EXPLORING THE DYNAMICS OF INSURANCE PENETRATION AND ITS INFLUENTIAL FACTORS IN NEPAL

A Dissertation submitted to the Office of the Dean, Faculty of Management, in partial fulfilment of the requirements for the Degree of Masters of Business Studies

by

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August, 2024

Certification of Authorship

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled **"Exploring the Dynamics of Insurance Penetration and Its Influential Factors in Nepal"**. The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor has it been proposed and presented as part of requirements for any other academic purposes.

The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declare that all information sources and literature used are cited in the reference section of the dissertation

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Report of Research Committee

Ms. Samita Bharati has defended research proposal entitled **"Exploring the Dynamics of Insurance Penetration and Its Influential Factors in Nepal"** successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per and submit the thesis for evaluation.

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We have examined the dissertation entitled **"Exploring the Dynamics of Insurance Penetration and Its Influential Factors in Nepal"** presented by **Samita Bharati** a candidate for the degree of Master of Business Studies (MBS). We hereby certify that the dissertation is acceptable for the award of degree.

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Acknowledgements

I would like to take this opportunity to express my sincere appreciation and gratitude to all those who have guided and supported me throughout my thesis experience. This dissertation has been undertaken in partial fulfillment of the requirement for the MBS, in accordance with the rules and regulations prescribed by Tribhuvan University.

First and foremost, I would like to express my heartfelt gratitude to Tribhuvan University and Shanker Dev Campus for providing me with such a magnificent opportunity to apply my knowledge in the practical world and enhance my educational spectrum. The platform they have offered has been invaluable in shaping my academic journey.

I am deeply grateful to my supervisor, Asso. Prof. Rita Maskey, for her guidance, expertise, and constant support throughout the research process. Her insightful feedback and encouragement have been instrumental in the successful completion of this study. I would also like to extend my thanks to Asso. Prof. Sajeeb Kumar Shrestha, the head of the research department, for his valuable insights and support.

Furthermore, I would like to express my appreciation to the entire research team at Shanker Dev Campus for their assistance in collecting the necessary information for this report. Their contributions have greatly enriched the quality of this dissertation.

Lastly, I would like to extend my gratitude to all my friends and acquaintances who have directly and indirectly supported me in this academic mission. Their encouragement and assistance have been invaluable, and without them, this study would not have been possible.

Once again, I would like to express my sincere thanks to everyone who has played a role in making this thesis a success. Your guidance, support, and contributions are deeply appreciated.

Samita Bharati

August, 2024

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Abbreviations

DR:	Dependency Ratio
EL:	Education Level
FDI:	Foreign Direct Investment
IL:	Income Level
IP:	Insurance Penetration
IR:	Inflation Rate
Ltd:	Limited
SD:	Standard Deviation
SPSS:	Statistical Package for Social Science
TU:	Tribhuvan University

Abstract

This study examines the key determinants of insurance penetration in Nepal. The primary objectives are to evaluate the current state of insurance penetration and examine the relationships between insurance penetration and various economic and demographic factors, including the inflation rate, foreign direct investment (FDI) inflow, education level, dependency ratio, and per capita income. The research employs a descriptive and causal research design, analyzing secondary data collected over a twenty-year period. The entire insurance industry in Nepal constitutes the study population, with data sourced from government and industry reports. Statistical methods, including descriptive analysis, correlation analysis, and regression analysis, were utilized to assess the impact of these variables on insurance penetration. Major findings indicate that insurance penetration in Nepal varies significantly, with a range from 0.40% to 7.03% and an average of 2.41%. The correlation analysis reveals strong positive relationships between insurance penetration and FDI inflow, education level, and per capita income. Conversely, negative correlations are observed with the dependency ratio and the inflation rate. The regression analysis shows that FDI inflow significantly increases insurance penetration, while education level and per capita income have unexpected negative impacts. The dependency ratio is also found to have a notable negative effect on insurance penetration. The study concludes that while FDI inflow positively influences the insurance market, other factors such as a higher dependency ratio and increased per capita income present challenges to expanding insurance coverage. The findings imply that policymakers should focus on creating a favorable investment climate to attract more FDI, consider diversifying insurance products to cater to a more educated population, and implement financial education programs to enhance understanding and utilization of insurance. Additionally, regulatory frameworks may need to be revised to improve access and transparency in the insurance market.

Keywords: *Insurance penetration, foreign direct investment, dependency ratio, per capita income, education level, inflation rate*

CHAPTER I
INTRODUCTION

1.1 Background of the Study

Insurance is a basic financial instrument that is often used for risk management. By shifting the financial repercussions of probable losses to an insurer, people and organizations are able to protect themselves against the unpredictability of the future and assure better financial stability (Kunreuther, 1996). Products that fall under the category of insurance cover a broad variety of risks, such as those pertaining to property damage, medical bills, liability and business interruption. According to Swiss Re Institute (2022), a flourishing insurance industry makes a significant contribution to the resilience of the economy by providing opportunities for investment and entrepreneurial endeavors.

A measure of the amount to which insurance is employed within an economy is referred to as the insurance penetration rate. According to Outreville (2013), it is commonly assessed as the ratio of total insurance premiums to the Gross Domestic Product (GDP) of a nation that is being considered. There is a correlation between a greater insurance penetration rate and a more developed insurance market, which in turn signals that individuals and institutions are engaging in more effective financial risk management methods. In spite of this, there are considerable differences in the percentage of people who have insurance among nations and regions. The penetration rates of developed nations are often greater, whilst the penetration rates of developing countries are frequently lower (Swiss International Institute, 2022).

It is crucial for both insurers and regulators who are interested in expanding insurance markets to have a solid understanding of the variables that drive insurance penetration. Extensive study has shown a wide range of factors that have a role in determining whether or not an individual will acquire insurance. According to Li et al. (2007), one of the most important aspects is economic growth, with richer nations displaying greater levels of insurance demand being one of the most prevalent determinants. According to Beck and Webb (2003), the expansion of the insurance industry is often supported by the presence of well-developed financial systems and increased access to credit.

Ward and Zurbregg (2000) asserted that demographic factors such as population density, urbanization, and educational levels also have a major impact in the phenomenon. The adoption of insurance policies may be influenced by socio-cultural variables in addition to economic and demographic ones. According to Zietz (2003), consumers' perceptions of insurance are influenced by cultural views that relate to risk aversion, confidence in financial institutions, and religious interpretations. In addition, the regulatory environment has a significant influence on the markets for insurance. According to Outreville (2013), robust regulatory frameworks that emphasize consumer protection, flexibility of market entrance, and efficient contract enforcement are able to create confidence and boost demand for insurance.

As a result of its comparatively low level of insurance coverage, Nepal makes for an interesting and intriguing case study instance. The number of people in Nepal who have insurance is still quite low, despite the fact that the country's economy is expanding. This is mostly due to factors such as low-income levels, inadequate financial literacy, and poor understanding of the advantages of insurance (NIB, 2021). In addition, the geographical susceptibility of Nepal to natural disasters underscores the urgent need for increased insurance coverage in order to reduce the number of financial losses and to assist the efforts of recovery.

It is highly recommended to do study on the penetration of insurance in Nepal, taking into consideration the theoretical framework and the setting of Nepal. It is possible to identify the most important obstacles to the acceptance of insurance via thorough research. These obstacles might include economic, socio-cultural, and legal constraints. The results have significant repercussions for policymakers in Nepal who are contemplating the creation of initiatives that would encourage the growth of the insurance market and the inclusion of financial services. In addition, the study has the potential to make a contribution to the larger body of literature about the penetration of insurance in developing nations, providing insights that are relevant to other economies that have comparable features.

Insurance penetration in Nepal has reached around 44.55% of the population as of the fiscal year 2022/23, indicating that the country has attained a level of penetration. This figure takes into account both domestic insurance plans and those held by persons who have relocated to a foreign country in order to pursue career opportunities there. The

gross written premium of the Nepal insurance market in 2021 was NPR 138.3 billion, which is equivalent to around $1.1 billion, according to the Nepal Insurance Authority. The general insurance category was considered to be the most dominant component of the market. The agriculture insurance, microinsurance, and parametric insurance sectors are among the most important developments that are driving the Nepal insurance market. In particular, Nepal is vulnerable to natural disasters because of its position in a seismically active zone; therefore, insurance is essential for risk reduction. Despite the government providing subsidies for crop insurance, widespread awareness remains a challenge. For towns affected by continuous riverine flooding, the government recently introduced a parametric flood insurance policy in July 2022. The purpose of this program in Nepal 2 is to improve both insurance accessibility and resilience. Nepal's insurance sector is continuously developing to expand market penetration and address the specific hazards that the country's population faces. Despite the fact that the sector's future prospects remain optimistic, new products and awareness-building activities continue to fuel growth.

1.2 Problem Statement

The insurance industry in Nepal is poised for sustained growth as more people become aware of the benefits of insurance and as the government continues to support the sector's development. However, addressing the challenges of low awareness, regulatory hurdles, and trust in insurance providers is essential for further penetration of insurance in Nepal. The government of Nepal has been taking initiatives to increase insurance penetration, such as promoting micro-insurance and expanding coverage in rural areas. Despite these efforts, challenges such as low awareness, lack of trust, and income levels continue to impact life insurance penetration in Nepal. The concentration of wealth among the top 10% affects the purchasing power for insurance, thereby affecting penetration Additionally, Nepal's exposure to natural hazards and the poor uptake of government-subsidized insurance schemes due to a lack of awareness highlight the need for increased education and trust-building measures

Addressing the problem of low insurance penetration in Nepal holds significant implications. Increased insurance coverage can provide financial protection to individuals and businesses, reducing vulnerability to economic shocks. This can have a broader positive effect on economic stability and promote investment. Moreover, with Nepal's exposure to natural disasters, insurance plays a vital role in disaster risk

management and recovery efforts. A deeper understanding of the determinants of insurance penetration will inform tailored policies and initiatives aimed at expanding insurance access and inclusion in Nepal.

Ghimire (2018) revealed significant variation in premium income patterns in the Nepalese life insurance market, emphasizing the importance of regulatory intervention to enhance the capacity of underperforming insurers. Jnawali and Jaisawal (2019) identified demographic and socioeconomic factors such as gender, education level, occupation, economic class, family size, and income as significant determinants of life insurance demand in Kapilvastu district of Nepal, suggesting targeted marketing strategies for life insurance companies to enhance uptake among specific population segments.

Furthermore, Ghimire (2020) examined the current status of insurance services in Nepal and emphasized the need for regulatory improvements to address challenges such as poor corporate governance, substandard service quality, and fraudulent activities. Ranabhat et al. (2020) identified factors contributing to low enrollment and high dropout rates in health insurance programs in Nepal, highlighting issues such as inadequate health care packages and unfriendly behavior of health workers. Olarewaju and Msomi (2021) explored the determinants of insurance penetration in West African countries, with a focus on institutional quality indicators such as regulatory quality, control of corruption, and government effectiveness, suggesting that improving institutional quality is crucial for enhancing insurance development in Africa.

Lastly, Bah and Abila (2022) analyzed the impact of institutional quality on insurance demand in Africa, finding positive associations between regulatory quality, control of corruption, government effectiveness, and insurance penetration, while Sanjeewa (2021) investigated the factors influencing life insurance demand in Sri Lanka, identifying personal income, insurance market development, life expectancy, and regulatory quality as significant determinants. These findings underscore the importance of understanding the multifaceted nature of insurance penetration and implementing targeted strategies to address specific challenges within each context.

Despite the potential benefits of insurance in mitigating financial risks and promoting economic resilience, Nepal exhibits a low level of insurance penetration. The reasons behind limited insurance uptake are complex and multifaceted. While some factors,

such as low-income levels, are evident, a comprehensive understanding of the key barriers hindering insurance adoption in Nepal is lacking. Current research on insurance penetration in Nepal remains insufficient to guide effective policy interventions and market development strategies. So, this study mainly raise the following research questions:

- What is the present scenario of insurance penetration and its determinants in Nepal?
- How inflation rate, foreign direct investment (FDI) inflow, education level, dependency ratio and income level relate with insurance penetration in Nepal?
- Which variable among inflation rate, foreign direct investment (FDI) inflow, education level, dependency ratio and income level affect insurance penetration in Nepal?

1.3 Objectives of the Study

The general objective of the study is to examine the insurance penetration and its determinants in Nepal. However, the specific objectives of the study are as follows:

- To assess the present scenario of insurance penetration and its determinants in Nepal.
- To examine the relationship between inflation rate, foreign direct investment (FDI) inflow, education level, dependency ratio and income level and insurance penetration in Nepal.
- To analyze the impact of inflation rate, foreign direct investment (FDI) inflow, education level, dependency ratio and income level on insurance penetration in Nepal.

1.4 Research Hypothesis

Based on the research questions, objectives of the study and various empirical studies, the following hypotheses are formulated and tested using statistical tools:

H_1: Inflation rate does not determine the insurance penetration in Nepal.

H_2: Foreign direct investment inflow does not determine the insurance penetration in Nepal.

H_3: Education level does not determine the insurance penetration in Nepal.

H_4: Dependency ratio does not determine the insurance penetration in Nepal.

H_5: Income does not determine the insurance penetration in Nepal.

1.5 Rationale of the Study

The examination of insurance penetration in Nepal is motivated by a variety of factors, including the country's distinctive socioeconomic environment and the vital function insurance serves in financial planning and risk management. It is generally accepted that bringing research evidence into policy and practice (GRIPP) is crucial for facilitating the translation, transmission, exchange, and dissemination of knowledge. This is especially pertinent in the context of Nepal, where the penetration of insurance is relatively low despite substantial growth potential. Insurance adoption in Nepal is influenced by cultural, economic, and regulatory factors, rendering the country's insurance market distinctive. An analysis of insurance penetration must take into account the nation's susceptibility to natural disasters, the level of wealth concentration, and the predilection for conventional saving approaches. In order to foster the expansion of the insurance industry, researchers can optimize their engagement with policymakers and the community by customizing their methodologies to the local environment. The examination of insurance penetration in Nepal possesses the capacity to make a substantial scholarly contribution to the direction of understanding how to augment insurance adoption in analogous circumstances. It can provide policymakers, insurers, and other stakeholders with evidence-based recommendations for developing targeted interventions to resolve the barriers to insurance penetration. Furthermore, it can facilitate the development of economically feasible and culturally sensitive insurance policies in Nepal, thereby expanding the market's accessibility and efficacy. The motivation for conducting research on insurance penetration in Nepal is to comprehend and tackle the distinctive obstacles encountered by the insurance industry in the country. By incorporating insights from other nations and employing a research methodology that prioritizes active involvement of policymakers and the public, Nepal can devise tactics to enhance insurance penetration. This, in turn, will contribute to the financial stability and overall welfare of its populace.

1.6 Limitations of the Study

While conducting a study on insurance penetration in Nepal, it is important to acknowledge certain limitations that may impact the findings and the overall scope of the research. The main limitations of the study are as follows:

- The study relies on secondary data, which may have limitations in terms of accuracy, completeness, and relevance to the specific research objectives. The

availability of data for all variables of interest and the consistency of data collection methods over the twenty-year period may also pose challenges.

- While correlation and regression analysis can identify associations between variables, they do not establish causality. The study may not be able to determine the direction of causality or account for potential confounding factors that could influence the relationship between determinants and insurance penetration.
- The study covers a twenty-year period i.e. from fiscal year 2003/04 to fiscal year 2022/23 and the findings may not capture recent developments or changes in the insurance market. Factors such as regulatory reforms, economic fluctuations, or technological advancements that occurred after the data collection period may not be adequately accounted for in the analysis.
- The findings of the study have limited external validity beyond the context of Nepal. The unique socio-economic, cultural, and regulatory factors specific to Nepal may limit the generalizability of the study's findings to other countries or regions.

