



Efficiency of Insurance Companies in Cameroon: Does Corporate Governance Matter?

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Research Article

Abstract

Purpose: The main objective of this study is to assess the level of efficiency of insurance companies in Cameroon and to examine the role of corporate governance in explaining this level of efficiency.

Method: Using data extracted from the audited financial statements and reports of 15 insurance companies from 2010 to 2020, the study employs the output-oriented Malmquist index to measure the efficiency scores of non-life insurance companies in Cameroon. To examine the effect of corporate governance on the firms' efficiency levels, we used the panel Tobit model.

Result: Since insurance companies' main mission is to protect against future risk occurrence while remaining financially viable, findings from data analysis revealed that the average efficiency level of sampled firms over the period of the study stands at 76.8%. Furthermore, results from the panel tobit analysis indicate that board gender diversity significantly enhances efficiency as well as board composition in terms of the number of foreigners on the board and ownership concentration measured by the number of shareholders compromise it. However, board size, presence of foreign executives, and foreign ownership were found to exert no significant effect on insurance companies in Cameroon.

Implications: The study therefore recommends that corporate governance and regulatory oversight be strengthened by implementing measures that will go a long way to enhance corporate governance practices and ensure compliance with best practices and standards within insurance companies in Cameroon. A performance analysis commission should be created within the regulatory organ to assess, rank, and recommend best practices to the insurance firms.

Keywords: Efficiency, Corporate Governance, Insurance company, Malmquist Index, Panel Tobit, Cameroon.

1. Introduction

The insurance industry is very important for our economy because it helps people and businesses manage risks and stay financially protected. It helps pay for things like fixing buildings after accidents, covering medical bills, and making sure people do not lose money if something bad happens. It also gives confidence to banks that they will still get their money back even if something happens to the property, they loaned money for (World Bank, 2021).

Between 2015 to 2020, insurance penetration in north America was around 7% and grew to about 7.5% by 2020. In Europe, it stood at 6.5% in 2015 and remained stable at around 6.5% by 2020. In Asia, it was 3% in 2015 and 4% in 2020. In Latin America, 2.5% in 2015 and 3% in 2020 and in the middle east and Africa,

it was 1.5% in 2015 and 2% in 2020 (OECD, 2022). As for the CIMA zone, insurance penetration rate has been below the African average. For CIMA (2020), it was 0.95% for Cameroon as against 1.26% for Ivory Coast in 2020. We notice therefore that there are challenges related to insurance demand in Cameroon. These challenges are linked to efficiency and corporate governance mechanisms implemented within the insurance industry.

The background of this study lies in the recognition that corporate governance and efficiency are fundamental pillars for the sustainable growth and performance of insurance companies. As per the OECD (2004), corporate governance refers to the interplay among a company's management, board, shareholders, and other stakeholders. These relationships establish the framework that the company uses to set its goals, decide how to achieve them, and establish performance monitoring procedures. Therefore, in the insurance industry, corporate governance refers to the systems, procedures, and frameworks that control how stakeholders and management interact. It guarantees accountability, openness, and moral behavior—all crucial for preserving the public's faith in insurance businesses.

The sustainability of any business, however, is largely dependent on the performance of the enterprise. To optimise the potential for pooling funds from multiple insured entities to settle for potential losses, a well-functioning corporate governance framework in insurance firms will enforce appropriate procedures for internal controls as well as conduct standards for managers (Atuilik et al., 2017). According to Njegomir and Tepavac (2014), maintaining solvency, having an appropriate investment policy, and exercising careful underwriting are all necessary for the insurance industry's corporate governance to be conducted successfully.

According to EIOPA (2016), the two main risks that an insurance provider may encounter are related to its governance and to the competence of its management and staff. As a result, there are a number of regulatory frameworks and industry standards that are designed to encourage the insurance industry to adopt sound corporate governance procedures. One set of guidelines and standards for insurance supervision, for instance, was created by the International Association of Insurance Supervisors (IAIS), and it has demands for corporate governance. To be specific to the Cameroonian context, CIMA who is the main regulatory body has put in place a number of regulations which ranging from the accreditation of an insurance company, accreditation of the management organ and the control of the activities of these companies, not forgetting sanctions for defaulters. This will improve the insurance industry's use of sound corporate governance standards. Despite these rules, many insurance companies continue to receive injunctions and warnings which sometimes lead to suspension.

According to the annual insurance report of the Ministry of Finance for the year 2015, 11 insurance companies went bankrupt in Cameroon between 1998 to 2020, including the lone National Reinsurance Company (CNR). In addition to revoking these companies' licenses, the CIMA regional control committee has made 37 decisions between 2011 and now that have sanctioned about 15 insurance companies in Cameroon. These sanctions are mostly related to governance and range from warning, fines and to the suspension of the entire governing body of an insurance company. More so, at the level of the insurance directorate, the number of litigation files between the insurance companies and the insured increased from 122 in 2022 to 133 in 2023 (activity report of the insurance directorate for 2022 and 2023)

As such, the following will comprise the research questions for this study:

- i. What is the level of efficiency of insurance companies in Cameroon?
- ii. What is the effect of corporate governance mechanisms on the efficiency of insurance companies in Cameroon?

