



## ESG Factors and their Influence on the Investment Behavior of Individual Investor: A Case from Pakistan

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### Keywords:

ESG factors, Individual Investor, Structural equation modeling, Socially Responsible Investment.

### ABSTRACT

Companies are extensively mobilized about their sustainability due to the inequalities and problems in the presence of resource scarcity at a global level. Sustainable responsible investment (SRI) holds the belief to merge Environmental, Social, and Governance (ESG) factors in strategies, policies, and investment allocations to act socially impactful. This article postulates a deductive study framework based on a theory of planned behavior (TPB) to further enlighten the stakeholders on this subject. The research study has analyzed the ESG factors' influence on investors' investment where primary data has been collected from individual investors based on GPower analysis (sample 300) through snowball non-probability sampling technique in the Pakistan Stock Exchange (PSX). The results obtained through Structural Equation Modeling (SEM), demonstrate that investors are sensitive to ESG factors. The combined effects of the three factors are statistically significant and favorable for investing. The respondents' investment decisions are significantly and dominantly influenced by the governance factors, followed by social factors, and then environmental factors have additional effects. The results revealed the impact of perceptions about (ESG) aspects on outcomes (Investment). The research suggested the assessment of ESG factors as an integral part of a suitable investment process for investors. There are few studies available to measure the perception of individual investors in the market about non-financial criteria that brings variation in investors' investment decision. The subjective studies are also lacking in finance. Theoretically, it has been found that each person's attitude is shaped by their beliefs that further lead to certain behavior. For businesses, it has been suggested that management should improve their ESG performance to draw large amounts of investment from the market. The results also showed that investors should invest in companies that can safeguard their capital and increase their cash inflows by undertaking ESG factors.

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## INTRODUCTION

Environmental, social, and governance (ESG) factor evolution has created more value for sustainable investment in financial markets (Glavina, 2022). Sustainable investment, socially responsible investment, moral investment, or impact investment are terms used to refer to the incorporation of ESG factors into investment decisions. The ESG factors appraisal phenomena are crucial for both parties i.e., company and investor. The company assessment process of ESG factors is termed as ESG due diligence (DD). ESG-DD is an uninterrupted process of objectively compiling and evaluating ESG material factors/issues relevant information disclosed to stakeholders in various reports (Villmann, 2021). The previous studies describe the DD procedure/method of investigation to identify crucial business transactions and operational tasks. However, this process has been executed in mergers and acquisitions to assess the value, inherent risks, and price of the target firm (Spedding, 2008). The ESG's first pillar, environmental factors emphasize the issues related to the phenomena of climate and environmental variation. These incorporate water and air pollution, greenhouse gases emission, and waste management policies ensuring the best use of resources, social factors have an impact on basic human rights, delivery of high-quality goods and services, consumer's health and safety, and maximum employment benefits and governance factors focus more on the board of directors' impartiality and responsibility, the shareholder's equal rights and benefits, financial disclosure and transparency, and legislation and initiatives to combat corruption (PRI, 2015). The environmental information implies a cure of credibility and trust that possibly influence investor behavior and attitude toward an investment opportunity (Amel-Zadeh & Serafeim, 2018). To comply with the social norms in which they are operating as an entity, the corporation must undergo a thorough examination known as "social factors." Whether it is required by law or regulation, the corporation must do it as a member of society (Busch et al., 2016). Corporate governance places a strong emphasis on driving management to increase company profits and safeguard shareholders' interests (return on investment) (the agency theory). Investors often utilize their judgment, advanced analytics, and fundamental analysis as tools for investment appraisal based on various factors relevant to non-financial information (Jagongo & Mutswenje, 2014). Corporate investors take governance practices into account while investing (Crifo et al., 2015). The goal of investments is to increase prospective cash inflows. As a result, when making a decision, the investor must consider numerous factors, both monetary and non-monetary (Whelan, Atz, Van Holt, & Clark, 2021).

Therefore, the perceptions about each material ESG factor reshape their decisions towards sustainable investments. Larry Fink, founder, and CEO of the Global Investment Management Corporation stated that sustainability must be the main element in an investment decision (Herz et al., 2016). Previous empirical studies also suggested the ESG factors assessment for better selection of investment opportunities (Berry & Junkus, 2013; Crifo, Forget, & Teyssier, 2015). This study has used the impact of investors' perception of ESG factors on their investment allocation.

The developing market of Pakistan has no hard rules for disclosure of non-financial information rather it's a board of directors' fiduciary duty as per the amended code of corporate governance 2017 issued by the Security Exchange Commission of Pakistan (SECP) (Naveed, Sohail, Abdin, Awais, & Batool, 2020). The board act as a bridge between the two parties i.e., shareholders and management. They are responsible to protect the rights of stockholders and monitoring management's decision-making practices (Shah, Ahmad, & Mahmood, 2018). Therefore, ESG organized data is not available as prescribed by the international standard index. Pakistan's weak laws contrary to global frameworks trigger for more focus to have empirical studies on the subject matter. Empirical study has shown the connection between voluntary disclosure, governance structure, and organizational features. The study further adds that an increase in disclosure practices related to the environment, society, and governance is directly proportional to achieving sustainable results. The study made recommendations for further integration of these data into decision-making processes in diverse scenarios (Khalid, Razzaq, Ming & Razi, 2022).