CHAPTER II
LITERATURE REVIEW

The literature review explores existing research on insurance penetration, examining factors that influence the level of insurance activity in different economies. It provides a foundation for the current study's research framework and objectives. The review is divided into three parts: theoretical review, empirical review, and research framework. The theoretical review explores comprehensive frameworks and theories related to insurance penetration, while the empirical review analyzes previous studies and evidence. Based on these findings, the research framework is developed, outlining the methodology, variables, and hypotheses for the study. Through this comprehensive literature review, the study aims to contribute to our understanding of insurance penetration and its determinants, ultimately informing effective strategies for increasing insurance activity in various economies.

2.1 Theoretical Review

A number of different hypotheses are discussed in this overview about the reasons why people and organizations acquire insurance, the functioning of insurance markets, and the impact that protection has on the stability of the economy and the welfare of society. It examines the decision-making processes involved in risk and insurance, as well as the market flaws and difficulties that insurers face when attempting to evaluate and price risk. Furthermore, it shows the role that insurance firms play in the distribution of savings and the channeling of those savings into productive investments, which contributes to the expansion of the economy. It is possible to get a better understanding of the dynamics of insurance uptake, market growth, and the socio-economic advantages of extending insurance coverage through the use of these concepts in developing nations such as Nepal. A comprehensive theoretical review provides a basis for empirical research. This foundation guides the identification of important variables and the construction of hypotheses on which to base the study.

2.1.1 Insurance Penetration

When investigating the dynamics of insurance penetration, it is necessary to have a grasp of the degree to which insurance services have infiltrated a market, as well as the variables that have an impact on this penetration. One of the most important indicators of the development of the insurance sector and the role it plays in maintaining economic

growth and stability is the insurance penetration rate, which is commonly defined as the ratio of total insurance premiums to a country's gross domestic product. According to Outreville (2013), there is a correlation between higher levels of insurance penetration and superior risk management, financial stability, and economic resilience. In addition to being a reflection of the level of maturity of the insurance market, this indicator also serves as a reflection of the economic context in which the market functions.

The level of economic development is one of the most important criteria for determining insurance penetration. The expansion of economies and the rise in consumers' discretionary spending can lead to a growing demand for insurance goods. According to Beck and Webb (2003), increases in economic growth lead to increased financial literacy as well as knowledge of the advantages of insurance, which in turn encourages greater adoption. Additionally, well-developed financial markets and institutions, more prevalent in more prosperous nations, provide the infrastructure necessary for the insurance business to thrive. Consequently, nations that have a greater GDP per capita have a tendency to have higher levels of insurance penetration (Arena, 2008).

Cultural variables also influence a significant portion of the decision-making process regarding insurance penetration. It societal views about risk and financial planning can significantly influence people's tendency to acquire insurance. a greater degree of risk aversion and a larger need for security, societies are more inclined to accept insurance goods (Hofstede, 2001). This is due to the fact that insurance products are more profitable. However, Browne and Kim (1993) suggest that cultures that prioritize informal risk-sharing mechanisms, like family or community assistance, may see a lower adoption of formal insurance.

The regulatory and policy contexts play a significant role in developing the insurance landscape. According to Skipper and Kwon (2007), effective regulation ensures that insurance businesses operate in a transparent manner and keep appropriate capital reserves, which in turn fosters confidence among customers. Additionally, measures enacted by the government that require certain forms of insurance, such as health or automobile insurance, have the potential to greatly increase the percentage of people who have insurance. Policies that encourage people to get insurance by providing them

with tax breaks or subsidies are another factor that contributes to increased levels of insurance penetration (Mahul & Stutley, 2010).

In the process of growing insurance penetration, technological improvements are becoming an increasingly important factor. Mobile banking and digital payment systems are two examples of innovations that have made insurance products more accessible. This is especially true in developing nations, where conventional banking infrastructure may be weak (PwC, 2019). In addition, technology makes it easier to gather data and conduct risk assessments, which enables insurance companies to provide solutions that are more individualized and more reasonably priced. Given the fact that internet penetration and digital literacy are both on the rise worldwide, there is a significant possibility that technology will be the driving force behind further gains in insurance coverage (World Bank, 2020).

2.1.2 The Economic Theory of Insurance

In the 1960s, the economist Kenneth Arrow was the primary contributor to the development of the Economic Theory of Insurance, which examines the distribution of risk within the economy as well as the role that insurance plays in the process of risk distribution. Arrow (1963) emphasized the importance of information asymmetry and moral hazards in the insurance industry through his research. His contributions provided a framework for understanding how insurance may operate successfully despite the constraints presented by these economic events. His efforts were instrumental in proving this.

Both risk aversion and risk pooling are essential ideas in Arrow's theory, which focuses on these two concepts. Individuals purchase personal insurance to transfer the financial risk of potential losses to an insurance company. People choose a definite loss (insurance premium) over an uncertain future loss (accidents, disease) based on the concept of risk aversion. Through the process of pooling risks from a large number of policyholders, insurers are able to more efficiently control and distribute the risk. Insurance companies use this pooling to more accurately estimate losses and charge premiums that reflect the average risk of the covered population.

Cohen and Siegelman's (2010) research on adverse selection in the health insurance market suggests that individuals with higher risk are more likely to purchase insurance. This finding lends weight to Arrow's argument about information asymmetry. In

addition, Chiappori and Salanié (2000) conducted an empirical study that revealed evidence of moral hazards in the automobile insurance industry. They found that insured drivers took higher risks than uninsured drivers, which was consistent with Arrow's expectations.

This notion could greatly benefit the investigation of insurance penetration is a field that may greatly benefit from this notion. It is possible to explain the diverse levels of insurance uptake that occur in different markets by gaining an understanding of the economic incentives that people have to purchase insurance and the processes that insurers use to keep risk under control. According to Beck and Webb (2003), countries that have improved risk assessment technology and information that is more open to public scrutiny are likely to have a greater insurance penetration rate. This is because there is less moral hazard and adverse selection. On the other hand, insurance penetration may be lower in markets where there is a considerable knowledge asymmetry. This is because premiums are higher, and consumers have less faith in insurers.

The economic theory of insurance provides a framework that policymakers can use to improve insurance penetration. Governments can promote a more trustworthy and efficient insurance market by implementing regulatory measures that aim to improve information transparency and reduce moral hazards. In addition, boosting financial literacy may assist individuals in comprehending the significance of insurance, which in turn can lead to an increase in the percentage of people who have insurance (Mahul & Stutley, 2010). Arrow's theory continues to provide the groundwork for the study of insurance economics, serving as a guiding principle for both academic research and governmental interventions in the real world.

2.1.3 The Institutional Theory of Insurance

Douglass North developed the institutional theory of insurance to investigate how institutions, including explicit rules, informal norms, and enforcement features, influence the operation of insurance markets (North, 1990). According to this hypothesis, the legal, regulatory, and sociological frameworks have a substantial impact on insurance penetration, in addition to the economic aspects that were previously mentioned.

According to this idea, institutions play a crucial role in providing the necessary framework for markets to function effectively. Effective legal systems enable the execution of contracts, protect property rights, and decrease transaction costs, all of which are essential for the growth of insurance markets. An atmosphere that is favorable to insurance is also significantly influenced by informal norms, such as trust and social capital, which play a vital role in the process. There is a correlation between weak or corrupt institutions and increased risks and inefficiencies in the insurance business.

When it comes to the development of the insurance market, empirical research demonstrates that institutional quality is quite important. It was established by La Porta et al. (1998) that nations that have robust legal systems and greater protection of property rights have more developed financial markets, including insurance markets. Beck et al. (2003) discovered that there is a positive correlation between the quality of institutions and the level of insurance penetration. This finding highlights the fact that robust institutions foster both market trust and efficiency.

The institutional theory is directly pertinent to the study of insurance penetration since it emphasizes the role that regulatory and legal frameworks play in supporting market expansion. According to Skipper and Kwon (2007), countries that have effective regulatory agencies that enforce fair procedures, transparency, and consumer protection tend to have lower insurance penetration rates than other countries. On the other hand, insurance markets are less established in places where regulatory enforcement is weak or where corruption is common, which results in lower penetration rates.

The institutional theory emphasizes the significance of constructing institutions that are robust, open to scrutiny, and effective in order to increase insurance penetration. Reforms that attempt to improve legal processes, reduce corruption, and encourage confidence in financial institutions have the potential to greatly strengthen the insurance industry. Mahul and Stutley (2010), boosting the consumption of insurance products may be aided by establishing a culture of trust and dependability via education and public awareness initiatives. Through the application of this theory, a complete framework is provided for understanding the non-economic elements that impact the evolution of the insurance market.

2.2 Empirical Review

2.2.1 Empirical Review in International Context

Sihem (2024) analyzed the impact of macro-economic and social variables on the growth or decline of the non-life insurance sector across European countries. The study uses Fixed Effects Panel Data Regression and annual data from 1990 to 2021 on 10 countries to examine the factors influencing non-life insurance demand. The findings reveal that GDP, urbanization, and education rates negatively impact non-life insurance penetration and density, while urbanization, religion, education level, and rule of law positively influence non-life insurance density and penetration. Countries with higher urbanization levels, higher education levels, Christian or Buddhist beliefs, and more effective rule of law spend more on non-life insurance. However, control of corruption and government effectiveness negatively affect non-life insurance. The study concludes that governments can develop the non-life insurance sector through policies that support urbanization and promote economic freedom. Policies that reduce urbanization rates may lead to less population and congestion in cities and better opportunities for non-life insurance markets. The study's implications suggest that providing correct and accurate information to reinsurers is crucial to prevent top-rated reinsurers from withdrawing from the market, which could negatively impact the insurance industry.

Isedomi and Michael (2024) investigated the factors influencing insurance penetration in African nations from 2010 to 2023, employing secondary data and an expo-facto research approach. Their study examines the impact of economic factors such as inflation rate, exchange rate, insurance premium, and economic growth on insurance penetration through descriptive analysis, correlation analysis, unit root test, co-integration analysis, and panel error correction models. The findings reveal significant relationships, with inflation and insurance premiums positively affecting penetration, while exchange rate fluctuations and economic growth negatively impact it. The study underscores the complexity of insurance market dynamics in Africa, offering insights for regulators, insurers, and consumers. Recommendations are provided to enhance penetration through legislative measures, product innovation, consumer awareness, and data accessibility. This research advances understanding of insurance market growth in African nations, offering guidance for fostering financial resilience and risk mitigation across the continent.

Agarwal (2023) examined the factors influencing insurance demand, particularly in the context of foreign direct investment (FDI) entering the insurance industry in India. Employing Granger Causality tests and regression analysis, the study examines the relationships between population, literacy, life expectancy, financial development, and insurance demand, focusing on insurance penetration and density. The findings suggest that population expansion, income growth, and increased literacy positively impact the demand for life insurance, with substantial effects observed for population and NDP per capita. Premium growth rates are notable, indicating a strong relationship between GDP growth and life insurance premiums. Financial development also plays a significant role in increasing insurance penetration. The study acknowledges limitations in time series analysis and suggests the inclusion of additional factors impacting life insurance demand in future studies. Notably, the study highlights the negative impact of recession on life insurance demand in 2022 and emphasizes the importance of considering internal demand variables when allocating life insurance agents across different states.

Arachchi and Buddhika (2023) identified the determinants of low insurance penetration in the Sri Lankan life insurance market, recognizing the significance of insurance penetration as a measure of industry capability and confidence. Conducting a quantitative research study, they investigate the impact of independent variables such as inflation rate, income, literacy ratio, and dependency ratio on life insurance penetration over a 22-year period from 2000 to 2021. Utilizing the EWIEWS statistical software, the study finds significant relationships between most independent variables and life insurance penetration in both the long and short run. Additionally, the research explores differences between pre-war/post-war and pre-COVID/post-COVID periods. This study offers valuable insights for the Sri Lankan government to address factors contributing to low insurance penetration and suggests targeted interventions to enhance penetration rates in the country.

Malambo (2023) explored the reasons behind the low uptake of insurance products in the Sub-Saharan Region, recognizing the multifaceted contributions of insurance to national economies. Utilizing the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) reporting guidelines, the researcher systematically searches Google, Google Scholar, the Cochrane Library, and Scopus for relevant literature. Through thematic analysis of the evidence, Malambo identifies poverty, lack

of product knowledge, inadequate regulatory sensitization, and low-income levels as primary factors hindering insurance uptake in Sub-Saharan Africa. The study underscores the crucial role of insurance in economic development and highlights the need for targeted interventions to address barriers to insurance adoption, with implications for policymakers, regulators, and stakeholders in the region.

Melnikov (2023) explored the causes of interregional disparities in the development of the insurance market in Russia, focusing on the impact of economic, social, demographic, and geographical factors. The study uses regression analysis of panel data to estimate the effect of these factors on regional insurance market development, with insurance premiums per capita and the ratio of insurance premiums to gross regional product serving as explained variables. The findings reveal that the most favorable conditions for insurance development are in large urban agglomerations with high population density, particularly Moscow and St. Petersburg. The development of the banking system is identified as the main driver for regional insurance market development in Russia, stimulating demand for insurance services from borrowers and expanding sales channels for other insurance products. An increase in the population's education level leads to a higher risk appetite but does not increase demand for insurance services. No stable relationship is found between the crime rate and the level of insurance market development, aligning with results from Eastern Europe. The study concludes that enhancing the role of insurance in economic growth requires measures to improve the financial and insurance literacy of Russian citizens and additional tax incentives for policyholders' expenses for life and property insurance protection.

Bah and Abila (2022) examined the institutional determinants of insurance demand in Africa using panel data from 42 countries over the period 1996–2017. Employing a system GMM approach for estimations, the study focuses on the impact of institutional quality indicators such as regulatory quality, rule of law, control of corruption, political stability and absence of violence, and government effectiveness on insurance penetration. The findings reveal positive and significant effects of institutional quality on insurance demand, with regulatory quality, control of corruption, and government effectiveness being particularly influential. However, while all these factors positively influence total insurance and life insurance demand, only regulatory quality, control of corruption, and government effectiveness are associated with non-life insurance demand. The study concludes that improving the business and political environments

is crucial for enhancing insurance development in Africa. The implication drawn suggests that policymakers should prioritize efforts to enhance institutional quality to foster greater insurance penetration, thereby contributing to economic stability and growth across the continent.

Kabrt (2022) investigated the relationship between key determinants such as income, education, life expectancy, employment, and life insurance demand in the countries of the Visegrad Group (V4). The study utilizes OECD data and applies linear and panel data regressions to analyze these relationships. The findings reveal that as income and educational attainment increase, there is a higher demand for investment in pension funds but a lower demand for life insurance. Unemployment has a strongly negative effect on all models presented. Additionally, with higher life expectancy, there is an increased demand for life insurance products and a decreased demand for pension fund assets. The study's implications suggest that these key determinants significantly influence the demand for life insurance and pension funds in the V4 countries.