2. Literature Review

In order for a commercial organisation to achieve its strategic objectives, effective corporate governance is necessary. Control policies and guidelines that help a business achieve its goals and meet the needs of its stakeholders are combined into a corporate governance structure. Traditionally, the theoretical literature on corporate governance identifies two mechanisms, which are the internal and external mechanisms (Charreaux & Pitol, 1991). Jensen (1993) has identified four fundamental kinds of individual corporate governance mechanisms, namely product market competitiveness, external control mechanisms, legal and regulatory processes, and internal control mechanisms. Myers (2010) added that pay packages, independent director oversight, and takeover threats can all serve to align the interests of investors and managers. Other financial professionals divide governance systems into two categories: internal and external.

The board of commissioners, internal control, and internal audit functions are the source of the internal corporate governance processes. While the external mechanisms are generated from the capital market, corporate control market, labour market, state status, court rulings, stockholders, and investor activities, the quality of the internal mechanisms is strongly linked to improved corporate performance. (Nguyen and Aman, 2008).

Internal mechanisms comprise an organization's most important sets of controls. These controls keep an eye on the organization's operations and growth, and they take remedial action when things get out of control. By upholding the broader internal control framework of the organisation, they support the internal goals of the company and its internal stakeholders, who include managers, owners, and employees. These goals include efficient operations, distinct reporting lines, and procedures for evaluating performance.

The firm-specific internal corporate governance processes are employed in the assessment of enterprises. The following internal corporate governance processes have been identified by existing literature: audit committee, management compensation, ownership structure and concentration, institutional shareholding, corporate by-laws and charters, board characteristics, and incentive schemes. (Safiullah, 2013).

The economy is significantly impacted by corporate governance since it helps businesses succeed and guarantees returns to investors by reducing related investment risks (Shleifer & Vishny, 1997). According to Fooladi et al. (2014), a company's overall performance is influenced by the efficacy of its corporate governance structure. According to Otuo Agyemang et al. (2013), corporate governance aids in the efficient and effective use of resources, supports the attraction of low-cost capital, and enhances the performance of corporate organisations. It is noteworthy that numerous research on corporate governance, both in developed and emerging nations, have discovered a favourable correlation between firm performance and corporate governance. (Ahmad & Sallau, n.d.; Happy Chukwudike Azutoru et al., 2017; Jensen & Meckling, 1976; Njegomir & Tepavac, 2014; Tomašových et al., 2020; Wahba, 2015).

An equal number of research have been conducted on the connection between efficiency and corporate governance. Among these are the works of Grmanová and Strunz (2017), Huang et al. (2011), and Ndjanyou et al. (2015). While some of these research (Muhammad et al., 2011; Zheka, 2005) demonstrate a relationship between corporate governance and efficiency, other studies (Assenga et al., 2018; Ciftci et al., 2019; Merendino & Melville, 2019) find no such relationship. As a result, (Kang et al., 2007) are in favour of conducting a corporate governance-performance study that is unique to each nation. (Kyere & Ausloos, 2021) thereby bolster the idea that a company's finances can be enhanced by selecting the appropriate corporate governance structures. According to Comfort (2017), insurance is one of the key participants in the financial industry. It distinguishes itself from competitors in this field by having an advantage over other members of the same class, such as banks and financial institutions. Insurance offers mean for project financing and investment, but it is the only way to spread risk and finance compensation.

The effectiveness of insurance firms has been the focus of numerous empirical investigations during the previous twenty years. Using both nonparametric DEA methodology and conventional financial indicators, Uckar and Petrovic's (2022) study evaluated and contrasted the efficiency of Croatian insurance businesses

between 2015 and 2020. The study also seeks to ascertain whether big insurers are more productive than medium-sized and small insurers. The findings show that, overall, big insurers have below-average debt, expenditure, and claims ratios and above-average ROI, ROE, and ROA values. They reach full efficiency or above average efficiency based on the DEA methodology. Furthermore, while medium-sized insurance companies experience more complex outcomes, certain tiny insurance companies also tend to be efficient. Ultimately, during the investigated time, the average efficiency of insurance businesses increased, but the difference between large, medium, and small insurers continued to grow.

Maharjan (2019) investigated how corporate governance practices affected Nepali insurance companies' financial results. The study included several measures of corporate governance, including board size, number of meetings, CEO duality, and audit committee. The age and size of the businesses are regarded as control factors. Return on Equity (ROE) and Return on Assets (ROA) were used to measure the performance of the dependant variable. The research design used in the study was descriptive cum causal relational. The population of the study consisted of all 23 listed insurance companies. Based on the availability of data, a sample of only 18 insurance companies (13 non-life and 5 life) comprising 78.26% of the sample was selected. The company's annual report contained the secondary profitability data. The corporate governance explanatory factors were gathered using a standardised survey questionnaire. The research period spans 141 firm year measurements from 2011 to 2018. A multivariate linear regression model was employed for the analysis of data. The study concluded that corporate governance procedures and firm performance are strongly correlated. It was discovered that the audit committee and board meetings had a favourable impact on insurance companies' financial results. It is discovered that board size is negatively but not significantly. The study also concludes that an insurance company's performance is negatively impacted by CEO duality. Larger companies with high board meetings typically have better results. The company's age had a favourable impact on the insurance companies' financial performance in Nepal as well.

