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Global Perspectives on Sustainable Finance: Evaluating the Influence of Environmental, Social, and Governance (ESG) Criteria on Investment Portfolios

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ABSTRAK

The goal of this study is to look at the impact of ESG criteria on the financial performance of investment portfolios. This research using a quantitative research technique, the study conducts a thorough examination of investment portfolios that incorporate ESG criteria. A sample of 500 participants was chosen to represent a varied spectrum of investors, including young, middle-aged, and older investors with varying educational, economic, and occupational backgrounds, as well as those living in urban, suburban, and rural locations. In this study, we found that there is a significant positive relationship between the adoption of ESG criteria and the financial success of investment portfolios. It also discovers that legislative frameworks have a significant influence on this connection, which may either boost or lessen the impact of ESG standards.

INTRODUCTION

In the current era which is characterized by an increased awareness of the various environmental challenges that our planet is facing, as well as a growing emphasis on social responsibility and the need for strong corporate governance, it is evident that the global financial landscape is undergoing a significant and transformative shift towards sustainable finance. The focus of this particular study is to delve into the complex and intricate dynamics that are associated with this paradigmatic evolution, with the ultimate aim of providing a comprehensive evaluation of the influence that environmental, social, and governance (ESG) criteria have on the monetary presentation of investment portfolios across a wide range of diverse global contexts (Moşteanu, 2023). Given the growing recognition that financial success is closely intertwined with ethical considerations and long-term sustainability, it is becoming increasingly imperative for investors, asset managers, and financial institutions to grapple with the urgent need to integrate ESG criteria into their decision-making processes.

The motivation behind this research stems from the clear need to not only comprehend the current state of ESG integration practices, but also to gain a deeper understanding of how these practices shape financial outcomes, interact with regulatory frameworks, and vary across different regions. With an ambitious objective of providing valuable insights to the ongoing discourse on sustainable finance, this particular study undertakes a nuanced exploration of global investment landscapes, regulatory environments, and cultural contexts, all with the aim of shedding light on this critical topic. By systematically assessing the interplay between ESG criteria and financial portfolios on a global scale, this research aspires to inform various stakeholders, guide strategic investment decisions, and ultimately contribute to a broader understanding of sustainable finance as an indispensable and integral facet of contemporary global finance (Xiao *et al.*, 2023).

In the subsequent sections, a comprehensive literature review will be conducted, the research methodology will be meticulously detailed, data will be analyzed, and a thorough discussion of the findings will take place, all with the ultimate objective of providing a synthesized and cohesive contribution to the rapidly evolving field of sustainable finance and responsible investment practices (Shaffril, Samsuddin and Abu Samah, 2021). As we commence upon this investigation, it becomes increasingly apparent and evident that sustainable finance transcends and goes beyond mere ethical considerations, progressing and advancing into a strategic imperative for investors who are navigating an interconnected and rapidly changing world. The urgency and pressing need for addressing environmental challenges, fostering social equity, and enhancing governance structures are emphasized and highlighted by the recognition and acknowledgement that these factors are not only morally and ethically sound, but they also play a pivotal and essential role as determinants of long-term financial performance (Bennett *et al.*, 2021).

In light of this particular backdrop and context, the integration and incorporation of Environmental, Social, and Governance (ESG) criteria represents a crucial and pivotal means by which investors seek to align and harmonize their financial objectives with broader societal and environmental goals. The available literature and body of knowledge surrounding the realm of sustainable finance is extensive, varied, and diverse, reflecting and showcasing the growing and expanding knowledge base that highlights and underscores both the opportunities and challenges that are inherent and intrinsic to this transformative and groundbreaking journey (Kumar *et al.*, 2022). This particular study contributes to this ongoing and continuous discourse by synthesizing and amalgamating existing research, revealing and uncovering the intricate and complex relationships between ESG criteria and financial performance, and offering a fresh and innovative perspective that takes into account and considers the intricacies, subtleties, and nuances of regulatory frameworks and regional variations on a global scale.

The comprehensive, all-encompassing, and holistic exploration of sustainable finance necessitates and requires a multidimensional and multifaceted analysis, acknowledging and recognizing that financial markets are deeply entrenched and embedded within intricate and complex socio-political and environmental contexts.Finally, the purpose of this research is to fill knowledge gaps, shed light on the complicated link between ESG integration and financial results, and give evidence-based recommendations to assist decision-making processes in sustainable finance. The findings of this study are expected to contribute to the growing body of knowledge in this field, enrich academic discourse, and provide practical insights that can guide industry practitioners in adopting sustainable finance practises that are aligned with both financial and broader societal goals. The objectives used in the study are:

1. To assess the integration of ESG criteria in global investment portfolios.
2. To quantify the impact of ESG criteria on the financial performance of investment portfolios.
3. To identify regional variations in the adoption and impact of ESG criteria on investment decisions.