Kajwang (2022) explored the factors contributing to the low utilization of insurance services in Africa, recognizing the potential of insurance in promoting economic growth and risk reduction. Through an examination of various elements such as lack of means, mistrust of financial service providers, reluctance of multinational insurance firms to invest in Africa, inadequate information, weak legal and judicial systems, insufficient human capital, shallow financial markets, and community resistance to formal insurance services, the study seeks to uncover the reasons behind low insurance penetration on the continent. The findings underscore a significant correlation between these identified factors and the level of insurance penetration in Africa. Notably, the study recommends the provision of tailored insurance products that combine risk protection with financial opportunities, along with collaborative efforts among stakeholders to address the identified barriers to insurance uptake.

Segodi and Sibindi (2022) analyzed the factors influencing the demand for life insurance in the BRICS countries, with a focus on both demand-side and supply-side variables, particularly financial regulation. Using panel data econometric techniques over the period 1999–2020, the study examines the impact of income, unemployment, interest rates, inflation, economic growth, and financial freedom on life insurance demand, measured by life insurance density and penetration. The findings reveal a

negative association between life insurance demand and income, unemployment, interest rates, and inflation, while economic growth and financial freedom exhibit positive relationships with life insurance demand. Notably, the study highlights the importance of considering supply-side factors such as financial regulation in understanding life insurance demand dynamics. The implication drawn suggests that deregulation of the life insurance sector could enhance financial freedom and subsequently bolster life insurance demand.

Tajudeen et al. (2022) examined the underdevelopment of the insurance market in Nigeria, characterized by low density and penetration rates, and question whether this is due to dynamics in macroeconomics, demographics, and institutional factors. The study uses a multiple regression framework through ARDL bounds cointegration testing to determine the factors influencing insurance sector development in Nigeria from 1987 to 2020. The findings, based on the Error Correction Model (ECM), reveal that the speed of adjustment to equilibrium level following a short-term distortion had a negative coefficient of 0.02725 (p=0.000), indicating a slow adjustment process. The study's implications suggest that addressing the identified macroeconomic, demographic, and institutional factors could enhance the development of the insurance sector in Nigeria.

Hafiz et al. (2021) explored the role of insurance as a systematic solution to risk reduction and its significant contribution to socio-economic development, emphasizing that the level of diversity and inclusion in the sector reflects a nation's financial progress. The study has dual objectives: to ascertain and discuss theories that stimulate economic performance from the perspectives of institutions and innovation. Using keywords to search literature repositories with Harzing's publish or perish software, the study identifies the New Institutional Economics (NIE) and Schumpeter's theory of Innovation as suitable for the study's objectives. The findings suggest that efficient institutions, coupled with the emergence of novel products, can promote trust and confidence in the market, catering to the specific needs of a large majority of unserved potential consumers. The study concludes that the interaction between institutions and innovation could likely stimulate insurance uptake. The study's implications highlight the potential of institutional efficiency and innovative products in enhancing insurance uptake.

Olarewaju and Msomi (2021) examined the determinants of insurance penetration in 15 West African countries from 1999Q1 to 2019Q4, focusing on both long- and short-term dynamics. Employing a panel auto regressive distributed lag model on quarterly data, the study identifies education, productivity, dependency, inflation, and income as significant determinants of insurance penetration in the region. The findings reveal a cointegrating and short-run significant relationship between insurance penetration and the independent variables, with the error correction term indicating a gradual adjustment towards long-run equilibrium. Additionally, the study uncovers short-run causality among the regressors, suggesting joint causation of insurance penetration. The study recommends economy-wide policies informed by these significant factors, advocating for the restructuring of the education sector to include finance-related modules across faculties and the implementation of Bancassurance to facilitate easier penetration of the insurance sector through the banking sector.

Sanjeewa (2021) analyzed the determinants of life insurance demand in Sri Lanka, prompted by the country's low life insurance penetration and density. Using annual data from 1996 to 2018, the study constructs a multiple regression log-linear model to analyze the impact of selected socioeconomic and institutional factors on life insurance consumption. The findings highlight the significant influence of economic and institutional factors on life insurance demand in Sri Lanka. Notably, personal income and insurance market development exhibit positive effects on life insurance demand, while life expectancy and old dependency also stimulate demand. However, urbanization and education do not seem to affect life insurance consumption. Institutional factors such as regulatory quality positively impact demand, whereas income inequality and financial development have negative effects, indicating low trust and awareness about insurance products among the population. The study offers practical policy implications for enhancing the development of the life insurance market in Sri Lanka, emphasizing the importance of addressing socioeconomic and institutional factors to promote greater uptake of life insurance products, thereby fostering financial resilience and security for individuals and households in the country.

Sharku et al. (2021) delved into the economic factors that stimulate the demand for insurance products in Albania, a developing country with a moderately progressing insurance market. Using density insurance as a proxy for life and non-life insurance market development, the study examines the economic determinants of the Albanian

insurance market from 2009 to 2020 based on quarterly data. The analysis, conducted using the Vector Error Correction Model, designs separate models for life and non-life insurance segments. The study considers several economic variables, including GDP, inflation, real interest rate, and unemployment. The empirical results reveal that GDP per capita has the most significant impact, while unemployment is found to be insignificant in respect to life and non-life insurance density. The study contributes to the existing international literature, particularly related to developing countries, by being the first to investigate the influence of a set of economic factors on life and non-life insurance industry in Albania. The study's implications suggest that insurance companies should evaluate these factors to improve the availability of insurance services to the public.

Das and Shome (2016) investigated the determinants of insurance penetration in India over a 23-year period (1992-2014), aiming to assess the impact of various factors beyond just insurance premium and gross domestic product (GDP) on this ratio. Utilizing SPSS for data analysis, the study employs descriptive statistics such as mean and standard deviation, as well as inferential statistics including t-tests and multivariate analysis like regression analysis. The findings reveal that factors such as inflation rate, Foreign Direct Investment (FDI) inflow, education, openness ratio, life expectancy, labor productivity ratio, Global Terrorism Index, and Dependency Ratio influence insurance penetration. However, the study indicates that only one determinant has a significant effect on insurance penetration, suggesting the need for further exploration and refinement of the model. The implication drawn from the study underscores the importance of understanding the nuanced interplay of various determinants to effectively promote insurance penetration in India, thereby contributing to the development and resilience of the insurance sector in the country.

Table 1

Summary of Literature Review in International Context

SN	Author(s)	Objective	Methodologies/Tools	Major Findings
1	Sihem (2024)	To analyze the impact of macro-economic and social variables on	Fixed Effects Panel Data Regression, annual data from	GDP, urbanization, and education rates negatively impact non-life insurance

		the growth or decline of the non-life insurance sector across European countries.	1990 to 2021 on 10 countries	penetration and density. Urbanization, religion, education level, and rule of law positively influence non-life insurance density and penetration. Control of corruption and government effectiveness negatively affect non-life insurance. Governments can support the non-life insurance sector through policies that support urbanization and economic freedom.
2	Isedomi and Michael (2024)	To investigate the factors influencing insurance penetration in African nations.	Secondary data, expo-facto research approach, descriptive analysis, correlation analysis, unit root test, co-integration analysis, panel error correction models	Inflation and insurance premiums positively affect insurance penetration, while exchange rate fluctuations and economic growth negatively impact it. Recommendations include legislative measures, product innovation, consumer

				awareness, and data accessibility to enhance insurance penetration.
3	Agarwal (2023)	To examine the factors influencing insurance demand in the context of FDI entering the insurance industry in India.	Granger Causality tests, regression analysis	Population expansion, income growth, and increased literacy positively impact life insurance demand. Financial development also significantly increases insurance penetration. The study highlights the negative impact of recession on life insurance demand and suggests considering internal demand variables when allocating life insurance agents.
4	Arachchi and Buddhika (2023)	To identify the determinants of low insurance penetration in the Sri Lankan life insurance market.	Quantitative research, EWIEWS statistical software	Significant relationships between inflation rate, income, literacy ratio, dependency ratio, and life insurance penetration. Differences noted between pre-war/post-war and pre-

				COVID/post-COVID periods. Recommendations for the Sri Lankan government to address factors contributing to low insurance penetration and enhance penetration rates.
5	Malambo (2023)	To explore the reasons behind the low uptake of insurance products in the Sub-Saharan Region.	PRISMA reporting guidelines, systematic literature search, thematic analysis	Poverty, lack of product knowledge, inadequate regulatory sensitization, and low-income levels are primary factors hindering insurance uptake. Recommendations include targeted interventions to address barriers to insurance adoption, with implications for policymakers, regulators, and stakeholders.
6	Melnikov (2023)	To explore the causes of interregional disparities in the development of	Regression analysis of panel data	Favorable conditions for insurance development are in large urban agglomerations with high population

		the insurance market in Russia.		density. Development of the banking system is the main driver for regional insurance market development. Education level increases risk appetite but does not increase insurance demand. No stable relationship between crime rate and insurance market development. Measures to improve financial and insurance literacy and tax incentives recommended.
7	Bah and Abila (2022)	To examine the institutional determinants of insurance demand in Africa.	Panel data from 42 countries (1996-2017), system GMM approach	Positive and significant effects of institutional quality on insurance demand, with regulatory quality, control of corruption, and government effectiveness being particularly influential. Recommendations for policymakers to enhance institutional quality to foster

				greater insurance penetration, contributing to economic stability and growth.
8	Kabrt (2022)	To investigate the relationship between income, education, life expectancy, employment, and life insurance demand in Visegrad Group countries.	Linear and panel data regressions, OECD data	Higher income and educational attainment lead to higher demand for pension funds but lower demand for life insurance. Unemployment negatively affects all models. Higher life expectancy increases demand for life insurance and decreases demand for pension fund assets.
9	Kajwang (2022)	To explore the factors contributing to the low utilization of insurance services in Africa.	Examination of various elements including lack of means, mistrust, reluctance to invest, inadequate information, weak legal systems	Significant correlation between identified factors and low insurance penetration. Recommendations for tailored insurance products combining risk protection with financial opportunities, and collaborative efforts among stakeholders

				to address barriers to insurance uptake.
10	Segodi and Sibindi (2022)	To analyze the factors influencing the demand for life insurance in the BRICS countries.	Panel data econometric techniques (1999-2020)	Negative association between life insurance demand and income, unemployment, interest rates, and inflation. Positive relationships with economic growth and financial freedom. Emphasizes the importance of considering supply-side factors such as financial regulation. Recommendations for deregulation to enhance financial freedom and life insurance demand.
11	Tajudeen et al. (2022)	To examine the underdevelopment of the insurance market in Nigeria.	Multiple regression framework, ARDL bounds cointegration testing	Identifies macroeconomic, demographic, and institutional factors influencing insurance sector development. Slow adjustment process to equilibrium level after short-term distortions.

				Recommendations to address these factors to enhance the insurance sector development in Nigeria.
12	Hafiz et al. (2021)	To explore the role of insurance as a systematic solution to risk reduction and its contribution to socio-economic development.	Systematic literature search, thematic analysis	Efficient institutions and innovation can promote trust and confidence in the insurance market. Highlights the potential of institutional efficiency and innovative products in enhancing insurance uptake. Recommendations for fostering interactions between institutions and innovation to stimulate insurance uptake.
13	Olarewaju and Msomi (2021)	To examine the determinants of insurance penetration in 15 West African countries.	Panel auto regressive distributed lag model (1999Q1-2019Q4)	Significant determinants of insurance penetration include education, productivity, dependency, inflation, and income. Short-run causality

				among regressors suggests joint causation of insurance penetration. Recommendations for economy-wide policies and restructuring the education sector to include finance-related modules.
14	Sanjeewa (2021)	To analyze the determinants of life insurance demand in Sri Lanka.	Multiple regression log-linear model, annual data (1996-2018)	Economic and institutional factors significantly influence life insurance demand. Personal income and insurance market development positively affect demand, while urbanization and education do not. Recommendations for addressing socioeconomic and institutional factors to enhance life insurance market development.
15	Sharku et al. (2021)	To delve into the economic factors	Vector Error Correction Model,	GDP per capita has the most significant

		that stimulate the demand for insurance products in Albania.	quarterly data (2009-2020)	impact on life and non-life insurance density, while unemployment is insignificant. Recommendations for insurance companies to evaluate these factors to improve the availability of insurance services.
16	Das and Shome (2016)	To investigate the determinants of insurance penetration in India.	SPSS, descriptive and inferential statistics (1992-2014)	Factors such as inflation rate, FDI inflow, education, openness ratio, life expectancy, labor productivity ratio, Global Terrorism Index, and Dependency Ratio influence insurance penetration. Highlights the importance of understanding the nuanced interplay of various determinants to effectively promote insurance penetration in India.

2.2.2 Empirical Review in Nepalese Context

Karki et al. (2021) assessed the status of agriculture and livestock insurance services in Nepal and identify the conditions that would allow this sector to thrive. The study, based on a review of literature and theories of agriculture insurance, involved a census survey conducted from October to December 2019 at the head offices of various insurance companies in Kathmandu. The data collected was analyzed using MS Excel, revealing age and education as influential factors in adopting agriculture insurance. Despite the potential, companies showed a preference for livestock insurance over crop insurance due to the latter's complexities. The study found that the number of agriculture insurance products has grown from six to over 70, with the private sector, particularly Shikhar Insurance, leading the way, and the most profitable company being the government sector's Rastriya Beema Company. The study concludes with the suggestion of developing a national database to provide reliable and consistent data to agricultural insurers and implementing various strategies such as advertising, extension, and appealing insurance policies based on farmer and market demand. The implication of the study highlights the need for accurate information and strategic initiatives to enhance the growth and effectiveness of the agriculture insurance sector in Nepal.

Maharjan (2021) examined the issue of information asymmetry in the Nepalese insurance market, particularly from the perspective of reinsurers across various portfolios such as fire, marine, motor, engineering, and miscellaneous. The study uses a descriptive and causal relation research design, analyzing secondary data from 14 non-life insurance companies from 2008/09 to 2018/19, totaling 168 firm-year observations. The findings reveal the existence of strong asymmetric information in fire, marine, and overall portfolios, while no evidence of such information asymmetry is found in motor, engineering, and miscellaneous portfolios. The study concludes that while asymmetric information is often inevitable, its extensive presence can lead to unhealthy relations between parties and potentially distort relations. The study's implications stress the need for Nepalese non-life insurers to provide correct and accurate information to reinsurers, warning that failure to do so could lead to top-rated reinsurers withdrawing from the Nepalese market, adversely affecting the insurance industry.

Ranabhat et al. (2020) addressed the slow progress of health insurance coverage in Nepal compared to other South Asian countries, focusing on identifying enrollment and dropout rates of health insurance and their determinants in selected districts. Employing a mixed-method approach involving quantitative data from the Health Insurance Board (HIB) of Nepal and qualitative data gathered through focus group discussions with enrollment assistants (EAs) in three districts, the study synthesizes results to understand the dynamics of health insurance enrollment and dropout. The findings reveal significant variation in enrollment and dropout rates across districts, with a substantial proportion of subsidy enrollment for vulnerable groups. Factors contributing to poor enrollment and dropout include unavailability of drugs, unfriendly behavior of health workers, and limited health care packages. The study underscores the need for revisiting existing health insurance policies, enhancing capacity building for EAs, and improving coordination between the health insurance board and health care facilities to increase enrollment and minimize dropout rates, thereby ensuring the sustainability of the health insurance program in Nepal.

