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Effects Of Working Capital Management on the Financial Performance of Life Insurance Companies in Lusaka Province

Silumesi Isaac Kwaleyela[1]*, Dr. Romeo Yohane[1]

[1] *Graduate School of Business, University of Zambia, Lusaka, Zambia*
* Corresponding Author

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Abstract

This study investigates the effects of working capital management (WCM) on the financial performance of life insurance companies in Zambia, addressing critical issues such as low insurance penetration and insolvency risks faced by the sector. The study highlights the Insurance Penetration Ratio (IPR), which was 1.26% in 2021, indicating a significant gap in the contribution of insurance to Zambia's gross domestic product and the economic implications of low insurance uptake among the population. The study was guided by three specific objectives: to establish the challenges in working capital management experienced by life insurance companies in Zambia, to identify the reasons life insurance companies in Zambia experience short-term and long-term insolvency, and to formulate strategies that can enhance working capital management of life insurance companies in Zambia. The study employs a mixed-method approach, combining quantitative analysis of financial data from five insurance companies with qualitative insights gathered from structured questionnaires with key informants, including CFOs and finance managers. A total of 37 respondents were selected using random sampling, and secondary data was collected from audited financial statements spanning 2018 to 2022. The data were analyzed using descriptive statistics and regression analysis to assess relationships between WCM components and financial performance indicators. The findings reveal that life insurance companies face considerable challenges in WCM, primarily influenced by macroeconomic conditions, regulatory frameworks, and competitive dynamics. A significant portion of respondents (78.3%) indicated that macroeconomic factors negatively affect premium collections, corroborating existing literature on the vulnerability of insurance firms in unstable economic climates. The study further identifies misalignments in premium pricing strategies, operational inefficiencies, and delayed premium remittances as systemic issues impacting liquidity and overall financial performance. The analysis underscores that both profitability and liquidity are crucial determinants of short-term and long-term insolvency risks, with over half of the respondents reporting inconsistent profitability over the past five years. Key factors contributing to insolvency include delayed claims settlements and ineffective accounts receivables management, underscoring the need for robust credit control mechanisms and effective asset-liability matching. To enhance WCM, the study advocates for improved receivables management, periodic cash flow forecasting, and strategic negotiations with vendors, all aimed at bolstering liquidity and operational efficiency. Interestingly, while respondents expressed skepticism toward restricting investments to liquid assets, there was a strong ethical stance against delaying claims payments, emphasizing the importance of maintaining customer trust and operational integrity. The regression analysis further reveals a statistically significant negative relationship between receivable days and premium growth, highlighting the adverse impact of prolonged receivables on revenue generation. Overall, this study contributes to the understanding of the complexities surrounding WCM in the Zambian life insurance sector, providing valuable insights for stakeholders to develop effective strategies that enhance financial performance and sustainability in the face of ongoing economic challenges. Future research could explore the long-term effects of these strategies and examine other sectors within Zambia for broader applicability.

Keywords: Working Capital Management, Financial Performance, Life Insurance, Insolvency Risk, Zambia

1. Introduction

The life insurance industry plays a critical role in the global financial markets by offering essential services such as risk management, long-term savings, and financial protection for individuals and businesses. In both developed and developing economies, life insurance companies significantly contribute to financial stability and economic growth by mobilizing savings and reinvesting them into the economy (Swiss Re Institute, 2019). In well-established markets like North America and Europe,

life insurance companies are typically well-capitalized and operate in relatively stable economic environments. These companies have developed robust systems for managing working capital, enabling them to meet both short- and long-term obligations while generating consistent profits (Huang & Eling, 2021). However, even in these mature markets, the management of working capital remains a core concern. Life insurance companies must balance liquidity and profitability, given that their business model involves receiving premiums upfront while paying out claims over extended periods. Inefficient working capital management (WCM) can result in liquidity shortages, hindering the firm's ability to settle claims and honor contractual obligations, which ultimately erodes customer trust and damages the firm's reputation (Aktas et al., 2017). To sustain financial performance in increasingly competitive markets, life insurance companies globally are prioritizing the optimization of working capital strategies (Singh & Kumar, 2020).

In contrast, life insurance companies in Africa operate in more volatile economic environments. The continent's insurance penetration rate remains low compared to global averages, despite significant growth driven by rising incomes, urbanization, and increased awareness of financial products (Chingaipe & Kachingwe, 2021). For instance, in South Africa, where the insurance market is relatively advanced, firms have managed to navigate WCM challenges. However, in many other African nations, life insurance companies struggle with liquidity issues, operational inefficiencies, and weak regulatory frameworks, which exacerbate WCM difficulties (Oluyemi & Afolabi, 2019). The unpredictability of economic conditions in many African countries characterized by fluctuating interest rates, inflation, and currency devaluations further complicates WCM for life insurance companies. Firms without effective WCM practices face liquidity constraints, resulting in delayed claim settlements, reputational damage, and even financial distress (Sheikh & Wang, 2021). Efficient WCM is critical in such contexts, as it enables companies to manage current assets and liabilities, safeguarding long-term profitability amidst economic uncertainty (Majeed et al., 2020).

Focusing on Zambia, although the market is relatively small compared to regional counterparts, life insurance in Zambia plays a vital role in promoting financial inclusion and offering protection against financial shocks. Government-led initiatives have spurred the growth of life insurance penetration, yet challenges remain, particularly in terms of managing working capital (Pensions and Insurance Authority, 2021).