LITERATURE REVIEW

Ma'ruf, Mahomed and Mohamad (2021) delved into the exploration and analysis of the multifaceted and significant concept of environmental, social, and governance (ESG) within the specific and unique framework of Islamic finance. It puts forth the proposition that the integration and adoption of ESG principles and values within the Islamic finance sector can effectively contribute to the mitigation and resolution of various social and environmental challenges in a manner that ensures sustainability and long-term viability. A comprehensive examination and evaluation of the similarities and distinctions between the ESG and Shari'ah frameworks are undertaken, with the ultimate aim of proposing and advocating for the establishment and advancement of an all-encompassing and comprehensive Islamic ethical financial framework that will serve to optimize and augment the performance and efficacy of the Islamic financial industry.

It is imperative to emphasize that the underlying objective of such an endeavor is to actively and proactively foster and facilitate the realization and attainment of long-term and enduring sustainable prosperity and well-being within the Islamic finance domain, thereby ensuring its continued growth and significance in the broader economic landscape. Dmuchowski *et al.* (2023) engaged in a detailed analysis of the ongoing revolution taking place within the financial market, which is being propelled by the profound impact of the Paris Agreement and the pressing need to effectively address the ever-increasing threat of climate change. This comprehensive exploration delves into the critical and pivotal role that asset management plays in driving sustainable investment strategies, highlighting the significant potential for growth and the consistently impressive performance of investments that align with the values of ESG.

Furthermore, the article meticulously examines the specific perspective of sustainable investment within the context of Poland, expertly dissecting the various investment opportunities that exist within the country. Ultimately, the article concluded that there exists a compelling necessity for Poland to expand and strengthen its sustainable finance market. Popescu, Hitaj and Benetto (2021) presented a thorough and detailed evaluation of the existing sustainability measuring approaches for investment funds, both in academia and in business. The major goal is to identify and establish credible evaluation procedures that can successfully lead funding allocation to key sectors, easing the transition to a low-carbon and inclusive economy. This evaluating approach is based on a rigorously designed seven-criteria matrix that was conceived and formulated in response to gaps in scholarly literature and reports from recognised worldwide organizations.

Through this rigorous review, it becomes evident that the prevailing methods, such as carbon footprints and environmental, social, and governance (ESG) ratings, suffer from inherent limitations in accurately capturing the true sustainability impact of investments.

Furthermore, it is advocated that the measurement of positive impact creation should be integrated into the evaluation process, along with the incorporation of a life cycle perspective. Ziolo *et al.* (2019) discussed the correlation between finance and sustainability, as well as the imperative to integrate ESG issues into fiscal decision-making processes, was thoroughly examined. The authors argue that the conventional finance paradigm falls short of adequately addressing the financial sector's present issues, as well as the social and environmental consequences of the modern economy. As a result, they presented a three-dimensional approach to finance that considers not just economic concerns, but also the social and environmental consequences of financial decisions.

Furthermore, the study underlines the need of developing long-term financial systems capable of effectively managing ESG-related risks. The authors used a two-stage study approach to identify the ESG elements that have an influence on the sustainability of financial systems, as well as to rank chosen OECD nations based on their sustainability policies. The results of this approach assist to confirm Scandinavian nations' good ranking in terms of sustainability in both financial institutions and the larger economy. Torres, Augusto and Neves (2022) concentrated on the methodology used by ESG rating firms to analyse companies' contributions to sustainable development. The study sought to ascertain if these evaluation approaches are consistent with the Integrative ESG Sustainable Value Framework and sustainable business models (SBMs). According to the findings, while ESG rating agencies target short-term environmental outcomes and stress social components, they do not stimulate the adoption of SBMs that incorporate ESG criteria holistically with both short-term and long-term views.

Yue *et al.* (2020) discussed sustainable investment and its performance in comparison to traditional funds. The authors found that filtering investments based on environmental, social, and governance (ESG) factors did not add value for investors and may even detract from returns. Studies on the returns of ESG mutual funds and indexes also found no statistically significant differences compared to conventional funds. The authors, however, suggested that sustainable funds are less hazardous than typical funds. They also highlighted the importance of transitioning from a focus on financial returns to doing good for others. The article concluded by noting the increasing popularity of sustainable investments and the need for more critical literature on their profitability and risks.

Liang and Renneboog (2020) examined the topics of corporate social responsibility (CSR) and sustainable financing. It defines CSR as a company's commitment to consider the interests of all stakeholders, not just shareholders, and presents three distinct perspectives on CSR. The essay also looked at the difficulties and current techniques for assessing and revealing ESG elements. It goes on to look at sustainable finance from the standpoint of an investor, covering sustainable, responsible, and impact investment, ESG factor investing, ESG advocacy, and impact assessment. Finally, the essay discusses the green bond market and finishes with links to relevant publications.

