

THE IMPACT OF BEHAVIORAL FACTORS ON ENVIRONMENTAL ISSUES REGARDING INDIVIDUAL INVESTOR'S DECISION MAKING: EMPIRICAL EVIDENCE FROM PAKISTAN'S STOCK MARKET

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Abstract. *The behavioural biases impact the decision-making of individual investor in the stock market, hence, modern finance theories presumed that investor does not make a rational decision. This research paper aims to examine the impact of behavioral factors on environmental issues regarding individual investor's decision-making in the Stock Market of Pakistan. The data was collected from five provinces of Pakistan through adapted questionnaires; a sample size of 421 individual investors of the Pakistan stock market. This study applied the Structural Equation Model (SEM) using SmartPLS to analyze the influence of individual investor's behavioural factors on environmental issues. This study finding showed that overconfidence, loss aversion, mental accounting, and herding biases of individual investors positively affect investment decisions on environmental issues. This study attempts to fulfil the gap by analyzing behavioral factors and environmental issues in the Pakistan stock market. However, the current study contributes to the existing literature on behavioral finance and environmental issues in the Pakistan stock market. Furthermore, the current study will be useful for financial professionals, regulatory authorities, or investment advisors, academia as well as practitioners.*

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1. Introduction

The corporate world has faced drastic changes in the last few decades mainly because of the Global Financial Crisis which signified the interconnectivity of the world financial system (Bancel & Mittoo, 2012). This event was primarily

accountable for escalating the apprehension of businesses for their unethical conduct, accountability, management of stakeholders, & oversight of risk. In this process of revolutionary change, the investors of the stock market have turn out to be extra concerned about environmental, social, and governance (ESG) factors (Przychodzen et al., 2016). According to (Sultana et al., 2018), ESG issues have gained prevalence in the corporate world because it combines accountability towards society and environment, risk reduction and sustainable return. However, with time, investors have become more concerned and conscious regarding the environment, society, and governance. It is believed that investing decisions by the principles of ESG helps in terms of getting higher returns along with contributing towards the environment and society (Olmedo et al., 2010). The classical economics and standard financial theories are based on the rationality of investors, which means that that investor is always logical while initiating decisions pertinent to investment (Toma, 2015). (Fama, 1965; Fama, 1970; Fama, 1991) assumed that traditional/classical finance theory is based on maximizing the value or output without any emotion or bias because the investors behave rationally. The traditional finance theory states that an investor is always rational and hence makes investment decisions in alignment with profit maximization (Lodhi, 2014).

The efficient market hypothesis theory is grounded on the statement which stock prices exhibit all available information, therefore, market participants are rational and market forces cannot all beat their decision (Johnsson et al., 2002). The EMH provided whole information to investors without any cost and this theory is the cornerstone of traditional finance. However, in reality, investors don't need to always make rational decisions. Consequently, this phenomenon motivates investigators to examine the issues of irrationality amongst investors. This phenomenon has been planned under “behavioural finance” and the arena of behavioral finance has made incredible development in the last two decades (Abul, 2019). However, behavioural finance scholarships try to ascertain & used different methodologies for knowing the behavior of irrational investor's decisions & psychological factors of human behaviour and also encourage investors to think in a distinct approach to traditional finance in the financial market (Abul, 2019).

The behavioral finance investors are irrational in a decision, while investing due to the underlying assumptions of psychology and behavioral biases i.e. cognitive or emotional errors, cognitive errors based on subjective social reality, inaccurate judgment, illogical interpretation of data wrong calculation, etc. while emotional errors are sprung from thinking, feelings & perceptions. Behavioral biases impact investment decisions (Wali, 2019). Behavioral finance supports investors to make better decisions related to investment and avoid recurring errors and mistakes in the future (Farooq & Sajid, 2015).

Environmental factors are an investment concept that can be considered as the cross-over between classical and behavioral finance theories. Unlike the traditional finance theory, environmental is an investment concept according to which an investor can make investment choices based on economic preferences, environmental and social concerns, or both (Przychodzen et al., 2016). Environmental (E) investing includes nonfinancial standards in an investment's decisions (Winegarden, 2019).

The ground of behavioral decision-making has recognized an extended list of biases (Bazerman, 2008) and many of which apply to faulty environmental choices. Behavioral biases obstruct sound individual decision-making that has a positive relevance to behaviors impacting the environment (Shu & Bazerman, 2012).