Ghimire (2020) assessed insurance services current status, identify opportunities, and address challenges within the sector. Utilizing a desk review methodology, the study examines the regulatory and developmental issues impacting the insurance industry. The findings highlight a historical trend of slow growth, limited coverage, and low penetration and density in the Nepalese insurance industry, which has gradually improved since 2001. Commercial insurers dominate the market, while social insurance and social security programs are expanding. However, deposit insurance and insurance services by non-insurance organizations remain limited. Regulatory concerns loom large, including poor corporate governance practices, substandard service quality, fraudulent activities, low coverage and penetration, underinsurance, misspelling, and force selling, compounded by a lack of qualified insurance personnel. The study underscores the pivotal role of insurance in the financial system as a source of funding for the banking sector and capital markets. It emphasizes the need for robust coordination among regulatory authorities and market players to ensure financial stability and sustainable economic growth, with a primary focus on safeguarding consumer rights.

Jnawali and Jaisawal (2019) investigated the determinants influencing the purchase of life insurance in Kapilvastu district of Nepal, aiming to provide insights for life

insurance companies. Utilizing a structured questionnaire, primary data were collected from 384 life insurance policyholders in the district through purposive sampling. The study finds that the demand for life insurance, measured by premium paid, is significantly associated with gender, level of education, occupation, economic class, family size, and monthly income of respondents, while age, religion, and marital status show no significant association. The findings suggest that life insurance companies should focus on selling policies to individuals with higher income, larger family sizes, and higher levels of education. The implication drawn from the study highlights the importance of targeting specific demographic and socioeconomic groups to enhance life insurance uptake in Kapilvastu district, thereby promoting financial protection and security among residents.

Kharel (2019) assessed the contribution of the insurance business to the Nepalese economy, positing the insurance sector as an infrastructural pillar of the financial sector. The study aims to highlight the growing importance of insurance in financial intermediation, a sector often overshadowed by banks and stock markets. The ultimate goal of the insurance business, according to the study, is to provide security to the insurance industry by protecting all societal classes from natural and social risks, while adhering to globally accepted insurance norms. The study employs simple statistical tools to analyze data collected from various research studies, aiming to elucidate the fundamental issues of the insurance business in the economy. The findings underscore the significant contribution of the insurance business to Nepal's economic development and its role in mobilizing financial resources. The study concludes that the development of the insurance business and its contribution to financial resource mobilization warrant greater attention in financial sector analysis and macroeconomic policy.

Timsina et al. (2018) examined the status and sustainability of compulsory agriculture insurance in Nepal, a common risk transfer mechanism in agriculture, particularly for borrowers of agricultural loans in low and middle-income countries. The study employs a household survey using a pre-tested semi-structured questionnaire across eight districts, involving 377 insurer farmers (132 crop and 245 livestock farmers) selected through simple random sampling, and five case studies. The findings reveal that the Government of Nepal has developed both cost of production and value-based insurance products based on farmers' demand, with premium rates fixed at five percent for cost of production-based and seven percent for value-based insurance for most crops and

livestock. Various government programs have linked agriculture insurance with their initiatives, making insurance mandatory for subsidy support. However, the study finds this strategy ineffective, with farmers more willing to participate in agriculture insurance if they perceive the enterprise as risky and can achieve higher returns. Most farmers participating in the government grant program have limited understanding of crop insurance, leading to discontinuation after the end of the grant/subsidy program. The study concludes with the need to revisit the existing provision of grant-linked insurance and emphasizes the importance of creating awareness for the sustainability of agriculture insurance.

Ghimire (2018) focused on the pattern of premium income and market share over a five-year period. The study uses secondary data and employs methodologies such as trend analysis, averages, standard deviations, and concentration ratios to examine the growth pattern and correlation among different types of premium income. The findings reveal a satisfactory growth in the market, with renewal premiums identified as the major source of income, indicating an oligopolistic market structure. There is a significant variation among insurers, with some underperforming and others showing enthusiastic performance. A strong correlation is observed between first premiums and other premium types. The study concludes with the need for regulatory intervention to enhance the capacity of underperforming insurers to protect policyholders' rights. The implication of the study emphasizes the need for proactive measures to improve insurer performance and ensure consumer protection in the Nepalese life insurance market.

Ghimire (2017) investigated the reasons behind the reluctance to purchase life insurance policies, focusing on the impact of variables such as education, income, expenditure, and fixed assets. The study employs a structured dichotomous questionnaire to gather perceptions from 300 uninsured respondents, using purposive sampling, and applies Mode and Mann Whitney U test for analysis. The findings reveal both financial and non-financial factors influencing the respondents' perceptions, including dependency on relatives during hardship, low bonus rate of life insurance, sufficient property, mistrust in life insurance, perceived low-quality services, lack of convincing capacity of agents, and complex claims settlement process. The study concludes that while education and expenditure do not significantly affect perceptions, assets and income greatly influence the perception of the uninsured. The study suggests increasing social faith in insurance through awareness campaigns, introducing

investment-linked products, improving service quality, and enhancing the financial performance of companies. It also recommends that the government offer financial incentives to boost the demand for insurance products.

Sharma (2013) explored the current state of insurance in Nepal, highlighting the inherent uncertainty and risk that necessitates robust risk-management solutions. The study underscores the vulnerability of poor families who can lose their assets due to unforeseen circumstances like sickness or accidents. The government's policy to provide free primary and secondary care is lauded as a positive step towards reducing the financial burden on the poor. However, the study points out that this policy only mitigates a part of the vulnerability as the poor still bear the cost of services not covered under this policy. The study reveals that poor households often resort to borrowing to finance their health expenses, which exceed their income and savings. The paper also provides an overview of the insurance sector in Nepal, noting that there are 25 registered insurance companies, including 8 private life insurers, 16 private non-life insurers, and 1 government-owned composite insurer. The study concludes that while steps have been taken to alleviate the financial strain on the poor, more comprehensive solutions are needed. The implications of the study suggest a need for broader policy interventions and financial solutions to fully address the financial vulnerabilities of Nepal's poor.

Table 2

Summary of Literature Review in Nepalese Context

SN	Author(s)	Objective	Methodologies/Tools	Major Findings
1	Karki et al. (2021)	To assess the status of agriculture and livestock insurance services in Nepal and identify the conditions for	Review of literature, census survey, data analyzed using MS Excel.	Age and education are influential factors in adopting agriculture insurance. Companies prefer livestock insurance due to complexities in crop insurance. The number of agriculture insurance products has grown

		sector growth.		from six to over 70, with Shikhar Insurance leading and Rastriya Beema Company being the most profitable. A national database is needed to provide reliable data to insurers. Strategies such as advertising, extension, and appealing policies based on farmer demand are suggested.
2	Maharjan (2021)	To examine the issue of information asymmetry in the Nepalese insurance market.	Descriptive and causal relation research design, analysis of secondary data from 14 non-life insurance companies from 2008/09 to 2018/19 (168 firm-year observations).	Strong asymmetric information exists in fire, marine, and overall portfolios; no evidence of such asymmetry in motor, engineering, and miscellaneous portfolios. Extensive information asymmetry can distort relations between parties. Non-life insurers in Nepal need to provide accurate information to reinsurers to prevent top-rated reinsurers from withdrawing, which could negatively impact the insurance industry.

3	Ranabhat et al. (2020)	To identify enrollment and dropout rates of health insurance and their determinants in selected districts in Nepal.	Mixed-method approach: quantitative data from the Health Insurance Board of Nepal, qualitative data through focus group discussions.	Significant variation in enrollment and dropout rates across districts, with a substantial proportion of subsidy enrollment for vulnerable groups. Poor enrollment and dropout are due to unavailability of drugs, unfriendly behavior of health workers, and limited health care packages. Recommendations include revisiting health insurance policies, enhancing EA capacity, and improving coordination between the health insurance board and health care facilities.
4	Ghimire (2020)	To assess insurance services' current status, identify opportunities, and address challenges.	Desk review methodology.	Slow growth, limited coverage, and low penetration and density in the Nepalese insurance industry have improved since 2001. Commercial insurers dominate, while social insurance and security programs are expanding. Regulatory concerns

				include poor corporate governance, substandard service quality, fraudulent activities, low coverage and penetration, underinsurance, misselling, force selling, and a lack of qualified insurance personnel. Coordination among regulatory authorities and market players is needed for financial stability and economic growth.
5	Jnawali and Jaisawal (2019)	To investigate the determinants influencing the purchase of life insurance in Kapilvastu district, Nepal.	Structured questionnaire, primary data from 384 life insurance policyholders through purposive sampling.	Significant associations between life insurance demand and gender, education, occupation, economic class, family size, and income; no significant association with age, religion, and marital status. Recommendations for life insurance companies to target individuals with higher income, larger families, and higher education levels to enhance life insurance uptake.

6	Kharel (2019)	To assess the contribution of the insurance business to the Nepalese economy.	Simple statistical tools to analyze data from various research studies.	Insurance sector is a crucial infrastructural pillar of the financial sector, providing security against natural and social risks and contributing significantly to economic development. Greater attention is needed for the insurance sector's role in financial intermediation and resource mobilization in financial sector analysis and macroeconomic policy.
7	Timsina et al. (2018)	To examine the status and sustainability of compulsory agriculture insurance in Nepal.	Household survey using pre-tested semi-structured questionnaire across eight districts (377 insurer farmers) and five case studies.	Government has developed cost of production and value-based insurance products with fixed premium rates. Insurance is mandatory for subsidy support, but strategy is ineffective. Farmers more willing to participate in insurance if they perceive the enterprise as risky and can achieve higher returns. Recommendations

				include revisiting grant-linked insurance provisions and creating awareness for sustainability.
8	Ghimire (2018)	To examine the pattern of premium income and market share in the Nepalese insurance market.	Secondary data analysis using trend analysis, averages, standard deviations, and concentration ratios.	Satisfactory market growth with renewal premiums as the major income source, indicating an oligopolistic market structure. Significant variation among insurers, with some underperforming. Strong correlation between first premiums and other premium types. Regulatory intervention needed to enhance underperforming insurers' capacity and protect policyholders' rights.
9	Ghimire (2017)	To investigate the reasons behind the reluctance to purchase life insurance policies.	Structured dichotomous questionnaire, analysis using Mode and Mann Whitney U test.	Financial and non-financial factors influence reluctance to purchase life insurance, including dependency on relatives, low bonus rates, sufficient property, mistrust,

				perceived low service quality, lack of convincing agents, and complex claims processes. Assets and income significantly influence perception. Recommendations include increasing social faith through awareness campaigns, introducing investment-linked products, improving service quality, and offering government financial incentives.
10	Sharma (2013)	To explore the current state of insurance in Nepal and its role in mitigating financial vulnerability.	Review of literature and government policy analysis.	Insurance is critical for mitigating financial risks for poor families. Government's policy to provide free primary and secondary care is a positive step, but additional comprehensive solutions are needed. Broader policy interventions and financial solutions are needed to address financial vulnerabilities of Nepal's poor.

2.3 Research Gap

In Nepal, there is a noticeable gap of detailed study on the dynamics of insurance penetration and the variables that influence it, despite the fact that insurance plays a significant role in encouraging economic development and stability. Previous research has attempted to investigate various elements of insurance markets; however, it often fails to combine up-to-date data and does not take into account a comprehensive perspective of the specific factors that have a substantial influence on insurance penetration. To be more specific, there is a lack of awareness of the ways in which macroeconomic factors have a role in influencing insurance penetration in Nepal. These variables encompass the rate of inflation, the amount of foreign direct investment (FDI) received, the level of education, the dependence ratio, and the income level. The research that is currently available has a tendency to ignore the synergistic impacts of these variables, concentrating instead on the effects of individual elements. Additionally, due to the continuously shifting economic landscape and the ever-evolving regulatory environment in Nepal, it is necessary to conduct updated studies that take into account the most recent data and trends. In order to address this gap, the purpose of this study is to provide an up-to-date and complete assessment of the factors that determine insurance penetration. This study will use current data to investigate the interaction between these influential variables.

CHAPTER III
RESEARCH METHODOLOGY

3.1 Research Design

The research design employed in this study on insurance penetration in Nepal is a descriptive and causal research design. Descriptive research aims to describe and analyze the characteristics, behaviors, and relationships of a particular phenomenon or population. It involves collecting and analyzing data to provide a comprehensive overview of the research topic. Likewise, causal research design analyzes the relationship and effect of independent variables on insurance penetration in Nepal. In this study, the research design allows for the examination of insurance penetration trends, determinants, and their relationships over a twenty-year period.

3.2 Population and Sample and Sampling Design

In this study, the population of interest is the entire insurance industry in Nepal comprising 14 non-life insurance companies, 14 life insurance companies, 2 reinsurance companies, 3 micro life insurance companies, and 4 micro non-life insurance companies as on July, 2024. The research aims to analyze insurance penetration in Nepal based on variables such as inflation rate, foreign direct investment (FDI) inflow, education level, dependency ratio, income level, and insurance penetration itself. As the study intends to analyze the entire population, there is no need for a sample or sampling design. The analysis encompasses the entire insurance industry in Nepal, allowing for a comprehensive examination of insurance penetration and its determinants. Since the study covers the entire population, no sampling technique is required; the entire population data is utilized for the analysis.

3.3 Nature and Sources of Data

The study relies on secondary data sources to gather information on insurance penetration in Nepal. These sources include reports, publications, and datasets from government agencies i.e. ministry of finance, insurance regulatory body i.e. national insurance authority, and industry associations. The nature of the data is primarily quantitative, consisting of numerical information related to inflation rate, foreign direct investment (FDI) inflow, education level, dependency ratio and income level and insurance penetration. The use of secondary data allows for the analysis of long-term trends and patterns in insurance penetration.

3.4 Data Collection Procedures

The data collection procedures involved accessing and extracting relevant information from the identified secondary data sources. Researcher collects data on inflation rate, foreign direct investment (FDI) inflow, education level, dependency ratio and income level and insurance penetration and other variables related to insurance penetration. The data collection process focused on gathering comprehensive and reliable information to ensure the accuracy and validity of the study's findings.

3.5 Method of Analysis

The study employed statistical analysis techniques, including descriptive analysis, correlation analysis, and regression analysis, to analyze the collected data. Mainly, the following tools are utilized to analyze the data and meet the objectives set on chapter one.

3.5.1 Mean

In this study, the mean is used to determine the average values of key variables related to insurance penetration in Nepal. By calculating the mean, a central tendency measure that represents the typical value for each variable is obtained. This helps to provide a clear understanding of the general level of insurance penetration, as well as other influential factors such as inflation rate, foreign direct investment (FDI) inflow, education level, dependency ratio, and income level. The mean serves as a foundational statistic that summarizes the overall data set and allows for comparisons between different variables. The mean is calculated using following formula:

$$\bar{X} = \frac{\Sigma x}{n}$$

$\bar{X}$ = Arithmetic Mean return

$x_1, x_2, x_3, x_4 \ldots\ldots\ldots\ldots\ x_n$ = Set of Observation

Σx = Sum of given Observation

n = Total number of Observations

3.5.2 Standard Deviation

The standard deviation is employed in this study to assess the dispersion or variability of the key variables from their respective means. By calculating the standard deviation, we can understand how spread out the data points are, indicating the degree of variation within the data set. This is crucial for identifying the consistency or volatility of

variables such as insurance penetration, inflation rate, and income level. A higher standard deviation suggests greater variability, while a lower standard deviation indicates that the data points are more closely clustered around the mean. The standard deviation is calculated using following formula:

$$\text{Standard Deviation (S.D.)} = \sqrt{\frac{\Sigma(X - \bar{X})^2}{n}}$$

Where,

X = number of observations in the sample

$\bar{X}$ = mean of number of observations in the sample

n = number of years

$\Sigma(X - \bar{X})^2$ = Sum of Total number of observations deviation from mean in the sample.

