

Integration of Financial and ESG Performance Indicators to Measure and Evaluate Egyptian Insurance Companies Performance

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This study aims to evaluate the performance of Egyptian insurance companies through the integration of financial and non-financial performance indicators through the dimensions of sustainable development as a mediator variable. The study relied on Allianz Egypt property and liability insurance company data from 2012 to 2021, and the Monte Carlo simulation method was used based on the Mathcad program. This study used structural Equations Modeling via AMOS program to extract the direct and indirect effect through path analysis. The results showed that each environmental dimension, social dimension, and governance dimension plays a mediator role in the relationship between solvency, liquidity, credit, activity, underwriting profitability, and both market share and investment profitability. Our research contributes to the literature of achieving sustainable development in the insurance sector, to keep pace with global developments. This paper presents evidence of the relationship between integrating ESG indicators into insurance companies' performance and achieving an additional competitive advantage.

Keywords: sustainable insurance, financial performance indicators, ESG performance indicators, competitive advantage, path analysis

INTRODUCTION

Adopting sustainable practices in the insurance industry makes insurance companies contribute to building healthy and sustainable societies and economies. The insurance industry is considered one of the important sectors in achieving the principles of sustainable development, as it has a good understanding of the economic and social impact of disasters on societies, in addition to understanding the importance of disaster risk reduction, especially in the context of climate change, and the need to mitigate the effects of climate change. The primary business of insurance is to identify and manage risks. To encourage sustainable economic and social growth, the insurance industry has a significant role to play. Better management of environmental, social, and governance (ESG) issues will enhance the insurance sector's contribution to building resilient, socially inclusive, and sustainable societies.

Hence, sustainable insurance is one of the most important topics that the Insurance Federation of Egypt seeks to increase awareness to incorporate into the workplace environment and company culture both internally and externally. The principles of sustainable insurance provide a global roadmap for developing

and expanding the scope of risk management and finding innovative insurance solutions needed to promote the use of renewable energy, clean water, food security, sustainable cities, and resilient societies in the face of disasters.

Therefore, insurance companies had to make major changes in their operations systems and apply modern methods and concepts, including sustainable development, to be able to improve their competitive position among their counterparts. Also, work on developing performance measures so that non-financial indicators are integrated with financial indicators in measuring the success or failure of the management's efforts to improve the company's competitive position.

LITERATURE REVIEW

Previous studies related to the performance of insurance companies concerned with evaluating financial performance only. Ahmed (2014) evaluated the financial and technical performance of Egyptian insurance companies in the context of governance. Alzair & Aljashi (2015) evaluated financial and technical conditions of Saudi insurance companies, according to the American Insurance Regulatory Information System (IRIS). Also, Mohamed (2018) used the total quality management approach to evaluate companies' performance as one of the modern management methods. Tar (2018) applied early warning systems to the Algerian insurance market to detect weaknesses in the company's financial position.

Additionally, Yan et al. (2018) predicted the financial situation of general insurance companies by using the RBF neural network model, and improving it using a Genetic Algorithm, to establish an early warning model. Ali (2020) showed the impact of the company's characteristics on the financial performance of insurance companies. Moreover, some studies explored the factors affecting the financial performance of insurance companies (Al-Soub, 2009 & Altarawneh 2015; Saeed, 2020; Morara & Sibindi, 2021).

Ibrahim (2023) measured the financial performance of insurance companies operating in the United Arab Emirates during the financial years 2006 to 2009, to measure the impact of the financial crisis on performance. Many studies have examined the relationship between sustainable development and a company's performance. Weber (2005) presented a reference study for European banks and financial services organizations, to determine the extent to which sustainability is integrated into their policies, strategies, products, services, and operations.

Chang & Kuo (2008) developed a measurable model to evaluate the relationship and influence between sustainability development and a firm's financial performance. Additionally, Ameer & Othman (2012) found that companies that engage in superior sustainable practices enjoy higher financial performance compared to those that do not engage in such practices. Özçelik & Öztürk (2014) measured the sustainability performance of Turkish banks that issue sustainability reports by using the Grey Relational Analysis method. Bäckström & Karlsson (2015) showed a positive relationship between corporate sustainability performance and financial performance. Some studies referred to the positive ESG impact on corporate financial performance (Friede et al., 2015; Ferrero & Aceituno, 2015)

Lewis et al. (2015) showed that investment strategies that consider ESG factors lead to better performance over the long term. Ortas et al. (2015) noted that ESG performance has a significant impact on the financial performance of companies that have adopted the principles of the United Nations Global Compact (UNGC). Atan et al. (2016) examined the impact of ESG information on company performance in comparison between Malaysia and Denmark, it found that Denmark failed to provide sufficient disclosure compared to Malaysia. Tarmuji et al. (2016) aimed to investigate the impact of ESG practices on the economic performance of companies in Malaysia and Singapore, it found that social and governance practices significantly affect economic performance.

