IMPACT OF SUSTAINABILITY ON THE SHARE PRICE VOLATILITY OF FINANCIAL SERVICE COMPANIES IN SRI LANKA

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Abstract

This study analyzes the impact of environmental practices, social practices and governance practices(ESG) on share price volatility (SPV) of Sri Lanka's financial services industry from 2015 to 2023, including banking, finance, and life insurance firms. This study aims to provide a view of how ESG factors impact SPV, given the growing importance of global ESG practices. The study analyzes secondary data from the Colombo Stock Exchange and corporate annual reports using quantitative data using deductive methods. The Convenience sampling technique was used from 2015 to 2023, and data was collected from published yearly reports by Life Assurance, Finance and Banking Companies from the Colombo Stock Exchange (CSE). The evaluation revealed that ESG does not significantly impact SPV in life insurance companies. Environmental (energy) and social factors (Labor turnover) significantly impact SPV in the finance sector. In contrast, social factors (Gender diversity) significantly impact SPV in the banking sector. The study's outcomes have practical implications for insurance sector policymakers, financial sector investors and banks' stakeholders. As sustainability standards evolve globally, the findings emphasize areas within ESG that most impact share price stability. The findings demonstrate how vital environmental, social and governance elements, particularly diversity, contribute to increased investor confidence and market stability. This study emphasizes how crucial it is to incorporate ESG activities into business strategy. These findings offer practical advice for legislators, investors, and managers who are pursuing a match between sustainability and the share price volatility of the Sri Lankan Financial Service Sector.

Keywords: Banking sector, ESG, Finance sector, Insurance, Share Price, Sustainability

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Introduction

Background of the study

In recent decades, the number of sustainability reports produced and published by firms to inform stakeholders of their environmental, social, and corporate governance (ESG) activities has increased significantly (Miras et al., 2018). As per the NASDAQ report, "ESG is a hot topic. That is not surprising, given the sums of money flowing into ESG strategies. Investments in ESG strategies grew by 42% from 2018 to 2020. Today, one of every three dollars of assets under management is invested in ESG strategies. ESG funds are also on track for a record year of inflows in 2021, raking in more than $21 billion in the first quarter alone" (NASDAQ, 2021).

There is an opportunity for organizations to gather comprehensive ESG data that can help transform how they do business - building accountability across the organization, achieving global sustainability goals, and ultimately creating more excellent business value. ESG is a common and more familiar topic nowadays. It is a key measure of sustainability, and it leads to finding how sustainability impacts the investors of the insurance industry by considering share price volatility. Integrating ESG factors is essential for insurance, banking and finance companies to demonstrate their commitment to sustainability and attract socially responsible investors (PRI, 2020). The authorities are introducing new regulations to promote ESG practices, and stakeholders demand more accountable behaviour (Su et al., 2020).

Research Problem

Previous research in the field of sustainable investment profoundly weighted toward exploring relationships between Corporate Social Responsibility performance and Corporate Financial Performance, such as studies by (Rodriguez-Fernandez, 2016; Filbeck et al. 2009; and Wang et al., 2017) etc. The European Commission highlights that CSR should be company-led. Measures that companies can take include "following the law, integrating social, environmental, ethical, consumer, and human rights concerns into their business strategy and operations" (European

According to the research area, the main focus is to find the impact of ESG factors on share price volatility of Sri Lankan financial services, and the literature on the impact of ESG factors on stock prices is still relatively limited (Colquitt et al., 2006; Thistlethwaite & Wood, 2018; Stechemesser et al., 2015).

Wang and Kutan (2013) and Ferreira et al. (2015) focus on the insurance industry because this sector plays a key role in the transition to a low-carbon economy, and the physical risks related to global warming can have a direct impact on the insurance industry due to their unique activity.

Problem Statement

Companies worldwide are focusing more on sustainability initiatives due to rising environmental and social issues and regulatory pressures. Comprehending the significance of ESG ratings on companies in the insurance, finance, and banking industries is essential for risk management and encouraging sustainable investment strategies. These valuable insights help evaluate the impact of ESG factors on companies, their customers, and society while identifying effective strategies for managing ESG risks and opportunities. It also assists in creating new instruments for assessing and documenting the performance of Environmental, Social and Governance (DiTommasoetal, 2023).