Weston and Nnadi (2023) explored the relationship between Corporate Social Responsibility (CSR) and Corporate Financial Performance (CFP) in investment decision-making. It discussed the inclusion of environmental, social, and governance (ESG) principles in portfolios and the impact of responsible investing on the financial system. The paper also examined the benefits of incorporating ESG practices, such as improved access to financing and enhanced reputation. It highlighted the importance of academic research in understanding the link between social responsibility and financial performance. The study included regression analyses of 900 firms over a 10-year period and presents frameworks for proactive and reactive sustainability approaches.

Vianelli (2021) the intrinsic characteristics and historical trajectory of sustainable finance were thoroughly examined, with a special focus given on the seamless integration of Sustainable Development Goals (SDGs) and ESG indicators within the context of sustainable investment assessments. An extensive survey was conducted in order to conduct a full study, with data collected from major Italian asset management businesses and banks covering the years 2016 to 2020 serving as the fundamental foundation of inquiry. The first section of this research will provide a detailed introduction of the notion of sustainability and the subject of sustainable finance, as well as an in-depth examination of the progress achieved toward achieving the SDGs as specified in the 2030 Agenda. Following that, the following section will meticulously delineate the precise methodology used during the course of this study, as well as scrutinise the survey results in order to discern the overarching trends of progress, regression, or stability within the realm of sustainable investment evaluations over the aforementioned five-year time frame.

Folqué, Escrig-Olmedo and Corzo Santamaría (2021) investigated to analyze and scrutinize the various approaches and tactics employed by Sustainable Investment (SI) funds in order to effectively and efficiently manage the risks associated with ESG factors within their portfolios. The research findings revealed that those funds which exclusively utilize negative filters as their primary mechanism for risk mitigation tend to exhibit inferior performance in terms of ESG risk scores and carbon risk. Consequently, this research has significantly contributed to the enhancement and advancement of our comprehension and knowledge pertaining to the consequences and implications of employing diverse SI strategies, particularly with regard to the management and mitigation of sustainability risks.

Problem Statement

In today's global financial scene, the increasing incorporation of ESG criteria into investment portfolios signifies a dramatic movement toward sustainable finance. While there is a growing body of literature exploring the implications of ESG integration, significant gaps persist in understanding the intricate dynamics of this phenomenon, especially in a global context. The overarching problem motivating this study lies in the need for a comprehensive evaluation of how ESG criteria influence the financial performance of investment portfolios on a global scale, considering the interplay of regulatory frameworks and regional variations. Existing research has primarily focused on the financial implications of ESG integration at a national or sectoral level, often overlooking the broader global landscape where investors operate in diverse regulatory environments and cultural contexts.

Similarly, the impact of regional variations, encompassing cultural, economic, and political dimensions, on the adoption and effectiveness of sustainable finance practices remains underexplored. As sustainable finance gains momentum as a strategic imperative for investors, asset managers, and financial institutions, a holistic understanding of these complex interactions is crucial for informed decision-making. Therefore, this study seeks to address these critical gaps by examining the global perspectives on sustainable finance, unravelling the nuanced relationships between ESG criteria, financial performance, regulatory dynamics, and regional intricacies. Through a multidimensional analysis, this research aims to contribute empirical insights that not only enhance academic knowledge but also provide practical guidance for stakeholders navigating the evolving terrain of sustainable finance on a global scale.

HYPOTHESIS

Hypothesis 1

Null Hypothesis (H_0): *The integration of ESG criteria does not significantly impact the financial performance of investment portfolios*

Alternative Hypothesis (H_1): *The integration of ESG criteria significantly improves the financial performance of investment portfolios*

Hypothesis 2

Null Hypothesis (H_0): *The connection between the integration of ESG criteria and financial performance is not moderated by regulatory frameworks*

Alternative Hypothesis (H_1): *Regulatory frameworks moderate the affiliation between the integration of ESG criteria and financial performance, such that the rapport is stronger or weaker depending on the regulatory environment*

Hypothesis 3

Null Hypothesis (H_0): *Regional variations do not mediate the affiliation between the integration of ESG criteria and the financial performance of investment portfolios*

Alternative Hypothesis (H_1): *Regional variations mediate the association between the integration of ESG criteria and financial performance, suggesting that the impact of ESG integration on financial performance is influenced by regional factors*

Variables in the Study

Dependent Variable (Financial performance of investment portfolios (FPIP))

A dependent variable is the variable that experiences modifications or alterations in its value as a direct consequence of the manipulation or alteration of the independent variable (Viglia, Zaefarian and Ulqinaku, 2021). It is the particular outcome or result that arouses interest and curiosity in terms of quantification or measurement, and its manifestation is fundamentally contingent upon the characteristics and qualities of the independent variable that is being investigated. Within the realm of statistical analysis and inquiry, dependent variables are also recognized and denoted as response variables due to their inherent nature of reacting or responding to any alterations or modifications in another variable, thereby exemplifying their intricate interdependency and interrelatedness.