Zambia's economic volatility, marked by fluctuating inflation and exchange rate instability, complicates the task of maintaining liquidity and ensuring profitability for life insurance companies. Poor WCM has led to liquidity shortages, delayed payments, and increased operational costs (Nyabwari & Wangari, 2019). Furthermore, the underdeveloped financial markets limit investment options, constraining the ability of life insurance companies to generate returns necessary for profitability (Akinlo & Ogunseye, 2019). Companies with poor WCM practices face not only financial distress but also reputational risks, as inefficiencies in managing claims and operational obligations diminish consumer trust and confidence (Molefe & Mazibuko, 2021). Working capital management can form an important part of a company's competitive advantage. (Mathuva, 2010) states that firms can gain competitive advantage by effectively and efficiently utilizing resources of an organization by keeping the cash conversion cycle to a minimum.

The business model of life insurance companies—collecting premiums upfront while being liable for long-term claims—makes effective WCM particularly crucial. Receivables cannot be avoided entirely in business as they stimulate sales (Ahmet & Emin, 2012). Insurance premiums are only as good as the ability for them to be turned into cash to help in the management of working capital. (PricewaterhouseCoopers, 2019) through a survey noted that the most pressing issue across the insurance industry in Zambia was the failure to recover premium debts which have a direct impact on a company's liquidity position. Firms that do not manage their working capital efficiently may experience delays in claim settlements, lost investment opportunities, and higher borrowing costs. Despite its importance, there is limited research on how WCM impacts the financial performance of life insurance companies in Zambia. Existing studies on WCM have primarily focused on sectors such as manufacturing and retail, leaving a gap in understanding the relationship between WCM and financial performance in the life insurance industry, particularly in developing economies like Zambia (Majeed et al., 2020).

Two life insurance companies in Zambia, Focus Life Assurance Limited and Aplus Life Assurance, were recently liquidated due to insolvency. This was attributed to poor WCM, as their liabilities exceeded their assets, rendering them unable to meet operational obligations, such as claim settlements (Pensions and Insurance Authority, 2021). Additionally, the life insurance industries combined ratio a measure of profitability was 141.55% in 2021, up from 131.53% in 2020, indicating that firms are struggling to cover expenses with underwritten premiums (Pensions and Insurance Authority, 2021). The mismatch between premiums and expected expenses further exacerbates WCM challenges. The ratio is calculated as claims + commissions + expenses as a percentage of net premiums. The ratios from 2021 and 2020 entails that long-term insurers are not able to cover their expenses from underwritten premium. This mismatch in premiums and expected expenses creates working capital management issues in companies which is then supposed to be covered by investment and other income. Insurance companies are widely known as institutional investors as they are active investors on both the primary and secondary markets. Their participation largely depends on the amount of liquidity they can foster from the premiums they receive. This enables insurance companies to generate additional income known as investment income.

Furthermore, with the growing kwacha depreciation which was at the beginning of 2018 trading at K10.04-$1 and traded at K18.07 at the close of 2022 (Bank of Zambia, 2024) and increase in inflation rates, the operating costs of insurance companies has grown making it more difficult to manage working capital. Firms that fail to implement sound WCM strategies may not only face financial instability but also lose their competitive edge in the market (Mathuva, 2010). Proper

management of receivables, payables, and cash flows is essential for sustaining profitability and enhancing operational efficiency. Moreover, insurance companies, as institutional investors, rely on efficient WCM to generate investment income, which supplements premium income and ensures financial stability.

In light of these challenges, this study seeks to examine the relationship between WCM and the financial performance of life insurance companies in Zambia. By analyzing key components of WCM, such as the cash conversion cycle, liquidity management, accounts receivable, and accounts payable, the study aims to provide insights into how life insurance companies can improve their financial performance through more efficient WCM practices. The findings will contribute to the existing body of knowledge and offer practical recommendations for both firms and policymakers in creating an enabling environment for effective financial management within Zambia's life insurance sector.

1.2 Research Objectives

The study was guided by the following objectives:

i. To establish the challenges in working capital management experienced by life insurance companies in Zambia.
ii. To establish the reasons life insurance companies in Zambia, experience short term and long-term insolvency.
iii. To formulate strategies that can enhance working capital management of life insurance companies in Zambia.

1.3 Theoretical framework

The theoretical framework for this research was based on the concepts of the aggressive and conservative approaches to working capital management, as well as Walker's Three Propositions. The aggressive approach involves maintaining high levels of non-current assets and low levels of current assets, which can increase profitability but also risk of illiquidity. In contrast, the conservative approach favors holding low investments in non-current assets but high investments in current assets, which may sacrifice long-term profitability to ensure short-term liquidity. Walker's Three Propositions further explore the risk-return tradeoff of working capital management, suggesting that the amount, type, and maturity of capital used to finance working capital can directly impact a company's risk and profitability. This theoretical framework is relevant to the study as it provides a foundation for understanding the key considerations and approaches involved in effective working capital management.

1.4 Conceptual framework

The conceptual framework below shows that the independent variables include payables management, characterized by payable days, which refers to the average time a company takes to pay its suppliers. Efficient management of payables can enhance cash flow, positively influencing financial performance. The second independent variable is receivable management, indicated by receivables days, which reflects the average time taken to collect payments from customers. Effective receivables management can improve liquidity and overall financial stability. The dependent variable in this model is financial performance, measured by key indicators such as Return on Assets (ROA), which shows how efficiently a company uses its assets to generate earnings; Return on Equity (ROE), which measures profitability relative to shareholders' equity; and premiums growth, particularly relevant in the insurance and financial sectors, indicating growth in income from premiums.

The relationship between the independent variables and the dependent variable highlights a positive influence: effective management of both payables and receivables can lead to improved cash flow, thereby enhancing ROA, ROE, and premiums growth. For instance, reducing receivable days can increase cash inflow, while optimizing payable days can free up cash for other investments or operational needs. However, both variables can interact; extending payable days might improve short-term cash flow but could potentially strain supplier relationships. Conversely, improving receivables management enhances liquidity, supporting better payment practices. Overall, effective management of payables and receivables is crucial as it directly influences a company's financial performance, reflecting its operational efficiency and overall financial health.

