Journal of
Risk and Financial Management

MDPI

Article

An Attempt to Understand Stock Market Investors' Behaviour: The Case of Environmental, Social, and Governance (ESG) Forces in the Pakistani Stock Market

Samina Rooh [1], Hatem El-Gohary [2,*], Imran Khan [3], Sayyam Alam [4] and Syed Mohsin Ali Shah [4]

[1] Department of Management Sciences, University of Buner, Bunerwal 19290, Pakistan; saminarooh@ubuner.edu.pk
[2] College of Business & Economics, Qatar University, Doha 2713, Qatar
[3] Department of Mathematics, Islamia College University, Peshawar 25120, Pakistan; imrankhan.pk87@gmail.com
[4] Institute of Business Studies and Leadership, Garden Campus, Abdul Wali Khan University, Mardan 23200, Pakistan; sayyam@awkum.edu.pk (S.A.); syedmohsinali@awkum.edu.pk (S.M.A.S.)
* Correspondence: helgohary@qu.edu.qa

check for updates

Citation: Rooh, Samina, Hatem El-Gohary, Imran Khan, Sayyam Alam, and Syed Mohsin Ali Shah. 2023. An Attempt to Understand Stock Market Investors' Behaviour: The Case of Environmental, Social, and Governance (ESG) Forces in the Pakistani Stock Market. *Journal of Risk and Financial Management* 16: 500. https://doi.org/10.3390/jrfm16120500

Academic Editors: Jian Huang, Han Yu and Minghui Ma

Received: 9 October 2023
Revised: 13 November 2023
Accepted: 16 November 2023
Published: 5 December 2023

Correction Statement: This article has been republished with a minor change. The change does not affect the scientific content of the article and further details are available within the backmatter of the website version of this article.

Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/).

Abstract: The present study investigates the decision-making process of investors on the Pakistan Stock Exchange with regard to portfolio construction, explicitly focusing on the incorporation of ESG concerns. A quantitative research approach has been implemented for this paper. The hypotheses have been developed and tested through the adapted questionnaires. The data were collected from individual Pakistani investors. The present study employed SmartPLS-SEM to quantitatively assess data received from a sample of 421 out of 500 respondents. Based on the available data, investors participating in the Pakistan Stock Exchange are notably impacted by ESG aspects. The findings of this study hold significance for emerging economy firms, regulators, and investors, in terms of both theoretical and practical ramifications. The study's findings demonstrate a clear indication of investors' significant emphasis on ESG matters. This research made a significant contribution to the field of behavioural finance with a focus on ESG-related issues. This work contributes to the literature on ESG elements by using the Theory of Planned Behaviour (TPB) to adapt the ESG components from the United Nations Global Compact (UNGC) and Thomson Reuters Corporate Responsibility Index (TRCRI). Furthermore, it provides valuable insights for stakeholders who are involved in the ever-evolving realm of sustainable finance within developing countries.

Keywords: Environmental, Social, and Governance (ESG); individual investor's behavioural factors; Theory of Planned Behaviour (TPB)

1. Introduction

ESG activities have experienced a significant rise in prominence in academia, business, and government. Meyer and Hess (2018) assert that the early proponents of socially responsible investing (SRI) were the primary individuals who initially included ESG factors in their investment strategies. Therefore, the ESG framework is frequently cited as the "pillars of sustainability" (Ewens and Townsend 2020). The terms "ethical", "green", "impact", "mission", "responsible", "socially responsible", "sustainable", and "values" encompass concepts that are relevant to strategies aimed at attaining a balanced state of corporate responsibility, social fairness, and environmental standards. These strategies aim to provide advantages for society while attaining sustainable competitive profitability in the long run.

Przychodzen et al. (2016) have pointed out that there has been a substantial expansion in the worldwide socially responsible investment (SRI) business in recent years.

Umar et al. (2020) have observed a worldwide surge in attention given to ESG aspects. The ESG criteria provide a structured framework for assessing the managerial quality of potential investment opportunities. The three fundamental pillars of ESG encompass

the domains of "environmental", "social", and "governance". The environmental factors encompassed within a corporate context are its waste management strategies, the utilization of renewable energy resources, and the dedication to mitigating greenhouse gas emissions. Social factors include the observance of human rights, the elimination of child labour, the provision of fair salaries, and the establishment of safe working conditions. As discussed by Bollen (2007) and Riedl and Smeets (2017), SRI has several notable benefits. These advantages encompass enhanced financial returns, less risk in times of uncertainty, effective reputation management, and a sense of security. In contrast to modern finance's boundless investment portfolio, regarded as the most suitable option for an investor looking to allocate capital, the demand for ethical, environmental, and SRI has declined in recent decades. Financial scandals and crises, like the global financial crisis, have promoted ethical, environmentally friendly, and socially responsible investing in various ways.

Global investors are increasingly interested in ESG investments (Sultana et al. 2018). ESG-driven investments take into consideration non-financial factors. Since events such as Enron and the global financial crisis shook investor confidence, organizations have made more significant efforts to promote social change (Galbreath 2012). Since unethical or socially irresponsible behaviour can result in legal repercussions or reputational harm for a business, investors are paying more attention to ESG issues. Investing in companies with a strong track record of positive environmental, social, and governance practices offers more than financial security.

According to Sultana et al. (2018), after this collapse, investors were under increased pressure, as they had to take on financial losses as well as the psychological effects of more than a thousand people's fatalities, which also had an impact on thousands more people's lives and hopes. At the same time, they were charged with emphasizing business interests over the well-being of society and the local community (Aybars et al. 2019).

According to Chiromba (2019), investors are rational in the long and short terms, as assumed by traditional financial theory; i.e., they are wealth maximizers who adopt basic financial principles and base their investment plans primarily on risk–return considerations. In other words, according to Rehman and Vo (2020), investors are motivated to maximize both short- and long-term wealth/returns. However, Nilsson's (2008) SRI behaviour indicated that consumer investment in socially responsible investments (SRIs) is associated with both financial opinions and pro-social approaches. Additionally, according to research (Ani and Özarı 2020; Shefrin and Statman 2011), internal and external behavioural or ethical considerations, which tend to contradict traditional finance, have also been shown to influence investors' financial decisions in behavioural finance.

Limited scholarly research has thus far examined the influence of non-financial metrics, encompassing moral, spiritual, and ESG considerations, in the context of investment choices (Gasperini 2020; Przychodzen et al. 2016; Sairally 2015; Sreekumar Nair and Ladha 2014; Syed 2017; Umar et al. 2020; Winegarden 2019; Sandhu and El-Gohary 2022; Omopariola et al. 2021; Hussain et al. 2020; Nkwocha et al. 2019; Owusu-Manu et al. 2023).

However, our understanding still needs to be improved regarding the impact of behavioural factors such as attitudes, norms, and perceptions on the investing selection of individual investors (Pellinen et al. 2015). This knowledge gap is particularly salient given that ESG factors cannot be assessed in isolation. Consequently, the present study seeks to address this void within the ESG literature by investigating how individual investors' attention to ESG considerations influences their behaviour in the Pakistani stock market.

Furthermore, the research by Ng (2018) examines individual investors in developing countries where ESG problems are important. One possible implication of the research is that effective communication with various stakeholders regarding investors' ESG inclinations could assist in altering attitudes about certain ESG concerns related to sustainable growth. This research has practical implications for businesses that can identify investor demand for ESG, behave sustainably, and build long-run value. Regulators can recognize the significance of this and establish procedures and laws to increase ESG performance reporting. Furthermore, regulators might initiate measures to introduce the ESG index in

the Pakistan Stock Exchange or other nations with related cultural contexts. Investors will make gains through sustainable investment returns, confirming their commitment to the environment, society, and stability of the economy. This will eventually be central to the nation and the sustainable growth of the world.

The paper's main goal is to define the impact of ESG concerns on individual investor behaviour.

2. Review of Literature and Development of Hypotheses

Theoretical Underpinning

The present study expands upon the foundational work of Ajzen and Icek's original Theory of Planned Behaviour (TPB) developed in 1985, as well as the subsequent update of the TPB proposed by Wang et al. (2019). The TPB posits that individuals' willingness to pursue specific behaviours is shaped by their ideas about the value they attach to these behaviours, the level of control they perceive over their actions, and the significance of this control for their overall pleasure. This inquiry is grounded in the core principles of the TPB, specifically focusing on the constructs of "attitude" and "intention".