Shaheen and Jaradat (2019) Analyse how corporate governance affects the performance of Palestinian insurance companies. Board composition, CEO status, ownership structure, committee composition, and meeting frequency were used to gauge corporate governance. However, the performance of the insurance industry is gauged using return on equity (ROE) and return on assets (ROA). Descriptive statistics, bivariate correlation when appropriate, and a quantitative approach were employed to gather secondary data from insurance companies published annual reports between 2007 and 2018. The t-test and Pearson correlation are used to determine whether the CG variables and performance are related. The findings showed that the frequency of board meetings and the CEO's status have a major influence on the performance of the company. Companies with CEO duality—that is, CEOs who are also board members—perform better than companies with CEOs who are independent from the board. Companies with higher board meeting frequency also tend to achieve better returns on assets (ROA) and equity. The performance of insurance companies in Palestine is not significantly impacted by board size, board committees, or ownership structure. The authors suggested enforcing required adherence to the CG code in order to improve CG practices.

Barros et al. (2014) investigate capacity problems and efficiency factors in Angolan insurance firms. According to Barros et al. (2014), the findings imply that "efficiency is driven by cultural and relational aspects with their former metropolis rather than based on scale (market share)". Furthermore, since most insurance companies are small and none of the observed insurance companies are fully efficient (operating on the frontier), the authors predicted that the Angolan insurance industry could participate in the process of consolidation (mergers and acquisitions activities). Furthermore, there is empirical evidence to suggest that larger insurance businesses and financial institutions can gain from their scale in terms of enhanced stability and efficiency.

Kramarić et al. (2018) investigated how the size and diversity of the board (the supervisory board and the board of directors) affected the way insurance businesses performed. This empirical study's findings demonstrated that the size of the supervisory and director boards, as well as financial performance, are all adversely impacted by board gender diversity. The authors also draw the conclusion that when the number of directors rises, issues with coordination, communication, and decision-making also occur. Finally, it is discovered that larger insurance companies have higher profit efficiency (based on assets), most likely because of economies of scale and scope.

Datta (2018) carried out research to investigate how corporate governance affects insurance businesses' performance. The study employed various corporate governance mechanisms, such as board size, makeup, meetings, and board audit committee. The author discovered that the performance of Bangladesh's insurance industry is influenced by corporate governance. 38.2% of the variance in performance (ROE) can be attributed to the independent variables of corporate governance, which include board size, makeup, meetings, and the board audit committee. The data, which show a positive association between board meetings and ROE and board sizes, are presented using Pearson correlation. The results also show a negative correlation between board composition and ROE. Nevertheless, the study was unable to find any correlation between the insurance's performance (ROE) and board audit committee.

Grmanová and Strunz (2017) looked at the connection between Slovakian insurance businesses' profitability and technical efficiency in another study. Technical efficiency and profitability (as measured by ROA, ROE, and total assets) do not statistically significantly correlate, according to the findings of the DEA CCR and BCC models and the ensuing Tobit regression.

More in-depth research on the effectiveness of European insurance companies was done by Eling and Schaper (2017). Using DEA methodology, the authors examined the effects of capital market developments, laws, and competition on the productivity and efficiency of 970 life insurance companies across 14 European nations between 2002 and 2013. These findings validate that the business environment has a major effect on the efficiency of life insurers.

Conversely, Grmanová and Strunz (2017) examined the connection between Slovakian insurance businesses' profitability and technical efficiency. Technical efficiency and profitability (as measured by ROA, ROE, and total assets) do not statistically significantly correlate, according to the findings of the DEA CCR and BCC models and the ensuing Tobit regression.

In a similar vein, Wanke and Barros (2016) examined the factors that contributed to efficiency in the Brazilian insurance sector between 1995 and 2013. The authors discovered that the results, as determined by the Malmquist index, support the hypothesis that the most efficient insurance businesses are also the biggest.

Using DEA technique, Cummins, and Xie (2016) investigated the productivity and efficiency of US property liability insurers. For the years 1993–2011, the writers project only technical factors such as scale, cost, revenue, and profit efficiency. The findings show that during the examined period, US property liability insurers increased their productivity and efficiency. Nonetheless, the insurance sector runs at a low cost and revenue efficiency. The authors uncover evidence that M&A activity from large insurers may not improve efficiency, in contrast to prior studies. Additionally, the authors contend that success in the insurance sector is often influenced by the effective use of capital, and they propose that effective risk management may enhance the cost-effectiveness of insurers.