The emerging markets listed companies issue fewer reports on corporate social responsibility (CSR). Even sustainability performance is rarely a subject of study as contrary to financial information analysis (Cohen, Holder-Webb, & Zamora, 2015; Khan, 2019). Although many studies have been conducted on ESG implementation and its macro-level impact on the companies' financial performance (Lokuwaduge & Heenetigala, 2017; Dobbs & Staden, 2016; Eccles, Ioannou & Serafeim, 2012), few have examined the importance that investors place on ESG when making investment decisions (Rooh et al., 2021; Naveed et al., 2020; Sultana, Zulkifl, 2018). The studies found disparities in investor attitudes toward ESG considerations in their investments despite the presence of evidence about those who don't care about ESG preferences and those who favor ESG practices having a beneficial impact on financial performance (Chen, & Xie, 2022). The study recommended that businesses exhibit excellent ESG performance outperform their industry peers financially and command greater market valuations. Moreover, further analysis is crucial to identify investors who value ESG

information in the presence of tested ESG-enhanced market performance (Ademi & Klungseth, 2022). The research has concluded the concerns about the quality of information disclosed for ESG factors analysis used by institutional investors. The results added that there is a need to mitigate the barriers related to the lack of quality information. Supplementary research is required to add knowledge about investor perception to direct companies for more quality information (Jonsdottir, Sigurjonsson, Johannsdottir, & Wendt, 2022). In industrialized nations, various events and decisions have been shaped by the process of integrating non-financial factors (Berry & Junkus, 2013; Crifo, Forget, & Teyssier, 2015). The uncertain situation of novel corona crises raises further calls on ESG investments (Naveed et al., 2020). Utilizing the global crisis brought on by the COVID-19 pandemic, the study demonstrates that a positive relationship between ESG performance and a company's market valuation holds even during times of unanticipated crises (Ademi & Klungseth, 2022). The research objectives of the study have demonstrated how investors perceived value of ESG factors shape their investment decisions in the Pakistan Stock Exchange. The contribution of knowledge and its novelty is the main theme of research articles. By providing a contemporary understanding of the variables impacting investors' judgments, the findings add to the body of literature (Glavina, 2022). It improves and adds awareness about investor value and beliefs in emerging markets in terms of investment avenues. Along with predicting the overall impact of ESG on investors' investment choices, it also examines and compares the specific effects of a variable. The ESG performance-based studies assist companies in the way investors organize their outlays in various projects. The results also added further about the precision of their decisions that rely on various published non-financial information from companies. Subjective assessments necessitate survey-based investigations in finance. The study's conclusions imply that in addition to financial measurements, organizations should pay more attention to ESG factors. The requirements of the study are satisfied by testing the hypothesis that has been put forward based on literature evaluation, research design, outcomes, and discussion.

## **LITERATURE REVIEW**

### **Comprehensive Empirical Studies on ESG Factors**

ESG factors are crucial for business investment and decision-making, especially in managing long-term operations and mitigating risk (Dhaliwal, Li, Tsang & Yang, 2011; Spedding, 2008). The sustainable development framework of ESG constructs action plans efficiently handle the financial crises and other significant issues in domestic and international stock markets (Lokuwaduge, 2017; Ademi & Klungseth, 2022). The investment facets of

sustainable return, risk management, and responsibility are encountered by ESG (Sultana et al., 2018). Similarly, corporate sustainability is crucial to ensure environmental pollution preservation and addressing issues of planet natural resources protection. Particularly when climate change is a diverse challenge for the global village (Dobbs & Staden, 2016). On the other hand, social considerations come up in discussions about modern slavery (Adam & Shauki, 2014). The dedication and responsibility to governance issues, such as the rights and obligations of the company's stakeholders, are also vital (Filatotchev, Poulsen, & Bell, 2019). Investors are rational about the role that ESG plays in generating consistent returns on their investments (Kocmanová & Doekalová, 2012). ESG reporting increases the demand for shares and resultantly enhances share prices in the market (Cheng, Ioannou, & Serafeim, 2014). The sustainability information variables fluctuate company performance. These are pertinent and indicative of financial performance as it creates hype for shares in the market that shift the prices demands (Grewal, Hauptmann, & Serafeim 2017). However, there are studies on objective measures of ESG factors, but a gap exists to evaluate the subjective measure to find the investors' judgments and perceptions about ESG integration (Hongming, Ahmed, Hussain, Rehman, Ullah & Khan, 2020; Whelan et al., 2021; Buallay, 2019; Adedeji, Ong, Rahman, Odukoya, & Alam, 2019; khan, 2019; Adam & Shauki, 2014). Extensive research on each aspect strengthens the link between ESG reporting and investment choices.

### **Environmental Factors and Investors' Investment**

To achieve the sustainable development aim outlined in the millennium goals, environmental information includes the company's performance on environmental practices. Analysis of the detrimental impacts of air pollution on commercial activity has led to unfavorable conclusions (Dobbs & Staden, 2016). More than ever, investors are concerned about the environment, which eventually influences their choice of investments (Rooh et al., 2021). The environmental elements are influenced by the nature of the business, the sort of employment, and the region's natural environment and climate. These often involve greenhouse gas emissions, climate change, waste management, and water and air pollution (PRI, 2015). Environmental concerns are often considered when making investment decisions. Italian investors' perceptions of organizations are favorably impacted by ESG voluntary disclosure, which depends on an audit accountability structure (Fazzini & Dal Manso, 2016). These findings are consistent with the study by Crifo et al. (2015), which demonstrates a 30.8% decline in private equity investments in French companies when they pay less attention to environmental issues. The same is true in Japan, where investors and other stakeholders are more concerned with the company's environmental policies. The

results of the Australian study are also similar regarding ESG variables (Zwaan, Brimble, & Stewart, 2015). Investors expect that businesses uphold environmentally sustainable practices all over the world. Environmental protection is priorities for investors and the companies grasp high profits with strict policy implementation. Therefore, the company's environmental initiatives send a message to the market and affect investors' attitudes and behaviors regarding investments (Amel-Zadeh & Serafeim, 2018). According to the study by Rooh et al., (2021), investors are aware of how to take care of their surroundings. Therefore, it is worthwhile and advised to assess the impact of environmental factors. The first hypothesis is proposed here.