According to the proposition put forth by Fishbein and Ajzen (2011), the behaviour of an individual is mainly influenced by their emotional state. The TPB addresses stock market investors' "intention" to invest in ESG-practicing companies when making investment decisions by determining their "attitudes" to these issues. An "attitude" regarding behaviour is defined as an entire collection of desirable behavioural beliefs (Ajzen 1991) and an individual's intention to participate in conduct is also known as an "intention" (Fishbein and Ajzen 2011). Since attitude, in addition to other psychological constructs, may predict and explain social behaviour effectively (Fishbein and Ajzen 2011) and because investors' opinions regarding various investment criteria are important when they make an investment decision (Esat 1993), the "attitude" and "intention" components of TPB are studied. In their comprehensive study, Jafarkarimi et al. (2016) undertake a thorough examination of the various aspects that impact users' moral discernment when engaging with social networking sites. This study highlights the intricate nature of the connection between an individual's viewpoint and their subsequent actions in such situations. A study conducted by Yadav and Pathak (2016) demonstrates that consumer-purchasing decisions are highly influenced by their opinions of a product's environmental friendliness.

Despite the widespread popularity of the Technology Acceptance Model (TPB), there exists a notable need for scholarly understanding regarding its potential application in examining the motivations and viewpoints of investors. The theoretical framework is further enhanced by including the ESG notion as a behavioural determinant for individual investors. The conceptual framework for this investigation is depicted in Figure 1.

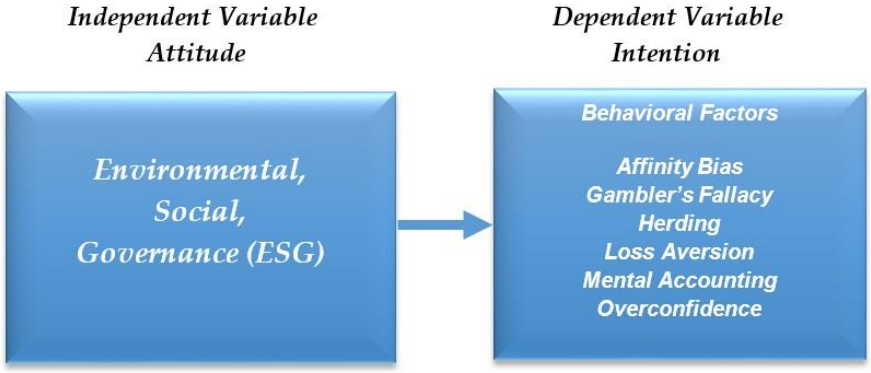


Figure 1. Conceptual framework.

A crucial investment decision phase is selecting stock from the many possibilities accessible on different stock markets. According to conventional economic theory, people are rational actors who may benefit from opportunities and make appropriate choices based on

their knowledge, skill, and anticipations. However, behavioural theory demonstrates how investors comprehend the world and make investment choices based on emotional preferences, ingrained cognitive behaviours, and psychological biases of individuals (Cohen and Kudryavtsev 2012; Somathilake 2020). ESG is critical for business and investment decisions, particularly when assessing long-term firm performance and risk (Kumar et al. 2020).

3. Independent Variables

Natural systems and environmental sustainability lie at the heart of environmental concerns. The factors above encompass pollution, water resources, alterations in land utilization, management of natural resources, and the utilization of sustainable energy sources (UN PRI 2015). The consideration of environmental effects has consistently played a significant role in shaping investment decisions, as shown by Sultana et al. (2018).

Conversely, social concerns involve a wide range of issues that impact individuals' fundamental rights, freedoms, and overall wellbeing. UN PRI (2015) places significant emphasis on human rights, freedom of expression, diversity, employee relations, efficient human capital management, engagement with local communities, and consumer protection.

Firms and other invested entities govern governance concerns. Concerns related to the management of an organization and other stakeholders in general include executive compensation, board structure, diversity, information disclosure, shareholder rights, risk management, and internal controls (UN PRI 2015). When making investment decisions, investors evaluate corporate governance practices as an essential measure of their state of economic prudence (Crifo et al. 2015). According to Giannetti and Simonov (2006), investors ought to refrain from supporting businesses with weak corporate governance. Investors have grown more worried about integrating governance concerns into investment decisions due to the corporate governance catastrophes involving Enron and others. The consideration of the current situation with corporate governance challenges the essential function of governance matters in global investor decisions (Sultana et al. 2018). Table 1 illustrate different ESG indicators.

Table 1. ESG Indicators.

ESG Factors	Factors
Environment	Climate change
	Energy consumption
	Water Management
Social	Fair Trade
	Safety
	Philanthropy
Governance	Corruption
	Bribery

Source: Sultana et al. (2018).

4. Effect of Independent Variables on Dependent Variables

4.1. ESG and Affinity Bias

An investor frequently needs to make more efficient investment decisions depending on how a sale or buying of a security will impact their morals. This bias in information processing is caused by emotion. In particular, investors frequently demonstrate "home-country bias" and favour acquiring shares in domestic companies. More patriotic regions or countries have lesser foreign equity interests. Affinity bias often leads investors to acquire stocks in selling businesses that enjoy shopping and "ESG" companies they believe will greatly impact the world, despite the reality that these companies may have poor future performance prospects (Pompian 2017).

4.2. ESG and Gambler's Fallacy

The phenomenon commonly referred to as the "law of small numbers" is alternatively recognized as the "gambler's fallacy". Concerning the stock market, there exists a common

assumption among individuals that a stock is likely to undergo a decrease after a period of expansion. The investor will closely observe the performance of companies with positive growth prospects and that meet all relevant ESG criteria. The investor will refrain from succumbing to the gambler's fallacy (Bloomfield and Hales 2002) due to the similarity between these investments and lottery games, wherein there are no certainties, and the result is entirely contingent upon random chance.

4.3. ESG and Herding Behaviour

The study by Kumar et al. (2020) showed that the investment behaviour known as "herding" is widely observed. Herd behaviour is observed when individuals in the market disregard their own personal beliefs and objective assessments and instead choose to imitate the actions and decisions of their fellow participants. As a consequence of such trading activity, the price of an asset has the potential to exhibit significant fluctuations, deviating considerably from its intrinsic worth. Research has shown that investors tend to exhibit herd behaviour more frequently when faced with market instability. The study conducted by Lee (2004) showed that private investors tend to display a higher propensity for engaging in herd behaviour compared to institutional investors.

Based on the available data, market participants who possess higher levels of expertise or hold prominent positions within the business often reassess their investment evaluations promptly when confronted with ESG concerns. The statement above underscores the importance of incorporating ESG practices, as they can enhance an investor's standing within their professional network by positioning them as a more dependable and credible player (Semmann et al. 2005).

4.4. ESG and Loss Aversion

As stated by behavioural finance authors, loss aversion bias is a very significant bias (Tversky et al. 1992). According to Tversky and Kahneman (1991), loss aversion bias makes investors make irrational decisions. Depending on one's attitude towards risk, ESG shortcomings may play a greater or smaller role in investment decision making (Przychodzen et al. 2016). It is significant to remember that there is proof that risk aversion and loss aversion depend on the domain. Investors are encouraging businesses to think about the connection between their investments and significant changes in governance, the environment, and social issues (Goel 2018). When knowing about the ESG investing path, the loss-averse investor might have confined his choices to value or ESG investments since they provide low risk for a long time and value-adding possibilities for investment. A previous research study (Dash and Kajiji 2020) urged incorporating ESG into the investment decision-making process as a loss-mitigating element.

4.5. ESG and Mental Accounting

It is a well-known notion that Richard Thaler stated that the "two-pocket" idea and mental accounting bias are both cognitive biases in which people treat every aspect of their portfolio separately. Numerous categories are used to classify investments reliant on the financing or purpose of the account (Jain et al. 2019). Investors can use mental accounting to manage and organize their investment portfolios in many accounts (Mahapatra et al. 2016), significantly affecting asset prices (Barberis and Huang 2001). The investor who employs a value-based accounting system and seeks to enhance the socially responsible composition of their portfolio is referred to as a socially responsible investor (SRI) (Bilbao-Terol et al. 2016). Calvo et al. (2016) integrate the concept of social responsibility into the mean–variance portfolio selection model, thereby introducing an extra non-financial aim. When formulating investment selections, ESG investing incorporates non-financial aspects in addition to a company's financial success (Sairally 2015). Therefore, investors need to consider supporting companies emphasizing environmental, social, and governance issues. The conclusion is erroneous since investors concerned about ESG principles are unlikely to invest their money into a stock that is losing money (Landi and Sciarelli 2019). According

to (Lungeanu and Weber 2021), there may be an association between philanthropy and corporate social responsibility (CSR) through mental accounting.