Because of the prime significance of behavioral finance in the current world, there is a significant amount of international literature that is focused on assessing its role in the performance of capital markets (Tekçe et al., 2016). Some studies focus on evaluating the role of ESG factors on trading performance (Garcia et al., 2017; Landi & Sciarelli, 2019). However, while evaluating the regional literature on the very topic, it can be found that there are limited studies that are focused on studying behavioral factors of individual investors, and environmental issues. Environmental concerning investment is a broad phenomenon all over the world. Therefore this study contributes to the environmental focusing investment decision literature. The present research study purposes to fill the gap in the literature on individual investor's behavioral factors and environmental issues. Therefore, the present study goals to simplify the problem a researcher have proposed the research objective that; to examine the effect of individual investor's behavioral factors on the environmental issues regarding investment decisions in the Pakistan stock market.

After responding to the overhead objective and filling the demonstrated gap in the literature, the existing research has significant contributions to the body of knowledge. Hence current study contributes to the existing literature on behavioral finance and environmental issues in the context of the Pakistan stock market. Besides, contributions to the literature, present research has also an input to help policy and decision-makers by avoiding behavioral biases and also make some strategy regarding environmental issues in the Pakistan stock market. This paper designates investor's inclination for the environment and it might continue towards the definition of rules and guidelines to improve environmental, social, and governance execution of organizations, ESG revealing, and a definitive presentation of ESG index in Pakistan, which can

guarantee constant stock markets and whole sustainable development of the country. The study also offers several theoretical, methodological, and practical contributions that will be a thorough analysis of investors 'behavior and related factors that can guide the authorities in Pakistan to devise related policies attracting more investors for the development of Pakistan in different regions.

The following segment contracts with the literature review and hypotheses development while the next section reports research techniques, results, discussions, conclusions, and recommendations of the study.

2. Review of Literature and hypothesis development

2.1 Theoretical framework

Considering the plan in the light of the theoretical framework, the theories which are considered to be the base of this whole research and considering the investment behavior of the investors & stock market as a combined approach. There are numerous theories that past researchers have been joined and identify with behavioral finance in an alternate setting; the existing study has been grounded on the behavioral finance theory.

In recent decades, behavior finance has gained significance because it contributed positively to the decision of the individual investor in the capital market. Behavioral finance stipulates that very often investors act coherently and sensibly. At times, the decisions taken by the very investors are founded on personal prejudices or have some other behavioral aspects to them (Ramiah et al., 2016). These biases can be either emotional or cognitive (Tuyon & Ahmad, 2016). There is a wide amount of literature which is available on behavioral finance that explains the actions of investors. Behavioral finance suggests that the decisions taken by investors are not always optimal hence markets are temporarily or persistently inefficient (Joo, 2015).

2.3 Environmental Factors

It has been observed that usually, the investors have a conscious mindset therefore their investment decision is environmentally conscious. This asserts that the effect of the environment is present on the investing behavior of the investors. Moreover, the work of Heyes et al. (2016) was conducted on analyzing the influence of air pollution on trading behavior and the detrimental effect was inferred. Therefore, the evidence in this context is present.

Environmental factors are subjects related to the working and nature of the characteristic frameworks climate and environment. These incorporate waste management, energy efficiency, climate changes, water, air pollution, & greenhouse gas emissions, etc. (PRI, 2015) Environmental factors have been ordered as one of the significant features to be viewed when making decisions regarding investment. Recognized in a few earlier research in Australia Japan,

France, & India. According to (Sreekumar Nair & Ladha, 2014) the investors of India supported environmental concerns as the most persuasive component while thinking about non-economic objectives in decision-making. (Nakamura, 2013) likewise revealed the majority of the investors in Japan are principally worried about the environmental guidelines of an association. Environmental issues uplifted the attention of investors all over the world, so Pakistani investors need to consider environmental problems during investment decisions.

2.2. Behavioral Factors of the study

2.2.1. Over-confidence and Environmental issues

It can be termed as the tendency to overestimate the risk, value, and price while making investment decisions and forecasts. There are several factors can cause an investor to show over-confidence bias while making a decision or prediction such as self-serving bias which states that people associate their success with the credit of their expertise meanwhile attributing the mistakes if their past to their ill luck. Ullah et al. (2016) see that there is a positive effect of overconfidence on the investment decision. Qasim et al. (2019) findings demonstrated that Pakistani investor's decisions were positively impacted through overconfidence bias. Overconfidence is shown to have both positive and negative influences on firms. Overconfident family firm executives tend to exhibit superior environmental performance while making decision-making regarding investment (Dawson, 2011). Therefore, grounded on the discussion highlighted above, the first hypothesis is that:

H₁: There is a significant positive impact of overconfidence on environmental factors.

