Emotional Intelligence and Behavioral Biases in Investment Decisions: A Study of Mindful Investing

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ABSTRACT: This research investigates the influence of behavioral factors and investor psychology on investment decisions (IDs) among financial specialists in Pakistan, focusing on individuals investing through the Pakistan Stock Exchange (PSX). The study employed a purposive sampling method, which is a non-probability sampling technique based on specific characteristics of the population and the research objectives. Purposive sampling, which is dependent on the researcher's competence, is also known as judgmental sampling, selected sampling, or subjective sampling. The study reveals a positive correlation between behavioral biases of financial specialists and investor decisions, as well as a positive relationship between emotional intelligence (EI) and investment choices. Notably, EI was found to be a stronger predictor of IDs compared to behavioral biases. Specific behavioral biases such as regret bias were identified as influential factors in investor decisions. The study acknowledges the limitation of its sample selection, which was zone-specific and limited to the Pakistan Stock Exchange (PSX). Consequently, generalizing the results to investors in other states or exchanges should be done with caution. The study assumes the accuracy and truthfulness of the provided investor data. However, the findings have relevance for other stock exchanges similar to the Pakistan Stock Exchange (PSX). Additionally, investors can gain insight into their subjective behaviors and learn to manage emotions while making stock market decisions. This study contributes to the assessment of investors' risk attitudes, enabling investment advisors and finance specialists to make more informed decisions.

KEYWORDS: Behavioral Biases, Emotional Intelligence, Decision Making, Statistical Analysis

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Introduction

Raheja & Dhiman (2020) investigated the concept of EI and its impact on interpersonal relationships. They found that individuals who have higher EI tend to foster well-balanced relationships, while those with lower

EI tend to create high-stakes situations. Moreover, EI training plans were found to positively influence participants' attitudes, perceptions, and affiliations in various aspects of life. Rosales-Pérez et al. (2021) examined the relationship between EI and personality traits among Croatian and Slovenian university students. Using data collected from 257 and 171 university students, respectively, they employed regression, correlation, and two-way ANOVA analyses. Their findings highlighted that extraversion and conscientiousness traits play significant roles as indicators, while neuroticism exhibited the strongest predictive power. Zia et al. (2017) studied the behavior of overconfident financial experts in the insurance market through simulations. They observed that an increase in market trends led to heightened carelessness among financial experts. Raheja & Dhiman (2020) explored the relationship between emotional knowledge, personality traits, and mental tendencies among students. Their research revealed a positive correlation between emotional knowledge and neuroticism, while negative relationships were observed with responsiveness and openness. Additionally, emotional clarity showed a negative association with neuroticism and a positive association with extraversion.

Toma (2015) investigated the impact of entrepreneurial investors and their characteristics on portfolio performance. Data from 122 Iranian shareholders were analyzed using regression and t-tests, indicating a positive effect of entrepreneurial investors on portfolio performance. Furthermore, the study revealed that the investors' experience significantly influenced portfolio performance and returns. Kumari & Arora (2015) explored the influence of social factors on the IDs of financial managers. Their findings identified regret as a primary factor influencing IDs. Saleh Torkestan et al. (2015) examined the relationship between EI and business performance in the Tehran Stock Exchange. While self-affiliation exhibited a positive correlation with performance, no significant relationship was found between social attention and performance.

Novianggie & Asandimitra (2020) investigated the association between EI and personality traits among school leaders in high- performance schools in Malaysia. The study indicated that integrity, responsiveness to understanding, extraversion, and adaptability were positively related to EI among teacher leaders. Moreover, self-confidence exhibited a stronger association with EI compared to other personality traits. Parashar (2010) examined risk attitudes and women's personality traits in the PSX. Data collected from 563 individual investors were analyzed using t-tests, factor analysis, and percentages. Joseph et al. (2015) explored the relationship between demographics, personality traits, and over-confidence bias among financial specialists in the Tokyo Stock Exchange. Their study, conducted with 170 respondents, utilized chi-square ($\chi 2$) tests and correlation analysis, revealing a positive association between over-confidence bias and extraversion, as well as an indirect association between overconfidence bias and psychoneurosis. Nur Aini & Lutfi (2019) investigated the impact of economic factors and personality traits on behavior and risk-taking tendencies among lenders and finance students in Pakistan. Their study employed structural equation modeling.