4.6. ESG and Overconfidence

When individuals exhibit overconfidence, they mistakenly believe they can successfully perform a task, even in the face of substantial hurdles. Overconfidence can be regarded as a cognitive bias, as posited by Thaler (1992). Jain et al. (2019) conducted a study on this topic. The choice is bestowed with a higher level of trust than what would often be anticipated. Overconfident investors overreact to market information (Parveen et al. 2020). Tversky et al. (1992) have proposed a theory explaining how individuals act when given unclear decisions. According to Dick et al. (2021), executives at these companies who are overconfident tend to perform better in terms of CSR.

Consequently, overconfident executives could reduce a family's tendency for control by emphasizing establishing their reputation by functioning socially responsibly. Moreover, Dick et al. (2021) highlight that corporate leaders in such organizations perform better when it relates to ESG while they are overconfident. Thus, a family's propensity for control can be mitigated by overconfident managers who overlook the family's control risk and focus on developing a reputation by acting socially carefully. Overconfident managers take greater chances and develop more (Hirshleifer et al. 2012).

Hypotheses of the Study:

H1. *ESG has a positive effect on the affinity bias of individual Pakistani stock market investors.*

H2. *ESG has a positive effect on the gambler's fallacy of individual Pakistani stock market investors.*

H3. *Herding of investors in the Pakistani stock market is positively affected by ESG.*

H4. *ESG impacts Pakistani stock market investors' loss aversion.*

H5. *ESG impacts Pakistani stock market investors' mental accounting.*

H6. *ESG impacts Pakistani stock market investors' overconfidence.*

A researcher has taken into account a 5% significance level.

5. Research Methodology

In order to achieve its objectives, this study uses quantitative methodologies. In order to evaluate the efficacy of a novel instrument, it is essential to employ quantitative data-collection methods to analyze occurrences (Ivankova et al. 2006). The primary research approach entails conducting a questionnaire survey targeting individual investors in the PSX, aligning with the research objectives. The data were acquired through a simple random sampling technique. Consequently, this work adopts a positivist paradigm, as it seeks to uncover empirical regularities that can be subjected to testing using empirical datasets (El-Gohary 2009, 2012).

Individual stock market investors in Pakistan constitute the population. While the researcher could not obtain data from every investor, an appropriate population sample was selected. As of 2019, the Pakistan Central Depository Company reported 56,053 individual investors in Pakistan. The population that is being examined in this study is well-defined. When determining the sample size, the authors depend on the formula suggested and implemented by well-established scholars (e.g., El-Gohary 2012; Saunders et al. 2009) to determine the population for the present investigation. The primary sample size was 383; however, to address the possible outliers, insufficient information, and non-response rates, an additional 10% was added to the proposed sample size, resulting in a sample of 421 (383 + 38).

Based on previous scholarly investigations, the present study employed a modified questionnaire comprising three primary constructs (Appendix A). The constructs under consideration encompass ESG components (Sultana et al. 2018), behavioural features (Antony and Joseph 2017; Mouna and Anis 2015; Metawa et al. 2019), and metrics of trading performance. Participants' responses were rated on a 5-point Likert scale from "strongly disagree" to "strongly agree". This research employs ESG dimensions to investigate the ESG considerations of stock market investors. We determined the minimum sample size using SmartPLS (Version 3.3.3) and structural equation modelling.

The SmartPLS-SEM approach was chosen over regression or other models for this investigation. Rather than examining each variable independently, it allows for the simultaneous study of several variables incorporated into the model. SEM is used because, unlike conventional regression models, it addresses the error component, which is ignored in other cases (Byrne 2016).

6. Analysis and Results of the Study

In this paper, the data were examined using Smart PLS 3 (SEM), and the outcomes of the analysis are presented using a two-step methodology.

The current study employed the Partial Least Squares Structural Equation Modelling (PLS-SEM) approach, as Ringle et al. (2015) suggested, to assess the reliability and validity of the gathered data. The evaluation involved the utilization of factor loading, average variance extracted (AVE), Cronbach's alpha, composite reliability, and average extracted variance. The present analysis utilized the method developed by Fornell and Larcker (1981) to evaluate the discriminant validity. The results for the convergent validity and internal consistency reliability of the measurement model are presented in Table 2. The methodology necessitated the establishment of accurate measurement standards for both items and metrics. Converged validity is achieved when the outer loadings of a model surpass a threshold of 0.650.

Table 2. Measurement Model Assessment.

	FL	Cronbach's Alpha	rho_A	CR	AVE	VIF
Affinity Bias	-	0.891	0.916	0.909	0.590	
AB-1	0.827					2.129
AB-2	0.798					1.920
AB-3	0.75					1.547
AB-4	0.739					2.055
AB-5	0.737					2.173
AB-6	0.742					2.045
AB-7	0.776					2.070
Anti-Bribery		0.898	0.941	0.928	0.762	
BR-1	0.884					2.456
BR-2	0.906					2.640
BR-3	0.862					2.424
BR-4	0.838					2.462
Climate Change		0.850	0.855	0.89	0.579	
CC-1	0.617					3.178
CC-2	0.647					3.278
CE-1	0.831					3.603
CE-2	0.8					2.811
CE-3	0.791					2.900
CE-4	0.847					3.612

Table 2. *Cont.*

	FL	Cronbach's Alpha	rho_A	CR	AVE	VIF
Corruption		0.907	1.063	0.927	0.762	
CO-1	0.937					2.697
CO-2	0.825					3.068
CO-3	0.893					2.742
CO-4	0.831					2.688
Energy Consumptions		0.93	0.978	0.954	0.875	
EN-1	0.94					4.447
EN-2	0.945					3.349
EN-3	0.921					3.803
Fair Trade		0.937	0.962	0.951	0.796	
FT-1	0.909					3.473
FT-2	0.89					3.112
FT-3	0.894					3.934
FT-4	0.871					3.141
FT-5	0.897					3.783
Gamblers Fallacy		0.893	0.982	0.875	0.596	
GF-1	0.724					2.683
GF-2	0.642					2.561
GF-3	0.526					1.704
GF-4	0.969					3.211
GF-5	0.909					3.739
Herding		0.901	0.906	0.920	0.590	
HE-1	0.76					2.137
HE-2	0.806					2.192
HE-3	0.779					2.038
HE-4	0.775					2.105
HE-5	0.749					1.900
HE-6	0.766					1.928
HE-7	0.727					1.762
HE-8	0.781					2.074
Loss Aversion		0.898	0.883	0.907	0.586	
LA-1	0.86					2.299
LA-2	0.826					2.057
LA-3	0.791					2.252
LA-4	0.841					2.035
LA-5	0.584					1.775
LA-7	0.765					2.281
LA-8	0.65					2.066
Mental Accounting		0.908	0.946	0.920	0.624	
MA-1	0.659					2.527
MA-2	0.737					2.762
MA-3	0.752					2.618
MA-4	0.862					2.598
MA-5	0.851					2.314
MA-6	0.871					2.893
MA-7	0.771					1.782

Table 2. *Cont.*

	FL	Cronbach's Alpha	rho_A	CR	AVE	VIF
Over Confidence		0.908	0.916	0.925	0.609	
OC-1	0.789					2.404
OC-2	0.851					2.967
OC-3	0.819					2.318
OC-4	0.827					2.492
OC-5	0.751					1.914
OC-6	0.664					1.615
OC-7	0.79					2.051
OC-8	0.734					1.843
Philanthropy		0.927	1.030	0.943	0.767	
PH-1	0.819					2.583
PH-2	0.869					3.155
PH-3	0.875					3.112
PH-4	0.894					2.945
PH-5	0.919					3.279
Safety		0.926	0.945	0.942	0.729	
SA-1	0.87					2.989
SA-2	0.816					2.435
SA-3	0.832					2.619
SA-4	0.871					2.741
SA-5	0.856					2.760
SA-6	0.875					2.768
Water Management		0.919	1.547	0.933	0.778	
WM-1	0.872					3.789
WM-2	0.957					3.622
WM-3	0.821					3.834
WM-4	0.875					3.954

Furthermore, the discriminant validity of the model was confirmed with a mean–variance exceeding 0.50, as reported by Shiau et al. (2020). Based on the findings of Shiau et al. (2020), it can be inferred that an increase in the composite dependability score beyond 0.70 indicates an improvement in internal consistency. The model's convergence validity, internal consistency, and general dependability can be assessed by comparing its metrics to those of the studies above. Table 3 illustrate the Fornell–Larcker Criteria.