This study examines the dynamic interplay between sustainability initiatives, investor sentiment, and stock market performance in the financial services sector, focusing on the Colombo Stock Exchange. By investigating these interconnections, the research seeks to contribute to the growing body of literature on sustainable finance while offering evidence-based insights for policymakers and industry stakeholders aiming to foster resilience and long-term value creation in emerging financial markets.

Research Questions

- How do sustainability practices, including environmental, social, and governance (ESG) practices, impact the share price volatility of Sri Lankan financial services?
- What are the key sustainability indicators (Environmental, Social, Governance) have the most considerable influence on share price volatility within Sri Lankan financial services?

Research Objectives

- To find the Impact of ESG practices on share price volatility in Listed Sri Lankan Life Insurance Companies.
- To find the Impact of ESG practices on share price volatility in Listed Sri Lankan Banking Companies.
- To find the Impact of ESG practices on share price volatility in Listed Sri Lankan Finance Companies.

Review of literature

The interplay between sustainability initiatives and stakeholders' behavior is important in the contemporary business landscape. This chapter delves into existing literature regarding the sustainability initiative's impact on the share price of listed companies. Most of the research articles are written to understand sustainability practices within the financial sector, which provides a foundational framework for analyzing their impact on investor perception and share prices. It can also help identify best practices for managing ESG risks and opportunities and develop new tools for measuring and reporting ESG performance. (Di Tommaso & Mazzuca, 2023). The study investigates the effect of environmental, social, and governance (ESG) ratings on the stock price of European insurance companies using the event study methodology (Di Tommaso & Mazzuca, 2023). Researchers focused on the insurance industry for two main reasons.

- The insurance sector plays a key role in the transition to a low-carbon economy, and transition risks could create financial risks for lenders and investors. Insurance companies are relevant in achieving sustainability goals because this sector allocates many economic resources.

- Second, the physical risks related to global warming can have a direct impact on the insurance industry due to their unique activity (Wang and Kutan, 2013; Ferreira and Karali, 2015). Exposure to physical climate change risks is more relevant for non-life companies and derives from extreme weather events and gradual global warming (EIOPA, 2022).

While the relationship between the insurance industry and environmental risks is clear and relevant, there appears to be more work to manage these risks. Researchers apply an event study methodology to measure the stock market's reaction to the upgrade or downgrade announcements (MacKinlay, 1997). Researchers define the announcement of the ESG rating upgrade or downgrade as the "event" and estimate the market model based on daily stock returns in several event windows.Most of the previous studies in the field of ESG have been heavily weighted on investigating the effect of CSR on firm profitability, such as in Filbeck et al. (2009), Brammer et.al. (2006), Guenster et al. (2011). The result of this study will lead to the authors being able to make recommendations to individual investors concerning how ESG performance affects total risk and how this can be used in portfolio formation with certain assumptions Mishra & Modi, (2013), Humphre (2012) Suto & Takehara, (2017); Cajias et al. (2014). As Jian Fu (2024), the research employs the composite ESG score and the separate E, S, and G scores to evaluate the ESG performance of corporations and employs regression models to examine the association between ESG score, individual score, and stock returns. Additionally, the study examines how the volatility of the stocks is related to the ESG score and individual score. This article adds to the existing literature on ESG and the Chinese stock market by examining Chinese firms' ESG performance and asset pricing. According to La Torre et al. (2023), the article uses a two-step approach to examine how ESG score affects the return and volatility of stocks for European Stoxx50 index companies from 2010-2018. The study's findings suggest a greater excess return and less volatility in companies with a more excellent ESG score. Based on Limkriangkrai et al., this study has explored the return on stocks of European firms regarding ESG ratings during the coronavirus pandemic.

The literature underscores the importance of ESG integration in investment decisions and the need for policymakers, rating agencies, and investors to consider ESG metrics. It also identifies gaps in existing research, including the need to explore the individual impacts of E, S, and G factors on share price volatility within the Sri Lankan finance industry. Overall, this review sets the stage for further empirical analysis to deepen understanding of sustainability's impact on financial performance, particularly in emerging markets like Sri Lanka.

Methodology

The section elucidates the methods employed in this study, particularly the examination of how sustainability factors influence the fluctuations of the share price of the firms in the listed insurance, banking and finance companies in Sri Lanka. This study includes a discussion on research methods, concept, theory, population and sample, methods for data gathering, approaches to data analysis, ethical issues, and hypothesis formulation. The justification for each technique used in each section alongside the merits and demerits of the methods and their connection to the study aims. The selected type of research philosophy is the positivist research philosophy, and the research conducted in this paper uses the deductive approach because it believes that the reality of the world is measurable and can be expressed with certainty (Saunders & Thornhil, 2015).

