CHAPTER-2

LITERATURE REVIEW

2.1 LITERATURE REVIEW

The literature review is a vital element of academic research, serving as the foundation for new knowledge creation. It goes beyond summarizing existing work to critically analysing and synthesizing relevant studies. This process provides context, identifies research gaps, and demonstrates the researcher's understanding of the subject. Through a review of prior work, researchers can verify assumptions, refine their questions, and situate their contributions within the broader academic dialogue.

A strong literature review establishes the theoretical background; highlights areas already explored and identifies topics that require further inquiry. It strengthens the rationale for the current study and prevents duplication by clearly distinguishing original contributions from existing knowledge. Furthermore, it demonstrates academic credibility and helps frame research findings in relation to established scholarship.

According to the Wright Center for Graduate Education, a literature review helps understand existing discussions, test assumptions, and identify gaps. The NCBI emphasizes its role in cumulative scientific progress, while Scrintal notes its importance in shaping research methodology and positioning within scholarly discourse.

This study’s literature review focuses on existing work related to non-life insurance companies and the CARAMEL model. It is organized into three parts:

- **International Studies** related to non-life insurance companies and the CARAMEL model
- **Indian Studies** focusing on non-life insurance and the CARAMEL framework
- **Research Gap** identified through critical comparison of both international and Indian studies

2.2 INTERNATIONAL STUDIES RELATED TO NON-LIFE INSURANCE COMPANIES AND CARAMEL MODE

Nissim (2010) provided a comprehensive review of the insurance industry, covering its business activities, organization, products, distribution channels, competition, regulation, taxation and risk management. The study examines how these activities are reflected in financial statements, analyzing key line items concerning their economic significance, U.S. accounting principles, earnings quality and differences between IFRS and U.S. GAAP. The final section discusses valuation models, focusing on drivers of intrinsic value such as profitability, growth prospects and cost of equity capital and offers a forecasting template for insurers' financial statements. This work serves as a foundational resource for understanding the financial reporting and valuation of insurance companies.

Joo (2013) examined post-liberalization transformations in India's insurance sector, noting low penetration and density relative to global peers. Foreign insurers entered via joint ventures, increasing competition and underwriting losses for local insurers, threatening solvency margins. Using ISI predictors and multiple regression, the researcher found claim ratio and firm size significantly impacted non-life insurers' solvency, highlighting both challenges and opportunities post-liberalization.

Burca and Batrinca (2014) analyzed the determinants of financial performance in Romania's insurance market from 2008 to 2012. Using panel data techniques, they found that financial performance is influenced by internal factors like company size, financial leverage, gross written premium growth, underwriting risk, risk retention ratio, and solvency margin. The study emphasized that financial analysis is critical for underwriting and investment decisions, and that the insurance sector significantly contributes to economic growth and stability through its role in the financial system

Smajla (2014) tested the applicability of the CARAMELS model on Croatian non-life insurers' financials. By comparing model indicators with domestic regulatory benchmarks using secondary data and comparative ratio analysis, the study found that the CARAMELS model often flagged weaknesses—especially in asset quality and

sensitivity to market risk—not identified by local regulatory metrics. This supports the model's broader relevance for maintaining financial soundness in diverse regulatory environments.

Kwon and Wolfrom (2016) presented a comprehensive review commissioned by the OECD's Insurance and Private Pensions Committee, focusing on the diverse analytical tools and indicators employed globally for insurance regulation, supervision and policymaking. This report synthesizes best practices across countries, reflecting the varied contexts of domestic insurance markets—from their developmental stages to the number of active companies. While the use of such tools is well-established among regulatory authorities worldwide, the study emphasizes the importance of tailoring these instruments to specific national environments. By providing a detailed stocktaking of methodologies for monitoring insurance sector performance and stability, the report serves as a valuable resource for regulators aiming to enhance market surveillance and supports the ongoing expansion of the OECD's Global Insurance Statistics framework.

Ajao and Ogieriakhi (2018) investigated the intricate relationship between firm-specific factors and the financial performance of Nigerian insurance companies over the period from 2009 to 2017. Utilizing panel least squares techniques on data from twelve firms listed on the Nigerian Stock Exchange, the study reveals that an insurer's age positively and significantly correlates with performance, suggesting that experience and market presence matter. Conversely, firm size and growth rate exhibit a significant inverse relationship with performance, indicating diseconomies of scale due to unchecked expansion. The researchers recommend that external macroeconomic factors be given greater consideration, as many firm-specific variables showed limited positive impact on performance during the study period. This nuanced analysis offers valuable insights for industry stakeholders aiming to optimize operational scale and strategic focus in Nigeria's evolving insurance market.