### **H1: Environmental factors have a positive effect on investors' investment.**

#### **Social Factors and Investors' Investment**

Social issues are crucial in influencing investors' decisions. The social sustainability of the company is an artificial person including taking better attention to its stakeholders and community at large (Cohen et al., 2015). It covers the welfare and interests of the communities, as well as individual and reciprocal rights. Human rights, health facilities, a positive work environment, child labor, contentious weaponry, consumer protection, linkages to local communities, and other health-related activities are some of these obligations. Human rights also encompass freedom of association and expression ( UN PRI, 2015). Social interactions have been one of the key elements influencing investors' choices (Crifo et al., 2015). According to Zwaan et al., (2015) social aspects are one of the main pillars that investors in Australia consider when making ESG decisions. Publications on this subject are most frequently found in the fields of human rights, labor health and protection, product safety, and public relations (Berry & Junkus, 2013; Rakotomavo, 2011). Thus, in comparison to governance and environmental considerations, the social aspect was overwhelmingly dominating and favored (Sultana et al, 2018). In the regime of integrated markets in industrialized countries, stock market investors give social issues a higher priority (Zwaan et al., 2015). Studies must learn more about this situation because there is a void in the setting of developing countries. A different theory was put up in this study to determine the social aspects influencing investors' choices in PSX.

### **H2: Social factors have a positive effect on investors' investment.**

#### **Governance factors and Investors' Investment**

Investors view corporate governance principles as a critical management system and a key indicator of a company's financial viability in investment allocation (Crifo et al., 2015). Frequently the investors perceive their financial success based on first dominant factors



governance structure and later dedication to environmental and social factors in the financial markets (Walsh, Mitchell, Jackson & Beatty, 2009). Corporate governance is a framework for safeguarding stakeholders' rights, with a particular emphasis on shareholders and guiding management decisions in the company's best interests. Additionally, it runs into agency issues that arise when distinct ownership and control authorities are used (Aguilera, Judge, & Terjesen, 2018). The governance mechanism also makes sure that the firm has a robust internal control system to accomplish both financial and non-financial goals. The results found that 64% of respondents are concerned about corporate governance when choosing their investments (Zwaan et al., 2015). The better-performing businesses can also invest in social and environmental issues to further support their reputation (Busch, Bauer, & Orlitzky, 2016). The survey-based analysis, which evaluated the three ESG pillars, found that investors, industries, brokers, and financial experts all have governance as a top concern. Corporate governance guarantees the firms' openness and disclosure, assisting investors in making investment decisions (Filatotchev, Poulsen, & Bell, 2019). While the other two variables tend more toward sustainability (Herz & Rogers, 2016). However, the three components' importance has been resurrected by the present global movement of socially responsible investment. According to researchers, social issues now outweigh environmental aspects in importance, but perception varies from investor to investor (Bradford, Earp, Showalter & Williams, 2016). If environmental and social concerns result in profitable investments in the region then investors value this factor more as compared to others (Rakotomavo, 2011). Corporate governance is recommended in all other cases. Global scandals like Enron and Tyco raise awareness of corporate governance's process and necessity in the business sector. As a result, it is crucial to investigate how investors behave about corporate governance while making investment decisions in Pakistan. As a result, the third theory is put forward here.

### **H3: Governance factors have a positive effect on investors' investment.**

The study chooses a deductive research methodology where studies are based on theories for more firm analysis and results. The theory of planned behavior (TPB) is utilized here. The theory postulate that intentions are determined by attitude. Intentions are a combination of one's attitude toward behavior, perception of behavior control, and subjective norms that leads to real behavior. As a result, actions should result from intentions, and vice versa (Ajzen & Fishbein, 2000). Here the study adopted the component of "attitude" and "intention" from a theory of planned behavior. To further operationalize the investors' perception towards ESG factors are considered as attitude and their intention is the output in

the form of investment decision. The theory has been tested in various studies. It has been found while testing TPB that individual interest has a significant influence on investment behavior (Paramita, Isbanah, Kusumaningrum, Musdholifah, & Hartono, 2018). Another study found the impact of ESG on investment decisions in Bangladesh using TPB (Sultana et al., 2018). The desire for future rewards drives investors' attitude to engage in stock investments (Grewal et al., 2017). According to Villmann (2021), the goal of investment is to generate additional inflow from the invested outlay. Investors review the intended investment opportunity using their fundamental, technical, and judgmental analysis as a tool (Jagongo & Mutswenje, 2014). Sairally (2015) concluded in his study that consideration of numerous important criteria, including non-financial ones, results in a better investment. The proposed study has looked at the relationship between investors' perception of ESG factors and their plans to pursue their investment in projects where solid environmental, social, and governance standards are being executed.

### Conceptual Framework

The following conceptual framework is suggested for the study based on the preceding analysis of the current literature.

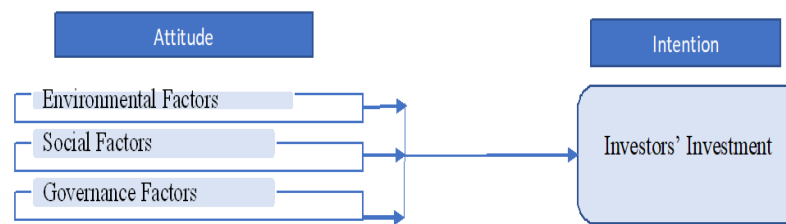


Figure 1. Conceptual Model

## RESEARCH METHODOLOGY

The research is based on a philosophical stance. The current study employs epistemological positivistic philosophy (Wilson & McLean, 1994). The quantitative study collected data through a survey questionnaire from an individual investor in the Pakistan stock exchange (PSX). The central Depository Company declared fifty-nine thousand, seven hundred & nineteen (59719) as the total no of individual investors trading at PSX. The GPower 3.1 power analysis calculates two hundred and twenty-two (222) as the required minimum sample size setting the effect size to 0.30 by default, the alpha level to 0.01, and the power to 0.99, as recommended (Faul, Erdfelder, Buchner, & Lang, 2009). The sample size includes 300 active trading investors for the safe side in case the values are missing, or outliers exist. A non-probability snowball sampling strategy has been used in the investigation. It has been



tested for item validity and reliability. Fornell and Larcker's (1981) criteria are used to test reliability via Cronbach's alpha (CA) and composite reliability (CR). Validity assumption has been met by ensuring the convergent and discriminant validity tests (Hair et al., 2017). After all, hypothesis testing allowed us to attain our goals. Partial least squares structural equation modeling has been used for this purpose (Hair et al., 2017).

