IMPACT OF CAPITAL STRUCTURE ON PROFITABILITY OF LIFE INSURANCE COMPANIES IN NEPAL

A Dissertation submitted to Office of the Dean, Faculty of Management in partial fulfillment of the requirements for the Master's Degree

by

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CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled **"Impact of Capital Structure on Profitability of Life Insurance Companies in Nepal"**. The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor it has 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

Mr. Sailendra Bhatta has defended research proposal entitled **"Impact of Capital Structure on Profitability of Life Insurance Companies in Nepal"** successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestions and guidance of supervisor Dr. Dilli Ram Bhandari and submit the thesis for evaluation and viva voce examination.

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APPROVAL SHEET

We, the undersigned, have examined the thesis entitled We, the undersigned, have examined the thesis entitled **"Impact of Capital Structure on Profitability of Life Insurance Companies in Nepal"** presented by Sailendra Bhatta a candidate for the degree of master of Business Studies (MBS Semester) and conducted the Viva voce examination of the candidate. We hereby certify that the thesis is worthy of acceptance.

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This study entitled **"Impact of Capital Structure on Profitability of Life Insurance Companies in Nepal"** has been prepared in partial fulfillment for the Degree of Master of Business Studies (MBS) under the Faculty of Management, Tribhuvan University is based on research models involving the use of quantitative aspect of impact of capital structure on profitability of insurance companies in Nepal.

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Sailendra Bhatta

Date: ……

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ABBREVIATIONS

AD	:	Anno Domini
BS	:	Bikram Sambat
CNBC	:	Consumer News and Business Channel
CV	:	Coefficient of Variation
DAR	:	Debt to Assets Ratio
DER	:	Debt to Equity Ratio
F/Y	:	Fiscal Year
GP	:	Gross Premium
IT	:	Information Technology
LICN	:	Life Insurance Corporation Nepal Limited
LSIZE	:	Natural Logarithm of Total Assets
Ltd.	:	Limited
NLIC	:	Nepal Life Insurance Company Limited
NLICL	:	National Life Insurance Company Limited
NRB	:	Nepal Rastra Bank
ROA	:	Return on Assets
ROE	:	Return on Assets
SD	:	Standard Deviation
TU	:	Tribhuvan University

ABSTRACT

This research examines how capital structure affects the profitability of life insurance companies in Nepal. It utilizes secondary data from Nepalese microfinance companies over a ten-year period (2013/14 to 2022/23). The study employs descriptive statistics, correlation analysis, and multiple regression analysis using SPSS version 26. The findings reveal that insurance companies play a significant role in contributing to investors' funds and maintain a strong capital adequacy position, largely due to their high debt-to-equity ratios. Additionally, the study indicates that life insurance companies are primarily financed by insurers rather than owners, which exposes the insurers to higher risks due to the elevated leverage or debt-to-equity ratio. Profitability serves as a measure of efficiency. Life insurance companies with high values of ROA (Return on Assets) and ROE (Return on Equity) demonstrate effective utilization of their total assets, leading to better returns for investors and strong company performance. The correlation analysis shows that the debt-to-equity ratio (DER) has an insignificant positive relationship with both ROA and ROE. Similarly, the debt-to-total-assets ratio exhibits an insignificant negative correlation with ROA and an insignificant positive relationship with ROE. Additionally, the size of the companies is found to have a significant negative relationship with both ROA and ROE in the insurance sector. The results of the multiple regression analysis indicate that the debt-to-equity ratio has an insignificant positive effect on the profitability (ROA and ROE) of insurance companies. Similarly, the debt-to-assets ratio shows an insignificant negative impact on profitability (ROA and ROE). However, the size of the companies has a significant negative effect on the profitability (ROA and ROE) of life insurance companies in Nepal. Based on these findings, the study concludes that capital structure has an insignificant impact on the profitability of life insurance companies in Nepal.

Keywords: *Return on assets, return on equity, debt to equity ratio, debt to assets ratio and size of companies.*

CHAPTER I
INTRODUCTION

1.1 Background of the Study

A company's capital structure refers to the way it raises funds to start and grow its business operations. It is a combination of different forms of equity and debt capital that the company holds as a result of its financing decisions. Every business activity requires financial resources, and without sufficient cash to support both fixed assets and working capital, a company cannot function. Among the various financial decisions, the choice of capital structure is the most critical, as it has a direct impact on the company's profitability. Therefore, selecting an appropriate capital structure is a decision that requires careful consideration (Bhattarai, 2005).

Capital structure refers to the proportion of debt and equity used by a company to finance its long-term operations. It includes long-term funding sources such as preference capital, debentures, long-term debt, and equity capital, while excluding short-term debt. It also takes into account retained earnings and the costs of servicing these funds. Each company has a unique capital structure, as different businesses rely on varying mixes of borrowing and shareholder funding. For instance, some companies may be heavily reliant on debt, while others depend more on equity from shareholders. A "better" capital structure is one that minimizes the company's overall cost of capital. This means that the company can achieve a lower required rate of return on the total capital invested. When the cost of capital is reduced, the present value of future cash flows increases, thereby enhancing the company's overall value. The goal, therefore, is to determine the capital structure that optimizes the company's value by minimizing the total cost of capital (Pradhan & Bhattarai, 2016).

The decision regarding capital structure is one of the most crucial decisions made in financial management. This is because an optimal capital structure not only maximizes shareholder value but also minimizes the overall cost of capital. Before understanding capital structure, it is essential to first grasp the concept of financial structure (Gautam & Thapa, 2004).

A company's capital structure, often known as its capitalization, is composed of its preferred stock, long-term debt, and shareholder ownership. Thus, the capital structure of a business is just its financial structure. A company's capital structure affects both its level of liquidity and its capacity to achieve long-term profitability. Only long-term debt and the entire amount invested by stockholders are covered under the term. In some businesses, the capital structure is not formally designed; rather, it emerges organically from the finance manager's judgment. These companies may be successful in the short term, but they may struggle to make enough money to sustain themselves over time. These companies may also be unable to use their funds as effectively as they could due to unforeseen capital arrangements. Theoretically, the finance manager must create the optimal capital structure for his business. The optimal capital structure is reached when the market value per share reaches its peak. In practice, figuring out the optimal capital structure is a challenging task that calls for creative problem-solving (Barges, 1963).

The entire value of the company is impacted by the capital structure decision. A proper debt to equity ratio is necessary to ensure a trade-off between risk and return to shareholders. The capital structure of the business should aim to maximize value. A capital structure with an adequate debt-to-equity ratio is preferable because it optimizes shareholder value while minimizing the opportunity cost of capital (Jaishi, 2020).

According to Sharma (2019), a company's riskiness and profitability are influenced by its capital structure, which is established by the ratio of its total debt to its total assets at book value. The combination of debt and equity used to finance a company organization is known as the capital structure, according to definitions given by a number of past researchers. When companies sell a piece of their ownership position to obtain funds for capital projects and operations, equity is formed. Businesses are required by a contractual arrangement known as debt to borrow money and repay it with interest within a certain time frame. Most organizations won't be able to use their assets as efficiently if they have a single capital structure. The decision between debt and equity is still very important as capital structure directly affects a company's performance.

When evaluating the financial success of a business, profitability ratios are crucial. Profitability, which in turn dictates whether an enterprise succeeds or fails, is a measure of efficiency. For financial institutions to maximize profit, a careful ratio of debt to equity is essential. With an emphasis on the profitability of core business operations, the research sought to understand how financing choices impacted the financial performance of insurance companies in Ghana. In addition to helping them identify the optimal level of capital structure to achieve the maximum degree of firm profitability and, ultimately, maximize shareholder value, this will provide finance managers with a practical grasp of potential problems with capital structure and profitability (Bhatta, 2023).

Life insurance companies in Nepal serve multiple functions and contribute significantly to the economy. Key performance indicators for these companies include net premiums earned, annual turnover, underwriting profitability, return on investment, and return on equity. These metrics can be categorized into two main types: those that measure investment performance and those that assess profit performance. If the substantial financial resources of the sector are effectively managed, they can benefit the broader economy in various ways. Consequently, to ensure the stability and success of the insurance industry, extensive research and careful analysis are essential to prevent the failure of its companies. Examining possible ways for insurance businesses to increase their profitability is crucial for the same reason. The link between capital structure and profitability has seen a significant shift in the last ten years. In addition to supporting insurers' solvency, profit is essential in enticing policyholders and shareholders to make monetary contributions to insurance companies.

One of the most delicate financial decisions made by management is selecting the optimal capital structure, which is based on weighing the benefits and drawbacks of debt vs equity. Typically, corporate organizations struggle to choose the best proportion of debt and stocks. Most industries have debated the relationship between capital structure and performance, and it seems that the question of capital structure remains unsolved. The findings on the connection between performance and capital structure are not entirely consistent. While some research has suggested that capital structure impacts performance in a beneficial way, other studies have indicated the

opposite. Thus, the purpose of this study is to examine how capital structure affects the profitability of insurance companies in Nepal.

1.2 Problem Statement

The adage "survival for the fittest" has become a slogan for all businesses in the modern world, regardless of industry preference. From short-term to long-term objectives, the management is in charge of making a number of asset financing decisions. Comparing the benefits and drawbacks of debt vs. equity financing requires a careful examination of each's effects on the business. This project has proven to be quite challenging due to the theoretical foundations of the impact that capital structure has on the insurance firm's value. Since there is no denying the connection between these two variables, it is essential to explain its nature and importance. In addition to these shared issues, non-financial entities also face the weak organizational structure of the insurance business. An organization's ability to maximize shareholder wealth, or return on equity, is critical to its development and success. The lack of proportionality in Nepalese insurance firms' capital structure limits their ability to maximize their value.

Any business organization's ability to maximize returns to stakeholders depends on its choice of capital structure (Akintoye 2008). Numerous research studies have been conducted to examine the correlation between financial leverage and performance. Several studies, including those by Akintoye (2008), Dare and Sola (2010), and Tayyaba (2013), discovered a favorable relationship between capital structure and performance. Iorpev and Kwanum (2012), on the other hand, discovered a negative association. But according to some studies, there is no connection between capital structure and performance (Prahlathan & Rajan 2011).

Growth improves financial performance in all sectors of Malaysia, but corporate financial performance—specifically, ROA, ROE, and EPS—has a negative impact on the long-term debt ratio (LTD), short-term debt ratio (STD), and total debt ratio (TD), according to Salim and Yadav (2012). Additionally, Tobin's Q has a significant and positive impact on both short-term debt (STD) and long-term debt (LTD). Leverage, liquidity, size, and the management competency index all had a statistically significant beneficial effect on financial performance, according to Saeedi and

Mahmoodi (2011). However, Dogan (2013) noted that return on assets was negatively impacted by the financial leverage ratio. Additionally, a firm's age has a statistically significant negative influence on the performance of insurance companies listed on Borsa Istanbul.

Bony and Moniruzzaman (2017) stated that there was a substantial difference in the D/A ratio, D/E ratio, and ROA between bank and insurance firms, but not in the EPS or ROE of the two types of businesses. Akani and Ifechi (2017) found there was a substantial negative association between capital structures (DER) and performance (ROA & ROE) in Nigeria, as well as a significant relationship between board size and performance. Musah (2018) mentioned that the profitability of Ghanaian banks was adversely correlated with both the short-term and long-term debt ratios. Profitability, however, was positively correlated with the overall debt ratio. Singh and Bagga (2019) concluded that there was significant impact of total debt and total equity ratios on profitability (ROA and ROE).

The findings also indicate that financial leverage has a positive and significant impact on profitability. Almajali and Shamsuddin (2019) found that both short-term debt (STD) and long-term debt (LTD) were positively associated with return on equity (ROE), but negatively related to Tobin’s Q. The earnings-to-price ratio (ETP) showed a positive correlation with all profitability metrics. Jaishi (2020) discovered that the financial performance of insurance companies in Nepal is significantly affected by various factors, including the total debt-to-total assets ratio, leverage, company size, liquidity, and asset tangibility. Bhattarai (2020) concluded that the financial performance of Nepalese insurance companies is influenced by the ratio of equity to total assets, leverage, and asset tangibility. Hajisaaid (2020) observed a negative correlation between return on equity (ROE) and the short-term debt-to-total assets ratio (SDA). Furthermore, a positive correlation was found between profitability and total debt (DA), while a negative correlation was noted between the long-term debt-to-total assets ratio (LDA) and return on equity (ROE).