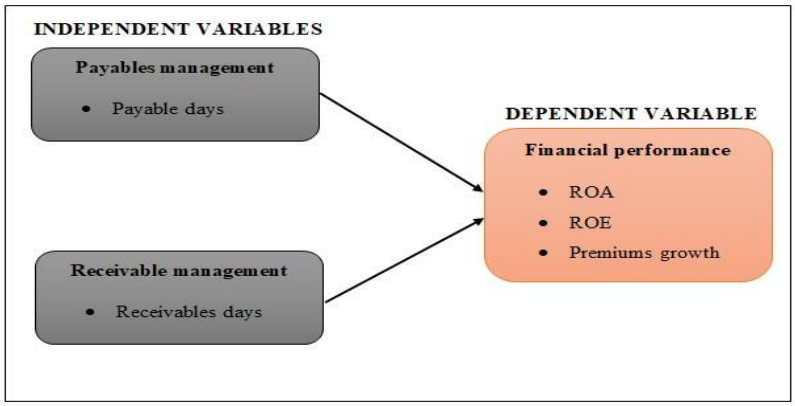

Figure 1: Conceptual framework

2. Literature Review

This section offers an overview of the existing literature and theoretical frameworks pertinent to the study

2.1. Definitions of Terms and General Concepts

Life Insurance

Life insurance guarantees that, in the event of the policyholder's death, the policyholder pays one or more named beneficiaries a sum of money in exchange for premiums paid by the policyholder during their lifetime. Insurance premiums are installments of money that are to be paid by the insured who enters into an insurance contract with the insurance company as a condition to be covered. A vital issue in life insurance is the determination of rates as these will determine the amount of insurance premiums to be charged and received (Issalillah & Khayru, 2022). The premiums charged should be able to cover the cost of claims (risk) and insurance service costs, and also form part of the insurance company's revenue (profit).

Working Capital Management

Working capital management is a business process that helps companies use their current assets efficiently and optimize cash flow. The key to profit growth is the rational management of debtors and creditors, which can be used to mitigate cash flow deficits (Appuhami, 2008). Eladly (2021) used current ratio, quick ratio, and liquidity as measures of liquidity in their study on insurance companies in Egypt. The study found out that there is a positive significant effect of current ratio, quick ratio and liquidity on Return on Equity. The current ratio is a financial ratio that measures whether a company has enough resources to pay short-term obligations when they come due. The higher the current ratio, the better the company can pay its obligations. A current ratio of 2:1 is usually considered a benchmark. A ratio of less than one indicates that the company may not have sufficient resources to pay its current obligations (Bawa & Chattha, 2013).

Receivable days and Payable days

Receivable days and payable days are examples of efficiency ratios. An efficiency ratio is a metric that business leaders use to measure how efficient a company uses its resources. Organizations will typically use these ratios to gain an insight into areas that they can improve operationally, management of assets and various business practices. A number of studies have used these two constructs for the purpose of assessing working capital management.

(Ponsian, et al., 2014) using the cash conversion cycle found that when the cash conversion cycle increases, even the profitability also increases. This highlights the importance of managing the accounts payable and accounts receivable. The major reason for cash management is to help the company determine the optimal level of cash for its day-to-day operations and still manage to make long-term investments to boost profitability. The major task around cash management is to maintain sufficient cash and marketable securities to reduce the risk of insufficient operating funds. Thus, a company's competency to synchronize cash inflows with cash outflow, by using cash budgeting and forecasting in formulating a cash management strategy is important.

According to Bagchi and Khamrui (2012) cash flow management is concerned with arranging cash, monitoring account receivable and account payable activities and proper maintaining of inventory. They further posit that optimum cash flow management affects liquidity and profitability of a firm.

Financial Performance

Financial performance is a subjective measure of how well a company can use its assets in its core business to generate income. Financial performance measures provide stakeholders with a valuable tool to assess a company's past financial performance and current position. Additionally, these can be used to compare similar companies in the same industry or to compare industries or sectors together. Financial performance of companies can be measured using accounting data or stock market values in the context of financial management practices (NYONGESA, 2017). Ultimately financial performance affects the health and ultimately the survival of an organization. Financial performance can be measured based on profitability, liquidity, solvency, financial efficiency, and solvency (Higgins, et al., 2016); (Bacidore, et al., 1997) & (Turegun, 2022). Profitability is a measure of the profit obtained from the use of the production assets of a company; liquidity measures the company's ability to meet its obligations when they are due; Solvency measures a company's ability to pay all its financial obligations if all its assets are sold.

2.2. Empirical Review of similar studies

Global studies

Alsulayhim, (2019) conducted a study to ascertain the relationship between working capital management and profitability in non-financial companies listed in the Saudi Stock Exchange. The study was on 67 companies listed on the Saudi Stock Exchange using data for a period of ten years (2007-2016). Using quantitative approach and deductive reasoning the researcher noted that there is a positive relationship between working capital management and profitability; there is a significant relationship between company size and working capital management and this could affect profitability; and no

single working capital management strategy would suit every company. Similarly, (Raheman & Nasr, 2007) in a study on working capital management with reference to Pakistan concluded that there was a significant negative relationship between liquidity and profitability. The study was conducted on 94 Pakistani firms listed on Karachi Stock Exchange for a period of 6 years from 1999 – 2004. The researchers used data regression analysis of cross-sectional and time series data and the Pearson correlation model to analyse the secondary data obtained from financial statements.

