteristics. For this study, the sampling technique is simple random sampling.

Random sampling is a "variety of selection techniques in which sample members are selected by chance, but with a known probability of selection". This is the type of sampling that most business, social science and surveys from similar areas use to choose their participants (Harter, 2008).

Hence, 427 samples are selected randomly from the whole population. The questionnaires are self-administered to the respondents from the bank's customers in various places throughout the Maldives.

Data collection procedures

Surveys are tools used in order to understand the general characteristics of a group of people. This study utilized a questionnaire as the key tool for collecting the data. This is simply because questionnaires are the major method of gathering data that can be self-administered and is simple to use, score, and analyse. The questionnaire was distributed among customers using FinTech-based bank solutions in the Maldives and attached with a section detailing the purpose for gathering the data to get cooperation from the respondents. According to Sekaran (2003), questionnaires are an effective method of collecting data. The questionnaire is adapted from several studies and information collected from banks. A questionnaire set adopted covered all the important constructs of the proposed theoretical framework.

Most primary data collection procedures were followed for the research. The self- administered survey consists of general personal information, FinTech-based solutions infrastructure, channels and tools and customer experience-related questions for the primary data collection. The survey followed a 5-point Likert scale and some questions to allow insight into customer's thinking. It is a response scale where respondents rank their agreement with a statement, usually out of five: (1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; (5) Strongly agree.

Before undertaking the main study, a pilot survey was carried out among twenty customers using FinTech-based solutions to analyse the data collected and the feedback, which can facilitate the final questionnaire and check the reliability and readability of the questions used. Besides this, the author collected secondary data from books, journal articles and relevant digital literature. Thus, the author conducted a survey and collected 70% of the data from the questionnaire and 30% by analysing the literature.

Operational Definitions and Measurements

The current study's model consists of one dependant variable (customer experience) and three independent variables (FinTech-based solutions, infrastructure facilities, and FinTech channels and tools). These variables were derived from the literature and were defined in various dimensions. The operational definition of every variable in this study is explained and listed below.

Customer experience

Customer experience is a customer's direct or indirect reaction to a business. Direct contact is often established during purchasing a good or service or through its use (Schwager and Meyer, 2007). According to Wereda and Grzybowska (2016), customer experience management can "strengthen brand preference through great experiences and improve customer loyalty and create advocates through valued and memorable customer interactions", and by using structured data such as demographics and transaction data alongside newer data such as social media, companies can make more informed decisions, and understand their customers' better.

A four-item scale was used to measure customer experience and was adapted from the literature.

Table 1

	Measurement items of customer experience
1	I am satisfied with the available fintech services
2	I am satisfied with the reminders, notifications and offers given on fintech solutions
3	I am satisfied with the extent of the relationship I have with my bank
4	Is the user interface friendly to navigate?

FinTech-based solutions

A company that uses technology to improve, automate or change their financial services for individuals and other parties are called fintech firms (Columbia Engineering, 2021). However, it is not only fintech firms that use fintech to improve their products. Some of these companies are rivals to other financial institutions such as banks. However, banks have also introduced this technology in order to compete and retain their customers. In the Maldives, there is a lack of FinTech firms, but banks have adopted fintech-based solutions such as mobile and internet banking in order to give their customers a better banking experience.

Table 2

	Measurement items of Fin- Tech- based solutions
1.	I receive bank transfers (deposits) online into my bank account and get informed by my banks via phone text immediately
2.	I usually do bank transfers online
3.	I often make payments through online banking
4.	I am satisfied with my bank's online banking facilities
5.	I am more satisfied with the fintech based digital offerings than with brick and mortar bank branches
6.	Overall, I am satisfied with online banking than traditional banking systems

Infrastructure facilities

Infrastructure facilities refer to the safety and security of the fintech-based solution, the ability to easily navigate the user interface, and whether customers may have a positive enough experience with the solution in order to potentially pay a service fee when using it.

In a survey done in the United States, in which over a 1000 people were asked whether customer service was more important than price, 58% of respondents answered yes. For example, Amazon is a case study of customer convenience. The study showed that over 70% of customers were willing to pay more if they got a convenient service, and Amazon with their same-day delivery services and tracking epitomises convenience. In fact, most customers can get their goods cheaper from elsewhere, however most people choose to pay more because of the convenience that Amazon offers (Hyken, 2022).

Table 3

	Measurement items of infrastructure facilities of FinTech
1.	I believe that the fintech based banking facilities are easier to navigate and use than traditional methods
2.	I believe that my information is safe when using fintech based banking facilities
3.	I believe that the fintech based banking facilities enables transactions to be conducted flexibly and with more protection
4.	I believe that the fintech based banking facilities are more cost-effective than traditional banking services
5.	Would you use your internet banking/mobile app with a service fee?

FinTech channels and tools

FinTech channels and tools refer to the perceived mode of communication, interaction or service delivery made available by the FinTech solution provider, such as the mobile apps, web portal and such tools from the customer's perspective.

This variable also delves into whether FinTech makes their banking experience easier and smoother, thus freeing up time in their schedule for other activities. According to Seldal and Nyhus (2022), individuals using mobile payments were not only not partaking in risky financial behaviour, but they in fact were also more likely to pay their bills on time compared to individuals that did not use mobile payments. This finding went against their initial hypothesis.

Table 4

	Measurement items of FinTech channels and tools
1.	Using fintech channels and tools enhances my banking experience and efficiency
2.	I believe that fintech channels and tools are vital elements in doing banking digitally
3.	Using fintech channels and tools enhances my digital banking literacy and competence
4.	Using the fintech channels and tools makes my banking easier, hence, it increases my productivity

Data Analysis

This part outlines the method of data analysis used in the study. The data was analysed using "the Statistical Package for Social Sciences (SPSS)". It aims to test the effect of the independent variables on customer experience in the banking sector in the Maldives. The data analyses cover the following stages: respondents' profile, normality test, reliability test and regression analysis were used to analyse the collected data.

After the normality and reliability tests were conducted, the data was analysed by a multiple regressions model. The result of this model indicates how significant the relationship between independent and dependent variables are.

$UE = \alpha + \beta 1FBS + \beta 2IF + \beta 3FCT + \varepsilon$

Where

UE = User (customer) experience; α = Constant; $\beta1$– $\beta3$ = coefficients to be estimated to measure the change in dependent variable with unit change in independent variable; FBS = FinTech-based solutions; IF = Infrastructure facilities; FCT = FinTech channels and tools; and ε = the error term, assuming mean zero and unit variance.

Research Findings

Data Screening

Data screening scrutinises data properties that may affect how the results from the statistical models are interpreted but do not touch the research questions (Huebner et al., 2020).

Four multivariate outliers (i.e., 192, 211, 232 and 264 cases) were detected and therefore discarded from the database, as they might have an effect on the data analysis accuracy. After deleting the outliers, the final dataset in the present research was 427 responses. However, there is no missing data detected in the data collected.

Respondent's Profile

In this study, the sample characteristics show that 51% of the respondents were male and 47% were female (Table 5). About 46% of the respondents were aged between 36 and 55 years, and another 41% comprised the group of respondents aged 18-35 years old. The sample also shows that all respondents (100%) have a bank account. Of 427 customers, 93% are customers of BML, while only 4% are customers of MIB. As for the device customers usually use to bank online, a substantial majority (97%) of them use the phone to use online banking services.

Table 5

	Category	Frequency	Percentage (%)
Age	18 - 35 years	175	41.0
	36 – 55 years	195	45.7
	Above 55	51	11.9
	No response	6	1.4
Gender	Male	218	51.1
	Female	202	47.3
	No response	7	1.6
Do you have a bank account?	Yes	427	100
	No	0	0
What is your primary bank?	Bank of Maldives (BML)	397	93.0
	Maldives Islamic Bank (MIB)	18	4.2
	Others	12	2.8
What device do you usually use to bank online?	Phone	415	97.2
	Tablet	0	0
	Laptop	12	2.8

Normality Test

Normality is the extent to which the data distribution is compatible with a normal distribution (Hair et al., 2010). To assess the normality of data, some researchers, such as Pallant (2013), have suggested evaluating the normal distribution of data by examining skewness and kurtosis values. In the present study, the results illustrated in Table 6 show that skewness scores obtained ranged from -0.331 to -0.463 with standard errors of 0.118, while the scores of kurtosis ranged from +0.358 to -0.658 with standard errors of 0. 236.

Table 6

Variable	N	Skewness		Kurtosis	
		Statistic	Std. Error	Statistic	Std. Error
FinTech-based solutions (FBS)	427	-0.463	0.118	-0.359	0.236
Infrastructure facilities (IF)	427	-0.331	0.118	-0.013	0.236
FinTech channels and tools (FCT)	427	-0.414	0.118	-0.658	0.236
User Experience (UE)	427	-0.409	0.118	0.358	0.236

The fact that the skewness of all variables is less than two and that kurtosis is far lower than the allowable limit of 10 as shown in the table above confirms the normality of the data observation. Consequently, both findings demonstrated that the study's data is normally distributed. (Hair et al., 2010).

Reliability Test

The reliability analysis was conducted to test the internal consistency of the measurements, which can be obtained through the Cronbach's alpha coefficients (Hair et al., 2010). The reliability was analysed using SPSS version 23. Based on the guideline provided by Sekaran and Bougie (2010) for evaluating Cronbach's alpha, a reliability coefficient of more than 0.80 is good, a coefficient in the range of 0.70 is acceptable, and less than 0.60 is poor. In the present research, the result of the reliability analysis of the research model is ranged from 0.61 to 0.91 (Table 7), which is considered acceptable.

Table 7

Variable	No. of items	Cronbach's Alpha
FinTech-based solutions (FBS)	6	0.618
Infrastructure facilities (IF)	5	0.707
FinTech channels and tools (FCT)	4	0.917
User Experience (UE)	4	0.863

Multiple Regressions Analysis

A full collinearity test was done to determine the possible variance inflation factor (VIF) among the constructs in the research model, exceeding 3.3. It was found that pathological values of VIF for all latent constructs ranged from 1.504 to 1.880 (Table 8), confirming that common method bias did not threaten validity (Diamantopoulos and Siguaw, 2006).