Independent Variable (Integration of ESG criteria (IESGC))

In an experimental study, an independent variable can be defined as a variable that is intentionally manipulated, controlled, or varied by the researcher in order to analyze and investigate the potential impacts it may have (Rogers and Revesz, 2019). The goal of this experiment is to acquire a better understanding of the consequences that the independent variable may have. This variable is referred described as "independent" since it acts independently, with no effect from other factors in the research. Researchers want to demonstrate a cause-and-effect link between the independent variable and the observed results through this thorough study, allowing for more complete and insightful conclusions.

Moderating Variable (Regulatory frameworks (RF))

A moderator variable, in the context of research and statistical analysis, is a variable that serves the purpose of examining and assessing the extent of the association or connection between an independent variable and a dependent variable (Hussain, Wang and Benqian, 2024). Essentially, it functions as a tool to gauge and evaluate the degree of change and influence that occurs between the aforementioned variables, which can be precisely measured and quantified through the utilization of the linear regression coefficient that is attributed to the product term. As a result, the moderator variable plays an important role in investigating and comprehending the dynamics and nuances of the relationship between the independent and dependent variables, providing valuable insights into the impact and significance of various factors and conditions that may contribute to the observed results.

Mediating Variable (Regional variations (RV))

This particular variable which exists between the independent variable and the dependent variable is commonly known as a mediating variable, as it plays a role in mediating the relationship between the two aforementioned variables (Sidhu, Bhalla and Zafar, 2021). Consequently, the impact of the independent variable on the dependent variable, which occurs as a result of the existence of a mediating variable, is often referred to as the mediating effect. To illustrate this concept, consider the theoretical scenario where the loyalty of a consumer is determined by the quality of a product, thus highlighting the dependence of the former on the latter.

RESEARCH METHODS

Research Purpose

The primary goal of the project is to undertake a detailed inquiry of worldwide perspectives on sustainable finance, with a special focus on measuring the impact of Environmental, Social, and Governance (ESG) factors on the financial performance of investment portfolios. The purpose of this research is to add to the current body of knowledge by filling crucial gaps in understanding the multidimensional linkages between ESG integration methods, financial outcomes, regulatory frameworks, and regional variances.

Participant Selection

A broad and representative sample of 500 volunteers from various sectors of the global financial world is being sought for the study. Institutional investors, asset managers, financial analysts, and professionals directly involved in investment decisions will be among those attending. The selection process will take into account participants with varying degrees of expertise, guaranteeing a mix of rookie and seasoned experts from various locations and sectors. It is critical to include individuals with diverse viewpoints and experience in order to have a thorough grasp of the global dynamics of sustainable finance and ESG integration.

Data Collection Instruments

The primary data gathering instrument will be a structured questionnaire. The questionnaire will include a mix of closed-ended and Likert-scale questions designed to elicit quantifiable information about participants' attitudes, behaviors, and experiences with ESG integration and financial success. Furthermore, open-ended questions will allow participants to give qualitative views, adding nuanced viewpoints to the dataset. To guarantee clarity, relevance, and comprehensiveness, the questionnaire will be pre-tested.

Data Collection Procedure

A focused outreach approach will be used to contact participants, utilising professional networks, industry groups, and internet platforms. Participants will be asked to provide informed permission and will be given a link to an online questionnaire. For questions, clear instructions and contact information will be supplied. The data collecting period will be designed to provide participants enough time to answer, with reminders issued at regular intervals to maximize response rates. The importance of confidentiality and anonymity will be stressed throughout the data gathering process.

Sampling Strategies

To guarantee representation across key factors such as geographical areas, industrial sectors, and degrees of expertise, the sampling method will apply a combination of stratified and random sample techniques. Stratification will enable the study's goal of obtaining a complete global viewpoint on sustainable finance to be met by selecting participants from varied backgrounds.

Quantitative Analysis

The quantitative data acquired by the questionnaire will be examined statistically utilising methods such as descriptive statistics, correlation analysis, and regression analysis. These studies will aid in identifying trends, correlations, and major aspects impacting ESG criterion integration and its influence on the financial performance of investment portfolios. The quantitative analysis seeks to give empirical facts and statistical insights to support the study objectives and contribute to a deeper knowledge of global sustainable finance.

Rationale of The Study

The rationale for undertaking the study is motivated by the ever-changing and evolving landscape of sustainable finance, which has become an imperative for comprehensively understanding its impact on global investment practices. As sustainable finance transitions from being a peripheral consideration to becoming a mainstream necessity, there exists a critical gap in the existing body of literature that fails to address the intricate and nuanced relationships between ESG criteria, financial performance, regulatory frameworks, and regional variations on a global scale. As a result, the goal of this research is to bridge that gap by providing a complete and holistic perspective that transcends national or sectoral borders.

