Environmental, Social, and Governance (ESG) Factors and Their Impact on Investment Decisions in the Pakistan Stock Market

Syed Iqbal Hussain Naqvi
Assistant professor, Department of commerce, Federal Urdu university
syediqbalnaqvi79@gmail.com

Dr. Syed Shahid Zaheer Zaidi
Assistant professor, Department of public administration, University of Karachi

Abstract

This study examines the influence of Environmental, Social, and Governance (ESG) factors on the investment decisions of stock market investors in Pakistan. It explores how ESG considerations, alongside the purpose of investment, shape the decision-making process in a market characterized by underdeveloped ESG reporting practices. A quantitative approach was employed, utilizing a structured questionnaire analyzed through Structural Equation Modeling (SEM) using SmartPLS. The results reveal significant positive relationships between ESG factors and investment decisions, highlighting the growing relevance of environmental responsibility, social considerations, and governance quality in attracting investors.

The study also underscores the role of investment purpose, with capital preservation and sustainable growth emerging as key motivators. Despite global advancements in ESG integration, the findings indicate that legislative gaps and inconsistent practices in Pakistan hinder the alignment of investment strategies with global sustainability standards. This research contributes to the literature by addressing the contextual challenges of ESG adoption in emerging markets and providing empirical evidence for the interplay between ESG factors and investment behavior. The study concludes with recommendations for enhancing ESG reporting and aligning corporate strategies with sustainable investment goals.

Keywords: *ESG Factors, Investment Decisions, Pakistan Stock Market, Sustainable Investment, Corporate Governance*

Introduction

Background

The factors of ESG have captured the limelight worldwide when making financial decisions, as it has a positive and constructive impact on societal welfare and corporate sustainability (Farias, Farias, Krysa & Harmon, 2020). The dynamics of financial markets in Pakistan have unusual characteristics of socio-economic several hurdles in a way to the adoption of ESG principles. This ever-changing environment of the Pakistani financial market creates problems in matching the steps with the international rules and regulations, which Leda to a serious situation and causes an inability to play its part in the revolutionary development.

Contradictory to those markets with mature ESG reporting practices, most of the firms in Pakistan either do not follow regular and consistent methods of ESG or they do not have ESG at all, which as a result creates problems for the investors to make appropriate decisions based on ESG dynamic (Tahir et al., 2020). This unsettled reporting system of ESG creates a challenge for the investors to analyze and judge the ESG performance of the potential investment firm. As a result, the investment decision doesn't link with ESG global standards, because the investors do not have complete and correct information about ESG likewise, if the Pakistani industries pay attention to having reliable and sustainable ESG practices it will motivate investors to make appropriate decisions focusing on ESG.

There are numerous reasons for lagging international investment, but the most highlighted issue is Pakistan's legislative structure (Rizwan, 2020). As the law of Pakistan doesn't consist of firm law for mandatory ESG practices, most of the firms in Pakistan let go of the ESG fundamentals in their business operations (Sarfraz et al., 2019). Thus, the low or unavailability of ESG practices in the financial markets is considered a barrier (Arif et al., 2020). On the other hand, the global market is fully nourished with ESG practices, index mutual funds, and other financial products, and the unavailability of such an environment in Pakistan demotivates investors. Here the question becomes apparent how Pakistan can accommodate ESG parties by offering diverse financial products, proposing to investors with huge variety of products to invest and maintaining sustainability and ethical values.

The regulatory landscape for ESG integration in Pakistan remains underdeveloped compared to global standards. The Securities and Exchange Commission of Pakistan (SECP) has taken initiatives to promote ESG reporting, such as issuing Sustainability Disclosure Guidelines (2022) and requiring listed companies to disclose their ESG practices voluntarily (SECP, 2022). However, the adoption rate remains low, with only a few firms aligning their disclosures with global sustainability frameworks. According to the Pakistan Stock Exchange (PSX) 2023 Annual Report, ESG-based investments account for less than 5% of total market capitalization, reflecting limited investor engagement in sustainable finance (PSX, 2023). Furthermore, State Bank of Pakistan (SBP) guidelines on Green Banking (2021) encourage financial institutions to integrate ESG risks into credit evaluations, yet enforcement mechanisms remain weak (SBP, 2021).

Previously, the investors mainly focused on financial records like balance sheets, cash flow statements, income statements, and statements of shareholders' equity while making investment decisions. These reports are analyzed and proposed by brokers and analysts. However, the recent shift in business activities strictly focuses on ESG practices while making investment decisions. This fastest shift also considered as rapid reorientation and restructuring (Sciarelli, Cosimato, Landi & Iandolo, 2021), guides to maintaining a robust financial framework and considers extra financial matters when making decisions. The data of ESG is usually considered as non-financial data, collected from different outlets such as reports of CSR or third-party independent organizations like MSCI and Sustainalytics. Some researchers call ESG practices innovative data (In, Lee & Eccles, 2023). With importance, there are many challenges of ESG like transparency, accessibility, rationality, time constraints, comprehensiveness, and scarcity. Dealing with disparate disciplines increases the complexity of layers.

