Reference to the Altman Z Score Model
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<b>CHAPTER 2: LITRETURE REVIEW</b>

Financial Performance Analysis of Selected Insurance Companies in India with

#### **CHAPTER 2: LITRETURE REVIEW**

#### 2.1 REVIEW OF LITRETURE

Azam, A., Ahmad, N., Khan, I., Mulla, N. A. I., & Khan, M. R. (2023) The Altmanz-Score Model is used to measure the financial performance of a selected group of Indian pharmaceutical companies. This study uses Altman's Z-Score methodology to analyze the financial performance of Indian pharmaceutical businesses from 2018–19 to 2022–2023. The primary research entities included in the analysis are Abbott India, Zydus Lifescience, Cipla, Divis Laboratories, and Torrent Pharmaceutical. Torrent Pharmaceutical and Zydus Lifescience demonstrate intermediate stability, and Cipla and Divis Laboratories maintain solid positions. In contrast, Abbot India maintains a strong position in the financial landscape. The need for aggressive financial management to safeguard these market players is emphasized in the paper.

Das, S., & Sarma, G. (2022) Prediction of Financial Distress Using Altman Z Score and Its Effect on Stock Return for Small Cap Pharmaceutical Companies Listed on the BSE (India). Investors can assess a company's financial health using techniques like ratio analysis and choice theory. situations, however, do not assess the organization's future financial situation; rather, they merely assess its present state. This study aims to forecast the likelihood of bankruptcy for small-cap pharmaceutical companies listed on the BSE and to identify the degree to which Z-score components impact stock return. A program that can precisely forecast the likelihood of a firm filing for bankruptcy is essential to enhancing investors' decision-making process.

Rahman, M. R., Rahman, M. M., & Subat, A. (2020) Altman's Z-Score methodology is utilized to assess the financial distress of non-bank financial firms in Bangladesh. Since 1981, NBFIs, or non-bank financial institutions, have been instrumental in the expansion of Bangladesh's economy. The majority of NBFIs have had exceptional financial performance, however a few are experiencing financial challenges. Using Altman's Z score (1995), this study assessed the monetary well-being of a sample of NBFIs. The research covered 2014–2018 and involved twenty NBFIs from 23 Dhaka Stock Exchange organizations. Most of the 20 NBFIs (95%) were in the crisis zone,

while just 5% were discovered in the safe zone. The study claims that some non-bank financial institutions (NBFIs) may look at filing for bankruptcy in the following years.

Molla, S. A. (2022) Assessment of Financial Distress Condition of Commercial Banks in Ethiopia: Assessment of Trends using Altman's Z-score Model. Preventing social and economic crises requires early warning indicators, and the financial crisis is a global business problem. For five years (2017–2021), this study assessed the financial hardship situation of CBE using Altman's Z'-score model, a quantitative model-based approach. Liquidity conditions mostly caused financial hardship. Commercial banks are in a similar financial bind to CBE, although CBE has a worse long-term financial soundness score. The board of directors and senior management should improve dividend policy and practice to reduce financial hardship.

Sood, K., Seth, N., & Grima, S. (2022) A comparative analysis of public sector general insurance companies' portfolio performance in India. A fundamental shift in customer knowledge of the pricing and quality of insurance products has been brought about by big data, in addition to the liberalization strategy (which has been implemented). An unanticipated catastrophe such as the COVID-19 pandemic will put existing models and insurance policies for both individuals and companies to the test. The purpose of this study is to bring attention to the difficulties connected with managing product portfolios in a disruptive environment.

**Dharma, B.** (2019) Comparative analysis of financial statements for insurance companies concerning f values. A financial performance study can examine a company's financial health over time. In order to assess a company's financial health, it is required to link the balance sheet with the profit and loss statement. It simplifies the process of analyzing the National Bank's financial data and gaining an understanding of the bank's finances. Regression research showed that size, liquidity, growth, leverage, and capital volume most determined profitability. Thus, growth, size, and capital volume are positively correlated. However, liquidity and leverage ratios negatively impact profitability. No association exists between a company's age, profitability, and tangible assets.

Anthony, P., Behnoee, B., Hassanpour, M., & Pamucar, D. (2019) Financial performance evaluation of seven Indian chemical companies. Using ratio analysis,

TOPSIS, CORPRAS, and DEA, the research investigates the financial characteristics of seven chemical companies operating in India between 2010 and 2018. One of the study's goals was to divide these companies into three distinct categories. The weighing systems created a linear scatter plot, and no noticeable variations in the values were obtained. Even though the Friedman test and the Entropy Shannon weighting techniques did not uncover any statistically significant changes in values, the DEA model used rank values to classify and categorize efficient organizations. This study brings to light the importance of financial evaluations to the expansion and development of society.

Srour, H., & El Maghawry, M. (2021). Using Altman Z-Score Model in Comparing Firms' Financial Performance Applied Research on Egyptian Stock Market. The 2008 financial crisis brought to light worries about company financial performance and the consequences of financial stress on large and small firms. We looked at how well Altman's failure prediction model predicted the financial troubles of Egyptian stock market companies. Microsoft Excel was used to gather and examine data from seven firms between 2016 and 2020 that came from secondary sources. According to the research, Altman's Z-score model is a reliable indicator of financial stress that stakeholders and investors should employ.

Amsaveni, M. R., & Selvan, M. C. (2020) A Study on the Profitability Analysis of Select Private Life Insurance Companies in India. Companies that offer insurance are extremely important to India's economy since they mitigate risk, promote private investment, provide job opportunities, and support various development efforts. Insurance companies need to be profitable to continue existing in a very competitive market on a global scale. When comparing the earnings growth of the top ten private life insurance companies in India between 2007 and 2017, SBI Life Insurance emerged as the clear winner. Based on operational ratio, INGVysya was determined to be the most profitable company. In contrast, TATALIC was found to be the most profitable in terms of underwriting risk.

Batool, A., & Sahi, A. (2019) Determinants of financial performance of USA and UK insurance companies during the global financial crisis (2007–2016). The insurance industry has been in a downward spiral for the last decade, according to studies that

analyzed the US and UK insurance markets. The study examined how businesses fared financially during the global financial crisis using panel data techniques and information gathered from twenty-four insurance firms between 2007 and 2016. According to the findings, the efficiency of insurance in the United States is superior to that of insurance in the United Kingdom. The study also found that factors including company size, liquidity, leverage, asset turnover, GDP, and WTI have a positive impact on financial success.

Srijanani, D., & Rao, R. S. (2019) An analysis of factors affecting the performance of general insurance companies in India. Individuals and businesses alike recognize the significance of insurance companies since they compensate for damages and restore things to the state they were in before the disaster. In addition to reducing losses, anxiety, and employment opportunities, they benefit society on both an economic and a social level. The insurance industry in India is still in its infancy, even though it has experienced growth in terms of penetration and density over the past decade. As a result of increasing disposable income and savings, most of the company's revenue comes from tax cuts and incentives, which have a limited appeal to customers.