The regression results, as presented in Table 8, shows that R squared = 0.373, which shows that the predictor variables (i.e., FinTech-based solutions, infrastructure facilities, and FinTech channels and tools) significantly contributed by 37.3% to user experience.

This result explains the three independent variables' value of 37.3% variance in users' experience. Moreover, the analysis result as shown in Table 8, presents that the F value of 83.771, is significant at the 0.000 level. As such it can be determined that the model in this study is appropriate and fit (Hair et al., 2017).

The findings also reveal that with one exemption (for the paths: FCT→UE), all pathways run from exogenous variables to endogenous and can be statistically accepted once the critical t- values are ±1.96 (Hair et al., 2017). Specifically, the results obtained indicate that FinTech- based solutions and infrastructure facilities significantly influence user experience of BML and MIB FinTech based solutions.

Table 8

Model	Unstandardized Coefficients		Standardized Coefficients	t-value	sig	VIF
	ß	Std. Error	ß			
1(Constant)	-0.187	0.260		-0.719	0.472	
FBS	0.534	0.069	0.365	7.717	0.000	1.504
IF	0.349	0.064	0.287	5.436	0.000	1.880
FCT	0.064	0.058	0.055	1.105	0.270	1.674
R^2	0.373					
Adjusted R^2	0.368					
F value	83.771					
Sig	0. 000					

Summary of Hypotheses Testing

H1: There is no significant relationship between FinTech-based solutions and customer experience in the banking sector of the Maldives.

As illustrated in Table 8, the t-value of 7.717 for FinTech-based solutions at (p= 0.000) shows that FBS has a significant influence on customer experience in the banking sector of the Maldives. Therefore, this result rejects the null hypothesis H1.

H2: There is no significant relationship between FinTech infrastructure facilities and customer experience in the banking sector of the Maldives.

Furthermore, the statistical result reported in Table 8 reveals that customer experience is related significantly to FinTech infrastructure facilities (t= 5.436, p= 0.000). Thus, this statistical result rejects the hypothesis (H2).

H3: There is no significant relationship between FinTech channels and tools with customer experience in the banking sector of the Maldives.

However, the relationship between FinTech channels and tools with customer experience in the banking sector of the Maldives was insignificant. As reported in Table 8, (t= 1.105, p= 0.270). Based on this result, this study accepts the hypothesis (H3).

Conclusion

Of the 500 questionnaires distributed to bank customers in the Maldives, only 431 were returned by respondents. Of these, only 427 were completed and useable for data analysis. Overall, the current study found that 97% of customers usually use smart phone online banking services.

The findings of the current study signified that the explanatory power of the research model is 37%, which means that the research model used is appropriate to show the factors that influence the banking customer experience in the Maldives. The findings of the current study seem to be consistent with those previous research findings in various fields. In a study conducted into customer centricity in mobile banking by Komulainen and Saraniemi (2019), the results show that in the instance of their mobile wallet application, the customer experience outcome dimension adds value by "replacing other services, affecting consumption behaviour, providing financial benefits".

Generally, the result of this study shows that two factors (i.e., FinTech-based solutions, and infrastructure facilities) have a significant effect on banking customer experience in the Maldives. Hence, the null hypotheses on the relationship between FinTech-based solutions, and infrastructure facilities with user experience were rejected.

However, it was found that the relationship between FinTech channels and tools that impacts customer experience in the banking sector of the Maldives was insignificant. Thus, the researcher accepted hypothesis 3. This could be due to a number of reasons, such as a different culture or environment. There are different components that could affect customer experience as has been established in this research, security being one. A customer's perception regarding security can differ from country to country.

Cultural response bias is challenging when results between nations need to be compared and the differences in results are attributable to actual variations in what is measured or just because of differences in cultural response styles (Ipsos, 2020).

As such, while FinTech channels and tools may be an important aspect of another country or culture's customer experience, it does not seem to be as important in the Maldives. For example, (Sangar and Rastari, 2015) state that usability and ease of using FinTech platforms such as mobile banking applications have a high rate of satisfaction but it may not be applicable in the Maldivian context, again due to cultural or environmental factors.

Although majority of the literature in this area support the idea that there is a significant relationship between FinTech channels and tools and customer experience, that is not what the result of this data is showing.

From the results that emerged in this study, the author argues that there is no doubt how the adoption of FinTech-based banking solutions can benefit a country as widely dispersed as the Maldives. It will lead to a reduction in cash usage and an increase in financial inclusion in underbanked areas of the country. For example, at the moment, 96% of pensioners and social benefits beneficiaries see their money deposited into their bank accounts every month. However, BML has to facilitate the withdrawal of cash by making regular trips to areas of the country with limited banking facilities due to a lack of automation and effective payment structures (Naseer, 2018). Furthermore, banking services providers should put emphasis on the digital experience of their products because a positive online experience can financially impact them (Chauhan et al., 2022).

Limitations

This study is conducted only in the state share-owned banks where the FinTech-based solution/platform is available for the customers; therefore, this does not apply to the banks that do not have such a system. Additionally, this study is only relevant to the chosen banks and not in other financial institutions that may be experiencing the same issues.

Since the approach used is web-based, it has aided the research in maintaining anonymity and supported the careless filling of questionnaires without a thorough understanding of the research paradigms, which may have added to the huge support of the survey, where the response rate is 95 percent- i.e. 95 percent of the people who received the questionnaire responded.

The research concentrates on BML and MIB customers using FinTech, and customer information is quite sacred in the Maldives. Due to the small community effect the banks guard the customer information very closely.

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EFFECTS OF FINANCIAL LITERACY ON PERSONAL FINANCIAL MANAGEMENT

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Abstract

This study aims to examine the effects of financial literacy on the personal financial management of employees working in different financial institutions in Nepal. The study covers employees of different age groups, gender, and qualification perceiving financial literacy from different financial institutions.

To meet the objectives of the study, regression analysis has been carried out to test the relationship between personal financial management (dependent variable) and saving literacy, investment literacy, debt management literacy, and expenditure literacy (independent variables). In this research 107 sample sizes were taken for study. The research is developed by using a causal comparative research design for the study. Similarly, the convenience sampling method is used for selecting the sample. The data is collected using structured questionnaires. The researcher has used a 5-point Likert scale and IBM SPSS Statistics 2016 to process the primary data collected through the questionnaire to understand various statistical tales, the chart was issued to interpret and the final answer has also been tested by the hypothesis.

The findings from the analysis show that there is a significant relationship between investment literacy and expenditure literacy and the personal financial management of employees with the hypothesis accepted. Likewise, the expenditure literacy factor of financial literacy has the strongest positive association with personal financial management. As the overall data shows a positive correlation among the variables and is found to be reliable.

The study concludes that all the financial literacy factors saving literacy, investment literacy, debt management literacy, and expenditure literacy are very essential for improving the personal financial management of employees. Similarly, the overall data have a positive association with personal financial management towards financial literacy provided by different financial institutions. The crucial recommendations and conclusions are provided after interpreting and analyzing the collected data through primary sources for further research.

1. Introduction

In the course of everyday life, people make a variety of financial decisions about saving, investing, and borrowing. The global marketplace is increasingly risky and is becoming more vulnerable day by day. One of its main implications includes rising costs of goods and services that push people to be able to make well-informed financial decisions (Lusardi & Mitchell, 2011). Financial literacy has important implications for financial behavior and has gained attention post the global financial crisis, with a correlation to personal financial management. As a result, financial education programs have become popular, with more countries developing national strategies and investing in related programs. The complexity of financial decisions and economic recession has led to researchers exploring ways to address the challenges, making the ability to manage personal finance increasingly important in today's world.

According to (Wachira & Kihiu, 2012) financial literacy facilitates decision-making process and provides greater control over one's financial future, more effective use of financial products and services. It also reduces vulnerability to fraudulent schemes. Financial literacy goes beyond providing financial information and advice. It involves understanding key financial concepts, effectively managing personal finances through informed decision-making and long-term planning, and considering life events and economic conditions. Financial illiteracy affects individuals of all ages and socioeconomic levels, exposing them to risks such as predatory lending, fraud, high-interest rates, which can lead to negative financial outcomes like bad credit, bankruptcy, or foreclosure.

Financial literacy equipped individuals with the necessary knowledge, ability, and tools to make informed financial decisions with confidence, manage personal wealth with a high degree of competency, and heighten the efficiency in the demand for the best financial products (Ali, Rehman, & Bakar, 2013). Financial behavior encompasses how individuals manage their money, including bill payment, budgeting, and saving habits. Financial attitude influences behavior and reflects beliefs about planning, saving, and spending. The level of financial literacy is determined by the combination of knowledge, attitude, and behavior in handling personal finances.

Globalization has made nations interdependent, and finance has become more complex with the emergence of new products such as digital banking, and digital currency with increased risk. Sound financial strategies are necessary for individual well-being, and society needs to be informed about financial developments and possess basic financial knowledge. Financial literacy includes understanding concepts like financial planning, compound interest, debt management, savings techniques, and the time value of money (OECD, 2013).

The growing concern for financial literacy highlights its importance in enabling individuals to make informed decisions, manage personal finances effectively, and improve financial well-being. The policymakers have recognized the need for financial education, especially for younger generations facing complex financial products and services. However, it is not just the younger generation that needs financial literacy; all people (including – old aged people receiving pensions, and retirement benefits) to optimize their wealth. Therefore, the importance of financial literacy has increased following the global financial crisis, as research indicates its connection to personal financial management. Financial education initiatives are growing in popularity, and many countries are investing in national strategies. The enhancement of financial literacy facilitates improved decision-making, planning, and handling of life events (Mahdzan & Tabiani, 2013). It also encourages access to finance, fosters desirable financial behaviors, and tackles the adverse effects of inadequate financial management on productivity. The complexity of financial products and markets has made it difficult for individuals to grasp fundamental financial concepts. Therefore, financial literacy is the key to unlocking greater wealth and increasing personal net worth by practicing strategic budgeting, making smart investment choices, managing debt effectively, and implementing risk management strategies, individuals can experience exponential growth in their financial well-being.