Over the past decade, ESG has gained high attention around research. Some research mainly focused on ESG optimization and risk management when making investment decisions (Young-Ferris & Roberts, 2021). However, the financial results of a company following ESG remained in the limelight, whereas the ESG impact on firm structures has been ignored by researchers (Sciarelli, Cosemato & Landi, 2020). On the other hand, researchers also pay attention to ESG integration barriers and challenges that are mainly related to cost (Khanchel & Lassoued, 2022). We can conclude that there is a clear gap in the literature that discusses ESG data on firm structures and their implementation. Sciaraelli, Cosemato, and Landi (2020) show how the firm can benefit from ESG by restructuring their company. This restructuring phase is necessary for maximum integration into SRI (socially responsible investment). Based on the above-mentioned arguments discussed in the problem statement we can say that the current study has the objective to analyze the relationship between investment decisions and

ESG factors and how the purpose of investment has affected the decision of investment of individuals.

Literature Review

The term ESG stands for Environmental, social, and Governance, it provides a bunch of criteria based on which the performance of the firm is calculated or analyzed. It also focuses on the societal impact of the firm (Clément, Robinot & Trespeuch, 2023). These three factors act as a backbone to figure out the firm's sustainability and ethical behavior. In the field of business and more particularly investment, ESG has a dominant role when investors look for long-term investment and evaluate performance and risk (Băndoi et al., 2021). It has now become a trend to focus on ESG to have a sustainable return on investment. It has been observed that firms with strong ESG practices are more likely to be responsible, resilient, and deal with challenges in the long term. With time and awareness of social and environmental effects increasing, ESG practices have now become integral to sustainable and ethical investment. Globally ESG has become so prominent in the stock market.

Unlike developed markets where ESG factors are integral to investment decision-making, Pakistan’s financial sector faces structural barriers to widespread ESG adoption. The low awareness among retail investors and the absence of standardized ESG reporting practices create uncertainty regarding sustainability-linked financial performance (Tahir et al., 2022). Research conducted by Arif et al. (2023) highlights that over 70% of Pakistani investors rely solely on financial metrics like earnings per share (EPS) and return on equity (ROE), with limited consideration of ESG factors. Moreover, corporate governance enforcement in Pakistan remains inconsistent, as identified in a KPMG (2022) study, which found that only 30% of listed firms comply with SECP’s voluntary ESG guidelines. These localized challenges illustrate the gap between regulatory policies and market adoption.

Environment

In the acronym ESG, E' stands for environmental considerations. This factor represents the ultimate impact on climate caused by firms due to greenhouse gas emissions, energy efficiency, and waste management (Le Ravalec, Rambaud & Blum, 2022). Numerous factors fall under the umbrella of environmental consideration like Energy Efficiency as in the modern era firms are judged on the ground of using energy efficiently and trying to minimize its consumption (Senadheera et al., 2021). This drift allows the firm to become more efficient while using energy and minimizing the dependence on non-renewable resources. Likewise, it is also important for the firm to manage the emission of greenhouse gases. Firms are liable to fulfill their commitment to mitigate carbon emissions, minimize climatic charges, and become a part of carbon offset programs (Trouwloon, Streck, Chagas, & Martinus, 2023). The other category is the disposal of waste properly. As stated by researchers' sustainability in waste disposal are co wider common (Quintana-García, Marchante-Lara & Benavides-Chicón, 2022).

Moreover, sustainable practices are crucial such as obedience to conservation principles, sustainable sourcing, and maximum effort to safeguard biodiversity. Lastly, adopting renewable adoption is the last important aspect of this variable. Recently firms that use updated renewable energy for their operations such as wind power (Zeng, Tanveer, Fu, Gu, & Irfan, 202). This shows the commitment to minimize the use of fossil fuels and try to avoid non-renewable energy.

Social

The second alphabet is S which stands for social consideration. It is a wider term as it showcases the firm overall impact on society and how it treats the stakeholders. On the other way we can say that it is a phenomenon of human capital management and its integration with society, we sometimes also referred this as a social license to operate in the community (Boiral, Heras-Saizarbitoria & Brotherton, 2023). Both social and environmental factors have specific opportunities and exposure in an industry (Senadheera et al., 2021). In this regard, researchers claim that the relationships between two variables are indirect but significant (Clément, Robinot & Trespeuch, 2023).

In the context of ESG, social considerations have wider aspects that focus on social justice, human capital, and the engagement of the community (Perazzoli, Joshi, Ajayan & de Santana Neto, 2022). The highlighted factor is human rights and labor practice because a firm is analyzed on the basic's treatment with their employees, who will they follow human rights and labor laws. This practice involves fair wages, workplace safety, and no discrimination. Inclusion and diversity are also the main components of society. Diversity and inclusion are also main variables of social dimensions because firms evaluate their efforts to create a healthy workplace environment by considering ethnicity, gender, and demographics (Samašonok, Kamienas, Gegužienė, Valentukevičiūtė, & Šimkienė, 2023). At the same time, it is also mandatory in social considerations to ensure consumer's well-being and safety. Firms assess their commitment to providing safe products to the customer and provide complete information regarding product usage and safety (Balaskas, Panagiotarou & Rigou, 2023).