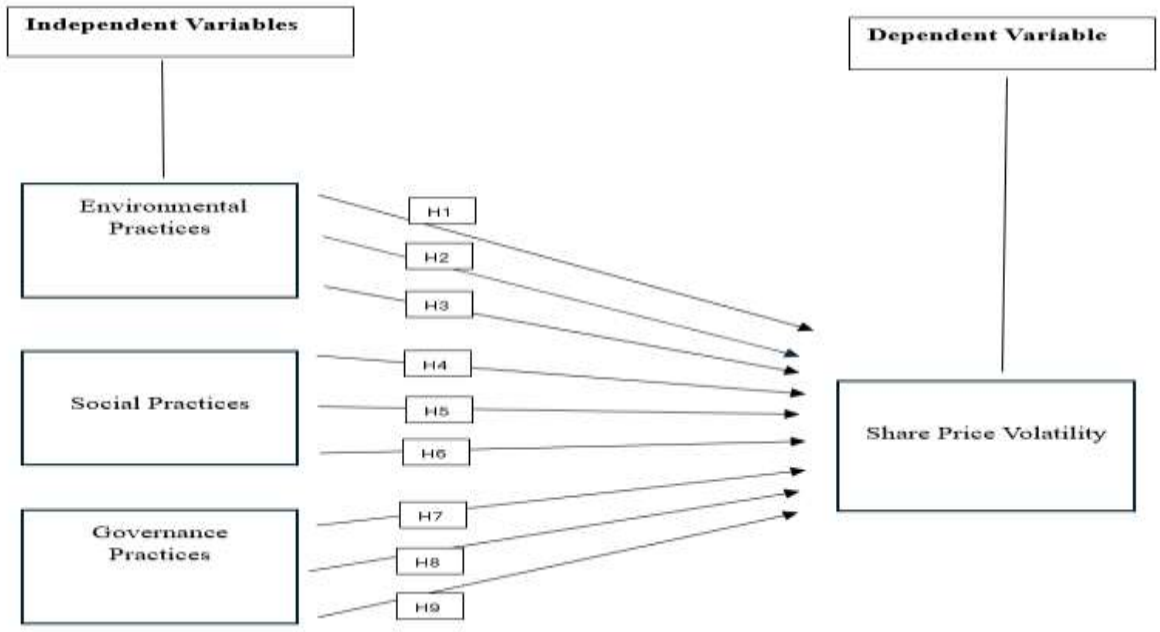

Figure 01:Conceptual Framework and Operationalization

The conceptual framework of the study is given in Figure 01. Complementarily, for each ESG factor, sub-factors can also be distinguished as suggested by, for instance, the Thompson Routers ESG Score Overview.

Table 01: Operationalization

Variable	Dimension	Indicator	Measurement	Citation
Environmental Practices	Carbon Emissions	Carbon footprint	Total CO2 emissions in metric tons	(Tasnia et al., 2020)
	Energy Efficiency	Energy consumption	Total energy used in MWh	(Galindo et al., 2021)
Social Practices	Labor Practices	Employee turnover rate	Percentage of employees leaving the company annually	(Fu, 2024)
	Diversity and Inclusion	Gender diversity in the workforce	Percentage of women in total workforce	(Fu, 2024)
Governance Practices	Board Composition	Independent directors on the board	Percentage of independent directors	(Miralles et al., 2021)
	Shareholder Rights	Voting rights	Number of voting rights per share	(Sherif et al., 2024)
Share Price Volatility		Yearly stock return volatility	The standard deviation of stock returns (Closing Share Price)	(X. Xu, 2023)

Population

The population finance sector encompasses the insurance industry in Sri Lanka, including twenty-eight (28) listed insurance companies operating in Sri Lanka as of 31st December 2023 and registered with the Sri Lankan Insurance Regulatory Commission.

The banking sector's population encompasses the banking industry in Sri Lanka, including twenty-four (24) listed banks operating in Sri Lanka as of 31st December 2023 and registered with the Central Bank of Sri Lanka.