Fekadu (2015) investigated how corporate governance affected the strictly regulated Ethiopian insurance industry's performance. Econometric panel data from ten insurance companies spanning the years 2007 to 2014 were used in the study. While the size and independence of the audit committee and the frequency of board meetings have a positive but negligible impact on the performance of insurance companies in Ethiopia, board size, diversity, and independence have a negative and insignificant effect on the performance of insurance companies. Therefore, it may be said that all corporate governance practices have little bearing on how well insurance companies operate as determined by return on asset.

Additionally, Eling and Luhn (2010) investigated the effectiveness of insurance firms from 2002 to 2006 using a global sample. The primary empirical findings of the authors show that, although there were significant country variations, multinational insurance companies generally improved in terms of both technology and cost efficiency during the investigated period. The study's findings are consistent with prior empirical studies showing that larger insurance companies tend to be more efficient than medium-sized and smaller businesses. Lastly, it is demonstrated that there is minimal variation in the outcomes between the two techniques as writers use both parametric (SFA) and non-parametric (DEA) methodologies.

Using DEA technique, Borges et al. (2008) investigated the effectiveness of the Greek life insurance market from 1994 to 2003. The author's findings imply that efficiency is impacted by scale and suggest that consolidation would boost efficiency in the life insurance industry. It is also found that life insurance firms that are quoted typically have higher efficiency than those that are not, and that larger life insurance companies tend to be more efficient than small life insurance companies. The authors conclude by supporting the hypothesis that life insurance businesses participating in mergers and acquisitions are often more efficient than life insurance companies not participating in these operations.

Barros et al. (2005) investigated the productivity and efficiency of Portuguese insurance businesses. The authors calculate the overall productivity of the Portuguese insurance industry using the Malmquist Index. The authors concluded that, although Portuguese insurance companies saw improvements in their technical efficiency during the observed period, they also saw a decline in technological change, which suggests that they made poor input decisions that ultimately affected their market prices. Overall, the authors find that European integration had a positive impact on the efficiency scores. The authors also concluded that improved governance and openness of insurance businesses from state supervisors and regulators would result in higher insurance company efficiency in Portugal.

Using DEA technique, Diacon et al. (2002) concentrate on the effectiveness of European specialist and composite long-term insurance between 1996 and 1999. The authors arrive at the conclusion that size plays a significant role in determining technical efficiency for both small and large insurance companies by estimating pure technical efficiency (profit maximisation), scale efficiency (the impact of increasing or decreasing returns to scale), and mix efficiency (or allocative efficiency – the combination of inputs and outputs properly – ideally utilised). Additionally, the findings show that while scale efficiency is negatively impacted by higher solvency, technical efficiency is positively impacted by it. Ultimately, the writers come to the conclusion that insurers from the UK, Spain, Sweden, and Denmark are probably going to have the highest average levels of technical efficiency and that there is no correlation between efficiency and liquidity.

Using the DEA BCC model, Diacon (2001) investigates the effectiveness of general insurance companies in the UK relative to five European nations (France, Germany, Italy, the Netherlands, and Switzerland). The empirical findings indicate that, in terms of assets, the biggest and smallest insurance companies are typically the most efficient, whereas medium-sized firms appear to be less efficient. Additionally, the second stage Tobit regression demonstrates that concentration of investments in specific classes affects efficiency and that solvency has a positive association with efficiency in the UK and the Netherlands, with negligent or negative relationships reported in other studied countries. Ultimately, the author concludes that there is no proof that efficiency and risk are positively correlated, even if French and German insurers are generally more effective than those in the UK and other nations under observation.

Numerous studies have looked at how effective insurance firms are in the world and went further to look at factors affecting this level of efficiency or performance. However, it should be noted that most of these existing studies either focus on conventional performance indicators like ROI, ROE, or ROA. Even when these studies attempted to construct an efficiency score using DEA or SFA, most of the studies were cross sectional in nature as they determine efficiency at a single point in time. In addition, a good number of

studies were simply descriptive and made use of merely correlation analysis to investigate how corporate governance affects insurance companies' performance. Furthermore, very little studies address the dynamic of change by applying a panel analysis approach. In addition, studies on the effectiveness of Cameroonian insurance companies' context are rare given the difficulties in accessing secondary data regarding the different variables. By employing panel analysis to investigate the impact of corporate governance on the productivity of insurance companies in Cameroon, the current study aims to close these gaps in the literature.

3. Data, Methods, and Procedure

The Ministry of Finance (MINFI) and the Insurance Supervisory Commission oversee the modest insurance market in Cameroon. A small number of very large businesses, the most of which are internal insurance subsidiaries, also control the industry. The Cameroonian government has recently put many changes into place with the goal of encouraging the expansion and advancement of the insurance sector. Adoption of the new insurance code, which aimed to modernise the sector and bring it into line with worldwide best practices, is one of these changes.

Despite the improvements, Cameroon's insurance penetration rate is still quite low, with just a small portion of the population carrying insurance. Inadequate infrastructure, insufficient public knowledge, and a shortage of qualified workers are some of the additional issues the insurance industry in Cameroon faces (Atlas Magazine, 2023).