Huijgevoort (2017) aimed to examine the impact of ESG factors on the financial performance of European small capitalization companies, the results provided supportive evidence of the moderating effect of company size on the relationship between ESG and corporate financial performance, among the group of small and medium-sized companies. Moreover, Kweh et al. (2017) examined the impacts of ESG on the corporate performance of government-linked companies (GLCs) in Malaysia, it showed that GLCs focused

more on governance disclosures, followed by social and environmental aspects. Sila & Cek (2017) tested the effects of ESG performance on economic performance.

Atan et al. (2018) found that the combined score of ESG positively and significantly influences the cost of capital of a company. Gharib et al. (2018) aimed to examine the impact of economic, social, and environmental dimensions of sustainable development on the financial performance of banks from the perspective of employees. Zhao et al. (2018) showed that good performance of ESG standards can improve financial performance. Taliento (2019) examined the impact of sustainability indicators on economic performance. Also, Grossa (2020) determined the indicators of economic, environmental, and social performance that impact corporate financial performance. García (2022) found that sustainability became of fundamental importance for financial performance. Ismail et al. (2022) found that sustainability reporting results in high financial performance in emerging markets. Al-Otaibi & Al-Shabi (2023) examined the role of ESG practices in the financial performance of Saudi banks. Some studies investigated the relationship between corporate sustainability reporting and financial performance (Reddy & Gordon, 2010; Nugroho & Arjowo, 2014; Nagornova, 2016; Alhassan et al., 2021; Botchwey et al., 2022; Celik, 2023; Lehenchuk et al., 2023). Also, some studies found that there is a strong relationship between ESG disclosures and corporate financial performance (Brooks & Oikonomou, 2018; Xie et al., 2019; Mohammad & Wasiuzzaman, 2021; Abo-Obead, 2022; Okon et al., 2023).

There are a few studies related to sustainable insurance and the integration of ESG into insurance companies. Cuperus (2012) evaluated the current state of sustainability (sustainable insurance) in the life and general insurance industry on the global level. Kanojia (2014) showed that the insurance industry contributes a major share towards sustainable development. Scordis et al. (2014) found that the largest global insurance companies are seeking to apply Principles for Sustainable Insurance (PSI) to expand the scope of corporate risk management. Lapinskaite & Radikaite (2015) analyzed sustainability measurement methods by applying them to the biggest insurance company in Lithuania and the Baltic countries, two methods were chosen: the Dow Jones Sustainability Index (DJSI) and the Corporate Sustainability Grid (CSG).

Reddy & Thomson (2015) considered how institutional investors and actuaries can promote sustainability. Additionally, Nogueira et al. (2017) proposed an integrative model to understand how progress in ESG risk underwriting can influence the management of ESG issues in insurance operations, the model indicates only environmental and governance constructs as measurement discriminants, it found a positive relationship between company size and progress in ESG risk underwriting and ESG issues in insurance operation management constructs. Ho et al. (2018) aimed to explore and establish corporate social responsibility (CSR) dimensions and sustainable business development standards in the insurance industry in Taiwan. Maftuchah (2018) examined the current situation for the development of sustainable insurance in Indonesia, which is represented in the knowledge, readiness, and potential of insurance companies in the development of sustainable insurance.

Moreover, Uthayakumar & PUNCHIHewa (2018) evaluated the impact of sustainability reporting on financial performance in insurance sectors. Labreche & Edriss (2021) aimed to highlight the contribution of insurance to meeting the requirements of sustainable development. Finally, Ganesan & Sachin (2023) concluded that there are many opportunities to integrate sustainability into insurance.

From the previous discussion of literature, the researcher concludes that:

First, there is agreement on the importance of sustainable development at the global level.

Second, few studies have investigated sustainable insurance and the impact of ESG on insurance companies, and measuring the impact of ESG on the performance of Egyptian insurance companies was not discussed. Therefore, there is a chance to do more research.