The populationn of the finance sector encompasses the finance industry in Sri Lanka, including thirty-four (34) listed finance companies operating in Sri Lanka as of 31st December 2023 and registered with the Central Bank of Sri Lanka.

Sample

Consequently, purposive sampling was adopted to capture organizations that have declared their ESG practices because such information is critical to the investigation. The sample size is defined depending on the accessibility of ESG data and the required number of observations for obtaining statistically significant outcomes. The identified sample guarantees coverage of the industry's heterogeneity and encompasses companies of different sizes and market capitalizations.

Therefore, the sample for this study comprises Insurance companies, Banks and Finance companies that traded on the Colombo Stock Exchange.

The researcher selected PLC companies subjected to stratified random sampling as the sample, which are 04 publicly listed life insurance companies, 06 banks, the publicly listed companies from the banking sector, and 11 financial PLC companies based on the highest total available capital (TAC) (Insurance), and highest asset base (Banks & Finance companies) respectively.

When selecting Insurance Companies, there is a lack of companywide categorization. Therefore, researchers used the IRCSL Handbook on Insurance Industry Statistics (2022).. Researcher categorized the companies according to the available TAC values into 03 categories to select a sample and use stratified random sampling. Hence, all categories have different numbers of companies' researchers selected a balanced number of companies (50% from each category)

When selecting Banks, according to the Ranking of Listed Banks in Sri Lanka-3Q 2023/24, 3 Categories can be seen according to the Asset Base capacity of Finance Companies. (KPI Investment Pvt.Ltd.) Therefore, researchers use stratified random sampling to select a sample from these categories. Hence, all categories have different numbers of companies' researchers selected a balanced number of companies (50% from each category)

When selecting finance companies, according to Ranking of Listed Finance Companies in Sri Lanka- 3Q 2023/24, 4 Categories can be seen according to the Asset Base capacity of Finance Companies. (KPI Investment Pvt.Ltd.) Therefore, researchers use stratified random sampling to select a sample from these categories. All categories have different numbers of companies. The researcher selected a balanced number of companies (50% from each category). For this study, the assessment employed is the panel data analysis, which, according to Xu et al. (2007), it is an 'aggregate of cross-sectional data on a set of households, countries, firms, etc. observed at different periods. In this context, these observation units are the firms, more specifically, the listed insurance, banking and finance firms, and the time series is represented by the yearly data attainable from the annual reports.

This method fits this study since it assists in answering the research question about the effects of sustainability initiatives on the fluency of share prices (Hsiao, 2007). Hence, not only is it possible to compare participants at different points in time, but it is also equally possible to compare participants cross-sectionally, leading to the differentiation of results arising from changes within the company due to differences between companies.

Hypotheses Development

Since the impact of each subcategory mentioned in the operationalization table is not considerable when calculating impact separately, the impact of each subcategory is calculated as a whole to find the significant impact categories of the research area based on the previous articles as we used the Environmental, Social and Governance impact on the share price volatility. (Galindo et al., 2021; Fu, 2024; Miralles et al., 2021; Sherif et al., 2024; Siregar & Satria, 2023; Tasnia et al., 2020; Xu, 2023)

Based on the literature review and theoretical framework, the following hypotheses developed:

H1: Environmental practices (Carbon footprint, Energy consumption) rate significantly impacts the share price volatility of listed Life insurance companies.

H2: Social practices (Employee turnover rate, Gender diversity in the workforce) significantly impact the share price volatility of listed Life Insurance companies.

H3: Governance practices (Independent directors on the board, voting rights) significantly impact the share price volatility of listed life insurance companies.

H4: Environmental practices (Carbon footprint, Energy consumption) significantly impact the share price volatility of listed Finance companies.

H5: Social practices (Employee turnover rate, Gender diversity in the workforce) significantly impact the share price volatility of Listed Finance companies.

H6: Governance practices (Independent directors on the board, voting rights) significantly impact the share price volatility of listed finance companies.

H7: Environmental practices (Carbon footprint, Energy consumption) significantly impact the share price volatility of listed Banking companies.
H8: Social practices(Employee turnover rate, Gender diversity in the workforce) significantly impact the share price volatility of Listed Banking companies.
H9: Governance practices (Independent directors on the board, Voting rights) significantly impact the share price volatility of listed banking companies.