Africa studies

(Yushan & Abbas, 2016) in a study on working capital management increasing profitability of insurance firms in Tanzania concluded that there is a strong negative correlation involving components of the working capital management along with profitability of the insurance companies and constructive correlation involving size of the companies and its profitability. Ologbenla (2018) conducted a study to investigate the impact of liquidity management on the performance of insurance companies in Nigeria using a sample of 5 out of the Nigerian insurance companies that are quoted on the Nigerian Stock Exchange (NSE). The duration of the study was 2003 to 2012. The data used was secondary data and analysed it using panel regression analysis. The conclusion of the study was that insurance companies should place more priority on their equity capital which is having negative impact on their performance rather than liquidity management since they are less involved with liquid cash unlike commercial banks. Gatsi, et al. (2013) investigate how profitability of insurance firms in Ghana are influenced by working capital management and leverage. The study used a sample of 18 out of 42 insurance companies in Ghana and the data was analysed using panel regression. The conclusion was that the degree of financial leverage and liquidity are inversely related to profitability while operating leverage is positively related to profitability.

Zambia Insurance Industry

The insurance industry is a heavily regulated industry in Zambia and well over the world as it creates a safeguard that eliminates uncertainties that surround sudden and unexpected financial losses. The insurance sector contributes to financial systems by providing critical risk management services to businesses and citizens. The insurance industry in Zambia has undergone major changes over the last 50 years. In the early 1970s 26 foreign insurance companies were nationalised following the Economic Nationalisation Reforms in 1968. This led to the creation of Zambia State Insurance Corporation. In 1991 after the much-anticipated elections, the Movement for Multi-party Democracy (MMD) came into power and with that came the liberalisation of the economy.

Following this economic reform several private insurance companies both local and international entered the market. With this the number of insurance companies have been growing over the years. Even as the number of insurance companies have been growing, there has also been some that have closed done in the last couple of years. It was in line with that the Pensions and Insurance Authority in 2015 announced the increase in the minimum paid up capital for insurance companies and brokers in Zambia. The life insurance company's minimum capital was raised from K1 million to K12 million through statutory instrument 171 of 2015. This was aimed at increasing the solvency of insurance companies to better handle the risk they take. In a study by (Ochieng & Jagongo, 2020) it was found that raising working capital led to development of better credit management policies, increased receivable, reduction of payable, reduced bad debts, and improved ability of insurance companies to meet obligations.

Zambia's insurance industry and associated risks/ hedging mechanisms in relation to WCM

The Zambian insurance industry has been evolving, yet it continues to face significant challenges, including low penetration rates and a pressing need for innovative financial products. Recent studies indicate that life insurance remains the dominant sector, but issues such as regulatory constraints, market volatility, and liquidity risks hinder growth (Mwanza, 2023). The economic landscape, characterized by rising inflation and currency fluctuations, exacerbates these challenges, leading to heightened insolvency risks among insurers. As highlighted by Chanda (2023), the lack of comprehensive risk assessment frameworks further complicates the operational environment, making effective working capital management (WCM) essential for financial stability and performance enhancement.

To address these risks, Zambian insurers are increasingly employing hedging mechanisms such as derivatives and reinsurance to mitigate cash flow volatility and protect against adverse economic conditions. These strategies are crucial for maintaining liquidity and ensuring that firms can fulfill both short-term obligations and long-term growth objectives (Phiri, 2023). Additionally, robust receivables management and precise cash flow forecasting are vital components of effective WCM, enabling insurers to optimize operational efficiency and reduce financial exposure. By integrating risk management strategies with WCM practices, Zambian insurance firms can bolster their resilience against economic shocks, ultimately contributing to a more stable and prosperous insurance sector in the region (Kamwendo, 2023).

3. Methodology

Using a descriptive and correlational quantitative research design, the study was grounded in a positivist philosophy, emphasizing objective measurement and analysis of observable phenomena. The research followed a deductive approach, testing hypotheses developed from existing theories on WCM and financial performance using financial data from life insurance companies. The study targets five companies in Lusaka, with a sample of 37 respondents selected through

random and purposive sampling techniques. Data collection methods included both secondary data from audited financial statements and primary data gathered via structured questionnaires administered to finance department employees. The analysis employed descriptive statistics and multiple regression analysis to explore the relationship between WCM components and financial performance indicators, adhering to ethical considerations like informed consent and confidentiality throughout the research process.

4. Data presentation and analysis

4.1. The challenges in working capital management experienced by life insurance companies in Zambia

The data collected reflects various challenges in working capital management faced by life insurance companies in Zambia, particularly due to macroeconomic conditions, industry practices, and regulatory issues. A majority (78.3%) agree or strongly agree that macroeconomic conditions negatively impact premium collections (mean = 3.97, SD = 1.142), and 83.8% feel similarly about the effect on new business acquisition (mean = 4.05, SD = 0.941). Additionally, 62.1% believe these conditions hinder accurate cash flow forecasting (mean = 3.54, SD = 1.070), and 91.9% agree that they increase the cost of business operations (mean = 4.24, SD = 0.796). Perceptions on premium pricing reflect mixed opinions; 32.4% agree that premiums align with associated risks and expenses, while 32.4% disagree (mean = 3.22, SD = 1.272). Similarly, 35.1% feel that market investment yields are adequate to support insurance products, while 27% disagree (mean = 3.19, SD = 1.126). There is also a strong indication of undercutting in the industry, with 59.4% agreeing or strongly agreeing (mean = 3.78, SD = 1.031). While opinions are divided on the burden of taxes, with 43.2% disagreeing that taxes are excessive (mean = 2.97, SD = 1.013), the presence of fraudulent claims is acknowledged by 78.4% (mean = 3.95, SD = 0.848). Delayed premium remittances by brokers are seen as a significant issue, with 94.6% agreeing that this negatively affects insurers (mean = 4.57, SD = 0.603).