Alternatively, the heterotrait–monotrait ratio can be employed to evaluate a construct's discriminant validity in differentiating between two distinct groups. Discriminant validity pertains to the degree to which items belonging to one concept demonstrate associations with items from other constructions that are unrelated and should not demonstrate such relationships. To ascertain the extent of variance ascribed to a collection of constructs, it is imperative to develop a statistically significant differentiation between two conceptually distinctive constructs (Henseler et al. 2012).

In order to ensure discriminant validity, it is recommended to maintain the HTMT (heterotrait–monotrait ratio) value at or below 0.85, as suggested by Kline (2011). Table 4 provides evidence that the study meets the requirements for establishing discriminant validity. Meanwhile, Table 5 illustrate the Model Fit Criteria.

Table 3. Fornell–Larcker Criteria.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Affinity Bias	0.768													
Anti-Bribery	0.133	0.873												
Climate Change	0.188	0.109	0.761											
Corruption	−0.032	0.038	0.031	0.873										
Energy Consumptions	0.128	0.112	0.390	0.058	0.935									
Fair Trade	0.225	0.166	0.422	−0.001	0.289	0.892								
Gamblers-Fallacy	−0.066	−0.080	−0.020	0.250	−0.089	−0.043	0.772							
Herding	0.340	0.085	0.202	−0.070	0.126	0.188	−0.071	0.768						
Loss-Aversion	0.093	0.066	0.203	−0.028	0.217	0.220	−0.034	0.014	0.766					
Mental-Accounting	0.242	0.124	0.287	0.007	0.168	0.141	0.001	0.186	0.165	0.790				
Over-Confidence	0.227	0.163	0.356	−0.116	0.214	0.283	−0.160	0.244	0.163	0.199	0.780			
Philanthropy	0.007	0.081	0.121	0.099	0.059	0.146	0.046	0.076	−0.076	0.044	0.118	0.876		
Safety	0.093	0.144	0.406	0.096	0.390	0.420	−0.105	0.108	0.084	0.180	0.163	0.050	0.854	
Water Management	0.044	0.166	0.221	0.144	0.160	0.194	0.086	0.004	−0.044	0.129	−0.018	0.127	0.259	0.882

Table 4. Heterotrait–Monotrait Ratio.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Affinity Bias														
Anti-Bribery	0.153													
Climate Change	0.188	0.135												
Corruption	0.051	0.062	0.06											
Energy Consumptions	0.105	0.113	0.434	0.087										
Fair Trade	0.212	0.188	0.463	0.053	0.3									
Gamblers Fallacy	0.050	0.047	0.051	0.196	0.145	0.054								
Herding	0.379	0.096	0.224	0.076	0.139	0.19	0.077							
Loss Aversion	0.082	0.064	0.177	0.046	0.183	0.173	0.093	0.078						
Mental Accounting	0.256	0.123	0.268	0.05	0.144	0.125	0.051	0.17	0.138					
Over Confidence	0.230	0.185	0.399	0.108	0.225	0.303	0.129	0.26	0.145	0.182				
Philanthropy	0.034	0.092	0.127	0.136	0.058	0.156	0.06	0.077	0.089	0.062	0.117			
Safety	0.102	0.165	0.457	0.121	0.426	0.446	0.127	0.113	0.138	0.161	0.181	0.065		
Water Management	0.065	0.184	0.246	0.192	0.166	0.208	0.085	0.036	0.057	0.127	0.066	0.127	0.289	-

Table 5. Model Fit Criteria.

	SM	EM
SRMR	0.053	0.07
d_ULS	8.985	15.454
d_G	3.115	3.222
Chi-Square	6209.9	6389.553
NFI	0.739	0.732

Structural Model Assessment

Table 6 provides a visual representation of the evaluation of the structural model (Direct Effect). An investigation was conducted to assess the structural model within the SEM-PLS framework and validate the study's hypotheses. Specifically, the study's first, third, fourth, fifth, and sixth hypotheses posit a significant positive association between ESG and variables such as overconfidence, mental accounting, loss aversion, and affinity bias. The outcomes of the structural model analysis reveal that the dependent variables exert a statistically significant influence on the independent variables, thereby confirming the hypotheses.

Table 6. Structural Model.

	Std. Beta	S.E	*t*-Values	*p*-Values	CILL	CIUL	Decision
ESG → Affinity Bias	0.235	0.076	3.007	0.003	0.130	0.348	Supported
ESG → Gamblers Fallacy	−0.072	0.124	0.938	0.349	−0.242	0.147	Not Supported
ESG → Herding	0.241	0.080	2.911	0.004	0.120	0.367	Supported
ESG → Loss Aversion	0.277	0.140	2.059	0.040	−0.273	0.420	Supported
ESG → Mental Accounting	0.303	0.055	5.201	0.000	0.191	0.406	Supported
ESG → Over Confidence	0.386	0.047	8.125	0.000	0.285	0.473	Supported

The analysis produced the following results: (β = 0.235, t = 3.007); (β = 0.241, t = 2.911); (β = 0.277, t = 2.059); (β = 0.303, t = 5.201); and (β = 0.386, t = 8.125). Consequently, these findings support hypotheses H1, H3, H4, H5, and H6. However, for the study's second hypothesis, the connection between ESG and the gambler's fallacy (GF) is statistically insignificant. The study's outcomes reveal that ESG and the GF exhibit a negative but statistically insignificant relationship (β = −0.072, t = 0.938), failing to provide statistical support for H2.

7. Discussion

This study investigates how ESG factors affect the investing selection of Pakistani stock market investors. This study, in a rapidly expanding economy, provides the first empirical evidence of individual ESG investor participation. This research expands the ESG and sustainability literature on Pakistani stock market investors.

The study provides evidence that investors hold a collective viewpoint on ESG matters and underscores the importance of integrating these aspects into financial decision making. The findings above suggest that investors are keenly interested in providing financial support to firms and projects that significantly contribute to sustainable development at the regional, national, and international levels. All survey participants were unanimous in acknowledging the inherent risk associated with investing in companies that exhibit subpar environmental standards. Furthermore, the study substantiated the notion that investors had a genuine interest in integrating ESG factors into their investment decision-making processes.

Furthermore, the study supports the notion that investors exhibit bounded rationality in their economic decisions, where they view the benefits of investing in terms of its social, economic, and psychological contributions (Guzavicius et al. 2014). This contrasts with traditional financial theories that assume investors are primarily concerned with financial gains. ESG, however, represents an intersection of traditional and behavioural finance theories, as environmental and social concerns can significantly impact long-term investment returns. Consequently, economic preferences and social and environmental considerations may play a role in shaping investment decisions. In contrast, rationality primarily influences governance factors and is supported by purely financial theories.

Based on the research findings, investors demonstrate a higher propensity to allocate their investments towards enterprises prioritizing ESG factors, assuming that such investments will yield favourable environmental outcomes. Pakistani stock market investors exhibit a much-diminished emphasis on ESG aspects compared to their previous experiences in the market. The available data indicate that Pakistani investors may need a more complete understanding of the societal implications of their stock market decisions.

Furthermore, the study reveals that individual investors in the stock market of Pakistan exhibit herd behaviour despite possessing knowledge of ESG-oriented equities. A recent study conducted by Rubbaniy et al. (2021) observed that investors commonly exhibit herd behaviour while making decisions connected to ESG factors. These findings provide support for the existing understanding of this phenomenon.

Furthermore, the study provides evidence that loss aversion substantially impacts the improvement in ESG parameters. Investors are more inclined to allocate their investments towards companies that demonstrate awareness of ESG factors when considering these organizations have a reduced likelihood of incurring financial losses. Investors prefer environmentally responsible enterprises due to their perception of them as more financially stable and secure investment options. The findings of this study align with previous research that suggests ecological considerations serve as a mitigating influence in making investment decisions (Dash and Kajiji 2020).