1.1 Financial Literacy in Nepal

In Nepal, financial literacy programs are currently conducted in a scattered and fragmented manner by various agencies, including the central bank. Nepal Rastra Bank (NRB) has aimed to enhance and systematize these activities through the introduction of a Financial Literacy Framework (FLF), 2022. It is expected to be useful to promote retention and contribute to behavioral changes in domestic financial consumers. The Financial Literacy Framework of Nepal Rastra Bank was formulated with the objective of enhancing knowledge of using banking channels for making financial transactions and converting these skills into behavioral changes. These are indicated by the behavioral changes in the targeted group of people generally depicted by financial access and usage.

The FLF provides guidelines, training manuals, and monitoring methods based on NRB's vision, mission, goals, and objectives. The NRB intends to make it mandatory for financial institutions to invest a prescribed amount in financial literacy programs, enforcing the rule that they allocate at least one percent of their annual profits to such initiatives. The BFIs will be required to submit their work plans and evaluation reports periodically to NRB. The focus of these programs should be on corporate social responsibility rather than promoting their own businesses. The effective implementation of the FLF is expected to contribute to poverty reduction, income growth, and overall economic and social development in Nepal. The number of Banks and Financial Institutions (BFIs) in Nepal has been increasing since the 1990s, as the Nepalese economy stepped towards liberalization. (NRB, 2014) states that one of the reasons behind the quantitative growth of BFIs in Nepal was financial liberalization. These expansions of the financial market assured the supply of financial services to the people. The proliferation of financial institutions has resulted in an increasing number of people receiving better and more financial services from the BFIs. In this connection, access to financial literacy for increasing sustainable access to finance in Nepal is the issue of ease of availability of banking services to the people.

The Nepal Rastra Bank Act of 2002 aimed to expand banking services and led to the establishment of new financial institutions. The financial sector is now undergoing a phase of consolidation to strengthen the market. However, efforts to increase financial access have primarily focused on the supply side, neglecting the empowerment of financial consumers. The central bank recognizes the importance of financial literacy and is preparing a strategy to increase access and enhance individuals' capability in using financial instruments. The government also highlights the need to improve financial literacy to address the weak access to finance and inadequate financial inclusion in the country. Clear action plans are required to promote financial awareness and empower people in financial matters.

NRB, 2014, has also explained that there is a close relationship between access to finance, financial education, and financial literacy. In other words, to increase outreach of the financial services of the deprived, marginalized, and excluded segment of people, financial literacy and debt counseling are significant. Similarly, The Financial Literacy Framework of NRB aims to enhance financial knowledge and promote behavioral changes in using banking channels for transactions. This has led to increased financial access for the Nepalese people. The expansion of BFIs has been supported by policy measures to broaden financial access. Financial literacy empowers individuals to plan for their future, develop saving habits, and make informed financial decisions. BFIs have a responsibility to provide financial education and can benefit from capturing untapped business opportunities, particularly in rural areas. Financial literacy is seen as a promotional tool for increasing access to finance and achieving financial inclusion. However, the policy does not address the responsibility of making people financially literate. The other guiding factors such as economic issues and unpredictable market situation lead people toward financial literacy.

2. Related Literature

This section basically highlights the existing literature and research work related to the present research being conducted with the view of finding out what had already been explained by the previous researchers and how the current research adds further benefits to the field of research. It also provides a foundation for understanding the topic and supports the need for research. It also looks at the studies that have been carried out so far to address research gaps in the theories that are put forward in the literature. The study can serve as a future reference for further study of financial literacy and its implications in different financial institutions in Nepal. Thus, this study will facilitate understanding the impact of financial literacy on the personal financial management of employed individuals. (Jorgensen, 2007) conducted a study on college students in Virginia, USA, to assess their personal financial literacy. The results showed that initially, financial knowledge, attitude, and behavior scores were low, but they significantly improved each year from freshman to master's level. The study also found that students influenced by their parents had higher financial scores, and higher financial knowledge correlated with better financial attitudes and behaviors. (Mahdzan & Tabiani, 2013) examined the influence of financial literacy on individual saving in the context of an emerging market, Malaysia. Other determinants of individual saving were also examined, in particular, saving regularity, risk-taking behavior, and socio-demographic characteristics. The results of a probity regression revealed that the level of financial literacy had a significant, positive impact on individual saving. The results of this study suggest that it was important for policymakers to increase the financial literacy of households by implementing various financial education programs, to further influence saving rates at the national level. In Kenya, a study conducted by (Nyamute & Maina, 2011) in Kenya on personal financial management practices, focused on savings behavior among financially literate and non-literate employees. The results showed that financially literate individuals displayed a savings culture, setting aside money regularly and seeking opportunities to save. (Klapper & Panos, 2011) found a similar pattern in Russia, where higher financial literacy was positively associated with retirement planning and saving.

Investment is an important part of an individual's personal financial plan. Individuals invest to increase their future wealth. According to (Jones, 2007), an investment involves the commitment of funds to one or more assets that will be held over an investment horizon. Investments range from savings accounts, money market funds, and real estate, equity, and bond investments. In order to manage the investment process, individuals require financial skills in investment identification, risk assessment, evaluation and implementation of investments, and monitoring of the investments. (Bhushan, 2014) examined the relationship between financial literacy and investment behavior of salaried individuals in India and used Anova Test and Regression method for data analysis. The study clearly implies that due to low levels of financial literacy, individuals invest their money in traditional financial products and are not able to take advantage of new-age financial products which can offer them higher returns. The results of the study suggested that the financial literacy level of individuals affected the awareness as well as investment preferences of salaried individuals towards financial products.

(Bruhn & Zia , 2011) found that financial literacy had a significant impact on investments among young entrepreneurs in Bosnia. Entrepreneurs with higher financial literacy experienced increased profits and sales after training, while those with lower financial literacy made changes but did not see the same improvements. The study concluded that baseline financial knowledge and training provided an advantage for business growth and development.

Debt management is pegged on the ability of one to be financially literate hence their ability to make informed personal financial decisions on how to minimize their debts. Excess high debt levels are a propellant to one being susceptible to investment fraud, delinquency on credit cards, and bankruptcy all of which are pointers to financial illiteracy in individuals (Kim, 2000). Similarly, (Gatakaa, 2010) found that personal financial literacy has an impact on lending decisions by commercial banks in Kenya. The study used a census survey with questionnaires for data collection and content analysis for data analysis. The results indicated that financial literacy increases the chances of loan approval and improves decision-making by borrowers.

(Mohamed & Fatima, 2013), found that there was no significant relationship between financial literacy and personal financial attitude with the decision to carry debt from bank loans or borrow from friends or family. However, a strong negative relationship was observed with borrowing through credit cards. The study concluded that improving personal financial attitude through education and practice reduces dependence on credit cards.

(Njehia, 2014) also undertook research to examine the impact of financial literacy on the personal financial management of employees of Mumias Sugar Company Limited. The regression analysis was used to analyze the data. The study concludes that financial planning was positively affected by the level of financial literacy. Most of the employees were also found to be literate in financial issues. Similarly, (Wamae, 2015) found that financial literacy positively affects personal financial management among bankers in Nairobi, leading to increased investment returns. The study recommends implementing financial literacy programs in Kenyan banks to improve employees' financial well-being.

(Nyamute & Monyoncho, 2008) found that financially educated individuals tend to practice standard financial behaviors to a greater extent. However, the study also observed that individuals can still practice financial management behaviors even without being financially literate but with other sources of financial knowledge. Therefore, the study concluded that financial literacy significantly impacts personal financial management practices.

The review of the above-mentioned relevant research articles and other related studies helps to present the given model for conducting this research.

Figure 1: Theoretical Framework

Independent variables	Dependent variable
Saving Literacy Investment Literacy Debt Management Literacy Expenditure Literacy	Personal Financial Management

3. Research Methods

In this particular study, the quantitative method was used for data analysis. Under quantitative research design, this study has used a survey method to examine the relationship between the study variables. The targeted population was employed individuals working in different financial institutions in Kathmandu Valley. From the study population, 107 respondents were chosen as a sample for the study. Hence, the questionnaires were used as a primary source of data collection. The data were collected through structured questionnaires via different social media such as Facebook, Messenger, Instagram, etc using a Google form survey. The collected data were analyzed using the SPSS version 16 software, which included various descriptive and inferential statistical tools such as frequencies, descriptive statistics, and reliability analysis (Cronbach's alpha), correlation, and regression to derive the results.

3.1 Reliability Analysis

The most popular internal consistency reliability estimate is given by Cronbach's alpha. In this study, Cronbach's Alpha is used to measure the reliability of primary data. The table represents the coefficient of Cronbach's alpha for all the primary data.

Table 3.1 Coefficient of Cronbach's Alpha

Reliability Statistics	
Cronbach's Alpha	**No. of Items.**
0.743	5

Table 3.1 shows the reliability test for all the variables of the questionnaire regarding the effect of financial literacy on personal financial management which were computed by using SPSS. Cronbach's Alpha greater than 0.7 is considered reliable and acceptable data. Likewise, the Cronbach's alpha of 5 quantitative data is 0.743, which means 74.3 percent of the data taken for the study is reliable and the remaining 25.7 percent of data is error.

4. Results and Discussion

4.1 Demographic Characteristics of Respondents

Table 4.1 presents the profile of the respondents, characterized by gender, age, academic qualification, working financial institutions, and work experience. From the study of collected data, out of the total 107 respondents, 53.3 percent of the respondents were female and the remaining 46.7 percent of the respondents were male. Hence, the participation of males and females is somewhat the same and both are equally linked with different types of financial institutions in Nepal. The various age distributions of the respondents were analyzed and the majority of them fall under the age group of 24-29. The classification of the respondents by education level in terms of number and percentage in which the majority of respondents are graduates that cover 52.3 percent and fewer respondents from the intermediate level that is 2.8 percent only. Similarly, the higher portion of the respondents are involved in depository financial institutions ie.64.50 percent while only 35.50 percent of respondents are involved in non-depository financial institutions. This shows that the majority of the respondents are engaged in different depository financial institutions in Nepal. The collected data shows that the majority of respondents recently joined different financial institutions to work with 61.7 percent having less than 2 years of work experience in different financial institutions.