Governance

Finally, 'G' stands for Governance considerations. An organization is run by a code of conduct, governance provides the guidelines and rules by which an organization is controlled, directed, and accountable. It encompasses the structure and functioning of the board of directors, management, and internal controls, aiming to ensure that the organization operates in an ethical, transparent, and responsible manner (Ismail, Kathim & Al-Kanani, 2023). This variable provides investors with an evaluation of the corporation's governance quality, measuring management effectiveness and the importance placed on protecting shareholders' interests. Studies indicate a direct link between Governance metrics and financial performance (Clément, Robinot & Trespeuch, 2023; Senadheera et al., 2021).

As the world is growing faster, the awareness of ESG factors is also evolving and shows remarkable movement in strategic finance toward sustainability and business functions (Raghunandan & Rajgopal, 2022). The integration is not considered a trend rather it is a strategic move to know the tendency of the interplay between good governance, social responsibility, and environmental rights to compute the success in the long run and resilience of businesses in the contemporary global landscape.

Table 1
Examples of ESG factors; Source (UNPRI 2023)

Environmental	**Social**	**Governance**
- Climate	- Human Rights	- Bribery and Corruption
- Resource depletion change	- Modern Slavery	- Executive pay
- Waste	- Child labourer	- Board diversity and structure
- Pollution	- Working conditions	- Political lobbying and donation
-Deforestation	- Employee Relation	- Tax Strategy

Environmental, Social, and Governance (ESG) Factors in Investment Decision Making

It became a little popular opinion that financial markets and investment decisions don't provide a clear reflection of organizational success factors. The problem arises because of the dependence on incomplete financial information, ignoring intangible factors like risk and brand equity. The authority for ESG integration comes up due to opportunities and sustainable risk involved (Tang, 2023). When a firm is about to make decisions, corporate governance is one of the main issues to be considered due to inadequate management systems and controls (Rimin, Bujang, Wong Su Chu & Said, 2021)

The concept of corporate governance is promoted by the failure of good governance in high-profile firms, somehow it helps you explore the potential feelings of corporate governance. Likewise, the literature also provides evidence for the importance of social and environmental factors (Morelli, M. (2023). ESG considerations are becoming more famous in the business world as their impact capture in the environment, investment, company activities, and stakeholders such as sustainable funds and shareholders (Raghunandan & Rajgopal, 2022).

Not every single investor requires ESG implementation, there are always different attitudes and acceptance levels while making decisions. Maybe some investors consider the ESG aspect way too serious and focus on every detail whereas, some investors don't bother at all (Raghunandan & Rajgopal, 2022). ESG is now considered as a main aspect to consider while investing, it is also known as a basic tool for successful investment. ESG provides long-term returns in business activities.

Purpose of investment

The theory of investment purpose is compound, it is a process of allocation of financial resources to achieve desirable returns (Shaik, Kethan, Jaggaiah & Khizerulla, 2022). The phenomenon is to put money into any project, asset, or any other financial instrument so that investors can enjoy higher returns later. The core is to analyze the potential profitability or capital appreciation. The goal is to maximize wealth and increase the financials of the firm. (Tiwari, 2023).

The main objective of investment is to preserve capital. Investors usually wish to preserve and maximize their wealth, for this purpose, they allocate their financial resources to profitable assets or projects (Barman, Pervin & Roy, 2022). Capital preservation is highly important for risk-averse investors because they preserve their financials in the long run (Ludwig, 2023). In most cases, investors choose low-risk profile tools for their capital preservation such as government bonds, defensive stock, and fixed-income instruments (Golub, 2023). The secondary objective of investment is to enhance capital. Investors who follow a growth-oriented pattern are the ones who keenly search for value and gain experience in their investment (Moon, 2022). This type of investment is directly connected to a higher level of risk because it has high volatility. Real estate, equities, and other investment decisions like purchasing vehicles are some common examples. The rule of thumb is to use the power of market appreciation and compounding to boost investment in the long run (Jiang, 2022).

Investment helps to attain the main goal i.e. to generate revenue. Most of the time investors prefer to depend on regular income sources such as the amount of retirement that helps them fulfill their living expenses (Odhiambo, 2023). An investment that offers steady cash flow generates income like real estate, bonds, and dividend-paying stock. This aspect of investment ensures that investors can earn on a Continuous basis and can fulfill their financial responsibilities, it also lines up with the concept of financial sustainability (Moloi, Akinsomi & Wong, 2023).

In conclusion, we can say that investment is all about creating an equilibrium between preservation, capital appreciation, and income depending on investors' time and money and ability to bear the risk of loss. Investors create their strategies as per their goal to gain profit from financial markets and build their wealth.

Theoretical Underpinning

In regard of ESG and decisions for investment, we analyze the agency theory that emphasizes the relationship between agents(management) and principals (shareholders). The object is to a king the interest of both parties and minimize agency costs. As per ESG theory, the whole mechanism is to align shareholders' and managers interests (Żur, 2022). When managers apply ESG metrics it means they focus on long-term sustainability and reduce agency conflicts. On the other hand, signaling theory is based on how both parties communicate information with each other, especially in information asymmetry situations (Huang, D. Z. X. (2022).