Mondal, I., & Mandal, B. (2023) Impact of Corporate Governance on Financial Performance of Selected Insurance Companies in India. Policies, laws, and regulations pertaining to business management, operation, and supervision make up corporate governance. The interests of everyone—investors, clients, employees, suppliers, communities, governments, and society—are now stable. This research looks at the insurance industry in India and how corporate governance influences their bottom line. Ten insurance companies were selected from the 56 actives in India from 2018–19 to 2022–203. The study indicated that female board members and CEO duality harmed industry financial performance, but that board composition and independent directors had no such effect.

**Abdulkareem, A. M., & Nagvadiya, B. R. (2021)** The profitability and liquidity position of a few Indian life insurance companies are analytically examined. This study aims to determine which insurance firms have the best performance, as well as to examine the liquidity and profitability difficulties of two organizations, HDFC Standard Life Insurance Co. Ltd. and SBI Life Co. Ltd. Data analysis is carried out using a

theoretical framework for liquidity and profitability. Based on the data shown here, we can understand the ratios that relate to current assets, current liabilities, net profit, and gross profit. Simple random sampling is utilized to identify the top Indian banks, and a t-test is employed for hypothesis testing. Over the course of the study's five years, which start in 2014–15 and finish in 2018–19, secondary data from publications including annual reports and financial statements is used.

Goswami, Y., Asokan, K., & Arunasalam, K. (2022) Impact of Fraud on the Financial Performance of Insurance Companies in India. The prevalence of illnesses and the focus on prevention by financial institutions have led to increased insurance scams. About 8% of India's insurance industry income is going down the drain due to fraudulent claims. Insurance fraud in India cost the country's insurance industry INR 10,500 crores, or almost \$1.5 billion. Medical practices, surveyors, and support centers are all victims of these scams, which begin with erroneous research on insurance policy regulations. Aside from draining vital funds from the system, this false and illegal claim drives up costs. Expanding our understanding of ROA towards fraudulence, this essay examines how misleading promises impact insurance companies' success rates due to insurance scams.

Barakat, F. S., Hussein, J., Mahmoud, O. A., & Bayyoud, M. (2022) an analysis of the factors impacting the financial results of insurance companies traded on the Palestine Stock Exchange. This research examined seven Palestinian insurance companies' financial performance from 2010 to 2019. According to the results, a larger solvency buffer, a more robust state legal system, a larger board, and a larger corporation all had a favorable effect on return on assets. It was also shown that there were negative consequences on board member ownership, claims loss rates, and dependence on auditing organizations. Neither the audit committee's reliability nor the availability of reinsurance significantly affected ROA. The research implies that Palestinian insurance companies follow the required 150% profit margin.

**Upadhyay, G., & Sitlani, C. D. M. (2022)** A Study of Determinants and Their Impact on Financial Performance of Private Non-Life Insurance Industry in India. The financial services sector of India's insurance business is one of the fastest growing in the country. The research team behind this project hopes to identify the internal financial variables

that impact the profitability of India's private non-life insurance sector. The financial data of fifteen companies were obtained from 2013 to 2019, with Return on Assets (ROA) serving as a proxy. Profitability was positively affected by company age and technical reserve ratio and negatively affected by claims ratios, management expenses, and retention ratios.

Siddiqui, S. A. (2020) Evaluating the efficiency of the Indian life insurance sector. The research looked at 24 different Indian life insurance companies from 2013–2017. It utilized data envelopment analysis (DEA) to determine their technical effectiveness. It was discovered that the Life Insurance Corporation (LIC), which is a state-owned life insurance company, is efficient. Private life insurance companies varied in size, were both new and had varying degrees of success. Some made better use of capital, leading to higher productivity, while others were more efficient. To expand quickly, very few life insurance companies have made use of technology. Since the method does not assume functional form but depends on anticipated relative efficiency, comparisons become more difficult. Policymakers, decision-makers, and practitioners may all benefit from the study's valuable insights.

Vibhakar, N. N., Tripathi, K. K., Johari, S., & Jha, K. N. (2023) the determination of important financial performance metrics for Indian building enterprises. In this research, SFPFs (significant financial performance factors) for construction companies are determined using a combination of qualitative and quantitative analysis. A stratified sample approach was utilized to pinpoint one hundred Indian construction companies in 10 years. Asset management, activity efficiency and risk coverage, company efficiency, operations management, and investor return were found to be the five SFPFs. Another possible result of these SFPFs is the creation of a framework for evaluating financial performance, which might help with goal and policy planning and enhance the financial performance of construction companies.

**Tabash, M. I., Al-Homaidi, E. A., Ahmad, A., & Farhan, N. H. (2020).** Factors affecting the financial performance of Indian firms: an empirical investigation of firms listed on Bombay Stock Exchange. This study looks at the variables that influenced 1,598 Indian publicly listed firms' bottom lines from 2010 to 2016. The fixed effects regression model revealed that age, company size, liquidity ratio, and leverage ratio

were important performance determinants. Returned on assets, return on equity, and return on assets were all negatively affected by the leverage ratio. The leverage ratio has a positive effect on return on equity. The article suggests that managers think about the leverage ratio in their companies to boost financial success. All parties involved in Indian listed firms, including managers, analysts, regulators, and investors, stand to gain from the findings.

Rajput, B. K. (2021) An Analytical Study of Financial Management Practices of Selected Private Sector Life Insurance Companies in India. Developed cultures have utilized insurance as a social instrument to reduce uncertainty caused by unforeseen disasters. Since it was initially established in 1818, the life insurance sector has achieved several firsts and made major contributions to the expansion of both the nation and the insurance market. One sector in India experiencing rapid expansion is life insurance, which is growing at a pace of 15-20%. Approximately seven percent of the gross domestic product comes from the banking and insurance industries. An economy benefits from a mature and dynamic insurance business because it provides capital for infrastructure development over the long run. The insurance business is bolstering the nation's risk-taking capability.

Hasan, M. B., Islam, S. N., & Wahid, A. N. (2018) the impact of macroeconomic factors on Bangladeshi non-life insurance businesses' performance. This study aims to examine the relationship between macroeconomic variables and the performance of non-life insurance businesses in Bangladesh. Over the course of seven years, 32 separate companies were questioned, with return on equity and return on assets serving as the dependent variables. The research used panel data regression analysis to look at how various macroeconomic variables affected the economy. Apart from interest rates, no macroeconomic element seems to have a substantial impact on the profitability of businesses unrelated to life insurance. Organizational factors that considerably affected the sector's output included managerial competency index, asset tangibility, age, size, loss ratio, solvency margin, liquidity ratio, and debt ratio.

**Rohilla, R. L. (2023)** Financial soundness of life insurers in India. There has been meteoric growth in India's insurance industry due to better insurer financial conditions, more market alternatives, and more emphasis on the client. A change to the IRDAI laws

has allowed the Life Insurance Corporation of India and 23 other commercial and foreign organizations to engage in life insurance operations. A study assessed the financial stability, operational soundness, and sufficient capital base of the life insurance business. The study included six companies, one of which was publicly traded and five of which were privately held. To evaluate these companies' financial health, we used the CARAMEL Model with a two-tailed ANOVA.

Chakravaram, V., Ratnakaram, S., & Hari Krishna, B. (2020) Economic and financial analysis of Indian life insurers in fintech and financial engineering era. Modern innovations in insurance are reshaping India's economy, thanks to InsurTech, FinTech, and Financial Engineering. Product designs and organizational procedures in the life insurance business incorporate these advancements to provide specialized services. This research examines a subgroup of life insurers in India with an eye on financial development and profitability using the International Monetary Fund's Management and Financial Soundness Indicators for Insurance Companies.