The demographic details are mentioned in Table 1 to summarize the attributes of participants (Investors).

Table 1 Demographic Attributes of the Respondents

Demographic variable	Characteristics	Percentage
Gender	Male	94.3
	Female	5.7
Age	Upto 25 years	3.0
	26-35 years	4.0
	36-45 years	78.3
	46-55 years	12.7
	above 55 years	1.7
Highest Qualification	Intermediate	0.1
	Bachelors	21
	Masters	68.3
	Doctorate	3.3
	Other	6.3
Yearly Income	Less/equal 500000 Rs.	8.7
	500001 - 1000000 Rs.	12.7
	1000001 - 1500000 Rs.	24.7
	1500001 - 2000000 Rs.	18.3
	Above 2000000 Rs.	35.3
Trading Experience	Less than 1 year	5.0
	2-5 years	8.3
	6-9 years	73
	10 or more years	13.7

### Research Instrument

The dependent variable is assessed using six items on a Mayfield-adapted five-point Likert scale (2008). The study's independent variables are Environment factors (Items-7), Social factors (8-Items), and Governance factors (9-Items) factors (ESG) to determine the investor's preference for which elements received more value while investing in the company using a 5-

point Likert scale. The survey for ESG is adapted from the research by Sultana et al., (2018). The questionnaire used is organized and modified under the ESG elements index from the respected Thomson Reuters Corporate Responsibility Index (TRCRI, 2013) and the United Nations Global Compact (UNGC, 2004). Bangladesh, where the study was conducted, is a developing nation like Pakistan. However, neither nation has an index for measuring a company's ESG performance. According to the UNGC, Bangladesh has 43 participants whereas Pakistan has 73. Therefore, it is appropriate to conduct a study of Pakistan Stock Exchange investors using the adopted questionnaire. The instrument's face and content validity has been measured for accuracy to analyze the subject matter (Zikmund, Carr & Griffin, 2013). The questionnaire was attested from four brokerage houses in Peshawar to review and attempt the research instrument. The face validity was ensured with a few minor corrections/comprehensions highlighted through brokerage house managers in items. The rest of the items were simple and in familiar wordings (Saunders et al., 2016). The content validity measures the instrument's acceptable coverage of the research questions. The evidence was already provided through literature but still, the questionnaire was reviewed by three subject experts with more than 10 years of experience in the same domain. As the same instrument has been tested in other developing markets of Bangladesh (Sultana et al., 2018). Thus, the questionnaire was adopted and was brief in their respective construct, and the panel of experts approved each item as important and relevant. A further pilot study was also conducted with 165 initial responses from investors where The reliability of the survey instrument was confirmed by Cronbach's alpha values, which varied from 0.81 to 0.93 for all the constructs and were higher than the usually acceptable norm of 0.7 (Hair et al., 2017; Nunnally & Bernstein, 1994).

### **ANALYSIS**

A second-generation technique that has been extensively used in investigations for the past 20 years is structural equation modeling (SEM). The second-generation approach has fixed the first-generation's flaws. The approach takes into consideration measurement error and uses latent variables that are not visible but are nevertheless quantified by items or indicators. The Partial Least Square Structural Equation (PLS-SEM) is used to analyze complex theories where the model focus exists on explanatory and/or predictive relevance as recommended (Ringle, Sarstedt, Mitchell, & Gudergan, 2020; Sarstedt, Ringle, Henseler, & Hair, 2014). PLS-SEM path modeling is used to test the hypothesis of the study and the same has been found in previous studies too (Rooh et al., 2021; Naveed et al., 2020; Sultana et al., 2018).

Table 2 Descriptive Statistics

Constructs	N	Min	Max	Mean	Std. Dev	Variance	Range
E <sub>nv</sub> _F	300	1.86	5.00	3.82	.843	.712	3.14
S <sub>oc</sub> _F	300	1.43	4.86	3.88	.708	.502	3.43
G <sub>ov</sub> _F	300	1.00	5.00	4.11	.760	.578	4.00
I <sub>nv</sub>	300	1.83	4.83	3.42	.711	.506	3.00

Note: E<sub>nv</sub>\_F= Environmental factors, S<sub>oc</sub>\_F= Social factors, G<sub>ov</sub>\_F= Governance factors, I<sub>nv</sub>= Investors' Investment.

The results present descriptive and correlation results. The descriptive statistics in Table 2 show numerous details regarding each variable. Environmental factors have a mean value of 3.82 and a range of 1.86 to 5.00 for independent variables. The mean for social diligence is 3.88 with a minimum value of 1.43 and a maximum value of 4.86. The mean value of governance factors was recorded as 4.11, with a minimum and maximum value of 1.00 to 5.00. Investors' Investment Scores, a dependent variable minimum and maximum range from 1.83 to 4.83 with a mean value of 3.42.

### Common Method Bias (CMB)

When data is collected across a single time period, the issue of common method bias (CMB) arises and may compromise the validity of the results. Harman's (1967) single factor test and the correlation matrix process are statistical methods that were executed for evaluating CMB (Bagozzi et al., 1991). By including all the items in exploratory factor analysis (EFA) utilizing principal component analysis (PCA), Harman's (1967) single factor test was used. The findings show that there are six factors with eigenvalues greater than one and that the first component explains 40.297 percent of the variation in total. This demonstrates that the validity of the notion is not at risk because of CMB (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). According to Bagozzi et al. (1991), the existence of CMB is demonstrated by a significantly high correlation ( $r > 0.9$ ) among the studied constructs when using the correlation matrix approach. As a result, Table 3 analysis of the variables' correlations revealed that they were significantly below 0.9. CMB was therefore not a major worry in this research investigation.