3.5.3 Correlation Analysis

Correlation analysis is conducted in this study to explore the strength and direction of relationships between insurance penetration and various influential factors. By calculating correlation coefficients, it is determined whether there is a positive or negative association between variables such as inflation rate, FDI inflow, education level, dependency ratio, and income level. This analysis helps to identify which factors are significantly related to insurance penetration and the nature of these relationships, providing a deeper understanding of the interdependencies among the studied variables. The correlation is calculated using following formula:

$$\text{Correlation Coefficient (r)} = \frac{n\Sigma xy - \Sigma x \Sigma y}{\sqrt{n\Sigma x^2 - (\Sigma x)^2}\sqrt{n\Sigma y^2 - (\Sigma y)^2}}$$

Where,

r = coefficient of correlation

ΣXY = Sum of product of two series.

ΣX^2 = Sum of squared in X series

ΣY^2 = Sum of squared in Y series

n = number of years

The value of this coefficient can never be more than + 1 or less than -1. Thus, + 1 and -1 are the limit of this coefficient. The r = + 1 implies that correlation between variables is positive and vice- versa and zero denoted no correlation.

3.5.4 Regression Analysis

Regression analysis is applied in this study to examine the effect of independent variables on insurance penetration in Nepal. By constructing regression models, it can quantify the impact of factors such as inflation rate, FDI inflow, education level, dependency ratio, and income level on insurance penetration. This analysis allows us to identify significant determinants and understand the magnitude of their influence, providing a basis for making informed policy recommendations and strategic decisions to enhance insurance penetration in Nepal. The regression analysis also helps to control for confounding variables, ensuring a more accurate assessment of causal relationships. The regression model utilized in this study is as follows:

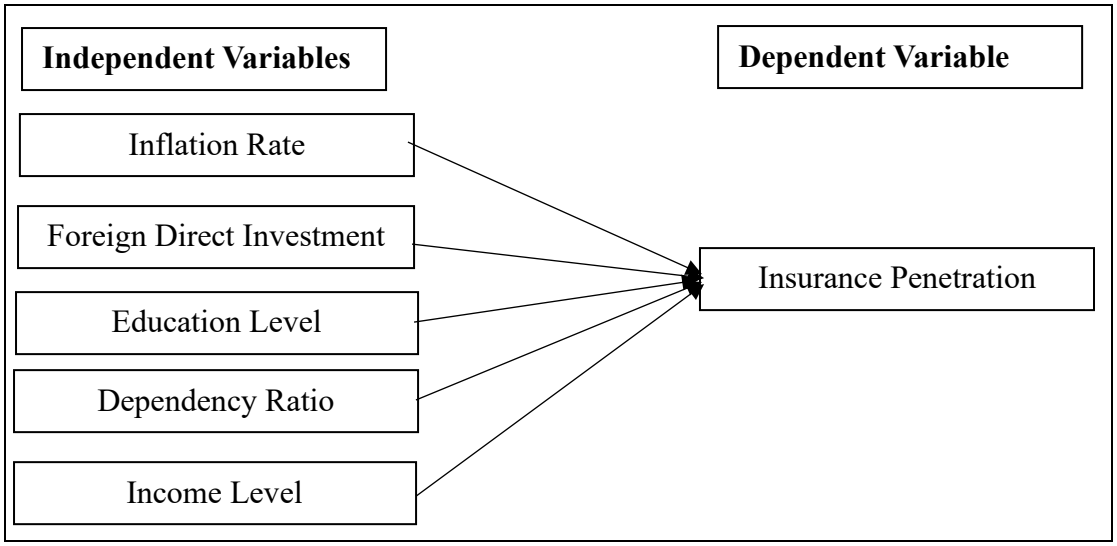
Insurance Penetration = $\beta 0 + \beta 1 *$ Inflation Rate $+ \beta 2 *$ FDI Inflow $+ \beta 3 *$ Education Level $+ \beta 4 *$ Dependency Ratio $+ \beta 5 *$ Income Level $+e$

Where

In this equation, $\beta 0$ represents the intercept or constant term, $\beta 1$ to $\beta 5$ represent the coefficients for each independent variable, and e represents the error term. The coefficients ($\beta 1$ to $\beta 5$) measure the impact of each independent variable on the insurance penetration, indicating the direction and magnitude of the relationship.

3.6 Research Framework and Definition of Variables

The research framework for studying the determinants of insurance penetration encompasses several independent variables that may influence the level of insurance activity within an economy. These variables include the inflation rate, foreign direct investment (FDI) inflow, education level, dependency ratio and income level. The dependent variable in this framework is insurance penetration, typically measured as the ratio of insurance premiums to GDP, serving as a key indicator of insurance activity and market development within a country's economy. The framework of the study is presented in Figure 1.



Source: Das and Shome, (2016); Jnawali and Jaisawal, (2019); Olarewaju and Msomi (2021)

Figure 1 *Research Framework*

3.6.1 Insurance Penetration

An important indicator of the growth and depth of the insurance industry within an economy is the percentage of the population that has insurance coverage. The ratio of total insurance premiums to a nation's gross domestic product (GDP) is the standard and most used method of measurement for this. This indicator reflects the extent to which corporations and individuals utilize insurance products to reduce risks and protect themselves from financial losses. Outreville (2013) posits that a more mature insurance market, characterized by widespread acceptance and use as a financial safety net, implies higher insurance penetration. ponent in the process of economic growth and stability because of its effectiveness in enhancing financial resilience and risk management within a society.

3.6.2 Inflation Rate

The inflation rate is the percentage increase in the overall price level of goods and services in an economy over a predetermined time period, which is often one year. Because it reflects money's buying power, it is an important indicator of the macroeconomic situation. According to Fischer and Modigliani (1978), high inflation may have a negative impact on the insurance market by raising the costs of claims and decreasing the actual value of premiums collected. This can also cause the value of money to decrease, leading to a reduction in savings and an increase in economic uncertainty. On the other hand, moderate inflation may cause economic activity to

increase, which might lead to an increase in the demand for insurance products. This is because people and businesses want to protect their assets from the effects of inflationary pressures.

3.6.3 Foreign Direct Investment

Foreign direct investment (FDI) refers to investments made by a company or a person in one nation into commercial interests situated in another country. These investments might be made overseas. According to Borensztein et al. (1998), foreign direct investment (FDI) is a crucial engine of economic growth and development because it provides the host nation with money, the transfer of technology, and skilled management knowledge. It has the potential to affect insurance penetration by promoting economic development and stability, which in turn increases people's and enterprises' financial capability to acquire insurance. Furthermore, the presence of foreign companies often leads to the introduction of improved risk management methods.

3.6.4 Education Level

The education level of a population is a demographic indicator that indicates the greatest level of education that people within that group have achieved. According to Beck and Webb (2003), those with higher levels of education have stronger financial literacy, a better grasp of risk management, and a greater awareness of the advantages of insurance. Individuals with greater levels of education are more likely to recognize the significance of adequately preserving their assets and earnings via the purchase of insurance, which results in higher insurance penetration rates. Education also contributes to the development of qualified individuals in the insurance industry, which in turn leads to an increase in general efficiency and innovation within the company.

3.6.5 Dependency Ratio

The dependency ratio refers to the ratio of the non-working population, which typically includes individuals under 15 and those beyond 64, to the working population. A high dependence ratio suggests that the working population is under a greater strain to provide for the members of society who are not doing any kind of employment. According to Cutler et al. (1990), this may have an effect on insurance penetration by influencing the amount of discretionary money and the priority placed on finances. High dependence ratios may reduce the financial ability of families to pay insurance

premiums, thereby reducing the number of people purchasing insurance. On the other hand, reduced reliance ratios may free up more resources for investment in insurance products, which can contribute to better penetration rates.

3.6.6 Income Level

The income level of the population is a critical independent variable that significantly influences insurance market penetration. Higher income levels typically correlate with increased disposable income, allowing individuals to allocate funds for insurance products, thereby driving market penetration. Previous research suggests that as income levels rise, there is a greater demand for financial security, leading to higher adoption rates of insurance (Beck & Webb, 2003). In Nepal, the income level can be seen as a determinant of the ability and willingness of individuals and businesses to purchase insurance, impacting overall economic growth through enhanced financial stability and risk management (Paudel, 2020). The relationship between income level and insurance penetration is thus essential for understanding the broader economic implications in a developing economy like Nepal.

CHAPTER IV
RESULTS AND DISCUSSION

In the chapter Results and Discussion, the empirical data are examined and analyze their significance for comprehending the dynamics of insurance penetration in Nepal. This chapter presents an analysis of the quantitative data gathered over a span of 20 years. It examines the connections between insurance penetration and important economic and demographic factors, such as inflation rate, inflow of foreign direct investment, level of education, dependency ratio, and per capita income. The study utilizes statistical techniques such as descriptive statistics, correlation analysis, and regression modeling to determine the elements that have a substantial influence on the insurance industry. The discussion in this study examines the findings in relation to previous research and theoretical frameworks. It emphasizes both the anticipated and unexpected consequences, offering a detailed explanation of how these factors interact within Nepal's distinct economic setting.

4.1 Results

The findings portion of this study examine the patterns and connections between important factors during the last two decades with a specific emphasis on their influence on the level of insurance penetration in Nepal. The investigation begins by scrutinizing the trends of the study variables emphasizing noteworthy alterations and patterns noticed during the duration. Subsequently, a descriptive analysis is conducted, presenting summary statistics that give a concise overview of the key patterns and variability present in the data. Afterwards, a correlation analysis is performed to investigate the intensity and direction of the connections between the dependent variable insurance penetration and the other factors. A regression analysis is conducted to measure the impact of these independent variables on insurance penetration, providing a more comprehensive comprehension of the fundamental issues that influence the insurance market.

4.1.1 Insurance Penetration

Insurance penetration denote to the total premiums collected as a proportion of a country's gross domestic product. This important indicator allows us to track the growth of the insurance industry and its integration into the overall economy. Within the scope of this investigation, the dependent variable is insurance penetration, indicating the

extent to which individuals and companies utilize insurance goods and services. This metric can assist in evaluating the effectiveness of the insurance industry in providing solutions for risk management and financial protection. Table 3 shows the trend of insurance penetration during the twenty years of the study period.

Table 3

Insurance Penetration

FY	IP
2003/04	0.403991
2004/05	0.481123
2005/06	0.544551
2006/07	0.608759
2007/08	0.675255
2008/09	0.766953
2009/10	1.01014
2010/11	1.133
2011/12	1.348864
2012/13	1.43705
2013/14	1.698973
2014/15	2.004449
2015/16	2.511196
2016/17	2.698278
2017/18	3.550156
2018/19	4.076474
2019/20	5.296065
2020/21	6.374473
2021/22	7.030206
2022/23	4.642367
Mean ($\bar{X}$)	2.41462
S.D. (σ)	2.01317
C.V.	83.37%

Source: Appendix I and II

Table 3 shows the trend in insurance penetration in Nepal shows a clear upward trajectory indicating significant growth in the insurance market. Starting at 0.403991%

in FY 2003/04 insurance penetration gradually increased to 0.766953% by FY 2008/09, reflecting steady growth in the early years. This was followed by a period of accelerated expansion, with penetration rates rising sharply from 1.01014% in FY 2009/10 to 3.550156% in FY 2017/18. This rapid increase suggests enhanced adoption of insurance products, likely driven by economic growth, regulatory reforms, and a broader range of insurance offerings. The trend continued to rise, reaching a peak of 7.030206% in FY 2021/22. However, FY 2022/23 saw a decline to 4.642367%, which could be attributed to market saturation, economic challenges, or shifts in consumer behavior and policy changes. On average, insurance penetration over this period was 2.41462%, with a standard deviation of 2.01317% indicating moderate variability. The coefficient of variation (C.V.) of 0.83374 underscores this moderate fluctuation highlighting the overall growth trend despite some recent declines. This pattern suggests a need to address potential challenges to sustain and enhance the growth of insurance penetration in Nepal.

4.1.2 Inflation Rate

The rate of inflation is a critical economic indicator that measures how the overall level of prices for goods and services is increasing over time, leading to a decrease in consumers' purchasing power. Inflation can have widespread implications for the economy, affecting everything from consumer behavior to business investment decisions. High inflation typically erodes the real value of money, making it more expensive for consumers to purchase goods and services, while low inflation may signal weak economic activity. This research considers the rate of inflation to be an independent variable in order to investigate the possible impact that it may have on the percentage of people who have insurance. It is possible to have a better understanding of the economic issues that consumers are facing by gaining an understanding of how inflation influences the financial choices that people make, including the purchase of insurance. Understanding this relationship helps in assessing how changing inflation rates might affect financial priorities, including the decision to invest in insurance products. Table 4 shows the trend of inflation rate during the twenty years of the study period and this table provides a detailed view of how inflation has fluctuated highlighting periods of high and low inflation.

Table 4

Inflation Rate

FY	IR
2003/04	3.963056
2004/05	4.538847
2005/06	7.962505
2006/07	5.9
2007/08	6.704438
2008/09	12.63064
2009/10	9.6
2010/11	9.643049
2011/12	8.304271
2012/13	9.9
2013/14	9.1
2014/15	7.21
2015/16	9.92
2016/17	4.47
2017/18	4.15
2018/19	4.64
2019/20	6.15
2020/21	3.6
2021/22	6.32
2022/23	7.74
Mean ($\bar{X}$)	7.12234
S.D. (σ)	2.44061
C.V.	34.27%

Source: Appendix I and III

Table 4 the inflation rate in Nepal from fiscal year 2003/04 to 2022/23 exhibits significant fluctuations reflecting varying economic conditions over the years. Initially, the inflation rate started at 3.963056% in FY 2003/04 and rose to 7.962505% by FY 2005/06. A notable spike occurred in FY 2008/09, where the rate surged to 12.63064%, indicating a period of economic stress possibly linked to global and domestic challenges. The following years, from FY 2009/10 to FY 2015/16, saw sustained high

inflation, with rates hovering around 9-10%, peaking at 9.92% in FY 2015/16. This period suggests persistent economic pressures. However, from FY 2016/17 onward, inflation moderated, dropping to 4.47% and stabilizing around 4-6% until FY 2020/21, indicating a phase of relative economic stability. In the most recent years, FY 2021/22 and FY 2022/23, the inflation rate saw a slight increase, reaching 7.74%, possibly due to global economic factors or rising domestic costs. The average inflation rate over this period is 7.12234%, with a standard deviation of 2.44061%, showing considerable variability. The coefficient of variation of 34.27% indicates that while inflation fluctuated, it did so within a moderate range. The inflation trend in Nepal highlights periods of both volatility and stability, shaped by various economic influences over the years.

4.1.3 Foreign Direct Investment Inflow

FDI Inflow refers to the total investment made by foreign entities in a country's economy, typically in the form of establishing businesses, acquiring assets, or entering joint ventures. It plays a crucial role in enhancing economic growth, technological advancements, and market efficiency. Foreign direct investment (FDI) is an indispensable source of foreign capital and a primary driver of economic expansion. By providing necessary funds and resources, FDI contributes to the growth of infrastructure, the introduction of new technologies, and increased market competition. This research investigates foreign direct investment (FDI) as an independent variable to assess its impact on the insurance industry. The rationale behind this investigation is that foreign investment can significantly influence various aspects of the economy, which in turn may affect insurance penetration. An increase in foreign investment may result in the development of new technologies, improvements in infrastructure, and increased levels of competitiveness, all of which may have an effect on insurance penetration. Table 5 shows the trend of foreign direct investment inflow during the twenty years of the study period. This table provides a comprehensive view of how foreign investment has varied over time, highlighting periods of significant inflows and those with lower investment levels.