Table 4.1 Demographic Characteristics of Respondents

Gender	No. of respondents	Percentage
Male	50	46.7
Female	57	53.3
Total	107	100.00
Age Group	No. of respondents	Percentage
18-23	10	9.3
24-29	73	68.2
30-35	17	15.9
36 & above	7	6.5
Total	**107**	**100.00**
Academic qualification	No. of respondents	Percentage
Intermediate Level	3	2.8
Undergraduate Level	13	12.1
Graduate Level	56	52.3
Post Graduate	35	32.7
Total	**107**	**100.00**
Working Financial Institution	No. of respondents	Percentage
Depository financial institution	69	64.5
Non-depository financial institution	38	35.5
Total	**107**	**100.00**
Work Experience	No. of respondents	Percentage
0-2 Years	66	61.7
3-5 Years	26	24.3
6-8 Years	7	6.5
9 Years & above	8	7.5
Total	**107**	**100.00**

4.2 Level of Employee Understanding

4.2.1 Have you undertaken financial literacy training?

From this study, data for the proper implementation of financial literacy training in different financial institutions can be analyzed. As the employees were asked whether they have participated in financial literacy training or not from their concerned institutions.

Table 4.2 Financial Literacy Training

	No of respondents	Percentage
Yes	19	17.8
No	88	82.2
Total	107	100.0

Table 4.2 shows that only 17.8 percent of respondents have undertaken financial literacy training out of 107 respondents. That means the concerned authority should consider the particular purpose. From this analysis, it is clear that the majority of employees need to be trained regarding financial literacy and its importance in today's use.

4.2.2 Do you think financial literacy affects the personal financial management of an employed individual?

Table 4.3 Financial literacy

	No of respondents	Percentage
Yes	33	30.8
No	74	69.2
Total	107	100.0

Table 4.3 shows the data and information collected from the respondents regarding their views on financial literacy that affects the personal financial management of employed individuals or not. The results show that the majority of respondents disagree that financial literacy affects the personal financial management of an employed individual.

4.2.3 What do you think are the major reasons for personal financial management? (Please rank the following in order of their importance by assigning 1 to the most important one and so on)

Table 4.4 Opinion on major reasons for personal financial management

Major reasons for personal financial management/Rank	Rank 1		Rank 2		Rank 3		Rank 4		Weighted Value	Mean Weight	Rank
	No.	%	No.	%	No.	%	No.	%			
Saving	42	39.25	39	36.45	20	18.69	6	5.61	204	1.91	1
Investment	22	20.56	27	25.23	34	31.78	24	22.43	274	2.56	3
Debt	12	11.21	21	19.63	30	28.04	44	41.12	320	2.99	4
Expenditure	31	28.97	20	18.69	23	21.50	33	30.84	272	2.54	2
Total	**107**		**107**		**107**		**107**		**1,070**		

Table 4.4 shows the opinion on the priority of the most important factor influencing personal financial management of employees working in different financial institutions in Nepal from those who participated in the survey. The survey questionnaire tried to capture the preferences and views of employees on whether they consider these four factors to prefer one more important over others. Respondents were asked to rank the various factors influencing personal financial management. Rank 1 for the first important factor, rank 2 for the second important factor, rank 3 for the third important factor, and rank 4 for the least important factor. As evident from the table the great majority of the respondents ranked saving as their first choice and ranked one, showing a mean weight value of 1.9, Expenditure is ranked two with a mean weight value of 2.54, Investment as the third with a weight value of 2.99 and debt is ranked as the least important factor with a mean weight value of 2.54 i.e. rank four among four alternatives.

4.3 Descriptive analysis

In the current study, descriptive statistics were used to systematically summarize collected data and interpret its essential attributes for easier comparison. Tables specific to each profile are used to present the data. The Likert Scale ranged from 1 to 5 where 1 is for Strongly Agree, 2 is for Agree, 3 is for neither agree nor disagree, 4 is for Disagree and 5 is for Strongly Disagree. Therefore, the mean score that is more inclined towards 1 indicates a high impact of selected variables as on personal financial management. The total number of respondents for this research was 107, their answers relating to each determinant and their descriptive statistics are presented below:

Table 4.5 Descriptive statistics

Saving Literacy	N	Minimum	Maximum	Mean	Std. Deviation
I find spending money more satisfying than saving it for the long term.	107	1	5	3.26	1.298
I am conversant with my present rate of savings and wealth accumulation.	107	1	5	2.66	.961
I give importance to saving money from my monthly income.	107	1	5	2.05	.985
I have prioritized savings over discretionary spending for financial planning in the long run.	107	1	5	2.38	.928
Investment Literacy					
I am prepared to risk some of my own money when making an investment.	107	1	5	2.08	1.001
I regularly invest some amount of income in financial instruments.	107	1	5	2.57	1.142
The financial know-how would enhance an investor in shaping my financial decisions.	107	1	5	2.26	.965
I am aware of the performance of my investment practices in the short as well as the long run.	107	1	5	2.13	.982
Debt management Literacy					
Debt management practice enables me to plan my investments well and effectively.	107	1	5	2.01	.947
Personal debt is considered to be a major cause of financial distress.	107	1	5	2.19	1.065
Personal loans offered by financial institutions in the market is a convenient tool for me.	107	1	5	2.67	1.106
I use alternative credit sources to balance my personal finances with effective financial decisions.	107	1	5	2.76	1.036
Expenditure Literacy					
I keep a close personal watch on my financial affairs (Income & Expenses).	107	1	5	2.07	.914
I am uncertain about where my money is spent.	107	1	5	2.90	1.181
I prepare and follow a budget for managing all my personal expenses.	107	1	5	2.66	1.149
I track my expenses and compare prices while buying it.	107	1	5	2.46	1.127
Personal Financial Management					
Economic spending with financial planning and the use of financial services bring discipline in preparing my personal financial budget.	107	1	5	2.02	.824
I monitor and review my financial plan with my current financial position.	107	1	5	2.29	1.028
The need for planning and controlling households and individual resources increases their financial sophistication including wealth creation and financial stability.	107	1	5	2.15	.810
I consider new and complex financial instruments with informed decisions to recover from the consequences of extreme debt.	107	1	5	2.69	1.013

The study comprises saving literacy, investment literacy, debt management literacy, and expenditure literacy as independent variables and personal financial management as dependent variables. From the saving literacy variable, the result shows the statement "I give importance to saving money from my monthly income" has the lowest mean value of 2.05 with standard deviation of 0.985 which shows that most of the respondents agree with the statement and has less deviation with the statement i.e, the values in the data set are nearer to the mean on average, while the statement "I find spending money more satisfying than saving it for the long term" has the highest mean value of 3.26 with the standard deviation of 1.298. It means that a higher standard deviation results in a wide range of disagreement towards the statement.

As part of the questionnaire, respondents were asked about their investment literacy and their views and perceptions regarding their investment practices. The result shows that the mean value of all the statements is greater than 2. Among the five statements, the statement "I am prepared to risk some of my own money when making an investment" has lowest mean of 2.08 with the standard deviation of 1.001 which shows that most of the respondents agree with the statement and has less deviation with the statement i.e, the values in the data set are nearer to the mean on average, while the statement, "I regularly invest some amount of income in financial instruments" has the highest mean value of 2.57 with the standard deviation of 1.142. For debt management literacy variable, the statement "Debt management practice enables me to plan my investments well and effectively" has the lowest mean value of 2.01 with the standard deviation of 0.947 which shows that most of the respondents agree with the statement and has less deviation with the statement, while the statement, "I use alternative credit sources to balance my personal finances with effective financial decisions" has the highest mean value of 2.76 with the standard deviation of 1.036.

The expenditure literacy variable result shows that the mean value of all the statements is greater than 2. Among the five statements, the statement "I keep a close personal watch on my financial affairs (Income & Expenses)" has the lowest mean value of 2.07 with the standard deviation of 0.914 which shows that most of the respondents agree with the statement and has less deviation with the statement while the statement, "I am uncertain about where my money is spent." has the highest mean value of 2.90 with the standard deviation of 1.181.

"Personal Financial Management" as a dependent variable presents respondents' involvement in financial literacy with financial planning of financial instruments and investment decisions affecting personal financial management of employees. The result shows the statement "Economic spending with financial planning and the use of financial services bring discipline in preparing my personal financial budget." has the lowest mean value of 2.02 with the standard deviation of 0.824 which shows that most of the respondents agree with the statement, and it has less deviation with the statement i.e, the values in the data set are nearer to the mean on average, while the statement "I consider new and complex financial instruments with informed decisions to recover from the consequences of extreme debt" has the highest mean value of 2.69, with the standard deviation of 1.013. It means that higher the standard deviation results in disagreement towards the given statement.

4.4 Correlation Analysis

Under the inferential analysis, the hypothesis test was done using the mean of all the items of each corresponding individual variable. Pearson's correlation analysis has been carried out to analyze the degree of relationship between two or more variables and to know to what extent variables under study are correlated to each other. Bivariate Pearson Correlation analysis was used to test the relationship between the dependent and independent variables at an appropriate level of significance.