Kumar, R., & Singh, S. (2023) A Comparative Analysis Of Private Insurance Companies And Life Insurance Corporation Of India. The fundamental goal of this study is to compare the various life insurance policies offered by commercial and public entities in India. As a result of its thriving economy, India has emerged as the most advantageous location in the world to purchase insurance. From the year 1999 until that year, the national insurance corporation (LIC) held a dominant position in the life insurance industry. When it comes to life insurance firms, customers now have a total of 23 alternatives to choose from. A comparative study was carried out on twenty-four different life insurance companies working in India. When comparing PIC and LIC, the four parameters that were considered were market share, the number of new individual policies issued, premium revenue, and benefits reimbursed. We used the t-test to check for trends and verify our hypothesis as the investigation progressed. According to the results, the LIC performed better than the PICs on each of the four measures.

Chaturvedi, A., & Sharma, J. (2021) an investigation on how accounting information systems affect the performance and profitability of Indian insurance firms. In this study, we investigate how Accounting Information Systems (AIS) affect the productivity and profits of Indian insurance companies. AIS supports business decision-making and may

be tailored to meet certain objectives and situations. Accuracy, reliability, ease of use, productivity, and data quality are the following aspects that influence AIS utilization. The financial institutions that participated in the research were the State Bank of India, ICICI Insurance Companies, HDFC, and LIC. Using regression and correlation analysis, the researcher investigated how advanced information systems (AIS) impacted the effectiveness and income of Indian insurance businesses.

Zaid, D. A., & Ahmad, I. (2020) The effect of certain firms on Indian enterprises' financial performance. Based on information collected from 1069 publicly traded companies between the years 2011 and 2017, this article investigates the impact that organizations have experienced on the financial performance of Indian businesses. According to the study's results, these traits are positively affected by the cost of financial crises. On the other hand, Indian firms' financial performance, development prospects, company size, and total taxation are negatively affected by asset structure and leverage. By evaluating substantial data from 1069 organizations over seven years, the study fills a vacuum in the literature. It draws recommendations that may be applied generally.

**THIRUPATHI, T., & BALAMURUGAN, C. (2022)** An analysis of public non-life insurance companies in India's performance evaluation. The insurance industry is one that is expanding in India. It is critical to evaluate insurance businesses, especially those in the general insurance sector, due to the widespread skepticism and unreliability within the Indian insurance market. Determining how public non-life insurance businesses are evaluated for performance is the study's primary goal. Six criteria formed the basis of the study (CARAMEL Model).

Khunger, S., & Kumar, V. (2023) A Comparative Evaluation of Life Insurance Premium Underwritten by Selected Private Sector Life Insurance Companies in India. This article looks at the premium growth rates of specific private life insurance companies and how they altered from 2017–18 to 2021–2022. According to secondary data from IRDA annual reports, there was a declining trend in linked first-year premiums from 2018–19 to 2020–21. HDFC and SBI saw a decline in linked first-year premiums in 2020–21. Insurance demand increased after COVID-19, as the most significant increase in non-linked first-year prices happened in 2020-21. Linked

renewal premiums for HDFC, ICICI, and SBI showed a decline of 0%, 12%, and 10.86%, respectively, in 2021 and 2022. An analysis of variance revealed no statistically significant difference between linked and non-linked plans concerning the first- and single-year premium mean values.

Anandarao, S., Durai, S. R. S., & Goyari, P. (2019) An application to Indian life insurance firms of efficiency decomposition in two-stage data envelopment analysis. A two-stage Relational data envelopment analysis (DEA) approach is employed to assess the efficacy of India's life insurance industry. This technique enables decision-making units to focus on wasteful processes to increase efficiency. The Pareto solution and a non-cooperative approach are used in the research to determine which decision step is most important. Conclusions drawn from analyses of 17 life insurance companies show that investment stages are more efficient than premium stages. For better overall efficiency, this discovery has managerial ramifications.

Hothur, S., & Reddy, K. J. (2022) An assessment of the financial performance of a subset of Indian CPSEs using Dupont analysis. The study looks at how DuPont factors affect ROE or return on equity. When it comes to the fuel industry in India, it evaluates the financial performance of three Maharatna central public sector businesses. These organizations are GAIL (India) Limited, Indian Oil Corporation Limited (IOCL), and Hindustan Petroleum Corporation Limited (HPCL). Annual reports that were released in 2010–2011 and 2019–20 were the sources from which the information was extract. Through the use of multiple linear regression, we investigated the connection that exists between the DuPont criterion and return on equity. Return on equity (ROE) was shown to be most affected by net profit margins, with little influence from the equity multiplier and total asset turnover. It was decided that GAIL (India) Limited was the preferred option for investors.

Qaiser, I. J. (2022) Efficiency Analysis of LICI and Select Private Sector Life Insurance Companies in India Comparative Study. In an insurance policy, the insured party assigns the risk of financial loss to the insurer, who then commits to paying the insured party back if the worst happens. In a commitment, one side is known as the insured and the other as the insurer. The twenty-four life insurance businesses, both public and commercial, and four critical financial ratios were the target subjects of the

research. It was audited as part of the firm's financial statements from 2009 to 2019. Financial records and relevant public and unpublished papers were reviewed to get secondary data for this investigation.

Shetty, A., & Basri, S. (2020) Using a Slack-based data envelopment analysis technique, the technical efficacy of corporate and traditional agents in the Indian life insurance market is evaluated. Distribution channels are important for life insurance firms since they significantly increase revenues. Efficiency studies are now necessary, nonetheless, because of issues like excessive attrition, a high expenditure ratio, and ineffective sales. This paper assesses the technical efficacy of life insurance company distribution channels using data gathered from 12 insurance firms between 2012 and 2016. The Quiet Life hypothesis, which holds that efficiency ratings have a negative correlation with market share, is not supported by the results. More specifically, bancassurance and conventional agents do not significantly differ in terms of efficiency rankings. For both channels, the ratio of inputs to outputs is excessive.

Shahi, A., & Agnihotri, M. (2022) The profitability of life insurance firms in India is influenced by a firm's size, tangibility, and liquidity. Specifically, the study set out to determine what variables had the greatest impact on the profitability of life insurance companies operating in India. Ten private Indian life insurance companies have released their annual reports for the year 2021. The data and regression model were examined using SPSS. Taken as a whole, the study's findings had a substantial impact on the profitability of life insurance businesses in India. This was confirmed by a regression model with a 0.5 confidence level. Life insurance firms rely on their managers to implement successful strategies that keep the company profitable. These strategies consider the firm's size, liquidity, and tangible nature.

Husain, T., & Sunardi, N. (2020) Firm's Value Prediction Based on Profitability Ratios and Dividend Policy. This study provides empirical data to support the research framework on the relationship between the firm's worth, profitability ratios, and dividend policy. For the purpose of determining the worth of the company, the Price-to-Book worth Method, often known as the "PBV" Method, is utilized. In order to conduct this research, eleven companies that are listed on the Indonesia Stock Exchange and are involved in the automobile and component sectors participated. Indeed, it

encompasses the years 2014–2018 in its entirety. For the purpose of this investigation, the researchers utilized IBM SPSS 23.0 to carry out path analysis, which included the Sobel test for determining direct and indirect effects.