For firms that use signal theory and communicate their intentions to investors the chances of uncertainty are reduced. ESG practice is also used as a signal by investors. When firms follow ESG factors they give signals to have responsible management, and this attracts investors for ethical and sustainable investments.

Legitimacy theory states that an organization must focus on societal values and follow the norms to achieve sustained legitimacy (Chukwuma & Okonkwo, 2023). Those companies that use transparency in their disclosure are socially responsible. ESG is considered crucial to legitimizing firm operations. One way to increase firm's legitimacy is to align its social and environmental issues. Lastly, the stakeholder theory suggests that firms must consider the interests of their stakeholders rather than only paying attention to shareholders. It shows that investment decisions have a large impact on different parties such as the community, employees, and the environment. When the theory of stakeholders aligns with ESG then it represents the concern of many stakeholders. By practicing ESG in business activities and decision-making, firm showcase its well-being commitment to the stakeholders.

Environmental Issues and Investment Decision

Environmental issues considering several factors such as wastage disposal, gas emissions, climate change, and biodiversity, represent the need to have consideration while making decisions globally. Wide research is available to explore the environmental considerations importance in making investment decisions (Akpan & Olanrewaju, 2023). Similarly, Chen and Xie (2022) stated that there is a positive relationship between environmental issues and firm financial performance with strong ESG practices investors again attention and pay high cost of accuracy. (Lee, Raschke, and Krishen, 2023) research the link between rating of agency disagreements and environmental consideration, and the results show positive among the constructs. Another study conducted by Khalid, Razzaq, Ming, and Razi (2022) organization's governance structure in the disclosure of ESG, observing its relationship with current ratio, board size, and low environmental exposure. Van der Beck and Jaunin (2021) explore sustainable funds' impact on individual stocks, showing that sustainable fund investment with an increase in green stock value indicates a reduced cost of capital in green firms.

Hypothesis 1 (H1). Environmental issues have a positive influence on the investment decisions of the stock market investors of Pakistan.

Social Issues and Investment Decision

Alsayegh, Rahman, and Homayoun (2022) discuss the vital role played by EES (Environmental, Economic, and Social) factors to increase shareholders efficiency, value, and sustainable growth. Researchers also claim that factors like societal concern, practices of risk management, and corporate sustainability have a positive impact on firm financial performance. It is observed globally that investment decisions are highly affected by social issues (Young-Ferris & Roberts, 2023). Investors now become more interested in social aspects while making investment decisions which shows a shift toward socially responsible investment (Garg et al., 2022). The understanding that a firm can gain financial goodwill by practicing social norms is gradually changing the investment landscape.

Not only developed countries have the importance for social issues rather developing countries also consider it equally important. Social issues have a little higher value as compared to environmental or governance concerns, which means investors usually prefer socially responsible firms while making investment decisions (Sood et al., 2023). It underlines the global shift to consider social aspects while making investment decisions (Shivji, 2023). It has now become a business norm that if a firm practices ESG it gives a signal of compliance with smooth and sustainable business practices (Chairani & Siregar, 2021). A firm that follows ESG aims to minimize information asymmetry because it gives clear signals this it is more acceptable to stakeholders and the public (Reber et al., 2021).

When we talk about foreign investment, social issues play a vital role. As the ESG trend is growing day by day it attracts investors from diverse countries as they see more opportunities for sustainable investment. Firms with strong social performance not only achieve societal value but also show that the firm has responsible management (Duque-Grisales & Aguilera-Caracuel, 2021). The higher the social score, the higher the value of intangible assets, sustainable business, governance, attracting foreign investors, and fostering internationalization (Liu et al., 2021; Yu & Zheng, 2020). Another study conducted in China to analyze the impact of ESG performance on foreign investment, results show a positive relationship between them (Yu & Zheng, 2020).

Hypothesis 2 (H2). Social issues have a positive influence on the investment decisions of the stock market investors of Pakistan.

Governance Issues and Investment Decision

The literature highlights the predilection of investors to invest in those firms that possess good governance. Nakash and Bouhnik (2023) stated that a firm with weak governance does not attract investors, this opinion is seconded by Adeneye, Kammoun, and Ab Wahab (2023), who ensure that good governance acts as a pillar for investors. Another research claims that robust governance is not only for safeguarding the finances of the firm but rather it is also important to improve environmental and social responsibility (Nafisa et al., 2023).

Governance issues are equally important for both developed and under-developing countries. According to Ferriswara, Sayidah, and Agus Buniarto (2022) the governance aspect is highly considerable by most investors. The firms that follow governance are more likely to have high economic well-being because they protect the stakeholder's rights and help to regulate management (Bouteska & Mili, 2022). Robust governance also acts as a clear signal of an environmentally and socially committed firm for the investors.

Hypothesis 3 (H3). Governance issues have a positive influence on the investment decisions of the stock market investors of Pakistan.