Table 5

Foreign Direct Investment Inflow

FY	FDI
2003/04	0.010298
2004/05	0.011185
2005/06	-0.03737
2006/07	0.027876
2007/08	0.021312
2008/09	0.126891
2009/10	0.188752
2010/11	0.41284
2011/12	0.56343
2012/13	0.537527
2013/14	0.178356
2014/15	0.235325
2015/16	0.316554
2016/17	0.662496
2017/18	0.797946
2018/19	0.558403
2019/20	0.852721
2020/21	0.814789
2021/22	0.733829
2022/23	0.231394
Mean ($\bar{X}$)	0.36223
S.D. (σ)	0.29708
C.V.	82.01%

Source: Appendix I and IV

Table 5 shows the trend in foreign direct investment (FDI) inflow in Nepal from fiscal year 2003/04 to 2022/23 shows notable variation reflecting shifts in the country's attractiveness to foreign investors. The FDI inflow began at 0.010298 in FY 2003/04 but experienced a significant drop to -0.03737 in FY 2005/06 indicating a period of negative investment inflows. After this dip, FDI inflows gradually increased, peaking at 0.797946 in FY 2017/18. This peak suggests a period of strong foreign interest in

Nepal's economy. However, FDI inflows have fluctuated significantly, with recent years showing a decrease to 0.231394 in FY 2022/23, indicating a potential decline in investor confidence or changing economic conditions. The average FDI inflow over this period is 0.36223, with a standard deviation of 0.29708, indicating considerable variability. The coefficient of variation of 82.01% highlights the high level of dispersion in FDI inflows reflecting the inconsistent nature of foreign investment in Nepal. As a factor influencing insurance penetration, FDI can have a substantial impact on the GDP and the broader economy. Increased FDI typically signifies greater foreign confidence in a country's economic prospects, leading to more capital available for investment in various sectors, including insurance.

4.1.4 Education Level

The population's education level refers to the highest level of formal education attained by individuals within a specific group. This factor is crucial because it significantly influences financial literacy and awareness, which in turn affects various economic behaviors, including the decision to purchase insurance. Higher education levels often correlate with improved understanding of financial concepts and risk management, leading to more informed decisions regarding financial products such as insurance. In this research, education level is analyzed as an independent variable to evaluate its impact on insurance penetration. Improved educational attainment is expected to enhance financial literacy thereby fostering a greater propensity for individuals to engage in insurance practices. The rationale for this investigation is that individuals with higher levels of education are generally more knowledgeable about financial planning and risk management strategies. They are more likely to recognize the value of insurance as a tool for mitigating financial risks and securing their financial future. Consequently, higher educational attainment can lead to increased insurance uptake and better overall insurance coverage. Table 6 shows the trend of education level during the twenty years of the study period. This table provides an overview of how the average level of education has evolved showing periods of significant changes and trends in educational attainment within the population. By analyzing these trends, the research aims to understand how shifts in education levels influence attitudes toward insurance.

Table 6

Education Level

FY	EL
2003/04	43.21454
2004/05	45.21885
2005/06	42.84846
2006/07	42.56725
2007/08	48.64606
2008/09	49.93654
2009/10	56.34319
2010/11	59.7314
2011/12	64.07684
2012/13	66.36922
2013/14	68.13395
2014/15	68.92825
2015/16	71.8179
2016/17	76.096
2017/18	77.21458
2018/19	79.31682
2019/20	84.5885
2020/21	83.516
2021/22	83.923
2022/23	89.551
Mean ($\bar{X}$)	65.1019
S.D. (σ)	15.3229
C.V.	23.54%

Source: Appendix I and V

Table 6 shows the trend in the education level measured by secondary education admissions in Nepal from fiscal year 2003/04 to 2022/23 shows a consistent upward trajectory, reflecting significant improvements in educational attainment over the years. Starting at 43.21454% in FY 2003/04, the education level steadily increased, reaching 89.551% by FY 2022/23. This substantial rise indicates a growing emphasis on education and increased access to secondary education. The average education level

over this period is 65.1019%, with a standard deviation of 15.3229%, suggesting moderate variability in educational progress. The coefficient of variation of 23.54% highlights a relatively stable trend with some fluctuations. As a factor influencing insurance penetration, the rise in education levels has a notable impact on GDP. Higher levels of education typically lead to a more informed and financially literate population, which can enhance the demand for insurance products. Improved education increases individuals' understanding of the benefits and necessity of insurance, potentially leading to higher insurance penetration rates. the expansion of secondary education not only improves individual financial planning but also supports broader economic stability and growth. By fostering a more educated population, the demand for insurance products is likely to rise, contributing positively to the overall insurance penetration rate and economic development.

4.1.5 Dependency Ratio

A population's dependence ratio is a measurement of the percentage of dependents, which includes both young and old people, in comparison to the number of working-age individuals. This ratio provides insight into the economic burden placed on the working-age individuals who are responsible for supporting these dependents. A higher dependency ratio indicates a greater proportion of non-working individuals, which can affect household financial priorities and resource allocation. This investigation regards the dependence ratio as an independent variable to explore its potential impact on insurance penetration. When the dependence ratio is higher, it may have an effect on households' priorities regarding their finances and the resources they allocate to insurance. This financial strain can influence how households prioritize their spending, potentially affecting their willingness or ability to invest in insurance products. Higher dependency ratios might lead to a greater focus on immediate household needs rather than long-term financial products like insurance. Table 4.5 shows the trend of dependency ratio during the twenty years of the study period. This table provides a detailed view of how the dependency ratio has evolved, highlighting fluctuations and trends in the proportion of dependents compared to the working-age population. A rising dependency ratio may indicate increased economic pressure on working-age individuals, which could affect their insurance purchasing decisions.

Table 7

Dependency Ratio

FY	DR
2003/04	76.56
2004/05	75.58
2005/06	74.54
2006/07	73.42
2007/08	72.12
2008/09	70.68
2009/10	69.17
2010/11	67.77
2011/12	66.67
2012/13	65.75
2013/14	64.79
2014/15	63.63
2015/16	62.24
2016/17	60.8
2017/18	59.44
2018/19	58.18
2019/20	56.63
2020/21	54.9
2021/22	53.78
2022/23	53.17
Mean ($\bar{X}$)	64.991
S.D. (σ)	7.28476
C.V.	11.21%

Source: Appendix I and VI

Table 7 the dependency ratio in Nepal from fiscal year 2003/04 to 2022/23 reveals a consistent downward trend, indicating a gradual decrease in the proportion of dependents relative to the working-age population. Starting at 76.56 in FY 2003/04, the dependency ratio steadily declined to 53.17 by FY 2022/23. This decline reflects improvements in demographic structures, such as a growing working-age population relative to dependents. The average dependency ratio over this period is 64.991, with a

standard deviation of 7.28476, suggesting moderate variability in the ratio. The coefficient of variation of 11.21% highlights a relatively stable yet declining trend. As a factor influencing insurance penetration, the decreasing dependency ratio has significant implications for GDP. A lower dependency ratio generally indicates a higher proportion of the population is in the workforce, which can boost economic productivity and increase disposable income. With more individuals in the working-age group, there is likely to be greater financial stability and capacity to invest in insurance products. This increased insurance penetration can further support economic growth by enhancing financial security, reducing economic vulnerabilities, and fostering a more robust financial sector.

4.1.6 Income Level (Per Capita Income)

Individuals or families within a population determine its income level by earning an average amount of money. This key economic indicator, a measure of income, determines both the buying power and financial capacity of consumers. Per capita income represents the average income earned per person in a given area, serving as a proxy for economic prosperity and the standard of living. Per capita income, a key economic indicator, measures the average income earned per person in a given area and serves as a proxy for economic prosperity and the standard of living. This metric is essential for understanding the overall economic health of a region and its impact on consumer behaviors, including financial decisions such as purchasing insurance. In this study, per capita income is examined as an independent variable to assess its relationship with insurance penetration. By examining how income levels influence the adoption of insurance, the research aims to determine whether higher income levels are associated with increased insurance uptake. Higher per capita income typically indicates greater financial resources and a higher standard of living, which can enhance individuals' ability to afford and prioritize insurance coverage. As income levels rise, people are more likely to engage in various financial planning activities, including securing insurance to manage risks and protect their assets. The analysis aims to determine whether higher income levels are associated with increased insurance adoption, reflecting greater financial capacity to purchase insurance coverage. Table 8 shows the trend of natural log of per capita income during the twenty years of the study period.

Table 8

Income Level

FY	IL
2003/04	5.633804
2004/05	5.734345
2005/06	5.831965
2006/07	5.957208
2007/08	6.145672
2008/09	6.164653
2009/10	6.378707
2010/11	6.673583
2011/12	6.6772
2012/13	6.696274
2013/14	6.718705
2014/15	6.782541
2015/16	6.780177
2016/17	6.935337
2017/18	7.057497
2018/19	7.078074
2019/20	7.038073
2020/21	7.114277
2021/22	7.206494
2022/23	7.188437
Mean ($\bar{X}$)	6.58965
S.D. (σ)	0.4975
C.V.	7.55%

Source: Appendix I and VII

Table 8 shows the trend in per capita income in Nepal from fiscal year 2003/04 to 2022/23 shows a steady and gradual increase, reflecting continuous economic improvement. Starting at 5.633804 in FY 2003/04, per capita income rose to 7.188437 by FY 2022/23. This consistent rise indicates a positive shift in the average income of individuals over the period. The mean per capita income is 6.58965, with a standard deviation of 0.4975, suggesting low variability and stable growth. The coefficient of

variation of 7.55% underscores this steady upward trend. In terms of insurance penetration, higher per capita income typically translates to increased financial resources and improved economic stability for individuals. As per capita income rises, people generally have more disposable income to allocate towards various financial products, including insurance. This increased capacity for insurance expenditure leads to higher insurance penetration rates. In turn, greater insurance coverage enhances financial security and stability, contributing to a more resilient economy.

4.1.7 Descriptive Analysis

Descriptive analysis is the process of summarizing and presenting data to create an overview of the primary features of the variables under investigation. This section will describe the dataset's fundamental characteristics, including central tendency and variability numbers. Through the provision of a statistical description of the independent and dependent variables, the descriptive analysis lays the groundwork for subsequent investigation into the connections between these variables.

Table 9

Summary of Descriptive Analysis

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Insurance Penetration	20	.40	7.03	2.41	2.07
Inflation Rate	20	3.60	12.63	7.12	2.50
Foreign Direct Investment Inflow	20	-.04	.85	.36	.305
Education Level	20	42.57	89.55	65.10	15.72
Dependency Ratio	20	53.17	76.56	64.99	7.47
Income Level	20	5.63	7.21	6.59	.510

Source: Appendix i and SPSS Output

Table 9 shows the summary of descriptive statistics of study variables through the twenty years of the study period. The descriptive statistics for insurance penetration show that the value ranged from a minimum of 0.40% to a maximum of 7.03% over the 20-year study period. The mean insurance penetration was 2.41%, with a standard deviation of 2.07. This indicates a substantial variation in the degree of insurance uptake relative to GDP. The relatively high standard deviation suggests that the insurance sector experienced significant fluctuations, possibly due to varying economic conditions, regulatory changes, or shifts in consumer behavior. The maximum value of

7.03% suggests a period of heightened insurance activity, possibly driven by increased awareness and demand for insurance products.

The inflation rate varied considerably during the study period, with a minimum of 3.60% and a maximum of 12.63%. The average inflation rate was 7.12%, with a standard deviation of 2.50. The high variability, as indicated by the standard deviation, reflects the economic volatility experienced during the period. Periods of high inflation could have eroded purchasing power, making it challenging for consumers to afford insurance premiums. Conversely, lower inflation periods could have improved affordability, thereby encouraging more people to purchase insurance. The mean inflation rate of 7.12% indicates a relatively high level of price instability, which could have broader implications for economic stability and consumer confidence.

Foreign direct investment (FDI) inflow displayed notable variability, with a range from -0.04% to 0.85%. The negative minimum value indicates a net outflow of investments during some years, while the maximum of 0.85% reflects a peak in foreign investment. The mean FDI inflow was 0.36%, with a standard deviation of 0.305, indicating moderate fluctuations over the years. The relatively low mean suggests that while there were periods of significant investment, FDI inflow was generally modest. This could be due to various factors, including political stability, economic policies, and global market conditions. The fluctuations in FDI inflow highlight the challenges and opportunities in attracting foreign capital, which can significantly impact economic growth and development.

The education level of the population, measured as the percentage of individuals with a secondary level of education, ranged from a minimum of 42.57% to a maximum of 89.55%. The mean education level was 65.10%, with a standard deviation of 15.72. This considerable range and relatively high standard deviation indicate a significant improvement in educational attainment over the years. The upward trend in education levels suggests a growing emphasis on education and its increasing accessibility. Higher education levels are often associated with better financial literacy, which can lead to more informed decisions regarding financial products, including insurance. The high mean education level reflects a generally well-educated population, which could positively influence the uptake of insurance products.

The dependency ratio representing the proportion of dependents to the working-age population varied between 53.17% and 76.56%. The mean dependency ratio was 64.99%, with a standard deviation of 7.47. The relatively wide range indicates changes in the demographic structure, with periods of higher and lower economic dependency. A higher dependency ratio implies a greater economic burden on the working-age population, potentially limiting disposable income and the ability to purchase insurance. Conversely, a lower dependency ratio can indicate a more economically productive population, with more resources available for discretionary spending, including insurance. The mean dependency ratio of 64.99% suggests a moderate level of economic dependency, which could influence overall economic stability and consumer spending behavior.

Income level i.e. per capita income reflecting the average income per person, ranged from a minimum of 5.63 to a maximum of 7.21 over the study period. The mean per capita income was 6.59, with a relatively low standard deviation of 0.510. This indicates that income levels were relatively stable, with gradual growth observed over the years. The steady increase in per capita income suggests an overall improvement in economic conditions, contributing to better living standards. Higher income levels generally correlate with greater financial capacity, allowing individuals to invest in financial products such as insurance. The consistent growth in per capita income reflects a positive economic trajectory, enhancing the population's ability to afford insurance and other financial services.

4.1.8 Correlation Analysis

The purpose of correlation analysis is to examine the strength and direction of the associations between variables. The purpose of this study is to use correlation analysis to find possible relationships between the independent factors (inflation rate, foreign direct investment, education level, dependency ratio, and income level) and the dependent variable (insurance penetration). Understanding these linkages is helpful in determining whether changes in the independent variables are associated with changes in insurance penetration.

Table 10

Relationship Analysis

		IP	IR	FDI	EL	DR	IL
IP	Pearson Correlation	1	-.362	.771**	.884**	-.924**	.821**
	Sig. (2-tailed)		.117	.000	.000	.000	.000
IR	Pearson Correlation		1	-.288	-.186	.184	-.075
	Sig. (2-tailed)			.219	.432	.438	.753
FDI	Pearson Correlation			1	.805**	-.792**	.824**
	Sig. (2-tailed)				.000	.000	.000
EL	Pearson Correlation				1	-.988**	.969**
	Sig. (2-tailed)					.000	.000
DR	Pearson Correlation					1	-.964**
	Sig. (2-tailed)						.000
IL	Pearson Correlation						1
	Sig. (2-tailed)						

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

Table 10 the correlation matrix presents the Pearson correlation coefficients between insurance penetration (IP) and the independent variables inflation rate (IR), foreign direct investment inflow (FDI), education level (EL), dependency ratio (DR), and per capita income (IL). The values indicate the strength and direction of the linear relationships between these variables and IP.