Rashid and Kemal (2018) conducted an extensive analysis of the internal (micro) and external (macro) factors influencing the profitability of life insurance companies in Pakistan over the period 2006–2016. Using panel data regression models, the study

examined three key profitability measures: Return on Assets (ROA), Underwriting Profit (UP)and Investment Income (INI). The research identified gross written premium, management expenses, firm size and interest rates as significant determinants of profitability. Notably, underwriting losses highlighted the need for specialized actuarial departments to ensure accurate policy validation. The findings provide valuable insights for risk managers, regulatory authorities and policymakers aiming to enhance the operational efficiency and financial performance of the insurance sector. By emphasizing both internal operations and macroeconomic influences, this study presents a comprehensive framework to support sustainable growth in Pakistan's life insurance industry.

Osho and Efuntade (2019) investigated the impact of foreign exchange on the financial performance of multinational companies in Nigeria, drawing on transaction cost theory, liquidity theory, inflation theory, and the managerial theory of firm performance. Utilizing secondary data, the researchers found that fluctuations in exchange rates significantly influence the performance of these companies. The study concluded that exchange rate instability adversely affects the operations of Nigerian multinational companies and their engagement in international trade.

Widati and Anas (2019) advanced the discourse by comparing three prominent models used to evaluate the financial soundness of Indonesian life insurers: the Risk-Based Capital (RBC) model mandated by the Indonesia Financial Services Authority, the International Monetary Fund's CARAMELS model and Standard & Poor's Financial Strength Rating (FSR). Employing a mixed-method case study approach grounded in established financial performance theories, their findings reveal that while insurers may excel under one model, such as RBC, this does not guarantee superior results across others. This divergence underscores the necessity of synthesizing quantitative and qualitative indicators from all three models to achieve a holistic and accurate assessment of financial soundness.

Lim et al. (2021) investigated the efficiency, productivity, and competitiveness of the Malaysian insurance industry, with a focus on the effectiveness of regulatory policies—especially the risk-based capital framework. The study included all insurance firms

operating in Malaysia between 2000 and 2017 and utilized data envelopment analysis, the Malmquist productivity index, and the Panzar–Rosse methodology. Findings indicated that life insurers were more efficient and competitive than general insurers. Additionally, the implementation of risk-based capital requirements led to a deterioration in the efficiency and productivity of conventional insurers.

Morara and Sibindi (2021) explored the components contributing to the financial performance of insurance firms by analyzing a sample of 37 general insurers and 16 life insurers from 2009 to 2018. Using panel data methods, including pooled OLS, fixed effects and random effects models, the researchers found that insurer financial performance (proxied by ROA or ROE) was positively related to company size. In contrast, financial performance was negatively related to insurer age. Additionally, higher-leveraged insurance companies performed better than those with lower leverage. The study provides a comprehensive analysis of the drivers of financial performance in the Kenyan insurance industry and offers valuable insights for insurance management to sustain superior financial results.

Aduloju and Ukpong (2022) assessed the financial soundness of Nigerian life insurance companies using the CARAMEL model, which evaluates capital adequacy, asset quality, reinsurance, management soundness, earnings, and liquidity. Their analysis of eight insurers (2011–2019) revealed varying strengths across firms, with FBN Insurance ranking highest overall. The study highlights the importance of robust financial indicators and recommends that policymakers enforce measures to strengthen insurers' financial stability, supporting broader financial sector resilience and market confidence in Nigeria's insurance industry.

Ghimire et al. (2023) assessed the financial soundness of Sri Lankan life and general insurers under the CARAMELS framework. Using comparative ratio analysis and benchmarking, the study found that while most firms showed adequate capital and liquidity, weaknesses persisted in asset quality and sensitivity to market risk. The researchers recommended strengthening asset-liability management and stress-testing practices to better align with international financial soundness standards.