Table 4.6 Pearson Correlation Coefficients

Pearson Correlation	**PFM**	**SL**	**IL**	**DML**	**EL**
Personal Financial Management	1				
Saving Literacy	.388**	1			
Investment Literacy	.344**	.242*	1		
Debt management Literacy	.331**	.462**	.486**	1	
Expenditure Literacy	.630**	.368**	.183	.268**	1

***. Correlation is significant at the 0.01 level (2-tailed).*

**. Correlation is significant at the 0.05 level (2-tailed).*

Source: Authors Computation

From the above table, it implies that there exists a significant positive relationship between expenditure literacy, saving literacy, investment literacy and debt management literacy and personal financial management of employees working in different financial institutions. It means an increase in expenditure literacy, saving literacy, investment literacy and debt management literacy can lead to an increase in personal financial management of employees and the relationship is significant at 1 percent level of significance. The management of income and expenses with proper budget allocation of an individual and following throughout the process during the time period would be resulting in betterment in personal financial management of employed individuals. The saving and proper financial planning helps an individual to lead wealth accumulation in the long run by minimizing risk and maximizing return. Hence effective financial planning with investment decisions leads to better personal financial management of employees. An active participation and sharing of knowledge and ideas among employees regarding debt management leads to better personal financial management. From the correlation analysis, it can be concluded that the four variables (Saving Literacy, Investment Literacy, Debt Management Literacy and Expenditure Literacy) are positively correlated with the level of Personal Financial Management. Therefore, the policymakers must consider this variable to decide on financial literacy. Thus, to ensure better personal financial management there must be proper use of saving, investment, debt management and expenditure literacy among employees working in different financial institutions.

4.5 Regression analysis

The regression analysis has been carried out to know the variability and significance of the dependent variables taken under study i.e, personal financial management with regard to independent variables saving literacy, investment literacy, debt management literacy and expenditure literacy.

4.7 Multiple Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	.683[a]	.467	.446	.49873	22.344	.000[a]

Source: Author's Computation

The table 4.7 represented R Square for this model, which is 0.467. This means that 46.7% of the variation in the dependent variable personal financial management can be explained by four independent variables (saving literacy, investment literacy, debt management literacy and expenditure literacy). From the analysis, R is 0.683, adjusted R square is 0.467 and the standard error of the estimate is 0.49873. Similarly, the fitness of the model is stated by an F-value of 22.344 at a .00 percent level of significance. As the significant F – Statistics value provides the best fit of the model explaining the effects of financial literacy on personal financial management of employees.

Table 4.8 Multiple Regression Coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.031	.269		.114	.909
SL	.150	.100	.128	1.500	.137
IL	.190	.079	.199	2.406	.018
DML	.028	.082	.031	.343	.733
EL	.543	.079	.538	6.858	.000

Source: Author's Computation

a. Predictors: (Constant), SL (Saving Literacy), IL (Investment Literacy), DML (Debt Management Literacy) and EL (Expenditure Literacy

b. Dependent Variable: Personal Financial Management

The above table presents that there is a positive significant relationship between investment literacy and expenditure literacy and personal financial management of employees working in different types of financial institutions of Nepal having p-value less than 0.05. Based on the result of regression analysis, the equation with the statistically significant variables is: Personal Financial Management = 0.31 + 0.190 * Investment Literacy + 0.543 * Expenditure Literacy

4.6 Hypothesis Testing

The following table 4.9 shows the summarized form of the final result of hypothesis testing which is derived after analysis of dependent and independent variables.

Table 4.9 Summary of Hypothesis Testing

Hypothesis	P-value	Outcome
H1: There is a significant relationship between saving literacy and personal financial management.	.137	Rejected
H2: There is a significant relationship between investment literacy and personal financial management.	.018	Accepted
H3: There is a significant relationship between debt management literacy and personal financial management.	.733	Rejected
H4: There is a significant relationship between expenditure literacy and personal financial management.	.000	Accepted

The results showed investment literacy and expenditure literacy had a significant relationship with personal financial management, while saving literacy and debt management literacy had no significant relationship in the study, which provides the pieces of evidence for prior expectation stated in hypotheses 2 and 4 and contradicts hypotheses 1 and 3.

5.1 Conclusion and Implications

The research study provides a clear description of the factors of financial literacy that influence personal financial management among employed individuals in various financial institutions. The findings highlight the positive impact of financial literacy training provided by financial institutions on personal financial management. The study concludes that there is a positive and significant relationship between expenditure literacy and personal financial management, as well as a significant relationship between investment literacy and personal financial management. However, the study rejects hypotheses H1 and H3 while accepting H2 and H4, indicating that all variables have a relationship with personal financial management. Overall, the research provides valuable insights into the factors influencing personal financial management and underscores the importance of financial literacy training in enhancing an individual's financial management skills.

The research study emphasizes the increasing demand for financial literacy due to the complexity of financial services and products. It highlights the need to enhance financial literacy among employed individuals from various social and demographic backgrounds. Therefore, the financial literacy program should have essential elements to have program sustainability such that ensure the accurate results. There seems to be a lack of financial education expertise to guide initial program planning and design. It requires experienced professionals to deploy specialized solutions. The desires of the target audience to be reached by the campaign via surveys and assess the feasibility of given available monetary & personnel resources should be considered. The empirical measures that demonstrate participant adoption or modification of financial behaviors (i.e. savings rate, debt load, credit scores, retirement plan participation, wage garnishment measures, etc.) should also be considered. Therefore, the programs should be designed by qualified experts that are built with purpose, with the flow of information and built-in promotional components leading to greater overall campaign results. The creation of a successful financial education campaign requires specialized expertise. As the impact, overall outcomes and results of any program are directly influenced by the information gathered during the discovery and design phases and then molded into custom solutions by qualified campaign designers.

The study helps in making key recommendations to individuals on managing finances to enable access to financial information in order to manage their personal finance effectively. It is also recommended that similar studies to this one be carried out over a period of time. This is important in order to capture employee's financial literacy levels and financial management practices over a period of time since individuals have changing knowledge levels, preferences over a period of time. However, there are areas which need further study and more recommendations as follows:

- The sample size of the study is limited; so future study can be conducted by taking larger samples.
- The study has taken only four factors as financial literacy that affect personal financial management of employed individuals. Beside this, there might be other factors relating to financial literacy and personal financial management. So other variables can be taken into consideration for further research.

- The data were collected only through structured questionnaires. The further studies can collect the response through conducting a detailed interview technique to understand the effect of financial literacy on personal financial management.
- The study was conducted among employed individuals only with Kathmandu valley, for broader results the geographical area also should increase.

The present study brings out the social and demographic antecedents to financial literacy of employed individuals and the findings point to the fact that there is a need to enhance financial literacy at all levels of the society. The study recommends the introduction of financial literacy programs for working individuals, professionals, small entrepreneurs, and homemakers to help them effectively manage their finances, investments, and income tracking. It suggests implementing financial literacy programs in low and middle-income families and incorporating financial education into higher education curricula. Policymakers and financial institutions are urged to take necessary steps to address this issue, considering the challenges faced by financially illiterate individuals in managing money, debt, and investments. Financial institutions play a vital role in mediating between individuals with excess funds and those in need, and it is crucial for both parties to have a fundamental understanding of the financial system. Financial illiteracy problem also reflects information asymmetry phenomenon which can be enormously seen at any bilateral relation. Individual investors can be viewed as probable customers of financial institutions. These institutions have much elaborated knowledge about the riskiness and return capacity of their products whereas people with limited financial literacy do not know about those products. If they financially know more, they would save or invest in that particular product. Financial literacy of employed individuals has crucial importance to these suppliers of financial products. Financial institutions should pay attention to the issue of financial literacy, not only for their mediating mission but also for their goals as profit organizations. The study can serve as a valuable reference for banking institutions and other organizations working towards improving financial literacy among employees and employers. Governments should also consider implementing policies and strategies for financial literacy programs to enhance the overall financial condition of the nation. Furthermore, the study recommends that employers should conduct yearly financial literacy training programs for their employees. These benefits both the employees and the organization, as employees gain better financial management skills and can provide advice to customers regarding their financial needs. The study suggests that employees should apply their financial literacy knowledge gained from the banking sector to diversify their personal investments. Managing debt in a realistic manner and understanding the cost of borrowing are also important aspects emphasized by the study. In conclusion, the study confirms that financial literacy leads to better personal financial management practices. It calls for efforts from various stakeholders, including employers, financial institutions, governments, and individuals, to prioritize financial literacy and implement measures to improve financial education for the overall well-being of individuals and the nation.

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Nepal: Bumpy Ride Ahead

MEHUL PANDYA
MANAGING DIRECTOR & CEO

CARE Ratings

Associated with CARE Ratings since 2000, Mehul Pandya took over as Managing Director & CEO of the company on July 29, 2022, after serving as an Executive Director since 2017. Over the years, Mr Pandya has successfully incubated and nurtured the company's business in India and abroad. He is a member of the Board of Directors for all subsidiaries of CARE Ratings while also serving on the Board of the Association of Credit Rating Agencies in Asia (ACRAA). A technocrat with a management background, Mr Pandya is the Chairman of the Special Projects and Publications Committee and Co-Chairman of the Training and Programs Committee of ACRAA. He is a CFA charter holder from CFA Institute, USA. Over the years, he has attended various leadership programmes at IIMA and the High Potentials Leadership Programme at Harvard Business School as well. Prior to joining CARE Ratings, he worked with a state-level financial institution in Gujarat for about four years and was instrumental in setting up an in-house credit rating cell for the screening of lending proposals. He has worked as a Consultant for the Asian Development Bank and conducted various training programmes on credit risk analysis in India and abroad.

In FY23, Nepal's journey towards economic recovery is likely to be uneven, with risks to the outlook being mostly balanced. The main drivers of recovery in FY22, which were domestic consumption and investment demand, are expected to witness some slowdown this year due to high inflation and reduced capital inflows. While the agriculture sector supported growth in the first quarter of FY23, the overall momentum has slowed down. The economy expanded by 0.8% in Q1 FY23, compared to 3% in the same period last year. Interest rate hikes and credit control measures have resulted in a slowdown in sectors such as real estate, construction, and wholesale & retail trade in Q1. Real GDP growth is expected to soften to 4.4% in FY23 (as per International Monetary Fund) from 5.5% in FY22, as Nepal remains exposed to volatile and still relatively high global commodity prices and weather-driven risks. The modest deceleration of growth in FY23 could also be attributed to fiscal and monetary policy normalisation.