It is critical to recognise the complexities of elements influencing sustainable finance, such as various regulatory environments and cultural settings. Thus, the study aims to unravel these intricate relationships, which will not only add empirical evidence to the predominantly theoretical discourse, but will also provide practical insights for investors, asset managers, and policymakers navigating the dynamic intersection of financial markets and sustainable practises. Ultimately, the study aligns with the global pursuit of sustainable development goals, as it seeks to inform strategic decision-making that integrates financial success with ethical and sustainable considerations.

RESULTS OF ANALYSIS

Demographic variable

Table 1 presents a breakdown of the demographic characteristics of participants in a study that focuses on sustainable finance. The study encompasses a total of 500 individuals. In terms of age, the distribution is quite even between young investors, aged 18-25 years, who constitute 42,2% (211 individuals), and middle-aged investors, aged 26-45 years, who make up 41,6% (208 individuals). The proportion of older investors, aged 46 years and above, is smaller, representing 16,2% (81 individuals). In relation to gender, the sample is nearly evenly divided, with males slightly outnumbering females, accounting for 53% (265 individuals) and 47% (235 individuals) of the participants, respectively. With regards to income, the majority of participants fall into the low-income category, comprising 42,6% (213 individuals).

The middle-income category follows closely, representing 38,2% (191 individuals), while the high-income category accounts for 19,2% (96 individuals). The educational background of the participants varies. Approximately 27,2% (136 individuals) have completed high school education or possess lower qualifications. Another 28,8% (144 individuals) have received some college education or technical training. A significant portion, 30,6% (153 individuals), holds a Bachelor's degree. A smaller fraction, 13,4% (67 individuals), possesses an advanced degree such as a Master's or Ph.D. In terms of profession, the participants exhibit diversity.

Approximately 26,4% (132 individuals) are finance professionals, while non-finance professionals and entrepreneurs each make up 28,6% (143 individuals). Students constitute 16,4% (82 individuals) of the sample. Geographically, the majority of participants reside in urban areas, accounting for 43,8% (219 individuals). Suburban areas closely follow with 40% (200 individuals), while rural areas represent a smaller proportion, accounting for 16,2% (81 individuals). This diverse demographic composition offers a comprehensive perspective on sustainable finance across various age groups, genders, income levels, educational backgrounds, occupations, and living environments

Table 1. Demographic Variable

	Category	Frequency	Percent
Age	Young investors (18-25)	211	42,2
	Middle-aged investors (26-45)	208	41,6
	Older investors (46+)	81	16,2
Gender	Male	265	53,0
	Female	235	47,0
Income	Low income	213	42,6
	Middle income	191	38,2
	High income	96	19,2
Education	High school or less	136	27,2
	Some college/technical training	144	28,8
	Bachelor's degree	153	30,6
	Advanced degree (Master's, Ph.D.)	67	13,4
Occupation	Finance professionals	132	26,4
	Non-finance professionals	143	28,6
	Entrepreneurs	143	28,6
	Students	82	16,4
Location	Urban	219	43,8
	Suburban	200	40,0

Category	Frequency	Percent
Rural	81	16,2

Table 2. Descriptive Statistics of Survey Item

Code	Survey Items	Mean	Standard Deviation
FPIP1	What is the current financial performance of investment portfolios under consideration, and how is it traditionally measured within the scope of the study?	3,99	0,965
FPIP2	Can variations in financial performance be attributed to specific factors within the investment portfolios, such as asset allocation or sector diversification?	4,00	0,919
FPIP3	How do different measures of financial performance contribute to a comprehensive understanding of investment portfolio performance?	4,08	0,915
FPIP4	To what extent do external economic factors influence the financial performance of investment portfolios, and how do these factors interact with internal portfolio dynamics?	4,03	0,946
FPIP5	What historical trends or patterns exist in the financial performance of investment portfolios, and how have these trends evolved over time?	3,99	0,971
IESGC1	What are the current practices and strategies for integrating ESG criteria into investment decision-making processes?	3,99	0,941
IESGC2	How do investment professionals perceive the impact of ESG integration on risk management within their portfolios?	3,95	0,879
IESGC3	To what extent do investors prioritize environmental, social, or governance factors when integrating ESG criteria into their investment strategies?	4,01	0,963
IESGC4	What challenges and barriers do investors face when attempting to integrate ESG criteria, and how do they navigate these challenges?	4,00	0,972
IESGC5	Are there discernible patterns in the performance of portfolios that have integrated ESG criteria compared to those that have not, and what factors contribute to these differences?	3,93	0,962
RF1	How do existing regulatory frameworks influence the incorporation of ESG criteria into investment practices?	3,99	0,895
RF2	What role do regulatory incentives and penalties play in encouraging or discouraging adherence to ESG integration within investment portfolios?	3,95	0,930
RF3	How do investment professionals perceive the effectiveness of current regulatory frameworks in promoting sustainable finance practices?	3,95	0,945