Furthermore, the evidence suggests that investors who exhibit overconfidence tend to assign greater importance to their viewpoints compared to the perspectives of their acquaintances, relatives, and coworkers. In the context of making decisions regarding finances, it has been discovered that people who display overconfidence and a reluctance to adjust their methods in reaction to fluctuations in the market are more likely to consider the implications that their decisions will have on the community. The statement above corroborates the outcomes of prior investigations conducted by Sultana et al. (2018).

Finally, this study reveals that investors opt for a diversified portfolio and consider socially responsible stocks, perpetually evaluating a range of investment opportunities to construct a diversified portfolio and explore socially responsible investment options, which is consistent with prior research (Lungeanu and Weber 2021).

7.1. Theoretical Implications

The study's findings give arguments against commonly held ideas, as they demonstrate that various variables other than financial considerations influence Pakistani investors. In addition, concerns about culture, economics, and psychology are considered. This observation is consistent with the concepts of behavioural finance, demonstrating the complex nature of the decision-making process involved in investing and providing scholars on the subject with a vital insight into the behaviour of investors.

By highlighting that financial and non-financial factors, such as ESG, influence Pakistani investors, the study contributes to the ongoing dialogue that bridges traditional financial theories with behavioural finance. It posits that investors are not always rational agents, as traditionally portrayed, but rather complex decision makers influenced by a myriad of factors. Pakistan's unique cultural, economic, and socio-political milieu provides a novel context for applying ESG and behavioural finance theories. This study adds depth to the literature by showcasing how ESG considerations play out in a rapidly expanding economy, which might differ from established Western markets.

By dissecting ESG into its environmental, social, and governance components and analyzing their differential impacts, this research adds nuance to the understanding of ESG as a multi-faceted construct. It moves the discourse beyond monolithic ESG discussions to a more nuanced understanding of each dimension. The study's findings on herd behaviour and loss aversion, in the context of ESG factors, offer further insights into the variability of investor behaviour. It posits that even when armed with knowledge, investors may still fall prey to certain behavioural biases, complicating the predictable models of investor behaviour.

This study analyzes the impact that ESG factors have on the process of making financial decisions. The aspects of an organization that are typically associated with governance have a greater degree of congruence with rationality and finance theories. At the same time, environmental and social considerations significantly impact the method by which decisions are arrived at. This variation highlights the complex influence of ESG issues on investor behaviour. As a result, it provides valuable insights for the research that academics will conduct in the future.

7.2. Practical Implications

The findings suggest that Pakistani investors exhibit a solid inclination to match their investment portfolios with sustainable development objectives. In order to facilitate increased capital allocation towards firms prioritizing environmental sustainability, investors and financial institutions should contemplate integrating ESG issues into their investment strategies and offerings.

Given the growing importance of ESG factors among Pakistani investors, publicly traded companies on the Pakistani stock market could be encouraged, or even mandated, to provide clearer and more comprehensive ESG reporting. This transparency would allow investors to make more informed decisions and align their portfolios with ESG preferences. Additionally, financial institutions can introduce investment products with a distinct ESG focus, catering to the growing segment of the market that values these factors. Examples include ESG-focused mutual funds or ETFs. In a similar context, regulatory bodies or trade associations could launch campaigns to improve the understanding of ESG issues among individual and institutional investors. These campaigns can dispel myths, provide clear data on the financial performance of ESG-focused investments, and educate individuals on the broader societal benefits.

It is imperative to provide investors with education and awareness regarding social issues, as a significant proportion may need more knowledge in this domain. The potential for the Pakistani stock market to experience positive outcomes lies in adopting sustainable investment practices. This transition could be facilitated by enhancing ESG knowledge among investors.

8. Conclusions and Recommendations

This paper makes a significant scholarly and practical contribution by examining the dynamic field of ESG investing in the context of the PSX. The study's results reveal the demographic makeup and investing inclinations of individual investors in Pakistan, highlighting the significant worldwide relevance of ESG considerations. This report offers crucial insights into the current state of the sustainable investing sector. This phenomenon may compel corporations to reassess their operational strategies, hence enhancing the probability of stock market authorities incorporating investor preferences into the formulation of legislative measures. The research findings indicate that establishing and implementing ESG policies and protocols can potentially enhance the overall ESG landscape in Pakistan. This, in turn, can foster ecological and social balance and positively contribute to long-term development.

This study provides empirical evidence indicating a positive association between self-confidence among investors and their inclination to adhere to ESG principles. However, the underlying reasons for this relationship remain unexplained. Further investigation is necessary to explore the impacts of social, economic, affective, value-based, and societal issues.

The approach employed in this study is characterized by its distinctiveness, which stems from using ESG metrics sourced from recognized organizations worldwide. This particular feature received limited attention in earlier ESG studies. The utilization of measurement methodologies and the analysis of the ESG attributes of significant multinational corporations enhances the empirical basis of ESG research.

The study suggests that the increasing interest of investors in ESG principles could lead to the creation of guidelines and benchmarks to enhance ESG performance and

transparency. The implementation of these programs may lead to the creation of an ESG index in Pakistan, which has the potential to yield advantages for both foreign investors and foreign direct investment (FDI). This phenomenon demonstrates significant efficacy in nations characterized by similar cultural standards, making a substantial contribution to the enduring stability of stock markets.

The study's findings offer empirical support for the notion that cultural factors play a significant role in shaping the practice of ESG investment, particularly in emerging economies like Pakistan, where a shared cultural framework exists among its populace. In future studies, it is imperative to integrate a diverse range of religious and cultural perspectives. It is imperative to attain a comprehensive understanding of the benefits and drawbacks associated with ESG initiatives. Additional research is required to examine the unobserved variability present in ESG variables. Conducting comparative research with other emerging nations can provide valuable insights into this subject matter, and pursuing such investigations is strongly advised. This study represents a notable advancement in sustainable and responsible investment as it aids various stakeholders, including investors, corporations, regulators, and scholars, in gaining a deeper comprehension of the dynamic characteristics of ESG issues.

The outcomes of the study demonstrate that ESG factors significantly enhance the dependent variables, with the exception of the second variable. Therefore, if investors think that investing in an ESG-oriented stock will have positive effects on the globe, they are going to favour investing in ESG-oriented companies when making investment decisions (Rooh and Hussain 2022; Rooh et al. 2021; Sultana et al. 2018).

Limitations and Future Research Directions

Notwithstanding several constraints, this study elucidates the impact of ESG variables on the decision-making process of investors in the Pakistani stock market. The study's conclusions may be limited due to several issues, including a small sample size, reliance on self-reported data, utilization of a cross-sectional methodology, a restricted number of contextual elements considered, and the potential inability to generalize the findings to other markets. Future research endeavour may consider utilizing experimental designs, conducting cross-national data comparisons, and employing longitudinal approaches to overcome these issues. Understanding the importance of ESG variables in investment decision making requires further study of distinct behavioural biases, regulatory consequences, information dissemination channels, and intervention tactics.

Author Contributions: S.R. and S.M.A.S. conducted the conceptualization of the study, while S.R. and I.K. developed the methodology; S.R. and S.M.A.S. developed the software used in the study. The validation process was carried out by S.R. and I.K.; formal analysis of the data was performed by S.R.; H.E.-G. led the investigation.; S.A. prepared the original draft of the manuscript, and S.A. and H.E.-G. also contributed to the writing, review, and editing of the manuscript; S.R carried out the visualization of the data; H.E.-G. provided the overall supervision of the study. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Ethical review and approval were waived for this study due to the study involves the collection of primary data through questionnaires, focusing on the perceptions and behaviors of stock market investors. The data collected is entirely anonymized, non-invasive, and does not involve sensitive or personal information that could identify individuals. Participants have been informed about the purpose of the study and have voluntarily consented to participate. Given the nature of the data collection and the measures taken to ensure ethical compliance, no ethical approval is deemed necessary for this research.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Guidelines for filling out this questionnaire: Please read this questionnaire carefully and choose your answer by encircling the answer of your choice or by putting the tick mark inside the boxes where required. Encircle or put a tick mark for every individual answer and do not provide more than two choices as an answer for a single question as this would cause ambiguity for the research and may impede the data collection process.