Zinyoro & Aziakpono (2024) conducted a comprehensive review of studies examining factors affecting non-life insurers' performance. Drawing from 235 studies published between 1990 and 2021, the researchers demonstrated that both firm-level factors—such as size, organizational form, diversification, capital structure, risk, reinsurance, corporate governance, distribution system and group affiliation—and external factors—including market structure, macroeconomic, financial and institutional development—are major determinants of non-life insurers' performance. Although empirical findings regarding the effects of these factors are generally mixed, firm size, capitalization, risk, macroeconomic conditions and to some extent, corporate governance and market structure consistently show clear relationships with insurer performance. The researchers concluded that increased solvency surveillance may be necessary, particularly for smaller insurers, which appear to face a higher risk of insolvency compared to larger firms.

2.3 INDIAN STUDIES RELATED TO NON-LIFE INSURANCE COMPANIES AND CARAMEL MODEL

Charumathi (2012) conducted an empirical study to identify the factors that determine the profitability of life insurance companies in India, using Return on Assets (ROA) as the measure of profitability. The study included all 23 Indian life insurers—one public and 22 private—and analyzed data from three financial years: 2008-09, 2009-10and 2010-11. Firm-specific characteristics such as leverage, size, premium growth, liquidity, underwriting risk and equity capital were examined to see how they affect ROA. The results showed that profitability is positively and significantly influenced by company size (measured by the logarithm of net premium) and liquidity. Conversely, leverage, premium growth and the logarithm of equity capital had a negative and significant impact on profitability. The study found no significant relationship between underwriting risk and profitability.

Sinha (2012) studied the cost efficiency of life insurance companies in India from 2005-06 to 2009-10. Using Farrell and Tone's methods, the study found that cost efficiency changed a lot during these years, showing that companies often did not operate at their best level. The research also looked at technical efficiency (how well

inputs are used) and allocate efficiency (how well resources are allocated). Finally, the study connected cost efficiency to the types of products and sales channels used by the companies.

Kumari (2013) examined the life insurance sector in India after economic liberalization. The study focused on competition between public and private insurers, market share and growth. It explained that India's rapid economic growth since the 1990s has helped the insurance sector grow. The government allowed private companies to enter the market, which increased competition and gave customers more choices.

Sharma & Chowhan (2013) analyzed the performance of public and private life insurance companies in India from 2006-07 to 2011-12. They used statistical tools like percentages, ratios and growth rates to study the data. The results showed that LIC still leads the market, but private insurers are increasing their market share by using new marketing channels. The investment patterns and solvency ratios differed between LIC and private companies, with private insurers having better solvency despite some losses. LIC had a lower lapsation ratio and better service for death claims compared to private insurers.

Shreedevi and Manimegalai (2013) compared public and private non-life insurance companies in India following privatization. Using data from 2002–2011, they analyzed growth in new policies, gross direct premium income, and net incurred claims. The Mann-Whitney U Test revealed significant differences in growth rates between public and private insurers across all parameters. Public sector firms, particularly New India Assurance, generally outperformed private companies, attributed to aggressive pricing and strong business retention strategies in a competitive market.

Ansari and Fola (2014) investigated the financial soundness and performance of life insurance companies in India, applying the CARAMEL model to assess regulatory and supervisory parameters. Analyzing data from seven insurers over 2008–2013, they found significant differences between private and public insurers in capital adequacy, asset quality, management efficiency, earnings, profitability, and liquidity. However,

no significant difference was found in return on assets (ROA) and new business premiums (NBP). The study highlighted concerns over excessive focus on marketing at the expense of risk management.

Popat (2014) investigated the financial health and liquidity of eight Indian non-life insurers (four public, four private) for the years 2005–2012 using the CARAMEL framework. Utilizing ratio analysis along with F-tests and one-way ANOVA, the study found that private insurers exhibited an ROE of approximately 20%, significantly higher than the public sector's 10%. However, both groups suffered from substandard liquidity—ratios were below the 100% threshold. The analysis also showed low variability in public insurers' liquidity ratios (high F-values), indicating uniformly weak liquidity across public-sector firms.

Chakraborty & Sengupta (2015) compared the financial performance, solvency and market share of four leading life insurance companies in India: LIC (the only public-sector player), ICICI Prudential, HDFC Standard and SBI Life (private-sector companies). The study covered three financial years from 2010-11 to 2012-13. At the end of 2012-13, the private companies held market shares of about 4.72%, 3.95%and 3.64%, respectively, showing their growing presence alongside LIC.