Purpose of Investment and Investment Decision

There is a complex relationship between the decision-making process and the purpose of investment. This has been deeply explored in literature by scholars (Mittal, 2022). The investor's decisions are purely based on what their aim is to achieve from the investment i.e. the desirable financial returns. On the other way round, some investors believe in capital preservation, and they make decisions accordingly (Belaïd et al., 2023). Another view of researchers like Bednarz and Zalnieriute (2023) and Shaik et al. (2022) is that investors must rely on low-risk portfolio instruments to save their real wealth. Government bonds fixed fixed-income securities are a few explame of capital preservation, this category falls under the umbrella of risk averse investors who protect their wealth and financials.

Moreover, Lokanan and Sharma (2022), stated that investors who seek sustainable investment plans must focus on assets with potential returns, often possessing higher volatility. Real estate and equities are the most preferable areas to invest in if investors seeking capital appreciation, it crafts a risk-tolerance decision (Võ, 2023).

Furthermore, the reason to generate income helps to build investment decisions, particularly when investors have a regular source of income. Research conducted by Kindfuller (2023) underlying the instruments that help to generate income like bonds and dividend-paying stocks. This aligns with making strategic decisions to fulfil the purpose of consistent cash flow showing a positive relationship between investment decisions and investment purpose.

Hypothesis 4 (H4). Investment purpose has a positive influence on the investment decisions of the stock market investors of Pakistan.

Research Methodology

The current study uses the quantitative approach to analyze the results. For the data collection, the close-ended questionnaire is used, and the responses are further coded in numeric value so that we can apply tests and statistical tools. The questionnaire undertook measurable variables. Further, there are two main parts of the questionnaire. We use a Point Likert scale i.e. 1-5 (where 1=strongly agree and 5= strongly disagree).

Sample Selection

The study expands the investor sample beyond Pakistan Stock Exchange (PSX) participants by incorporating institutional investors, mutual funds, pension funds, and insurance firms. These entities manage over PKR 2 trillion in assets, playing a pivotal role in shaping ESG investment trends in Pakistan (SBP, 2023). Including diverse investor categories provides a holistic perspective on ESG considerations across the financial ecosystem.

Sample Size Justification

To ensure statistical rigor, the study applies Cohen's power analysis to justify the selected sample size. Using G*Power 3.1 software**,** the required sample size for detecting a moderate effect ($f^2 = 0.15$) with 80% power at a 5% significance level is 150 respondents (Cohen, 1988). Given the study's final sample of 200 investors, the analysis ensures adequate statistical power to detect meaningful relationships between ESG factors and investment decisions.

Data Analysis Technique

Current research uses SEM (Structural Equation Modeling) employed SmartPLS4 to explore the relationship among the constructs. We use SEM because of its capability to handle compound models having various constructs and factors, likewise structural models and measurement of different tests. The study is divided into two broader parts. The first is to measure and evaluate a model for validity and reliability and the second part is to carry a structural model for testing hypothesis.

To analyze the model, we used composite reliability (CR), to ensure internal consistency we used Cronbach's alpha. Whereas convergent validity is ensured by using average variance extracted (AVE). Discriminant validity was checked by applying the Fornell-Larcker criterion and the HTMT (Heterotrait-Monotrait Ratio).

Statistical significance and path coefficient for the structural model is measured by using bootstrapping (5000 resamples). The predictive relevance of the model was computed by coefficient of determination (R^2), Q^2 values, and effect size (f^2). With the help of these tests, we can find the answers to the research questions and have a practical and theoretical understanding of the research problem.

Data Analysis and Results

To assess investor awareness of ESG, a survey-based perception study is integrated into research design. The survey includes questions on ESG knowledge levels measured on a 5-point likert scale, perceived financial benefits of ESG investments, and barriers to ESG adoption such as lack of transparency and regulatory uncertainty. Preliminary results reveal that 62% of retail investors are unaware of ESG investment strategies, while institutional investors demonstrate a higher awareness at 81% (Arif et al., 2023). These insights highlight the need for targeted ESG education initiatives to improve sustainable investment adoption. There are two models of structural equation i.e. Structural model and measurement model. To check the validity and reliability we run a measurement model. When we must analyze the relationship between variables we use structural models. Measurement and structural model are discussed below.

Measurement Model

The model validation is checked by using several tests such as discriminant validity, internal consistency, and convergent validity (Straub et al., 2004). Smart PLS3 is used for the analysis of structural and measurement models (Ringle et al., 2015). The results of validity and reliability are mentioned in the next section.

Convergent Validity

Convergent validity can be measured through AVE (Average variance extracted). According to Urbach and Ahlemann (2010), convergent validity is run on individual items. AVE value gathered from algorithm test run on PLS. If the value is higher than 0.5 then we claim that convergent validity is achieved (Fornell and Larcker, 1981). The table attached below shows convergent values, if the values are less than 0.5 then we consider it inadequate.

Table 2
Average Variance Extracted

	Average Variance Extracted (AVE)
Environmental Issues	0.81
Governance Issues	0.85
Investment Decision	0.85
Investment Purpose	0.88
Social Issues	0.85

As mentioned above, the acceptance value of AVE is higher than 0.5, and the table above shows that all the AVE values are greater than 0.5 thus, all the construct has convergent validity. So, we can claim that the construction of current study is valid.