As an import-dependent economy, Nepal has faced significant challenges due to elevated prices of commodities in international markets and depreciation in the local currency, leading to a significant increase in the cost of imported goods. This has resulted in rising domestic price pressures, with average inflation for the first seven months of FY23 currently standing at 8%, above Nepal Rastra Bank's (NRB) target of 7%. Moreover, core inflation has remained sticky at an average of 9%. Stubbornly high inflation levels could reduce the purchasing power of the low-income segments of society and dent consumption demand, hurting growth prospects.

In light of intensifying inflationary pressures, NRB has maintained a tighter monetary policy stance, raising the policy repo rate by 150 bps to 7% at the start of this fiscal. While banks have been raising lending rates, the simultaneous rise in deposit rates has helped ease liquidity conditions during the year. The sharp decline in interbank rates and improving credit-deposit ratio (below the 90% threshold) is also indicative of improving liquidity conditions.

However, a revival in the tourism sector, easing external pressures, and resilient remittance flows have been supportive of economic revival. The tourism industry, an important source of employment, revenue, and foreign exchange for Nepal, has shown promising signs of recovery, with tourist arrivals rising nearly four-fold in the first seven months of FY23 from a year ago period as many countries eased travel restrictions. Tourist arrivals stood at 457,114 in the fiscal year so far, compared to 125,525 a year ago. The Nepal Tourism Board in association with the United Nations World Tourism Organization is discussing the need for reliable tourism data, which is a step in the right direction for the effective formulation of tourism policy.

Workers' remittances, which account for 21% of GDP, have also shown significant improvement as out-migration for foreign employment exceeded pre-pandemic levels of FY19. In the August-February period of FY23, remittances rose 23% to Rs 2.6 trillion, on the back of a rise in foreign employment permits. This has helped ease external pressures and build the war chest of forex reserves that were depleted during the pandemic years. Foreign exchange reserves have risen to USD 10.5 billion in February. The rise in forex reserves has pushed the import cover of goods and services to 9.4 months in February 2023. This is above the optimal level of 5.5 months recommended by the IMF, and the central bank target of 7 months of import cover. This augurs well for a country that is heavily dependent on imports.

On the external front, both export and import contracted in the seven months to FY23, with the former registering a steeper decline as global demand slowed. Export growth contracted by 29% in the current fiscal year, as shipment of key commodities such as palm oil and soybean oil plunged during the year. As per the NRB's mid-term review, the decrease in imports and trade deficit can be attributed majorly to the ban on the import of luxury goods, the requirement for cash margins when opening a letter of credit, and restricted credit flow from financial institutions. The decline in imports and increase in the flow of remittances has improved the balance of payment position in FY23. Looking ahead, imports related to the pandemic are expected to decline further, which along with lower oil prices bodes well for the overall import bill in FY23. On the flip side, a steep decline in oil prices could lower demand for migrants from Gulf countries and weigh on inward remittances. Meanwhile, the import restrictions that were in place for nine months have been lifted in December, which could also create some pressure. The rise in imports will nevertheless support revenues that are largely generated through import tax. ADB expects Nepal's current account deficit (CAD) to narrow to 8% of GDP in FY23 from 13% in FY22, owing to a moderation in merchandise imports and stable remittance inflows. That said, efforts to reduce dependence on imports and boost exports must be stepped up to ensure external sector stability.

Although there have been some positive developments in Nepal's economy, there are several underlying issues that require urgent attention. Firstly, the low level of foreign direct investment (FDI) is preventing Nepal from realizing its export potential, and declining FDI is leading to a reliance on reserve drawdowns to finance the current account, which poses risks to the economy. In the period of August-February in FY23, there has been a significant drop of 84% in FDI, partly due to the global slowdown but also due to political uncertainty, structural constraints, and a challenging business environment in Nepal, which are discouraging foreign investors. The possibility of being greylisted by the Financial Action Task Force (FATF) is also a concern that could further discourage FDI. Therefore, it is crucial to introduce reforms that promote transparency and strengthen anti-corruption institutions.

Nepal is set to graduate from its status as one of the world's least developed countries in 2026. In this regard, it is imperative that efforts to reduce poverty, enhance financial inclusion, promote digitization, minimise vulnerability to climate-driven food security risks, and improve fiscal management, are stepped up. This will help achieve a smooth, sustainable, and irreversible graduation.

Despite these challenges, the IMF is optimistic about Nepal's commitment to policies and reforms outlined in the Extended Credit Facility (ECF)-supported program, which will provide USD 52 million to the government upon approval. The program aims to establish a comprehensive revenue mobilization strategy, enhance tax collection, strengthen bank asset quality, and improve the identification and monitoring of fiscal risks. The IMF projects that the ECF-supported program will help Nepal's economy remain on a sustainable path over the medium term, with projected growth of around 5% and inflation at around 6%, while maintaining adequate levels of international reserves and keeping public debt at a sustainable level.