Dar and Thaku (2015) conducted a comprehensive comparative financial study of eight major non-life insurers in India (four public and four private) across fiscal years 2003–04 to 2012–13, employing three components of the CARAMEL model—Earnings & Profitability, Management Soundness, and Liquidity. They used secondary data from IRDA and annual reports, applying ratio analysis alongside statistical tools such as mean, standard deviation, F-test, and CAGR. Their findings indicated that private insurers consistently demonstrated superior profitability, evidenced by lower claim and expense ratios and higher ROE. Public-sector firms, in contrast, held stronger liquidity ratios, though overall both groups underperformed against the 100% liquidity benchmark. The study highlighted statistically significant differences in most CARAMEL indicators, confirming that private players outperform public counterparts in earnings, while public firms maintain better liquidity positions.

Sinha and Bandopadhyay (2015) analyzed the efficiency of India's non-life insurance sector using Data Envelopment Analysis (DEA) and secondary data from IRDA Annual Reports. Their sample included twelve insurers, with four public and eight private. Results indicated public sector insurers outperformed private ones in technical and pure technical efficiency; however, the Mann-Whitney U Test revealed mixed evidence regarding significant year-wise differences in overall efficiency between the sectors.

Daare (2016) analyzed factors influencing the profitability of general insurance companies in India using panel data from 2006 to 2016 across 10 firms (4 public, 6 private). The study applied a Fixed Effect Model after validating its suitability through Random Effect and Pooled regression tests. The findings revealed that capital adequacy and GDP positively impact profitability, while liquidity and inflation have negative effects. The study recommends that managers prioritize capital adequacy and current liability management to sustain profitability in India's general insurance sector (

Bodla et al. (2017) conducted a comprehensive analysis comparing the profitability performance of life insurance companies in India, encompassing both public and private sectors. Their study sampled 13 private insurers alongside the public sector giant LIC India over a decade-long period from 2007 to 2016. Employing seven key financial variables—including Net Premium, Income from Investments, Underwriting Income, Return on Assets, Combined Ratio, Solvency Ratio and Profit after Tax—the researchers applied ANOVA to test the significance of profitability variances among insurers. The findings revealed that while LIC maintained a strong liquidity position, many private insurers struggled with underwriting income and expense control, impacting their profitability. The study underscores the critical need for private insurers to manage expense ratios effectively and improve underwriting performance to sustain growth in India's increasingly competitive insurance market.

Singh and Fatima (2017) evaluated the growth and performance of ICICI Prudential Life Insurance Company, a leading private sector life insurer in India, using parameters such as net profit, net premium, number of branches, and the CARAMEL model. The CARAMEL model analyzed ratios including capital to total assets and net premium to gross premium, with statistical validation through a one-sample t-test. The study found

that while the number of branches and policies issued declined, net profits increased, indicating effective business concentration and growth. The financial year 2014–15 showed notable positive growth in net premium collection. However, the CARAMEL model revealed that the company was not maintaining its capital base in proportion to its total assets, a key indicator of financial health. The t-test results confirmed significant differences in company performance for this ratio. The researchers recommended that the company strengthen its equity capital relative to total assets, reduce operating expenses, and maintain adequate liquid assets to meet current liabilities. They also emphasized the need for efficiency improvements in management and agent recruitment to sustain market leadership and customer goodwill.

Singhal (2018) assessed the underwriting efficiency of 19 Indian non-life insurers (both public and private) for the fiscal years 2011–12 to 2015–16 using Data Envelopment Analysis (DEA), specifically the BCC and CCR models. The study used share capital and total investment as inputs, and profit, net premium, and investment income as outputs. Results indicated a decline in underwriting efficiency from 2011–12 to 2014–15, with a slight recovery in 2015–16. On average, between 21% and 42% of insurers operated at optimal scale each year, revealing significant variation in efficiency within the sector.

Jansirani and Muthusamy (2019) explore the financial soundness of four selected public sector non-life insurance companies over five years (2012–13 to 2016–17) using the CARAMEL model. Recognizing the unique nature of the insurance business, especially non-life insurance, the study carefully selects financial soundness indicators tailored to this sector. Utilizing secondary data from IRDA annual reports, the analysis reveals an increasing profit base and the ability of companies to cover underwriting losses through advances. The findings suggest that the financial soundness and liquidity parameters of these companies align closely with standard financial benchmarks, underscoring the robustness of the CARAMEL model in evaluating insurance firms.