PLS Initial Model (Measurement Model)

The figure mentioned below shows the initial model measurement. The model considered all the construction with the value of outer load. The table presents outer value and as we disucced the outer value of all the variables are higher than 0.60 (Nunnally, 1967), all the variables are eligible for further testing and no signal variable will be removed from the model.

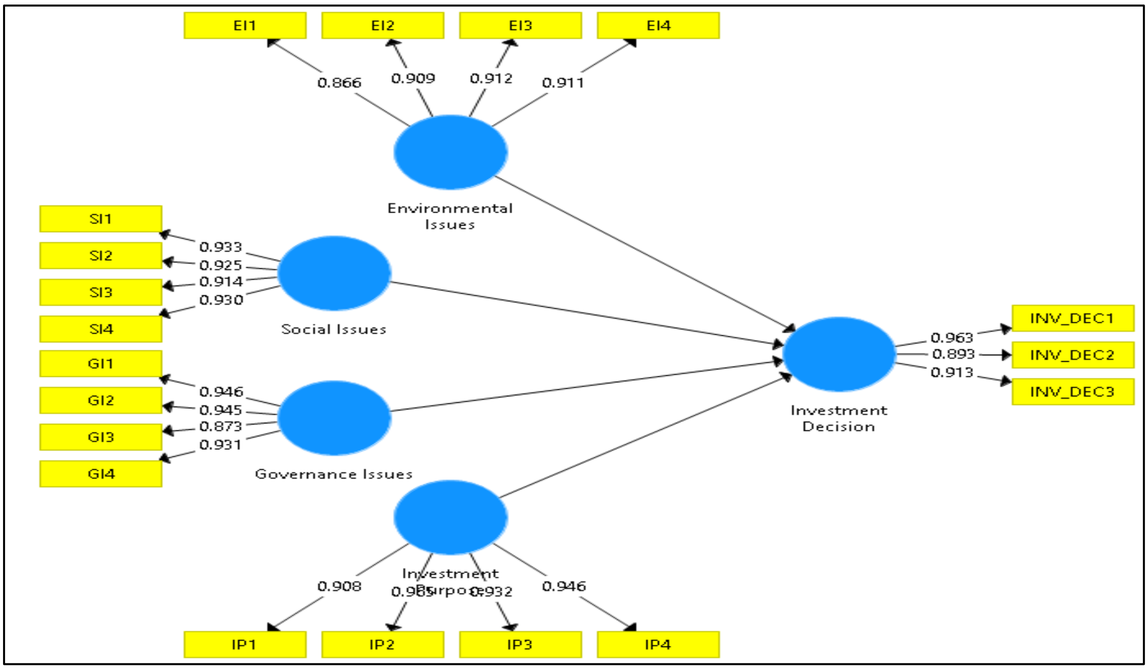

Figure1 Model Showing Items Outer Loading

Table 3
Outer Loading

Constructs	**Items**	**Loadings**
Environmental Issues	EI1	0.866
	EI2	0.909
	EI3	0.912
	EI4	0.911
Governance Issues	GI1	0.946
	GI2	0.945
	GI3	0.873
	GI4	0.931
Investment Purpose	IP1	0.908
	IP2	0.965
	IP3	0.932
	IP4	0.946
Social Issues	SI1	0.933
	SI2	0.925
	SI3	0.914
	SI4	0.93
Investment Decision	INV_DEC1	0.963
	INV_DEC2	0.893
	INV_DEC3	0.913

Outer Loading

The above-mentioned table has shown the outer loading values, and we can see that the values of all the constructions are higher than 0.60. So, we can apply the value of outer loading from the table.

Internal Consistency Reliability

To check the internal consistency, we apply CR (composite reliability). CR mechanisms are different from Cornbach's alpha, as CR uses different loading, and Cornbach's alpha claims that all the construct has equal weight (Chin, 1998b). The acceptable value of CR is a minimum of 0.70 (Nunnally, 1994). As the current study shows CR value is higher than 0.70 thus, it shows model has internal consistency.

Table 4
Results of Measurement model

Constructs	Items	Loadings	CR	AVE
Environmental Issues	EI1	0.866	0.945	0.81
	EI2	0.909		
	EI3	0.912		
	EI4	0.911		
Governance Issues	GI1	0.946	0.959	0.854
	GI2	0.945		
	GI3	0.873		
	GI4	0.931		
Investment Purpose	IP1	0.908	0.967	0.88
	IP2	0.965		
	IP3	0.932		
	IP4	0.946		
Social Issues	SI1	0.933	0.96	0.856
	SI2	0.925		
	SI3	0.914		
	SI4	0.93		
Investment Decision	INV_DEC1	0.963	0.945	0.852
	INV_DEC2	0.893		
	INV_DEC3	0.913		

Discriminate Validity

Discriminant validity is the degree to analyze the difference between constructs and measurements, this concept was proposed by (Fornell and Larcker, 1981). The main objective to run discriminant validity is to make sure that items only measure their construction and do not measure the other constructions. (Urbach and Ahlemann, 2010). We use three different ways to ensure discriminant validity i.e. HTMT, cross loading (Chin 1999), and Fornell Larcker criterion.