"अटुट सम्बन्धलाई
अझ प्रगाढ बनाउँदै..."
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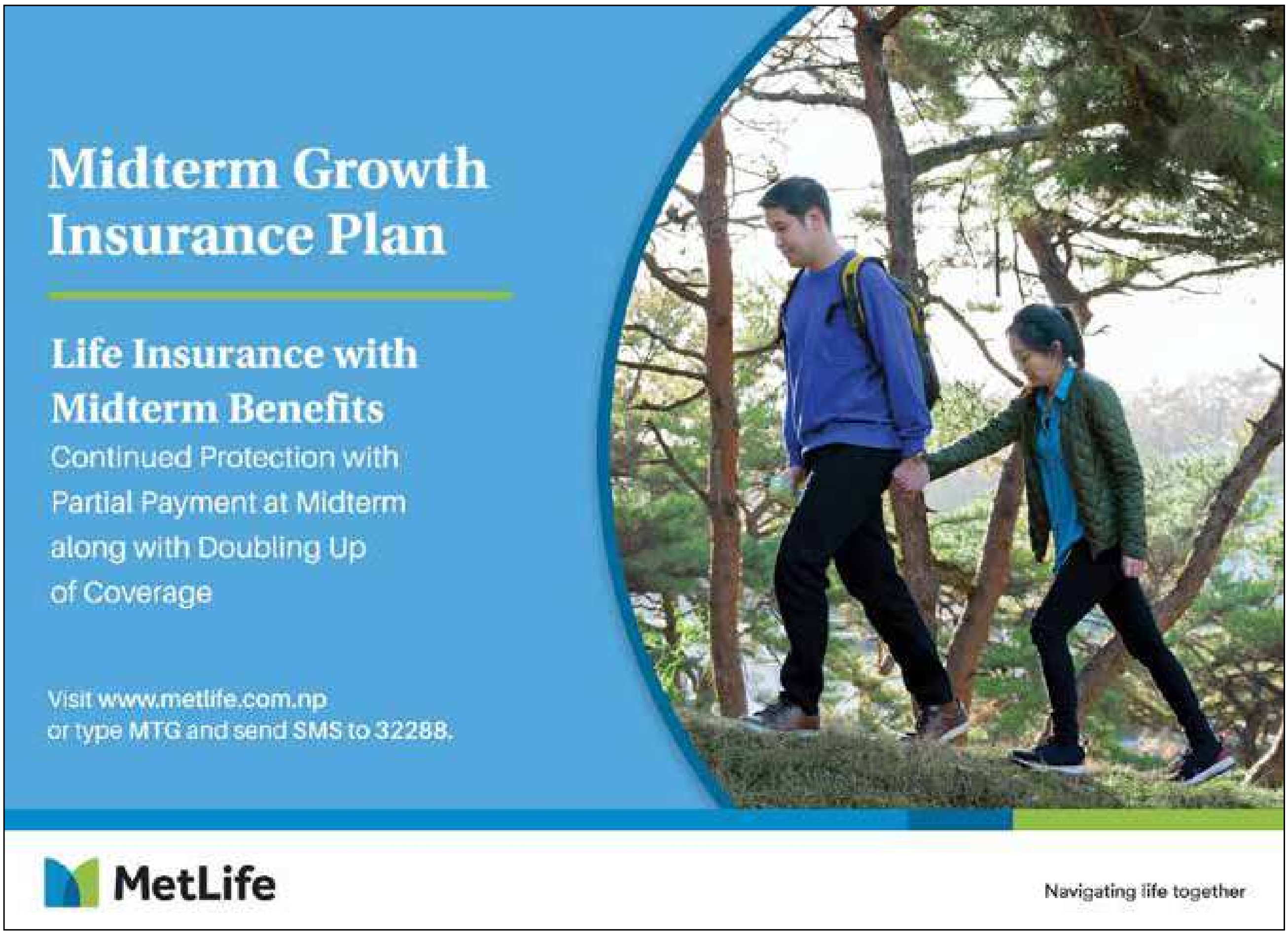
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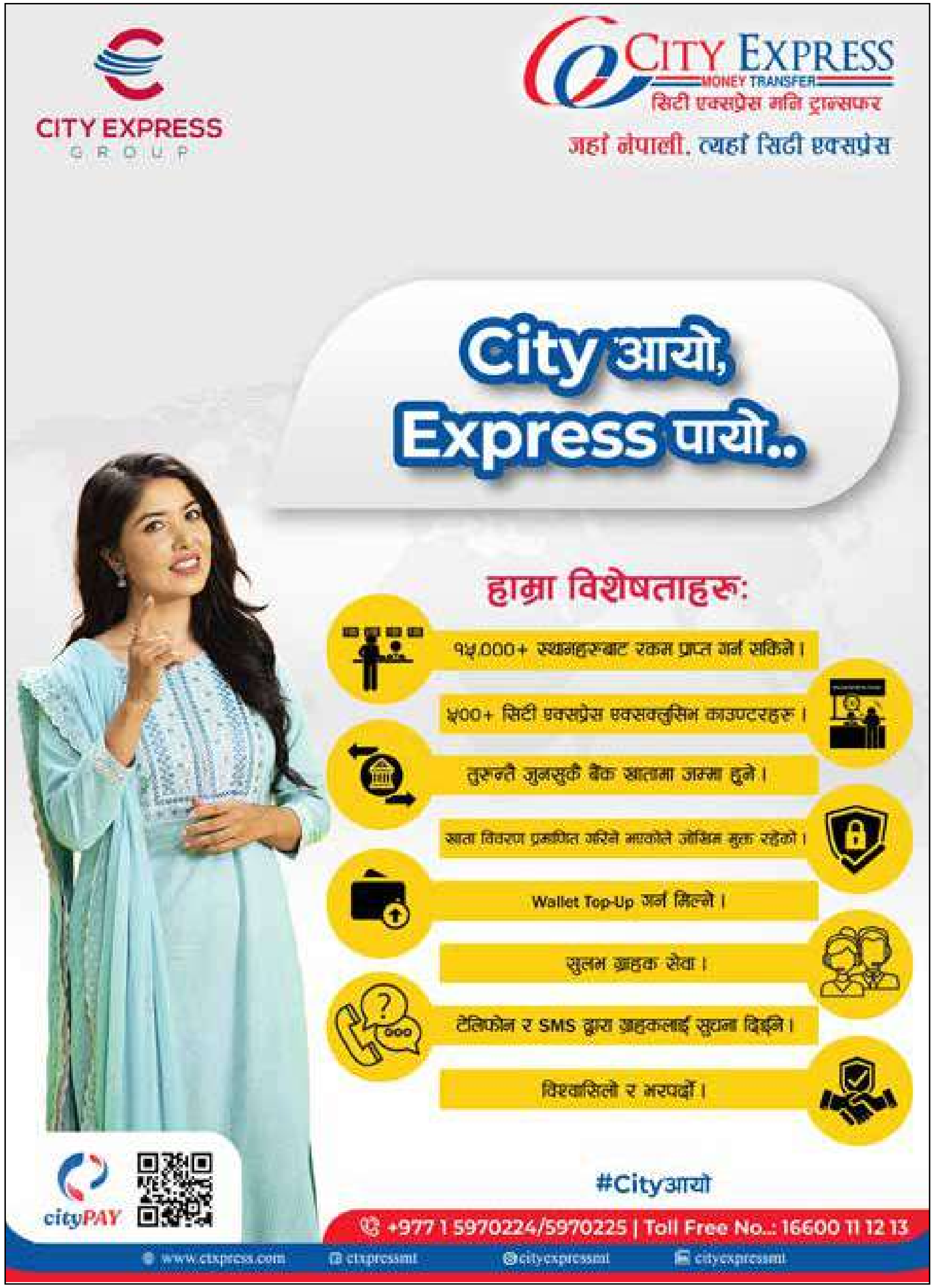
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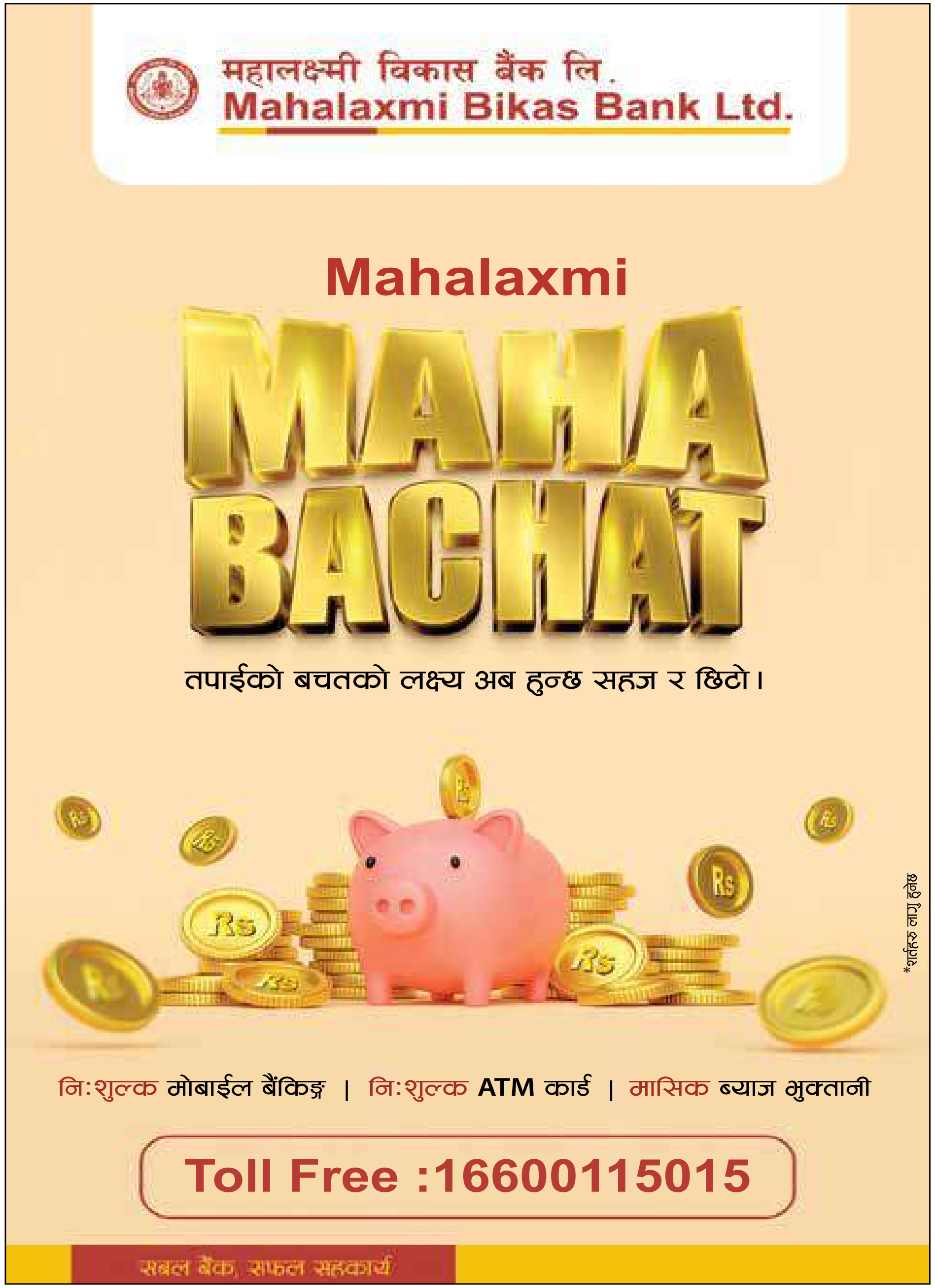
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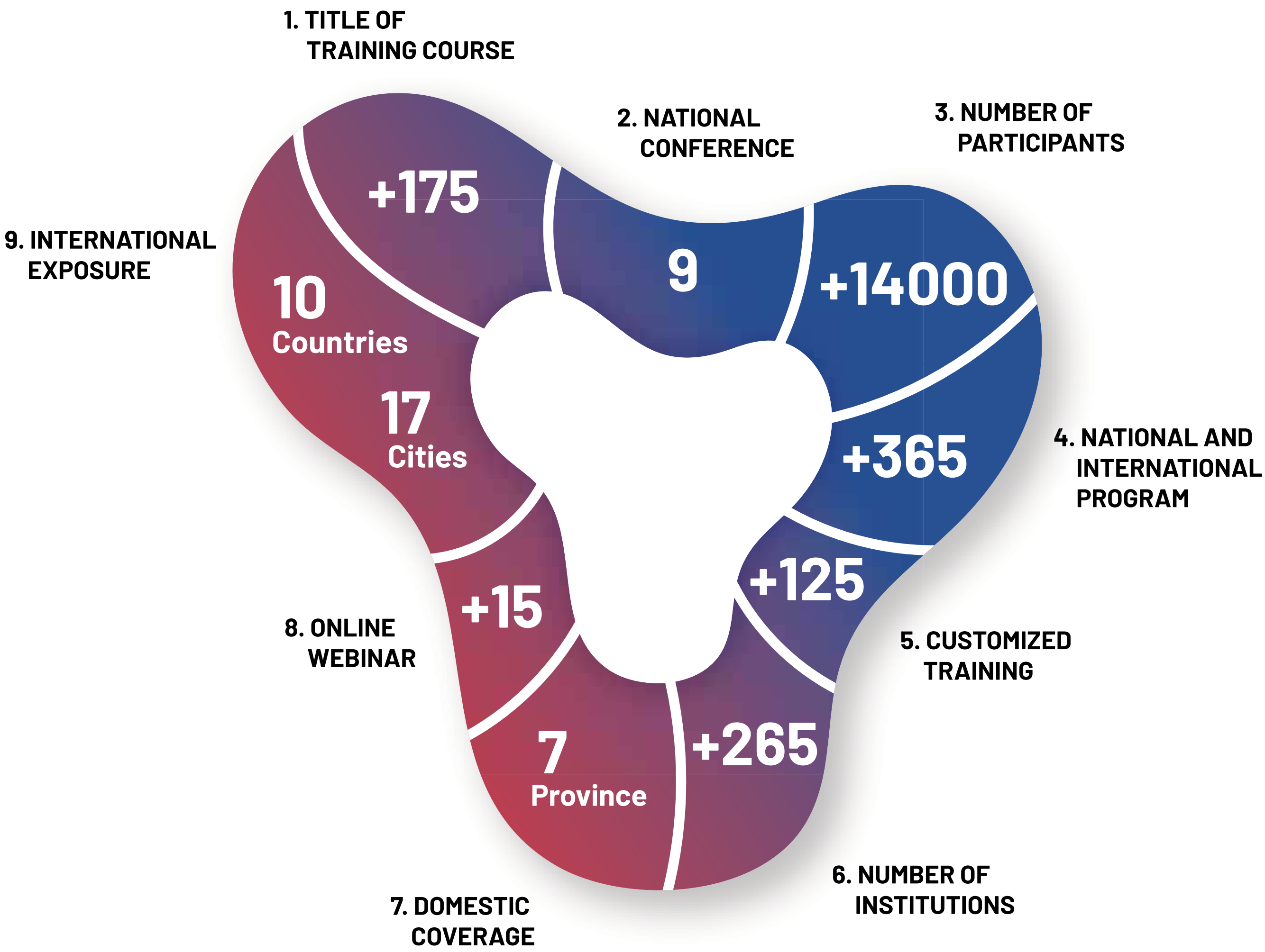