DATA ANALYSIS AND FINDINGS

This study explores the impact of environmental, social, and governance (ESG) factors on share price volatility (SPV) in the life insurance, finance and banking sectors over nine periods. Descriptive statistics show that while variables like energy use and carbon emissions exhibit higher variance, the overall mean SPV indicates moderate fluctuation. The data was generally distributed with minor positive skewness in SPV, labour, and voting rights. Multicollinearity tests confirm no significant issues between variables, and the random effects model is preferred based on the Hausman and LM tests (Refer to Appendixes).

In the life insurance industry, regression analysis reveals a moderate link between SPV and carbon emissions, but ESG factors generally have minimal impact on SPV. In the financial sector, energy use, labour turnover, and diversity significantly positively affect SPV, with diversity being the most important predictor. Conversely, shareholder rights, board composition, and carbon emissions do not substantially impact SPV.

Table 02: Final Results of the Life Insurance Sector

Hypothesis no.	Sustainability Factors	Hypothesis	Accept or Reject Null Hypotheses
01	Environmental	Carbon emission has a significant impact on SPV	Reject
		Energy consumption has a significant impact on SPV	Reject
02	Social	Labor turnover has a significant impact on SPV	Reject
		Gender Diversity has a significant impact on SPV	Reject
03	Governance	Board Composition has a significant impact on SPV	Reject
		Voting Rights has a significant impact on SPV	Reject

The above table verified that all the null hypotheses rejected. Overall, the researcher can identify no significant impact of Environmental, Social and Governance practices on the share price volatility of Life Insurance Companies. (The detailed SPSS outputs given in appendices)

For finance companies, Descriptive statistics show significant variance within companies, particularly for diversity and carbon emissions. Normality and multicollinearity tests confirm that the data is suitable for regression analysis. The Hausman and LM tests suggest that the random effects model is most appropriate, and autocorrelation is not an issue. Regression analysis reveals that energy use, labour turnover, and diversity significantly impact SPV, with diversity being the strongest predictor. However, shareholder rights, board composition, and carbon emissions do not substantially impact SPV. The findings emphasize the importance of labour, energy, and diversity in influencing SPV, offering insights for financial firms seeking to enhance their market value through sustainable practices.

Table 03: Final Results of the Finance Sector

Hypothesis no.	Sustainability Factors	Hypothesis	Accept or reject Null Hypotheses.
H 4	Environmental	Carbon emission has a significant impact on SPV	Reject
		Energy consumption has a significant impact on SPV	Accept
H 5	Social	Labor turnover has a significant impact on SPV	Accept
		Gender Diversity has a significant impact on SPV	Accept
H 6	Governance	Board Composition has a significant impact on SPV	Reject
		Voting Rights has a significant impact on SPV	Reject

The above table verified that hypotheses H2, H3, and H4 are accepted, and the others (H1, H5, and H6) are rejected. Additionally, it demonstrates that Energy, Labor and Diversity positively impact SPV, whereas Carbon Emission, Board Composition and Voting rights have an insignificant impact on SPV. Based on facts can identify that Social and Governance practices have an impact on the SPV. (The most significant impact is from social practices.

For the banking industry, descriptive statistics show more variation within companies than across companies in key indicators like energy consumption and gender diversity. Regression results indicate that only diversity has a statistically significant association with SPV, suggesting that higher diversity can improve stock stability. The findings underline the importance of labour, energy, and diversity in influencing SPV and stress the need for further research on other potential drivers.

Table 04: Final Results of the Banking Sector

Hypothesis no.	Sustainability Factor	Hypothesis	Accept or reject Null Hypotheses
H 7	Environmental	Carbon emission has a significant impact on SPV	Reject
		Energy consumption has a significant impact on SPV	Reject
	Social	Labor turnover has a significant impact on SPV	Reject

		Gender Diversity has a significant impact SPV	Accept
	Governance	Board Composition has a significant impact on SPV	Reject
		Voting Rights has a significant impact on SPV	Reject

Source: Author compiled (2024)

The above table verified that all the hypotheses are rejected except Gender diversity. When considering the overall impact, social factors have the most impact on the SPV of banks. The following table shows the summary of the data analysis of the research.

Table 05: Final Results of the Banking Sector

Financial Service Sector	Variables Impact for the dependent variable	Sustainability Factor affected by the result
Life Insurance Sector	No Impact of the independent variable	Nil
Financial Companies	Energy consumption Labor turnover Gender Diversity	Environmental Factors Social Factors
Banking Sector	Gender Diversity	Social Factors

Source: Author compiled (2024)

CONCLUSION

By examining environmental, social, and governance (ESG) factors, including carbon emissions, energy use, labour turnover, gender diversity, board composition, and shareholder rights, this study aimed to show connections between these factors and SPV.