Table 3 Correlation Matrix

Constructs	E <sub>nv</sub> _F	S <sub>oc</sub> _F	G <sub>ov</sub> _F
S <sub>oc</sub> _F	.529**		
G <sub>ov</sub> _F	.756**	.526**	
I <sub>nv</sub>	.744**	.643**	.778**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The correlation matrix result shown in Table 3 reveals that investors' investment is positively and statistically highly significantly correlated with independent variables environmental factors (r=0.744), social factors (r=0.643), and governance factors (r=0.778) at the first level (0.00).

**Structural Equation Model (PLS-SEM)**

A multi-construct or multi-item model applies to both small and large sample sets using PLS-SEM. There are two steps in the process. Quality criteria were initially evaluated using a measurement model. Once the first step is met here for the first criterion, then the structure model has been evaluated (Hair et al., 2017).

**Measurement Model**

The reflective model in PLS-SEM is assessed by each indicator loading, internal consistency reliability, and constructs validity (Ringle & coll., 2020; Hair et al., 2017).

**Factor Outer Loading**

The Factor outer loading demonstrates the input of every indicator to the formulation of its construct. The first view of reliability can be analyzed through factor outer loading produced by PLS Algorithm (see Fig. 1).

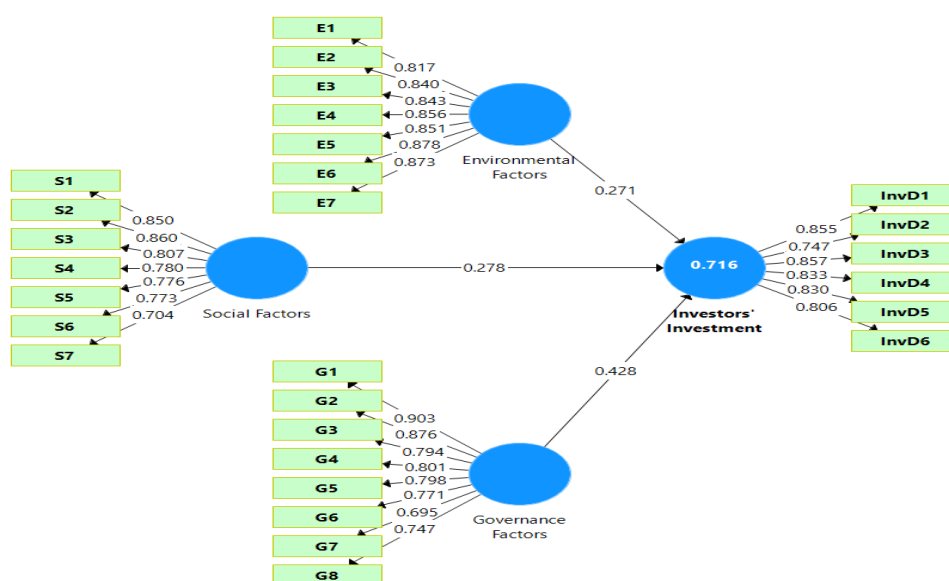


Figure. 1. Factor outer-loading of the model

The item must be retained in case the construct explained 0.70. (Hair et al., 2017; Ringle et al., 2020). However, the latent construct can comprise extra indicator items and is considered appropriate in the case of at least 0.50 loading items (Henseler, Ringle & Sarstedt, 2015). The exogenous variable Environmental factors are denoted by (Env\_F), Social factors by (Soc\_F), and Governance factors by (Gov\_F). Environmental and social factors include Seven indicator items, numbered E1 through E7 and S1 to S7 respectively. Governance factors include eight items numbered G1 to G8. The endogenous variable investors' investment includes six items from IInv1 to IInv6. All the factors are well above 0.70, therefore items are retained here in all constructs (Env\_F, Soc\_F, Gov\_F & IInv).

Table 4 Outer Loading for Environmental Factors

Construct	Items	Loadings	p-values
Environmental Factors	E1	.817	.00
	E2	.84	.00
	E3	.843	.00
	E4	.856	.00
	E5	.851	.00
	E6	.878	.00
	E7	.873	.00
Social Factors	S1	.85	.00
	S2	.86	.00
	S3	.807	.00
	S4	.78	.00
	S5	.776	.00
	S6	.773	.00
	S7	.704	.00
Governance Factors	G1	.903	.00
	G2	.876	.00
	G3	.794	.00
	G4	.801	.00
	G5	.798	.00
	G6	.771	.00
	G7	.695	.00
	G8	.747	.00
Investors' Investment	IInv1	.855	.00
	IInv2	.747	.00
	IInv3	.857	.00
	IInv4	.833	.00
	IInv5	.83	.00
	IInv6	.806	.00

### Internal Consistency Reliability (CR) and Convergent Validity (CV)

For further examination, it is essential to consider each item's internal consistency and reliability. In this type of investigation, composite reliability is seen as being more important than Cronbach's alpha (Hair et al., 2017). Cronbach's alpha or composite reliability should be greater than 0.70, but not greater than 0.95, for satisfactory dependability. Redundancy is indicated by the data above a reliability rating of 0.95 (Avkiran, 2017). Similarly, the

Average variance extracted (AVE), PLS algorithm is another operation to analyze the validity of the constructs in the model. The convergent validity of a measure is the degree to which it positively correlates with other measures of the same construct. For improved variance explanation by the indicators of the construct, the AVE scores should be greater than 0.507. (Hair et al., 2017).

Table 5 Internal Consistency Reliability

Construct	Cronbach's Alpha (CA)		Composite Reliability (CR)		Average Variance Extracted (AVE)
	AR-Values	p-Values	CR-Values	p-Value	
E <sub>nv</sub> _F	.93	.00	.94	.00	.725
S <sub>oc</sub> _F	.90	.00	.92	.00	.631
G <sub>ov</sub> _F	.91	.00	.93	.00	.641
I <sub>nv</sub>	.90	.00	.92	.00	.676

All the study's variables are statistically reliable for further examination. The reliability for Cronbach's alpha ranges from 0.90-0.93 (p-value 0.00) and composite reliability range from 0.92-0.94 (p-value 0.00). The AVE results here vary from 0.63 to 0.72 and are significantly higher than the cutoff point of 0.507, demonstrating CV.