There is a continuous increase in the number of companies seeking to implement sustainable development as well as sustainable insurance in most countries of the world, as a result of its clear positive impact on countries' economies, and investments, whether internally or externally. This research is an extension of the efforts of researchers and academics in this field, to highlight the important and effective role of evaluating non-financial performance according to the dimensions of sustainable development,

which has a positive impact on achieving an additional competitive advantage for companies in the short and long terms. The researcher attempts to measure the impact of environmental, social, and governance (ESG) factors on the performance of Egyptian insurance companies and the extent of their impact on improving competitive advantage.

METHODOLOGY

This research depends on Allianz Egypt property and liability insurance company data to evaluate financial performance and non-financial performance in light of the dimensions of sustainable development. So, the researcher measures the direct and indirect effect of financial performance indicators as an independent variable, which include (solvency, liquidity, credit, activity, and underwriting profitability). on achieving an additional competitive advantage as a dependent variable represented by (market share, and investment profitability). in the presence of sustainable development dimensions as a mediator variable represented by (environmental dimension, social dimension, and governance dimension). Data were obtained from Allianz’s financial and sustainability reports. The Monte Carlo simulation method was used, based on the Mathcad program, to complete the study data. The AMOS program was used to extract statistical results. The following Table 1 shows the indicators of the study variables, as follows:

**TABLE 1
THE INDICATORS OF THE VARIABLES**

Independent variables			Mediator variables			
Variables	S.	Indicators	Variables	S.	Indicators	
Solvency X1	x1	Shareholders’ equity/ total assets	Environmental dimension Z1	z1	CO2 emissions per employee	
	x2	Shareholders’ equity/ Technical reserves		z2	Natural disaster loss claims	
	x3	Growth in shareholders’ equity		Social dimension Z2	z3	Employee engagement index
	x4	Provision for under-settled compensation/ average net compensation			z4	Average training expenses per employee
Liquidity X2	x5	Illiquid Assets/ Total Assets	z5		Average training days per employee	
	x6	Capital/ total assets	z6		Number of micro insurance clients	
	x7	Liquid assets/ total liabilities	z7		Women in the workforce	
Credit X3	x8	Insurance operations debtors/ total premiums	z8	Inclusive Meritocracy Index score		
Activity X4	x9	Retention rate	z9	Work well index		
	x10	Net premiums/ shareholders’ equity	Governance dimension Z3	z10	Women in administrative positions	
	x11	Growth in net premiums	Dependent variables			
Underwriting profitability X5	x12	Commission rates and production costs	Market share Y1	y1	Company premiums/ total market premiums	
	x13	Combined rate	Investment profitability Y2	y2	Rate of return on equity	
	x14	Operating rate		y3	Rate of return on assets	

To determine the direct effect, the following structural model equations are formulated:

1. The effect of: solvency X1, liquidity X2, credit X3, activity X4, and underwriting profitability X5, on environmental dimension Z1:

$$\text{Environmental dimension} = \beta_{11} \text{Solvency} + \beta_{12} \text{Liquidity} + \beta_{13} \text{Credit} + \beta_{14} \text{Activity} + \beta_{15} \text{Underwriting profitability}$$

2. The effect of: solvency X1, liquidity X2, credit X3, activity X4, and underwriting profitability X5, on social dimension Z2:

$$\text{Social dimension} = \beta_{21} \text{Solvency} + \beta_{22} \text{Liquidity} + \beta_{23} \text{Credit} + \beta_{24} \text{Activity} + \beta_{25} \text{Underwriting profitability}$$

3. The effect of: solvency X1, liquidity X2, credit X3, activity X4, and underwriting profitability X5, on governance dimension Z3:

$$\text{Governance dimension} = \beta_{31} \text{Solvency} + \beta_{32} \text{Liquidity} + \beta_{33} \text{Credit} + \beta_{34} \text{Activity} + \beta_{35} \text{Underwriting profitability}$$

4. The effect of: environmental dimension Z1, social dimension Z2, and governance dimension Z3, on market share Y1:

$$\text{Market share} = \beta_{41} \text{Environmental dimension} + \beta_{42} \text{Social dimension} + \beta_{43} \text{Governance dimension}$$

5. The effect of: environmental dimension Z1, social dimension Z2, and governance dimension Z3, on investment profitability Y2:

$$\text{Investment profitability} = \beta_{51} \text{Environmental dimension} + \beta_{52} \text{Social dimension} + \beta_{53} \text{Governance dimension}$$

The indirect effect is the effect of the independent variables on the dependent variables through the mediator variables, and this will be explained in a table later.