According to Bhatt and Jain (2020), return on equity (ROE) showed an insignificantly positive relationship with long-term debt and deposits, but an insignificantly negative relationship with short-term debt and total debt. Gundu (2021) found a negative

correlation between the debt-to-asset ratio and return on equity, meaning that a higher debt-to-asset ratio was linked to a lower return on equity. Ngoc, Tien, and Thu (2021) reported that capital structure negatively impacted company performance, as measured by return on assets (ROA). Similarly, Bogamuwa and Dharmasiri (2021) concluded that the ROA and ROE of listed insurance companies in Sri Lanka were statistically significant and negatively influenced by both the debt-to-equity (D/E) and debt-to-asset (D/A) ratios.

Opoku-Asante, Winful, Sharifzadeh, and Neubert (2022) concluded that there is a significant negative correlation between financial performance and capital structure. They found that the relationship between capital structure and financial performance remained unaffected by debt maturity. In a study by Dodoo, Kumi, and Mangudhla (2023), the analysis showed that capital structure, particularly short-term debt (STD) and long-term debt (LTD), had a negative impact on the return on assets (ROA) of firms. Similarly, Tran, Nguyen, Tran, and Duong (2023) observed that both ROA and return on equity (ROE) were adversely affected by capital structure, with the short-term debt-to-total-assets ratio negatively impacting profitability in Vietnamese companies. However, there is limited research specifically focusing on insurance companies, which leaves a gap in the literature. Therefore, this study aims to address this gap by examining the impact of capital structure on the profitability of insurance firms in Nepal. The research seeks to answer the following key questions:

- What is the existing position of capital structure of life insurance companies in Nepal?
- What is the relationship between capital structure variables and profitability of life insurance companies in Nepal?
- What is the impact of debt ratio, debt equity ratio, firm size on profitability of life insurance companies in Nepal?

1.3 Objectives of the Study

The primary goal of this study is to examine how capital structure affects the profitability of life insurance companies in Nepal. The specific objectives are outlined as follows:

- To analyze the position of capital structure of life insurance companies in Nepal.
- To measure the relationship between capital structure variables and profitability of life insurance companies in Nepal.
- To assess the impact of debt ratio, debt equity ratio, firm size on profitability of life insurance companies in Nepal.

1.4 Research Hypothesis

The researcher anticipated that effective capital structure management would lead to a higher return on assets (ROA). Using data, the study formulated and tested the following hypothesis:

Hypothesis (H_0): Debt ratio has an effect on the profitability of life insurance companies in Nepal.

Hypothesis (H_1): Debt ratio has no effect on the profitability of life insurance companies in Nepal.

Hypothesis (H_0): Debt to equity ratio has as an effect on the profitability of life insurance companies in Nepal.

Hypothesis (H_1): Debt to equity ratio has no effect on the profitability of life insurance companies in Nepal.

Hypothesis (H_0): Firm Size has an effect on the profitability of life insurance companies in Nepal.

Hypothesis (H_1): Firm Size has no effect on the profitability of life insurance companies in Nepal.

1.5 Rational of the Study

Nepalese life insurance companies are currently undergoing mergers. There is a lack of studies and research in Nepal that examine the relationship between capital structure and the performance of life insurance companies. Financial managers play a crucial role in shaping the capital structure by making key decisions regarding the allocation, investment, and utilization of capital funds. The capital structure is a vital aspect of a company, as it directly impacts profitability and determines the organization's ability to sustain itself.

Analyzing an organization's financial structure helps identify its strengths and weaknesses, guiding the company in the right direction. A key responsibility of any business is to meet the needs of various stakeholders, each with their own objectives and interests, which is achievable through a solid capital structure. The significance of this study lies in its ability to identify the factors that influence capital structure management and provide valuable insights for financial managers. This research is beneficial for potential investors, as well as for owners, decision-makers, and shareholders, offering them a deeper understanding of the subject.

1.6 Limitations of the Study

The limitations of the study are as follows;

- This study only considers three life insurance companies: Life Insurance Corporation Nepal Limited (LICN), National Life Insurance Company Limited (NLICL), and Nepal Life Insurance Company Limited (NLIC).
- The study covers only the latest ten fiscal years i.e. 2013/14 to 2022/23.
- Other financial factors are excluded in favor of capital structure in this analysis.
- The whole study is based on secondary data.
- Other financial factors are excluded in favor of capital structure in this analysis.

CHAPTER- II
LITERATURE REVIEW

The literature review is an important and vital component in every research undertaking. In order to do new research, it involves reviewing research papers or other relevant claims in the relevant field of study to become aware of all prior studies, their limitations, and their conclusions. This chapter includes an examination and evaluation of a few pertinent books, articles, and published and unpublished articles in various economic journals, periodicals, newspapers, the annual balance statement of the company in question, previous theses on comparable topics, and subject-related internet searches. This chapter is divided into two sections: the theoretical review and the empirical review.

2.1 Theoretical Review

2.1.1 Theories of Capital Adequacy

This study reviews the following theories: capital structure theory, agency theory, trade-off theory, static trade-off theory, and Modigliani and Miller (MM) theory.

2.1.1.1 Capital Structure Theory

Modigliani and Miller (1958) introduced the theory of capital structure, which posits that a company's capital structure does not impact its overall value. According to this theory, the firm's market value remains unchanged regardless of whether it is highly leveraged or has a smaller amount of debt. Instead, the market value is determined by the company's operational profitability (Modigliani & Miller, 1958).

A company's capital structure refers to how it finances its assets, and it influences the company's capital adequacy. Businesses can fund their operations through debt, equity, or a combination of both. The capital structure may lean more towards debt or equity, consist of only one, or be evenly balanced between the two. Each approach has its own unique benefits and advantages (Kwan & Eisenbeis, 1995).

Many scholars have applied capital structure theory in both theoretical and empirical research across various financial and non-financial sectors. However, as noted by

Bourke (1989), most studies have concentrated on the non-financial sector. There has been relatively little research on the capital structure of the financial sector, and even fewer studies focus on the factors affecting the Capital Adequacy Ratio (CAR) in the banking sector, particularly in developing countries.

2.1.1.2 Agency Theory

According to agency theory, a firm is a "nexus of contracts" made up of several resource providers. In agency theory, the two primary participants are agents, who manage the company's daily operations, and principals, who provide the funding. Agency costs arise because the interests of agents do not always align with those of the principals. These costs include expenses related to monitoring agents' behavior, such as implementing budgetary constraints, compensation policies (like stock options, bonuses, and other incentives), and financial losses from sales due to operational guidelines and management restrictions.

Agency theory also encompasses the costs associated with suboptimal decisions choices made in the interest of agents rather than principals as well as the bonding costs incurred by agents. According to agency theory, in modern firms with widely dispersed share ownership, managerial decisions often diverge from those needed to maximize shareholder returns (Berle & Means, 1932; Pratt & Zeckhauser, 1985). The theory suggests strategies to reduce agency costs, such as implementing management incentive programs that align managers' interests with those of shareholders by rewarding them for enhancing shareholder value.

2.1.1.3 Static Trade-off Theory

The relationship between profitability and leverage is the subject of several capital structure theories. The trade-off argument states that when considering the tax effects, firms frequently decide to take on debt. Profitable companies would thus take on additional debt since greater leverage would increase the value of their debt tax shield (Myers, 1984). Furthermore, it states that companies strive for debt levels that balance the risks of possible financial difficulty with the tax advantages of taking on greater debt. Due of agency and bankruptcy costs, very successful businesses may be convinced to add more debt to their capital structure in addition to the tax advantages

of debt. This is because highly successful companies are more likely to pay back debt, which reduces the likelihood that they would file for bankruptcy. They will thus demand more debt in order to maximize their tax shield at more alluring loan rates. Given these considerations, the trade-off hypothesis forecasts a positive relationship between leverage and profitability.

2.1.1.4 Trade-Off Theory

The trade-off theory of capital structure states that a company determines how much debt and equity financing to use by weighing the benefits and drawbacks of utilizing varying amounts of each. The classic version of the idea considered finding a balance between the deadweight costs of bankruptcy and the tax benefits of debt. It asserts that there are advantages to debt, including tax benefits, as well as disadvantages to financing with debt, like the price of financial hardship (Kraus & Litzenberger, 1973).

The tax benefits of taking on additional debt are offset by anticipated costs associated with financial issues, which drastically lower a company's value. On the other hand, it is said that capital is quite costly. Investors look for a premium to cover the increased bankruptcy risk associated with the possibility of financial troubles and a correspondingly low capital ratio. To deliver a "adequate" return on equity, the company must assume more risk in order to generate a higher risk premium on its assets. As capital levels rise, this risk premium rises as well. Therefore, bigger percentages of equity in the company's capital structure are required for greater risk in order to prevent an inefficient cost of capital. What the buffer effect and its detrimental incentive impact will finally lead to is uncertain. It's possible that the default risk may increase in tandem with rising capital levels (Brealey & Myers, 2003).

2.1.1.5 Modigliani and Miller (MM) Theory

Modigliani and Miller's seminal study of capital structure in 1958 laid the groundwork for the development of the theoretical framework that would later contain a variety of concepts pertaining to corporate finance. Modigliani and Miller came to the well-known conclusion of "capital structure Irrelevance," which maintains that financial leverage has no effect on a firm's value, in 1958. However, their theory was

based on incredibly specific assumptions that aren't true in reality. Ideal capital markets, uniform expectations, the absence of taxes, and transaction costs are some examples of these presumptions. The existence of bankruptcy costs and tax benefits related to interest payments gave rise to the concept of a "optimal" capital structure, one that maximizes the firm's value and, thus, decreases its overall cost of capital.

Modigliani and Miller reexamined their original viewpoint in 1958 by adding tax advantages to the list of variables affecting a firm's capital structure. The primary feature of taxes is that interest is a tax-deductible cost. When a business pays taxes, it receives a "tax-shield" in the form of lower taxes, which helps to partially balance the interest. In order to increase profitability and eventually maximize firm value, Modigliani and Miller (1963) recommended utilizing as much loan capital as feasible.

2.1.2 Determinants of Capital Structure

Numerous company-level attributes have been discovered by empirical study as deciding factors for the capital structure or leverage of the organization, taking into consideration the viewpoints of the major capital structure theories (described above). Age, profitability, company size, and asset structure are some of the characteristics that are considered here. Other factors include the company's ownership and tax structure, the degree of risk associated with its activities, and its growth.

2.1.2.1 Profitability

As was previously indicated, the pecking order hypothesis may be used to describe the link between capital structure and a company's profitability. The theory states that companies would first utilize internally generated funds (IGF) rather than money from outside sources to finance operations or commercial projects. According to Myers (1984), this leads to an information imbalance between the managers who are inside stakeholders and the outside stakeholders, such as market players, who are less informed. Prior to adopting the riskiest source of funding, the business would utilize the least dangerous one. This happens as a result of management of a company having more knowledge about the company's (financial) problems than other external stakeholders. In contrast to businesses with extremely low retain profits that are forced to rely on external financing sources (debt), this assertion asserts that

businesses with more profitability and better access to the IGF would rely on them. Retained income are thus the main, most reliable, and least expensive source of finance. Because they can raise the money needed for internal company operations, companies with exceptionally high profit margins would often retain relatively lower debt ratios (Titman & Wessels, 1988).

2.1.2.2 Size of a Firm

A firm's size is one of the main factors that determines its capital structure or leverage; the larger the company in terms of sales or turnover, the more debt it will utilize. The reason for this is that larger companies may be able to handle greater debt ratios since they have more revenue streams or business divisions and, thus, are less susceptible to fluctuations in their earnings. Since larger organizations are thought to provide less operational or commercial risk, they are frequently given precedence when obtaining funding from outside fund sources. Additionally, with increasing turnover levels that may be turned into profit, loan servicing and interest should not be difficult to repay. However, smaller companies sometimes have to pay more to deal with asymmetric information issues with outside financing sources, which restricts their capacity to get external acknowledgment for their work (Oppong-Boakye et al., 2013).