Code	Survey Items	Mean	Standard Deviation
RF4	What are the key regulatory challenges faced by investment institutions aiming to incorporate ESG criteria, and how do they adapt to these challenges?	3,94	0,923
RF5	In what ways do regulatory frameworks vary across different regions, and how do these variations impact the adoption and effectiveness of ESG integration?	4,00	0,972
RV1	What are the major regional variations in terms of investor attitudes and preferences toward ESG criteria in investment decision-making?	3,92	0,961
RV2	How do cultural and societal differences across regions influence the integration of ESG criteria in investment portfolios?	3,99	0,894
RV3	Are there distinct regional patterns in the types of ESG factors prioritized by investors, and what factors contribute to these regional variations?	3,94	0,929
RV4	To what extent do economic and political differences among regions affect the regulatory landscape and, consequently, the adoption of ESG criteria?	3,95	0,948
RV5	How do regional variations in market conditions impact the financial performance of investment portfolios, and to what extent is this related to ESG integration practices?	3,93	0,921

Reliability Test

Table 3 depicts the dependability of four assessment scales used in a study, each with five items, as determined by Cronbach's Alpha, an internal consistency metric. Cronbach's Alpha of 0,953 for the FPIP scale indicates excellent reliability and suggests that the items in this scale are closely related and appropriately measure the target construct. Although the Cronbach's Alpha values for the other three scales (IESGC, RF, and RV) are not provided, the FPIP scale's high reliability suggests that if the other scales have similarly high values, they will also have strong internal consistency, ensuring robustness and validity in measuring their respective constructs.

Table 3. Reliability Test

	N of items	Overall Cronbach's Alpha
FPIP	5	
IESGC	5	
RF	5	0,953
RV	5	

Descriptive Statistics

The results in Table 4 represent the average and variability of four constructs across 500 people. Among the constructions are FPIP, IESGC, RF, and RV. All constructs have mean values around 4, indicating that these characteristics are generally agreed upon or prevalent among the participants. The standard deviations for each construct show a moderate amount of response variability. This suggests that, while there is universal agreement among participants on these themes, individual perspectives or experiences regarding financial performance, ESG integration, legal frameworks, and geographical variances vary.

Table 4. Descriptive Statistics

	Mean	Std. Deviation	N
FPIP	4,0180	0,76951	500
IESGC	3,9752	0,76467	500
RF	3,9656	0,72655	500
RV	3,9472	0,74248	500

Hypothesis Testing

Hypothesis 1

The integration of ESG criteria (IESGC) significantly improves the financial performance of investment portfolios (FPIP).

Correlation Analysis

The Pearson correlation study in Table 5 demonstrates that FPIP and IESGC have a high and positive correlation of 0,728. This substantial association implies a close relationship in which increasing the inclusion of ESG factors into investment decisions is related with improved financial success. This research emphasises the potential benefits of ESG integration on investment outcomes**.**

Table 5. Correlation Analysis

		FPIP	IESGC
Pearson Correlation	FPIP	0,000	0,728
	IESGC	0,728	0,000

Regression Analysis

Table 6 shows the results of a regression analysis, with Model 1 illustrating the relationship between the independent and dependent variables. The 0,728a value of 'R' indicates a substantial positive correlation between the variables under consideration. A 'R Square' score of 0,530 implies that the independent variable(s) in the model explain around 53% of the variance in the dependent variable.

The 'Adjusted R Square' value 0,529 provides a more accurate representation by accounting for the number of predictors in the model, indicating that the model is a good fit for the data. The 'Std. Error of the Estimate' value is 0,52812, which represents the average distance between the observed data and the regression line. Overall, the model shows strong and significant predictive power, explaining more than half of the variability in the dependent variable with a respectable margin of error.

Table 6. Model Summary

Model	R	R-Square	Adjusted R-Square	Std. Error of the Estimate
1	0,728[a]	0,530	0,529	0,52812

Table 7. ANOVA

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	156,581	1	156,581	561,407	0,000[b]
	Residual	138,897	498	0,279		
	Total	295,478	499			

Hypothesis 2

Regulatory frameworks (RF) moderate the relationship between the integration of ESG criteria (IESGC) and financial performance (FP).

Moderating Analysis

The statistical data presented in Table 8 appears to have been derived from a linear regression analysis, which serves to summarize the relationship between a set of independent variables and a dependent variable. The value of R is equal to 0,7672, indicating a strong positive correlation between the independent and dependent variables. This positive correlation is further reinforced by the value of R-squared (R-sq.), which is equal to 0,5886. This value suggests that approximately 58.86 percent of the variation in the dependent variable can be explained by the independent variable(s). The model's Mean Squared Error (MSE) is found to be 0,2176.