The correlation coefficient between insurance penetration and the inflation rate is -0.362, indicating a weak to moderate negative relationship. Although not statistically significant at the 0.05 level ($p = 0.117$), this negative correlation suggests that, generally, as inflation increases, insurance penetration tends to decrease. Higher inflation may reduce disposable income, making it harder for individuals and businesses to afford insurance premiums, potentially leading to lower insurance penetration.

The correlation coefficient between insurance penetration and FDI inflow is 0.771, which is statistically significant at the 0.01 level ($p = 0.000$). This strong positive correlation indicates that higher levels of foreign direct investment are associated with

higher insurance penetration. FDI inflow may contribute to economic growth, enhancing the overall financial infrastructure, including the insurance sector. This relationship suggests that as foreign investment increases, so does the availability and uptake of insurance products.

The correlation coefficient between insurance penetration and the education level is 0.884, also statistically significant at the 0.01 level ($p = 0.000$). This very strong positive relationship indicates that higher education levels are closely associated with greater insurance penetration. As the population becomes more educated, their financial literacy improves, leading to a better understanding and appreciation of the importance of insurance, thus increasing the demand for insurance products.

The correlation coefficient between insurance penetration and the dependency ratio is -0.924, statistically significant at the 0.01 level ($p = 0.000$). This very strong negative correlation suggests that as the dependency ratio decreases (fewer dependents relative to the working-age population), insurance penetration increases. A lower dependency ratio implies a more economically productive population, with more financial resources available to invest in insurance, leading to higher penetration rates.

The correlation coefficient between insurance penetration and income level i.e., per capita income is 0.821, statistically significant at the 0.01 level ($p = 0.000$). This strong positive correlation indicates that higher per capita income is associated with higher insurance penetration. As income levels rise, individuals and businesses have more disposable income to allocate towards insurance, thereby increasing the demand for and uptake of insurance products.

The correlation analysis suggests that insurance penetration is positively associated with FDI inflow, education level, and per capita income, while it is negatively associated with the dependency ratio and inflation rate. These findings underscore the importance of economic and educational development in fostering a robust insurance market.

4.1.9 Regression Analysis

Regression analysis and its purpose is to represent the connection that exists between a dependent variable and one or more independent variables. This study makes use of regression analysis in order to quantify the influence that the independent variables have on the level of insurance penetration. The study sheds light on the relative

relevance of each element and its contribution to explaining differences in insurance penetration. These insights are provided by calculating the coefficients of the regression model. Table 11, Table 12 and Table 13 shows the regression results of the study variables.

Table 11

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.985[a]	.971	.960	.41240	1.913

a. Predictors: (Constant), IL, IR, FDI, DR, EL

b. Dependent Variable: IP

Table 11 the regression model summary provides information into the overall fit and explanatory power of the model, which examines the relationship between the independent variables (per capita income (IL), inflation rate (IR), foreign direct investment inflow (FDI), dependency ratio (DR), and education level (EL)) and the dependent variable, insurance penetration (IP). The model exhibits a high coefficient of determination (R^2) of 0.971, indicating that approximately 97.1% of the variance in insurance penetration can be explained by the independent variables included in the model. The adjusted R^2 value of 0.960, which accounts for the number of predictors, suggests a robust model fit and minimal overfitting. The Durbin-Watson statistic of 1.913, close to the value of 2, indicates that there is no significant autocorrelation in the residuals, suggesting that the model's assumptions are not violated.

Table 12

Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	78.676	5	15.735	92.522	.000[b]
	Residual	2.381	14	.170		
	Total	81.057	19			

a. Dependent Variable: IP

b. Predictors: (Constant), IL, IR, FDI, DR, EL

Table 12 the ANOVA table presents a detailed breakdown of the sources of variance in the regression model which investigates the impact of independent variables per capita income (IL), inflation rate (IR), foreign direct investment inflow (FDI), dependency ratio (DR) and education level (EL) on the dependent variable, insurance penetration (IP). The F-statistic of 92.522, along with the associated significance value (p = 0.000), indicates that the model is highly significant. This means there is a very low probability that the observed relationship between the dependent and independent variables occurred by chance. The high F-value further confirms that the independent variables collectively have a significant impact on insurance penetration, supporting the robustness and reliability of the model.

Table 13

Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	79.753	10.102		7.895	.000
	IR	-.045	.048	-.055	-.948	.359
	FDI	1.997	.612	.295	3.263	.006
	EL	-.109	.043	-.827	-2.524	.024
	DR	-.679	.084	-2.457	-8.064	.000
	IL	-4.026	.965	-.995	-4.171	.001

a. Dependent Variable: IP

Table 13 shows the regression coefficients of study variables where insurance penetration is dependent variable and per capita income (IL), inflation rate (IR), foreign direct investment inflow (FDI), dependency ratio (DR) and education level (EL) are independent variables. The constant term in the regression model has an unstandardized coefficient of 79.753, which represents the estimated insurance penetration when all independent variables are held at zero. This value indicates a baseline level of insurance penetration independent of the effects of the other variables. The coefficient is statistically significant (p = 0.000), suggesting that there is a significant base level of insurance penetration that is not explained by the included independent variables.

The unstandardized coefficient for the inflation rate (IR) is -0.045, suggesting that a 1% increase in the inflation rate is associated with a 0.045% decrease in insurance penetration. However, this relationship is not statistically significant (p = 0.359), indicating that changes in the inflation rate do not have a meaningful impact on insurance penetration within the context of this model. The negative sign suggests a potential inverse relationship, but the lack of significance means this effect is not reliable. So, the first hypothesis of the study i.e., H_1: Inflation rate does not determine the insurance penetration in Nepal is accepted.

The coefficient for foreign direct investment inflow (FDI) is 1.997, with a p-value of 0.006, indicating a statistically significant and positive relationship with insurance penetration. This means that a 1% increase in FDI inflow is associated with a 1.997% increase in insurance penetration. This finding suggests that higher levels of foreign investment can enhance the insurance sector's growth, likely due to increased economic activity and the development of financial infrastructure that accompanies FDI inflows. So, the second hypothesis of the study i.e., H_2: Foreign direct investment inflow does not determine the insurance penetration in Nepal is rejected.

The education level (EL) has an unstandardized coefficient of -0.109, which is statistically significant (p = 0.024). This negative coefficient indicates that higher levels of education are associated with a slight decrease in insurance penetration. The finding suggests that as the population becomes more educated, there might be an expectation of more advanced or different types of financial products, potentially leading to a lower reliance on traditional insurance products. This inverse relationship, while modest, highlights a nuanced interaction between education and insurance behavior. So, the third hypothesis of the study i.e., H_3: Education level does not determine the insurance penetration in Nepal is rejected.

The dependency ratio (DR) shows a strong negative effect on insurance penetration, with a coefficient of -0.679 and a highly significant p-value of 0.000. This indicates that a 1% increase in the dependency ratio is associated with a 0.679% decrease in insurance penetration. The strong inverse relationship suggests that as the proportion of dependents (non-working age population) increases, the financial capacity to purchase insurance decreases, leading to lower penetration rates. This effect is likely due to the increased economic burden on the working-age population. So, the fourth hypothesis

of the study i.e., H_4: Dependency ratio does not determine the insurance penetration in Nepal is rejected.

Income level i.e., per capita income (IL) has a substantial negative coefficient of -4.026, with a p-value of 0.001, indicating a statistically significant relationship with insurance penetration. This suggests that higher per capita income is associated with a decrease in insurance penetration by 4.026% for each unit increase in income. The negative association could imply that as income levels rise, individuals may seek alternative investment and savings vehicles outside of traditional insurance, or it could reflect a saturation point where additional income does not correspond to increased insurance uptake. This counterintuitive finding warrants further exploration to understand the underlying factors driving this relationship. So, the final hypothesis of the study i.e., H_5: Income does not determine the insurance penetration in Nepal is rejected.

The significance levels for FDI, EL, DR, and IL indicate that these variables have a statistically significant impact on insurance penetration, with DR and IL having the most substantial effects, as reflected by their high absolute standardized coefficients (Beta).

4.2 Discussions

The findings of the present study reveal several important insights into the determinants of insurance penetration in Nepal. Notably, foreign direct investment (FDI) inflow stands out as a significant positive driver, indicating that economic growth and the influx of external capital are crucial in enhancing the insurance sector. This suggests that as more foreign investment enters the country, it bolsters market confidence and stability, encouraging greater participation in the insurance market. On the other hand, the study found that the dependency ratio and per capita income have a negative impact on insurance penetration. A higher dependency ratio, which indicates a larger proportion of dependents in the population, seems to reduce the demand for insurance, possibly due to the increased economic burden on working individuals. Similarly, rising per capita income was associated with a decrease in insurance penetration, suggesting that as income levels grow, individuals might shift their financial priorities away from traditional insurance products, perhaps favoring alternative financial instruments or investments. The study also found a weak relationship between the inflation rate and insurance penetration, indicating that inflation does not play a significant role in driving

insurance demand in Nepal. Interestingly, education level showed a negative correlation with insurance penetration, suggesting that as people become more educated, they may opt for more sophisticated financial planning options, potentially at the expense of conventional insurance products.

When comparing these findings with previous research, several similarities emerge that reinforce the validity of the study's conclusions. The positive impact of FDI inflow on insurance penetration in Nepal is consistent with the findings of Agrawal (2023), who demonstrated that FDI inflow positively influences insurance demand in India, emphasizing the role of foreign capital in fostering financial development and increasing insurance penetration. Similarly, Bah and Abila (2022) highlighted the importance of institutional quality, often linked to FDI inflow, in enhancing insurance penetration in African countries. These studies support the idea that external investment and the accompanying institutional improvements can significantly boost the insurance market in developing economies. Furthermore, the study's finding of a negative relationship between the dependency ratio and insurance penetration aligns with the results reported by Arachchi and Buddhika (2023) in Sri Lanka. They also found that a higher dependency ratio negatively impacts life insurance penetration, suggesting that economic burdens associated with dependents can suppress insurance demand in regions with similar socio-economic conditions.

However, there are also notable dissimilarities between the present study's findings and those of previous research, which underscore the complexity and context-specific nature of insurance penetration. For instance, the negative relationship between per capita income and insurance penetration observed in Nepal contrasts with Agrawal's (2023) findings in India, where higher income levels were found to increase demand for insurance products, indicating a positive income elasticity of demand. This difference suggests that in Nepal, as incomes rise, individuals may prefer other forms of financial investments or savings over traditional insurance, reflecting different consumer preferences or financial product availability. Additionally, the weak impact of inflation on insurance penetration in Nepal diverges from the strong positive relationship found by Isedomi and Michael (2024) in African countries, where higher inflation rates led to increased insurance uptake as a hedge against economic instability. This contrast highlights the varying roles that inflation can play in different economic contexts, possibly due to differences in inflation volatility and consumer financial

behavior. Finally, the unexpected negative correlation between education level and insurance penetration in Nepal is in stark contrast to the positive associations reported by Sihem (2024) in European countries and Bah and Abila (2022) in Africa, where higher education levels were linked to greater financial literacy and higher insurance demand. This divergence suggests that in Nepal, higher education might lead to more critical evaluations of insurance products, with educated individuals possibly opting for more diversified financial portfolios or alternative financial planning tools, reflecting a unique interplay between education and financial decision-making in the Nepalese context.

CHAPTER V
SUMMARY AND CONCLUSION

5.1 Summary

The insurance industry in Nepal is vital for protecting individuals and businesses from unforeseen risks, yet its penetration is shaped by various economic and demographic factors. Nepal's diverse socio-economic landscape creates a complex environment for the sector, with factors like FDI inflows, education level, dependency ratio, and per capita income influencing the demand for insurance, reflecting both the economic conditions and cultural attitudes toward risk management.

Given the industry's developing nature, this research aimed to explore the key drivers of insurance penetration in Nepal. By examining the impacts of inflation, FDI, education, dependency ratio, and income, the study provided insights into the factors that either promote or hinder the growth of the insurance sector. It also identified areas where policy interventions and strategic efforts could effectively boost insurance coverage and accessibility across different population segments.

The research methodology of this study on insurance penetration in Nepal employs a descriptive and causal research design, focusing on analyzing trends and determinants over a twenty-year period. The entire insurance industry in Nepal constitutes the population, with no need for sampling as the study covers the whole sector. Secondary data, primarily quantitative, from government and industry sources are utilized to assess variables like inflation rate, FDI inflow, education level, dependency ratio, and income level. Data collection involves extracting relevant information, while analysis employs statistical techniques including descriptive, correlation, and regression analysis. The study's framework identifies these variables as potential influencers of insurance penetration, measured as the ratio of insurance premiums to GDP, with specific definitions and implications for each variable outlined in the research.

The study found that insurance penetration in Nepal varied significantly, with positive correlations to FDI inflow, education level, and per capita income, while negative correlations were observed with the dependency ratio and inflation rate. Regression analysis revealed that FDI inflow significantly boosted insurance penetration, whereas education level and per capita income surprisingly decreased it. The dependency ratio

also had a strong negative impact, highlighting the complex interactions among these factors in shaping insurance market penetration in Nepal.

This paper thoroughly examines the dynamics of insurance penetration in Nepal and the major factors that contribute to this penetration, providing significant insights. The findings of this study offer a framework for policymakers, industry stakeholders, and regulators to develop informed strategies with the goal of increasing the insurance market. The identification of important determinants that influence insurance adoption provides this foundation. The results offer a valuable resource for comprehending the sector's potential and constraints, thereby guiding efforts to enhance financial inclusion and security. Additionally, the research fills a gap in the existing academic literature on the topic of insurance penetration in developing markets, particularly in Nepal. The detailed analysis and insights that were extracted from the study may serve as a platform for subsequent research, which can assist in enhancing models and ways for improving insurance accessibility and relevance in socio-economic circumstances that are comparable to those studied.

5.2 Conclusion

A comprehensive analysis of the present condition of insurance penetration in Nepal has been carried out by this research which has shown a landscape that is characterized by volatility and is impacted by a variety of independent factors. Despite the fact that insurance penetration continues to be an essential component of the financial sector, the study revealed that its expansion is not uniform. According to the findings, the influx of foreign direct investment (FDI) has emerged as a significant positive driver. The results indicate that the expansion of the insurance market is highly influenced by both external capital and economic development. On the other hand, issues such as economic constraints associated with a greater dependence ratio may act as a barrier to this growth.

In the course of the investigation into the relationship between insurance penetration and important factors such as the rate of inflation, foreign direct investment (FDI) inflow, education level, dependency ratio, and income level the research discovered patterns that were both predictable and unexpected. It was shown that foreign direct investment (FDI) inflow had a favorable correlation with insurance penetration, but that it had a limited link with the inflation rate. It is important to note that education level

and per capita income revealed negative associations. This suggests that as people get more educated and wealthier, they may choose to purchase financial products that go beyond conventional insurance, which in turn affects the general uptake of insurance.

In addition to highlighting the significance of policies that encourage foreign investment, the impact study demonstrated that foreign direct investment (FDI) influx has a significant influence in increasing insurance penetration in Nepal. On the other hand, the negative effects of the dependence ratio and income level indicate that there may be difficulties in expanding the market, especially among populations who are under economic distress or those who have access to a wider variety of financial choices. The results of this study highlight the need of developing tailored policies that take into account the specific economic and demographic realities of Nepal in order to cultivate an insurance industry that is more inclusive and robust against change.