(SEM) and suggested significant associations between personality traits, except for mood, and attributes such as pretentiousness, group behavior, and risk-taking. Hussain et al. (2021) found a strong positive correlation between EI and life satisfaction, while personality traits showed an inverse association with life satisfaction. The study also identified intra-specific attention and neuroticism as key indicators of life satisfaction. Sabir et al. (2019) discovered a relationship between EI traits of financial investors and their IDs. Azouzi & Anis (2012) assessed the impact of EI on the speculative behavior of retail financial investors in the Tehran Stock Exchange. The study revealed a positive correlation between EI and IDs, while risk aversion exhibited a negative association with EI.

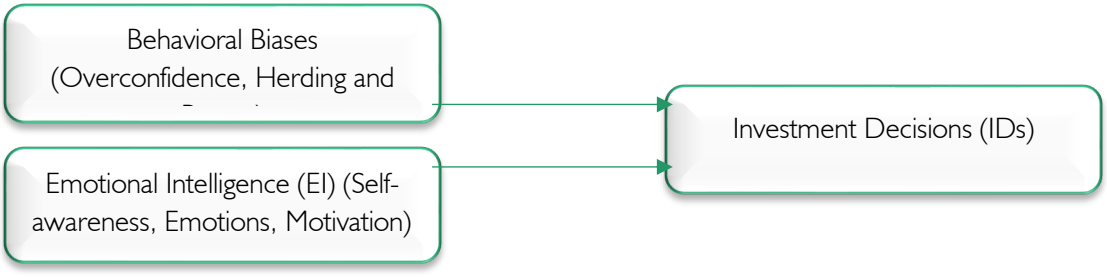
Báez et al. (2018) demonstrated that retail investors, particularly active ones, were more prone to various behavioral biases in decisions compared to less engaged individuals. Dibb et al. (2021) examined the association between IDs and behavioral factors. Their findings highlighted a significant relationship between egotism and IDs,

while no association was observed between herding behavior and IDs. Raheja & Dhiman (2020) explored the relationship between risk aversion and IDs. The study indicated that investors prefer certain gains over uncertain outcomes. Nisar et al. (2021) investigated the relationship between EI and IDs. They found that awareness, self-affiliation, and empathy had a significant positive impact, whereas relationship affiliation had a low impact. Chakrabarti & Sen (2021) aimed to identify the constructs necessary for identifying enterprise investors via a general review. Their study emphasized the relationship between EI and investment behavior. Barber & Odean (2001) analyzed the similarities and differences in IDs between individuals with high and low EI. Hervé & Schwienbacher (2018) considered the individual investors' behavioural shapes, institutional investors, and financial consultants. Kong (2013) found a strong association between risk tolerance and IDs. Shollapur et al. (2022) examined the association between behavioural biases, financial risk tolerance, and IDs among investors.

Based on the preceding analysis, our aim is to explore the connection between IDs and investors' EI. It is evident that individuals make diverse investment choices based on their EI and behavioral biases. Certain dimensions of EI exhibit a direct relationship with IDs, while others demonstrate an indirect association. Additionally, there exists a correlation between behavioral biases and investors' IDs. Some dimensions of behavioral biases directly influence IDs, while others exert an indirect impact.

Figure 1

Theoretical Framework



The following are the goals of this investigation:

1. To investigate the connection between IDs and EI dimensions.
2. To look into the connections between behavioral bias dimensions and IDs.

