

# “Analyzing firm-specific factors affecting the financial performance of insurance companies in South Africa”

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# ANALYZING FIRM-SPECIFIC FACTORS AFFECTING THE FINANCIAL PERFORMANCE OF INSURANCE COMPANIES IN SOUTH AFRICA

## Abstract

This study aims to investigate the effect that firm-specific factors have on the financial performance of South African insurance companies. This paper looked at the performance of 36 insurers that are publicly traded and have quantifiable markets from 2008 to 2019. The return on assets (ROA) was calculated as a function of the financial performance in this study. While the firm size, leverage ratio, premium growth rate, liquidity ratio, and tangibility of assets were examined as dependent factors using the panel data regression technique, the premium growth rate, liquidity ratio, and tangibility of assets were explored as independent variables. According to the findings of the regression analysis, other firm-specific factors, with the exception of leverage and liquidity ratios, do not have a statistically significant influence on the financial performance of South African insurance companies. A negative and insignificant association was discovered between premium growth rate and ROA at  $-0.0023$  and tangibility of assets and ROA at  $-0.0113$ . There was a strong positive and significant relationship between liquidity ratio and ROA at  $0.0927$ , while the size had a positive but insignificant relationship with ROA at  $0.0039$ . Leverage ratio and ROA had a negative but significant relationship at  $-0.1512$ . This study suggests that the use of automated systems and insured techs will be advantageous in cutting costs associated with policyholder enrollment, claims agreement, and even easily achieved tailor-made policy initiatives.

## Keywords

company size, tangibility of assets, profitability, insurance, ROA, regression analysis

## JEL Classification

C33, G22, L25

## INTRODUCTION

The insurance sphere is an essential part of any economy and financial system. Its primary function is to manage the risks of both ordinary persons and institutional (Sulehri et al., 2022). Insurance firms are the pillar of every nation's risk management program because they provide financial security, and open the door to long-term funding for infrastructure development projects (Banerjee & Majumdar, 2018). Similarly, these firms are playing a pertinent responsibility assisting to bear risk, by creating jobs, generating tax income for the state, and providing chances for investors and investment management services (bonds and stocks) (Milošević-Avdalović, 2018). Therefore, it is critical to ensure that South Africa's insurance companies operate extraordinarily well and efficiently. Every firm is concerned with how well it performs, and excellent performance not only increases the company's market value but also adds to the industry's long-term development, that contributes to the general prosperity and advancement of the economy (Banerjee & Majumdar, 2018). Shareholders who have made an investment in a business, regardless it be an insurance com-

pany or any other kind of corporation, expect to get satisfactory returns in terms of the company's overall performance (Ikpesu, 2019). There are many other performance indicators, but it seems that financial performance is the most commonly utilized indicator (Bobenič-Hintošová et al., 2020).

It is important to shed light on the key elements influencing the financial performance of insurance, a key component to the overall performance of the insurance industry. Thus, determining substantial factors that influence the company performance of SA insurance is crucial if it relates to their future growth, continued existence, and economic growth contribution. According to the previous literature, few evidence-based studies on the association between insurance company performance and firm-specific parameters such as size, leverage, ownership structure, liquidity, premium growth, loss ratio, capital size, and age have been done in South Africa (Meharia & Aemiro, 2013; Murigu, 2014; Kaya, 2015; Ajao & Ogieriakhi, 2018; Msomi, 2022). The importance of this research arises from the fact that previous studies have only looked at the drivers of performance in the non-life insurance businesses and banking sectors. This study is significant as it fills an important gap in understanding the factors that affect the financial performance of South African insurers. This knowledge is critical for the reason that it provides financial managers with applicable expertise for identifying elements that influence firm performance.