Jayanthi (2019) conducted a comprehensive financial performance appraisal of the Life Insurance Corporation (LIC) of India using the CARAMEL model. Drawing on secondary data sourced from books, journals, websites and newspapers, this case study

highlights the critical role of the insurance sector in the Indian economy, alongside banking. The study emphasizes that poor financial fundamentals not only deter investment but also threaten an insurer's ability to meet claims, making performance analysis essential. By focusing on LIC, the research underscores the necessity of robust financial health in fostering trust and stability within the insurance industry.

Rao and Rao (2019) conducted a detailed assessment of the financial performance of three major Indian life insurance companies—LIC of India, SBI Life and ICICI Prudential Life—using the CARAMEL approach combined with ratio analysis and One-Way ANOVA. Drawing on a decade of secondary data from 2008–09 to 2017–18, their study revealed significant differences in CARAMEL indicators at the 5% significance level. The researchers emphasize the importance of maintaining a balanced proprietary ratio to avoid shareholder burden, noting that a low equity share capital to total assets ratio signals underutilization of permanent capital. While underwriting risk is inherent in insurance, it can be mitigated through reinsurance and diversification. The study also highlights how digitization can help control rising expenses amid business growth. All three companies demonstrated satisfactory growth in benefits paid and shareholder earnings, supported by strong current and solvency ratios, reflecting their robust financial health and commitment to customer service.

Devi and Ranjana (2020) examined the pivotal role that efficient performance of life insurance companies plays in the growth and development of the insurance industry and, by extension, the broader economy. Their study rigorously examines the technical efficiency of India's public and private life insurers over 15 years (2004–05 to 2018–19) using the CCR model of Data Envelopment Analysis (DEA). Inputs such as the number of agents, operating expenses and equity capital were analysed against outputs including the number of policies and net premium. Representing the public sector, Life Insurance Corporation (LIC) of India was compared with five private insurers that collectively hold approximately 39% of the market share outside LIC. Together, these six companies command around 83% of the retail weighted received premium market share. The study's findings highlight LIC's consistent technical efficiency, reflecting its dominant position and trusted legacy in the Indian insurance landscape.

Kalyani and Pathak (2020) investigate the financial soundness of two leading Indian InsurTech companies, Go Digit and Acko, over three years (2017–18 to 2019–20) using six key parameters of the CARAMELS model: Capital adequacy, Asset quality, Reinsurance and actuarial issues, Management soundness, Earnings and profitability and Liquidity. Their comparative analysis reveals that Go Digit outperforms Acko in four parameters—capital adequacy, reinsurance and actuarial issues, management soundness and earnings—while Acko shows superior performance in asset quality and liquidity. This study highlights the nuanced strengths of emerging InsurTech players in India's dynamic insurance landscape.

Madhuri and Rao (2020) evaluated the financial performance of selected Indian life and non-life insurers over ten years (2015–2024) using the CARAMEL model and data from IRDAI. Their ratio analysis focused on six key parameters: capital adequacy, asset quality, reinsurance, management soundness, earnings, and liquidity. The study identified persistent vulnerabilities in asset quality and heightened sensitivity to market risk, despite overall acceptable levels of capital and earnings. The researchers emphasized the need for enhanced stress testing and stricter alignment between assets and liabilities to strengthen insurer resilience and stability.

Rani & Ramesh (2020) focused on LIC's financial health from 2016–17 to 2019–20, employing bivariate correlation and robust least squares on CARAMEL ratios such as capital adequacy, asset quality, and earnings. Their findings determined that capital adequacy remained the most significant influencer of LIC's profitability. The study stresses the importance of maintaining strong solvency buffers in state-run insurers within dynamic market conditions.

Rathi and Jatav (2020) examined a comprehensive comparative analysis of seventeen public sector non-life insurance companies in India by employing seventeen public disclosure analytical ratios over a decade (2009–10 to 2018–19). Utilizing robust statistical tools such as ANOVA, Welch, Jarque-Bera, Levene and Bartlett tests, their study reveals no significant differences in the mean ratios across the selected companies. However, performance nuances emerge: New India Assurance Company Ltd. excels in seven key ratios including claims settlement and profitability measures, while United India Insurance leads in six others related to efficiency and leverage.

Oriental Insurance Company Ltd. ranks third, showing strength in two ratios, whereas National Insurance Company lags as the least efficient performer. This nuanced portrait of public sector insurers provides valuable insights for policymakers and stakeholders aiming to enhance sectorial efficiency.