Demographic Variables	**Age**	**Education Level**	**Place/Province of Residence**	**Duration of Residence**
Gender:	Less than 30 y ☐	Matriculation ☐	Khyber ☐	Less than 1 y ☐
Male ☐	31 to 40 y ☐	Intermediate ☐	Pakhtunkhwa ☐	1 to 5 y ☐
Female ☐	More than 40 y ☐	Bachelors ☐	Punjab ☐	More than 5 y ☐
		Masters ☐	Sindh ☐	
		Ph.D. ☐	Balochistan ☐	
		Other ☐	Gilgit Baltistan ☐	

Variable

The notations used in the questionnaire are as follows:
SD: Strongly Disagree
D: Disagree
N: Neutral
A: Agree
SA: Strongly Agree

Variables	**SD**	**D**	**N**	**A**	**SA**
Variable: Environmental					
Items: I wish to invest in companies that care about:					
Climate Change					
During the time of investment, I address climate change as an investment risk.					
Carbon Emission					
Reducing harmful gases (carbon dioxide and chlorofluorocarbons) from the production process.					
I discourage those organizations who are involved in promoting this pollution.					
I am interested in investing in those organizations that reduce carbon emissions; policymakers provide incentives to achieve emission reduction.					
I invest under carbon emission regulation policies, and firms seek Cost-efficient methods to decrease emissions.					
Energy					
I want to invest in energy production projects because there are some areas in Pakistan where there is no electricity or gas.					
I would like to invest in projects that want to provide energy to the areas where there is a problem with energy.					
I prefer those investments that are working for renewable energy in Pakistan.					
Variable: Social					
Items: I wish to invest in companies that care about:					
Fair Trade Principles					
The organizations in Pakistan have fair trade rules.					

Variables	**SD**	**D**	**N**	**A**	**SA**
I prefer Investment in Community Development and environmentally Sustainable Projects.					
I invest in the project where I am given all the information withHonesty.					
I invest in those ventures that discourage forced labor and child labor.					
I invest in Workplace Non-Discrimination, Gender Equity, and Freedom of Association.					
Safety					
If the company is not safe for people, I do not invest.					
Pakistan has different safety issues so; I invest in the projects/organizations that are working for the safety of people.					
I also consider the health and safety of the people working in the organization as a major concern.					
I wish to invest in companies that care about the workplace health and safety of the employees and workers.					
Producing quality goods and services considering the customers' health and safety, and providing correct product information.					
Philanthropy					
I prefer those investments which are for the benefit of people.					
I invest more in social causes than for my benefit.					
Pakistan endured the consequences of the war against terrorism in some areas; I would like to invest in rehabilitation.					
Pakistan is one of the hubs of refugees in some areas; I would like to invest in their betterment.					
I invest in a charitable organization.					
Variable: Governance	SD	D	N	A	SA
Corruption					
I would not like to be a part of corrupt management as an investor.					
I prefer private organizations because corruption is more common in government organizations than in private ones in Pakistan.					
Bribery					
Bribery is a problem in Pakistan that is affecting investments.					
I will refrain from investing in the projects if I doubt Bribery.					
I have witnessed certain cases of bribery in Pakistan organizations more often.					
Bribery is more common in government organizations than in private ones.					
Stakeholder Protection					
I prefer those organizations that prioritize stakeholder Protection.					
I expect that I will be communicated with all necessary actions done by the organization or project where I have invested in Pakistan.					
I wish to invest in those organizations to improve performance, transparency, and accountability among stakeholders.					
Variable: Trading Performance					
My current investment's gains meet the expectations in Pakistan.					
I invest in riskier projects for high gains.					
I prefer a sufficiently high rate of returns on a project to the cause or attractiveness of the project.					

Variables	SD	D	N	A	SA
I always calculate my rate of return before investment and refrain from relying on intuitions.					
Generally, I am satisfied with my current investments due to satisfactory returns.					
If I invest in the future in Pakistan rather than in any other country, I will be satisfied.					
My trading experience motivates me to be a part of this region in the future.					
My level of satisfaction is linked with the level of safety of my investment.					
I consider the level of risk before investing in the stock market.					
I take high risks during my decision-making.					
If information is incomplete on an investment, I do not risk my money on that project.					
Investment in Pakistan is riskier than in any other country.					
I am satisfied with the way I am making investment decisions.					
My decision-making helps me to achieve my investment objectives.					
Variable: Behavioral Factors	SD	D	N	A	SA
Over-Confidence					
Sometimes I become overconfident in assuming returns.					
Initially, I was more confident in predicting returns, but with the experience, my overconfidence has reduced.					
I trade rapidly as I rely on my skills and knowledge.					
I tend to gather more and more information every time regarding Environmental, Social, and Governance (ESG) practicing firms.					
Confident in my ability to do better than others in stock picking during investment.					
I feel more confident in my own investment opinions than the opinions of my family, colleagues, or friends.					
Are Overconfident firm executives tending to exhibit superior ESG performance?					
Overconfident investors came to know that technical and fundamental analyses are not appropriate as investors are demanding ESG-oriented stock.					
Gambler's Fallacy					
I have an opinion that if some things have been happening more in the past then it is less likely to occur in the future.					
I tend to predict the data-generating process of the returns of shares I have invested in.					
I make simpler investment decisions based on past experience rather than ESG experience.					
Will the investor keep an eye on the stock of companies that fully satisfy ESG criteria or past performance?					
Are the investors predicting or forecasting incorrectly and improperly that the trend will be inverted as an ESG trend?					
Loss Aversion					
I tend to make moves by predicting the loss I will be able to bear.					
I avoid loss more than focusing on attaining gains.					
I will be happier if I know I have safeguarded myself from a loss than if I gain from an investment.					
If I have endured a loss on investment in the past, I will not invest in the specific project/organization later.					
I will not increase my investment when the market performance is poor.					
I feel nervous when large losses (price drops) are in my invested stocks.					

Variables	SD	D	N	A	SA
Are the loss-averse investors trying to follow and invest in ESG-practicing firms?					
As a loss-averse investor, I would like to invest in an ESG-practicing firm.					
Mental Accounting	SD	D	N	A	SA
I focus on avoiding the pain of bearing losses in my Investments classification.					
I have found my decision-making irrational.					
I always presume different pools/projects in my mind to invest in ESG practicing firms.					
I invest only in a diversified portfolio and ESG-oriented stock.					
I always keep in mind the ESG orientation firms for investment.					
If the investors are aware of ESG then they do not stick within the loss-bearing stock.					
Affinity Bias					
I tend to prefer domestic equities.					
I tend to prefer to invest in the stock of companies I like to shop From.					
I invest in stocks that are socially and environmentally responsible.					
I like to invest in companies in Pakistan.					
I prefer to buy a stock that goes beyond profit maximization.					
I prefer some time to buy a stock that goes beyond profit maximization rather than ESG stock.					
Sometimes I would like to shop the ESG stock if they feel will have a positive impact on the world.					
Herding					
I sometimes try to follow the actions of my friends and acquaintances in the market.					
I rely more on collective information as compared to private Information.					
The speed of following the trading behavior of others is based on frequent coordination.					
I believe that others invest in more profitable ventures so, I tend to follow them immediately to safeguard my opportunity.					
I usually react quickly to changes in other investors' decisions and follow their reactions to the stock market.					
I believe that information from relatives and colleagues has high reliability.					
Can ESG investment practices create a reputation & image of being more trustworthy among peers?					
I might keep on herding as well if I know that all the investors are focusing on the ESG-oriented stock,					

References

Ajzen, Icek. 1991. The theory of planned behavior. *Organizational Behavior and Human Decision Processes* 50: 179–211. [CrossRef]

Ani, Nuel Chinedu, and Çiğdem Özarı. 2020. Behavioral Finance: Investors Psychology. *IOSR Journal of Economics and Finance* 11. Available online: https://www.researchgate.net/profile/Nuel-Chinedu-Ani/project/The-Influence-of-Mental-Accounting-on-Windfall-Earning/attachment/5e36f95a3843b06506d69f9d/AS:854168642256904@1580661082182/download/Behavioral_Finance_Investors_Psychology+%25281%2529.pdf?context=ProjectUpdatesLog (accessed on 25 November 2023).

Antony, Anu, and Ansted Iype Joseph. 2017. Influence of Behavioural Factors Affecting Investment Decision—An AHP Analysis. *Metamorphosis: A Journal of Management Research* 16: 107–14. [CrossRef]

Aybars, Aslı, Levent Ataünal, and Ali Osman Gürbüz. 2019. ESG and financial performance: Impact of environmental, social, and governance issues on corporate performance. In *Handbook of Research on Managerial Thinking in Global Business Economics*. Hershey: IGI Global, pp. 520–36.