## 1. LITERATURE REVIEW

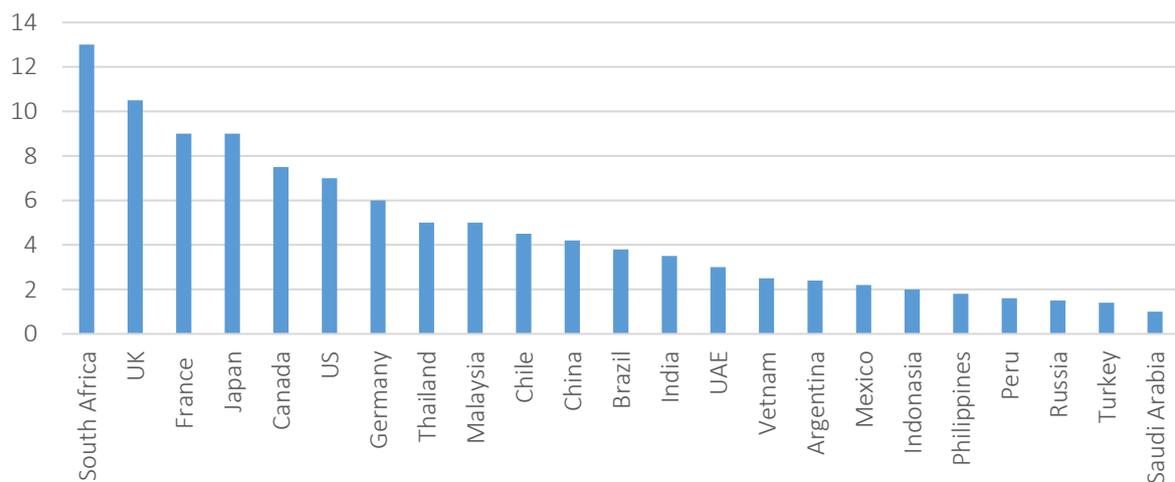
It is not unexpected that the insurance business is carefully regulated and watched because insurance performs an important function in society. In each jurisdiction, insurance companies engage in a variety of actions to ensure that insurance consumers have access to insurance, that insurers and their agents treat them fairly, and that insurance businesses are financially viable (Malik, 2011). Life insurance businesses take billions of dollars in people's savings each year and reinvest them back into the economy (Balkanli, 2010). Without insurance, the corporate world is unstable since hazardous businesses may not be capable of keeping all types of hazards in this constantly shifting and unpredictable world economy (Olawejaju & Msomi, 2021). Financial performance is the process through which a company makes revenues and handles assets and obligations to achieve long-term financial stability (Muraina et al., 2022).

The insurance market in South Africa is an essential component of the country's robust financial services sector. The proportion of the market that is held by insurance firms has been relatively constant over the previous decade, accounting for 18 percent of the total market. There are 170 people who are insured: 67 life, 70 non-life, 9 reinsurers, 23 captives, and 1 other (International Monetary Fund, 2022). The business is very consolidated

(particularly the life insurance sphere): 72 percent of the market is in the life sector (five insurance firms) and 48 percent in the non-life sector, respectively. The non-life insurance sector in South Africa is substantially smaller than the life insurance market there. At the end of 2018, the asset base of life insurers had reached a total of 3 trillion South African Rand (ZAR), while the asset base of non-life insurers was around 136 billion ZAR. The life sector is the primary focus of the market and risk analysis that follows unless a different sector is specifically mentioned. Figure 1, highlighted in sigma swiss 2018, illustrates South Africa insurance penetration premiums as a percentage.

To achieve the goal of maximizing wealth, effective financial management must first and foremost prioritize financial performance (Njiru, 2019). In their study, Adams and Buckle (2003) used panel data from 47 different insurance businesses collected between 1993 and 1997 in order to analyze the characteristics that are connected with the performance of the Bermudan insurers. According to the findings, businesses that had highly leveraged, poor liquidity, and insurers fared better, and the reverse was also true. It has been found that there is a strong link between the operational effectiveness of insurers and the underwriting risk that they took on. In contrast, the size of the firms studied and the breadth of their operations did not have a substantial impact on the success of those organizations.

Source: International Monetary Fund (2022).



**Figure 1.** Insurance Penetration: Premiums as Percent of GDP, 2018 (in percent)

In their study on the financial performance of 42 insurers in Sub-Saharan Africa during 1991–2020 years, Olarewaju and Msomi (2022) found that the financial performance of these businesses is affected by a variety of factors, including gross domestic product (GDP), competition (HHI), premium overall growth, investment strategies, underwriting risk, and operational efficiency. The analysis of the data in this study is quantitative and dynamic, and it makes use of the system-generalized technique of moments. Based on the findings, insurers should extend the scope of their services to maintain a high level of competition and increase their premium growth to maintain their financial performance.

A study by Kaya (2015) evaluated the firm-specific factors that affect financial performance and the association between these factors and the performance of 102 insurance companies in Turkey between 2008–2013. Within the scope of this investigation, the financial performance of insurance businesses was evaluated based on their ROA. The findings revealed that the age of a firm and the total gross written premiums have a substantial and favorable influence on the ROA. On the other hand, the return on assets is significantly impacted, albeit in a negative way, by factors such as the size of the firm, the current ratio, and the insurance leverage ratio. Because a single component cannot accurately reflect a firm's financial success, the inclusion of multiple factors allows for a more accurate assessment of the firm's financial profile (Matar et al., 2018).