Surya and Sudha (2020) examined the CARAMELS model—an acronym for Capital adequacy, Asset quality, Reinsurance and Actuarial issues, Management soundness, Earnings/Profitability, Liquidity and Sensitivity to market risk—as a comprehensive financial soundness indicator for both life and non-life insurance companies. Their work underscores the model's utility in quantitatively assessing the multifaceted factors that shape an insurer's financial health, offering a robust framework for regulators and analysts alike.

Abiramy and Hemalatha (2021) conducted an insightful examination of the financial performance of Oriental Insurance Company Ltd., highlighting the transformative impact of sector liberalization on transparency, governance and accountability within the Indian insurance industry. Their study identifies firm size and long-term investment as pivotal factors influencing profitability. However, they caution that overinvestment in long-term assets may jeopardize future profits, urging the company to expand cautiously to avoid diseconomies of scale.

Harwani (2021) examined the financial performance of public sector non-life insurance companies in India by applying the CARAMEL model over five years. The study relied on secondary data collected from annual reports published by the Insurance Regulatory and Development Authority of India (IRDAI), with a focus on four selected companies for the financial years 2014–15 through 2018–19. The results of the ratio analysis indicated that all four companies prioritized expanding their asset base over increasing their equity base.

Kataria (2021) examined the financial performance of Indian life insurance companies, specifically SBI Life Insurance and ICICI Prudential Life Insurance, by analyzing determinants of profitability. Recognizing the broader economic impact of company performance, the study employed financial ratios including liquidity, profitability,

persistency and solvency ratios. A t-test was conducted to assess significant differences in the current ratios of the two companies. The results indicated that SBI Life Insurance maintains a sound liquidity position and better profitability compared to ICICI Prudential Life Insurance, which was found to be in weaker financial health.

Nagaraju & Kamal (2021) aimed to analyze the financial performance of selected Indian insurance companies by examining determinants of profitability and measuring performance through the current ratio. Liquidity performance is significant as it can impact the broader economy, necessitating empirical analysis. The study used the current ratio, surplus and profit after tax as financial performance indicators. Findings revealed that public insurers such as LIC and SBI Life have higher current ratios compared to private insurers. From 2014–15 to 2018–19, the surplus increased for four insurance companies, whereas Birla Sun Life Insurance's surplus decreased. Profit after tax declined for ICICI and Birla Sun Life insurers during this period. While the current ratio for ICICI and Birla Sun Life insurance showed an increasing trend annually, LIC, SBI Life and HDFC exhibited a decreasing trend, attributed to rising current liabilities.

Vasani and Chakrawal (2021) concluded that assessing the financial health of an individual insurer or the insurance sector is a complex task. To ensure reliability, researchers must incorporate both primary and secondary research. While the literature identifies several indicators for evaluating financial soundness, the CARAMEL model—comprising Capital Adequacy, Asset Quality, Reinsurance and Actuarial issues, Management soundness, Earnings/Profitability and Liquidity—is considered the most effective for analyzing the financial soundness and performance of insurance companies. These ratios collectively help monitor and control the financial performance of insurance companies, highlighting the importance of robust indicators in identifying and managing potential problems.

Kalyani (2022) compared the financial performance of two public insurers (New India Assurance and National Insurance) and two private insurers (ICICI Lombard, Bajaj Allianz) from 2010–11 to 2021–22, utilizing the CARAMEL framework. Secondary financial data analysis showed that New India Assurance consistently led across capital adequacy, management soundness, and earnings metrics. Despite the

strong performance, all insurers exhibited moderate reinsurance alignment and suboptimal liquidity, suggesting that public insurers are financially sound but require enhancements in reserve and liquidity practices.

Kumar and Hussain (2022) conducted a descriptive research strategy for their study. This approach relies substantially on the interpretation of various data and statistical analyses. Both primary and secondary sources of information were utilized in the investigation. The majority of primary data was collected through a well-designed questionnaire, which included both closed and open-ended questions. The study involved a sample size of 60 participants, comprising a diverse group of salaried employees across different age groups. The sample included individuals at various stages, such as single persons, those who were married with children, individuals raising families and retirees. The researchers adopted convenience sampling to efficiently gather the necessary data and information for the study.