The analysis revealed that the independent variables of life insurance companies have no impact on share price volatility. The second analysis shows that environmental factors (Energy consumption) and social factors (Labor turnover and Gender Diversity) impact the SPV. As the last analysis of the banking sector results, only social factors (Gender diversity) impact the SPV. Gender diversity, labour turnover, and energy consumption are linked to variations in SPV, suggesting that these internal practices play a role in market stability and investor confidence. However, environmental factors such as carbon emissions did not show significant influence, indicating that they may lack substantial investor relevance or awareness within the insurance sector. In summary, the findings reveal the importance of environmental, social and governance initiatives in achieving financial stability, suggesting these factors are vital for the resilience of listed financial service providers in Sri Lankan firms.

Implications

The study's outcomes have practical implications for insurance sector policymakers, financial sector investors and banks' stakeholders. As sustainability standards evolve globally, the findings emphasize areas within ESG that most impact share price stability.

For Industry Practitioners: The results indicate that prioritizing social and governance practices, especially in workforce diversity, labour stability, and board composition, can enhance financial resilience by bolstering investor trust and market stability. A notable positive correlation between diversity and SPV suggests that firms with inclusive, diverse workforces are perceived as more resilient and socially responsible, which may increase investor attraction. Additionally, better labour management, as indicated by lower turnover rates, is associated with more stable SPV, highlighting the value of strong employee retention and engagement practices.

For Policymakers: Policymakers can foster environments where companies are encouraged to disclose ESG practices more transparently, with a focus on environmental factors. Although environmental aspects did not significantly influence SPV in this study, emphasizing sustainable practices and educating investors on their

importance could shift market behaviour over time. Creating policies that encourage improved reporting and investor education on sustainability could enhance the perceived value of these practices in the insurance sector.

Recommendations

Based on the findings, this study suggests that financial service companies and stakeholders focus on three main areas which are mentioned below.

1. Strengthen ESG Practices: Financial Service companies should invest in sound governance that supports workforce inclusiveness and labour stability. Since labour turnover and diversity are strongly linked to SPV, companies prioritizing employee retention and diversity may see more excellent financial stability. This can be achieved by promoting fair hiring, engagement, and retention strategies, contributing to an adaptable and innovative workplace.

2. Improve Transparency in Environmental Reporting: While environmental factors were not significant in this study, increasing interest in sustainable investing underscores the importance of transparent reporting. Establishing clear and accessible environmental metrics can build trust and awareness, potentially benefiting companies in the long term as investor expectations evolve. Improved reporting may also help companies prepare for potential regulations in Sri Lanka.

3. Enhance Investor Involvement in Sustainability**:** Businesses should rapidly engage investors in their sustainability projects to fully benefit from ESG initiatives. Recognizing the benefits of ESG policies may encourage investors who value social and environmental responsibility to support them. Two approaches to achieve this are aligning business strategies with the UN Sustainable Development Goals (SDGs) and periodically recognizing sustainability accomplishments in reports.

Limitations

While this study offers valuable insights, certain limitations should be considered before interpreting its findings accurately.

Limited Data Period: The analysis covers data from 2015 to 2023, which may not capture sustainability's full, long-term effects on SPV. Certain sustainability efforts, especially those related to environmental initiatives, may need a longer timeframe to show financial impact. Expanding the study period in future research could provide a more comprehensive view of the cumulative effects of sustainability practices on SPV.

Environmental Data Constraints: While environmental practices were found to have minimal impact on SPV, this may be due to limited reporting in the Sri Lankan context. Since sustainability disclosures are relatively new in Sri Lanka, investor awareness of environmental practices may be low, potentially affecting SPV. Future research with more robust environmental data may yield different results.

Suggestions for Future Research

1. Studies that examine different industries or compare regions could reveal whether sustainability impacts SPV differently across sectors. International comparisons could also provide insights into how cultural attitudes and regulations influence the perceived value of ESG practices.
2. Research into investor knowledge and attitudes toward sustainability in Sri Lanka could explain why certain ESG factors influence SPV more than others. Examining how investors understand ESG evolves and impacts market stability would be valuable, especially as ESG standards become more prominent.
3. Future research could incorporate other governance variables not covered in this study, such as executive compensation linked to sustainability or specific shareholder rights. This broader range of governance indicators could reveal additional factors contributing to SPV stability.