Kenya and Mukami (2022) analyzed the effects of claims paid, leverage, premium growth, liquidity, and liquidity on the bottom lines of 56 Kenyan insurance firms between 2015–2020. Insurers' annual financial statements from 2015 to 2020 were gathered as part of a secondary panel from the IRA database manually. A panel regression model was utilized to examine the variables, with the Random Effects Model being recommended by the Hausman Specification Test. Using STATA 14 to analyze data, it was discovered that claims had a negative impact on insurers' bottom lines. All four variables (leverage, premium growth, liquidity, and company age) are positively associated with insurers' financial success.

Abubakar et al. (2018) explored the effect of firm-specific factors on the financial performance of public insurers in Nigeria. Annual reports and financial statements of insurance businesses between 2007 and 2016 were extracted from the Nigerian Stock Exchange (NSE). In addition to performing certain diagnostic tests on the data, the hypothesis was put to the test with the use of strong regression analysis. Furthermore, factors such as liquidity and age have a substantial and detrimental effect on the financial performance of insurance businesses in Nigeria. A similar study conducted in Kenya by Nduati (2018) found a significant positive relationship between firm-specific factors and the financial performance of insurance companies. The financial performance of insurers was studied with factors such as solvency margin, liquidity management, premium

retention, firm size, firm age, and financial leverage. A strong positive and significant relationship was discovered between financial performance and solvency margin. Other factors either had an insignificant relationship, or were negative, or both. An earlier study by Yuvaraj and Ayele (2013) showed that the most significant contributing elements of financial performance are growth, leverage, the volume of capital, size, and liquidity; thus, growth, size, and quantity of capita are positively associated. In contrast, the liquidity and leverage ratios have a negative but significant relationship with financial performance. The age of a company and the tangibility of its assets have no bearing on its financial performance.

According to Hamal (2020), size and long-term investment have a negative and statistically significant link with financial performance. Thus, it demonstrated that the older the firm, the more challenging it is to maximize wealth. Firm size and long-term investment were the most influential criteria for financial performance in Nepalese life insurance businesses. The findings by Mootian and Mukoma (2020) demonstrated a strong inverse association between liquidity and financial performance. While a minor constructive connection was revealed between leverage, business size, and financial performance. Furthermore, the findings demonstrated that the interaction of these variables had a statistically significant effect on financial success. According to an earlier study by Batool and Sahi (2019), firm size, flexibility, leverage, asset turnover, GDP, and WTI all have a substantial influence in the United States, but CPI and interest rates have a negative impact. The influence of flexibility, GDP, CPI, and WTI on UK firm size is positive, while leverage, asset turnover, and interest rates are negative; US insurance is more efficient than UK insurance.

According to Jadi (2015), “financial performance, flexibility, firm size, and organizational form are statistically important drivers of the financial performance of insurance businesses in the United Kingdom”. A 2017 study conducted by Mazviona et al. (2017) investigated the factors that contributed to the financial performance of 20 short-term insurance businesses in Zimbabwe between 2010–2014. In the research, factor analysis and multiple linear regression models were

utilized to establish the variables that influence performance and to define the effect those factors have. The findings demonstrated that the expenditure ratio, claims ratio, and company size all had a significant and negative influence on the insurance company’s financial performance in general. Despite the fact that debt and flexibility improve performance. Berhe and Kaur (2017) discovered that the size of insurance, capital adequacy, liquidity ratio, and GDP growth rate are the major elements that substantially impact insurance firm financial performance. On the contrary, the leverage ratio, loss ratio, market share, and inflation rate were found to have little effect on insurance businesses’ financial success.