Ayomitunde, A. T., Zannu, S. M., & Adedayo, A. (2019) An Econometric Approach: Capital Structure and Financial Performance of the Quoted Firms in the Nigerian Stock Exchange. This study set out to examine the capital structure and financial performance of companies that were listed on the Nigerian Stock Exchange from 2012 to 2017. Using the ordinary pooled least square approach, data was collected from forty different firms for the investigation. Capital structure negatively impacts ROA and equity returns, as seen in the results. According to the research, investment initiatives in firms listed on the Nigerian Stock Exchange cannot be funded by borrowed money. Policymakers should reduce interest rates to double digits to guarantee that publicly traded companies possess self-liquidating debt capital.

Ginting, E. S. (2021) Ratio-Based Financial Performance Analysis of PT. Mustika Ratu, Tbk. The financial performance of PT. Mustika Ratu, Tbk, from 2012 to 2017, is examined in this study using a descriptive and qualitative data analysis approach. The findings reveal that a mix of internal and external variables caused the company's financial statistics to fluctuate annually. There are a lot of internal and external elements that influenced the financial ratios, thus new measures are needed to improve the company's performance and match market needs, according to the research. The findings highlight the significance of companies responding to changing market circumstances.

Joshi, M. K. (2020) Financial performance analysis of select Indian Public Sector Banks using Altman's Z-Score model. The research investigates the state of the financial health of government-run financial institutions that have high amounts of gross non-performing assets by employing Altman's Z-Score approach. As a result of the fact that the average Z-score of every bank was higher than the permissible level, it was concluded that all of the banks were inside the safe zone. Comparing the first five-year period to the five-year period that came before it, there was a statistically significant difference between the two, which may have been the consequence of an increase in non-performing assets. The study discovered that the Z-Score rose by about

15.31% for every 1% rise in net earnings. By contrast, gross non-performing assets fell by around 3.1% for every 1% rise. To boost profitability, public sector banks must be creative in how they manage non-performing assets.

Turgaeva, A. A., Kashirskaya, L. V., Zurnadzhyants, Y. A., Latysheva, O. A., Pustokhina, I. V., & Sevbitov, A. V. (2020) Assessment of the financial security of insurance companies in the organization of internal control. Considering the current financial problems, the article stresses the need to assess insurance businesses' financial stability as an integral aspect of internal control. As for assessing financial stability, it proposes a tiered monitoring approach and provides an algorithm for that purpose. The study uses a determinative factor analysis and an indicative approach to assess the indicators. This article aims to promote modern economic control and practical business optimization by introducing new methods of economic management. The authors emphasize the importance of introducing new ideas and modernizing insurance methods.

Rakshit, D., & Paul, A. (2020) Earnings management and financial distress: An analysis of Indian textile companies. Thirty Indian textile enterprises who have been through tough times financially between 2010 and 2019 are the focus of this study, which looks at how earnings management relates to financial stress. We used Altman's Z-Score to identify financial hardship and the Modified Jones Model to estimate discretionary accruals. Multiple regression analysis shows that even organizations with financial problems adopt earnings management measures that reduce income. Earnings management is positively impacted by profitability, liquidity, and growth prospects but negatively correlated with leverage and cash flow coverage. Companies with financial problems might nevertheless manage to be profitable, which is something that lenders and investors may find useful.

Etale, L. M. (2020) Dangote Cement PLC Capital Structure and Financial Performance Link in Nigeria: Empirical Analysis. This study examines Dangote Cement PLC's financial structure and profits performance from 2010 to 2019. We use the ratio of long-term debt to equity financing (DEFP) and the equity funding to total capital employed (ECEP) as independent variables. As a proxy for performance, we use return on equity (ROEQ). The data came from Dangote's annual financial filings that span a decade.

Although there was a positive correlation between ROEQ DEFP and ECEP, the impact was not significant at the 5% level, according to the results. The analysis recommends maintaining a debt-to-equity ratio between 32.1% and 67.9%, as it provides the best return on equity.

Islam, M. R., & Fakir, A. N. M. (2023) Assessing Financial Soundness of Ceramics Industry in Bangladesh: An Analysis with Altman Z-score Model. The research evaluates the financial resilience of Bangladesh's ceramics sector using the Altman Z-Score technique. The industry's meteoric rise in local and international markets makes sector stability all the more important. This research analyzes the annual reports of five ceramics enterprises listed for the 2020-21 fiscal year. The numbers show that many companies are experiencing increasingly severe financial problems, placing them in the "Distress" zone. Investors, lawmakers, and stakeholders may be able to use the findings to improve financial strategies and advance sustainable industries. Financial resilience in the ceramics business has been understudied until now, but our study fills that gap.

Gyawali, S. (2023) Exploring financial distress through Altman Z score: example of selected private commercial banks in Nepal. Using Altman's Z score model, this study will investigate several commercial banks in Nepal to ascertain the degree of financial hardship that these institutions are experiencing. To determining the severity of financial difficulty, this study utilized a descriptive research approach that was statistically based. Due to the convenience of this research, sixteen and twenty-four private commercial banks have been chosen to act as samples. The modified Z score (1993) model developed by Altman has been utilized to draw conclusions. Secondary data was derived from the 2019–20 fiscal year's publicly accessible annual financial filings of the participating institutions.

Verlekar, R. P., & Kamat, M. (2019) An application and comparison of bankruptcy models in the Indian banking sector. Due to the increased risk of credit and non-performing assets (NPA), comprehensive risk assessments are required of banks. This study compares the creditworthiness of public, private, and hybrid banks in India using the Altman Z-score, Springate, Grover, and Zmweskis evaluation models. A total of 44 Indian banks had their data compared between 2005 and 2017. The results showed that the Springate and Grover scoring systems were comparable; Dena Bank and Catholic

Syrian Bank tied for best rank, indicating that both banks are in very secure financial situations. This research highlights the importance of precise credit risk evaluation in India.

Ahmed, R., & Sarkar, S. (2019) Measurement of Financial Soundness of Life Insurance Companies in Bangladesh: An Empirical Study. The purpose of this research is to assess the stability of Bangladeshi insurance firms by looking at private life insurers traded on the Dhaka Stock Exchange. The two businesses are based in Bangladesh. Secondary data was analyzed using multiple discriminant analyses and CARAMELS ratio analysis from the annual reports of firms that have been listed on the DSE for at least 10 years (MDA). The analysis demonstrated that a decreasing capital adequacy ratio (CAR) was reasonable. Actuarial ratios indicate that enterprises seldom use reinsurance. Most sampled organizations had greater expenditure ratios than the 20% standard set by the Insurance Development and Regulatory Authority. There is an excess of liquid assets among all of the chosen insurers. The Z-scores suggest that all of the chosen businesses could be in a financial bind.