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APPENDIXES

Appendix 01: Normality Table of Life Insurance Sector

Variable	Observation	Skewness	Kurtosis
SPV	36	.5149866	2.182202
Carbon	36	.0192277	2.509372
Energy	36	.04507	1.635782
Labor	36	.5383749	2.775489
Diversity	36	-.0281845	2.576969
Board	36	. 0411923	1.8548
Voting Rights	36	.4599845	3.244035

Source: STATA Output (2024)

Appendix 02: Multicollinearity of Life Insurance Sector

Variable	VIF	1/VIF
Carbon	1.46	0.684532
Energy	1.41	0.710852
Labor	1.21	0.827448
Diversity	1.18	0.847482
Board	1.13	0.886087
Voting Rights	1.06	0.947792
Mean VIF	1.24	

Source: STATA Output (2024)

Appendix 03: Hausman Test for Life Insurance

Chi-square test value	0.50
P-value	0.9921

Source: STATA Output (2024)

Appendix 04: Random Effect Model of the Life Insurance Sector

Share Price	Coef.	Std. Err.	z	p>[z]	[95% Conf.	Interval]

Carbon	0.327912	.0182926	1.79	0.073	-.0030617	.0686441
Energy	1.21e-06	2.42e-06	0.50	0.618	- 3.53e-06	5.95e-06
Labour	-12.06888	38.16507	-0.32	0.752	-86.87105	62.73329
Diversity	.0525738	.4116697	0.13	0.898	-.754284	.854317
Board	2.915917	13.11479	0.22	0.824	-22.78859	28.62043
Voting Rights	1.341153	1.932756	0.69	0.488	-2.446978	5.129284
Cons	49.22455	21.56839	2.28	0.022	-6.951283	91.49782

Overall r-squared	0.1305	Number of obs	36
Chi-square	4.35	Prob > chi2	0.6292
R-squared within	0.1290	R-squared between	0.1305

Source: STATA Output (2024)

Appendix 05: Regression Analysis of Life Insurance Sector

Share Price	**Coef.**	**Std. Err.**	**z**	**p>[z]**	**[95% Conf.**	**Interval]**
Carbon	0.327912	.0182926	1.79	0.073	-.0030617	.0686441
Energy	1.21e-06	2.42e-06	0.50	0.618	- 3.53e-06	5.95e-06
Labor	-12.06888	38.16507	-0.32	0.752	-86.87105	62.73329
Diversity	.0525738	.4116697	0.13	0.898	-.754284	.854317
Board	2.915917	13.11479	0.22	0.824	-22.78859	28.62043
Voting Rights	1.341153	1.932756	0.69	0.488	-2.446978	5.129284
Cons	49.22455	21.56839	2.28	0.022	-6.951283	91.49782

Overall r-squared	0.1305	Number of obs	36
Chi-square	4.35	Prob > chi2	0.6292
R-squared within	0.1290	R-squared between	0.1305

Source: STATA Output (2024)

Appendix 06: Normality Table of Finance Sector

Variable	Observation	Skewness	Kurtosis
SPV	99	.4622224	2.283124
Carbon	99	.7255628	3.39499
Energy	99	.3140461	2.934121
Labor	99	.2347037	3.133662
Diversity	99	-.1525611	2.44515
Board	99	.3315919	3.3987
Voting Rights	99	.3426265	3.142252

Source: STATA Output (2024)

Appendix 07: Multicollinearity Test of Finance Companies

Variable	VIF	1/VIF
Carbon	1.10	0.912960
Energy	1.12	0.894168
Labor	1.02	0.977948
Diversity	1.06	0.942563
Board	1.02	0.981001
Voting Rights	1.01	0.986585
Mean VIF	1.06	

Source: STATA Output (2024)

Appendix 08: Hausman Test of Finance Sector

Chi-square test value	0.18
P-value	0.9993

Source: STATA Output (2024)