Concerning regulatory impacts, 29.7% feel that recent changes have negatively influenced working capital management, while a high 48.6% remain neutral (mean = 3.08, SD = 0.924). Additionally, 83.8% report experiencing higher-than-normal lapses, surrenders, and benefit claims (mean = 4.05, SD = 0.621), and 48.6% believe the current mortality experience has led to increased claims (mean = 3.43, SD = 0.689). Increased competition has also impacted premiums and growth rates, with 81.1% agreeing that competition has led to lower premiums and growth (mean = 3.92, SD = 0.722). Overall, the data highlights that macroeconomic factors, competition, regulatory shifts, and operational challenges significantly influence working capital management in Zambia's life insurance sector.

4.2. The reasons life insurance companies in Zambia experience short term and long-term insolvency

The data collected reveals various factors influencing short-term and long-term insolvency risks for life insurance companies in Zambia, with an emphasis on profitability, liquidity, credit management, and asset-liability matching. While nearly half (51.3%) agree that their companies have been profitable in the past five years, a substantial portion remains neutral (27%) or disagrees (21.6%), indicating mixed experiences in profitability (mean = 3.30, SD = 0.909). Likewise, 45.9% report growth in gross written premiums exceeding the industry average, but 27% remain neutral, and 27% disagree, suggesting variability in growth rates (mean = 3.22, SD = 0.976). Timely claims settlement is seen as crucial for premium growth, with 94.6% agreeing or strongly agreeing (mean = 4.51, SD = 0.607). Liquidity management is also deemed significant, with 70.2% affirming that high liquidity positively affects profitability (mean = 3.73, SD = 1.045). On the topic of selling on credit, 51.3% agree that avoiding credit sales could enhance profitability, though a notable 29.7% disagree or remain neutral, indicating diverse views on credit policies (mean = 3.35, SD = 1.136).

Effective management of accounts receivables is widely seen as essential for profitability, with 89.2% in agreement (mean = 4.22, SD = 0.712). The impact of a high current ratio on profitability is also recognized, as 67.6% agree or strongly agree (mean = 3.73, SD = 0.871). Opinions are more divided on the benefits of maintaining more current than non-current assets, with 37.8% neutral and 29.7% disagreeing, indicating uncertainty over this approach's effectiveness (mean = 3.11, SD = 0.936). Finally, ineffective asset-liability matching is identified as a major risk factor, with 91.9% agreeing it negatively affects financial performance (mean = 4.24, SD = 0.683). Overall, the responses highlight the importance of timely claims settlement, liquidity, receivables management, and effective asset-liability matching as key factors in mitigating insolvency risk for life insurers in Zambia.

4.3. Strategies that can enhance working capital management of life insurance companies in Zambia

The data collected highlights key strategies perceived to enhance working capital management for life insurance companies in Zambia, emphasizing receivables management, cash flow forecasting, cost reduction, and automation. A strong consensus is observed regarding the importance of managing receivables effectively, with 94.6% of respondents agreeing or strongly agreeing that it is essential for managing working capital (mean = 4.16, SD = 0.727). Similarly, negotiating better payment terms with vendors is widely supported, with 94.6% in agreement (mean = 4.03, SD = 0.726). Periodic preparation of cash flow forecasts is also considered highly beneficial, with 94.6% supporting this strategy (mean = 4.16, SD = 0.800). Introducing cash-and-carry insurance is seen as another potential strategy, supported by 72.9% of respondents (mean = 3.89, SD = 0.875). However, only 27% agree with the notion that insurance companies should restrict investments to liquid assets, with the majority disagreeing (59.4%), suggesting a preference for diverse asset

management strategies (mean = 2.57, SD = 1.168). Additionally, limiting working capital to cash holdings is viewed sceptically, with only 27% in agreement, indicating a lack of support for this restrictive approach (mean = 2.70, SD = 1.151).

Delaying claims payments as a strategy to manage working capital is generally disapproved, with 75.6% disagreeing or strongly disagreeing, pointing to the ethical and reputational risks of such a tactic (mean = 2.11, SD = 1.022). On the other hand, reducing operating costs is endorsed by 89.2% of respondents as a vital approach to effective working capital management (mean = 3.89, SD = 0.809). Automation also garners strong support, with 89.2% of respondents believing it could improve working capital management by streamlining processes (mean = 4.16, SD = 0.866). These responses underscore the perceived importance of strategic receivables management, periodic cash flow assessments, negotiation with vendors, cost efficiency, and process automation as primary means to enhance working capital management for Zambia's life insurance companies.

4.4. Regression analysis

The regression analysis results in table 1 provide insights into the model's explanatory power for predicting the dependent variable based on the given sample. With an R-squared value of 0.5204, the model explains approximately 52.04% of the variance in the outcome variable, indicating a moderate fit. The adjusted R-squared of 0.408 confirms that the model retains substantial explanatory power after accounting for the number of predictors. The F-statistic is 1.09, with a corresponding p-value of 0.0408, suggesting that the overall model is statistically significant at the 5% significance level, meaning there is a low probability that the observed relationship is due to chance. Breaking down the sources of variance, the model's sum of squares (SS) is 0.026203848, and the mean square (MS) is 0.013101924, indicating the average variability explained by the model across the two degrees of freedom (df) attributed to the predictors. The residual sum of squares, representing unexplained variance, is relatively small at 0.024150031, with an MS of 0.012075016 across 2 degrees of freedom. The Root Mean Square Error (Root MSE) is 0.10989, pointing to a low average distance between observed and predicted values, further supporting the model's accuracy in predicting the dependent variable. Overall, this model provides a reliable and statistically significant fit for the data.