These goals have served as the foundation for developing and testing the following hypotheses:

H0: Investors' investment decisions (IIDs) do not significantly differ based on their emotional intelligence (EI).

H1: Emotional intelligence (EI) and investment decisions (IIDs) of investors have a considerable association.

H0: Investors' investment decisions (IIDs) and behavioral biases do not significantly affect one another.

H2: Investment decisions (IIDs) made by investors and behavioral biases have a significant association.

This paper examines the relationship between the IDs of investors and two independent variables: behavioral biases and EI. The dependent variable is the IDs made by the investors. The behavioral biases' dimensions are represented by the codes: over-confidence bias (A1), herding bias (A2), and regret bias (A3). The dimensions of EI are represented by the codes: self-awareness (B1), handling emotions (B2), and motivation (B3).

Methodology

Sample Size: Data were collected from a total of 514 financial specialists.

Sampling Location: The research was conducted among financial experts who invest via PSX Securities.

Sampling Method: The study employed a purposive sampling method, which is a non-probability sampling technique based on specific characteristics of the population and the research objectives. Purposive sampling, which is dependent on the researcher's competence, is also known as judgmental sampling, selective sampling, or subjective sampling.

Survey: Data from financial specialists were gathered using standardized surveys. The study made use of the EI Scale, Behavioral Biases Scale, and IDs Scale.

- The EI Scale was based on the confirmed 40-item version, employing a five-point Likert scale developed by Goleman (2001). It measures the factors of EI, including self-awareness, motivation, and emotions.
- The Scale of Behavioral Biases was adopted from Chin (2012) and has 20 validated items, measured with a five-point Likert scale. It measures behavioral indicators such as overconfidence bias, regret bias, and herding behavior.
- The IDs Scale was also obtained with 30 validated items and measured with a five-point Likert scale developed by Hameed (2012).

Data Sources: For this study, primary data were collected from financial specialists through standardized surveys in the stock market, while secondary data were gathered from journals, books, websites, and literature reviews.

Pilot Study: A pilot study was conducted with 50 investors to test the reliability of the data. The Cronbach's alpha (α) was calculated as 0.857, which indicates good reliability as it exceeds the threshold of 0.6.

Data Analysis

This section looks at the relationship between investors' IDs, behavioral biases, and emotional intelligence. It is divided into three sections: the first one investigates the connections between behavioral biases and IDs; the second one looks at the connections between EI and IDs; and the third one addresses the connections between behavioral biases, EI, and IDs as a whole. These correlations were evaluated using multiple regression techniques.

Investors' Investment Decisions (IDs) and Behavioral Biases

This section focuses on the relationship between investor IDs and behavioral bias aspects. These analyses have led to the following theories being developed:

H0: Overconfidence and investor investment decisions (IIDs) do not significantly correlate.

H1: Overconfidence bias and investor investment decisions (IIDs) have a significant association.

H0: Investors' investment decisions (IIDs) and herding bias do not significantly correlate

H2: Herding bias and investor investment decisions (IIDs) have a significant association.

H0: Investors' investment decisions (IIDs) and regret bias do not significantly correlate.

H3: Investors' investment decisions (IIDs) and regret bias have a significant link.

Table 1 displays the coefficients from the multiple regression model, providing insights into the relationship between investors' behavioral biases and IDs. The fitted model is statistically significant at $p < 0.05$, indicating a connection between behavioral biases and IDs. The framework predicts a projected level of 0.534 or 53.4%, suggesting how accurately the regression model can anticipate future investment outcomes. The R^2 value of 0.415 or 41.5% explains the variability in IDs.