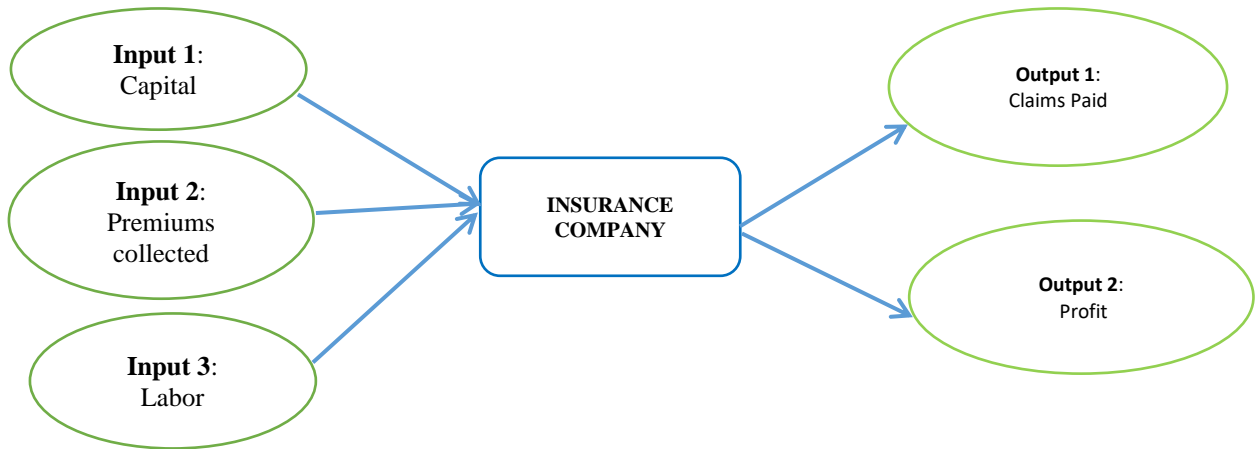
The Cameroon insurance market size was 229.8 billion Franc CFA in 2021 as against 253.1 billion Franc CFA in 2022 representing a 10.12% increase in overall turnover. According to Atlas Magazine (2023), non-life premiums increased by 8.83% and were valued at 166 billion Francs CFA in 2022. According to Atlas Magazine (2023), Cameroon's 28 active insurance businesses corroborate the country's second-place ranking in the Inter African Conference of Insurance Market, behind other African nations.

The Ministry of Finance provided the insurance companies' financial statements, which were used to gather data for this study. The information is available for the years 2010 through 2020. Fifteen insurance companies providing life and non-life insurance make up the sample. The Ministry of Finance's financial statements of insurance companies served as the source of data for this investigation. However, it should be noted that only companies with data which satisfy the requirements of the Malmquist index will finally be retained for the study. In effect, the DEA and Malmquist index does not make use of 0 and negative values in the computation of the efficiency scores (linear programming models are restricted to the non-negativity constraint).

This paper employed the Malmquist index which is an extension of DEA, or data envelope analysis, makes use of linear programming (inputs – output) to determine either how best insurance companies use their inputs to maximise their output (output-oriented model) or how they minimise their inputs given their level of output (inputs-oriented model). The Decision-Making Units (DMUs) are benchmarked based on how far they are from the efficiency frontier using the non-parametric, linear programming approach known as the DEA. Afterwards, to ascertain whether the mean level of efficiency is substantially below 1, the study conducts a one sample t-test.

The Malmquist Productivity Index (MPI), which employs a nonparametric DEA-like technique, can be used to break down changes in efficiency and technology. It gauges changes in productivity together with time fluctuations. Utilising a contemporaneous version of the data and the time variations of technology during the study period is necessary for productivity decomposition into technological change and efficiency catch-up. To account for main function of insurance companies which is indenisation of risks and the fact that they are profit oriented organisations we formulate the following inputs - outputs model:

Fig. 1: Schematic representation of the production function of insurance companies



Source: Authors' conception, 2024

Following the application of the Malmquist productivity index to evaluate the efficiency of insurance companies, the study will utilise the panel Tobit model to investigate the impact of corporate governance (measured by six indicators: board size, board gender diversity, board composition, foreign ownership, foreign executive, and ownership concentration) on the efficiency level of insurance companies. The panel tobit model was used because the efficiency levels found from the aforementioned Malmquist index are continuous between 0 and 1, suggesting that the variable is censored (continuous but limited).

$$EFF_{it} = \beta_0 + \beta_1 BSIZE_{it} + \beta_2 BDIV_{it} + \beta_3 BCOMP_{it} + \beta_4 FOWN_{it} + \beta_5 FEX_{it} + \beta_6 OWNC_{it} + \beta_7 SIZE_{it} + \beta_8 FAGE_{it} + \beta_9 MAGE_{it} + \varepsilon_{it}$$

The variables EFF, which is the efficiency level determined by the Malmquist index, BSIZE, which is the number of board members; BDIV, which is the percentage of female members in the board; BCOMP, which is the number of foreign board members; FOWN, which is the percentage of foreign capital; FEX, which is the presence of foreign executives (1 if a member of the executive team is a foreigner and 0 if not); and OWNC, which is ownership concentration measured by the number of shareholders. In terms of control variables, FAGE (firm age determined by number of years of operation), MAGE (manager age), and SIZE (firm size determined by natural logarithm of total assets). The Maximum Likelihood Estimation approach is used to estimate the panel tobit model.