Yohana, H., Raphael, G., & Kapaya, S. (2023) Empirical analysis on the impact of market share and capital adequacy ratio on the bankruptcy rate of community banks in Tanzania: an application of Altman's Z-Score model. The bankruptcy rates of Tanzanian community banks from 2006 to 2021 are examined in this study, along with the effects of market share and capital adequacy. The study found a substantial positive correlation between market share and capital adequacy ratio and bankruptcy rates using secondary data from community banks and the Bank of Tanzania. The research highlights the need for regulatory engagement and enhanced operational efficiency in reducing the bankruptcies of Tanzanian community banks. It recommends suitable capital levels and market share.

**Stoilova**, **D.** (2023) On the Effectiveness of Local Financial Management: Analysis of Municipal Companies in Southwest Bulgaria With the Z-Score Model. Bulgarian municipalities enjoy secure property rights, yet the effectiveness of their budget administration is a matter of continuous controversy. This chapter uses the Z-Score methodology to examine the financial performance of eighteen large municipal organizations from 2006 to 2020. Most companies make money by providing essential

public services, such as garbage collection, water distribution, sewerage, building inspections, and maintenance of urban infrastructure. However, the companies in charge of urban transportation, district heating, and sports facilities are in a terrible financial situation and need to do something to turn things around.

Nayem, T. A. (2022) Using Altman's Z-score model, the bankruptcy risk of a domestic pharmaceutical company in Bangladesh is predicted. The Altman Z score model was employed in this study to forecast the probability of bankruptcy in Bangladesh's pharmaceutical industry. Businesses are categorized into three groups: "Distress," "Grey," and "Safe". We gathered information from nine publicly traded firms' annual reports between 2015 and 2020. The results of a one-sample t-test indicated that insolvency was quite likely. As shown by pooled regression and generalized least square regression, changes in each component of the Z score model dramatically affect the Z score overall. This study has dual purposes, contributing to our understanding of the pharmaceutical industry and helping lawmakers reduce the risk of bankruptcy.

Azam, A., Ahmed, B., Sultana, S., & Mulla, N. A. I. (2023) Comparative Analysis of Financial Health of Selected Indian Metals and Mining Companies Using the Altman Z-Score And Zmijewski Models. To assess the soundness of Indian mining and metals firms, this research uses Zimjewski's X-Score and Altman's Z-Score. Ten companies are the focus of the three-year research that begins in 2019 and continues through 2021 and 2022. The outcomes show a spectrum of financial stability ratings, from very stable to very unstable, with some indicating moderate risks and others displaying a wide range. According to the research, financial analysis is crucial for assessing the health of mining and metals companies, which may help with well-informed decision-making and promote economic stability. Contrarily, there may be mistakes or insufficient data in the study, which limits its usefulness.

Sharma, A., Theresa, L., Mhatre, J., & Sajid, M. (2019) Application of altman Z-Score to RBI defaulters: Indian case. Since economic reforms are reducing fraud and stress in the financial system, it is crucial to forecast and analyze financial hardship. This research examined 19 Indian businesses that the Reserve Bank of India flagged as defaulters in 2017 using the Altman Z-score model. The model is useful in the nonperforming asset crisis since it can accurately anticipate the likelihood of default.

The study's small sample size, on the other hand, may restrict its generalizability to other settings.

Chitta, S., & Jain, R. K. (2019) Financial Soundness of Maharatna Companies-Application of Altman Z Score Model. The Maharatna businesses are the most significant PSUs since they are financially independent of the government and have made substantial long-term contributions to our country's progress. Because of their ongoing and severe financial problems, a handful of these businesses are about to go bankrupt. They have failed to meet expectations despite getting government assistance to guarantee their safety. Using the well-known Altman Z score method, this study examined the financial situation of eight Maharatna organizations from 2014 to 2018 to see if they experienced financial challenges. It came to light that several Maharatna enterprises were failing to meet expectations.

Khawaja, M. J. (2023) Predicting financial failure using altman's z-score model: evidence from commercial banks in Pakistan. This study aims to learn more about commercial bank failure prediction in Pakistan by applying the Altman Z-score Model. If the bank wants to avoid insolvency, its stakeholders must be able to foresee when its finances may crumble so that they can intervene to fix it. Commercial banks in Pakistan are evaluated using the Altman Zscore model and current ratio tests to achieve these objectives. Financial statements and ratios covering 2016–2021, upon which the model is built, are reviewed. The findings indicate that the current ratio and Altman's Z-Score model are reliable indicators of the financial difficulties faced by Pakistani commercial banks, particularly during the preceding two years. The research indicates that more than half of the commercial banks in Pakistan are in danger of going insolvent.

AlKulaib, Y. A., & AlAli, M. S. (2019) Examining the Impact of Bankruptcy Probability on Kuwait Stock Exchange-Listed Conventional Insurance Companies and Their Share Prices. This research examines the financial standing of conventional insurance firms that were listed between 2010 and 2017 on the KSE. We calculated financial failure indicators using the Altman Model. Next, we examined their degree of correlation with share price. The outcomes demonstrated that these businesses were solvent and had sound financial standing. Altman's score and share price, however, did not show a statistically significant correlation, indicating that the financial failure score

had no impact on these companies' stock values. This means that the insurance sector is vital to stabilizing the economy.

Irawan, A., Prasetyo, A., & Irawan, D. (2021) The Altman Z-Score Approach is used to analyze financial distress in transportation companies. The Altman Z-score model approach is going to be utilized in this study with the intention of determining the likelihood of firms operating in the public transportation sub-sector that are listed on the Indonesia Stock Exchange experiencing bankruptcy or other significant financial troubles. The only firms included in the study's sample are the top three land, sea, and air transportation corporations. The research now includes transportation businesses that were listed between 2017 and 2019 on the Indonesia Stock Exchange. Our data study, which employed the Altman Z-score technique, suggests that one of the enterprises has a higher probability of going bankrupt than the others. However, there is no assurance that a firm will file for bankruptcy within the reviewed year, predictions that it will help the company prepare for its worst-case scenario by revealing its current condition.

**Siddiqui, S. A. (2021)** Total factor productivity growth of Indian life insurance companies: A Malmquist Approach. Twenty-four Indian life insurance firms were analyzed for their productivity development from 2012–2013 to 2016–2017 using the Malmquist index. The results showed that overall factor production went up by 27.6% on average, with technological developments making up 20.9% of the increase and efficiency gains 5.5%. Private life insurers in India saw a productivity growth rate of 30.2%, far outpacing the 17.2% growth rate achieved by the state-owned Life Insurance Corporation of India. The life insurance business in India stands to benefit greatly from the study's conclusions in terms of policy, practitioner, and decision-making implications.

Qaiser, I. J. (2022) Efficiency Analysis of LICI and Select Private Sector Life Insurance Companies in India Comparative Study. The insured transfers financial responsibility for any losses to the insurer, who then agrees to compensate the insured. The insured and insurer both make a guarantee. The sum the insured pays to get insurance coverage is called the premium. The performance of Indian insurance firms is studied. The probe focused on twenty-four life insurance providers, both public and

commercial, and four key financial measures. The audited financial reports for 2009–2019 included an examination of it. This study's secondary data came from an evaluation of relevant published and unpublished documents and bank statements.