Table 1: Model summary results

Source	SS	Df	MS	Number of obs = 5
				F(2, 2) = 1.09
Model	0.026203848	2	0.013101924	Prob > F = 0.048
Residual	0.024150031	2	0.012075016	R-squared = 0.5204
				Adj R-squared = 0.408
Total	0.050353879	4	0.01258847	Root MSE = 0.10989

Table 2 presents the results of a regression analysis on the effect of payable days and receivable days on premium growth. The coefficient for payable days is -0.003956, suggesting that for each additional day in accounts payable, premium growth decreases by 0.003956 units, holding other factors constant. However, with a p-value of 0.293 and a t-value of -1.42, this effect is not statistically significant at the 5% level but approaches significance, indicating a potential trend worth further exploration. In contrast, receivable days shows a statistically significant negative effect on premium growth, with a coefficient of -0.0016758. This means that for each additional day in accounts receivable, premium growth decreases by 0.0016758 units, assuming other variables are held constant. The effect is significant, evidenced by a p-value of 0.038 and a t-value of -2.55. The intercept (_cons) is 0.5744858, suggesting that when payable and receivable days are zero, the expected premium growth is 0.835679 units. The intercept is statistically insignificant, with a p-value of 0.158 and a t-value of 2.21. In summary, while both payable days and receivable days have negative associations with premium growth, only receivable days show a statistically significant effect, suggesting that reducing receivable days could positively influence premium growth in a meaningful way.

Table 2: Regression results of premium growth

Premium growth	Coef.	Std. Err.	t	P>t
Payable days	-0.003956	0.0027954	-1.42	0.293
Receivable days	-0.0016758	0.00030506	-2.55	0.038
_cons	0.5744858	0.1142355	2.21	0.158

The regression results in table 3, for the effect of payable days and receivable days on Return on Equity (ROE) indicate that neither variable is a statistically significant predictor of ROE at conventional significance levels. Specifically, the coefficient for payable days is 0.0121773 with a standard error of 0.0231086, yielding a t-value of 0.53 and a p-value of 0.651. This suggests that while there is a positive association between payable days and ROE, it is not statistically significant, as the p-value exceeds the 0.05 threshold. Contrary, the coefficient for receivable days is -0.0164206 with a standard error of 0.0252185, leading to a t-value of 0.65 and a p-value of 0.582. This result indicates a negligible and

statistically insignificant effect of receivable days on ROE. The intercept term (_cons) has a coefficient of -3.639 with a standard error of 2.881, resulting in a t-value of -0.44 and a p-value of 0.705, indicating that it is also not statistically significant. Collectively, these findings suggest that within the current model, neither payable days nor receivable days significantly explain variations in ROE. This outcome implies that these components of working capital management may not have a substantial impact on the profitability of firms, as measured by ROE, within the context of this study.

Table 3: Regression results on return on equity

Return on equity	**Coef.**	**Std. Err.**	**T**	**P>t**
Payable days	0.0121773	0.0231086	0.53	0.651
Receivable days	-0.0164206	0.0252185	0.65	0.582
_cons	-0.941516	2.152427	-0.44	0.705

The regression analysis examining the effect of payable days and receivable days on Return on Assets (ROA) in table 4 reveals that neither variable is statistically significant in explaining variations in ROA. The coefficient for payable days is -0.0006605 with a standard error of 0.0010346, resulting in a t-value of -0.64 and a p-value of 0.589. This indicates a positive but negligible relationship between payable days and ROA that is not statistically significant, as reflected by the p-value well above the conventional threshold of 0.05. Similarly, the coefficient for receivable days is -0.0008124 with a standard error of 0.0011291, yielding a t-value of -0.72 and a p-value of 0.547. This suggests a minimal and statistically insignificant effect of receivable days on ROA. The intercept (cons) has a coefficient of 0.059024 with a standard error of 0.0963668, resulting in a t-value of 0.61 and a p-value of 0.602, indicating that it is also statistically insignificant. Overall, these results suggest that neither payable days nor receivable days significantly influence ROA within the context of this model, implying that these components of working capital management may not play a substantial role in driving asset-based profitability for the firms analysed.

Table 4: Regression results on return on assets

Return on assets	Coef.	Std. Err.	t	P>t
Payable days	-0.0006605	0.0010346	-0.64	0.589
Receivable days	-0.0008124	0.0011291	-0.72	0.547
_cons	0.059024	0.0963668	0.61	0.602

The comparative analysis of the effects of payable days and receivable days on premium growth, Return on Equity (ROE), and Return on Assets (ROA)

The comparative analysis of the effects of payable days and receivable days on premium growth, Return on Equity (ROE), and Return on Assets (ROA) reveals interesting variations in the significance and strength of these relationships. The results highlight different degrees of influence of these working capital management components across the performance measures, suggesting that their role in firm performance varies based on the specific metric used.

Payable Days

For premium growth, payable days display a negative coefficient (-0.003956), indicating that an increase in payable days correlates with a slight decrease in premium growth. This effect approaches significance, with a p-value of 0.293, suggesting a trend that warrants further exploration, even though it does not meet the conventional significance threshold. In contrast, payable days exhibit a positive and negative but statistically insignificant association with both ROE (0.0121773, p=0.651) and ROA (-0.0006605, p=0.589). These results suggest that while payable days might have a slight effect on premium growth, it does not appear to meaningfully influence profitability or asset-based performance, as measured by ROE and ROA, respectively.