4. Empirical Findings

Table 1 presents a summary of insurance companies' average efficiency scores by years.

Table 1: Mean efficiency scores by year

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Mean
Mean	0,576	0,524	0,787	0,865	0,792	0,851	0,758	0,778	0,873	0,837	0,807	0.768

According to results from the Malmquist index, the mean efficiency score Among the insurance companies that were sampled during that time running from 2010 to 2020 is 0.768 which implies that these companies were technically inefficient on average. In effect, an efficiency score of 0.768 under the output oriented model indicates that the 15 insurance companies produced 76.8% of what they could produce considering

their vectors of inputs. Figure 2 helps us to visualise the evolution of insurance companies' efficiency from 2010 to 2020

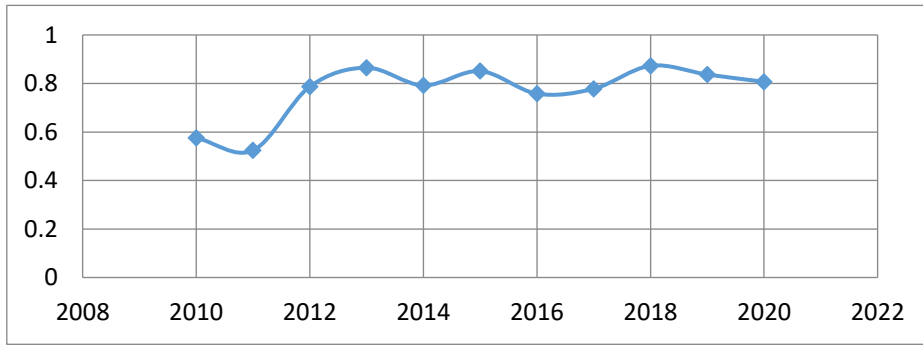


Fig. 2: Insurance companies' efficiency by year

A look at the graphical evolution of the efficiency scores by years reveals that there is globally an upward evolution of insurance companies' efficiency in Cameroon. Specifically, except for the years 2010 and 2011, the sampled companies have consistently had an average efficiency score between 0.7 and 0.8 after a sharp increase from 2012 to 2014.

Figure 3 allows us to comparatively visualise the efficiency of various companies included in the study over the period of study (2010 to 2020).