Barberis, Nicholas, and Ming Huang. 2001. Mental Accounting, Loss Aversion, and Individual Stock Returns. *The Journal of Finance* 65: 1247–92. [CrossRef]

Bilbao-Terol, Amelia, Mar Arenas-Parra, and Verónica Canal-Fernández. 2016. A Model Based on Copula Theory for Sustainable and Social Responsible Investments. *Revista de Contabilidad* 19: 55–76. [CrossRef]

Bloomfield, Robert, and Jeffrey Hales. 2002. Predicting the next Step of a Random Walk: Experimental Evidence of Re-gime-Shifting Beliefs. *Journal of Financial Economics* 65: 397–414. [CrossRef]
Bollen, Nicolas P. B. 2007. Mutual fund attributes and investor behavior. *Journal of Financial and Quantitative Analysis* 42: 683–708. [CrossRef]
Byrne, Michael. 2016. 'Asset price urbanism'and financialization after the crisis: Ireland's National Asset Management Agency. *International Journal of Urban and Regional Research* 40: 31–45. [CrossRef]
Calvo, Clara, Carlos Ivorra, and Vicente Liern. 2016. Fuzzy Portfolio Selection with Non-Financial Goals: Exploring the Efficient Frontier. *Annals of Operations Research* 245: 31–46. [CrossRef]
Chiromba, Vitalis. 2019. An Investigation of the Relationship between Signs and Faith in the Gospel According to John and its Application to the Zimbabwean Context. *DARE: Holy Trinity College Journal* 11: 23–38.
Cohen, Gil, and Andrey Kudryavtsev. 2012. Investor rationality and financial decisions. *Journal of Behavioral Finance* 13: 11–16. [CrossRef]
Crifo, Patricia, Vanina D. Forget, and Sabrina Teyssier. 2015. The price of environmental, social and governance practice disclosure: An experiment with professional private equity investors. *Journal of Corporate Finance* 30: 168–94. [CrossRef]
Dash, Gordon H., and Nina Kajiji. 2020. Multiobjective Behavioral Portfolio Selection with Efficient ESG Factors and Learning Network Estimation of Asset Returns. Paper presented at the 2nd Frontiers of Factor Investing Conference, Lancaster, UK, April 2–3; Available online: http://wp.lancs.ac.uk/fofi2020/files/2020/04/FoFI-2020-123-Gordon-Dash-Jr.pdf (accessed on 25 March 2023).
Dick, Markus, Eva Wagner, and Helmut Pernsteiner. 2021. Founder-Controlled Family Firms, Overconfidence, and Corporate Social Responsibility Engagement: Evidence from Survey Data. *Family Business Review* 34: 71–92. [CrossRef]
Esat, Robert. 1993. Investment Decisions and the Theory of Planned Behaviour. *Journal of Economic Psychology* 14: 337–75. [CrossRef]
El-Gohary, Hatem. 2009. The Impact of E-Marketing Practices on Marketing Performance of Small Business Enterprises: An Empirical Investigation. Unpublished doctoral dissertation, Bradford University, Bradford, UK.
El-Gohary, Hatem. 2012. Factors affecting E-Marketing adoption and implementation in tourism firms: An empirical investigation of Egyptian small tourism organizations. *Tourism Management* 33: 1256–69. [CrossRef]
Ewens, Michael, and Richard R. Townsend. 2020. Are Early Stage Investors Biased against Women? *Journal of Financial Economics* 135: 653–77. [CrossRef]
Fishbein, Martin, and Icek Ajzen. 2011. *Predicting and Changing Behavior: The Reasoned Action Approach*. London: Psychology Press.
Fornell, Claes, and David F. Larcker. 1981. Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research* 18: 39–50. [CrossRef]
Galbreath, Jeremy. 2012. Are Boards on Board? A Model of Corporate Board Influence on Sustainability Performance. *Journal of Management & Organization* 18: 445–60.
Gasperini, Andrea. 2020. Principles for Responsible Investment (PRI) and ESG Factors. In *Climate Action*. Edited by Walter Leal Filho, Anabela Marisa Azul, Luciana Brandli, Pinar Gökcin Özuyar and Tony Wall. Encyclopedia of the UN Sustainable Development Goals. Cham: Springer International Publishing, pp. 737–49.
Giannetti, Mariassunta, and Andrei Simonov. 2006. Which Investors Fear Expropriation? Evidence from Investors' Portfolio Choices. *The Journal of Finance* 61: 1507–47. [CrossRef]
Goel, Puneeta. 2018. Implications of corporate governance on financial performance: An analytical review of governance and social reporting reforms in India. *Asian Journal of Sustainability and Social Responsibility* 3: 1–21. [CrossRef]
Guzavicius, Andrius, Rita Vilkė, and Vytautas Barkauskas. 2014. Behavioural finance: Corporate social responsibility approach. *Procedia-Social and Behavioral Sciences* 156: 518–23. [CrossRef]
Henseler, Jörg, Christian M. Ringle, and Marko Sarstedt. 2012. Using partial least squares path modeling in advertising research: Basic concepts and recent issues. *Handbook of Research on International Advertising* 252. [CrossRef]
Hirshleifer, David, Angie Low, and Siew Hong Teoh. 2012. Are overconfident CEOs better innovators? *The Journal of Finance* 67: 1457–98. [CrossRef]
Hussain, Javed G., Navjot Sandhu, Hatem El-Gohary, and David J. Edwards. 2020. The Reality of Financing Small Tourism Firms: The case of Indian Tourism SMEs. *International Journal of Customer Relationship Marketing and Management* 11: 64–80. [CrossRef]
Ivankova, Nataliya V., John W. Creswell, and Sheldon L. Stick. 2006. Using Mixed-Methods Sequential Explanatory Design: From Theory to Practice. *Field Methods* 18: 3–20. [CrossRef]
Jafarkarimi, Hosein, Robab Saadatdoost, Alex Tze Hiang Sim, and Jee Mei Hee. 2016. Behavioral Intention in Social Networking Sites Ethical Dilemmas: An Extended Model Based on Theory of Planned Behavior. *Computers in Human Behavior* 62: 545–61. [CrossRef]
Jain, Jinesh, Nidhi Walia, and Sanjay Gupta. 2019. Evaluation of behavioral biases affecting investment decision-making of individual equity investors by fuzzy analytic hierarchy process. *Review of Behavioral Finance* 12: 297–314. [CrossRef]
Kline, Rex B. 2011. Convergence of structural equation modeling and multilevel modeling. *The SAGE Handbook of Innovation in Social Research Methods* 2011: 562–89.
Kumar, Anil, Abdul Moktadir, Zahidur Rhaman Liman, Angappa Gunasekaran, Klaus Hegemann, and Syed Abdul Rehman Khan. 2020. Evaluating sustainable drivers for social responsibility in the context of ready-made garments supply chain. *Journal of Cleaner Production* 248: 119231. [CrossRef]