EMPIRICAL ANALYSIS

Descriptive Analysis

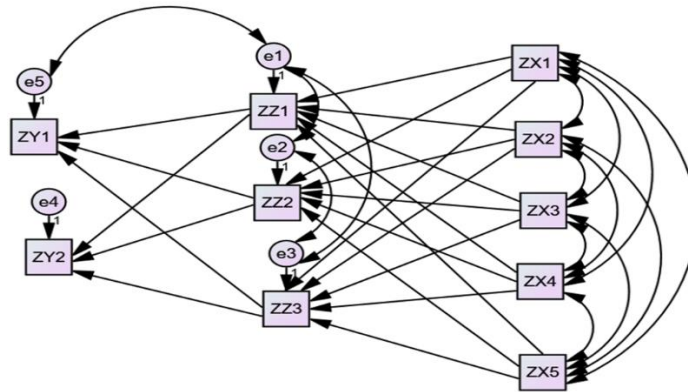
Table 2 shows the descriptive statistics results:

TABLE 2
DESCRIPTIVE STATISTICS

	Variables	Mean	Median	Maxi	Min	Standard Deviation	Skewness	Kurtosis	Kolmogorov-Smirnov	Signature
X1	Solvency	0.99	1.00	1.38	0.597	0.155	0.04	2.35	0.032	0.015
X2	Liquidity	1.00	0.994	1.40	0.592	0.168	0.03	2.31	0.028	0.057
X3	Credit	0.99	1.010	1.60	0.392	0.362	0.03	1.72	0.074	0.000
X4	Activity	0.99	1.00	1.41	0.583	0.191	0.014	2.01	0.051	0.000
X5	Underwriting profitability	1.00	1.00	1.19	0.81	0.08	0.004	2.15	0.047	0.000
Z1	Environmental dimension	2.00	2.00	2.77	1.27	0.23	0.12	3.02	0.027	0.076
Z2	Social dimension	142.02	142.38	197.2	84.81	16.94	0.14	3.03	0.028	0.067
Z3	Governance dimension	30.14	30.23	41.78	17.96	3.73	0.10	3.03	0.022	0.200
Y1	Market share	2.24	2.24	3.13	1.37	0.28	0.08	3.09	0.024	0.146
Y2	Investment profitability	14.66	14.69	20.47	8.98	1.89	0.08	3.09	0.024	0.200

The following Figure 1 shows the proposed structural model to measure the impact of financial performance indicators on achieving an additional competitive advantage in the presence of dimensions of sustainable development:

FIGURE 1
THE PROPOSED STRUCTURAL



The researcher conducted a Pearson correlation matrix to measure the significance of the relationship between financial performance indicators and their impact on achieving a competitive advantage in the presence of sustainable development dimensions, as shown in the following Table 3.

TABLE 3
PEARSON CORRELATION MATRIX

	Variables	Solvency X1	Liquidity X2	Credit X3	Activity X4	Underwriting profitability X5	Environmental dimension Z1	Social dimension Z2	Governance dimension Z3	Market share Y1	Investment profitability Y2
X1	Solvency X1	1									
X2	Liquidity X2	0.272***	1								
X3	Credit X3	0.293***	0.262***	1							
X4	Activity X4	0.298***	0.322***	0.356***	1						
X5	Underwriting profitability X5	0.288***	0.248***	0.272***	0.314***	1					
Z1	Environmental dimension Z1	0.575***	0.571***	0.833***	0.668***	0.473***	1				
Z2	Social dimension Z2	0.484***	0.480***	0.716***	0.601***	0.370***	0.862***	1			
Z3	Governance dimension Z3	0.441***	0.412***	0.596***	0.532***	0.332***	0.744***	0.822***	1		
Y1	Market share Y1	0.587***	0.586***	0.825***	0.677***	0.494***	0.994***	0.853***	0.735***	1	
Y2	Investment profitability Y2	0.450***	0.409***	0.633***	0.527***	0.344***	0.763***	0.855***	0.927***	0.757***	1

*** Correlation is significant at the 0.001 level

The correlation matrix shows that there is a positive significant relationship at a level of significance less than (0.001) between the independent variables represented by financial performance indicators (X1, X2, X3, X4, X5) and the mediator variables represented by the dimensions of sustainable development (Z1, Z2, Z3). and also between the independent variables (X1, X2, X3, X4, X5) and the dependent variables represented by competitive advantage indicators (Y1, Y2). as well as between the mediator variables (Z1, Z2, Z3).and the dependent variables (Y1, Y2).