### Discriminant Validity (DV)

Discriminant validity (DV) can be examined through different measures. The mostly utilized measures are the Fornell-Larcker criterion (1981) and the HTMT ratio (Henseler et al., 2015). Discriminant validity is “the degree to which a construct is truly distinct from other constructs by empirical standards” (Hair et al., 2017 p.115).

### Fornell-Larcker criterion

According to this method, each construct's variance ought to be higher than its association with any other variable. The reports proved the higher association with its own rather than any other construct. Consider as the value of S<sub>oc</sub>\_F square root value 0.796 is greater than its score with other variables. Consequently, the Fornell-Larcker Criterion is used here to prove the discriminant validity of each latent variable. Table 6 below lists the results of the calculations.



Table 6 Fornell-Larcker criterion

Construct	Env_F	Gov_F	IInv	Soc_F
E <sub>nv_F</sub>	.851			
G <sub>ov_F</sub>	.768	.800		
IInv	.748	.792	.827	
S <sub>oc_F</sub>	.533	.524	.639	.796

Note: E<sub>nv\_F</sub>= Environmental factors, S<sub>oc\_F</sub>= Social factors, G<sub>ov\_F</sub>= Governance factors, IInv= Investors' Investment.

### Heterotrait-Monotrait Ratio (HTMT)

For the analysis of DV, Henseler et al. (2015) developed a method that is extensively used. The Proposed Heterotrait-Monotrait Ratio (HTMT) ratio has established the standards for determining whether it is acceptable. In SEM-PLS, the HTMT value should be less than HTML 0.90 for rigorous validity (Henseler et al., 2015; Kline, 2011). The outcome in Table 7 demonstrates how all values between 0.577 and 0.852 reflect the constructs' validity at that value.

Table 7 Heterotrait-Monotrait Ratio

Construct	Env_F	Gov_F	IInv
E <sub>nv_F</sub>			
G <sub>ov_F</sub>	.827		
IInv	.809	.852	
S <sub>oc_F</sub>	.577	.570	.713

Note: E<sub>nv\_F</sub>= Environmental factors, S<sub>oc\_F</sub>= Social factors, G<sub>ov\_F</sub>= Governance factors, IInv= Investors' Investment.

### Structural Equation Model

The article's central hypothesis is examined by the structural equation model, which is more significant.

### Direct Path Model

The model comprises a total of four variables. Environmental, Social, and Governance factors (E<sub>nv\_F</sub>, S<sub>oc\_F</sub>, & G<sub>ov\_F</sub>) are exogenous variables while investors' investment (IInv) is an endogenous variable of the study. The model is shown in Figure.2.

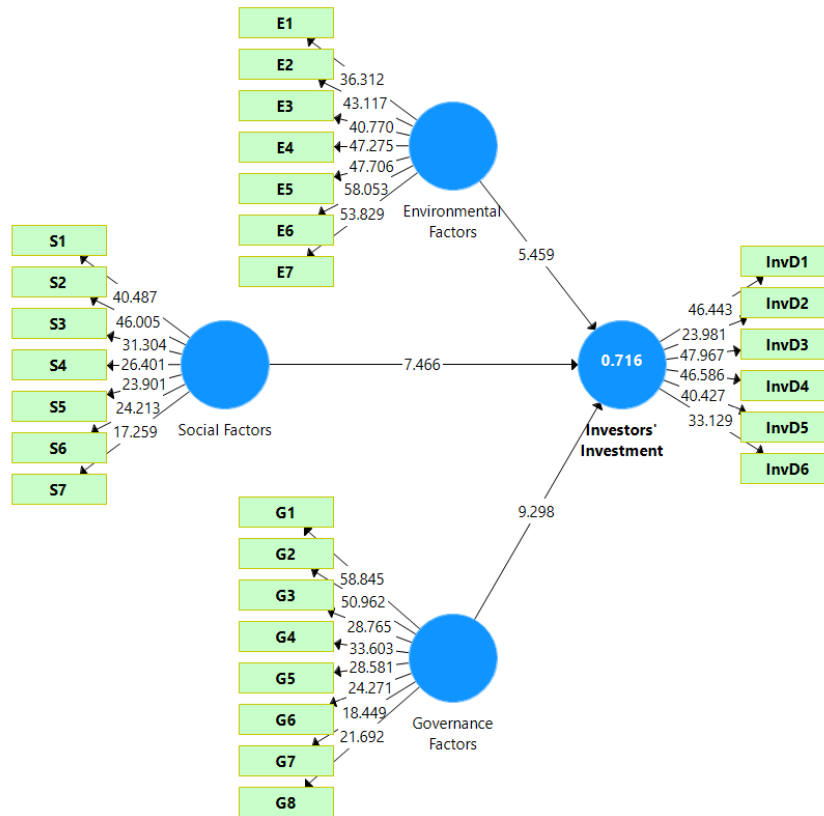


Figure. 2. Bootstrapping results of Structural Equation Model

**Assessment of Coefficient of Determination (R<sup>2</sup>)**

An endogenous dependent variable's expected variation because of external independent variables included is measured by the coefficient of determination (R<sup>2</sup>). Three categories make up the evaluation standards for R<sup>2</sup>. First, show minor predictability at 0.25, moderate value suggested as 0.50 then last cut off point is 0.75 is considered to be significant (Henseler et al., 2015).

Table 08 reports R-square values here. The R-square value (R<sup>2</sup>=0.716, p value= 0.00) and adjusted R-square value (R<sup>2</sup>=0.713, p value= 0.00) are almost same with a minimal difference here. It shows that 71% of the variation is caused by the included variables (Env\_F, Soc\_F, & Gov\_F) in the model to predict the dependent variable.