Appendix 08: Random Effect, Model of Finance Sector

Share Price	**Coef.**	**Std. Err.**	**z**	**p>[z]**	**[95% Conf.**	**Interval]**
Carbon	-0.000956	.0003011	-0.32	0.073	-.0030617	.0686441
Energy	0.2447897	.0647001	3.78	0.618	- 3.53e-06	5.95e-06
Labor	0.2209137	.0473062	4.67	0.752	-86.87105	62.73329
Diversity	.507121	.0387909	13.07	0.898	-.754284	.854317
Board	1.51113	3.244741	0.47	0.824	-22.78859	28.62043
Cons	-3.071925	6.289852	-0.49	0.022	-6.951283	91.49782
Overall r-squared		0.1305		Number of obs		36
Chi-square	4.35			Prob > chi2		0.6292
R-squared within		0.1290		R-squared between		0.1305

Source: STATA Output (2024)

Appendix 09: Regression Analysis of the Finance Sector

Share Price	**Coef.**	**Std. Err.**	**z**	**p>[t]**	**[95% Conf.**	**Interval]**
Carbon	-.0000767	.0002996	-0.26	0.799	-.0006717	.0005183
Energy	.2354237	.0646237	3.64	0.000	.1070755	.3637719
Labor	.2216836	.0470211	4.71	0.000	.1282957	.3150716
Diversity	.5081469	.0385611	13.18	0.000	.4315613	.5847326
Board	1.720886	3.228169	0.53	0.595	-4.690537	8.132309
Voting Rights	-.4120009	0.724087	-1.46	0.147	-.2498035	.0378166

Cons	49.22455	21.56839	0.06	0.951	-12.87349	13.69749
R-squired	0.7085		Number of obs		99	
F- Test	37.27		Prob > F		0.0000	

Source: STATA Output (2024)

Appendix 10: Normality Test of Banks

Variable	Observation	Skewness	Kurtosis
SPV	54	1.087428	3.958394
Carbon	54	-.6937939	2.462853
Energy	54	.1924371	3.621086
Labor	54	.0651298	2.362967
Diversity	54	-.1195431	3.987937
Board	54	.836108	4.506614
Voting Rights	54	-.0009892	2.817958

Source: STATA Output (2024)

Appendix 11: Multicollinearity Test of Banks

Variable	VIF	1/VIF
Carbon	1.31	0.762116
Energy	1.15	0.869500
Labor	1.09	0.916582
Diversity	1.09	0.918420
Board	1.07	0.934283
Voting Rights	1.06	0.942059
Mean VIF	1.13	

Source: STATA Output (2024)

Appendix 12: Hausman Test of the Banking Sector

Chi-square test value	2.40
P-value	0.8795

Source: STATA Output (2024)

Appendix 13:Random Effect Model of Banks

Share Price	**Coef.**	**Std. Err.**	**z**	**p>[z]**	**[95% Conf.**	**Interval]**
Carbon	.0000544	.0002431	0.22	0.823	-.0004221	.0005309
Energy	.0002424	.0001342	1.81	0.071	-.0000205	.0005054
Labor	-.0018556	.0023282	-0.80	0.425	-.0064188	.0027076
Diversity	.0066939	.0032852	2.04	0.042	.0002549	.0131329
Board	-.0012038	.0013773	-0.87	0.382	-.0039032	.0029448
Sharehol	-.0002022	.0016056	-0.13	0.900	-.0033491	

der						
Cons	-0.436427	.1428986	-0.31	0.760	-.3237187	.2364333
Overall r-squared	0.1236			Number of obs	54	
Chi-square	4.35			Prob > chi2	0.3563	
R-squared within	0.1186			R-squared between	0.2354	

Source: STATA Output (2024)

Appendix 14:Linear Regression Analysis of Banking Sector

Share Price	**Coef.**	**Std. Err.**	**t**	**p>[t]**	**[95% Conf.**	**Interval]**
Carbon	.0000544	.0002431	0.22	0.824	-.0004346	.0005435
Energy	.0002424	.0001342	1.81	0.077	-.0000275	.0005123
Labor	-.0018556	.0023282	-0.80	0.429	-.0065393	.0028281
Diversity	.0066939	.0032852	2.04	0.047	.0000848	.013303
Board	-.0012038	.0013773	-.087	0.387	-.0039745	.0015668
Voting Rights	-.0002022	.0016056	-0.13	0.900	-.0034322	.0030279
Cons	-0.436427	.1428986	-0.31	0.761	-.3311175	.2438321

R-squired	0.1236	Number of obs	54
F- Test	1.11	Prob > F	0.3736

Source: STATA Output (2024)