The following Table No. 4 shows the estimates of the coefficients of the proposed structural model and their level of significance using the Maximum Likelihood method to measure the impact of solvency, liquidity, credit, activity, and underwriting profitability, on market share, and investment profitability through environmental dimension, social dimension, and governance dimension:

TABLE 4
MAXIMUM LIKELIHOOD ESTIMATES OF THE COEFFICIENTS OF THE PROPOSED STRUCTURAL MODEL

Path direction		Estimate	Standard Error	T-test	Signature
Environmental dimension Z1	←	0.236	0.002	117.431	0.000***
Environmental dimension Z1	←	0.252	0.002	123.613	0.000***
Environmental dimension Z1	←	0.540	0.003	180.394	0.000***
Environmental dimension Z1	←	0.287	0.002	128.782	0.000***
Environmental dimension Z1	←	0.127	0.002	68.101	0.000***
Social dimension Z2	←	0.187	0.018	10.309	0.000***
Social dimension Z2	←	0.195	0.018	10.861	0.000***
Social dimension Z2	←	0.494	0.018	26.977	0.000***
Social dimension Z2	←	0.294	0.019	15.645	0.000***
Social dimension Z2	←	0.041	0.018	2.276	0.023*
Governance dimension Z3	←	0.190	0.024	8.037	0.000***
Governance dimension Z3	←	0.159	0.023	6.805	0.000***
Governance dimension Z3	←	0.390	0.024	16.358	0.000***
Governance dimension Z3	←	0.270	0.024	11.062	0.000***
Governance dimension Z3	←	0.047	0.023	2.001	0.045*
Market share Y1	←	0.979	0.007	143.922	0.000***
Market share Y1	←	0.087	0.008	11.060	0.000***
Market share Y1	←	-0.058	0.007	-8.969	0.000***
Investment profitability Y2	←	0.005	0.019	0.251	0.802
Investment profitability Y2	←	0.284	0.023	12.388	0.000***
Investment profitability Y2	←	0.690	0.019	36.219	0.000***
Normed Chi-Square=5.733, RMSR=0.008, GFI=0.939, AGFI=0.866, NFI=0.866, RFI=0.983, IFI=0.923, IFI=0.983, TLI=0.925, CFI=0.983, RMSEA=0.095					

*** Significant at the 0.001 level

* Significant at the 0.05 level

Previous Table 4 shows that:

- 1- There is a positive, direct, statistically significant standard effect at a level of significance less than (0.001) for each of solvency X1, liquidity X2, credit X3, activity X4, and underwriting profitability X5, on environmental dimension Z1, with a coefficient of determination R² of (97.8%). as follows:

$$\text{Environmental dimension} = 0.236 \text{ Solvency} + 0.252 \text{ Liquidity} + 0.540 \text{ Credit} + 0.287 \text{ Activity} + 0.127 \text{ Underwriting profitability}$$

- 2- There is a positive, direct, statistically significant standard effect at a level of significance less than (0.05) for each of solvency X1, liquidity X2, credit X3, activity X4, and underwriting profitability X5, on social dimension Z2, with a coefficient of determination R² of (72.9%). as follows:

$$\text{Social dimension} = 0.187 \text{ Solvency} + 0.195 \text{ Liquidity} + 0.494 \text{ Credit} + 0.294 \text{ Activity} + 0.041 \text{ Underwriting profitability}$$

- 3- There is a positive, direct, statistically significant standard effect at a level of significance less than (0.05) for each of solvency X1, liquidity X2, credit X3, activity X4, and underwriting profitability X5, on governance dimension Z3, with a coefficient of determination R² of (54.1%). as follows:

$$\text{Governance dimension} = 0.190 \text{ Solvency} + 0.159 \text{ Liquidity} + 0.390 \text{ Credit} + 0.270 \text{ Activity} + 0.047 \text{ Underwriting profitability}$$