Landi, Giovanni, and Mauro Sciarelli. 2019. Towards a more ethical market: The impact of ESG rating on corporate financial performance. *Social Responsibility Journal* 15: 11–27. [CrossRef]
Lee, Ian. 2004. Corporate law, profit maximization, and the responsible shareholder. *Stanford Journal of Law, Business & Finance* 10: 31.
Lungeanu, Razvan, and Klaus Weber. 2021. Social Responsibility Beyond the Corporate: Executive Mental Accounting Across Sectoral and Issue Domains. *Organization Science* 32: 1473–91. [CrossRef]
Mahapatra, Mousumi Singha, Jayasree Raveendran, and Anupam De. 2016. Mental Proposing the Role of Accounting and Financial Cognition on Personal Financial Planning: A Study in Indian Context. *Journal of Economic Policy and Research* 12: 62–73.
Metawa, Noura, M. Kabir Hassan, Saad Metawa, and M. Faisal Safa. 2019. Impact of behavioral factors on investors' financial decisions: Case of the Egyptian stock market. *International Journal of Islamic and Middle Eastern Finance and Management* 12: 30–55. [CrossRef]
Meyer, Julia, and Kelly Hess. 2018. Investments for Development in Switzerland: A Sub-type of Impact Investing with Strong Growth Dynamics. In *Positive Impact Investing: A Sustainable Bridge between Strategy, Innovation, Change and Learning*. Cham: Springer, pp. 177–95. [CrossRef]
Mouna, Amari, and Jarboui Anis. 2015. A study on small investors' sentiment, financial literacy and stock returns: Evidence for emerging market. *International Journal of Accounting and Economics Studies* 3: 10–19. [CrossRef]
Ng, Artie W. 2018. From sustainability accounting to a green financing system: Institutional legitimacy and market heterogeneity in a global financial center. *Journal of Cleaner Production* 195: 585–92. [CrossRef]
Nilsson, Jonas. 2008. Investment with a conscience: Examining the impact of pro-social attitudes and perceived financial performance on socially responsible investment behavior. *Journal of Business Ethics* 83: 307–25. [CrossRef]
Nkwocha, Obinna Udodiri, Javed Hussain, Hatem El-Gohary, David J. Edwards, and Ernest Ovia. 2019. Dynamics of Group Lending Mechanism and the Role of Group Leaders in Developing Countries: Evidence from Nigeria. *International Journal of Customer Relationship Marketing and Management* 10: 54–71. [CrossRef]
Omopariola, Emmanuel Dele, Abimbola Windapo, David John Edwards, and Hatem El-Gohary. 2021. Level of financial performance of selected construction companies in South Africa. *Journal of Risk and Financial Management* 14: 518. [CrossRef]
Owusu-Manu, De-Graft, Prosper Babon-Ayeng, Ernest Kissi, David J. Edwards, Derek Okyere-Antwi, and Hatem Elgohary. 2023. Green construction and environmental performance: An assessment framework. *Smart and Sustainable Built Environment* 12: 565–83. [CrossRef]
Parveen, Shagufta, Zoya Wajid Satti, Qazi Abdul Subhan, and Sana Jamil. 2020. Exploring market overreaction, investors' sentiments, and investment decisions in an emerging stock market. *Borsa Istanbul Review* 20: 224–35. [CrossRef]
Pellinen, Antti, Kari Törmäkangas, Outi Uusitalo, and Juha Munnukka. 2015. Beliefs Affecting Additional Investment Intentions of Mutual Fund Clients. *Journal of Financial Services Marketing* 20: 62–73. [CrossRef]
Pompian, Michael M. 2017. *Risk Tolerance and Behavioral Finance*. Greenwood Village: Investment Management Consultants Association Inc., vol. 1, pp. 1–5.
Przychodzen, Justyna, Fernando Gómez-Bezares, Wojciech Przychodzen, and Mikel Larreina. 2016. ESG Issues among Fund Managers—Factors and Motives. *Sustainability* 8: 1078. [CrossRef]
Rehman, Mobeen Ur, and Xuan-Vinh Vo. 2020. Is a portfolio of socially responsible firms profitable for investors? *Journal of Sustainable Finance and Investment* 10: 191–212. [CrossRef]
Riedl, Arno, and Paul Smeets. 2017. Why do investors hold socially responsible mutual funds? *The Journal of Finance* 72: 2505–50. [CrossRef]
Ringle, Christian, Dirceu Da Silva, and Diógenes Bido. 2015. Structural equation modeling with the SmartPLS. Structural Equation Modeling with the Smartpls. *Brazilian Journal of Marketing* 13: 56–73. Available online: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2676422 (accessed on 25 November 2023).
Rooh, Samina, and Arif Hussain. 2022. The Behavioral Factors and Individual Investor's Trading Performance in Khyber Pakhtunkhwa: The mediating role of Environmental, Social, and Governance (ESG) Performance: Herding, Loss aversion, Mental Accounting, Overconfidence, and ESG Performance. *City University Research Journal* 12. Available online: http://www.cusitjournals.com/index.php/CURJ/article/view/746 (accessed on 25 March 2023).
Rooh, Samina, Arif Hussain, and Muhammad Zahid. 2021. The impact of behavioral factors on environmental issues regarding individual investor's decision making: Empirical evidence from Pakistan's stock market. *Sarhad Journal of Management Sciences* 7: 65–82.
Rubbaniy, Ghulame, Ali Awais Khalid, and Aristeidis Samitas. 2021. Are cryptos safe-haven assets during Covid-19? Evidence from wavelet coherence analysis. *Emerging Markets Finance and Trade* 57: 1741–56. [CrossRef]
Sairally, Beebee Salma. 2015. Integrating Environmental, Social, and Governance (ESG) Factors in Islamic Finance: Towards the Realisation of Maqasid Al-Shari'Ah. *ISRA International Journal of Islamic Finance* 7: 145–54. Available online: http://search.proquest.com/openview/70dbf2bbb93fb0415e956ef5b9cbcd88/1?pq-origsite=gscholar&cbl=2031957 (accessed on 25 March 2023).
Sandhu, Navjot, and Hatem El-Gohary. 2022. Unveiling the Impact of Psychological Traits on Innovative Financial Decision-Making in Small Tourism Businesses. *Journal of the Knowledge Economy* 14: 2284–317. [CrossRef]
Saunders, Mark, Philip Lewis, and Adrian Thornhill. 2009. *Research Methods for Business Students*. London: Pearson education.
Semmann, Dirk, Hans-J. Grgen Krambeck, and Manfred Milinski. 2005. Reputation is valuable within and outside one's own social group. *Behavioral Ecology and Sociobiology* 57: 611–16. [CrossRef]

Shefrin, Hersh, and Meir Statman. 2011. *Behavioral Finance in the Financial Crisis: Market Efficiency, Minsky, and Keynes*. Santa Clara: Santa Clara University. Available online: https://www.econbiz.de/Record/behavioral-finance-in-the-financial-crisis-market-efficiency-minsky-and-keynes-shefrin-hersh/10009741001 (accessed on 25 March 2023).

Shiau, Wen-Lung, Ye Yuan, Xiaodie Pu, Soumya Ray, and Charlie C. Chen. 2020. Understanding fintech continuance: Perspectives from self-efficacy and ECT-IS theories. *Industrial Management & Data Systems* 120: 1659–89.

Somathilake, Hmdn. 2020. Factors Influencing Individual Investment Decisions In Colombo Stock Exchange. *International Journal of Scientific and Research Publications* 10: 579–85. [CrossRef]

Sreekumar Nair, Abhilash, and Rani Ladha. 2014. Determinants of Non-Economic Investment Goals among Indian Investors. *Corporate Governance* 14: 714–27. [CrossRef]

Sultana, Sayema, Norhayah Zulkifli, and Dalilawati Zainal. 2018. Environmental, social and governance (ESG) and investment decision in Bangladesh. *Sustainability* 10: 1831. [CrossRef]

Syed, Ali Murad. 2017. Environment, Social, and Governance (ESG) Criteria and Preference of Managers. Edited by Collins G. Ntim. *Cogent Business & Management* 4: 1340820. [CrossRef]

Thaler, Richard H. 1992. The Winner's Curse. *Across the Board* 29: 30.

Tversky, Amos, and Daniel Kahneman. 1991. Loss Aversion in Riskless Choice: A Reference-Dependent Model. *The Quarterly Journal of Economics* 106: 1039–61. [CrossRef]

Tversky, Amos, Paul Slovic, and Daniel Kahneman. 1992. Advances in prospect theory: Cumulative representation of uncertainty. *Journal of Risk and Uncertainty* 5: 297–323. [CrossRef]

Umar, Zaghum, Dimitris Kenourgios, and Sypros Papathanasiou. 2020. The static and dynamic connectedness of environmental, social, and governance investments: International evidence. *Economic Modelling* 93: 112–24. [CrossRef] [PubMed]

UN Principles for Responsible Investment (UN PRI). 2015. Available online: http://www.unpri.org/about-pri/pri-governance/pri-financial-information/ (accessed on 25 March 2023).

Wang, Haizhong, Hong Yuan, Xiaolin Li, and Huaxi Li. 2019. The Impact of Psychological Identification with Home-Name Stocks on Investor Behavior: An Empirical and Experimental Investigation. *Journal of the Academy of Marketing Science* 47: 1109–30. [CrossRef]

Winegarden, Wayne. 2019. Environmental, Social, and Governance (Esg) Investing: An Evaluation of the Evidence. Pacific Research Institute. Available online: https://www.pacificresearch.org/wp-content/uploads/2019/05/ESG_Funds_F_web.pdf (accessed on 25 March 2023).

Yadav, Rambalak, and Govind Swaroop Pathak. 2016. Young Consumers' Intention towards Buying Green Products in a Developing Nation: Extending the Theory of Planned Behavior. *Journal of Cleaner Production* 135: 732–39. [CrossRef]

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.