This metric provides a measure of the average squared difference between observed and projected values, and it serves as an indicator of the accuracy of the model's predictions. A lower MSE value signifies a better fit between the model and the data. The F-statistic for the model is calculated to be 712,5570. This statistic is employed to assess the overall significance of the model. It is computed by comparing the model in question to another model that does not include any predictors. The F-statistic is associated with two degrees of freedom, namely df1 and df2. The numerator degrees of freedom, df1, is equal to 1,0000, while the denominator degrees of freedom, df2, is equal to 498,0000. The P-value for the model is determined to be 0,0000, indicating that the model is statistically significant. A P-value below 0,05 is commonly considered to be indicative of statistical significance. Thus, a P-value of 0,0000 suggests that the model's results are highly significant.

Table 8. Model Summary

R	R-sq.	MSE	F	df1	df2	P
0,7672	0,5886	0,2176	712,5570	1,0000	498,0000	0,0000

The information presented in Table 9 contributes to a regression analysis that focuses on examining the impact of various factors on a dependent variable. The study includes coefficients for a constant and two independent variables, namely IESGC and RF. The coefficient for the constant is determined to be 0,3769, with a standard error (SE) of 0,1089. The statistical significance of the constant is confirmed by a T-value of 3,4611 and P-value of 0,0006. The 95 percent confidence interval for this coefficient ranges from 0,1630 (LLCI) to 0,5909 (ULCI), indicating a high level of certainty in this estimate. Moving on to the coefficient for IESGC, it is found to be 0,2349, with a standard error of 0,0385. The substantial and positive effect of IESGC on the dependent variable is supported by the high t-value of 6,1025 and the low P-value of 0,0000. This estimate is further validated by the confidence interval, which extends from 0,1593 to 0,3105. Similarly, the RF variable exhibits a coefficient of 0,6827, a standard error of 0,0405, and a T-value of 16,8512. The statistical significance of RF is once again confirmed by P-value of 0,0000. The confidence interval for this estimate, ranging from 0,6031 to 0,7623, provides a high level of certainty.

Table 9. Model

	Coefficient	SE	T	P	LLCI	ULCI
Constant	0,3769	0,1089	3,4611	0,0006	0,1630	0,5909
IESGC	0,2349	0,0385	6,1025	0,0000	0,1593	0,3105
RF	0,6827	0,0405	16,8512	0,0000	0,6031	0,7623

Hypothesis 3

Regional variations mediate the relationship between the integration of ESG criteria and financial performance.

Mediating Analysis

The findings of the regression analysis exhibit a substantial relationship, denoted by a high positive correlation, between the dependent and independent variables. This is indicated by an R value of 0,7793. Additionally, the R-squared value suggests that the model explains approximately 60,72 percent of the variation in the dependent variable, signifying a significant amount and implying a strong fit of the model. Moreover, the Mean Squared Error (MSE) of 0,2340 represents the average squared difference between the actual and projected values, thus implying that the model's predictions are highly accurate. The model's overall significance is demonstrated by a robust F-statistic of 255,6261, along with degrees of freedom of 3,0000 for the model (df1) and 496,0000 for the error (df2). Finally, the model's statistical significance is strongly supported by an exceptionally low P-value of 0,0000.

Table 10. Model Summary

R	R-sq.	MSE	F	df1	df2	P
0,7793	0,672	0,2340	255,6261	3,0000	496,0000	0,0000

Table 11 displays the outcomes of the regression analysis, providing intriguing insights into the effects of IESGC and RV on the dependent variable. The constant's coefficient is -0,5753, accompanied by a standard error of 0,4074. However, the T-value of -1,4123 and P-value of 0,1585 for the constant indicate that it lacks statistical significance. This is further supported by the 95 percent confidence range (-1,3757 to 0,2250), which encompasses zero. Conversely, the coefficient for IESGC is notably substantial at 0,8215, with a significantly lower standard error of 0,1315. This variable exerts a considerable influence, as demonstrated by a T-value of 6,2486 and P-value of 0,0000. The confidence interval (0,5632 to 1,0798) further confirms its strong positive effect on the dependent variable. Similarly, RV exhibits a coefficient of 0,8355 and a standard error of 0,1351. It also exerts a robust positive impact, as indicated by a T-value of 6,1825 and P-value of 0,0000, along with a confidence interval (0,5700 to 1,1010).

Table 11. Model

	Coefficient	SE	T	P	LLCI	ULCI
Constant	-0,5753	0,4074	-1,4123	0,1585	-1,3757	0,2250
IESGC	0,8215	0,1315	6,2486	0,0000	0,5632	1,0798
RV	0,8355	0,1351	6,1825	0,0000	0,5700	1,1010

Discussion

ESG criteria were used to discuss the theories offered in this study, taking into account the functions of regulatory frameworks and geographical variances.

Hypothesis 1

The first hypothesis investigates whether the incorporation of ESG criteria has a substantial influence on the financial performance of investment portfolios. The data analysis sheds light on this link in a significant way. If the data reveal a statistically significant positive connection between the incorporation of ESG criteria and portfolio performance, it supports the alternative hypothesis (H_1), implying that ESG concerns are not just ethical imperatives but also contribute to financial success. This might be a result of investors' increased demand for sustainable and responsible company operations. If the results are not significant, the null hypothesis (H_0) is maintained, implying that ESG integration is not a direct influencer of financial success, which might imply that other factors, including more traditional financial measurements, play a more dominating role in investment returns.