Table 8 Coefficient of Determination (R<sup>2</sup>)

Construc t	R-Square				Adjusted R Square			
	R <sup>2</sup>	SD	t-Stats	p-values	R <sup>2</sup> Adj.	SD	t-Stats	p-values
IInv	.716	.02	31.25	.00	.71	.023	30.81	.00

### Predictive Relevance of the Model (Q<sup>2</sup>)

The Stone-(Q<sup>2</sup>) Geisser's model's predictive relevance also serves to determine the model's prediction accuracy. The predictive relevance of the path model is demonstrated by a reflecting model when Q<sup>2</sup> has a value greater than zero (Hair et al., 2017). The blindfolding process in PLS-SEM is used to determine the value of the Q square. All values far above zero in Table 9, Q-square statistics indicate better prediction relevance of regressors for the dependent variable in the path model.

Table 9 Model Predictive relevance values

Constructs	SSO	SSE	Q <sup>2</sup>
E <sub>nv</sub> _F	2100	778.611	.629
S <sub>oc</sub> _F	2100	1038.534	.505
G <sub>ov</sub> _F	2400	1116.899	.535
IInv	1800	819.021	.545

### The Effect Size (f<sup>2</sup>)

Effect size (f<sup>2</sup>) demonstrates the relevance of each variable in the outcome for more practical and significant results. Cohen (1988) defined a minor effect of independent latent variable's affect size value up to 0.02, a medium effect size value of 0.15, and a strong influence remaining at 0.35. The big effect size denotes more relevancy while the small shows limited particle implications. Here, social factors have a medium effect (0.186), environmental factors have a slightly lower effect (0.10) than medium, and governance factors have a high effect (0.253). At p=0.00, all effect size remains significant.

Table 10 The effect size of constructs

Paths	F <sup>2</sup>	ST.DEV	P Values
E <sub>nv</sub> _F -> IInv	.100	.038	.00
S <sub>oc</sub> _F -> IInv	.186	.053	.00
G <sub>ov</sub> _F -> IInv	.253	.061	.00

### Hypotheses Testing: Direct Path Model

The structural model is examined after ensuring the quality dimensions through the measurement model. The values in Table 11 were obtained using SEM-PLS (Bootstrapping with 5000 subsamples) and the BCa method, which is advised for complicated models including four or more components. The technique produces Path coefficients, t-statistics, and p-values. In parallel, scores are generated for the confidence interval bias adjusted

method, which examines the stability of beta coefficients. The route coefficients are thought to be steadier and more important if the confidence interval lower and upper limits do not have zero values.

Table 11 Path Coefficients output ( Inner Structural Model)

Construct	Path coefficients	SD	t-Statistics	p-Value	Confidence interval (Bias corrected)	
					5.0%	95.0%
Env_F -> IInv	.271	.049	.547	.00	.191	.353
Soc_F -> IInv	.278	.040	.017	.00	.212	.341
Gov_F -> IInv	.428	.047	.172	.00	.349	.500

Note. Env\_F= Environmental factors, Soc\_F= Social factors, Gov\_F= Governance factors, IInv= Investors' Investment.

The model results proved the significant effect of ESG factors on investors' investment in the Pakistan stock exchange. The first variable environmental factors estimated the beta coefficient value is 0.271(p=0.00), social factors estimated beta value of 0.278 (p=0.00), and governance factors beta coefficient value is 0.428(p=0.00) turns out highly statistically significant. The stability of the coefficient finding is demonstrated by the confidence interval borders not having a zero value. All the confidence intervals lower and upper value proved their significance too. This concludes that all three factors have a strong effect on investors' investment.

The interpretation is crucial here. The results show that a 1% change in environmental conditions will bring a 27% increase in investor investment. The result of social factors is consistent with it. Investors' investment decisions will improve by 27.8% because of a 1% improvement in social factors. The governance factors turn out the most dominant. A 1% change will result in a 42.8% positive change in investors' investment decisions, indicating that the governance coefficient value has a greater overall impact on investments. These outputs support all three hypotheses in the study.

## DISCUSSION

The study unit of analysis "Individual Investors" are investigated here about their perception (Shah, 2018). The primary data provide stakeholders with more up-to-date information regarding the aspects they are concerned about while making investment allocations (Amel-Zadeh & Serafeim, 2018). The current study uses a survey-based methodology to look at investor preferences for ESG and how it affects their choice of investments. In line with the findings of Dobbs and Staden, the survey concludes that in environmental factors investors

want to put their money where the entity focuses on "the demand from civil society to enhance performance, transparency, and responsibility on environmental practices" (2016). According to the study, "Producing quality goods and services while considering the customers' health and safety and providing accurate product information and labeling" is one of the social factors that receives widespread support. The investor rates "The independence and accountability of the board of directors" and "Financial reporting standards" get same score and importance when it comes to governance factors (Spedding, 2008). The statement in dependent variable investors investment "Our investment has a lower risk compared to the market in general" gains the highest value.