2.2.2 Loss aversion and Environmental issues

Loss Aversion mentions the behavioral aspect of investors according to which they prefer to avoid loss more than they want to earn a profit (Hirshleifer, 2015). Thus, the investors make such investment decisions where loss is avoided. The investor continuously ignores the loss primarily to get a return; hence loss is more dominant than profit (Farooq & Sajid, 2015). The biggest problems with loss aversion are that there is no agreed definition. Several authors define loss aversion in different ways. (Farooq & Sajid, 2015; Köbberling & Wakker, 2005) are working well in the block of loss aversion. The loss-averse investors try to follow and invest in Environmental practicing firms and individuals Investor always attempt to mitigate the risk in their decision making regarding investment. Hence, investors who are great loss averse will invest money in sustainable and Environmental practicing firms. To find sustainable businesses, it is essential the loss-averse investors collect,

examine, and will use more sustainability information (Przychodzen et al., 2016). So, it was assumed that:

H2: There is a significant positive impact of loss aversion on environmental factors.

2.2.3 Mental accounting and Environmental issues

According to (Hirshleifer, 2015) described that individuals tend to classify their funds differently because of which they end up making irrational choices for their savings and investment. The tendency for people to shape their reality into specific mental records. Investors will in general deal with every component independently of investment selection, which could cause inconsistency and inefficiency in decision-making (Shiller, 2000). Wali (2019) conducted a study; the findings showed that mental accounting positively affects the Pakistan individual investor's decision-making regarding investment. Mental accounting is a behavior where the investors treat various parts of their investment or portfolio differently. In the stock market it can be seen when an investor loses money in shares of Let say PSO, and he is suggested by an expert to sell it out and invest in PTCL, the investors do not usually act upon these recommendations and they remain sticky to the PSO for their lose recovery, if the investors are aware of environmental criteria he or she may not stick to stock where they have lost their investment but will easily switch to another stock for sustainable returns. Therefore, it was established hypothesis H3:

H3: There is a significant positive impact on mental accounting on environmental factors.

2.2.4 Herding Behavior and Environmental issues

Investors tend to copy and follow the actions and footsteps of other investors in the market. This behavioral aspect is largely influenced by their instinct, gut, and emotion. (Poshakwale & Mandal, 2014) explicated that investors depending upon others in decision-making regarding investment with the belief that their information is superior as compared to his information. In financial markets, humans have a tendency to copycat the actions of others. (Qasim et al., 2019) catches the positive significant influence of herding on the decision-making of investors. Moreover, market players who have more understanding and appreciate greater peer positions are bound to be the principal fund experts to alter investment evaluations dependent on environmental factors (Ioannou & Serafeim, 2015). Environmental practices can create a status & image of being more reliable amongst peers (Keskek et al., 2014). Moreover, market players who have more insight or appreciate higher peer positions are additionally to be expected first finance experts to regulate investment valuations grounded on ESG factors (Ioannou & Serafeim, 2015). Hence, it was hypothesized that:

H4: There is a significant positive impact of herding on Environmental factors.

Conceptual Framework

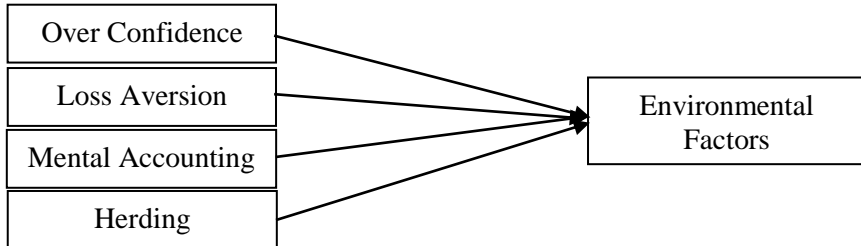


Figure 1. Conceptual Framework

3. Research Methodology

3.1 Population, Sample, & Instrument development

The population comprises individual investors in the Pakistan stock market. However, the researcher can't collect data from all of the investors hence a suitable sample was drawn from the population. The total population of the individual investors in Pakistan consists of 56053 as of 10/10/2019 reported by the Central Depository Company (CDC) Pakistan. According to (Battagila, 2008), it is the number of observations obtained from a given population. Population considers under the present study is exactly known. To calculate an exact population for the present study applied sample size calculation formula recommended by the previous authors (Krejcie & Morgan, 1970; Saunders, M, Lewis, P, and Thornhill, 2009). The authors recommend a sample size from 370-383 if the population is from 10000 to 100000. (Hair, Black, Babin, Anderson, & Tatham, 2006) keeping in view the potential outliers, missing values, and non-response rate the study applied an additional 10 percent of the recommended sample size. Hence, used a 421 (383 +38) sample size for further analysis. After computation of the sample size, the data has been composed by an adapted questionnaire developed grounded on previous literature. The study applied simple random sampling that is favored on account of providing an equal chance of selection to each unit of the population (Etikan, 2016). The rationale behind using the simple random sampling technique will help the researcher in terms of it increases the chances of the accuracy of the representation of the population.