Patel and Dwivedi (2022) conducted a research study comparing the profitability and long-term financial soundness of three major private life insurance companies. These companies collectively hold an average of 50% market share (based on gross direct premium) among all private life insurance companies. The study found that, in terms of profitability, HDFC Life Insurance Company generates superior returns, as reflected in its total income, shareholders' funds and total assets. On the other hand, SBI Life Insurance Company demonstrates a robust asset management strategy, evidenced by a favorable proprietary ratio, total liabilities to total assets ratio and policyholders' liabilities to total assets ratio.

Thirupathi and Balamurugan (2022) analyzed the financial performance of four public-sector non-life insurance companies in India using the CARAMEL model over 15 years (2006–2021). The study adopted descriptive statistical methods and trend analysis to assess capital adequacy, asset quality, reinsurance coverage, management soundness, earnings quality, and liquidity. The results revealed substantial disparities across insurers, particularly in asset management, expense control, and liquidity. Oriental Insurance was found to be more efficient in controlling operational expenses, while all the insurers struggled with liquidity, indicated by current ratios falling below

standard benchmarks. The researchers concluded that although public insurers are foundational to India's insurance ecosystem, their long-term financial sustainability depends on major improvements in liquidity and expense optimization.

Rohilla (2023) examined the financial soundness of India's life insurance industry, emphasizing its role in risk mitigation, savings mobilization, and economic growth. The study assessed six leading life insurers (one public, five private) selected for their market dominance, using the CARAMEL model and two-tailed ANOVA to evaluate financial health. Findings highlight the importance of capital adequacy, operational strength, and transparent financial reporting, especially following regulatory reforms that increased private and foreign competition in the sector.

Banerjee & Sarkar (2024) extended the CARAMEL model by integrating customer satisfaction as an additional pillar, analyzing 21 private life insurance companies in India over the 2013–14 to 2022–23 periods. They measured customer satisfaction through persistence, claim settlement and grievance ratios, and compared rankings with and without this new dimension. Statistical analysis revealed no significant correlation between traditional CARAMEL rankings and incorporating customer satisfaction, suggesting that operational efficiency and customer experience may diverge in influencing insurer soundness.

Srinivasa & Venkidasamy (2024) analyzed the financial soundness and efficiency of Indian public-sector general insurers using the CARAMEL model in a 2024 study. Their analysis confirmed that management and liquidity dimensions lagged behind international norms, with notable intercompany disparities. The research pinpointed the need for stronger internal controls and liquidity optimization to align with sound international insurance practices.

Sharma and Kumar (2025) examined the role of risk management disclosures in the financial performance of India's life insurance sector, focusing on both major private and public sector companies from 2013–14 to 2022–23. The study underscores the importance of life insurance in protecting individuals and families from financial risks while contributing to national economic development through long-term investments. The researchers highlight that life insurers must manage a wide array of risks, such as

market, credit, morbidity, operational, persistency, and catastrophe risks. Using statistical methods including coding, ranking, ratio analysis, and pooled regression analysis, the study demonstrates that high-quality risk disclosures are critical for building stakeholder trust and ensuring financial stability. The findings indicate that effective risk management is essential for maintaining solvency, meeting policyholder claims, and supporting the long-term resilience of life insurers in India.

2.4 RESEARCH GAP

A thorough literature review was conducted on the financial performance and soundness of public and private non-life insurance companies with reference to the CARAMEL model. In total, 50 scholarly articles and research papers were reviewed, of which 14 papers dealt with international studies on non-life insurance companies and CARAMEL/CARAMELS model applications and the remaining 36 papers focused on Indian studies covering both public and private non-life insurers. From the review of the literature, it could be pointed out that several studies have assessed profitability determinants, solvency, liquidity, technical efficiency, cost efficiency, and regulatory impacts on insurance companies. Numerous comparative studies evaluated the performance of public versus private insurers on selected financial parameters, while others analyzed the influence of macroeconomic and firm-specific factors, adoption of CARAMEL variants, and post-liberalization reforms.

However, very few studies have holistically examined the comparative financial performance of Indian public and private non-life insurance companies over a long-term period using the CARAMEL model in a multi-dimensional and consistent manner. Most existing research focused on isolated financial ratios, short-term trends, or specific companies without segmenting public and private insurers systematically across all CARAMEL dimensions. Limited work exists that integrates capital adequacy, management soundness, earnings, liquidity, and risk management collectively to provide comprehensive insights. The present study aims to fill this gap by conducting a detailed comparative analysis of selected public and private non-life insurers using the CARAMEL model over an extended period, aligning with India's evolving regulatory and competitive landscape.