2.1.2.3 Growth

According to the Pecking Order Theory, new businesses may use retained revenues to fund immediate expansion or improvement projects. However, pressure to keep earnings would imply that the business will have to look outside for finance to sustain its development if domestically generated funds run out. Research on the connection between leverage and economic prospects has produced conflicting findings. Leverage and growth rate are negatively correlated, according to Myers (1977), since rapidly expanding businesses usually do not have tax shields, which reduces the value of the tax deduction for financing expenses. According to Michaelas et al. (1999), a company's leverage, long-term liabilities, and prospects for future expansion and development are all positively correlated. Furthermore, Oppong-Boakye et al. (2013) discovered a negative correlation between growth and debt.

2.1.2.3 Firm risk

One of the main factors influencing a firm's capital structure is the level of risk associated with its operations. Catanias (1983) suggests that a company's operational risk determines its optimal debt-to-equity ratio, as outlined in the tax shield bankruptcy cost hypothesis. Given the potential costs related to agency issues and bankruptcy, a firm is unlikely to fully exploit the 100% tax advantages suggested by the static model structure. As the likelihood of incurring these costs increases, companies are more inclined to reduce leverage in their capital structure. Operational risk remains a key factor in this dynamic, as it raises the likelihood that a company may struggle to meet its debt obligations, especially when its earnings become less predictable. Companies with higher earnings volatility are more vulnerable to cash flow issues that may prevent them from servicing their debt. According to Kim and Sorensen (1986), firms facing greater business risk are less equipped to handle financial risk, and therefore tend to take on less debt. Conversely, Oppong-Boakye et al. (2013) argue that companies with very high operational risk may actually have higher levels of leverage, as equity investors are often reluctant to invest in such risk-prone businesses, leading management to rely more on debt financing.

2.1.2.5 Taxation

Many research studies have explored how taxes influence a company's financing decisions, with some focusing specifically on tax policy. Changes in a company's marginal tax rate can affect its financing choices (MacKie-Mason, 1990). For instance, a company with substantial tax coverage is less inclined to use debt for financing, as it reduces the benefit of the tax shield on debt interest payments (MacKie-Mason, 1990). This means the company is less likely to reach a zero tax rate or utilize loss carryforwards. However, there are other tax-coverage strategies available, such as depreciation, amortization, R&D expenses, and investment costs, which can serve as alternatives to the tax benefits typically associated with debt financing.

From a research standpoint, identifying alternative substitutes for tax reduction through empirical analysis is challenging. It remains difficult to pinpoint the exact variable that could replace the tax benefits of debt without being affected by factors

like inflation or economic depreciation (Titman & Wessels, 1998). Furthermore, Oppong-Boakye et al. (2013) observed that, compared to privately held companies, publicly listed firms often benefit from tax advantages. Consequently, an increase in corporate tax rates is generally linked to a rise in equity capital, as publicly traded companies are more likely to take advantage of specific tax incentives available to them.

2.1.2.6 Firm's Age

The age of a company is often considered a useful indicator of its social image in capital structure models. Over time, as the company matures, it builds a positive reputation, which reflects its management practices, products, and, crucially, its ability to meet obligations to stakeholders in a timely manner, as recognized by the market (Diamond, 1989). This growing goodwill also contributes to the company's perceived creditworthiness.

2.2 Empirical Review

Bony and Moniruzzaman (2017) conducted a comparative analysis of the capital structures of commercial banks and insurance companies in Bangladesh. The aim of the study was to examine how the debt-to-equity ratio impacts the performance of both Bangladeshi banks and insurance companies. To achieve this, the researchers analyzed the annual financial statements of commercial banks and insurance firms over a five-year period. The study uses several financial metrics, including the total debt-to-equity ratio, total debt-to-total funds ratio, and performance indicators such as ROE, ROA, and EPS, to assess the capital structure of commercial banks and insurance companies. Descriptive statistics and the t-test were employed to compare the capital structure and performance of the two sectors. The analysis reveals that while there was little difference in the EPS and ROE between banks and insurance firms, there were significant differences in the debt-to-assets (D/A) ratio, debt-to-equity (D/E) ratio, and return on assets (ROA).

Akani and Ifechi (2017) investigated the effects of capital structure and board structure on the corporate performance of selected firms in Nigeria. The study utilized secondary data from forty companies listed on the Nigerian Stock Exchange (NSE)

between 2008 and 2016 to explore the relationship between board composition, capital structure, and firm performance. After combining and pooling the data, the researchers conducted various tests, including unit root tests, co-integration, Granger causality tests, and regression analyses. The findings revealed a significant negative relationship between capital structure (debt-to-equity ratio, DER) and firm performance, a notable positive relationship between board size and performance, and a negative but insignificant correlation between board duality and performance, as measured by ROA and ROE in Nigeria.

Musah (2018) examined the impact of capital structure on the profitability of commercial banks in Ghana. The study aimed to assess how the capital structure of Ghanaian banks, as measured by their return on equity (ROE), return on assets (ROA), and various debt ratios (short-term, long-term, and total debt), influenced their profitability. The research focused on 23 banks over a six-year period, from 2010 to 2015, using data from the banks' annual reports. Descriptive statistics, panel regression analysis, and correlation analysis were employed to analyze the data. The findings revealed that Ghanaian banks exhibit high leverage, with debt financing accounting for 84% of total capital, of which 77% is short-term debt, despite an increase in minimum equity capital requirements. The regression analysis showed a negative relationship between profitability and both short-term and long-term debt ratios. However, the total debt ratio was positively correlated with profitability. In terms of control variables, bank profitability was positively correlated with firm size, foreign ownership, and age, but negatively correlated with an increase in client deposits. The study suggests that Ghanaian commercial banks should reconsider their reliance on short-term debt and client deposits, as this dependence tends to reduce profitability. It recommends that banks find an optimal balance between short- and long-term debt to enhance profitability.

Singh and Bagga (2019) conducted an empirical panel data study to analyze the impact of capital structure on profitability. The study aimed to assess how the capital structure influences the profitability of fifty firms listed on the National Stock Exchange of India between 2008 and 2017. The data were analyzed using multiple panel data regression models, correlation analysis, and descriptive statistics. Four distinct regression models were employed to examine the relationship between capital

structure and profitability, focusing on the effects of total debt and total equity ratios on return on assets (ROA) and return on equity (ROE). The analysis utilized fixed effects, random effects, and pooled OLS models. The correlation analysis revealed that the equity ratio (TETA) was positively correlated with both ROA and ROE, while the debt ratio (TLTA) had a negative impact on these profitability measures. The regression analysis further indicated that an increase in equity led to higher return on assets, while an increase in total debt resulted in a decrease in ROA. Interestingly, the results also showed that while an increase in total debt raised return on equity, an increase in equity led to a decrease in ROE. These findings suggest that the relationship between capital structure and profitability is complex and that the optimal balance between debt and equity varies depending on the performance metric in question.

Almajali and Shamsuddin (2019) examined the impact of capital structure on the performance of insurance companies in Jordan. The main goal of the study was to assess how capital structure influences the profitability of Jordanian insurance firms. The sample consisted of 19 insurance companies listed on the Amman Stock Exchange over a ten-year period from 2008 to 2017. The study used regression analysis and correlation techniques to estimate profitability measures, including Tobin's Q and return on equity (ROE), alongside capital structure variables such as short-term debt (STD), long-term debt (LTD), and equity financing (EQ). Additionally, sales growth and inflation rate were incorporated as control variables. The results indicated a positive and significant relationship between financial leverage and profitability. Specifically, short-term debt (SD) and long-term debt (LTD) showed positive correlations with ROE but negative correlations with Tobin's Q. On the other hand, equity financing (EQ) was positively correlated with all profitability measures. The findings supported the hypothesis that higher leverage is associated with increased profitability, particularly for insurance companies in Jordan.

Jaishi (2020) explored the relationship between capital structure and financial performance in Nepalese insurance companies. The study aimed to examine how capital structure influences the financial performance of these firms. The dependent variables were profit per share (EPS) and return on assets (ROA), while independent variables included factors like firm size, liquidity, tangibility, equity-to-total-assets

ratio, and total debt ratio. Using a causal-comparative research approach, the study combined both descriptive and analytical methods, constructing regression models to analyze the impact of these variables on financial performance. The findings revealed that insurance companies with higher debt ratios tend to have better financial outcomes. Specifically, ROA was positively correlated with increases in debt ratio and tangibility, but negatively correlated with increases in equity, size, and liquidity. Similarly, EPS was positively influenced by the debt ratio and tangibility, but negatively impacted by higher equity, size, and liquidity ratios. The key takeaway from the study is that the financial performance of Nepalese insurance companies is largely determined by factors such as size, liquidity, tangibility, leverage, equity-to-total-assets ratio, and total debt ratio. For improved financial performance, the study recommends that Nepali insurance companies should focus on increasing their tangible assets and total debt ratio, while reducing their equity, firm size, and liquidity ratios.

Bhattarai (2020) examined the effects of capital structure on the financial performance of insurance companies in Nepal. The study aimed to determine how different aspects of capital structure influenced the financial outcomes of Nepali insurance firms. Data was collected from the annual reports of 14 insurance companies in Nepal, covering the period from 2007-08 to 2015-16, resulting in a total of 126 observations. To analyze the data, the study employed three different models: fixed effects, random effects, and pooled OLS. The dependent variable in the study was return on assets (ROA), while the independent variables included company size, leverage, equity-to-total-assets ratio, liquidity ratio, and asset tangibility. The findings revealed that the equity-to-total-assets ratio, leverage, and asset tangibility had a significant impact on the financial performance of insurance companies in Nepal.

Hajisaaid (2020) analyzed the effect of capital structure on profitability of basic materials Saudi Arab firms. The main objective of the research was to examine the connection between the capital structure and profitability of eight Saudi Arabian basic material firms operating between 2009 and 2018. The statistical techniques used are regression analysis, the Housman test, the fixed effect model, and the random effect model. The dependent variable is the return on equity (ROE). Conversely, the independent variables are represented by the ratios of total debt to assets (DA), long-

term debt to assets (LDA), and short-term debt to assets (SDA). The results demonstrated a negative correlation between the short-term debt to total assets (SDA) ratio and the return on equity (ROE). Profitability and total debt (DA) are positively correlated, but return on equity (ROE) and the long-term debt to total assets ratio (LDA) are negatively correlated.

Bhatt and Jain (2020) studied the relationship between capital structure and profitability in commercial banks in Nepal. The goal of the research was to explore how the capital structure of Nepalese commercial banks impacts their profitability. Return on equity (ROE) was used as the profitability measure, and control variables such as bank size and asset growth were included, along with capital structure indicators like short-term debt, long-term debt, deposits, and the total debt-to-assets ratio. The study found that capital structure factors were able to explain more than 40 percent of the variation in bank profitability, as measured by ROE. Specifically, ROE was found to have an insignificantly positive relationship with deposits and long-term debt, but an insignificantly negative relationship with short-term debt and total debt. Additionally, all regression models indicated a significant positive relationship between bank size and profitability, meaning that larger banks tended to deliver higher returns to their shareholders.

Gundu (2021) investigated effect of capital structure on financial performance of quoted composite insurance companies in Nigeria. This study evaluated the impact of capital structure on the financial performance of Nigerian composite insurance firms that were listed between 2015 and 2019. The study data, collected through secondary means, was analyzed using STATA 13 to investigate the relationship between the independent variable (capital structure) and the dependent variable (financial performance). The study's findings indicated a negative relationship between the companies' debt to asset ratio and their return on equity during the course of the investigation. A lower return on equity was linked to a larger debt to asset ratio. Furthermore, the debt to equity ratio and return on equity were shown to be positively correlated, indicating that a greater debt to equity ratio is associated with a higher return on equity. Therefore, the paper recommends that Nigerian insurance companies simultaneously aim to lower their debt to asset ratio and raise the amount of debt they incorporate in their capital structure mix.