- 4- There is a positive, direct, statistically significant standard effect at a level of significance less than (0.001) for each of the environmental dimensions Z1, and social dimension Z2, while there is a negative standardized effect for governance dimension Z3, on market share Y1, with a coefficient of determination R² of (98.7%). as follows:

$$\text{Market share} = 0.979 \text{ Environmental dimension} + 0.087 \text{ Social dimension} + (-0.058) \text{ Governance dimension}$$

- 5- There is a positive, direct, statistically significant standard effect at a level of significance less than (0.001) for each of the social dimension Z2, and governance dimension Z3, on investment profitability Y2, with a coefficient of determination R² of (88.6%). while there is no significant effect of environmental dimension Z1 on investment profitability Y2, as it is not significant at a significance level greater than (0.05). as follows:

$$\text{Investment profitability} = 0.005 \text{ Environmental dimension} + 0.284 \text{ Social dimension} + 0.690 \text{ Governance dimension}$$

- 6- The values of Goodness of Fit Index (GFI). Normed Fit Index (NFI). Relative Fit Index (RFI). Incremental Fit Index (IFI). Tucker Lewis Index (TLI). and Comparative Fit Index (CFI) fall within the acceptable limits of the cut-off points (not less than 0.90). while the value of Adjusted Goodness of Fit Index (AGFI) is close to the optimal cut-off point, and the value of Normed Chi-Square is close to the value (5). and thus the possibility of matching the actual model to the estimated structural model.
- 7- The values of Root Mean Square Residual (RMSR). and Root Mean Square Error of Approximation (RMSEA) were (0.008) and (0.095). respectively, which is a value less than the cut-off point for the residuals (no more than 0.08). especially for the (RMSR). while the value of (RMSEA) is close to the optimal cut-off point, which indicates the low errors of the estimated structural model and thus the goodness of its fit.

TABLE 5
THE TOTAL, DIRECT, AND INDIRECT STANDARD EFFECT OF THE VARIABLES

Effect	Variables	Underwriting profitability X5	Activity X4	Credit X3	Liquidity X2	Solvency X1	Governance dimension Z3	Social dimension Z2	Environmental dimension Z1
Total	Governance dimension Z3	0.047	0.270	0.390	0.159	0.190	---	---	---
	Social dimension Z2	0.041	0.294	0.494	0.195	0.187	---	---	---
	Environmental dimension Z1	0.127	0.287	0.540	0.252	0.236	---	---	---
	Investment profitability Y2	0.045	0.271	0.412	0.167	0.185	0.690	0.284	0.005
	Market share Y1	0.125	0.290	0.549	0.255	0.237	-0.058	0.087	0.979
Direct	Governance dimension Z3	0.047	0.270	0.390	0.159	0.190	---	---	---
	Social dimension Z2	0.041	0.294	0.494	0.195	0.187	---	---	---
	Environmental dimension Z1	0.127	0.287	0.540	0.252	0.236	---	---	---
	Investment profitability Y2	---	---	---	---	---	0.690	0.284	0.005
	Market share Y1	---	---	---	---	---	-0.058	0.087	0.979
Indirect	Governance dimension Z3	---	---	---	---	---	---	---	---
	Social dimension Z2	---	---	---	---	---	---	---	---
	Environmental dimension Z1	---	---	---	---	---	---	---	---
	Investment profitability Y2	0.045*	0.271**	0.412*	0.167*	0.185**	---	---	---
	Market share Y1	0.125*	0.290*	0.549*	0.255*	0.237*	---	---	---

** Significant at the 0.01 level

* Significant at the 0.05 level

Previous Table No. 5 shows that

1- It is clear from the total effect (which combines the direct and indirect effect) that:

The most influential variables on governance dimension Z3 are credit X3 with a standard coefficient of (0.390). followed by activity X4 with a standard coefficient of (0.270). then solvency X1 (0.190). then liquidity X2 (0.159). and finally underwriting profitability X5 (0.047).

The most influential variables on social dimension Z2 are credit X3 with a standard coefficient of (0.494). followed by activity X4 (0.294). then liquidity X2 (0.195). then solvency X1 (0.187). and finally underwriting profitability X5 (0.041).

The most influential variables on environmental dimension Z1 are Credit X3 with a standard coefficient of (0.540). followed by Activity X4 (0.287). then liquidity X2 (0.252). then solvency X1 (0.236). and finally underwriting profitability X5 (0.127).