### **Impact of ESG factors on Investors' Investment**

Stone-predictive Geisser's relevance and structural equation modeling partial least square are utilized to examine the effect of ESG factors on investors' investment utilizing the effect size ( $f^2$ ), Coefficient of determination ( $R^2$ ), and relevance ( $Q^2$ ). The results indicate that 71% of the variability in investors' investment decisions can be described by the explanatory variables. The same is demonstrated by  $Q^2$  predictive relevance, which included exogenous variables that demonstrated strong predictability for the model's distribution of investors' investments. The effect size ( $f^2$ ) demonstrates that governance factors have a moderate impact compared to social and environmental factors. The study's findings suggest that ESG has a positive, significant impact on investors' investments. Similar to the research of investors' perceptions of ESG investing through superannuation by Zwaans (2015). The study is consistent in reporting the results that governance is an elevated factor that can draw more financing from the market. The same results are reported in various empirical studies (Naveed et al., 2020; Sultana et al., 2018; Lokuwaduge & Heenetigala 2017; Busch et al 2016; Cohen et al., 2015; Adam & Shauki., 2014). However, two other pillars, environmental factors, and social factors both have their unique value to improve the investment decision of investors (Rusu, 2020; Dobbs & Staden, 2016; Fazzini & Dal Maso, 2016). Recent studies suggest parallel results that the investors' group anticipates stronger future capital inflows for companies with higher ESG scores since they are more sustainable in long term (Glavina, 2022). Studies have shown that non-financial factors influence economic performance ((Hongming et al., 2020; Whelan et al., 2021; Buallay, 2019; Adedeji et al., 2019; Kocmanová & Doekalová, 2012). Other findings suggest that investors pay more prices for shares with high ESG reporting and consider the company more strengthen to protect their investments principal amount plus future gains (Sultana et al., 2018; Khan, 2019). According to the study, investors are clamoring for firm annual reports to disclose non-financial

transparency information about ESG policies so they may base their decisions on solid evidence (Naveed et al., 2020). Individual investors valued this type of information more highly than institutional investors (Rakotomavo, 2011). According to Lokuwaduge and Heenetigala's (2017) study, the enhancement of business financial performance is the additional rationale for a preference for non-financial metrics.

There are some controversies about ESG performance. The study shows that in the US and Europe the stock that undergoes controversies always performs below even the benchmark. The fact is that market reacts to those inconsistencies that bring negative returns but in Asia, the situation is different where it always outperforms (Franco, 2020). Another study considers the companies with profit-driven social impact identified in "Fortune magazine's annual Change the World list. Many of them are not able to place their position in SRI funds and ESG rankings (Porter, Serafeim, & Kramer, 2019). The corporate investor and their anticipated impacts on long-term profitability and value have underperformed even with ESG advancements. This appears to be especially clear during the quarterly earnings call. The data indicates that the cause is ESG disclosure content. The researcher makes the case for disseminating ESG data that is useful to both market sellers and purchasers (Eckerle, Whelan, & Tomlinson, 2020). The evidence that socially conscious companies have lower discount rates and as a result, lower expected returns for investors, is stronger than the evidence that these businesses experience better earnings or growth. Some companies simply gain from being socially responsible, yet there are cases where doing so incurs expenses with no corresponding advantages. (Cornell & Damodaran, 2020).

### **CONCLUSION**

The central conclusion of the study is that investors value ESG information disclosure and pay attention to the issues associated with these factors. The comparative dominance of governance factors is high as compared to the rest of the two factors, but all create a combined effect for the entity. The emerging markets including Pakistan Stock Exchange have no proper index or proper law to find and compare the company's commitment to the ESG factors. Therefore, in this situation, the current study findings would encourage the firms to blend the ESG aspects as part of their strategic management to give positive signals to the market. The company's investment in ESG issues will make its position better in the market and enhance its goodwill. The study also demonstrates how organizations can grow and continue over time by acquiring sizable investor markets. The money would be given to long-term initiatives concurrently to increase cash flow. Businesses run more efficiently



when they increase their ESG compliance and transparency as responsible citizens of the community, which eventually attracts talent through enhanced social standing (Cheng, 2014). The study's key findings have the potential to improve two areas. First, businesses may contribute by upholding the internationally acknowledged norms for ESG factors. Firms can increase their productivity by effective use of scarce resources. The company gives a positive signal through better performance and reputation. That ultimately reduce their expenses to encourage investors' investment and attract them without extraordinary efforts. The ESG performance eventually supports the signaling theory here. The second obvious competitive edge is to present care and consideration for stakeholders' interest in the market by ESG factors analysis. There is no standardized index to collect information on investor perceptions of ESG in the context of Pakistani companies or measure how well companies perform in terms of ESG. As a result, this study has developed a wonderful technique for including investors' viewpoints in the creation of business strategies and policies. The more determined the aim, the more likely the individual is to carry out a specific action or activity that corresponds to a habit. The study has demonstrated the awareness of individual investors about ESG factors as a Subjective Norm. It refers to the perception that most people either approve of or disapprove of conduct about certain phenomena. A person's behavior is judged favorably or unfavorably. This necessitates taking the behavior's result into account. The expected return on the investment is the outcome of such behavior if it relates to stock market investments. Investors may experience positive or negative circumstances depending on whether they can accomplish the expected return on their investment (profit) or not. If they can obtain the expected rate of return, they are in a good circumstance (profit).

### **LIMITATIONS & FUTURE DIRECTIONS**

Although there are some disadvantages, survey-based research is typically preferred for subjective topics. To assess the effects of the firm and investors on both sides, secondary data may be used in addition to primary data for more objectivity. The study used a nonrandom sampling technique. The sample size can be increased for further generalizability. The relationship has no moderating and mediating variable that can enhance their relationship. The study can further extend to a comparative analysis of Pakistan with other developing countries. Additional investigation into the unobserved heterogeneity connected to ESG may be done to comprehend the issues better. The effects of investment effectiveness, firm reputation, stock prices, behavioral biases, risk aggressiveness, financial literacy, stakeholder participation, etc. may be utilized as additional mediating and moderating variables. The analysis methods can also be updated.

## RECOMMENDATIONS

Eventually, CEOs and directors must include ESG as a part of the entire business plan. According to the survey, each board should establish clear communication with executives regarding how they will tackle sustainability performance for all stakeholders. By allocating funds to possibilities that are more attractive and sustainable, ESG proposals can improve investment results. By having a competitive advantage, the company can increase its market share. The only way to do this is to be proactive in governance, social issues, and the environment. By evaluating these factors, organizations can lower risk and gain an advantage over their customers. It is the need of an hour to start implementing ESG initiatives. Existing frameworks are numerous. The management should start tracking and publishing the important market indicators. This is an unending process. The frameworks and solutions are still being developed.

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