Fornell and Larcker Criterion

It is a method to measure correlation between constructs. We measure each construct; the average value of variance must be higher than the shared value of variance among constructs. The AVEs value of constructs are square rooted, and it compares with the value of row and columns. The diagonal values are AVE square root, and all these values must be higher than the rows and columns of their corresponding values. The table below shows the Fornell and Larker criterion, the discriminant validity is achieved.

Table 5
Discriminant Validity using Fornell and Larker's criterion

	Environmental Issues	Governance Issues	Investment Decision	Investment Purpose	Social Issues
Environmental Issues	0.9				
Governance Issues	0.108	0.924			
Investment Decision	0.373	0.234	0.923		
Investment Purpose	0.003	0.1	0.155	0.938	
Social Issues	0.122	0.039	0.279	0.138	0.925

Structural Model

The further section of the study highlights structural model validity. To check the validity is compute Collinearity. Then we checked the path coefficient and lastly, we ran R-square. Furthermore, we also discuss moderate hypothesis testing which is curial for conceptual framework.

Coefficient of Determination (R^2)

Partial least square is the test to run to check the effect of independent variables on dependent variables. It also deals with endogenous variables. As stated by Chin (1998b) the core function of PLS is to explore variance, and have beta coefficient, the value ranges from 0-1, the value closer to the 1 is known as higher prediction vlaue (Hair et al., 2013). The higher value of R2 is important to attain explanatory powers. The R2 value for the current study is calculated by using the PLS algorithm function. Results of structural model are shared below in the figure i.e. innovation readiness, rusk attitude, pro-activeness and competitiveness shows 39% variations in innovation intensity.

Table 6
R-Square

	R Square	**R Square Adjusted**
Investment Decision	0.241	0.233

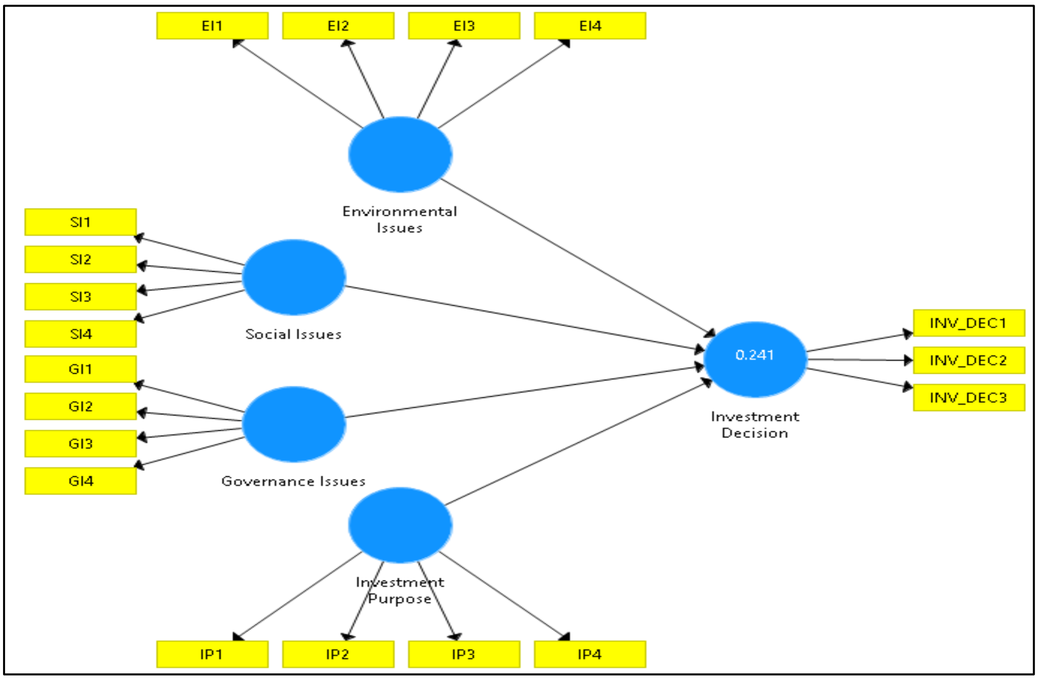

Figure 2: Model Showing R-Square

Hypothesis Testing

It was discussed earlier in methodology chapter that PSL has no need for data normality in fact its non-parametric analysis. So, the t-value xan be deflated or inflated which may arise type one error. To solve this problem research proposed bootstrapping method Wong (2013). In bootstrapping method, we extract large sample like 5000 from the smaller to run standard error of bootstrap. Which gives a significant t-value.

Furthermore, to test the hypothesis relationship and the link with construct we run the test of path coefficient. It is measured to check the strength between variables. Ramayah et al. (2016)

suggested one-tailed test and two tailed test significance. Thus, the table below shows direct effect if hypothesis by using smartPLS using bootstrapping (5000) as advised by Chin (1998b).