Burca and Batrinca (2014) examined the variables that influenced the profitability of 21 non-life insurance businesses based in Romania between 2008 and 2012. The model’s dependent variable was ROA, and 13 explanatory variables (including firm-specific, industry-specific, and macroeconomic variables) were examined using multiple regression analysis. All of the other variables were revealed to have a favorable connection with ROA. The study indicated that the parameters debt, size, gross written premium growth, reinsurance, risk retention ratio, and solvency margin were the most essential in influencing the economic security of non-life insurance businesses in Romania. Erdemr (2019) conducted a similar study on 30 Turkish non-life insurance companies and discovered that the approach with financial ratios rather than modified factors better explains financial performance. In SADC, Msomi and Nyide (2021) study findings showed that firm-specific characteristics have a typically favorable relationship with the financial performance (as measured by ROA) of listed insurance. Financial success, as measured by ROA, was shown to be positively related to firm size, liquidity, and expansion potential. Asset tangibility, on the other hand, shows a considerable adverse connection with the financial success of nonfinancial enterprises listed on the NSE.

Greene and Segal (2004) assert that an insurance company’s financial performance can be judged by its underwriting profit, the net premium earned, annual income, return on equity, return on assets, which can be either financial gains or investment performance, and the number of years it has been

in business. In Ethiopia, Deyganto and Alemu (2019) said that the performance of investments and underwriting has a proper association with financial performance. Notwithstanding these claims, Eling and Jia (2019) demonstrate that ROA is still a good way to measure how profitable an insurance company is.

Cekrezi (2015) analyzed the financial performance of five different insurance businesses in Albania during the years 2008 and 2013, as part of another research. It was found, through the utilization of both microeconomic and firm-specific variables on cross-sectional time series data, that leverage ratios and risks had a deleterious impact on the financial performance of firms assessed as ROA. Tangibility ratios, on the other hand, have a beneficial impact on financial performance. A comparable approach was taken by Kaya (2015), who analyzed the influence of firm-specific characteristics on the financial performance of Turkish 24 NLI enterprises using panel data collected over eight years. For the purpose of conducting an analysis of panel data, this particular research made use of the ordinary least squares (OLS) regression model, the one-way fixed effects model, and the one-way random effects model. In accordance with the findings of the empirical research, the company size and age, the loss ratio, the current ratio, and the premium growth rate are the firm-specific elements that have an effect on the financial performance of Turkish NLI enterprises. This indicates that out of the eight independent factors that were investigated, only five (age, size, loss ratio, current ratio, and premium growth rate) had a substantial impact on the financial performance of the companies that were the subject of the study. In particular, the size of the company and the pace of premium increase both had a favorable outcome on the performance, but the sign of all other factors that substantially influenced performance was negative. This is true for both of the dependent variables.

Based on the reviewed literature, it is evident that there is a limited previous empirical research on this particular topic in South Africa. This research paper aims to examine firm-specific factors that influence the financial performance of South African Insurance companies. These firm-specific factors studied include premium

growth rate (PGR), leverage ratio (LEV), size of business (SIZ), the tangibility of asset (TAN), and liquidity ratio (LIQ).

## 2. METHOD

This study made use of data obtained from well-known databases such as Refinitiv Eikon and S&P CapitalIQ, which are referred to as secondary sources. These databases provide data that is widely available. This study's population consisted of the 36 Insurance companies that are currently listed in South Africa (SARB, 2023). This study made a concerted effort to analyze all 36 insurers that are publicly traded in South Africa between the years 2008 and 2019. Longitudinal panel research is desirable and defensible due to its ability to account for behavioral fluctuations across a time period, cross-section, or both, handle heterogeneity issues, and provide a more accurate estimate of parameters (Magweva & Sibanda, 2020). The insurance companies used were carefully chosen due to the availability of data for the time period under investigation.

### 2.1. Model specification

This study was a panel study, and it combined information from 36 different businesses spanning the years 2008 to 2019. In particular, the study used a panel data approach with regression analysis (random, fixed, and pooled effect models) to evaluate the impact of firm-specific metrics on the return on assets (ROA) of Insurance firms operating in South Africa between 2008 and 2019. In addition to combining information from the data time series and cross-section to offer more in-depth data for performing the regression analysis that will reduce or eliminate bias, the panel data approach can conquer issues that result from omitted variable bias or a dearth of time series data. This is possible because the panel data approach incorporates information from the data time series and cross-section (Andoh & Yamoah, 2021). This study investigates how firm-specific characteristics are connected to return on assets (ROA).

The idea behind the model, which is called panel regression, may be expressed as follows:

$$Y_{it} = a_i + X_{it} + it. \quad (1)$$

In this equation,  $Y_{it}$  represents the dependent variable;  $a_i$  represents the constant term;  $I$  represent the number of cross-sections, which can range from 1 ...  $N$ ;  $t$  represents the time period, which can also range from 1 ...  $N$ ; represents the coefficient of independent variables;  $X_{it}$  represents the vector of independent indices, and it represents the stochastic error term.