3.2 Data Collection and Analysis

This study used a quantitative research method. The data was gathered from individual investors having various ages, gender, and education levels. A total of 500 questionnaires were distributed for a sample size of 400. Lastly, 393

responses were useable, and a response rate of 78.6%, were examined. The response might be low due to the stressed and sensitive job nature, long busy working schedules, and lack of academic interest of the participants. From previous literature, the study used an adapted questionnaire collected of three core constructs. These constructs comprising the behavioral factors from Antony and Joseph (2017) and Metawa et al. (2019). While environmental factors from Sultana et al. (2018). And the trading performance from Brewer, Selden, and Facer, (2000). The data of these variables were measured by 5 points Likert scale ordering from “strongly disagree” to “strongly agree”. Table 1 shows respondents’ profile.

Table 1: *Respondents Demographic Profile*

Variable	Group Respondents	Number	Percentage (%)
Gender	Male	343	85.80
	Female	57	14.30
Age	Less than 30 years	43	10.80
	Between 31 and 40 years	292	73.00
	Greater than 40 years	65	16.30
Education Level	Matriculation	7	1.80
	Intermediate	84	21.00
	Bachelors	150	37.50
	Masters	122	30.50
	Ph.D.	25	6.30
	Others	12	3.00
Place/province of residence	Khyber Pakhtunkhwa	130	32.50
	Punjab	135	33.80
	Sindh	104	26.00
	Balochistan	20	5.00
	Gilgit Baltistan	11	2.80
Duration of residence	Less than a year	43	10.80
	1-5 Years	175	43.80
	More than 5 years	182	45.50

3.3 Structural Equation Modeling

According to Hair Jr, Hult, Ringle, and Sarstedt (2016) ‘SEM’ has the power to show the associations between the constructs and conforming indicator variables, where an observed variable connection was depicted by the structural model.

Table 2: *Measurement Model of the Study*

Items	Factor Loadings	Cronbach's Alpha	rho_A	Composite Reliability	AVE	VIF
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Over Confidence	0.90	0.91	0.92	0.59	
OC1	0.77				2.24
OC2	0.84				2.75
OC3	0.80				2.18
OC4	0.83				2.36
OC5	0.74				1.85
OC6	0.64				1.59
OC7	0.78				2.02
OC8	0.73				1.82
Loss Aversion	0.90	0.86	0.90	0.54	
LA1	0.83				2.14
LA2	0.83				2.05
LA3	0.81				2.18
LA4	0.84				2.11
LA5	0.61				1.89
LA6	0.50				1.85
LA7	0.73				2.29
LA8	0.62				2.33
Mental Accounting	0.89	0.92	0.91	0.64	
MA2	0.69				2.13
MA3	0.71				2.14
MA4	0.85				2.52
MA5	0.85				2.25
MA6	0.88				2.80
MA7	0.79				1.76
Herding	0.91	0.92	0.93	0.61	
HE1	0.79				2.25
HE2	0.80				2.29
HE3	0.76				2.11
HE4	0.79				2.18
HE5	0.78				2.01
HE6	0.77				2.00
HE7	0.75				1.80
HE8	0.79				2.16
Environmental	0.87	0.87	0.90	0.53	
CC2	0.52				1.18
CE1	0.80				3.73
CE2	0.78				2.99
CE3	0.77				3.07
CE4	0.81				3.71

EN1	0.68	4.57
EN2	0.70	3.63

4.1.1. Measurement Model Assessment

Table 3 provides the descriptive statistics like reliability, discriminant validity, and multicollinearity tests of the data. The standard for factor loadings is (>0.7) to an individual element demonstrating a construct. Likewise, composite reliability must be greater than 7 as standards & the value of AVE should be greater (>0.5). There is sufficient convergent validity if the values for the measures are exceeding the designated cut-off values (Hair et al., 2011; Vinzi et al., 2010). The multicollinearity in the model to make certain the quality of the measurement scale is far of extremely good significance to test; else the independent variables may cause inflation of the effect sizes (Hair, Ringle, & Sarstedt, 2011). It is suggested that the VIF rating should be less than 5, and greater conventionally less than 3.3 (Hair, et al. 2009). Consequences of the above-mentioned measures pronounced in the table display that all values are exceeding the cut-off values and for that reason, the measurement model is suitable for all the constructs.