Release of Journal Vol III

Glimpses of Conference Programs


BFIN
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14 Aug 2022
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Glimpses of International Programs


MPAO

LDP Training at Australia

Glimpses of National Programs


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Program Coordinator

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Program Coordinator

MR. SUGAM POKHREL
Junior Assistant

Domestic Training

Date	Name of the Program	Venue
22-23 July 2022	Income Tax Practical Aspects	Kathmandu
29-30 July 2022	Risk Based Supervision and Basel Core Principles	Kathmandu
05-06 August 2022	Financial Statement based on NFRS	Kathmandu
22 -26 August 2022	Excellence in Excel for professionals	Kathmandu
02-03 September 2022	Training of Trainers (TOT)	Kathmandu
02-03 September 2022	Public Procurement and Contract Management	Kathmandu
02-03 September 2022	Real Estate Collateral & Relationship between Bank and Survey Officer (NAAPI)	Butwal
02-03 September 2022	Branch and Recovery Management in MFIs	Butwal
08-09 September 2022	""Corporate Governance Guidelines with Emphasis on Roles and Responsibilities of Audit Committee and Risk Management Committee""	Kathmandu
10-September-2022	Seeing is Selling	Kathmandu
16-17 September 2022	Workshop / Training Program on Electronic Payment System	Kathmandu
19-September 2022	AML / CFT and Suspicious Transaction Reporting	Kathmandu
23 - 24 September 2022	Customer Service Excellence and Sales Maximization	Nepalgunj
01 - 02 November 2022	Induction Program	Biratnagar
04 - 05 November 2022	Remittance in Modern Banking	Kathmandu
04 - 05 November 2022	Comprehensive Course on Credit Management	Dadeldhura
5-Nov-22	Comprehensive Course on Operation Management	Chitwan
11 - 12 November 2022	Comprehensive Course on Credit Management	Nepalgunj
10 November 2022	Comprehensive Course on Operation Management	Pokhara
02 - 03 December 2022	Training Program on Electronic Payment System	Kathmandu
09 - 10 December 2022	Advance Excel	Kathmandu
09 - 10 December 2022	Corporate Communication and Media Relation	Kathmandu
09 - 10 December 2022	Management of MFIs-Finance/Accounts, Compliance and Operations	Kathmandu
26 December 2022	Comprehensive Course on Operation Management	Bardibas
25 - 26 December 2022	Comprehensive Course on Credit Management	Itahari
02 - 03 December 2022	Corporate Governance and Best Practices	Kathmandu
3-Dec-22	Comprehensive Course on Operation Management	Butwal
02 - 03 December 2022	Comprehensive Course on Credit Management	Birgunj
10 December 2022	Comprehensive Course on Operation Management	Dadeldhura
24 December 2022	Counterfeit Notes, Signature Verification and Clean Note Policy	Nepalgunj
24 December 2022	Counterfeit Notes, Signature Verification and Clean Note Policy	Janakpur
26 - 24 December 2022	Working Capital Loan Management	Kathmandu
27 - 24 December 2022	Advance Excel	Kathmandu
06 - 07 January 2023	Customer Service Excellence and Sales Skills	Pokhara
21 January 2023	Legal Aspects of Banking Regulation	Kathmandu
21 - 28 January 2023	Certification Course on Operation Management	Birtamode, Jhapa
28 Janurary 2023	Procurement and Negotiation Skills	Kathmandu
2 February 2023	Current Issues in the Financial Sectors	Kathmandu
03 - 04 February 2023	Certification Course on Operation Risk Management	Besisahar, Lamjung.
03 - 04 February 2023	Branch and Recovery Management in MFIs	Besisahar, Lamjung.
11 February 2023	Environment and Social Risk Management	Kathmandu
10 -11 February 2023	Comprehensive Course on Credit Management	Bardibas
11 February 2023	Comprehensive Course on Operation Management	Dhangadhi
18-19 February 2023	Customer Service Excellence & Sales Excellence	Biratnagar
25 February 2023	Employee Learning and Development Excellence	Kathmandu
03 - 04 March 2023	Deposit Marketing and Sales Skills	Tansen, Palpa
03 - 04 March 2023	Comprehensive Course on Credit Management	Dhangadi
03 - 04 March 2023	Management Education Program	Dhulikhel
4 March 2023	Comprehensive Course on Operation Management	Nepalgunj
04 - 09 March 2023	Comprehensive Banking Course	Kathmandu
11 March 2023	Document Forgery and its Identification with Currency Notes Verification	Dhading

Continue: National Programs

Continue: National Programs

Date	Name of the Program	Venue
17 - 18 March 2023	Legal Aspets of security and documentation	Bhairahawa
17 - 18 March 2023	Corporate Governance: Best Practices	Dhulikhel
18 March 2023	Operation Risk in Banking	Nepalgunj
25 March 2023	Deposit Marketing and Sales Skills	Kathmandu
25 March 2023	AML/CFT Compliance	Kathmandu
31 March 1 April 2023	Management Education Program	Kathmandu
21 - 22 April 2023	Trade Facilitation Using LC and the Associated Risk Management	Biratnagar
21 - 22 April 2023	Cash Management and Teller Operation	Charikot Dolakha
28 - 29 April 2023	Branch/Field Management Excellence	Butwal
29 April 2023	Real Estate Collateral & Relationship between Bank and Survey Office (NAAPI)	Kapilvastu
3 May 2023	AML/CFT Compliance	Via Zoom Kathmandu
05- 06 May 2023	Management Development Program	Pokhara
05- 06 May 2023	MFIs Board of Directors: Best Practices and Governance	Pokhara
6 May 2023	Document Forgery and its Identification with Currency Notes Verification	Kathmandu
06 - 10 May 2023	Comprehensive Banking Course	Kathmandu
07 -08 May 2023	Enhancing Sales and AML/CFT Compliance	Dhulikhel
08 - 12 May 2023	Advance Excel	Kathmandu
12 - 13 May 2023	Regulatory Compliance Certification Program	Kathmandu
14 May 2023	Employee Learning and Development Excellence	Kathmandu
20 May 2023	AML/CFT Compliance	Kathmandu
20 May 2023	Document Forgery and its Identification with Currency Notes Verification	Nepalgunj
20 May 2023	Effective Communication Skills	Kathmandu
20 May 2023	Regulatory Compliance	Pokhara
20 May 2023	Comprehensive Course on Credit Management	Birgunj
26 May 2023	Corporate Governance, Regulatory Compliance & AML/CFT	Kathmandu
26-27 May 2023	Working Capital Loan Managment	Dhangadhi
02-03 June 2023	Legal Aspects & fundamental of Collateral Valuation	Kathmandu
3 June 2023	Operation Risk and Banking Fraud	Itahari, Sunsari
05 - 09 June 2023	Fundamental of Credit Analysis	Kathmandu
10 June 2023	Comprehensive Course on Operation Management	Bardibas, Mahottari
09 - 10 June 2023	Building Your Business through Sales & Services	Kathmandu

Conference

Date	Name of the Program	Venue
14 Aug 2022	Annual Conference on "Nepal Economic Outlook 2023 and Beyond	Kathmandu
25-Nov 2022	Conference on "Nepal-India BFSI Summit - 2022"	Kathmandu

Training given by International Resource Person

Date	Name of Training	Venue	Name of Resource Person
23 - 24 Dec 2022	Management Development Program & Consultancy 2022-23	Via Zoom	Dr Abhijit k. Chattoraj , Dean (SW&SS)
5-6 Jan 2023	Trade Facilitation Using Letter of Credit and Associated Risk Management	Kathmandu	Dr. Shah Md. Ahsan Habbib, Ramu Poudyal
7 jan 2023	Advance Course on Trade Facilitation Using Letter of Credit and associated Risk Management	Kathmandu	Dr. Shah Md. Ahsan Habbib
02 - 03 June 2023	Credit Risk in Infrastructure Financing	Kathmandu	(Engr. Mohammad Jahangir Alam

International Training

Date	Name of the Program	In Collaboration with	Venue
26-28 July 2022	Service Excellence and Sales Skills	City Bank Bangladesh	Bangladesh
06-10 Aug 2022	"Nano, Micro and SME Entrepreneurship Eco-System Development"	Centurion University of Technology and Management	Odisha, India
06 – 10 Sep 2022	Leadership Development Program	Victoria University	Melbourne, Australia
11- 15 Oct 2022	Advanced Bank Management	The Colombo Plan Staff College (CPSC)	Manila, Phillipines
11 -15 Oct 2022	Marketing & Selling Skills for High performance	Rajasthan, India	Mewar University
18 - 20 Oct 2022	Strategic HR Leadership	The Colombo Plan Staff College (CPSC)	Manila, Phillipines
28 - 02 Dec 2022	MFIs Board of Directors: Best Practices and Governance	Experts from CTB	Bangkok, Thailand
06 - 10 Dec 2022	"Exposure visit in Banking, Insurance and Capital Market Institutions in the Maldives"	Maldives Capacity Development and Governance Institute (MCDGI)	Male, Maldives
23 - 27 Jan 2023	Internal Audit & Finance for Bankers in India	Southern India Banks' Staff Training College (SIBSTC)	Bangalore, India
05 – 09 Feb2023	Exposure Visit in Banks of the Maldives	Maldives Capacity Development and Governance Institute (MCDGI)	Male, Maldives
20 - 24 Feb 2023	Leadership Development Program	Victoria University	Melbourne, Australia
17 - 21 April 2023	Bank Management	Centurion University of Technology and Management	Odisha,India
01 - 05 May 2023	Marketing and Selling Skills for High Performance	Birla Institute of Management Technology (BIMTECH)	BIMTECH, Delhi , India
15 -19 May 2023	Executive Education Program	Colombo Plan Staff College (CPSC)	Manila, Philippiness
15 - 19 May 2023	Specialized Exposure Visit on Micro Finance Operations	Institute for Inclusive Finance and Development (InM)	Dhaka Bangladesh

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