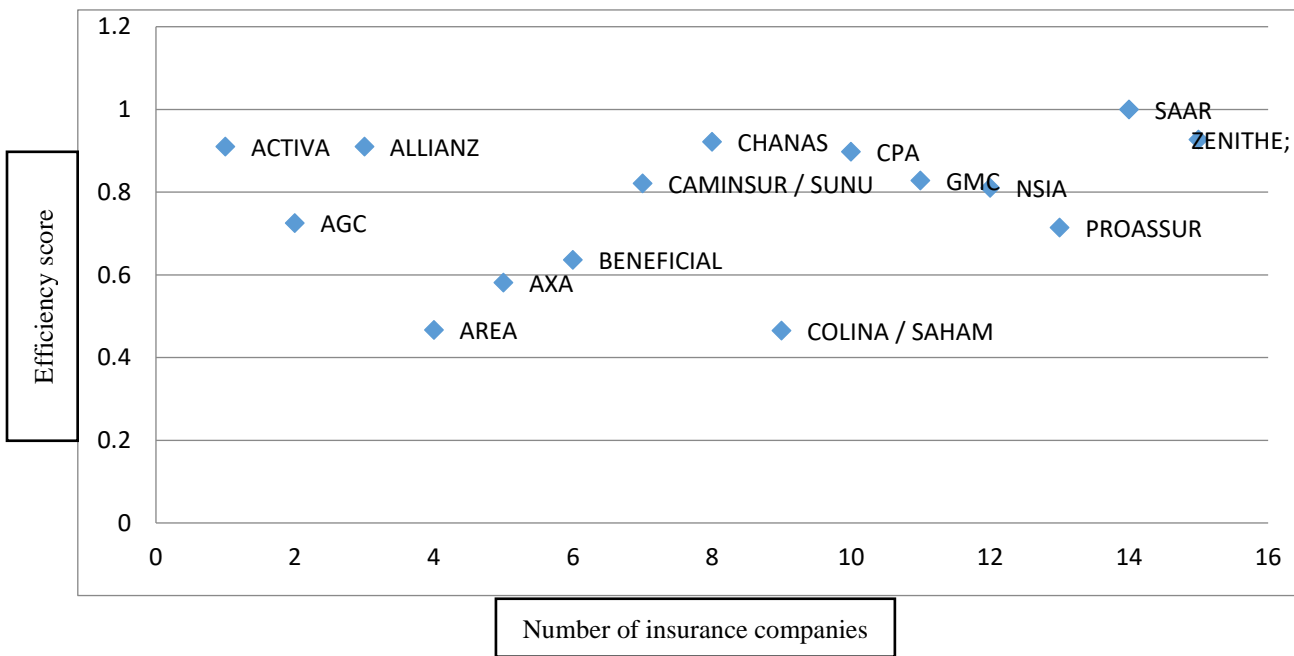


Fig. 1: Average efficiency scores by Insurance companies

Results from figure 3 shows that only SAAR insurance company has consistently remained on the efficiency frontier line while SAHAM and AREA top the sample from the bottom. A good number of these companies have been operating on average on a 0.8 to 0.9 efficiency level over the period of study which indicates that there is room for improvement and better practice. It is therefore important for us to examine what are the factors that may account for this inefficiency.

4.1. The effect of corporate governance on efficiency of insurance companies

The findings of the panel Tobit regression examining the impact of corporate governance on the productivity of Cameroonian insurance businesses are shown in Table 2.

Table 2: Panel Tobit results of the effect of corporate governance on efficiency

Variables	Coef.	Std. Err.	z	P>z
Board size	-0.0109607	0.0219395	-0.50	0.617
Board gender diversity (% of female BM)	0.0047267**	0.0021744	2.17	0.030
Board composition (No of foreign BM)	-0.0809991***	0.0224351	-3.61	0.000
Percentage of foreign shareholding	0.0004717	0.0014972	0.32	0.753
Presence of foreign executive dummy	0.0020472	0.0648463	0.03	0.975
Number of shareholders	-0.0041397***	0.0015503	-2.67	0.008
Firm size (Ln of total assets)	0.0541644	0.054058	1.00	0.316
Firm age	0.0124445***	0.0044237	2.81	0.005
Manager age	0.0035524	0.0030437	1.17	0.243
_cons	-0.6749068	1.173334	-0.58	0.565
/sigma_u	0.0435018	0.0628456	0.69	0.489
/sigma_e	0.2969562***	0.0187814	15.81	0.000
rho	0.0210091	0.060449		
Wald chi2(9)	28.54	Prob > chi2	0.0008	

Results in Table 3 indicate that the board size coefficient is negative (-0.0109607), suggesting that board size has a detrimental impact on Cameroonian insurance companies' operational efficiency. In actuality, the efficiency level will drop by roughly 0.01 points for every additional board member. However, considering that the p-value (0.617) is greater than 0.1 (10%), it should be highlighted that this finding is statistically insignificant. Therefore, board size has no discernible impact on the effectiveness of insurance businesses in Cameroon. This outcome is consistent with research by Shaheen & Jaradat (2019) and Maharjan (2019), who found no discernible impact of board size on the financial performance of insurance companies in Palestine and Nepal, respectively. Furthermore, this result indicates that the most important thing is not the quantity of board members but rather the board's effectiveness in carrying out its intended goal.

Additional findings show that the percentage of female board members, which measures the coefficient of board gender diversity, is positive (0.0047267), suggesting a favourable relationship between board gender diversity and the efficiency of insurance businesses. In actuality, Cameroonian insurance businesses are expected to become more efficient if the proportion of female board members rises. The efficiency level of insurance companies will rise by approximately 0.005 points for every 1% increase in the proportion of female board members. Additionally, at the 5% level, this finding is statistically significant. Therefore, gender diversity on the board has a favourable and substantial impact on the effectiveness of Cameroonian insurance businesses. A board with a diverse range of genders could result in a plethora of ideas and rigorous decision-making. The findings of Kramarić et al. (2018), who discovered a considerable negative impact of board gender diversity on the performance of insurance companies, are not supported by this research. Additionally, it runs counter to Fekadu's (2015) findings in Ethiopia, which indicated a weak but negative correlation between board diversity and insurance businesses' performance. However, this finding is in line with Maheshe (2021) and Nguyen (2020) who found that board gender diversity enhances corporate efficiency by increasing competitive advantage and corporate performance. It also corroborates the results of Kariuki (2023) who found that board gender diversity enhances efficiency of insurance companies in Kenya and reduces their risk-taking behaviour. Diversity in board promotes diversity in opinions. A well diverse board of directors therefore improves corporate governance which in turn stimulates efficiency.

Going by the third indicator of corporate governance, results from data analysis reveal that, unlike board female member percentage, the coefficient of number of foreign board members is negative (-0.0809991) which shows that foreign board membership negatively associates with efficiency of insurance companies.

All other things being equal, an increase in the number of foreign members on the board of directors by one will actually cause the efficiency score to drop by around 0.08 points. Furthermore, at the 1% level, this result demonstrates statistical significance. Therefore, foreign board presence has a major detrimental impact on Cameroonian insurance businesses' efficiency. This outcome supports Datta's (2018) conclusion that board composition has a detrimental impact on the performance of insurance companies in Bangladesh. Despite expectations, foreign ownership has a beneficial impact on an insurance company's efficiency, as evidenced by the positive coefficient of foreign share (0.0004717). In particular, the efficiency score of Cameroonian insurance businesses will rise by approximately 0.0005 points in response to an increase in the percentage of foreign ownership in the companies. The outcome is not statistically significant. Therefore, the degree of foreign ownership has little bearing on how effective insurance companies are. This data supports Nourani et al. (2018)'s claim that foreign-owned insurance companies in Malaysia are significantly more efficient than their local equivalents, even though it is not statistically significant.