Table 1

Multiple Regression Results

Variables (IDs as Dependent Variable)	beta	t-values	Sig. level
Over-confidence Bias_A1	0.22	9.714	0.000
Herding Bias _A2	0.01	0.12	0.53
Regret Bias_A3	0.02	7.926	0.000

Note: The evaluation employed ANOVA to determine the significance of the model, as shown in Table 1. The table indicates that the aspects are significant at $F(4,944) = 68.952$, $p < 0.05$, confirming that the model fits the data well. Additionally, for the t-test, the factors A1 (overconfidence Bias) and A3 (regret bias) are significant at the 0.05 level.

Therefore, hypothesis H2 is not accepted, while H1 and H3 are accepted. This suggests that a relationship between overconfidence bias and IDs is significant, as well as between regret bias and IDs. However, there is no relationship between herding bias and IDs.

The intercept of the regression equation is 9.714, and the significant beta (b) coefficients are 0.220 (A1) and 0.021 (A3). Among all the behavioral biases, overconfidence (A1) has the highest coefficient value, indicating its significance as a predictor of IDs. An increase of one point in overconfidence bias leads to a positive change of 0.220 points in IDs. This aligns with Combrink & Lew's (2020) previous findings, highlighting how investors can become overconfident and neglectful of their decision-making abilities. There is a significant connection between regret bias and IDs. A one-point increase in regret bias results in a positive change of 0.021 points in IDs. Investors who consider their past experiences tend to invest more cautiously and take fewer risks. This finding supports research on the phenomenon of regret.

However, no significant relationship is observed between conservatism bias and IDs, nor between herding bias and IDs. These results are consistent with Kauppakorkeakoulu's (2009) prior findings, suggesting that some investors do not follow the actions of others when investing in the stock market and are more adaptable to new information and technology.

Next, the analysis focuses on the relationship between EI dimensions and IDs. The following hypotheses are formulated:

H0: Investors' investment decisions (IIDs) and self-awareness do not significantly correlate with one another.

H4: Investors' investment decisions (IIDs) and self-awareness have a considerable link.

H0: Investors' investment decisions (IIDs) and how they handle their emotions have no discernible association.

H5: Investors' investment decisions (IIDs) and how they handle their emotions have a strong relationship.

H0: Investors' investment decisions (IIDs) and motivation do not significantly correlate with one another.

H6: There is a strong correlation between investor motivation and investor investment decisions (IIDs).

Table 2 presents the coefficients from the multiple regression model, demonstrating that the model is well-fitted and statistically significant ($p<0.05$). The framework predicts an anticipation level of 0.714 or 71.4%, indicating a connection between EI and IDs. The R2 value of 0.473 or 47.3% explains the variability in IDs.

Table 2

Multiple Regression Model Results

Dependent variable (IDs)	beta	t-values	Sig. level
Self-awareness _B1	0.34	7.103	0.000
Handling emotions _B2	0.12	3.247	0.000
Motivation _B3	0.32	5.623	0.000

Note: The ANOVA analysis confirms the significance of the regression model, as shown in Table 2.

The table reveals that the aspects are significant at $F(4, 944) = 81.444$, $p < 0.05$, indicating a good fit for the data. Additionally, the t-test results indicate significance for all the variables, B1, B2, and B3, at the 0.05 level. Therefore, hypotheses H4, H5, a n d H6 are accepted, suggesting a relationship between all dimensions of EI (self-awareness, handling emotions, motivation, empathy, and social skills) and IDs. The significant b coefficients are 0.338 (B1), 0.120 (B2), and 0.315 (B3. From the table, it is evident that among all the EI factors, motivation has the highest coefficient value, indicating its significance as a predictor of IDs. There is a significant relationship between self-awareness and IDs. This suggests that when investors are aware of their own emotions and their impact on IDs, they make more informed investment decisions.

Furthermore, there is a significant connection between handling emotions and IDs. A one-point increase in handling emotions results in a positive change in IDs. Investors who know how to stay positive under stress tend to invest more in the stock market. Motivation also shows a significant relationship with IDs. A one-point increase in motivation leads to a positive change in IDs. Investors who strive to achieve their goals and remain committed to their work are more likely to invest in the stock market.