For the valuation of the measurement, a model used discriminant validity. It displays the degree to which a construct is changed from its other different partners (Hair et al., 2014). The values in diagonal ought to be more than all other values in the corresponding row and column according to the benchmarks for measuring discriminant validity (Hair et al., 2014; Vinzi et al., 2010). Measurements of discriminant validity.

Table 3: *Fornell-Larcker Criterion*

	Environ mental	Herding	Loss Aversion	Mental Accounting	Over Confidence
Environmental	0.725				
Herding	0.238	0.78			
Loss Aversion	0.277	0.041	0.731		
Mental Accounting	0.329	0.215	0.186	0.797	
Over Confidence	0.358	0.243	0.179	0.221	0.769

The statistics show all the diagonal values are larger than other's values in Table 3. Furthermore, discriminant validity has also been shown with the HTMT 0.90 standards as all the values reported in Table 4 are below 0.90. These results are more expanded through the graph as presented in Figure 2.

Table 4: *Discriminant Validity (HTMT0.90 Criterion)*

	Environ mental	Herding	Loss Aversion	Mental Accounting	Over Confidence
Environmental	1.00				
Herding	0.26	1.00			
Loss Aversion	0.21	0.08	1.00		
Mental Accounting	0.31	0.21	0.16	1.00	
Over Confidence	0.39	0.26	0.15	0.21	1.00

4. Findings and Discussion

The study applied the structural model, after the valuation of the measurement model, that is utilized for testing the previously proven hypotheses. The structural model includes assessing the R-Square beta and comparing t-values for every hypothesis of the study. The findings of the structural model reports in Table 5.

Table 5: *Structural Model Assessment*

Hypotheses	Mean (M)	St. Dev.	T Statistics	P Values	LL	UL
H1: Over Confidence -> Environmental	0.25	0.05	5.50	0.00	0.16	0.33
H2: Loss Aversion -> Environmental	0.20	0.04	4.28	0.00	0.12	0.29
H3: Mental Accounting - > Environmental	0.21	0.05	4.69	0.00	0.12	0.30
H4: Herding -> Environmental	0.13	0.06	2.29	0.02	0.03	0.23

The first Hypothesis H1 projected that Over Confidence has a significant positive impact on environmental issues. The results ($\beta = 0.045$, t-value = 5.497, $p < 0.05$) stated in Table 5 display positive relationship which support H1 of the study. The outcomes display that overconfidence has significant positive impacts on environmental issues. So the investors believe that overconfident investors consider the environmental criteria in their investment decision because they face any change when coming into the market and overconfident investors came to know that technical and fundamentals analysis are not appropriate as investors are demanding environmental-oriented stock. Hence, individual investors should be overconfident in the Pakistan stock market, at an acceptable level to utilize knowledge and abilities in assured environments to expand the outcomes of investment and practice the environmental issues regarding investment. Nonetheless, investment results can affect severely, whenever confident investors incline to undervalue the related

risks of active stock investment. The findings show similarity to prior research studies (Bhandari et al., 2008; Deshmukh, et al. 2013; Dittrich, et al. 2005; Guzavicius & Barkauskas, 2014; Malmendier & Tate, 2005; Ngoc, 2013; Qasim et al., 2019).

Another Hypothesis H2 proposed a positive connection between Loss Aversion and environmental decision. The statistics ($\beta = 0.044$, t-value = 4.282, $p < 0.01$) reported in Table 5 for the relationship which support H2. The finding revealed that loss aversion has a significant impact on an environmental issue. Therefore, loss-averse investors, think that when environmental concepts will implement in the stock market with low risk and loss then investors invest their money in environmental practicing firms. Regarding loss aversion, the outcome shows that somewhat, after an increase, the investors become more risk-seeking in the stock market while they incline after a loss to be more risk-averse. These are normal responses of investors since; previous investment achievement inspires them greatly where the disappointment certainly dampens them a great deal. The finding is, to some level, supported by Lehenkari and Perttunen, 2004) and Przychodzen et al. (2016). The result also reliable with (Farooq & Sajid, 2015; Wali, 2019) investigated a positive impact on investment decision-making, where risk aversion harms investment decision-making.