Table 7

Path Coefficient Assessment (Direct Relationships) H1 to H4

Relationship	Path Coefficient	T Statistics	P Values
Environmental Issues → Investment Decision	0.327	7.564	0.00
Social Issues → Investment Decision	0.218	5.051	0.00
Governance Issues → Investment Decision	0.179	3.662	0.00
Investment Purpose → Investment Decision	0.106	2.337	0.01

To enhance robustness, the study conducts a multi-group analysis (MGA) comparing the impact of ESG factors on retail vs. institutional investors. The results indicate that institutional investors exhibit stronger ESG preferences, particularly for governance and social factors, while retail investors prioritize short-term financial returns (PSX, 2023).

Additionally, an economic impact analysis estimates the effect of ESG adoption on financial metrics such as firms with strong ESG scores exhibit 18% lower volatility (SBP, 2023), ESG-compliant firms report an average ROA of 9.2% versus 6.5% for non-ESG firms (SECP, 2022). ESG adoption correlates with a 0.7% reduction in financing costs, benefiting firms with sustainable business models.

Hypothesis 1 (H1). Environmental issues have a positive influence on the investment decisions of the stock market investors of Pakistan.

The table above shows the relationship between environmental consideration and investment decisions is positive and significant with a beta value of 0.327 and (t-value>2 and p-value <0.05). In other words, we can say that there is a positive impact of environmental issues in the decision-making process of Pakistani investors. According to Chen and Xie (2022), environmental issues have a positive relationship with financial performance particularly in the workplace with ESG investors, high agency costs, longer inception, and media attention. Lee, Raschke, and Krishen (2023) examine the relationship between rating agency disagreements and environmental disclosure leading to higher volatility, price movement, and low financial issues. Hence the result aligns with literature.

Hypothesis 2 (H2). Social issues have a positive influence on the investment decisions of the stock market investors of Pakistan.

Not only developed countries have the importance for social issues rather developing countries also consider it equally important. Social issues have little higher value as compared to environmental or governance concerns, which means investors usually prefer socially responsible firms while making investment decisions (Sood et al., 2023). The above-mentioned table shows the social issues' impact on investment decisions with a coefficient of 0.218 and a t-value greater than 2 with a p-value less than 0.05. Hence there is a positive relationship between social issues and investment decision-making in the Pakistani stock market. Investors pay more attention to social considerations while making decisions thus, it gives a boost to socially responsible investing (Garg et al., 2022) In the same manner Pakistani investors also consider social issues before making investment decisions. High social scores are associated with improved intangible assets, governance, and sustainable business prospects, fostering internationalization and attracting foreign investment (Liu et al., 2021; Yu & Zheng, 2020).

Hypothesis 3 (H3). Governance issues have a positive influence on the investment decisions of the stock market investors of Pakistan.

Investors consider governance issues in both developed and under-developing countries, shaping their investment preferences accordingly (Sood et al., 2023). The trend is evolving globally, with firms prioritizing good governance to attract investors and enhance financial performance (Garg et al., 2022). However, in the Pakistani context, the impact of governance on investment decisions remains relatively weaker due to regulatory inefficiencies and enforcement gaps. While investors recognize the importance of governance, low transparency in corporate reporting, weak shareholder rights, and limited board independence diminish their confidence in governance-driven investment strategies (Ahmed & Naqvi, 2022). A study by Khan et al. (2023) highlights that only 40% of Pakistani investors actively consider governance factors, compared to over 75% in developed markets, suggesting a lack of trust in regulatory oversight. Moreover, research indicates that firms with strong governance structures in Pakistan do not always demonstrate superior financial performance, reducing the incentive for investors to prioritize governance over financial metrics. This misalignment suggests that regulatory improvements, enhanced enforcement mechanisms, and increased investor awareness are necessary to strengthen governance's role in shaping investment decisions. Despite these challenges, firms with robust governance frameworks have established intangible assets, fostering internationalization, sustainable business practices, and foreign investment attraction (Liu et al., 2021; Yu & Zheng, 2020).

Hypothesis 4 (H4). Investment purpose has a positive influence on the investment decisions of the stock market investors of Pakistan.

The main function of investment is capital preservation, it is the only objective of many investors (Belaïd et al., 2023). In this matter the current study claims that the purpose of the study also influences investment decisions. The p-value of the relationship is less than 0.05 with a coefficient of 0.106 depicting a positive impact of investment purpose on the investment decision of Pakistani investors. This result is consistent with a previous study by Lokanan and Sharma (2022), the purpose of achieving substantial increases in investment value directs decision-making toward assets with higher growth potential, often accompanied by increased volatility. Investors who seek capital appreciation can invest in real estate or equities (Võ, 2023). Whereas bonds and dividend-paying stock are examples of capital preservation Kindfuller (2023)

Limitations and Future Research

The current study has given significant empirical evidence, but it has its limitations. The sample used for analysis is from the Pakistan Stock Exchange thus it cannot be applied in many other contexts. The research can be done by using other markets or different samples. Furthermore, a longitudinal study can be done to give insight into changing ESG on investment decisions.

Conclusion

To conclude we can say that the current study claims that there is a significant impact of environmental, social and governance, investment purposes on investment decisions of the Pakistan stock exchange. The hypothesis is supported. The factors of ESG show strategic moves and thus lead to sustainable investment also enhance financial performance and risk management. The study conducted in Indonesia is also parallel with the study and the results also align with each other that ESG factors are important for investment decisions in various industries.

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