Radhika, R., & Satuluri, R. K. (2019) Key performance indicators of life insurance operations in India. Since the IRDA Act 1999, 24 insurance firms have been active in India. These businesses handle assets of 34,07,106 crores and invested capital of 36,625 crores. There are almost 32.50 crore policies in place in the market due to increasing interest in diverse income categories, financial savings, and discretionary excess. Breaking even is an unrealistic target for most companies, and the promoters' aim is much more out of reach. Due to the country's underdeveloped economy and lack of new entrants, the life insurance market in India is somewhat stagnant. IRDAI's stringent regulations on expenditure management and charge restrictions further reduce profitability.

Sari, D. M., & Mislinawati, M. (2024) Navigating Financial Distress: Altman Z-Score Predictive Power on Stock Performance. This study looks at the correlation between the financial ratio and the stock price of firms that are listed on the Indonesian Stock Exchange in the agriculture and marine sectors between 2018 and 2020. The findings indicate that RE/TA positively affects stock price. On the other hand, MVE/BVL, WC/TA, and EBIT/TA are all detrimental. The findings suggest that in times of financial crisis, financial managers, auditors, lenders, and investors might find the Z-Score model helpful.

Sharma, B., Srikanth, P., & Jeevananda, S. (2023) Financial Distress and Value Premium using Altman Revised Z-score Model. Potential financial issues and stock market success are the subjects of this investigation. For industries and firms registered on the Bombay Stock Exchange in India, it assesses return on investment using an updated Altman Z-score. These findings demonstrate that the distress risk factor, a separate systematic risk factor, has a substantial impact on stock returns and validate the presence of the distress factor effect in portfolios at the industry and business levels. According to the study, there is a value premium in problematic zones just like in secure zones. The pricing and distress factor models work better when their dependability is validated.

AlAli, M. S. (2018) The application of Altman's Z-Score model in determining the financial soundness of healthcare companies listed in the Kuwait Stock Exchange. Companies in the healthcare industry that are listed on the Kuwait Stock Exchange will have their financial stability investigated in this study. The Leman Brothers are a classic example of how investors face the risk of bankruptcy every time they lend money to a company. While it is true that such a collapse does not happen overnight, there are a number of warning signs that it may. Predicting when a company could face financial issues is a common use of Altman's Z-score model.

Popker, S. M. (2018) Financial Performance of Public and Private Sector Banks in India. The research "Financial Performance of Public and Private Sector Banks in India" examines five specific banks' financial performance. We use financial ratios and z-scores to examine the financial statements from the last five years. The assessment found that out of ten institutions, including the Central Bank of India, five are ordinary, four are excellent, and five are outstanding. With regard to the spread ratio, the State Bank of India, Bank of Baroda, and Bank of India are among the private sector banks that are considered to be among the worst. Public sector banks do better in this regard. You can trust the quality of most public sector banks.

Agarwal, R., & Vashishtha, A. (2024) Financial and Non-Financial Factors Affecting Corporate Solvency: An Empirical Analysis in Indian Context. This research explores the many monetary and non-monetary elements that affect solvency in India. We use ttests and descriptive statistics to look at these factors. Key financial ratios include debtto-equity, total outside liabilities, interest coverage, net income/total assets, and swift ratios. Aside from capital, factors such as firm size, qualifications of the promoter, credit rating agencies, regulatory agencies, management committee duties, and rushed political-economic choices are also important. The study not only explains why people have money issues and what causes them, but it also offers suggestions on decreasing the chance of insolvency in the long term.

**Panchal, N. (2018)** Insurance sector in India: A comparative study of public & private insurance companies. Foreign and private investors can now participate in India's economy thanks to liberalization, privatization, and globalization. Businesses at home and abroad now have easier access to the insurance market due to the current economic

climate. Any company hoping to survive in today's fiercely competitive market must have a performance review system. In addition to laying the groundwork for future development, expansion, and diversification, it also defines parameters within which the activity's vulnerabilities may be monitored and managed. This article elucidates the reasons behind the performance gap between commercial life insurers and LIC, the country's public sector life insurer.

Mohanty, M. (2020) A Comparative Study on The Financial Performance of Selected Indian Pharmaceutical Companies. We shall compare the financial performance of the pharmaceutical businesses that were chosen. We use statistical approaches and ratio analysis to examine financial performance. This information is culled from the financial records of the selected companies and calculated for the years 2015 through 2019. Pharmaceutical firms are solvent and have plenty of cash on hand. However, their profits are not distributed evenly, and their efficiency is lacking. The researchers looked at current literature to find out what people do not know. Managers, regulators, and financial analysts interested in the selected Indian pharmaceutical businesses' bottom lines will find this study useful. A battery for more studies on this topic.

Maqbool, S., & Bakr, A. (2019) The curvilinear relationship between corporate social and financial performance: Evidence from Indian companies. Academics are deeply divided on how CSR (corporate social responsibility) relates to FP (financial performance). Among the dynamic relationships that have been investigated, the curvilinear link between CSR and FP has been a subject of study in recent years. This essay presents data from Indian corporations that show that CSR and financial performance have a non-linear association.

Sumathy, M., & Kalyani, V. (2019) A comparison of the financial results of Indian state and private life insurance organizations. This essay's main focus is on the financial outcomes of India's state and private life insurance businesses. The findings show that LIC is in a better financial position than individual Indian life insurance companies. Compared to other private life insurance companies in India, a Limited Liability Company (LIC) has less liquidity. The authors of the paper advise the LIC to improve its liquidity situation. To increase policy sales, private life insurance businesses should fortify their finances and lower their losses.

Joseph Antony, P. (2021) Study of Comparative Performance of Non-Performing Assets among India's Selected Leading Non-Banking Financial Companies. Their non-performing asset (NPA) performance from 2011 to 2015 is used to compare the top non-banking financial entities in India. Spearman's correlation study revealed a positive association between revenue and gross nonperforming assets (NPA), but a negative correlation was found for Bajaj Finance. While Muthoot Finance discovered a positive correlation between return on assets and gross nonperforming assets, Reliance Capital discovered a positive correlation between revenue and nonperforming asset provision. Compared to Bajaj Finance and Reliance Capital, Muthoot Finance performed better in income generation and reduced NPA values.

Destriwanti, O., Sintha, L., Bertuah, E., & Munandar, A. (2022) has studied They were analyzing the impact of Good Corporate Governance and Financial Performance on predicting Financial Distress using the modified Altman Z Score model. The study examines how financial performance, institutional ownership, and managerial ownership affect a company's profit-making ability. It included 62 businesses that were appropriate for the job and 169 manufacturing enterprises. The study improved its approach to measuring financial hardship by including new variables into the Altman Z-score model. To predict when a company may run into financial problems, several metrics are used, including debt-to-asset ratios, management and institutional ownership, ROE, retained profits to total assets, EBITTA, and return on asset. Compared to the modified Altman model, the Altman Z-score model was shown to be underperforming.

Kolte, A., Pawar, A., Rossi, M., & Rasal, D. (2022) have studied Analysing the financial state of selected Indian information technology companies: the assessment towards foreseeing the industry's future. The government's reforms and the distinctive business environment in India are attracting wide businesses, and the country's economy is expanding. According to the comparative gross domestic product economic indicator, India's economy has grown more quickly over the past ten years. Indian IT companies focus on more recent industry sectors with a wider global reach. To support this expansion, they are forming new alliances and purchasing subsidiaries. Additionally, the debt-to-equity profile of the Indian IT-ITES sector is lower, and stock research is seen as a secure investment. As a result, researching and assessing the

industry's financial health becomes crucial. This study assesses the Indian IT-ITES market by looking at financial data and using the standard analysis tools, such as the Altman Z-score and the Piotroski F-score. The goals are to assess the company's resilience, predict its financial health, compare the outcomes, and project the industry's future.