The third Hypothesis H3 also projected a positive coefficient of Mental Accounting concerning environmental issues. The findings ($\beta = 0.045$, t-value = 4.687, $p < 0.05$) exhibit a positive relationship in table 5 that support H3 of the research. Mental accounting order is the variable highest affecting the investor's decision-making. Under (Rockenbach, 2004) that outcome affirms that investors will, in general, treat every component of the investment portfolio independently; hence, pay no attention to the association between various investment opportunities. The findings also display that investors have sufficient knowledge to analyze and keep track of financial activities. The result is also supported by (Chandra & Kumar, 2012; Sairally, 20156). They always believe different pools in their mind to invest in a diversified portfolio and wish to invest in an environmentally oriented stock. So, investors always keep in mind the Environmental orientated firms for investment If the investors are aware of environmental criteria then they do not stick within the loss-bearing stock.

The fourth Hypothesis H4 presumed a positive association between herding & environmental factors. This confirmed H4, the positive impact of herding on environmental concerns regarding the investor's decision. The findings demonstrate that herding has a significant ($\beta = -0.055$, t-value = 2.286, $p < 0.05$) association with environmental factors described in table that support H4.

The finding supposed that herding has a significant effect on environmental factors. Individual investors ought to select good investment companions to consider as references for their investment because in the Pakistan stock market investors are not mature and experience. Therefore, the individual investors also keep on herding as well if they know that all the investors are concentrating on the environmental-oriented stock in the Pakistan stock market. The findings are consistent with (Ioannou & Serafeim, 2015; Qasim et al., 2019) indicate that the Pakistan market is not well efficient and established, so information is not equally accessible to everybody. The result is also reliable with (Przychodzen et al., 2016; Ullah et al., 2016) as herding biases are additionally credible amongst investors from the similar environment, within which they work.

5. Conclusion and Recommendations

The research study is completed by answering the research question elevated in the first chapter. Therefore, the hypotheses are tested and the objective is done. The results expressed that all investors of Pakistan are integrating behavioral biases in their investment decision. This study determines that the decision of investors is exaggerated by numerous behavioral issues. These behavioral factors influence decision is varied to altered points. Four behavioural factors positively significantly impact environmental factors in a Pakistan Stock market; i.e. Loss aversion, herding, mental accounting Overconfidence bias. Data collected with the help of the questionnaire was managed amongst the individual investors of the Pakistan market. The findings can assist recognized the call for environmental factors and will eventually encourage businesses to advance industry directly in Environmental-friendly manners. Stock market controllers will want to utilize investor inclinations when outlining the standards & guidelines here. The reception and execution of Environmental principles and guidelines will in the long run progress, generally ESG criteria of the country, and assist with protecting environmental and social stability. The investors would be confirmed a sustainable investment yield along with the responsibility to the environment. While this research study determined the inclination of assured behavioral factors of individual investors to environmental issues. Therefore, the integrated behavioral factors and environmental features in decisions of investment can add to constant stock markets and also the whole sustainable development of the country with comparable cultural locations Consequently, all investors in the Pakistan stock market suggested and wish to invest in environmentally friendly projects if the government wants to focus on environmental issues and should implement environmental-friendly procedures for every business then all investors will rush towards environment-friendly investments. Ultimately, this study also

recommended to the government take action and implement the rules and regulations regarding environmental issues. The acquired outcomes have suggestions for activities like Principles for Responsible Investment (PRI), and environmentally friendly investment, which would aid them improved; situation its objectives amongst the investor's community (Gasperini. A, 2020). By placing more emphasis on individual investor's decision-making regarding environmental (E) and therefore, improving the effectiveness of their execution among financial experts. This paper will be helpful for investment advisors and financial professionals. The study is also helpful for institutional investors, regulators, and fund managers to better understand their behavior by studying different behavioral biases due to which they deviate from an optimal financial decision. It will help them to analyze all relevant information before making an investment decision.

This study has certain limitations. First, when collecting data from the investors it was found that mostly the investors are illiterate and are unable to fill out the questionnaire. The bias of the respondents may also be a limitation of the study because normally the investors do not fill out the questionnaire with full concentration. The second constraint is that it is restricted to the Pakistan stock market because a collection of data is strenuous work and time-consuming as well. Maybe the researcher confronts difficulty in obtaining the data for assured variables; hence the application of results is limited to the Pakistan stock market. The current study is based on behavioral factors and environmental issues; upcoming research may conduct with other behavioral factors and social and governance issues. May be stretched out by a future researcher to other stock markets of the world by following a comparative study of the behavioral finance and environmental issues regarding individual investor's decision-making. This would restrict the limitation opposed in this research study. Forthcoming research might use the secondary data available on a different website and annual report of the listed firms on the Pakistan stock market. Further researches are also proposed to put on behavioral biases and environmental factors to discover the behaviors persuading the investment decisions of institutional investors at the Stock market of Pakistan.

