Journal of
Risk and Financial Management

MDPI

Article

Does the Investor's Trading Experience Reduce Susceptibility to Heuristic-Driven Biases? The Moderating Role of Personality Traits

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Abstract: The aim of this study was to evaluate whether trading experience reduces exposure to heuristic-driven biases, namely availability bias, anchoring and adjustments bias, representativeness bias, and confirmation biases of individual investors operating in the Indian stock market, through the moderating role of the Big Five personality traits. To achieve these research objectives, primary data were collected through a structured questionnaire. The sample consisted of 408 individual investors trading on the Indian stock market, who were selected on a convenient basis. Confirmatory factor analysis and Cronbach's alpha were used to measure the validity and reliability of the data. Further analysis was conducted using Pearson's correlation and multiple regression. The results of this study prove that increased trading experience does not always reduce the susceptibility to heuristic biases. Increased trading experience reduces the susceptibility to availability, and anchoring and adjustment heuristics of individual investors operating on the Indian stock market. The present study has some relevant implications for investors, portfolio managers, financial advisors, and other interested persons in the stock market.

Keywords: investor experience; availability bias; anchoring and adjustments bias; representativeness bias; confirmation bias; big five personality traits

Citation: Chalissery, Neenu, Mosab I. Tabash, T. Mohamed Nishad, Ibtehal M. Aburezeq, and Linda Nalini Daniel. 2023. Does the Investor's Trading Experience Reduce Susceptibility to Heuristic-Driven Biases? The Moderating Role of Personality Traits. *Journal of Risk and Financial Management* 16: 325. https://doi.org/10.3390/jrfm16070325

Academic Editor: Thanasis Stengos

Received: 3 June 2023
Revised: 1 July 2023
Accepted: 3 July 2023
Published: 7 July 2023

1. Introduction

Decision-making is a very complex process as it is affected by many psychological factors, and the extensive use of such factors will result in systematic deviation from rationality. As uncertainty is an unavoidable aspect of the human condition, investors use stereotypes to make decisions rather than rational and complex decision-making processes (Kahneman and Tversky 2013). They use mental shortcuts rather than analytical thinking and try to find similarities between real and past events that can be easily recalled by them (Badshah et al. 2016). Behavioral phenomena of the investor's psychology that relate to perceptions, memories, and ideas without awareness have been highlighted in studies over the last two decades, and it has become a fundamental part of the decision-making process in diverse situations (Dangol and Manandhar 2020), (Sadiq and Khan 2019). Further, the psychological realism of the conventional model has been improved in behavioral finance research in three areas. First, by making more grounded assumptions about people's views, particularly the idea that people do not always update their ideas in a totally logical way, departing from Bayes' rule. Second, by making more realistic assumptions about people's preferences, such as reconsidering the sources of people's utility and the shape of

their utility function or substituting an alternative paradigm, such as prospect theory, for expected utility. Thirdly, by accounting for cognitive constraints—by realizing that with the volume of information of this kind that is delivered each week, people are unlikely to be able to quickly digest all of it (Barberis 2018).

In situations when there is a lot of ambiguity and risk-taking behavior, a person will use heuristics, which are generic, simple rules, to address a particular category of problems. This explains the tendency of people to evaluate something, not based on probability, but based on a reference that closely resembles something. The question of how humans perceive, consider, and assess the possibilities of an occurrence has been the subject of extensive experimental research. This research has demonstrated that people do not adhere to the principles of probability theory (Khan and Bashir 2020). Subjective probabilities play a significant role in making decisions, reaching a conclusion, and choosing among alternatives. It is also prevalent when we deal with uncertain events (Kahneman and Tversky 1972). Prospect theory by Kahneman and Tversky, one of the milestones in the behavioral finance literature, contributes three propositions, as individuals do not all take risks in the same way, making the value function S-shaped. Using a reference point, people evaluate the worth of the prospect, and since individuals are loss averse, they put more weight on loss than gain (Prosad et al. 2015). Investors tend to anchor on information as a reference and make adjustments until they reach the final estimation. This inhibits people from updating their estimates in light of fresh knowledge. It allows their emotions and receptivity to new experiences to determine when to purchase or sell stocks. To assess the possibility of an event, they might use examples or incidents that they can recall quickly. Representativeness is a typical behavioral characteristic of decision-making, under which, investors are inclined to believe that a company's historically exceptional success is indicative of the kind of overall performance the company will continue to produce in the future (Boussaidi 2013). It relies on stereotypes to make quick decisions while dealing with complex financial processes (Chang et al. 2009). The tendency of investors to identify and select only the information that confirms their existing beliefs or opinions and ignore all contradicting information is referred to as confirmation bias.