Ngoc, Tien and Thu (2021) investigated the impact of capital structure on the financial performance of logistics service providers listed on the Ho Chi Minh City Stock Exchange. The study aimed to examine how the capital structure of 30 logistics companies, listed on the HoSE between 2012 and 2019, influenced their profitability, measured by return on assets (ROA) and return on equity (ROE). Using a quantitative approach and models such as Pool OLS, Fixed Effects Model (FEM), Random Effects Model (REM), and Feasible Generalized Least Squares (FGLS), the study found that capital structure negatively impacted profitability, specifically as measured by ROA. However, the analysis did not provide any statistically significant evidence to show that capital structure affected profitability when measured by ROE during this period.

Bogamuwa and Dharmasiri (2021) examined the impact of capital structure on the profitability of listed insurance companies on the Colombo Stock Exchange (CSE). The study utilized data from all insurance firms listed on the CSE between 2015 and 2019 to assess how capital structure influences profitability. The debt-to-asset (D/A) and debt-to-equity (D/E) ratios were used as indicators of capital structure, while return on equity (ROE) and return on assets (ROA) served as measures of profitability. The study found that both the D/E and D/A ratios had a statistically significant negative impact on the ROA and ROE of Sri Lankan listed insurance companies, as analyzed using the random effects panel regression model. Based on these findings, the study recommends that insurance firms adopt a more cautious capital structure strategy, focusing on reducing debt and increasing the proportion of equity capital in their overall capital structure, as these factors were found to have the most significant influence on profitability.

Opoku-Asante et al. (2022) analyzed the relationship between capital structure and financial performance of firms in Ghana and Nigeria. The study aimed to explore this relationship using a sector-specific approach and incorporating loan maturity as a factor. It examined 425 cross-sectional firm-year observations from companies in both countries between 2014 and 2019. The empirical findings revealed a strong negative relationship between financial performance and capital structure, indicating that higher leverage is associated with lower financial performance. Interestingly, the study found that the relationship between capital structure and financial performance was not significantly influenced by debt maturity. However, the industry sector did

play a role, as the impact of capital structure on financial performance varied across different sectors. Additionally, loan maturity was found to affect the relationship between capital structure and performance in certain industries, but not across the overall market. This research builds on previous studies by considering both sector-specific factors and loan maturity, offering new insights into how capital structure influences performance in Ghanaian and Nigerian firms.

Dodoo, Kumi and Mangudhla (2023) examined the effect of capital structure on firm performance in the context of an emerging economy, specifically focusing on non-financial companies listed on the Ghana Stock Exchange. The study aimed to assess how capital structure influenced business performance over a ten-year period (2008–2017), using a panel data sample of 15 companies. The researchers applied both the Two-Step System Generalized Method of Moments (GMM) and Ordinary Least Squares (OLS) regression techniques to analyze the data. The findings showed that capital structure, particularly short-term debt (STD) and long-term debt (LTD), had a negative impact on return on assets (ROA), which is a key indicator of firm performance. However, return on equity (ROE) was found to be unaffected by the capital structure (LTD and debt-to-equity ratio, D/E). Based on these results, the study concluded that capital structure does not significantly affect the financial performance of listed non-financial companies in Ghana. The robustness check further supported these findings, suggesting that other factors may play a more crucial role in determining the financial performance of these companies.

Tran, Nguyen, Tran and Duong (2023) explored the relationship between capital structure, debt maturity, and profitability for listed firms in Vietnam, a transition market. The study specifically examined how the capital structure and debt maturity impact the profitability of firms listed on the Vietnamese stock exchange. Instead of using traditional Ordinary Least Squares (OLS), the study employed Feasible Generalized Least Squares (FGLS), which provide more reliable results by addressing the issues of heteroskedasticity and autocorrelation in the data. The study's findings revealed that both return on assets (ROA) and return on equity (ROE) were negatively impacted by the capital structure. Additionally, the analysis found that the short-term debt-to-total-assets ratio negatively affected the profitability of Vietnamese firms. This is largely due to Vietnamese companies' preference for short-term debt, which is

easier to issue and typically comes with lower borrowing rates compared to long-term debt. The research also highlighted that the long-term debt ratio had an opposite relationship with profitability, suggesting that greater reliance on long-term debt could improve profitability. These findings align with previous studies and are consistent with the pecking order theory and trade-off theory, which suggest that firms balance between short-term and long-term debt based on their financial strategies and market conditions.

Boshnak (2023) investigated the impact of capital structure on firm performance: evidence from Saudi-listed firms. Investigating the effect of capital structure on the performance of companies listed on the Saudi Stock Exchange (Tadawul) was the aim of this study. The extended technique of moments estimation, which takes into account any autocorrelation, heteroscedasticity, and endogeneity issues, is used to estimate models in order to facilitate hypothesis testing. The results demonstrated that short-term debt, long-term debt, total debt, and debt-to-equity ratios all significantly harmed the firm's operational performance (return on assets), while long-term debt, total debt, and debt to equity had an effect on the firm's financial performance (return on equity) and market performance (as determined by Tobin's Q).

Table 1

Summary of Empirical Review

S.N.	Author/ Date	Title	Objective	Methodology	Major Findings
1	Bony and Moniruzzaman (2017)	A comparative analysis between commercial banks and insurance companies in Bangladesh on the basis of capital structure.	To determine the impact of the debt-equity mix on the business performance of Bangladeshi banks and insurance firms.	The capital structure and performance of commercial banks and insurance firms have been compared using descriptive statistics and the t-test.	This study revealed a substantial difference between the D/A ratio, D/E ratio, and ROA of banks and insurance businesses, but no significant variation between their EPS and ROE.
2	Akani and Ifechi (2017)	Effects of capital structure and board structure on corporate	To examine the effect of capital structure and board structure on firm performance in	The data were combined and pooled for analysis, followed by the application of various statistical	The study found a significant negative relationship between capital structure (measured by the debt-to-equity ratio, DER) and performance. It also identified a significant relationship between

		performance of selected firms in Nigeria.	Nigeria	tests, including the unit root test, co-integration test, Granger causality test, and regression analysis.	board size and performance. However, the relationship between board duality and performance (both ROA and ROE) was negative, but it was not statistically significant in the context of Nigerian firms.
3	Musah (2018)	The impact of capital structure on profitability of commercial banks in Ghana.	To investigate how Ghanaian commercial banks' capital structure—which is assessed by their short-, long-, and total debt ratios—affects their profitability, which is measured by their return on equity and return on assets.	Descriptive statistics, panel regression analysis, and correlation analysis were used to examine the data.	This study found that the profitability of Ghanaian banks is adversely correlated with both the short-term and long-term debt ratios. Nonetheless, there was a favorable correlation between the profitability of Ghanaian banks and the total debt ratio. While increase in client deposits was adversely correlated with bank profitability, firm size, foreign ownership, and bank age were favorably correlated with bank profitability on the control variables.
4	Singh and Bagga (2019)	The effect of capital structure on profitability: An empirical panel data study.	To assess how 50 firms listed on the National Stock Exchange of India between 2008 and 2017 fared financially in relation to their capital structure.	Descriptive statistics, correlation, and multiple panel data regression models have all been used to examine the data.	According to correlation research, the equity ratio (TETA) was directly correlated with both ROA and ROE, whereas the debt ratio (TLTA) had a negative effect on both performance metrics. Regression study shows that while an increase in equity raises return on assets, an increase in total debt lowers return on assets.
5	Almajali and Shamsuddin (2019)	The effect of capital structure on performance of insurance companies: evidence from Jordan.	To investigate how capital arrangements affect Jordanian insurance companies' profitability.	The functions pertaining to capital structure and profitability are estimated using regression analysis and correlations.	Financial leverage is positively significant to profitability, according to empirical data, which also demonstrate that (STD) and (LTD) have a positive correlation with ROE and a negative correlation with Tobin's Q. ETLQ has a positive correlation with all profitability metrics.
6	Jaishi (2020)	Capital structure and its impact on financial performance in insurance companies of Nepal.	To examine the connection between Nepalese insurance firms' financial performance and their capital structure.	To examine the impact on financial performance metrics, such as return on assets and profits per share, regression models are estimated.	According to this study, the debt ratio and tangibility have a favorable effect on earnings per share, whereas the equity, size, and liquid ratio have a negative effect. The study's main finding is that the key elements influencing the financial performance of insurance businesses in Nepal are size, liquidity, tangibility, leverage, equity to total assets ratio, and total debt ratio.
7	Bhattarai (2020)	Effects of capital	To investigate how capital	The fixed effect, random effect, and	The findings indicated that leverage, equity to total assets, and

		structure on financial performance of insurance companies in Nepal.	structure affects Nepali insurance firms' financial performance.	pooled OLS models were used to examine the data.	asset tangibility all had an impact on the financial performance of insurance businesses in Nepal.
8	Hajisaaid (2020)	The effect of capital structure on profitability of basic materials Saudi Arab firms.	To investigate the factors that affect NEPSE's stock price, paying particular attention to private commercial banks.	Regression analysis, the Housman test, the fixed effect model, and the random effect model are the statistical methods employed.	The findings showed a negative correlation between the return on equity (ROE) and the short-term debt to total assets ratio (SDA). Return on equity (ROE) and the long-term debt to total assets ratio (LDA) are negatively correlated, but profitability and total debt (DA) are positively correlated.
9	Bhatt and Jain (2020)	Capital structure and profitability of commercial banks in Nepal.	To examine the connection between Nepal's commercial banks' profitability and capital structure.	Multiple regression analysis and correlation were employed in this study to examine the data.	According to this analysis, return on equity has an insignificantly positive correlation with long-term debt and deposits, but a negligible negative correlation with short-term debt and total debt. Profitability and bank size have a substantial positive relationship across all regression models, meaning that the larger the bank, the better the return for shareholders.
10	Gundu (2021)	Effect of capital structure on financial performance of quoted composite insurance companies in Nigeria.	To investigate how capital structure affects the financial performance of Nigerian traded composite insurance firms between 2015 and 2019.	Multiple regression analysis and correlation were employed in this study to examine the data.	The study's conclusions showed that, throughout the course of the study period, the debt to asset ratio and the firms' return on equity were negatively correlated; that is, as the debt to asset ratio increased, the return on equity decreased. Additionally, the debt to equity ratio and return on equity were positively correlated, meaning that an increase in the debt to equity ratio results in an increase in return on equity.
11	Ngoc, Tien and Thu (2021)	The impact of capital structure on financial performance of logistic service providers listed on Ho Chi Minh City Stock Exchange.	To assess how capital structure affects the profitability of 30 logistics companies listed on the Ho Chi Minh City Stock Exchange, as measured by ROA and ROE metrics	This study employed cross-sectional data from secondary sources and a descriptive, pooled cross-sectional research approach. Multiple regression analysis was performed in this investigation.	The findings of this study have demonstrated that capital structure has a detrimental effect on company profitability as measured by ROA. The study could not find any statistical evidence to demonstrate the influence of logistics companies' capital structure during this time period on profitability, as measured by ROE.
12	Bogamuwa and Dharma	Impact of capital structure on	To determine the impact of capital structure on a	The data in this study were analyzed using	According to this study, the ROA and ROE of Sri Lankan listed life insurance companies are

	siri (2021)	firms' profitability: evidence from listed insurance companies in Colombo stock exchange.	firms' profitability using all the listed insurance companies in the Colombo Stock Exchange over the period of 2015 - 2019.	random effect panel regression.	negatively and statistically significantly impacted by D/E and D/A.
13	Opoku-Asante et al. (2022)	The relationship between capital structure and financial performance of firms in Ghana and Nigeria	To examine the link between capital structure and financial performance using a sectorial approach, taking into account how debt maturity affects the relationship.	Multiple regression analysis and correlation were employed in this study to examine the data.	The empirical results indicated that capital structure and financial performance were significantly correlated negatively. The link between capital structure and financial performance was unaffected by debt maturity. Nonetheless, the direction of the link between capital structure and financial performance is influenced by the industry.
14	Dodoo, Kumi and Mangudhla (2023)	The effect of capital structure on firm performance: empirical evidence from emerging economy	To investigate how capital structure affects business performance over a ten-year period (2008–2017).	Ordinary least squares (OLSs) regression and the two-step system generalized method of moment (GMM) were used in the empirical investigations.	This study demonstrated that, as measured by return on asset (ROA), capital structure—particularly STD and LTD—has a detrimental effect on business performance. Return on equity (ROE), a measure of a company's performance, is not significantly impacted by capital structure (LTD and DE).
15	Tran, Nguyen, Tran and Duong (2023)	Capital structure and profitability of listed firms and a transition market, does debt maturity matter?	To examine the effects of debt maturity and capital structure on the profitability of businesses that are listed on the Vietnamese stock exchange.	Feasible Generalized Least Squares is utilized to get trustworthy results because Traditional Least Squares breaches the heteroskedasticity and autocorrelation requirements.	According to this study, ROA and ROE are adversely affected by the capital structure. Furthermore, this study concludes that the profitability of Vietnamese enterprises is negatively impacted by the ratio of short-term debt to total assets. Lastly, this analysis demonstrated a negative correlation between profitability and the long-term debt ratio.
16	Boshnak (2023)	The impact of capital structure on firm performance : Evidence from Saudi-listed firms.	Investigating the effect of capital structure on the performance of companies listed on the Saudi Stock Exchange (Tadawul) was the aim of this study.	Models are estimated using the generalized method of moments (GMM) to facilitate hypothesis testing.	The findings showed that while long-term debt, total debt, and debt-to-equity ratios had an effect on the firm's financial performance (return on equity) and market performance (as measured by Tobin's Q), short-term debt, long-term debt, and debt-to-equity ratios all had a significant negative impact on the firm's operational performance (return on assets).