Naveenkumar, K. (2022) studied financial performance analysis of select health insurance companies in India. In India, the degree to which women are empowered depends on various factors that either support or undermine their decision-making ability. It addresses the entirety of possessing the ability to make decisions. National, state, and local governments all have policies to support women's empowerment in various areas, including health, education, the economy, and political engagement. Women's education is fundamentally vital since it is both their right and necessary for developing many of their potential. Education is an essential component in the process of empowering women because it equips them with the resources necessary to triumph over challenges, question the norms of society, and make positive changes in their life. Additionally, education helps to minimize inequality and acts as a tool for elevating one's position within the family. However, it is noted that gender roles have been reinforced in most Indian programs for the education of women and girls. It is a Crucial Intervention for Starting and Maintaining the Empowerment Process.

Sharma, M., & Patra, D. G. (2021) have studied the Prediction of Financial Distress in Indian Firms Using the Altman Z-Score Model. It is noteworthy that the corporate environment has changed recently. Businesses must deal with various issues due to the changing business environment; if they cannot adapt to these changes, they will not be able to compete in the market. The company's performance may be impacted if it takes too long to adapt to environmental, social, and technological changes. India is a nation in development. The federal and state governments implement numerous industrial reform programs to promote industrial growth. However, as a result of the increased level of uncertainty, a large number of businesses have experienced financial difficulties. Bankruptcy has become a serious issue in India due to the difficulty businesses now face in surviving in a constantly expanding environment. Organizations can avoid insolvency by updating their systems regularly.

Saha, D. (2021) has studied Bankruptcy Risk Prediction Using Altman's Z-Score Model: An Empirical Study on Private Commercial Banks of Bangladesh. For central banks and practitioners in Bangladesh, especially in the banking industry, financial stability is a major problem. When a person or business cannot pay their obligations in full, they may file for bankruptcy. To forecast the likelihood of a company's bankruptcy filing, this study utilized the modified Altman Z-score (1995) model. From 2009 to 2016, non-traditional banks had better z-score performance than traditional banks, according to the research. Consequently, private commercial banks should be closely monitored by the central bank. The research aims to forecast future financial issues and evaluate the level of bankruptcy risk using hypothesis testing and the Altman Z-score model.

Rathi, S., & Jatav, S. (2020) have researched Comparative Evaluations of Selected Public Sector Non-Life Insurance Companies' Financial Performance in India. India's insurance industry has seen significant changes in the years after deregulation, which has boosted the country's economy. From 2009–2010 to 2018–2019, seventeen public disclosure analytical ratios were used to evaluate the performance of the following insurance companies: New India Assurance Insurance Company, United India Insurance Company, Oriental Insurance Company, National Insurance Company, and Public Sector Non-Life Insurance Companies. This was done to determine how well these insurance companies performed. To conducting the research for the study, statistical techniques such as the analysis of variance (ANOVA), the Welch test, and the Jarque-Bera Levene & Bartlett test were utilized. The mean ratios of the chosen companies did not differ statistically significantly, according to the data; New India Assurance Company did well in seven analytical ratios, while United India Insurance did well in six.

**Mukherjee** (2020) has studied the financial performance analysis of GIC Re. In order to accomplish these goals, this study used performance ratios (PRs) to examine General Insurance Re's (GIC Re) financial performance. It also aimed to determine if GIC Re's financial performance indicators were consistent, how much growth potential GIC Re had internally, and how likely GIC Re would face financial difficulties. To evaluate GIC Re's potential for internal development, we looked at its internal growth rate. To determine if GIC Re would be in financial danger, we used Ohlson's O-score model, a

logit analytic approach, and a multivariate discriminant strategy, namely the modified Altman's Z-score model. The author adds to what is already known by presenting many viewpoints on the monetary results of GIC Re. In preparation for upcoming decision-making, the management of GIC Re was able to use the research's findings to develop plans, recommendations, and strategies. This was done to ensure that financial advisers were able to provide their clients with help and proper guidance on issues that associated with GIC Re's investments.

Nustini, Y., & Amiruddin, A. R. (2019) have studied This study compares Sharia and traditional insurance businesses using the Altman model for determining financial hardship. This research examines the financial difficulties faced by Islamic and conventional insurance businesses using the Altman model. 36 Islamic insurance businesses and 49 conventional ones were selected using a systematic sampling technique. The results showed that there was a connection between three major variables and companies' financial difficulties. The ratios used in the analysis were RETA, BVEBVTD, and EBITTA, which stand for Earnings Before Interest and Taxes to Total Assets. Information on the Altman ratio is the main focus of this research. This information may be applied to evaluate different insurance policies and decide which one provides the most effective protection against financial issues.

Kaur, J. (2019) has studied Financial Distress and Bank Performance: A Study of Select Indian Banks. Technically, financial distress is a means of assessing a company's financial standing concerning insolvency and bankruptcy. Given the prevalence of corporate frauds like Enron, Parmalat, Satyam, Punjab Sind Bank, and others, financial turmoil must be anticipated as bankruptcy results in significant losses for the affected companies, impacting the country's economy. In particular, the banking sector is crucial to a nation's economic growth. Using Altman's (1968) Z-score model, this study aims to evaluate the financial performance of India's banking industry from 2012 to 2017. We have estimated the Z-score values of a few Indian banks using Z-score to assess their reliability. When these financial institutions seek loans from the Reserve Bank of India (RBI) or another lender, they provide this number. After that, Tobin's Q was used as the performance metric to evaluate how financial difficulty affected the performance of the banks. According to the data, distressed equities performed better than non-distressed companies during market upswings.

Suvvari, A., S, R. S. D., & Goyari, P. (2019) examined the use of gray relational analysis (GRA) for life insurance businesses in India to analyze financial performance. Traditional statistical approaches for analyzing the financial performance of an industry have a number of disadvantages and obstacles, particularly when it comes to the statistical distribution of financial metrics. When using these methods, only the positive values of the ratios are taken into consideration. In this study, Deng's (1982) grey relational analysis (GRA) will be used to analyze the financial performance of twenty-four Indian life insurance businesses from 2013 to 2016. When calculating GRA, negative numbers are considered. This article's goal is to evaluate these firms' financial situation.

Panigrahi (2019) studied the validity of Altman's "Z" Score Model in Predicting the Financial Distress of Pharmaceutical Companies. The clear preference for corrective actions (such as corporate governance) and early detection of financial trouble over bankruptcy law protection drove empirical investigation in corporate bankruptcy prediction. If failing organizations could be identified in advance, the process could be stopped before it got out of hand. Using Altman's "Z" Score Model, a researcher examines the financial challenges faced by many pharmaceutical companies. Using this paradigm, several studies have successfully examined the link between financial difficulty and bankruptcy. Beginning in 2012–2013 and concluding in 2016–2017, the researcher's sample spans a span of five years. To the study, secondary data was the only thing that was employed. The data were then evaluated using Altman's "Z" score test procedure, which was developed after that. Throughout the course of the investigation, the Z-score of the pharmaceutical business was found to be 5.90 on average, as indicated by the findings.