References

- Abul, S. J. (2019). Factors influencing Individual Investor Behaviour: Evidence from the Kuwait Stock Exchange. *Asian Social Science*, 15(3), 27-41
- Antony, A., & Joseph, A. I. (2017). Influence of behavioural factors affecting investment decision—An AHP analysis. *Metamorphosis: A Journal of Management Research*, 16(2), 107–114.

- bancel, f., & mittoo, u. r. (2012). Financial flexibility and the impact of global financial crisis: Evidence from France. SSRN Electronic Journal. <https://doi.org/10.2139/ssrn.1587302>
- Battagila, P. M. (2008). Nonprobability sampling. *Encyclopedia of Survey Research Methods*, 523–526.
- Bazerman, H. and. (2007). Changing practice on sustainability: Understanding and overcoming the organizational and psychological barriers to action. *Organizations and the Sustainability Mosaic: Crafting Long-Term Ecological and Societal Solutions*,. 84–105.
- Bhandari, G., Hassanein, K., & Deaves, R. (2008). Debiasing investors with decision support systems: An experimental investigation. *Decision Support Systems*, 46(1), 399–410.
- Chandra, A., & Kumar, R. (2012). Factors Influencing Indian Individual Investor Behaviour: *Survey Evidence*. SSRN Electronic Journal, 1–41.
- Dawson, A. (2011). Private equity investment decisions in family firms: The role of human resources and agency costs. *Journal of Business Venturing*, 26(2), 189–199.
- Deshmukh, Sanjay; Goel, Anand M.; Howe, K. M. (2013). CEO Overconfidence and Dividend Policy. *Journal of Financial Intermediation*, 22(3), 240–263.
- Dittrich, Dennis; Güth, Werner; Maciejovsky, B. (2005). Overconfidence in Investment Decisions: An Experimental Approach. *The European Journal of Finance*, 11(6), 471–491.
- Etikan, I. (2016). Comparison of snowball sampling and sequential sampling technique. *Biometrics & Biostatistics International Journal*, 3(1), 1–2.
- Fama E. (1965). The Behavior of Stock-Market Prices. *The Journal of Business*, 38(1), 34–105.
- Fama, E. (1970). Efficient capital markets: A review of the theory. *The Journal of Finance*, 25(2), 383–417.
- Fama, E. F. (1991). Efficient capital markets: II. *The Journal of Finance*, 46(5), 1575.
- Farooq, A., & Sajid, M. (2015). Factors affecting investment decision making: Evidence from equity fund managers and individual investors in Pakistan. *Research Journal of Finance and Accounting*, 6(9), 2222–2247.
- Garcia, A. S., Mendes-Da-Silva, W., & Orsato, R. (2017). Sensitive industries produce better ESG performance: Evidence from emerging markets. *Journal of Cleaner Production*, 150, 135–147.

- Gasparini, A. (2020). Principles for Responsible Investment (PRI) and ESG Factors. *Climate Action*, 737–749.
- Guzavicius, A., & Barkauskas, V. (2014). Behavioural finance: Corporate Social Responsibility Approach. 156 (April), 518–523.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. (2006). *Multivariate Data Analysis*.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–152.
- Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review*, 26(2), 106–121.
- Heyes, A., Neidell, M., & Saberian, S. (2016). The Effect of Air Pollution on Investor Behavior: Evidence from the S&P 500. National Bureau of Economic Research. <https://doi.org/10.3386/w22753>
- Hirshleifer, D. (2015). Behavioral finance. *Annual Review of Financial Economics*, 7, 133–159.
- Ioannou, I., & Serafeim, G. (2015). The impact of corporate social responsibility on investment recommendations: Analysts' perceptions and shifting institutional logics. *Strategic Management Journal*, 36(7), 1053–1081.
- Johnsson, M., Lindblom, H., & Platan, P. (2002). Behavioral Finance - And the change of investor behavior during and after the speculative bubble at the end of 1990s. *School of Economics and Management*, 1–87.
- Joo, & D. (2015). A comprehensive review of literature on behavioral finance. *Journal of Commerce and Management Studies*, 6(2), 11–23.
- Keskek, S., Tse, S., & Tucker, J. W. (2014). Analyst information production and the timing of annual earnings forecasts. *Review of Accounting Studies*, 19(4), 1504–1531.
- Köbberling, V., & Wakker, P. P. (2005). An index of loss aversion. *Journal of Economic Theory*, 122(1), 119–131.
- Krejcie, R. V., & Morgan, D. (1970). Small-Sample Techniques. The NEA Research Bulletin, 30, 607–610.
- Landi, G., & Sciarelli, M. (2019). Towards a more ethical market: the impact of ESG rating on corporate financial performance. *Social Responsibility Journal*, 15(1), 11–27.
- Lehenkari, M., & Perttunen, J. (2004). Holding on to the losers: Finnish evidence. *The Journal of Behavioral Finance*, 5(2), 116–126.