2.3 Research Gap

The research gap refers to the differences between previous studies and the current study in terms of scope, time period, and methodology. First, there is a time gap between earlier research and this study. While previous studies focused on older time periods, this study covers data up to 2022/23. Additionally, many past studies were based on shorter time frames, typically covering a maximum of five years, whereas this study spans a decade, providing a more comprehensive view of trends over a longer period. Moreover, previous research on the impact of capital structure on the profitability of life insurance companies was limited and did not fully explore the topic. This study aims to address that gap by considering various explanatory variables such as debt ratio, debt-to-equity ratio, and company size, and analyzing their effects on profitability, measured by return on assets (ROA) and return on equity (ROE). The current study also employs a more robust analytical approach, using descriptive analysis, correlation analysis, and multiple regression analysis, which were not extensively used in previous studies. In addition, the study introduces t-tests and multicollinearity tests to ensure the reliability of the findings. Furthermore, this study includes three life insurance companies—Nepal Life Insurance Company Limited (NLIC), National Life Insurance Company Limited (NLICL), and Life Insurance Corporation Nepal Limited (LICN)—which were not part of earlier research. By incorporating these companies, the study aims to fill the gaps left by previous research and provide a more detailed and inclusive analysis of how capital structure affects the profitability of life insurance companies in Nepal.

CHAPTER- III
RESEACH METHODOLOGY

Research technique is the methodical process of solving a problem by gathering, documenting, analyzing, interpreting, and reporting facts on the many aspects of a phenomena under study. The procedures and methods used in each stage of the inquiry are detailed in the research methodology for this work. The four elements are the population and sample, the kind and sources of data, the analytical methodology, and the research design.

3.1 Research Design

A research design refers to the process of setting guidelines for data collection and analysis to ensure both procedural efficiency and relevance to the research question. This study employs both descriptive and causal research designs to achieve its specific goals. The descriptive research helps to analyze the capital structure and profitability of the selected life insurance companies, providing insights into their current status through measures such as averages, standard deviations, and the maximum and minimum values, which describe the data characteristics of the sample companies. On the other hand, the causal research design examines how capital structure impacts the profitability of these life insurance companies.

3.2 Populations and Sample, and Sampling Design

There are a total of 14 life insurance companies operating in Nepal, and all of these companies make up the population for this study. From this population, four companies Nepal Life Insurance Company Limited (NLIC), National Life Insurance Company Limited (NLICL), and Life Insurance Corporation Nepal Limited (LICN) have been selected as the sample using a purposive sampling method. These companies were chosen because they are currently the top three in terms of profitability and capital.

3.3 Nature and Sources of Data, and Instruments of Data Collection

This study relied solely on secondary data, which was collected from the financial annual reports and websites of the selected companies. Secondary data refers to

information that has already been collected or generated by another entity and is made publicly available in the form of statistics. The primary sources of data for this study include published materials such as annual reports of life insurance companies, relevant theses, reports from the Nepal Rastra Bank (NRB), books, journals, and articles, among others.

3.4 Method of Analysis

Arithmetic Mean

The simple mean, or arithmetic mean, of a data set is calculated by dividing the sum of all observations by the total number of observations. It represents the central value of the data and is considered the best measure of central tendency for the entire group. The formula for calculating the arithmetic mean of a series is:

$$\text{Mean } (\bar{X}) = \frac{\Sigma X}{n}$$

Where,

$\bar{X}$ = denotes arithmetic mean, n denotes the no. of periods and x_1, x_2 …… x are the individual observations.

Standard Deviation

The standard deviation is defined as the positive square root of the mean of the squared deviations from the arithmetic mean. It indicates the extent to which data points deviate from the mean, providing a measure of the spread or dispersion of the data. A larger standard deviation signifies greater variability, while a smaller standard deviation indicates less variability. In essence, standard deviation quantifies how far the individual data points are from the central value, helping to assess the consistency or quality of the data in terms of its variability. The formula for calculating the standard deviation is:

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

Co-efficient of Variation

The dispersion is expressed in absolute terms by the standard deviation. The relative measure of dispersion based on the standard deviation is the coefficient of standard

deviation. The percentage value of the coefficient of variation is the coefficient of so. Fewer CVs translate into more homogeneity and uniformity, and vice versa. The CV may compare two sets of variables independently based on how variable they are, in addition to the standard deviation being unsuitable for comparing two sets of variables. It is computed as follows:

$$\text{Coefficient of Variation (C.V.)} = \frac{\sigma}{\bar{X}} \times 100$$

Coefficient of Correlation

The correlation coefficient is a measure of the connection between the independent and dependent variables. It is a method for determining the relationship between these two variables. When the two variables have a strong relationship that is, when changes in the value of the independent variable also impact the value of the dependent variable there is a correlation coefficient.

$$\text{Correlation Coefficient (r)} = \frac{n\Sigma XY - \Sigma X\Sigma Y}{\sqrt{n\Sigma X^2 - (\Sigma X)^2}\sqrt{n\Sigma Y^2 - (\Sigma Y)^2}}$$

Regression Analysis

In statistical modeling, regression analysis is a set of statistical techniques used to assess the correlations between variables. A range of modeling and analysis techniques are used to investigate the relationship between a dependent variable (ROA and ROE) and one or more independent variables (debt ratio, debt to equity ratio, and firm size). More specifically, regression analysis explains how the typical value of the dependent variable, commonly referred to as the "criterion variable," varies when any one of the independent factors is altered while the other independent variables remain unchanged.

Model Specification

The model is a straightforward linear regression function that connects the profitability and capital structure ratios. The general regression formula looks like this:

Model 1

In this model, ROA is dependent variable whose value is affected by the value of other independent variables.

$ROA = \alpha + \beta_1 DR + \beta_2 DER + \beta_3 Size$

Where,

DR = Debt Ratio

DER = Debt equity Ratio

Size = Size (Total Assets)

α = Constant

β = Parameters of the Net Profit

Model 2

In this model, ROE is dependent variable whose value is affected by the value of other independent variables.

$ROE = \alpha + \beta_1 DR + \beta_2 DER + \beta_3 Size$

Where,

DR = Debt Ratio

DER = Debt equity Ratio

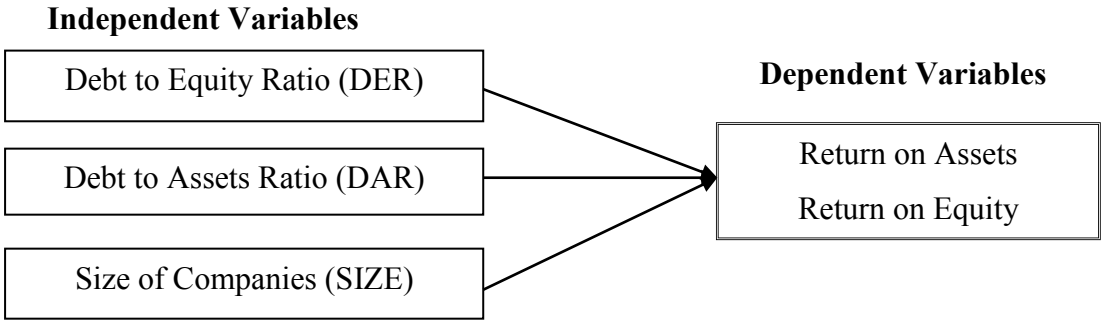
Size = Size (Total Assets)

α = Constant

β = Parameters of the Net Profit

3.5 Research Framework and Definition of Variables

The researcher constructed the following conceptual framework for the study based on reviews of the theoretical and empirical literature.



Source: Jaishi 2020; Bhattarai, 2020

Figure 1 Research Framework

Debt to Equity (D/E) ratio

The debt-to-equity ratio represents the percentage of a company's long-term debt in relation to its equity, providing a measure of its financial leverage. This ratio

compares the amount of debt used by a company to finance its assets with the equity held by its shareholders. It is commonly used to assess how much a company is relying on debt as a strategy to increase its value by borrowing funds to support various projects. A higher debt-to-equity ratio indicates that the company is aggressively using debt to fund its growth. While this can potentially amplify returns, it also increases the company's financial risk. Excessive use of debt is often associated with higher risk, as it may lead to volatile earnings due to the added burden of interest expenses.

$$\text{Debt-equity ratio} = \frac{\text{Total Debt}}{\text{Total Shareholder's equtiy}}$$

Debt to Asset (D/A) ratio

The debt-to-asset ratio represents the percentage of a company's assets that are financed through long-term debt. A higher debt-to-asset ratio indicates that the company is more leveraged, which means it carries a higher financial risk. A lower debt-to-asset ratio, on the other hand, suggests that the company relies less on debt and is in a stronger financial position, often reflecting better financial performance. Companies with higher debt-to-asset ratios must maintain a consistent income stream to cover their debt obligations and avoid financial strain.

$$\text{Debt-total assets ratio} = \frac{\text{Total Debt}}{\text{Total assets}}$$

Firm Size (Size)

One control variable that could influence a company's value, aside from its leverage, is its size. In this study, the firm's size is represented by the logarithm of its total assets. This proxy helps account for the potential effect of company size on its financial performance and value, as larger firms may have different risk profiles, market power, and access to resources compared to smaller firms.

Firm size (Size) = Log of total asset

Return on Asset (ROA)

The percentage of profit a business produces relative to its total resources is shown by a financial measure known as return on asset (ROA). The question of what you can do with the resources available to you is answered by ROA. A greater ROA indicates

superior management. Return on assets (ROA) is a metric that managers, investors, and analysts may use to assess how well a company's management is making money off of its assets.

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

Return on Equity (ROE)

Return on equity is defined as the amount of net income returned as a percentage of shareholder equity. By revealing the amount of profit a business produces on the capital given by shareholders, it evaluates its profitability. We will examine the Nepali life insurance company to examine the relationship between the parameters used in this study and the amount of profit a company generates with each cedi of shareholders' equity.

$$\text{Return on Equity (ROE)} = \frac{\text{Net Profit After tax}}{\text{Total Equity}}$$

CHAPTER - IV
RESULTS AND DISCUSION

The primary goal of this study is to examine how capital structure affects the profitability of life insurance companies in Nepal, as the researcher covered in the earlier chapters. As a consequence, this chapter, which is divided into three sections, deals with the findings and their analysis. Descriptive and correlational analyses of the study's variables were reported in the first part; the assumptions of the linear regression model were fulfilled in the second; and the regression's findings were presented in the third. The ratio of the designated dependent and independent variables, as well as the data analysis techniques utilized for ratio scale measurement, were computed for additional statistical analysis. The statistical program SPSS version 26 was used to help analyze the data that was gathered.