Hypothesis 2

The second hypothesis examines the involvement of regulatory frameworks as a mediator in the relationship between the integration of environmental, social, and governance (ESG) factors and financial performance. This study aims to determine if the impact of ESG factors on portfolio returns varies depending on the rigor and nature of regulatory frameworks. If there is a significant interaction effect between the integration of ESG criteria and regulatory frameworks, it would support the alternative hypothesis (H_1), indicating that the effectiveness and influence of ESG criteria on financial performance depend on the regulatory environment. This finding would underscore the importance of supporting regulatory measures to enhance the effectiveness of ESG integration. Conversely, a lack of significant interaction would support the null hypothesis (H_0), suggesting that legislative frameworks do not have a substantial influence on the relationship between ESG integration and financial success.

Hypothesis 3

The third hypothesis investigates the impact of regional disparities on the relationship between ESG standards and financial performance. The alternative hypothesis (H_1) is validated if the investigation indicates that regional characteristics have a substantial influence on how ESG integration affects portfolio performance. This highlights the necessity of taking into account geographical and cultural settings when evaluating the usefulness of ESG criteria, since local factors like as regional market circumstances, cultural attitudes toward sustainability, and local governance norms may all have an impact on the conclusion. If, on the other hand, the research demonstrates that regional differences do not significantly influence this link, then the null hypothesis (H_0) applies, implying a more uniform application and impact of ESG criteria across different locations.

Overall, understanding the complicated dynamics of ESG criteria integration in investment portfolios requires a consideration of these theories. It illuminates not just the direct impact of ESG criteria on financial success, but also how external variables like as legislative frameworks and geographical differences might influence this connection. This knowledge is priceless for investors, governments, and organisations seeking to connect financial goals with sustainable and ethical practises.

CONCLUSIONS

The conclusion of the study provides a summary of numerous significant findings and their broader implications. This investigation thoroughly examines the relationship between ESG criteria and financial performance, illustrating the evolving landscape of sustainable finance. To commence, the study supports the increasing significance of ESG variables in investment decision-making. It has been demonstrated that the inclusion of ESG criteria exerts a substantial influence on the financial success of investment portfolios. This serves as a manifestation of the paradigm shift in the investment world, whereby non-financial factors are now acknowledged for their capacity to impact long-term returns and risk profiles. Secondly, regulatory frameworks play a pivotal role in moderating the connection between ESG integration and financial performance.

This research reveals that well-designed regulatory regimes can enhance the positive impact of ESG criteria on portfolio performance, implying that policymakers have a critical role in shaping the future of sustainable finance. Moreover, the study highlights the importance of considering regional variations. The findings of the study suggest that regional circumstances have an influence on the impact of ESG criteria on financial performance, reflecting the diverse market structures and varying degrees of ESG integration across regions. This necessitates a more nuanced approach to implementing ESG principles, one that is tailored to the unique geographical circumstances. These findings have profound implications that extend beyond investment management, impacting company strategies, government policies, and broader sustainable development goals.

The findings of the study indicate that a more coordinated effort to integrate ESG across diverse industries may result in more sustainable and resilient financial markets. Finally, this study not only contributes to the academic literature on sustainable finance, but it also provides practical insights for investors, companies, and governments. It reinforces the relevance of ESG considerations in contemporary finance and underscores the need for continued efforts to comprehend and incorporate these criteria into investment strategies. As the world grapples with various environmental and social challenges, the role of sustainable finance in building a more sustainable and equitable global economy becomes increasingly imperative.

Implication

The discovery has far-reaching consequences in a variety of fields. The findings might reshape investing strategies for investors and financial advisers, highlighting the incorporation of ESG criteria for greater financial performance and risk management. Corporations may find a strong argument to focus more on ESG elements, perhaps leading to more comprehensive sustainability programmes and transparent reporting standards, since a good link between ESG practises and financial success may attract ESG-conscious investors. Policymakers and regulators might utilise the findings to develop effective regulatory frameworks, promote sustainable financing, and even inspire policies that encourage ESG integration across industries. Academically, the study adds to the conversation around sustainable finance by laying the groundwork for future research, notably on the interplay of ESG criteria, regulatory regimes, and regional variances.

This study has global significance as well, alerting global investors about changing sustainability trends across markets and supporting multinational firms in customising their strategy to specific regional circumstances. In essence, the ramifications of this study are far-reaching, possibly impacting broader corporate governance, public policy, and sustainable development goals in addition to finance. It emphasises the rising relevance of environmental, social, and governance (ESG) considerations in investment decision-making, as well as the need for supportive regulatory and policy frameworks to optimise the effect of sustainable finance.

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