The premium growth rate (PGR), leverage ratio (LEV), size of business (SIZ), tangibility of asset (TAN), and liquidity ratio (LIQ) are all firm-specific criteria that are taken into consideration. These variables are all independent indices that are compared to the dependent index (ROA).

$$Y_{it} = f(PGR, SIZ, LEV, TAN, LIQ), \quad (2)$$

$$ROA_{it} = \alpha + \beta_1 PGR_{1it} + \beta_2 SIZ_{2it} + \beta_3 LEV_{3it} + \beta_4 TAN_{4it} + \beta_5 LIQ_{5it} + \varepsilon_{it}. \quad (3)$$

Financial indicators and metrics have been employed as a method of measuring variables in several studies that have been conducted over the years to explore the factors of relevance in gaining knowledge of the ROA of insurance companies.

To be more specific, the dependent variable, ROA, is a financial performance surrogate and a signifier of a company's capability to make profits and assure the payout of claims and economic advantages to policyholders. Furthermore, ROA can be viewed as an indicator of a company's capacity to recruit and retain policyholders. ROA was used in the past to do these measurements. According to Abass et al. (2021), making a profit is an essential prerequisite for increasing the viability of an insurance company in both local and international markets. On the other hand, ROA continues to be an important indicator of a company's financial performance, particularly in the insurance industry (Sharma et al., 2018). In this case, the selection of both indicators (independent and dependent) as explanatory factors has been led by an extensive study of the literature, and the variables that have been chosen and presented below have been indicated as having an effect on the ROA of insurance businesses.

Financial performance analyzes a company's capacity to achieve its investment money and assets as a function of the rate of return. The ROA of an insurance company is critical to its longevity, prosperity, and competition (Guendouz & Ouassaf, 2018). Therefore, the insurance company cannot continue and will be unappealing to potential investors if earnings are not earned. Financial performance remains a financial performance metric used to assess a company's capacity to generate profits in comparison to its expenditure and other incurred expenses (Msomi, 2022). Assessing past, present, and prospective profit is critical. According to Sivalingam and Kengatharan (2018), financial performance provides information on available resources and working capital sufficiency, capacity to raise money, overhead cost structure, and efficient asset application via crucial trends' analyses of financial indicators. It might also be seen as a preliminary (progressive) step for assessing a company's financial strength and creditworthiness over time. This research paper assessed financial performance as ROA, as in numerous prior studies that studied insurance businesses' ROA (Sivalingam & Kengatharan, 2018; Guendouz & Ouassaf, 2018).

A company's capacity to grow in size, as shown by its willingness to reinvest profits and its ability to attract outside funding, may be indicative of that company's performance. The ROA may be stunted, though, because of the company's size. Various factors, such as total assets and personnel count, have been used in studies to estimate the size of insurance firms; however, other variables, such as net premium, may also be utilized (Boadi et al., 2013).

The leverage ratio may be represented as the ratio of a firm's total debt to the value of its assets, and it can also be referred to as the ratio of borrowing to earning power. In any given situation, the total projected claims must be less than the entire premium for the firm to be considered progressive (Njiru, 2019).

Even though they are not immediately obvious to the company's clients, a company's tangible (physical) assets, which include the amount of inventory, bonds, cash, furniture, equipment, electronics, machinery, cars and trucks, property, and so on, continue to be the fundamental factor in the company's performance and ensure that it can stay in business (Tegegn et al., 2020). It is often represented as a per-

**Table 1.** Variables' description

Variables	Definition	Measurement
Dependent	Financial performance (ROA)	Net profit before tax/total assets
Independent	Company size (SIZ)	Natural logarithm of total assets
	Leverage ratio (LEV)	Total liability/Total assets
	Tangibility of assets (TAN)	Fixed assets/Total assets
	Premium growth rate (PGR)	$PGR = (GWP(t) - GWP(t-1)) / GWP(t-1)$
	Liquidity ratio (LIQ)	Total current assets/Total current liabilities

centage of a company's total assets that are allocated to its fixed assets, and it is a consequence of the company's financial resilience.

Premium growth rate gauges the primary source of revenue that an insurance organization generates, and a higher PGR represents both financial growth and advancement that is the consequence of greater market share (Olarewaju & Msomi, 2022). Assuming that all other factors remain the same, the PGR is anticipated to have a positive correlation with ROA and is often shown as fluctuations in gross written premiums that are readily apparent.