Public and Private Life Insurance Companies in India (2018) has researched and analyzed commercial and public life insurance providers in India. This definition gives "Life Insurance Corporation of India (LIC), the country's largest insurance group and investment company." as the name of India's public life insurance organization. In other words, the Indian government owns 100% of it. The Liquidity Insurance Code of 1911. "The Private Life Insurance Companies in India are joint ventures between Indian groups and conglomerates and global insurance companies," explains these entities in the Indian market. An Indian partner in the joint venture, IRDAI, must possess most of

the shares. Using these six criteria, the study examines the insurance companies' financial health in India, both public and private. Trend analysis, ratio analysis, IRDA ratio, CARAMEL model, vertical analysis, and horizontal analysis are all forms of statistical analysis.

Bakhtiar (2018) studied bankruptcy detection in Indonesia's Sharia insurance industry. Bankruptcy might be determined using the modified Altman Z-score analysis method. A variety of ratios comprise the Altman Z-score method of evaluation. Some examples of such ratios are the network model to total assets, earnings before interest to total assets, retained profits to total assets, and capital book value to the book value of debt. One Sharia insurance company had a more dangerous financial situation from 2011 to 2017, whereas five were found to be in a stable financial position (i.e., not insolvent). With a ratio of 0.86: 0.72: 0.57: 0.54 and 0.44 during 2011 and 2015, Sharia prudential has the highest earnings before taxes to total assets ratio. This means that in 2011, each use of Rp 1 - assets owned by Prudential Syariah was able to generate profit before taxing Rp. 0.86. However, in 2016 and 2017, Prudential Syariah decreased the ratio to 0.01 and 0.09. This was possible because of a decrease in the value of recorded profit before tax.

Al-alien (2017) studied the financial performance analysis of Jordanian insurance companies using the Altman z-score model. According to experts, financial performance analysis looks at the big picture of a company's finances over a certain period. It required properly connecting the dots between the balance sheet and P&L items to assess the firm's financial health. It offers a succinct framework for assessing and comprehending the firm's condition. The purpose of this research is to look at how well a few insurance businesses in Jordan have done financially over the previous decade. The firms' financial performance was evaluated using data gathered from their annual reports and the Altman Z-Score Model. Analyzing the financial status of a firm is what financial performance analysis is all about. You may achieve this by taking a close look at the parts of the income statement and the balance sheet. When Middle East Insurance's Z score was calculated using the Z-Score technique, data was found that indicated the company might likely have financial difficulties since it is less than 1.8.

Madonna (2015) has studied This study set out to verify the predictive power of three models based on multivariate discriminant analysis developed to predict companies' bankruptcy in the Emilia-Romagna region of Italy. Each model was tested in a different business context to ensure accuracy. Three models have been tested: the discriminant function by Bottani, Cipriani, and Serao (2004), Alberici's Z-score (1975), and Altman's Z-score (1993). Every year, the models were run on the financial accounts of both solvent and insolvent companies, looking at their operations over the last five years. Using a comparison of the outputs of each model with the actual statuses of the organizations that we were analyzing, we were able to determine the degree of accuracy of each model's predictions. Altman's approach was perfect for large-scale studies since it seemed to meet the need for generalizability. The findings showed that: 1) Altman's model worked well for distinguishing between successful and unsuccessful companies using a single cut-off; and 2) Altman's approach seemed to satisfy the need for generalizability.

Kaur Bawa (2013) studied the financial performance of life insurers in the Indian insurance industry. The industry's growth, which benefits the economy, is heavily dependent on the company's performance. The researchers looked at attempts to evaluate Indian life insurers' financial performance. Leverage, profitability, solvency, and liquidity of insurance payers were all taken into account while calculating the numerous financial variables that were used to define it. The purpose of this research is to look at how equity capital, size, liquidity, solvency, and leverage relate to the profitability of life insurers in India. The study will provide this knowledge. There is one publicly traded firm and seventeen privately held companies among the eighteen Indian life insurers that comprise the study's sample. We look at the data from 2007–2008 all the way through 2011–2012. The researchers used a multivariate linear regression model to find out how these factors affected life insurance payouts. The results indicated a negative correlation between life insurers' profitability and capital, but a positive correlation with size and liquidity. Financial solvency, insurance leverage, and profitability are not connected to one another.

DR. S. M. TARIQ ZAFAR (2013) studied India's general insurance companies' financial situations just before the recession hit. The situation has changed drastically due to globalization and the deregulation of the Indian economy. As people's wealth and savings have grown, they have begun to act more recklessly and future oriented. The Indian market has much-untapped potential, thanks to its 200 million middle-class homes. The Indian general insurance companies that the researcher attempted to evaluate between 2003 and 2007 were Iffco-Tokio General Insurance (ITGI), Bajaj Allianz General Insurance (BAGI), The New India Assurance Company Ltd. (TNIA), Industrial Credit and Investment Corporation of India Lombard General Insurance (ICICI), and The Oriental Insurance Company ltd. (TOI). The ratios were computed using the analysis of variance (ANOVA) statistical method. The study discovered that the public should be made aware of the benefits, drawbacks, and documentation of insurance products, as there is now very little knowledge about them. It was discovered that the insurance firms' after-sale services were inadequate; they should be improved, and consumers should be kept fully informed about all aspects of their contracts. Company personnel give false information about the policyholder in order to meet targets and receive financial compensation; they even carry out the same actions after the policyholder reaches maturity, which has led to misunderstandings and mistrust. To foster confidence among the concerned parties, IRDA must take strong measures against the corporations.

Oscar Akotey (2013) analyzed the key determinants impacting the profitability of the life insurance market in Ghana and compared the financial outcomes of life insurance firms operating in the country. Investment income, underwriting profit, and total net profit were the three measures that the researchers considered to be the most important signs of insurer profitability. Between 2000 and 2010, ten distinct life insurance businesses' yearly financial statements were subjected to panel regression analysis. The time covered by the study was eleven years. Because of the findings of this study, persons who work in the life insurance sector are likely to face major policy consequences. Specifically, in order to prevent insurance marketing agents from decreasing rates and engaging in excessive trade, insurance companies should establish actuarial departments that are adequately financed and responsible for verifying pricing

for all products. A study found that insurers' sales profitability was positively correlated with gross written premiums.

Supriyaa (2013) has analyzed the success of Indian life insurance companies financially. Private life insurers were able to enter the market with novel tactics when the insurance sector was liberalized in 2000, following more than fifty years of LIC monopoly. This led to an increase in business. From a longer-term viewpoint, cleaner equity capital may now be deployed to meet the insurance industry's substantial capital requirements. Researchers may try to gauge productivity and profitability using the output maximization model on six different life insurance businesses. The public sector's ratio is going down, and public life insurance is particularly bad at all three of these metrics—capital adequacy, reinsurance, and actuarial issues. Conversely, private life insurance must focus on enhancing its underwriting processes, liquidity, and profitability as it is falling behind in these areas.