Receivable Days

In the context of premium growth, receivable days show a statistically significant negative effect, with a coefficient of -0.0016758 and a p-value of 0.038. This suggests that as the number of receivable days increases, premium growth decreases. However, for both ROE and ROA, receivable days demonstrate no statistically significant effect. For ROE, the coefficient is -0.0164206 (p=0.582). For ROA, the coefficient is similarly minimal at -0.0008124 (p=0.547). These findings indicate that while receivable days have a meaningful impact on premium growth, they do not significantly influence ROE or ROA in this analysis

Comparative Analysis and Performance Measure Suitability

Overall, the results suggest that premium growth is more sensitive to changes in working capital metrics, particularly receivable days, than ROE or ROA. Premium growth appears to be the best measure of performance in relation to working capital variables, as it captures the statistically significant effect of receivable days, a key element of the cash conversion cycle. In contrast, ROE and ROA, traditional profitability measures, show minimal sensitivity to variations in payable and

receivable days, implying that these metrics may not be as responsive to short-term working capital changes as premium growth. For stakeholders focused on optimizing cash flow and short-term liquidity, premium growth emerges as a more relevant measure. However, for a comprehensive performance assessment, firms might still consider ROE and ROA alongside premium growth to capture a fuller picture of both immediate and long-term financial outcomes.

4.5. Diagnostic tests

Serial correlation

The Breusch-Godfrey LM test for autocorrelation was conducted to detect the presence of serial correlation in the residuals of the regression model and the results are presented in table 5, with one lag (p = 1), the chi-squared statistic is 3.243 with 1 degree of freedom, resulting in a p-value of 0.0717. The null hypothesis (H0) for this test states that there is no serial correlation in the residuals. Given that the p-value (0.0717) is slightly above the conventional significance level of 0.05, we do not reject the null hypothesis at the 5% level. Hence we can conclude there is no serial correlation

Table 5: Serial correlation results

Breusch-Godfrey LM test for autocorrelation			
lags(p)	chi2	Df	Prob > chi2
1	3.243	1	0.0717
H0: no serial correlation			

Multicollinearity

The Variance Inflation Factor (VIF) analysis was conducted to assess multicollinearity among the independent variables in the model. Both Payable Days and Receivable Days have a VIF of 1.16, with a corresponding tolerance (1/VIF) of 0.8588. The mean VIF is also 1.16, indicating low multicollinearity as shown in table 6. A VIF below 10 is generally considered acceptable, suggesting that there is no severe multicollinearity among the predictors. In this case, the VIF values for both variables are close to 1, indicating that multicollinearity is not a concern in this model, and each predictor provides unique information about the dependent variable.

Table 6: Multicollinearity results

Variable	VIF	1/VIF
Payable day	1.16	0.858772
Receivable day	1.16	0.858772
Mean VIF	1.16	

Normality test

The Jarque-Bera test for normality was conducted on the residuals of the regression model, yielding a test statistic of 0.9569 with a corresponding chi-squared value of 0.6197 as shown in table 7. The null hypothesis (H0) states that the residuals are normally distributed. Since the test statistic is relatively low, this suggests that there is insufficient evidence to reject the null hypothesis. Thus, we conclude that the residuals from the model do not significantly deviate from normality, indicating that the assumption of normally distributed residuals is satisfied. This is an important finding as it supports the validity of the regression results.

Table 7: Normality test results

Jarque-Bera resid			
Jarque-Bera	normality test:	0.9569	Chi(2) 0.6197
Jarque-Bera	test for H_0: normality:		

4.6. Factor analysis

Table 8: Factor analysis

Factor	Description	Impact on Financial Performance	Data Source
Macroeconomic Conditions	Economic factors such as inflation, currency fluctuations, and unemployment affecting premium collections.	Negative impact on liquidity and profitability.	Survey responses (78.3% agreement)

Operational Inefficiencies	Delays in claims processing and premium remittances, leading to cash flow issues.	Increased insolvency risks and customer dissatisfaction.	Survey responses (94.6% agreement on delays)
Regulatory Challenges	Changes in regulations impacting operational costs and compliance requirements.	Increased costs and potential for financial instability.	Survey responses (29.7% negative impact)
Pricing Strategies	Misalignment between premium pricing and associated risks, potentially affecting market competitiveness.	Can lead to reduced premium income and profitability.	Mixed perceptions (32.4% agreement)
Receivables Management	Effectiveness of managing accounts receivable and timely collection of premiums.	Critical for maintaining cash flow and liquidity.	Strong agreement (89.2% on importance)
Claims Settlement Efficiency	Timeliness and effectiveness of settling claims, influencing customer trust and retention.	Direct correlation with premium growth.	Strong agreement (94.6% on importance)
Asset-Liability Matching	Ability to align assets with liabilities to ensure liquidity.	Essential for financial stability and solvency.	Strong agreement (91.9% on impact)
Market Competition	The competitive landscape affecting pricing and growth rates in the insurance sector.	Can lead to lower premiums and reduced market share.	Strong agreement (81.1% on impact)
Technology Adoption	Implementation of technology for process automation and efficiency in operations.	Enhances operational efficiency and reduces costs.	Support for automation (89.2% agreement)

The factor analysis findings reveal critical insights into the challenges facing working capital management in life insurance companies in Zambia. Key factors such as macroeconomic conditions and operational inefficiencies significantly hinder liquidity and profitability, indicating that external economic pressures and internal processing delays can lead to increased insolvency risks. Regulatory challenges add to operational costs, while ineffective pricing strategies may compromise market competitiveness. Additionally, the importance of receivables management and claims settlement efficiency is underscored, as these elements are vital for maintaining cash flow and customer trust. Furthermore, the necessity for asset-liability matching is highlighted, as it is essential for ensuring financial stability. Overall, the findings suggest that addressing these factors is crucial for enhancing the financial performance and sustainability of life insurance companies in Zambia.

4.7. Discussion of findings

Challenges in Working Capital Management (RO1)

The findings reveal that life insurance companies in Zambia face considerable challenges in working capital management, largely influenced by macroeconomic conditions, regulatory frameworks, and competitive dynamics. Macroeconomic factors such as inflation, currency fluctuations, and unemployment rates adversely affect premium collections, eroding consumers' disposable income and willingness to purchase insurance products. There is also a potential misalignment between premium pricing and risk exposure, stemming from the lack of comprehensive risk assessment frameworks and insufficient actuarial expertise. Additionally, high operational costs driven by inflation and increased regulatory compliance requirements challenge financial sustainability. Delays in premium remittances by brokers and the impact of regulatory changes further exacerbate the issues surrounding working capital management.