The liquidity ratio is an indicator of the likelihood that an insurer will pay obligations, such as proper payments for losses/benefits and operational expenditures, and the ratio of an insurer's solvency to its total liabilities (Hussain, 2015). It considers the percentage of a company's total current obligations that are covered by its total current assets.

Table 1 highlights these indicators and previous studies exploring their use as important factors of ROA in insurance businesses.

The validity and reliability of the data used in this research were determined by using three different statistical tests: the unit root test, the cross-sectional dependency test, and the Hausman test. Before conducting the regression analysis, an Augmented Dickey-Fuller test was carried out to determine whether or not the time series in question was stationary or nonstationary. This was done to circumvent potential problems with the significant value that could arise from the utilization of nonstationary time series. The Hausman test was used to select the model that best suited the data. The fixed and random effects were considered. In addition, the cross-sectional reliance test assisted in getting rid of the problem of cross-sectional dependence that existed among the insurers that were utilized.

### 3. RESULTS

The outcomes are laid out in an understandable manner, beginning with descriptive statistics and progressing through correlation statistics and panel regression.

#### 3.1. Unit root result

The Phillips-Perron test, the Augmented Dickey-Fuller test (ADF test), the KPSS test, and the ADFGLS assessment are only some of the tests that may be carried out to evaluate whether or not a variable in a regression has a unit root. Other tests include the ADFGLS evaluation. According to Alexander (2020), the objective of assessing the unit root in a model or regression is to determine whether or not a stochastic component is stationary. Therefore, to prevent the lack of unit roots in the variables of a regression model, it is necessary to prove that the regression is stationary, which means that the variables maintain the same variance and mean across time. Usman and Adeyinka (2019) have shown that the inclusion of a unit in a regression might provide a very high R-Squared value, which leads to the production of incorrect findings. To determine whether or not there is a unit root, the ADF test was used. The alternative suggests that there is no unit root, in contrast to the hypothesis of Null, which asserts that all indices have unit roots. The probability value of the ADF test has to be less than 5%, and in addition, the t-statistics of the ADF test need to be greater than values at 5% for all variables in the regression. Only then will the alternate be acceptable, whereas the null hypothesis will be rejected. The ADF test was performed on all variables within every objective of this study, and the findings show that the probability value of each test is less than 5%, and the values of their t-statistics (absolute value) were all greater than the values at the 5% level for the majority of the variables, with the exception of

variables such as tangibility of assets, size, and log of shareholder's resources, which were stationary at the first differential threshold with a probability level of less than 5%.

This study uses panel data analysis to determine the elements (firm-specific factors) that are responsible for or impact the ROA of the Insurance sector in South Africa. These components include the fixed effect, the random effect, and the pooled effect. It was also decided to use Hausman's test to determine whether the fixed or random effect was the most acceptable or appropriate outcome for each of the objectives. For each goal, both the pooled regression fixed and random effect tests were carried out. The study did not consider the results of the pooled regression, despite the fact that some of the independent variables had a significant impact on the outcome of the analysis. The reason for this is that the regression model does not differentiate between the various businesses that were investigated in the study. In other words, the pooled model does not consider the potential for heterogeneity or individuality across insurance firms, which is something that both the fixed and random effect models take into consideration.

### 3.2. Results for firm-specific factors affecting the financial performance of insurers

Table 2 provides a visual representation of the descriptive statistics for the variables involved in the first aim. It was found that the ROA of insurance firms has an average mean of 0.0466, which is the least for all variables, with a standard deviation (SD) of 0.053521, with 0 and 0.4461 as the minimum and greatest values, respectively. This was discovered by observation. Additionally, it demonstrates that the PGR has an average value of 1.1940 and a standard deviation value of 3.391, which is greater than twice the value of the variable's mean. As a variable, liquidity may take on values as high as 1 and as low as 0, with an average and standard deviation of 0.909524 and -0.1248, respectively. The greatest possible value is 1. The standard deviation of the TAN for these Insurance businesses is found to be 0.5829, while its mean is found to be 0.4009, and its maximum and lowest values are found to be 8.532 and 0.0, respectively. 8.532 is the highest value for the variables. The average leverage ratio of the companies is 0.6597, while the average size of the companies is 3.1928. The size of the companies has the highest mean value in the data set.