In India, the majority of trading occurs on the National Stock Exchange (NSE), launched in 1992, and the Bombay Stock Exchange (BSE), founded in 1875. The two most well-known market indices in India are Sensex and Nifty. Sensex offers time-series data for 30 companies that are listed on the BSE and account for 45% of the market capitalization of the index. Nifty, in contrast, offers time-series data for 50 companies listed on the NSE, which accounts for 62% of the index's overall market capitalization. The Indian financial consumer is undoubtedly exposed to a wide range of investment products to choose from, but lacks the knowledge and expertise to assess and comprehend these financial products as a result of the increased competition in the financial services sector. In this case, the individual investor's decision-making regarding financial investments must be guided by their beliefs and preferences (Sahi and Arora 2012). India is also on the edge of dominating the world scene and becoming one of the most influential nations. The outcomes of numerous studies have demonstrated that the rise of the Indian stock market positively affects that nation's economic development (Salameh and Ahmad 2022). Many researchers have examined various dimensions of investment in the Indian stock market related to the effect of macro-economic variables (Pal and Garg 2019), (Parab and Reddy 2020), (Sultana and Reddy 2017) and the effect of investor demographic and socio-economic factors (Sivaramakrishnan et al. 2017), (Akhtar et al. 2018), (Sahi et al. 2013). Even though many studies have examined the effect of various demographic, socio-economic, and psychological factors affecting investor decisions, no study has incorporated investor sophistication, psychological factors, and personality traits together in Indian context.

Strong evidence of the significant role of market experience in the elimination of market anomalies has been proposed in the previous literature. A trader's ability to resist inclinations that result in bad deals is likely to be aided by experience. Avoiding such urges may help investors with logical thinking, which reduces exposure to biases (Feng

and Seasholes 2005). This study aimed to evaluate whether trading experience reduces susceptibility to heuristic-driven biases. Moreover, we extended the study by incorporating the investor's personality characteristics as a moderating variable in the relationship that exists between investors' trading experience and their exposure to heuristic-driven biases. In keeping with how a person's traits differ from their actions, they also differentiated in terms of personality traits (Misra et al. 2021). The primary influencer of a person's reaction to his/her environment and decision-making is their personality. Recent research has identified a curious relationship between investor personality and their exposure to biased judgment (Akhtar et al. 2018), (Baker et al. 2021), (Caputo 2014), (Tauni et al. 2017). Previous studies have examined the effect of investors' trading experience on their non-normal trading behavior. However, there have been few studies accounting for all of the factors affecting this variation in behavioral bias, resulting from increased trading experience. As a result, we attempted to explain the effect of trading experience on investor bias by taking investors' personality into account. This will help investors to understand the effect of trading experience in terms of investment decision-making, background of the biased investment behavior, and how their personality affects their investment. Even though personality is stable and cannot be easily changed, investors can control its effect on trading decision by being aware of this relationship. The evaluation of a person's skills to integrate information into a choice or judgment is one of many alleged psychological aspects of investment analysis (Slovic 2001). In this study, we attempted to investigate the moderating role of the Big Five personality traits, namely openness, extraversion, neuroticism, agreeableness, and conscientiousness. This study will contribute to the existing literature on behavioral bias and personality by combining these in the presence of increased trading experience. It will also help portfolio managers to construct a portfolio that is suitable for investors, based on their personality trait and level of experience.

The remaining structure of this paper is as follows: Section 1 deals with the introduction and plausible reasons for undertaking this study. Section 2 describes the theoretical background, hypotheses, and conceptual model of the study. The methods and materials used for the study are included in Section 3, followed by the analysis and result. The final section concludes the study and provides scope for future studies.

2. Theoretical Background and Hypotheses Development

The literature in the area of behavioral finance is extensive. This section describes some significant contributions made by previous researchers in the field of heuristic biases, trading experience, investor bias, and the role of the Big Five personality traits.