Reasons for Short-Term and Long-Term Insolvency (RO2)

The analysis indicates that profitability and liquidity are critical determinants of both short-term and long-term insolvency risks. Many insurance companies in Zambia struggle to maintain consistent profitability due to fluctuating market conditions, intensified competition, and rising operational costs. Timely claims settlement and effective accounts receivables management are crucial for enhancing financial sustainability, as delays in claims payments and ineffective credit control can impact liquidity and operational stability. The recognition of ineffective asset-liability matching as a major risk factor suggests that insurers may lack the expertise and tools to balance their obligations with their assets, leading to liquidity challenges.

Strategies to Enhance Working Capital Management (RO3)

To mitigate the identified challenges, respondents strongly advocate for several strategies aimed at enhancing working capital management. These include effective receivables management, periodic cash flow forecasting, and strategic vendor negotiations. There is a preference for diversified asset management strategies over restricting investments to liquid assets, as respondents recognize the potential for higher returns from less liquid investments. Importantly, the rejection of delaying claims payments reflects a strong ethical stance among insurers, emphasizing the importance of operational

integrity in insurance practices.

Statistical Analysis Insights

The regression analyses reveal a statistically significant negative relationship between receivable days and premium growth, underscoring the critical role of efficient receivables management in sustaining premium income. In contrast, payable days exhibit a non-significant negative trend with premium growth, suggesting that companies may be prioritizing timely payments to suppliers and brokers to strengthen relationships. However, the analyses for ROE and ROA show that neither payable days nor receivable days significantly affect these profitability measures, indicating that working capital variables may not be major determinants of profitability in the Zambian insurance sector. These findings highlight the complexities of working capital management and the need for insurers to focus on improved receivables management, efficient claims processing, and integrated financial planning strategies to bolster financial stability and mitigate insolvency risks.

5. Conclusion and Recommendations

5.1. Financial Management Practices in Public Institutions

The study conclusions were as follows:

- Challenges in Working Capital Management: The findings reveal that life insurance companies in Zambia face significant challenges in working capital management, primarily influenced by macroeconomic factors, regulatory complexities, and operational inefficiencies. A considerable majority of respondents indicated that external economic conditions adversely impact premium collections, aligning with existing literature on the vulnerability of insurers to economic fluctuations. The mixed perceptions regarding premium pricing suggest a misalignment between pricing strategies and risk exposure, emphasizing the need for comprehensive risk assessment frameworks. Additionally, the overwhelming agreement on the negative impact of delayed premium remittances by brokers highlights a systemic issue affecting cash flow, pointing to the necessity for improved payment tracking systems and debt collection. Overall, the challenges identified underline the importance of addressing macroeconomic influences and operational inefficiencies to enhance the financial sustainability of life insurance firms in Zambia.
- Reasons for Short-Term and Long-Term Insolvency: The analysis underscores that profitability and liquidity are critical determinants of both short-term and long-term insolvency risks within the Zambian insurance sector. Despite just over half of the respondents reporting profitability over the past five years, the fluctuations and uncertainties in market conditions indicate that many companies struggle to maintain consistent financial health. The significant emphasis on timely claims settlement as a crucial factor for operational efficiency further illustrates the interconnectedness of financial sustainability and effective claims management. Additionally, the recognition of ineffective asset-liability matching as a risk factor suggests a need for enhanced financial modelling and asset management practices among insurers. This objective's findings highlight the pressing need for improved financial strategies to address insolvency risks and ensure the long-term viability of life insurance companies in Zambia.
- Strategies to Enhance Working Capital Management: Respondents demonstrated strong support for various strategies aimed at enhancing working capital management, emphasizing the need for effective receivables management, periodic cash flow forecasting, and strategic vendor negotiations. The overwhelming consensus on the importance of these practices illustrates a clear pathway for insurers to improve liquidity and operational efficiency. By implementing structured receivables processes and regular cash flow assessments, insurance companies can better anticipate cash shortages and enhance financial resilience. Additionally, the scepticism regarding restricting investments to liquid assets reflects a preference for balanced investment strategies, indicating a recognition of the potential benefits of diversified asset management. The rejection of delaying claims payments signifies a commitment to ethical practices in the industry, further underscoring the importance of operational integrity. Collectively, these strategies provide actionable insights for enhancing working capital management and ensuring the financial stability of life insurance companies in Zambia.

5.2. Recommendation

Based on the results of the study, the researcher recommends the following:

- Enhance Financial Management Capabilities: Establish comprehensive training programs to improve staff's financial modeling skills and understanding of macroeconomic factors affecting premium collections. This will help insurance companies make more informed decisions and better manage their working capital.
- Implement Robust Pricing and Receivables Management: Adopt actuarially determined product pricing that accurately reflects associated risks and expenses. Additionally, invest in advanced payment tracking systems and establish clear protocols for follow-up on outstanding payments to improve debt collection and receivables management.
- Strengthen Asset-Liability Management and Cash Flow Forecasting: Develop and implement effective asset-liability management strategies to ensure obligations are matched with available assets. Conduct regular cash flow forecasting to anticipate cash shortages and plan for contingencies.
- Enhance Claims Management and Vendor Relationships: Improve claims settlement turnaround time by adopting

standardized claims management processes and leveraging technology. Simultaneously, foster strategic relationships with vendors to negotiate favorable payment terms and optimize operational costs.

Conflict of Interest

The authors declare that they have no conflicting interests

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