**Table 2.** Variables' descriptive statistics

Variable	ROA	PGR	LIQ	TAN	LEV	SIZ
Mean	0.046666	1.194047	0.909524	0.400998	0.659781	3.192838
Median	0.036139	1.369596	0.943456	0.282953	0.696651	2.788516
Maximum	0.446103	3.199229	1.000000	8.532063	1.539972	5.625379
Minimum	0.000000	-68.34470	0.000000	0.000000	0.000000	0.000000
Std. dev.	0.053521	3.391256	0.124811	0.582985	0.205002	1.229144
Skewness	3.667561	-20.02359	-3.110003	7.360196	-0.309177	0.282116
Kurtosis	20.60032	411.1461	16.64482	92.55686	3.151387	2.151813
Jarque-Bera	6544.356	3027366.	4047.653	148268.2	7.295024	18.68002
Probability	0.000000	0.000000	0.000000	0.000000	0.026056	0.000088
Sum	20.15975	515.8281	392.9145	173.2311	285.0253	1379.306
Sum Sq. dev.	1.234576	4956.766	6.713999	146.4848	18.11316	651.1525
Observations	432	432	432	432	432	432

**Table 3.** Results of Pearson's correlation

Variable	Return on Assets (ROA)	Premium growth rate	Liquidity ratio	Tangibility of assets	Leverage	Size
ROA	1	-0.0273	-0.0328	-0.1636	-0.4077	-0.1885
PGR	-0.0273	1	-0.0042	-0.0242	-0.2071	-0.0188
LIQ	-0.0328	-0.0042	1	0.1075	0.4819	0.5201
TAN	-0.1636	-0.0242	0.1075	1	0.1310	0.1100
LEV	-0.4077	-0.2071	0.4819	0.1310	1	0.6431
SIZ	-0.1885	-0.0188	0.5201	0.1100	0.6431	1

**Table 4.** Panel result

Independent variables	Random Effect Test Significance	t-statistics	Standard coefficient	Fixed Effect Test Significance	t-statistics	Standard coefficient
PGR	0.0138*	-2.4726	0-.0023	0.0966	-1.6655	-0.00086
LIQ	0**	10.7544	0.0927	0**	9.4133	0.3138
TAN	0.0749	-1.7854	-0.0113	0.0723	-1.8022	-0.0065
LEV	0**	-4.9542	-0.1512	0.0059**	-2.768	-0.059
SIZ	0.248	-1.1568	0.0039	0.5988	-0.5266	-0.0045
Constant	0**	-5.9052	-0.1194	0**	-8.2401	-0.1818
F-statistics P-value	0	-	-	0	-	-
R-Squared	0.2508	Durbin- Watson stat = 1.3765	-	0.6977	-	-
Adjusted R-squared	0.242	-	-	0.6667	-	-
Hausman Test (Proba > Chi Sq Statistic) = 44.2808	Hausman test probability value = 0.0000					

Note: Significance of \* and \*\* represent 5% and 1%, respectively.

Table 4 illustrates the results of the panel analysis that was conducted using the random and fixed effect methods for the first aim of the research. Due to the fact that the probability value for the Hausman test is 0.000, which is less than 5%, the result for the fixed effect is the one that is most suited for objective one. Additionally, the value of the Durbin-Watson statistics is (1.3765), and it is greater than the value of the R-squared statistic (0.2508), which indicates that our regression is not false.

## 4. DISCUSSION

Premium Growth Rate, abbreviated as PGR: As can be shown in Table 4, the premium growth rate is negative and has a connection with ROA that is not statistically significant. It is not coherent with the bulletin of Kaya (2015), who cataloged PGR as one of the variables that influence the financial performance of insurance firms, nor is it coherent with the bulletin of Markonah et al. (2019), who discovered a negative but significant association with ROA as a mechanism of company performance and PGR for insurance companies in Indonesia. This clearly demonstrates that PGR is not an essential firm criterion in assessing an insurance firm's ROA in South Africa.