4.1 Results

4.1.1 Position and Status of Variables

Seven important variables are examined in this section, including the debt-to-equity and debt-to-total-assets ratios, company size, return on assets and return on equity.

4.1.1.1 Debt to Assets Ratio

The overall debt of the business is divided by the total asset value to arrive at this ratio. Both current and fixed assets make up the firm's total assets, and both short- and long-term debt make up its total debt. It shows the percentage of total assets financed by creditors, liabilities, and debt. If the company's total debt to asset ratio is 100%, then its obligations and assets are equal. A company with a total debt to asset ratio more than 100 percent is said to have more obligations than assets. Because it shows that it has more assets than liabilities and may sell those assets to pay off its debt in an emergency, a firm with a lower total debt to asset ratio is riskier.

Table 2

Debt to Assets

(In Percent)

Year	NLIC	NLICL	LICN
2013/14	5.57	6.58	3.98
2014/15	5.29	5.66	4.68
2015/16	4.58	5.41	4.15
2016/17	6.77	6.39	6.99
2017/18	7.88	8.55	6.57
2018/19	6.63	8.40	6.81
2019/20	7.10	7.50	6.99
2020/21	6.30	6.77	7.25
2021/22	4.16	5.83	7.63
2022/23	3.59	6.20	7.74
Mean	5.79	6.73	6.28
SD	1.38	1.10	1.44
CV	23.92	16.30	22.93

Source: Appendix- I

Table 2 shows that the debt to assets ratio of life insurance companies is in variable trend. In the fiscal year 2017/18, NLIC recorded its highest ratio of 7.88 percent, while in the fiscal year 2022/23, it reached its lowest ratio of 3.59 percent. Similarly, the ratio for NLICL fluctuated over the years, peaking at 6.58 percent in 2013–14 and dropping to 5.41 percent in 2015/16. For LICN, the ratio varied as well, reaching its lowest point of 3.98 percent in 2013/14 and its highest point of 7.74 percent in the fiscal year 2022/23. The average ratios for NLIC, NLICL, and LICN are 5.79 percent, 6.73 percent, and 6.68 percent, respectively. Among these, NLIC, with its lower total debt-to-asset ratio, appears to be the most preferable option, as it is financially more stable than the others in the sample. Additionally, NLICL has the lowest standard deviation, indicating that it is the least risky of the sample companies. With a coefficient of variation (CV) of 16.30 percent, NLICL demonstrates the highest level of consistency in its financial performance.

4.1.1.2 Debt to Equity

This ratio measures the relative conditions of the owner and outsiders on the company's assets. The total debt to equity ratio illustrates the relative contributions of debt capital and equity capital funds to the entire investment. A high ratio, relative to the owners, means that a larger portion of the capital came from the creditors, who want a low debt-to-equity ratio. An equal share of the company's assets are owned by

creditors and investors when the debt to equity ratio equals 1. When a company's debt to equity ratio is lower, it is frequently viewed as less risky and more financially stable.

Table 3

Debt to Equity

(In times)

Year	NLIC	NLICL	LICN
2013/14	0.06	0.07	0.04
2014/15	0.06	0.06	0.05
2015/16	0.05	0.06	0.04
2016/17	0.07	0.07	0.08
2017/18	0.09	0.09	0.07
2018/19	0.07	0.09	0.07
2019/20	0.08	0.08	0.08
2020/21	0.07	0.07	0.08
2021/22	0.04	0.06	0.08
2022/23	0.04	0.07	0.08
Mean	0.06	0.07	0.07
SD	0.02	0.01	0.02
CV	25.26	17.56	24.14

Source: Appendix- I

Table 3 shows that the debt to equity ratio of life insurance companies is in fluctuating trend. The fiscal year 2017/18 had the highest NLIC ratio of 0.09 percent, while the fiscal years 2021/22 and 2022/23 saw the lowest ratio of 0.04 percent. Likewise, the NLICL ratio varies from the greatest of 0.09 percent in fiscal years 2017/18 and 2019/20 to the lowest of 0.06 percent in fiscal years 2014/15, 2015/16, and 2021/22. Similarly, the LICN ratio varies from the greatest of 0.08 percent in fiscal years 2016/17, 2019/20, 2020/21, 2021/22, and 2022/23 to the lowest of 0.04 percent in fiscal years 2013/14 and 0.04. NLIC, NLICL, and LICN had average ratios of 0.06 percent, 0.07 percent, and 0.07 percent, respectively. It suggests that among the sample firms, NLIC is a more financially secure company with a lower debt to equity ratio. NLICL is the least dangerous of all the sample life insurance firms, as evidenced by its lowest standard deviation. With the lowest coefficient of variation (CV) of 17.56 percent, NLICL has demonstrated the best degree of consistency among the ratios.

4.1.1.3 Size of the Companies

The size of the insurance companies is determined by the logarithm of their total assets. Since larger companies typically have greater resources, better risk diversification, more advanced information systems, and more efficient management of expenses, it is expected that there will be a positive correlation between company size and profitability. Larger businesses are generally better equipped to generate higher profits due to these advantages.

Table 4

Size of the Companies

(Rs. in million)

Year	NLIC	NLICL	LICN
2013/14	20021	11881	17212
2014/15	27082	14188	22565
2015/16	36302	17035	29264
2016/17	50745	20810	37902
2017/18	62354	25992	47888
2018/19	77925	33517	60786
2019/20	101997	40987	75643
2020/21	126950	50572	90505
2021/22	152342	59817	105272
2022/23	180049	70508	121217
Mean	83576.74	34530.73	60825.37
SD	55057.75	20351.89	36175.65
CV	65.88	58.94	59.47

Source: Appendix- I

Table 4 shows that the size of insurance companies in Nepal. The size of the sample life insurance companies shows an increasing trend over the years. For NLIC, the total assets peaked at Rs.180,049 million in the fiscal year 2022/23 and were lowest at Rs.20,021 million in the fiscal year 2013/14. Similarly, NLICL's total assets reached a high of Rs.70,508 million in the fiscal year 2022/23 and a low of Rs.11,881 million in 2013/14. Likewise, LICN's total assets peaked at Rs.121,217 million in 2022/23 and were at their lowest of Rs.17,212 million in the fiscal year 2013/14. NLIC, NLICL, and LICN have average total assets of Rs.83576.74, Rs.34503.73, and Rs.60825.37 million, respectively. It reveals that NLIC is the biggest corporation with the most resources, the best risk diversification, sophisticated information systems, and the finest cost control. NLICL is the least hazardous of the sample firms since it has the

lowest standard deviation. With the lowest coefficient of variation (CV) of 58.94 percent, the data indicates that NLICL has the highest level of consistency in the ratio.

4.1.1.4 Return on Assets

The primary profitability measure is Return on Assets (ROA), which calculates a company's profit for every dollar of assets. It reflects the company's ability to generate profit without relying on leverage. ROA provides valuable insight into how efficiently management is utilizing the company's assets to generate earnings. However, shareholders often place more emphasis on other financial ratios, such as Return on Equity (ROE), rather than relying solely on ROA. ROA specifically indicates how much net profit is generated from the total assets, offering a measure of how effectively assets are being managed. This ratio helps management identify the key factors that influence the company's overall profitability and success.

Table 5

Return on Assets

(In percent)

Year	NLIC	NLICL	LICN
2013/14	3.07	2.13	1.13
2014/15	1.95	1.86	1.10
2015/16	2.50	2.05	1.10
2016/17	1.98	1.97	0.36
2017/18	1.78	1.82	2.81
2018/19	1.52	1.05	0.51
2019/20	1.17	1.73	0.95
2020/21	1.22	1.36	0.86
2021/22	0.23	1.24	0.74
2022/23	0.37	0.52	0.10
Mean	1.58	1.57	0.97
SD	0.88	0.52	0.73
CV	55.72	32.93	75.99

Source: Appendix- I

Table 5 shows that the return on assets of life insurance companies in Nepal. The sample firms' ratio is showing a tendency of fluctuation. The fiscal year 2013/14 had the highest NLIC ratio of 3.07 percent, while the fiscal year 2021/22 saw the lowest ratio of 0.23 percent. Likewise, the NLICL ratio varies from a maximum of 2.13 percent in the fiscal year 2013/14 to a minimum of 0.52 percent in the fiscal year 2022–2023. Similar to this, the LICN ratio varies from a maximum of 2.81 percent in

the fiscal year 2017/18 to a minimum of 0.10 percent in the fiscal year 2022/23. NLIC, NLICL, and LICN had respective mean ratios of 1.58 percent, 1.57 percent, and 0.97 percent. Given their greatest percentage, it suggests that NLIC was able to oversee their whole business. To put it another way, NLIC can maximize the return on its assets. NLICL has the lowest risk among the sample firms, as shown by its lowest standard deviation. With the lowest CV of 32.93 percent, NLICL has been the most stable among the ratios, according to CV.

4.1.1.5 Return on Equity

A return on shareholder equity is calculated to ascertain if an owner's investment is profitable. Return on equity (ROE), which indicates how much profit a company produces on the capital invested by shareholders, is a measure of a company's profitability. Return on equity is computed by dividing net profit after taxes by shareholder equity.

Table 6

Return on Equity

(In percent)

Year	NLIC	NLICL	LICN
2013/14	3.25	2.27	1.18
2014/15	2.06	1.97	1.16
2015/16	2.62	2.17	1.15
2016/17	2.12	2.10	0.38
2017/18	1.94	2.00	3.01
2018/19	1.62	1.14	0.55
2019/20	1.26	1.87	1.02
2020/21	1.30	1.46	0.93
2021/22	0.24	1.31	0.80
2022/23	0.39	0.55	0.11
Mean	1.68	1.69	1.03
SD	0.93	0.55	0.78
CV	55.44	32.74	76.18

Source: Appendix- I

Table 6 shows that the return on equity of life insurance companies in Nepal. The sample companies ratio is showing a tendency of fluctuation. The fiscal year 2013–14 had the highest NLIC ratio of 3.25 percent, while the fiscal year 2021–2022 saw the lowest ratio of 0.24 percent. Likewise, the NLICL ratio varies from a maximum of 2.27 percent in the fiscal year 2013–14 to a minimum of 0.55 percent in the fiscal year

2022–2023. Comparably, the LICN ratio varies from its maximum of 3.01 percent in the fiscal year 2017–18 to its minimum of 0.11 percent in the fiscal year 2022–2023. NLIC, NLICL, and LICN had mean ratios of 1.68 percent, 1.69 percent, and 1.03 percent, respectively. Among these, the NLICL's return on equity is thought to be the finest or most efficient management for making money. Furthermore, it may be said that NLICL is performing in a progressive manner. NLICL has the lowest risk among the sample firms, as shown by its lowest standard deviation. Based on the ratios' coefficient of variation, it can be inferred that NLICL has exhibited the highest consistency, with the lowest CV of 37.97 percent.

4.1.2 Descriptive Statistics of Variables

Table 7 displays the descriptive statistics for the variables considered in the study. The outcome demonstrates the lowest and highest performance metrics for Nepali insurance businesses' profitability measures, ROE and ROA, as well as other independent factors.

Table 7

Descriptive Statistics of Variable of Insurance Companies

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Independent Variables:					
DER	30	.04	.09	.0673	.01507
DAR	30	3.59	8.55	6.2650	1.32842
LSIZE	30	7.07	8.26	7.6645	.32284
Dependent Variables:					
ROA	30	.10	3.07	1.3727	.75942
ROE	30	.11	3.25	1.4643	.80807

Source: Appendix –II

Table 7 presents the descriptive statistics for the dependent and independent variables used in the study. For the first independent variable, the debt-to-equity ratio, the average ratio is 0.0673 times, with a standard deviation of 0.01507 over the study period. The maximum ratio observed is 0.09, while the minimum ratio is 0.04. For the second independent variable, the debt-to-assets ratio, this ratio ranges from a minimum of 3.59 percent to a maximum of 8.55 percent. The average ratio is 6.2650 percent, with a standard deviation of 1.32842, reflecting the variability of this ratio across the study period. The final independent variable, company size, shows a range from a minimum of 7.07 to a maximum of 8.26, with an average of 7.6645 and a

standard deviation of 0.32284. For the dependent variable, Return on Assets (ROA), the average ROA over the study period is 1.3727 percent, with a standard deviation of 0.75942. The maximum ROA is 3.07 percent, while the minimum is 0.10 percent. ROA measures the efficiency with which the insurance companies use their assets to generate profit, calculated by dividing profit before interest and tax (EBIT) by total assets. As for Return on Equity (ROE), the mean is 1.4643 percent, with a range from a minimum of 0.11 percent to a maximum of 3.25 percent, and a standard deviation of 0.80807. This ratio indicates the profitability of the companies relative to shareholders' equity.