2.1. Heuristic Biases

A heuristic method enables us to make decisions regarding challenging information collection and analysis. In uncertain situations, investors use representative, availability, overconfidence, and anchoring and adjustment heuristics to reduce the risk of loss (Shah et al. 2018). Kahneman and Tversky (1972) discussed the original research on three primary heuristics, namely availability, representativeness, and anchoring and adjustment.

2.1.1. Availability Heuristic

Instead of acquiring facts, it is said that humans tend to make decisions based on their experience and intuition, which would encourage them to draw straightforward conclusions (Shah et al. 2018). A person's propensity to depend on knowledge that is already available is known as the availability cognitive heuristic. Decision-making, especially under uncertainty, is carried out through availability heuristics because the experience is inherent in the memory of the decision-maker (Lazuarni and Asri 2019). It concentrates on retrieving information from memory. Due to availability heuristics, instead of processing all of the relevant information, humans could prioritize current information (Kliger and Kudryavtsev 2010). This may negatively influence their investment decision and performance.

2.1.2. Anchoring and Adjustment Heuristic

In psychology, the propensity for people to base their conclusions disproportionately on a single piece of information is known as "anchoring" (Campbell and Sharpe 2009). This presents a scenario where investors pick a starting point to fix a specific aim, known as the anchor, and then attempt to alter this starting point to choose a suitable value that can be attained over time (Chaffai and Medhioub 2020). The range of probable values for the question's boundaries is adjusted using anchor values as a point of reference. According to Bouteska and Regaieg (2020), it represents the reality that people tend to hold onto old views and are hesitant to change them. This might result in irrational decisions where even good or pertinent information is used sparingly or not at all. Despite the fact that it aids people in dealing with complex and unclear circumstances, which could produce biased results (Cen et al. 2013). The major portion of market players, especially institutional investors, give great importance to historical anticipated values, which can lead to illogical estimations when made under conditions of uncertainty (Nakazono 2012). Different researchers have examined the influence of anchoring bias in different dimensions; the extent of the anchoring effect in the horserace betting market was explored by Johnson et al. (2009). Shin and Park (2018) assessed the contribution of foreign investors to the stock market's anchoring bias.

2.1.3. Representativeness Heuristic

A representativeness heuristic means that people tend to decide on an uncertain event by considering the representative of it in a similar case. It is commonly perceived as one cause that produces the asset price underreaction and exaggerated response to fresh information (Luo 2013). Following representative heuristics, a person assesses the likelihood of an uncertain occurrence or sample based on how closely it resembles the parent population in terms of its core characteristics and how well it captures the key characteristics of the process that produced it. People frequently underestimate the possibility that a small sample of a population will not accurately reflect the characteristics of the whole population, and they use stereotypes to make quick decisions (Badshah et al. 2016). Investors may overreact and make irrational decisions if they attribute a single element to a company's rising stock while neglecting other variables by evaluating the effect of the representativeness heuristic on investment decision-making through the external locus of control and risk tolerance (Salman et al. 2020). Investors susceptible to representativeness bias believe that a company's past success accurately predicts its future performance as a whole (Boussaidi 2013) and that they can identify patterns in a truly random process (Luo 2013). This may result in an underreaction to fresh information regarding the asset price.

2.1.4. Confirmation Heuristic

The tendency of investors to identify and select only the information that confirms their existing beliefs or opinions and ignore all contradicting information is called confirmation bias (Khawaja et al. 2021). People will be more open to fresh knowledge supporting their existing beliefs (Furnham and Cheng 2019). This bias causes people to interpret information in a way that supports their preconceived notions while ignoring explanations that contradict them (Bashir et al. 2013). Investors search for confirmation bias in two ways: first, they favor information that supports the viewpoint that they already hold, and second, it manifests itself when people seek out corroborating evidence to back up their beliefs. Investors develop higher expectations for the performance of their stocks when this happens because they have already made decisions and are looking for facts to support those decisions (Chabi Gupta and Agarwal 2016), (Bashir et al. 2013). Considering data from several sources is the greatest strategy to counteract this bias.