Liquidity Ratio (LIQ): The findings on the liquidity ratio indicated that it is statistically significant and positively associated with ROA at the 1% level. This was determined based on the results collected

(Table 4). Additionally, it implies that an increase of 1% in the liquidity ratio would lead to an increase of 0.313% in the ROA of the insurance businesses given that other variables that might contribute to an increase in return on the asset are effectively regulated. By implication, insurance firms with higher liquidity ratios are anticipated to have lower chances for the failure of obligation payment to policyholders. On the other hand, firms with good liquidity can meet all of their roles at maturity despite the difficult circumstances caused by the large supply of current assets. This is the situation with the observations in the present study, where a ROA is positively and significantly associated with the approximate liquidity ratio of the study firms, and the proposal is coherent with past findings (Msomi, 2022), where a similar trend was provided with a capitulation that insurance firms can create a larger profit in line with the increase in current assets. In the latest examination, the approximate liquidity ratio of the research firms was calculated using the ratio of current assets to total assets. In addition, the result demonstrates that the liquidity ratio is an essential firm element in determining the ROA of insurance firms in SA, which agrees with the findings of Tegegn et al. (2020), who also discovered that the liquidity ratio is an essential component in determining ROA.

The tangibility of the asset (TAN) has a negative value and does not have a statistically significant relationship with ROA. The findings indicate that the tangibility of an asset is not a significant firm-specific feature that is responsible for de-

termining the ROA of insurance firms in South Africa (Table 4). This discovery contradicts the findings of Hassan et al. (2019) on the factors that inhibit the ROA of insurers in Bangla, but it is in complete accord with the findings of Zainudin et al. (2018) in Asia.

**Leverage Ratio (LEV):** As a consequence of a firm's financial performance, Table 4 demonstrates that the leverage ratio has a negative and statistically significant (1%) association with the ROA of insurance enterprises in SA. It also showed a one percent increase in LEV, which resulted in a five-point nine-point nine percent fall in ROA for insurance companies, assuming that other parameters that may lead to an increase in ROA were effectively maintained. According to this finding, if the companies decide to carry more debt (assuming they are already doing business with debt), their financial performance would drastically decrease. This observation regarding LEV in the current study is in line with findings from previous research (Malik, 2011; Hailegebreal, 2016; Msomi, 2022), but it stands in stark contrast to the findings of Mwangi and Murigu (2015), who stated that LEV was not associated with ROA in Kenyan

insurance companies. When all of this is taken into consideration, it is possible to demonstrate that the leverage ratio is an essential firm element in determining the ROA of insurance firms in SA.

**Size (SIZ):** According to Table 4, the SIZ of insurance companies is not significantly linked with but is adversely connected with ROA. Smaller businesses, in general, have a greater likelihood of going bankrupt due to the fact that their receivables' costs are more likely to be inflated since they have less market strength and, as a result, are able to charge lower prices and have a poorer revenue efficiency (Msomi & Nyide, 2022). This contrasts sharply with the results of the present study, which showed that the size of the insurance companies had a negative association with ROA but did not substantially influence ROA. This suggests that an increase in the SIZ of the study firms did not have an effect on ROA. Although larger companies have advantages in a number of ways, including increased diversification (Akhyar et al., 2023), the findings of this study offer a unique perspective and recommend that this notion does not apply to the South African insurance companies that were taken into consideration for this study.

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## CONCLUSION

This study was conducted to examine the firm-specific factors influencing the financial performance (ROA) of 36 listed South African insurance companies. Based on the findings, it was found that, aside from the leverage and liquidity ratios, other firm-specific variables did not have a significant (statistically significant) effect on the companies' return on assets (ROA) throughout the research period (which spanned from 2008 to 2019).

The important factors mentioned above must be considered by insurance companies, policymakers, governments, and investors to enhance their financial performance and make decisions. Leveraged companies are at risk of bankruptcy and inability to attract future new lenders because they are unable to pay the required amount of their debt. Meanwhile, leverage and optimal levels of investment and tax benefits associated with borrowing at the optimal level may boost a firm's financial performance. Since the size of a business is an essential component that determines its competitive strength, it is beneficial to have high consideration of raising the company's assets. Small businesses have less power than big companies, and it may be difficult for them to compete with huge corporations, especially in marketplaces. The size of an insurance company should not be increased until after a thorough analysis of its financial performance has been conducted as this may lead to inefficiencies in scale and decrease the company's financial performance.

Correlation in the positive direction between the tangibility of an asset and the financial performance of insurers. This suggests that insurance businesses with a high percentage of fixed assets are in a better position to be profitable than those with a lower rate. To increase financial performance, it is necessary

to put into place strategies such as automated systems, which are capable of reducing operational expenses. For businesses to maximize their profits, they need to place a primary emphasis on the management of their overall assets, long-term investments, current assets, and current liabilities. According to the study, life insurance firms in South Africa benefit financially from having a certain level of liquid assets on hand.

## AUTHOR CONTRIBUTIONS

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