5.3 Implications

Based on the discussions, major findings and conclusion of the study, the following implications are made:

- The significant positive impact of foreign direct investment (FDI) inflow on insurance penetration suggests that policymakers should prioritize creating a favorable investment climate. By implementing policies that attract more FDI, the government can stimulate the growth of the insurance sector and, consequently, enhance financial security for the population.
- The negative relationship between education level and insurance penetration indicates a potential demand for more sophisticated or tailored financial products. Insurance companies should consider diversifying their offerings to include products that cater to a more educated and financially aware customer base, such as comprehensive coverage plans or investment-linked insurance products.
- The strong inverse relationship between the dependency ratio and insurance penetration highlights the need for targeted financial education and support programs. Such initiatives can help households with high economic burdens better understand and utilize insurance as a tool for financial protection.
- The findings suggest a need for increased awareness and education regarding the benefits of insurance, especially in light of the negative association with rising per capita income. Campaigns focused on the value of insurance, even for

those with higher incomes, can help dispel misconceptions and encourage broader adoption.

- Regulators should consider revising the existing legal and regulatory frameworks to facilitate easier access to insurance products. This could include simplifying the process for obtaining insurance and making it more transparent, which could help increase trust and participation in the insurance market.
- To mitigate the negative impact of economic burdens, the government could explore providing targeted subsidies or tax incentives for insurance premiums. This would make insurance more affordable for low-income households and encourage wider participation.
- Further studies should explore the nuanced effects of education and income levels on insurance penetration. Specifically, research could focus on understanding the preferences and perceptions of these demographic groups towards different types of financial products, including insurance.

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Appendices

Appendix I

Data for Study Variables

FY	IP	IR	FDI	EL	DR	IL
2003/04	0.403991	3.963056	0.010298	43.21454	76.56	5.633804
2004/05	0.481123	4.538847	0.011185	45.21885	75.58	5.734345
2005/06	0.544551	7.962505	-0.03737	42.84846	74.54	5.831965
2006/07	0.608759	5.9	0.027876	42.56725	73.42	5.957208
2007/08	0.675255	6.704438	0.021312	48.64606	72.12	6.145672
2008/09	0.766953	12.63064	0.126891	49.93654	70.68	6.164653
2009/10	1.01014	9.6	0.188752	56.34319	69.17	6.378707
2010/11	1.133	9.643049	0.41284	59.7314	67.77	6.673583
2011/12	1.348864	8.304271	0.56343	64.07684	66.67	6.6772
2012/13	1.43705	9.9	0.537527	66.36922	65.75	6.696274
2013/14	1.698973	9.1	0.178356	68.13395	64.79	6.718705
2014/15	2.004449	7.21	0.235325	68.92825	63.63	6.782541
2015/16	2.511196	9.92	0.316554	71.8179	62.24	6.780177
2016/17	2.698278	4.47	0.662496	76.096	60.8	6.935337
2017/18	3.550156	4.15	0.797946	77.21458	59.44	7.057497
2018/19	4.076474	4.64	0.558403	79.31682	58.18	7.078074
2019/20	5.296065	6.15	0.852721	84.5885	56.63	7.038073
2020/21	6.374473	3.6	0.814789	83.516	54.9	7.114277
2021/22	7.030206	6.32	0.733829	83.923	53.78	7.206494
2022/23	4.642367	7.74	0.231394	89.551	53.17	7.188437

Sources: NRB Reports, Economic Survey and World Bank Data

Appendix II

Calculation of Mean, S.D. and C.V for Insurance Penetration

FY	IP (X)	$(X-\bar{X})$	$(X-\bar{X})^2$
2003/04	0.403991	-2.01062515	4.04261349
2004/05	0.481123	-1.93349315	3.73839576
2005/06	0.544551	-1.87006515	3.49714367
2006/07	0.608759	-1.80585715	3.26112005
2007/08	0.675255	-1.73936115	3.02537721
2008/09	0.766953	-1.64766315	2.71479386
2009/10	1.01014	-1.40447615	1.97255326
2010/11	1.133	-1.28161615	1.64253996
2011/12	1.348864	-1.06575215	1.13582765
2012/13	1.43705	-0.97756615	0.95563558
2013/14	1.698973	-0.71564315	0.51214512
2014/15	2.004449	-0.41016715	0.16823709
2015/16	2.511196	0.09657985	0.00932767
2016/17	2.698278	0.28366185	0.08046405
2017/18	3.550156	1.13553985	1.28945075
2018/19	4.076474	1.66185785	2.76177151
2019/20	5.296065	2.88144885	8.30274748
2020/21	6.374473	3.95985685	15.6804663
2021/22	7.030206	4.61558985	21.3036697
2022/23	4.642367	2.22775085	4.96287385
Total	48.29232		81.05715391

$$\text{Mean } (\bar{X}) = \frac{\Sigma x}{n} = \frac{48.29232}{20} = 2.415$$

$$\text{Standard Deviation (S.D.)} = \sqrt{\frac{\Sigma(X-\bar{X})^2}{n}} = \sqrt{\frac{81.05715391}{20}} = 2.01317$$

$$\text{Coefficient of Variance (C.V.)} = \frac{\text{S.D}}{\text{Mean}} \times 100 = \frac{2.01317}{2.415} \times 100 = 0.833610 \times 100$$

$$= 83.37\%$$

Appendix III

Calculation of Mean, S.D. and C.V for Inflation Rate

FY	IR (X)	$(X-\bar{X})$	$(X-\bar{X})^2$
2003/04	3.963056	-3.1592843	9.981077288
2004/05	4.538847	-2.5834933	6.674437631
2005/06	7.962505	0.8401647	0.705876723
2006/07	5.9	-1.2223403	1.494115809
2007/08	6.704438	-0.4179023	0.174642332
2008/09	12.63064	5.5082997	30.34136559
2009/10	9.6	2.4776597	6.138797589
2010/11	9.643049	2.5207087	6.35397235
2011/12	8.304271	1.1819307	1.39696018
2012/13	9.9	2.7776597	7.715393409
2013/14	9.1	1.9776597	3.911137889
2014/15	7.21	0.0876597	0.007684223
2015/16	9.92	2.7976597	7.826899797
2016/17	4.47	-2.6523403	7.034909067
2017/18	4.15	-2.9723403	8.834806859
2018/19	4.64	-2.4823403	6.162013365
2019/20	6.15	-0.9723403	0.945445659
2020/21	3.6	-3.5223403	12.40688119
2021/22	6.32	-0.8023403	0.643749957
2022/23	7.74	0.6176597	0.381503505
Total	142.446806		119.1316704

$$\text{Mean } (\bar{X}) = \frac{\Sigma x}{n} = \frac{142.446806}{20} = 7.1223$$

$$\text{Standard Deviation (S.D.)} = \sqrt{\frac{\Sigma(X-\bar{X})^2}{n}} = \sqrt{\frac{119.1316704}{20}} = \sqrt{5.9566}$$

$$= 2.44061$$

$$\text{Coefficient of Variance (C.V.)} = \frac{S.D}{Mean} \times 100 = \frac{2.44061}{7.1223} \times 100 = 0.342672 \times 100$$

$$= 34.27\%$$

Appendix IV

Calculation of Mean, S.D. and C.V for FDI Inflow

FY	FDI (X)	$(X-\bar{X})$	$(X-\bar{X})^2$
2003/04	0.010298	-0.3519297	0.123854514
2004/05	0.011185	-0.3510427	0.123230977
2005/06	-0.03737	-0.3995977	0.159678322
2006/07	0.027876	-0.3343517	0.111791059
2007/08	0.021312	-0.3409157	0.116223515
2008/09	0.126891	-0.2353367	0.055383362
2009/10	0.188752	-0.1734757	0.030093818
2010/11	0.41284	0.0506123	0.002561605
2011/12	0.56343	0.2012023	0.040482366
2012/13	0.537527	0.1752993	0.030729845
2013/14	0.178356	-0.1838717	0.033808802
2014/15	0.235325	-0.1269027	0.016104295
2015/16	0.316554	-0.0456737	0.002086087
2016/17	0.662496	0.3002683	0.090161052
2017/18	0.797946	0.4357183	0.189850437
2018/19	0.558403	0.1961753	0.038484748
2019/20	0.852721	0.4904933	0.240583677
2020/21	0.814789	0.4525613	0.20481173
2021/22	0.733829	0.3716013	0.138087526
2022/23	0.231394	-0.1308337	0.017117457
Total	7.244554		1.765125194

$$\text{Mean } (\bar{X}) = \frac{\Sigma x}{n} = \frac{7.244554}{20} = 0.36223$$

$$\text{Standard Deviation (S.D.)} = \sqrt{\frac{\Sigma(X-\bar{X})^2}{n}} = \sqrt{\frac{1.765125194}{20}} = 0.2971$$

$$\text{Coefficient of Variance (C.V.)} = \frac{\text{S.D}}{\text{Mean}} \times 100 = \frac{0.2971}{0.36223} \times 100 = 0.82014 \times 100$$

$$= 82.01\%$$

Appendix V

Calculation of Mean, S.D. and C.V for Education Level

FY	EL (X)	$(X-\bar{X})$	$(X-\bar{X})^2$
2003/04	43.21454	-21.8873775	479.0572938
2004/05	45.21885	-19.8830675	395.3363732
2005/06	42.84846	-22.2534575	495.2163707
2006/07	42.56725	-22.5346675	507.8112393
2007/08	48.64606	-16.4558575	270.7952461
2008/09	49.93654	-15.1653775	229.9886747
2009/10	56.34319	-8.7587275	76.71530742
2010/11	59.7314	-5.3705175	28.84245822
2011/12	64.07684	-1.0250775	1.050783881
2012/13	66.36922	1.2673025	1.606055627
2013/14	68.13395	3.0320325	9.193221081
2014/15	68.92825	3.8263325	14.6408204
2015/16	71.8179	6.7159825	45.10442094
2016/17	76.096	10.9940825	120.86985
2017/18	77.21458	12.1126625	146.7165928
2018/19	79.31682	14.2149025	202.0634531
2019/20	84.5885	19.4865825	379.7268975
2020/21	83.516	18.4140825	339.0784343
2021/22	83.923	18.8210825	354.2331465
2022/23	89.551	24.4490825	597.7576351
Total	1302.03835		4695.804275

$$\text{Mean } (\bar{X}) = \frac{\Sigma x}{n} = \frac{1302.03835}{20} = 65.1019$$

$$\text{Standard Deviation (S.D.)} = \sqrt{\frac{\Sigma(X-\bar{X})^2}{n}} = \sqrt{\frac{4695.804275}{20}} = 15.3228$$

$$\text{Coefficient of Variance (C.V.)} = \frac{\text{S.D}}{\text{Mean}} \times 100 = \frac{15.3228}{65.1019} \times 100 = 0.235367 \times 100$$

$$= 23.54\%$$

Appendix VI

Calculation of Mean, S.D. and C.V for Dependency Ratio

FY	DR (X)	$(X-\bar{X})$	$(X-\bar{X})^2$
2003/04	76.56	11.569	133.841761
2004/05	75.58	10.589	112.126921
2005/06	74.54	9.549	91.183401
2006/07	73.42	8.429	71.048041
2007/08	72.12	7.129	50.822641
2008/09	70.68	5.689	32.364721
2009/10	69.17	4.179	17.464041
2010/11	67.77	2.779	7.722841
2011/12	66.67	1.679	2.819041
2012/13	65.75	0.759	0.576081
2013/14	64.79	-0.201	0.040401
2014/15	63.63	-1.361	1.852321
2015/16	62.24	-2.751	7.568001
2016/17	60.8	-4.191	17.564481
2017/18	59.44	-5.551	30.813601
2018/19	58.18	-6.811	46.389721
2019/20	56.63	-8.361	69.906321
2020/21	54.9	-10.091	101.828281
2021/22	53.78	-11.211	125.686521
2022/23	53.17	-11.821	139.736041
Total	1299.82		1061.35518

$$\text{Mean } (\bar{X}) = \frac{\Sigma x}{n} = \frac{1299.82}{20} = 64.991$$

$$\text{Standard Deviation (S.D.)} = \sqrt{\frac{\Sigma(X-\bar{X})^2}{n}} = \sqrt{\frac{1061.35518}{20}} = 7.2848$$

$$\text{Coefficient of Variance (C.V.)} = \frac{\text{S.D}}{\text{Mean}} \times 100 = \frac{7.2848}{64.991} \times 100 = 0.112088 \times 100$$

$$= 11.21\%$$

Appendix VII

Calculation of Mean, S.D. and C.V for Income Level (Per Capita Income)

FY	IL (X)	$(X-\bar{X})$	$(X-\bar{X})^2$
2003/04	5.633804	-0.95584715	0.913643774
2004/05	5.734345	-0.85530615	0.73154861
2005/06	5.831965	-0.75768615	0.574088302
2006/07	5.957208	-0.63244315	0.399984338
2007/08	6.145672	-0.44397915	0.197117486
2008/09	6.164653	-0.42499815	0.180623428
2009/10	6.378707	-0.21094415	0.044497434
2010/11	6.673583	0.08393185	0.007044555
2011/12	6.6772	0.08754885	0.007664801
2012/13	6.696274	0.10662285	0.011368432
2013/14	6.718705	0.12905385	0.016654896
2014/15	6.782541	0.19288985	0.037206494
2015/16	6.780177	0.19052585	0.0363001
2016/17	6.935337	0.34568585	0.119498707
2017/18	7.057497	0.46784585	0.218879739
2018/19	7.078074	0.48842285	0.23855688
2019/20	7.038073	0.44842185	0.201082156
2020/21	7.114277	0.52462585	0.275232282
2021/22	7.206494	0.61684285	0.380495102
2022/23	7.188437	0.59878585	0.358544494
Total	131.793023		4.950032011

$$\text{Mean } (\bar{X}) = \frac{\Sigma x}{n} = \frac{131.793023}{20} = 6.58965$$

$$\text{Standard Deviation (S.D.)} = \sqrt{\frac{\Sigma(X-\bar{X})^2}{n}} = \sqrt{\frac{4.950032011}{20}} = 0.497495$$

$$\text{Coefficient of Variance (C.V.)} = \frac{\text{S.D}}{\text{Mean}} \times 100 = \frac{0.497495}{6.58965} \times 100 = 0.07549 \times 100$$

$$= 7.55\%$$

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Abstract This study examines the key determinants of insurance penetration in Nepal. The primary objectives are to evaluate the current state of insurance penetration and examine the relationships between insurance penetration and various economic and demographic factors, including the inflation rate, foreign direct investment (FDI) inflow, education level, dependency ratio, and per capita income. The research employs a descriptive and causal research design, analyzing secondary data collected over a twenty-year period. The entire insurance industry in Nepal constitutes the study population, with data sourced from government and industry reports. Statistical methods, including descriptive analysis, correlation analysis, and regression analysis, were utilized to assess the impact of these variables on insurance penetration. Major findings indicate that insurance penetration in Nepal varies significantly, with a range from 0.40% to 7.03% and an average of 2.41%. The correlation analysis reveals strong positive relationships between insurance penetration and FDI inflow, education level, and per capita income. Conversely, negative correlations are observed with the dependency ratio and the inflation rate. The regression analysis shows that FDI inflow significantly increases insurance penetration, while education level and per capita income have unexpected negative impacts. The dependency ratio is also found to have a notable negative effect on insurance penetration. The study concludes that while FDI inflow positively influences the insurance market, other factors