2.2. Trading Experience and Heuristic-Driven Biases

The question "Does trading experience reduce the exposure to biased judgment in the financial market?" is an emerging field of investigation. Some of studies have shown

evidence that trading experience reduces the exposure to some behavioral biases, namely those of Feng and Seasholes (2005), and Vestli (2021). Some of the researchers proposed that investors' prior experience increases their susceptibility to a particular bias, namely overconfidence bias (Beatrice et al. 2021). People may tend to exaggerate how accurate their knowledge is, and this accuracy will increase as their trading experience increases. The use of sophistication and trading experience removes the investor's exposure to behavioral bias (Feng and Seasholes 2005) (and eliminates the ability of investors to realize losses). At the same time, it partially reduces investors' propensity to realize this again. It would also help to eliminate the value disparity in the market (List 2003). This implies that a substantial market anomaly can be mitigated by market expertise alone. Additionally, less experienced investors act more irrationally than experienced investors. Prosad et al. (2015) investigated how demographic and investor sophistication factors affected biases, including overconfidence, excessive positivity, herding, and the disposition effect. They found a dependent relationship between investor behavioral biases and their demographic and sophistication factors. By adding to this body of research, Beatrice et al. (2021) suggested that mental accounting, disposition effect, and herding bias were unaffected by investors' prior experience, while overconfidence bias and disposition effect were affected by investment experience. This also significantly contributes to removing the endowment effect; consequently, it eliminates the anomalies that exist in the market (List 2003). At the same time, G. Chen et al. (2007) measured the relationship between five distinct investor characteristics—investment experience, age, trading frequency, personal wealth, and location—and trading performance related to behavioral biases (disposition effect, overconfidence, and representativeness bias). They proposed that experienced investors are not always more susceptible to behavioral biases than less experienced investors (Mishra and Metilda 2015). Contrary to this, G.-M. Chen et al. (2004) provided evidence to support the claims that more experienced investors are more likely to exhibit the disposition effect and representativeness bias as well as to make trading errors. Han et al. (2022) discovered that active strategies—those with high volatility, skewness, and personal engagement—spread when they result in strong returns and that this relationship is convex by presenting a novel social approach to financial decision-making. Additionally, Nicolosi et al. (2009) examined whether an investor's past forecasting skills (inferred from former purchases' resulting in risk-adjusted performance) have any bearing on their present and upcoming trading activity and profitability. They confirmed that individual investors learn from their past trading experience.

H1. *Trading experience reduces susceptibility to availability bias, anchoring and adjustment bias, representativeness bias, and confirmation bias.*

H1a. *Trading experience reduce susceptibility to availability bias.*

H1b. *Trading experience reduce susceptibility to anchoring and adjustment bias.*

H1c. *Trading experience reduce susceptibility to representativeness bias.*

H1d. *Trading experience reduce susceptibility to confirmation bias.*

2.3. Personality Traits and Behavioral Biases

Understanding investor behavior has involved a long and exhausting effort, described in the finance literature. As individuals have different dispositions or preferences, they perceive the same situation differently, and simultaneously, their response to a particular situation also differs (Barbuto 1997). In recent times, researchers have shown how individual's characteristics influence their investment behavior (Akhtar et al. 2018), (Ahmad 2020), (Pak and Mahmood 2015), even though the degree and extent of this influence on investment behavior and performance remain to be investigated. This study attempted to provide a plausible explanation for this. Han et al. (2022) argued that differences in the

social environment can have significant effects on economic outcomes, despite appearing insignificant at the individual level. For instance, their model contends that changes in societal acceptance of bragging about one's accomplishments or discussing personal investments in general can have significant effects on taking risks and engaging in active investing. This indicates a potential justification for changes in investment behavior that are both secular and higher frequency.

A person's personality characteristics can be explained by variances in their emotions, thoughts, and behavior patterns (Aren and Hamamci 2020). This determines a person's interactions, responses, and behavior toward others (Pak and Mahmood 2015). Individuals' personal traits affect their behavior, perception of danger, and propensity to take risky actions (Akhtar et al. 2018). The Big Five Factor model is the personality taxonomy that is most frequently applied, suggested by Eysenck (1991). The FMM model classifies the individual's personality according to five categories, namely extraversion, openness, neuroticism, conscientiousness, and agreeableness.