4.1.3 Correlation Analysis

A correlation matrix is a table that shows the correlation coefficients between variables. Each table cell shows the correlation between two matched variables. A correlation matrix can be used to summarize data. This provides us with a brief summary of the variables that exhibit varying degrees of importance and correlation. The absence of a linear relationship between the two variables is indicated by a correlation value of 0. A complete positive link is represented by a correlation coefficient of +1 between two variables, whereas a perfect negative association is represented by a correlation coefficient of -1. The correlation matrix is shown as follows in Table 3.

Table 8

Pearson Correlation Coefficients of Study Variables

	DER	DAR	LSIZE	ROA	ROE
DER	1				
DAR	.983**	1			
LSIZE	.126	.123	1		
ROA	.010	-.005	-.602**	1	
ROE	.030	.015	-.597**	1.000**	1

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

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

Source: Appendix-III

Table 8 presents the results of the correlation analysis between the dependent and independent variables using a correlation coefficient matrix. The analysis indicates that the debt equity ratio (DER) has a statistically insignificant positive relationship with ROA at the 5% significance level. Similarly, the DER shows an insignificant

positive correlation with ROE. Additionally, the debt to total assets ratio demonstrates an insignificant negative correlation with ROA and an insignificant positive correlation with ROE. Furthermore, the size of the companies is found to have a significant negative relationship with both ROA and ROE in the context of insurance companies.

4.1.4 Regression Analysis

When examining the link between dependent variables (ROA and ROE) and independent factors (debt to total assets ratio, debt to equity ratio, and company size), it encompasses a variety of modeling and analysis methodologies. One of the main tools for panel data analysis is ordinary least square regression (OLS).

4.1.4.1 Analysis of Return on Assets Regression

ROA is the dependent variable, while the independent variables are the debt to total assets ratio, debt to equity ratio, and company size, used to analyze the impact of capital structure on the profitability of insurance companies.

Table 9

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.614[a]	.378	.306	.63277

a. Predictors: (Constant), LSIZE, DER, DAR

Source: Appendix-IV

A summary metric used in multiple regression that indicates how well the sample regression line fits the data is the coefficient of determination (R2). Stated differently, the R2 statistic indicates the percentage of the dependent variable's variance that can be explained by the independent variables. In this instance, 37.80% of the variation in the dependent variable, ROA, can be explained by the model. The R statistic value of 0.614, which indicates a strong degree of association between the research variables, provides the basis for the strength of the variables' relationship (multiple correlation coefficients). This suggests that the independent factors had a significant impact on the ROA. Regression analysis is perfectly correlated with standard error of estimate.

Table 10

Analysis of Variance (ANOVA)

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.315	3	2.105	5.257	.006[b]
	Residual	10.410	26	.400		
	Total	16.725	29			

a. Dependent Variable: ROA
b. Predictors: (Constant), LSIZE, DER, DAR

Source: Appendix-IV

The most likely combination of predictor factors that might influence the impact of dependent variables is explained by an analysis using ANOVA (F-value). The ROA indicator has a considerable influence, according to the results. It is evident from the F-values of 5.257 ($p = 0.006 < 0.05$) for LSIZE, DER, and DAR as ROA proxy that the dependent variable (ROA) and the independent factors are significantly correlated.

Table 11

Regression Coefficient of Independent Variables with ROA

Variables	Coefficients	t-statistics	Sig. p-value
(Constant)	12.261	4.368	.000
DER	27.216	.644	.525
DAR	-.263	-.549	.587
LSIZE	-1.445	-3.937	.001

Source: Appendix-IV

Table 11 presents the regression coefficients for the independent variables—debt to total assets ratio, debt to equity ratio, and company size—as well as the intercept value for the dependent variable, ROA. The regression analysis shows that the debt to equity ratio (DER) has a positive relationship with ROA, with a coefficient estimate of 27.216. This implies that, while holding other variables constant, a one-unit increase in the debt to equity ratio (DER) is associated with a 27.216 percent increase in the ROA of insurance companies. However, the p-value for the debt to equity ratio (DER) is 0.525, indicating that the relationship is statistically insignificant at the 5 percent significance level. This suggests that the debt to equity ratio (DER) has an insignificant positive effect on ROA for insurance companies. The lack of significant impact implies that insurance companies may not be effectively using debt as a source of funding to finance operations. Additionally, external factors such as economic

conditions, the nature of the business, and market dynamics could influence ROA independently of leverage.

The regression model results show that the debt to assets ratio (DAR) has a negative relationship with ROA, with a coefficient estimate of -0.263. This suggests that, holding other independent variables constant, a 1% increase in the debt to assets ratio (DAR) results in a 0.263% decrease in the ROA of insurance companies. The p-value for the debt to assets ratio (DAR) is 0.587, indicating that the relationship is statistically insignificant at the 5% significance level. This means that the debt to assets ratio does not have a significant negative impact on ROA for insurance companies. The lack of a significant effect implies that companies with higher debt-to-asset ratios may struggle to maintain a steady income stream sufficient to cover their costs.

The regression results indicate that the size of companies (LSIZE) has a negative relationship with ROA, with a coefficient estimate of -1.445. This suggests that, holding other independent variables constant, a 1% increase in the size of a company leads to a 1.445% decrease in the ROA of insurance companies. The p-value for company size (LSIZE) is 0.001, which shows that the relationship is statistically significant at the 1% level. This means that the size of companies has a significant negative impact on ROA for insurance companies in Nepal.

4.1.4.2 Analysis of Return on Equity Regression

ROE is the dependent variable, with the independent variables being the debt to total assets ratio, debt to equity ratio, and company size. This model is used to analyze the impact of capital structure on the profitability of insurance companies.

Table 12

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.612[a]	.374	.302	.67496

a. Predictors: (Constant), LSIZE, DER, DAR
Source: Appendix-V

A summary statistic used in multiple regression that indicates how well the sample regression line fits the data is the coefficient of determination (R2). In this instance, 37.40 percent of the variation in the dependent variable, ROE, can be explained by the model. The value of the R statistic determines the strength of the association between the variables (multiple correlation coefficients). The study's R value, which stands at 0.612, suggests that the variables under investigation have a strong correlation with one another. This suggests that the independent factors had a significant impact on the ROE. Regression analysis is perfectly correlated with standard error of estimate.

Table 13

Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.092	3	2.364	5.189	.006[b]
	Residual	11.845	26	.456		
	Total	18.936	29			

a. Dependent Variable: ROE
b. Predictors: (Constant), LSIZE, DER, DAR

Source: Appendix-V

The most likely combination of predictor factors that might influence the impact of dependent variables is explained by an analysis using ANOVA (F-value). The ROE indicator has a considerable influence, according to the results. The dependent variable (ROE) and the independent factors are clearly related, as seen by the F-values of 5.189 ($p = 0.006 < 0.05$) for LSIZE, DER, and DAR as ROE proxy.

Table 14

Regression Coefficient of Independent Variables with ROE

Variables	Coefficients	t-statistics	Sig. or p-value
(Constant)	12.924	4.317	.000
DER	28.578	.634	.531
DAR	-.264	-.516	.610
LSIZE	-1.531	-3.911	.001

Source: Appendix-V

Table 14 presents the regression coefficients for the independent variables—debt to total assets ratio, debt to equity ratio, and company size—as well as the intercept value for the dependent variable, ROE. The regression results show that the debt to equity ratio (DER) has a positive relationship with ROE, with a coefficient estimate of

28.578. This means that, holding other variables constant, a one-unit increase in the debt to equity ratio (DER) is associated with a 28.578 percent increase in ROE for insurance companies. However, the p-value for the debt to equity ratio (DER) is 0.531, indicating that the relationship is statistically insignificant at the 5 percent significance level. This suggests that the debt to equity ratio (DER) has an insignificant positive effect on ROE. The lack of significant impact implies that insurance companies are not effectively using debt as a source of funding to properly finance their operations. Additionally, external factors such as economic conditions, the nature of the business, and market dynamics may influence ROE independently of leverage.

The regression model results show that the debt to assets ratio (DAR) has a negative relationship with ROE, with a coefficient estimate of -0.264. This indicates that, holding other independent variables constant, a 1% increase in the debt to assets ratio (DAR) results in a 0.264% decrease in ROE for insurance companies. The p-value for the debt to assets ratio (DAR) is 0.610, suggesting that this relationship is statistically insignificant at the 5% significance level. Therefore, the debt to assets ratio has an insignificant negative impact on ROE. The lack of significant impact implies that companies with higher debt-to-asset ratios may struggle to maintain a stable income flow sufficient to cover their costs.

The regression results indicate that the size of companies (LSIZE) has a negative relationship with ROE, with a coefficient estimate of -1.531. This suggests that, holding other independent variables constant, a 1% increase in company size results in a 1.531% decrease in ROE for insurance companies. The p-value for company size (LSIZE) is 0.001, which shows that the relationship is statistically significant at the 1% level. This indicates that the size of companies has a significant negative impact on ROE for insurance companies in Nepal.

4.2 Discussion

The primary objective of this study is to assess the impact of capital structure on the profitability of life insurance companies. Capital structure influences key profitability metrics, such as return on assets (ROA) and return on equity (ROE), which are essential for evaluating the financial performance of life insurance companies in

Nepal. The correlation analysis reveals that the debt equity ratio (DER) has an insignificant positive relationship with ROA at the 5% significance level. This finding aligns with Bhattarai's (2020) study and is consistent with the results of Dodoo, Kumi, and Mangudhla (2023), who also found a positive relationship between the debt to equity ratio and ROA. The debt to equity ratio (DER) also shows an insignificant positive relationship with ROE, which aligns with the findings of Gundu (2021). However, this result contradicts the study by Dodoo, Kumi, and Mangudhla (2023), who found a negative relationship between the debt to equity ratio and ROE. Additionally, the debt to total assets ratio shows an insignificant negative correlation with ROA, consistent with the findings of Tran et al. (2023), but contradicting the results of Bhattarai (2020) and Jaishi (2020). On the other hand, the debt to total assets ratio has an insignificant positive relationship with ROE, which is consistent with Bhatt and Jain's (2020) study, where they observed a positive relationship, but it contradicts the findings of Tran et al. (2023). Furthermore, company size has a significant negative relationship with ROA, which is consistent with the findings of Bhattarai (2020), Jaishi (2020), and Tran et al. (2023), but differs from the results of Dodoo, Kumi, and Mangudhla (2023). Company size also has a significant negative relationship with ROE, which aligns with the findings of Dodoo, Kumi, and Mangudhla (2023). However, this result contradicts the conclusions of Bhatt and Jain (2020) and Tran et al. (2023), who found a positive relationship between company size and ROE.

The multiple regression analysis reveals that the debt to equity ratio (DER) has an insignificant effect on the ROA of insurance companies, which is consistent with the findings of Bhattarai (2020) and Dodoo, Kumi, and Mangudhla (2023), but differs from the result of Boshnak (2023). Additionally, the debt to assets ratio (DAR) shows an insignificant negative impact on ROA at the 5% significance level, which aligns with the findings of Opoku-Asante, Winful, Sharifzadeh, and Neubert (2022), as well as Tran et al. (2023). However, this contradicts the findings of Bhattarai (2020) and Jaishi (2020), who reported a different relationship. Furthermore, the size of companies has a significant negative impact on ROA for insurance companies in Nepal, which is consistent with the findings of Jaishi (2020) and Tran et al. (2023), but contradicts the results of Bhattarai (2020) and Dodoo, Kumi, and Mangudhla (2023).