In addition, the presence of a foreign executive member in the management team exerts improves the effectiveness of Cameroonian insurance firms considering that the coefficient of the variable is positive (0.0020472). In fact, the presence of a foreigner in the management team increases The effectiveness of Cameroonian insurance firms by 0.002 point everything being equal. This result reveals that the implication of foreign expertise in the management of insurance companies in Cameroon stimulate efficiency. However this outcome is statistically insignificant.

Further results reveal that there is a negative effect of ownership concentration on insurance companies' level of efficiency in Cameroon as the coefficient of number of shareholders is negative (-0.0041397). In effect, the more an insurance company has shareholders the lower will be their efficiency level. In other words, the lower the ownership concentration captured by increasing number of shareholders, the lower the lower the efficiency of insurance companies. This result is significant at 1% level. This result suggests that large number of shareholders may constitute an obstacle to efficiency as it may translate into slower decision-making process or difficulty in agreement. Thus, ownership deconcentrating significantly compromises the degree of effectiveness of Cameroonian insurance firms. This may highlight the fact that the larger the number of shareholders, the higher the agency cost, the more the problem of coordination and making choices. This outcome is consistent with Nourani et al. (2018), who discovered a noteworthy detrimental impact of ownership structure on the effectiveness of insurance firms operating in Malaysia.

Using the control variables as a guide, the Tobit model's results show that the firm's size has a positive coefficient (0.0541644), meaning that as the company grows, so does its efficiency level. Precisely, a one percent increase in total assets will result in about 0.05-point increase in efficiency level of insurance companies in Cameroon. This result suggests that there is economy of scale in the insurance sector in Cameroon. However, this result is insignificant.

The insurance company's efficiency increases with age, as indicated by the positive coefficient of firm age (0.0124445). Essentially, one extra year of operation for insurance businesses raises their efficiency level in Cameroon by approximately 0.01 points. This suggests that the process of providing insurance services may involve a learning-by-doing approach. Over time, the business improved its efficiency in providing insurance services to the general population. It is noteworthy that this result is meaningful at the 1% level. As a result, company age significantly increases the effectiveness of insurance businesses in Cameroon.

In the same vein, manager age increases the level of efficiency of insurance companies in Cameroon given that the coefficient of manager age is positive (0.0035524). In effect the older the manager, the higher the level of efficiency of the company. An increase of manager age by one year will lead to about 0.004 point increment in efficiency level of insurance companies in Cameroon. However, this result is not significant. Thus, there is no significant effect of manager age on insurance companies' efficiency in Cameroon.

It should be noted that the overall model is significant at 1% level which implies that corporate governance significantly affects level of efficiency of insurance companies when controlling for company size, firm age and manager age.

5. Conclusion and Policy Implications

This paper provides meaningful insights into the connection between Cameroonian insurance companies' efficiency and corporate governance. The study's findings aid in the creation of best practices and suggestions for improving corporate governance frameworks in Cameroon's insurance sector. The findings could be utilised by insurance companies, regulators, and policymakers to improve corporate governance practices, and thus enhancing efficiency, risk management, and stakeholder value creation. The study's findings indicate that corporate governance is essential for improving or compromising technical efficiency of insurance companies as board gender diversity was found to significantly enhance efficiency while board foreign composition compromise it. It is therefore important for insurance companies to strengthen corporate governance by implementing measures that will go a long way to enhance corporate governance practices within insurance companies in Cameroon. This could include improving transparency and independence of the directors to guarantee effective over-sight and decision-making. This could also entail encouraging board gender diversity within the insurance sector.

Enhance operational Efficiency by identifying and addressing specific areas of inefficiency within insurance companies, such as underwriting processes, claims management and investment strategies also seems important. Such a strategy may consist in optimising the number of shareholders in order to determine a number which is compatible with their efficiency. In addition, it is required to strengthen regulatory oversight of the insurance industry by ensuring compliance with best practices and standards. This could involve regular assessments of company performance, enforcement of regulations and the implementation of incentives for efficient operations.

6. Limitations and Direction for Future Studies

This study is not void of limitations upon which subsequent study can be conducted to further explore various corporate indicators of insurance companies. The study makes use of only non-life insurance companies and internal corporate governance mechanisms. Future research may investigate a comparative analysis between the efficiency of life and non-life insurance companies.

Further research may also consider the use of other dimensions of corporate governance which include both internal corporate governance mechanisms and external corporate mechanisms such as board meeting, audit committee characteristics, managerial compensation just to name some few. Subsequent studies can also adopt different methodological approaches by expanding the scope of the study (both number of firms and time frame) and use other estimation techniques to ascertain that the results remain consistent.

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