The methodology then examines the overall connection between investors' behavioral biases, emotional intelligence, and individual differences. The ensuing theories are developed:

H0: Investors' investment decisions (IIDs) and emotional intelligence do not significantly correlate with one another.

H7: Investors' investment decisions (IIDs) and emotional intelligence (EI) have a significant association.

H0: Investors' investment decisions (IIDs) and behavioral biases (BB) do not significantly correlate with one another.

H8: Investors' investment decisions (IIDs) and behavioral biases (BB) have a considerable causal link.

The model is statistically significant at $p < 0.05$, as seen in Table 3. A level of expectation of 0.599, or 59.9%, is predicted by the model, according to the findings of the multiple regression analysis. The dependent variable's variability is explained by the regression model's R^2 value of 0.428, or 42.8%, showing how well it can forecast future events. It is noteworthy that EI has the greatest value, indicating that it is a greater predictor of IDs than behavioral biases. Investor IDs alter positively by 0.432 points for every point increase in EI. Similarly, an increase in behavioral biases by one point causes an improvement in IDs of 0.310 points.

Table 3

Multiple Regression Results

Independent variables	beta	t-values	Sig. level
Behavioral biases (BBs)	0.3	6.102	0.001
Emotional Intelligence (EI)	0.4	11.899	0.004

As a result, there is a strong correlation between investors' IDs, behavioral biases, and emotional intelligence (EI). Higher EI investors typically invest more money in the stock market. Additionally, biases in behavior can predict IDs.

Findings and Suggestions

The study reveals a positive correlation between the behavioral biases of financial specialists and IDs, as well as a positive correlation between the EI of financial specialists and their IDs. However, EI better predicts the IDs of financial specialists than behavioral biases. Among the various behavioral biases, regret and negligence are associated with the IDs of financial specialists. The IDs of financial experts are connected to the many components of EI (self-awareness, handling emotions, and motivation). According to the study, EI has a bigger impact on IDs than financial experts' behavioral biases. Financial experts who take into account their prior experiences are more likely to invest money and take a conservative approach to the stock market.

It is natural for individuals to experience feelings of regret in their daily lives. Financial specialists often feel regret when they purchase stocks at high prices and sell them at low prices. They tend to hold onto stocks for too long, waiting for the price to exceed their buying price. Investors who consistently strive to achieve their desired goals or overcome negative emotions tend to invest more in the stock market. Investors who are committed and proactive in their work also invest more in the stock market. Investors should have comprehensive information about investment opportunities. Therefore, companies should provide thorough attention to financial specialists, assisting them in making the right investments at the right time.

Investment companies should consider the social preferences and EI of investors when investing in the stock market. Personal investors should not blindly follow others or base their investments solely on past experiences. Thus, companies need to focus on individual investors to understand the entire market. Fund management companies should design investment opportunities based on the behavioral biases and EI of investors. Companies should offer value-added services to investors. Financial specialists should not blindly follow the herd mentality but be mindful of their investments. They should not rely solely on the advice of others when making IDs. Financial specialists should not base their investments solely on past stock performance. Financial advisors should pay attention to the overconfidence and regret behavioral biases of investors when making IDs to guide them effectively and mitigate these biases. Investors should practice patience when making IDs. They should carefully identify and analyze the social factors that influence IDs. Investors of all age groups should have knowledge of investment options to select the most suitable ones. Investors should be informed by businesses about the advantages of stock market investing.

Conclusion

In conclusion, the investment decisions (IDs) of financial specialists are influenced by their behavioral biases and emotional intelligence (EI). Different financial specialists exhibit different EI and, as a result, invest in different avenues. Companies should take into account the diverse behavioral biases and EI of investors in order to offer them the most suitable investment opportunities. Therefore, it is crucial for companies to provide tailored advice to their clients, considering the various aspects that impact the IDs of investors.

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