The most influential variables on investment profitability Y2 are governance dimension Z3 with a standard coefficient of (0.690). followed by credit X3 (0.412). followed by social dimension Z2 (0.284). then activity X4 (0.271). then solvency X1 (0.185). then liquidity X2 (0.167). then underwriting profitability X5 (0.045). and finally environmental dimension Z1 (0.005).

The most influential variables on market share Y1 are environmental dimension Z1 with a standard coefficient of (0.979). followed by credit X3 (0.549). followed by activity X4 (0.290). then liquidity X2 (0.255). then solvency X1 (0.237). then underwriting profitability X5 (0.125). then social dimension Z2 (0.087). and finally governance dimension Z3 (-0.058).

There is a positive, indirect, statistically significant standard effect at a level of significance less than (0.05) for solvency X1, liquidity X2, credit X3, activity X4, and underwriting profitability X5, on market share Y1, through the mediator variables related to each of environmental dimension Z1, social dimension Z2, and governance dimension Z3, with standard values ranging between (0.125) and (0.549). respectively, using the possible sampling method for (200) Bootstrap samples.

There is a positive, indirect, statistically significant standard effect at a level of significance less than (0.05) for solvency X1, liquidity X2, credit X3, activity X4, and underwriting profitability X5, on investment profitability Y2, through the mediator variables related to each of environmental dimension Z1, social dimension Z2, and governance dimension Z3, with standard values ranging between (0.045) and (0.412). respectively, using the possible sampling method for (200) Bootstrap samples.

Based on the above, we conclude that each of the environmental dimensions Z1, social dimension Z2, and governance dimension Z3 play a mediator role in the relationship between solvency X1, liquidity X2, credit X3, activity X4, underwriting profitability X5, and between market share Y1 and investment profitability Y2.

DISCUSSION

Insurance companies operate in a constantly evolving environment, which has affected the goals and strategies of these companies and increased their interest in keeping pace with continuous changes in the business environment to improve their competitive position and increase their profits and economic value. Since the economic and financial indicators that Egyptian insurance companies rely on have become insufficient to evaluate performance, as they are only concerned with financial measures, insurance companies must therefore pay attention to non-financial indicators in light of the dimensions of sustainable development, in addition to the financial indicators of performance and integration between them, so that objective results can be obtained about performance and improvement in competitive advantage.

The results obtained confirm that sustainability practices and considering ESG indicators when evaluating the performance of Egyptian insurance companies contribute to achieving an additional competitive advantage. This is consistent with the findings of previous studies in this field. The literature showed that the global insurance companies apply PSI and the insurance sector contributes to achieving sustainable development, making various innovations in their products and services by adopting sustainable insurance, promoting new sustainable products, encouraging investments in sustainable projects, providing products that encourage customers' sustainability behaviors such as lower premiums for electric vehicles,

providing new products to treat climate change, and organizing environmental awareness campaigns (Kanojia, 2014; Scordis et al., 2014; Labreche & Edriss, 2021; Ganesan & Sachin, 2023).

The literature evaluated the current state of sustainable insurance in the insurance industry on the global level, and in Indonesia respectively (Cuperus, 2012; Maftuchah, 2018). Therefore, none of the previous studies examined the impact of sustainability practices on the insurance sector in the Egyptian market.

CONCLUSION

The major goal of this study is to integrate ESG performance indicators with financial performance indicators to measure and evaluate Egyptian insurance companies' performance. The results of the statistical analysis showed that there is a direct effect of the independent variables (financial performance indicators) on the mediator variables (dimensions of sustainable development). and there is also a direct effect of the mediator variables on the dependent variables (indicators of competitive advantage). Also, each environmental dimension, social dimension, and governance dimension play a mediator role in the relationship between solvency, liquidity, credit, activity, underwriting profitability, and both market share and investment profitability. It is observed that financial performance indicators have an explanatory and predictive power "R²" that ranges from environmental dimension (97.8%). social dimension (72.9%). and governance dimension (54.1%). Also, sustainability indicators have an explanatory and predictive power "R²" that ranges from market share (98.7%). and investment profitability (88.6%). In conclusion, this means that the models used in the study were excellent, and sustainable development has critical importance in achieving an additional competitive advantage for insurance companies.

The researcher recommends that insurance companies provide insurance products to environmentally friendly economic sectors, and interest in preparing a sustainability report to demonstrate the extent of progress achieved towards sustainable development. Additionally, The Financial Regulatory Authority should pay attention to establishing a sustainable development department within insurance companies, so that sustainability practices in each company can be followed up.

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