The regression analysis for ROE reveals that the debt to equity ratio (DER) has an insignificant positive effect on ROE for insurance companies. This result is consistent with the findings of Gundu (2021), who also noted a positive effect of DER on ROE, but it contradicts the results of Dodoo, Kumi, and Mangudhla (2023) and Boshnak (2023), who found different relationships. The debt to assets ratio (DAR) shows a statistically insignificant negative impact on ROE at the 5% significance level, which aligns with the findings of Gundu (2021) and Tran et al. (2023). However, this contradicts the results of Bhatt and Jain (2020), who found a different relationship between DAR and ROE. Finally, the regression results indicate that the size of companies has a significant negative impact on ROE for insurance companies in Nepal. This finding is consistent with the results of Tran et al. (2023) and Dodoo, Kumi, and Mangudhla (2023), but it is contrary to the findings of Bhatt and Jain (2020), who reported a positive relationship between company size and ROE.

CHAPTER – V
SUMMARY AND CONCLUSION

5.1 Summary

Insurance companies must make key decisions regarding their capital structure to optimize shareholder value, as these decisions directly affect their ability to compete in the market. Choosing the right balance of debt and equity to maximize value while minimizing financing costs is a critical decision for managers today. The financial sector plays a vital role in the economic growth of any country, and as such, corporate performance is crucial not only to a company's success but also to the overall financial stability of the nation, as well as to maximizing value for shareholders. To achieve an optimal capital structure, insurance companies must carefully select and adjust their strategic financing mix, ensuring that their operations are neither overly leveraged nor under-leveraged. Since the goal of value maximization and risk minimization applies broadly, this study focuses on exploring the relationship between capital structure and profitability within the context of Nepalese insurance companies.

The primary objective of this study is to analyze the impact of capital structure on the profitability of life insurance companies in Nepal. The specific objectives include assessing the capital structure position of life insurance companies in Nepal, measuring the relationship between capital structure variables and profitability, and evaluating the impact of the debt ratio, debt equity ratio, and firm size on the profitability of these companies. To support this research, relevant journals, articles, and related websites have been consulted. To achieve the specific objectives of this study, both descriptive and causal research designs have been employed. The descriptive design is used to analyze the capital structure and profitability of life insurance companies, while the causal research design is applied to measure the impact of capital structure on profitability. Out of a total population of fourteen life insurance companies in Nepal, three companies were selected as a sample using purposive sampling. These three companies were chosen because they are the top three in terms of profitability and have accessible data. The data for the study is secondary, primarily gathered from the annual reports and other publications of the selected insurance companies. The data covers a ten-year period, from the fiscal year

2013/14 to 2022/23. The study employs descriptive analysis, correlation analysis, and multiple regression techniques using SPSS version 26. In this analysis, Return on Assets (ROA) and Return on Equity (ROE) are used as dependent variables, while the debt to equity ratio, debt to total assets ratio, and company size are treated as explanatory variables.

This study reveals that insurance companies play a significant role in contributing to investors' funds and maintain a strong capital adequacy position, primarily due to their high debt to equity ratio. However, the findings also show that life insurance companies tend to rely heavily on debt financing, which places them at risk due to their high leverage ratios or debt equity ratios. Profitability, as a measure of efficiency, is indicated by the high values of ROA and ROE in life insurance companies, suggesting that these companies are effectively utilizing their assets. This results in higher returns for investors and good overall company performance. The correlation analysis indicates that the debt to equity ratio (DER) has an insignificant positive relationship with both ROA and ROE. Similarly, the debt to total assets ratio shows an insignificant negative correlation with ROA and an insignificant positive relationship with ROE. Furthermore, the size of the companies has a significant negative relationship with both ROA and ROE, suggesting that larger companies in the insurance sector tend to have lower profitability in terms of both ROA and ROE. The multiple regression results show that the debt to equity ratio has an insignificant positive impact on the profitability (ROA and ROE) of insurance companies. Similarly, the debt to assets ratio has an insignificant negative impact on profitability (ROA and ROE). However, the size of the companies has a significant negative impact on both ROA and ROE for insurance companies in Nepal. Based on these findings, the study concludes that, overall, capital structure has an insignificant impact on the profitability of life insurance companies in Nepal.

5.2 Conclusion

Based on the findings of this research study, several conclusions have been drawn. The study concludes that insurance companies in Nepal are successful in utilizing debt to finance highly profitable assets, as evidenced by their high debt to assets ratios. Additionally, the owners of these companies tend to prefer higher debt ratios, which implies that insurance companies make significant contributions to investors'

funds and maintain a strong capital adequacy position. However, the study also highlights the risks associated with high leverage, as these companies rely heavily on debt financing compared to equity, which can expose them to greater financial risk due to the high debt-to-equity ratio. Profitability, being a key measure of efficiency, reflects the companies' success in generating desired profits. The high values of Return on Assets (ROA) and Return on Equity (ROE) indicate that these insurance companies are effectively utilizing their total assets to generate profits. As a result, investors are receiving higher returns on their investments, and the overall performance of these companies is positive. This suggests that the insurance companies are performing well in terms of profitability and asset utilization.

The correlation analysis indicates that the debt equity ratio (DER) has an insignificant positive relationship with profitability, as measured by both ROA and ROE. Additionally, the debt to total assets ratio shows an insignificant negative correlation with ROA, while exhibiting an insignificant positive relationship with ROE. Furthermore, the size of the companies has a significant negative relationship with both ROA and ROE for insurance companies. This suggests that larger companies tend to have lower profitability in terms of both ROA and ROE.

The regression results indicate that the debt to equity ratio has an insignificant positive impact on profitability (both ROA and ROE) of insurance companies. Similarly, the debt to assets ratio shows an insignificant negative impact on profitability (ROA and ROE). However, the size of the companies has a significant negative impact on profitability (ROA and ROE) for insurance companies in Nepal. Based on these findings, the study concludes that capital structure has an insignificant effect on the profitability of Nepalese life insurance companies.

5.3 Implications

The investigation has led to the following conclusions about how to improve the capital structure's influence on the profitability of Nepali insurance companies.

- This study found that the debt-to-equity ratio and debt-to-assets ratio have a negligible effect on the profitability of insurance companies in Nepal. The findings are intended to offer further insights into how capital structure influences profitability. Consequently, this suggests that policymakers and

insurance company managers should carefully consider the feasibility of their financial decisions.

- This research provides some of the latest data, statistics, and insights regarding capital structure and profitability. Therefore, it is likely to be of significant interest to insurers and shareholders.
- Future scholars and investors can benefit from the study's conclusions. Future researchers will find this study to be a valuable resource.
- This study recommends that further research be conducted over a period of more than ten years, using a larger sample size that includes more than three insurance companies, as well as other financial institutions such as commercial banks, finance companies, development banks, and microfinance institutions. If carried out properly, this could provide more robust findings for policy implementation. Additionally, this study focused on only three independent variables: the debt-to-equity ratio, enterprise size, and debt-to-assets ratio. Therefore, future research should include other relevant factors, such as the liquidity ratio, long-term debt-to-equity ratio, equity-to-total-assets ratio, tangible assets, and macroeconomic variables like GDP growth and inflation.

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APPENDICES

APPENDIX – I

Raw Data of Sample Life Insurance Companies

Co.	Year	DER	DAR	SIZE	ROA	ROE
NLIC	2013/14	0.06	5.57	20020644	3.07	3.25
	2014/15	0.06	5.29	27081894	1.95	2.06
	2015/16	0.05	4.58	36302202	2.50	2.62
	2016/17	0.07	6.77	50745148	1.98	2.12
	2017/18	0.09	7.88	62353772	1.78	1.94
	2018/19	0.07	6.63	77925355	1.52	1.62
	2019/20	0.08	7.10	101997461	1.17	1.26
	2020/21	0.07	6.30	126949757	1.22	1.30
	2021/22	0.04	4.16	152342188	0.23	0.24
	2022/23	0.04	3.59	180048653	0.37	0.39
NLICL	2013/14	0.07	6.58	11881489	2.13	2.27
	2014/15	0.06	5.66	14188427	1.86	1.97
	2015/16	0.06	5.41	17035225	2.05	2.17
	2016/17	0.07	6.39	20810065	1.97	2.10
	2017/18	0.09	8.55	25992248	1.82	2.00
	2018/19	0.09	8.40	33516779	1.05	1.14
	2019/20	0.08	7.50	40986883	1.73	1.87
	2020/21	0.07	6.77	50572044	1.36	1.46
	2021/22	0.06	5.83	59816517	1.24	1.31
	2022/23	0.07	6.20	70507656	0.52	0.55
LICN	2013/14	0.04	3.98	17211667	1.13	1.18
	2014/15	0.05	4.68	22564530	1.10	1.16
	2015/16	0.04	4.15	29264203	1.10	1.15
	2016/17	0.08	6.99	37902499	0.36	0.38
	2017/18	0.07	6.57	47888040	2.81	3.01
	2018/19	0.07	6.81	60785514	0.51	0.55
	2019/20	0.08	6.99	75643412	0.95	1.02
	2020/21	0.08	7.25	90504575	0.86	0.93
	2021/22	0.08	7.63	105272015	0.74	0.80
	2022/23	0.08	7.74	121217237	0.10	0.11

Source: Annual Report of Sample Life Insurance Companies

APPENDIX -II

Descriptive Analysis

	N	Minimum	Maximum	Mean	Std. Deviation
DER	30	.04	.09	.0673	.01507
DAR	30	3.59	8.55	6.2650	1.32842
LSIZE	30	7.07	8.26	7.6645	.32284
ROA	30	.10	3.07	1.3727	.75942
ROE	30	.11	3.25	1.4643	.80807
Valid N (listwise)	30				

Source: SPSS version 26

APPENDIX -III

Pearson Correlation Coefficients

		DER	DAR	LSIZE	ROA	ROE
DER	Pearson Correlation	1	.983**	.126	.010	.030
	Sig. (2-tailed)		.000	.505	.958	.877
	N	30	30	30	30	30
DAR	Pearson Correlation	.983**	1	.123	-.005	.015
	Sig. (2-tailed)	.000		.518	.979	.936
	N	30	30	30	30	30
LSIZE	Pearson Correlation	.126	.123	1	-.602**	-.597**
	Sig. (2-tailed)	.505	.518		.000	.000
	N	30	30	30	30	30
ROA	Pearson Correlation	.010	-.005	-.602**	1	1.000**
	Sig. (2-tailed)	.958	.979	.000		.000
	N	30	30	30	30	30
ROE	Pearson Correlation	.030	.015	-.597**	1.000**	1
	Sig. (2-tailed)	.877	.936	.000	.000	
	N	30	30	30	30	30

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

Source: SPSS version 26

APPENDIX -IV

Multiple Regression Analysis of Sample Companies (On ROA)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.614[a]	.378	.306	.63277

a. Predictors: (Constant), LSIZE, DAR, DER

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.315	3	2.105	5.257	.006[b]
	Residual	10.410	26	.400		
	Total	16.725	29			

a. Dependent Variable: ROA
b. Predictors: (Constant), LSIZE, DAR, DER

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	12.261	2.807		4.368	.000
	DER	27.216	42.236	.540	.644	.525
	DAR	-.263	.479	-.460	-.549	.587
	LSIZE	-1.445	.367	-.614	-3.937	.001

a. Dependent Variable: ROA

Source: SPSS version 26

APPENDIX -V

Multiple Regression Analysis of Sample Companies (On ROE)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.612[a]	.374	.302	.67496

a. Predictors: (Constant), LSIZE, DAR, DER

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.092	3	2.364	5.189	.006[b]
	Residual	11.845	26	.456		
	Total	18.936	29			

a. Dependent Variable: ROE
b. Predictors: (Constant), LSIZE, DAR, DER

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	12.924	2.994		4.317	.000
	DER	28.578	45.051	.533	.634	.531
	DAR	-.264	.511	-.434	-.516	.610
	LSIZE	-1.531	.391	-.612	-3.911	.001

a. Dependent Variable: ROE

Source: SPSS version 26

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