- Lodhi, S. (2014). Factors influencing Individual Investor Behavior: An Empirical Study of City Karachi. *IOSR Journal of Business and Management*, 16(2), 68–76.
- Malmendier, U., & Tate, G. (2005). CEO overconfidence and corporate investment. *Journal of Finance*, 60(6), 2661–2700.
- Metawa, N., Hassan, M. K., Metawa, S., & Safa, M. F. (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(1), 30–55.
- Nakamura, E. (2013). The impact of shareholders' types on corporate social responsibility: evidence from Japanese firms. *Journal of Global Responsibility*, 4(1), 113–130.
- Ngoc, L. T. B. (2013). Behavior Pattern of Individual Investors in Stock Market. *International Journal of Business and Management*, 9(1), 1–16.
- Olmedo, E. E., Torres, M. J. M., & Izquierdo, M. A. F. (2010). Socially responsible investing: sustainability indices, ESG rating and information provider agencies. *International Journal of Sustainable Economy*, 2(4), 442.
- Poshakwale, S., & Mandal, A. (2014). Investor behaviour and herding: Evidence from the National Stock Exchange in India. *Journal of Emerging Market Finance*, 13(2), 197–216.
- Przychodzen, J., Gómez-Bezares, F., Przychodzen, W., & Larreina, M. (2016). ESG issues among fund managers-factors and motives. *Sustainability (Switzerland)*, 8(10), 1–19.
- Qasim, M., Hussain, R. Y., Mehboob, I., & Arshad, M. (2019). Impact of herding behavior and overconfidence bias on investors' decision-making in Pakistan. *Accounting*, 5(2), 81–90.
- Ramiah, V., Zhao, Y., Moosa, I., & Graham, M. (2016). A behavioural finance approach to working capital management. *European Journal of Finance*, 22(8–9), 662–687.
- Rockenbach, B. (2004). The behavioral relevance of mental accounting for the pricing of financial options. *Journal of Economic Behavior and Organization*, 53(4), 513–527.
- Sairally, B. S. (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(2), 145.
- Saunders, M, Lewis, P and Thornhill, A. (2009). *Research Methods for Business Students* (5th edn).

- Shiller, R. (2000). Measuring bubble expectations and investor confidence RJ Shiller - *The Journal of Psychology and Financial Markets*, 2000 (pp. 49–60).
- Shu, L. L., & Bazerman, M. H. (2012). Cognitive barriers to environmental action: Problems and solutions. *The Oxford Handbook of Business and the Natural Environment*.
- Sreekumar Nair, A., & Ladha, R. (2014). Determinants of non-economic investment goals among Indian investors. *Corporate Governance (Bingley)*, 14(5), 714–727.
- Sultana, S., Zainal, D., & Zulkifli, N. (2017). The influence of environmental, social and governance (ESG) on investment decisions: The Bangladesh perspective. *Pertanika Journal of Social Sciences and Humanities*, 25, 155–173.
- Sultana, S., Zulkifli, N., & Zainal, D. (2018). Environmental, social and governance (ESG) and investment decision in Bangladesh. *Sustainability (Switzerland)*, 10(6), 1–19.
- Tekçe, B., Yilmaz, N., & Bildik, R. (2016). What factors affect behavioral biases? Evidence from Turkish individual stock investors. *Research in International Business and Finance*, 37.
- Toma, F.-M. (2015). Behavioral Biases of the Investment Decisions of Romanian Investors on the Bucharest Stock Exchange. *Procedia Economics and Finance*, 32(15), 200–207.
- Tuyon, J., & Ahmad, Z. (2016). Behavioural finance perspectives on Malaysian stock market efficiency. *Borsa Istanbul Review*, 16(1), 43–61.
- Ullah, S., Karachi, T., & Elahi, M. A. (2016). Behavioral biases in investment decision making and moderating role of investor's type: Evidence from Karachi Stock Exchange.
- Vinzi, V. E., Trinchera, L., & Amato, S. (2010). *Handbook of Partial Least Squares. In Handbook of Partial Least Squares.* <https://doi.org/10.1007/978-3-540-32827-8>
- Wali, S. (2019). Behavioural factors influencing individual investor's trade performance: A comparative study of Peshawar. *City University Research Journal*, 09(01), 2019.
- Winegarden, W. (2019). Environmental, social, and governance (ESG) investing: An Evaluation of the Evidence. 1–28.