People who are extraverted are warm, social, and unconstrained by reason or principles. They are outgoing, open to cooperation, and assertive (Sadi et al. 2011), (Aren and Hamamci 2020). On the other hand, they are more likely to display biases, especially the disposition effect, herding, and overconfidence (Ahmad 2020). Extroverts should keep their losing investment selections for longer because they are more positive about their predicted performance (Aren and Hamamci 2020). However, they make biased judgments because they are gregarious and want to see quick financial gains to demonstrate that they used successful tactics and received a return (Ahmad 2020). People with attributes of openness tend to be highly intellectual, creative, clever, open-minded, and curious regarding new ideas and information (Aren and Hamamci 2020). Investors, as a result, are more receptive to current information on investment options and are more likely to heed advice from friends and peers (Ahmad 2020). Conscientiousness traits are related to being organized, disciplined, responsible, goal-oriented, and careful (Aren and Hamamci 2020); people with these traits rely on their knowledge and abilities to make decisions. Being assistive, tolerant of others' beliefs, avoiding debates and confrontations, maintaining social relationships, and being sensitive to others are all characteristics of agreeable people. Anxiety, aggression, despair, vulnerability, impulsivity, and self-consciousness are examples of negative emotional qualities.

One of the major factors influencing how people behave is their personality (Tauni et al. 2017). According to some earlier studies, personality differences among investors may account for their propensity for different types of behavioral biases (Rzeszutek 2015); (Kumari et al. 2020), (Baker et al. 2021). Two significant psychological biases—the availability bias and the disposition effect—relate to personality traits (Cheong Fung et al. 2003). Extraversion, agreeableness, vulnerability to the disposition effect, and overconfidence have all been linked positively, according to a theory by Durand et al. (2008). A high value of agreeableness and openness to experiences reduces susceptibility to anchoring and adjustment bias (Caputo 2014). Further, Kourtidis et al. (2011) attempted to classify investors into distinct categories based on their psychological biases and personality traits, and then investigate if and how these biases and qualities influence their investment behavior. They found that high-profile investors are those who score highly in terms of psychological biases and personality attributes; the more highly they score, the better their stock trading performance.

H2. *Personality traits significantly moderate the relationship between trading experience and susceptibility to heuristic-driven biases.*

H2a. *Extroversion traits significantly moderate the relationship between trading experience and susceptibility to heuristic-driven biases.*

H2b. *Openness traits significantly moderate the relationship between trading experience and susceptibility to heuristic-driven biases.*

H2c. *Neuroticism traits significantly moderate the relationship between trading experience and susceptibility to heuristic-driven biases.*

H2d. *Agreeableness traits significantly moderate the relationship between trading experience and susceptibility to heuristic-driven biases.*

H2e. *Conscientiousness traits significantly moderate the relationship between trading experience and susceptibility to heuristic-driven biases.*

By analyzing the available literature, it is apparent that previous researchers have given more emphasis to analyzing the impact of investor trading experience and susceptibility to certain classes of behavioral biases, mainly the disposition effect and overconfidence. Likewise, researchers have focused on establishing a direct relationship between the Big Five personality attributes and investor biases (Ahmad 2020), (Aren and Hamamci 2020), (Baker et al. 2019), (Caputo 2014). However, no studies have attempted to evaluate the moderating effect of the Big Five personality traits in the relationship between investors' trading experience and their susceptibility to heuristic-driven biases. This study attempted to fill this gap by analyzing investors' trading experience in relation to their exposure to heuristic-driven biases, through moderating the role of the Big Five personality traits. This was carried out by attempting to answer two questions, namely, whether trading experience reduces the exposure to investor biases? and "whether investor Big Five personality traits significantly moderate the relationship between trading experience and exposure to heuristic-driven biases? This study has provided a distinctive perspective on the investor profile in relation to heuristic bias, taking into account their trading history. In addition to updating the body of research on behavioral biases, it also emphasizes the relevance of personality factors in traders' non-standard trading decisions.

2.4. Research Gap and Hypothesized Model

As is stated in the above section, trading experience influences the susceptibility to heuristic-driven biases of investors in the capital market. Based on the gap analysis that exists in the available literature, a conceptual model (Figure 1) was developed to empirically examine the relationship between investors' trading experience and their exposure to heuristic-driven biases, with the moderating role of investor Big Five personality traits. The model established a relationship between independent, moderating, and dependent variables. The independent variable of the study was the trading experience of individual investors, and the dependent variables were heuristic biases, namely, availability bias, anchoring and adjustment bias, representativeness bias, and confirmation bias. The moderating variable was the Big Five personality traits, namely openness, extraversion, neuroticism, agreeableness, and conscientiousness.

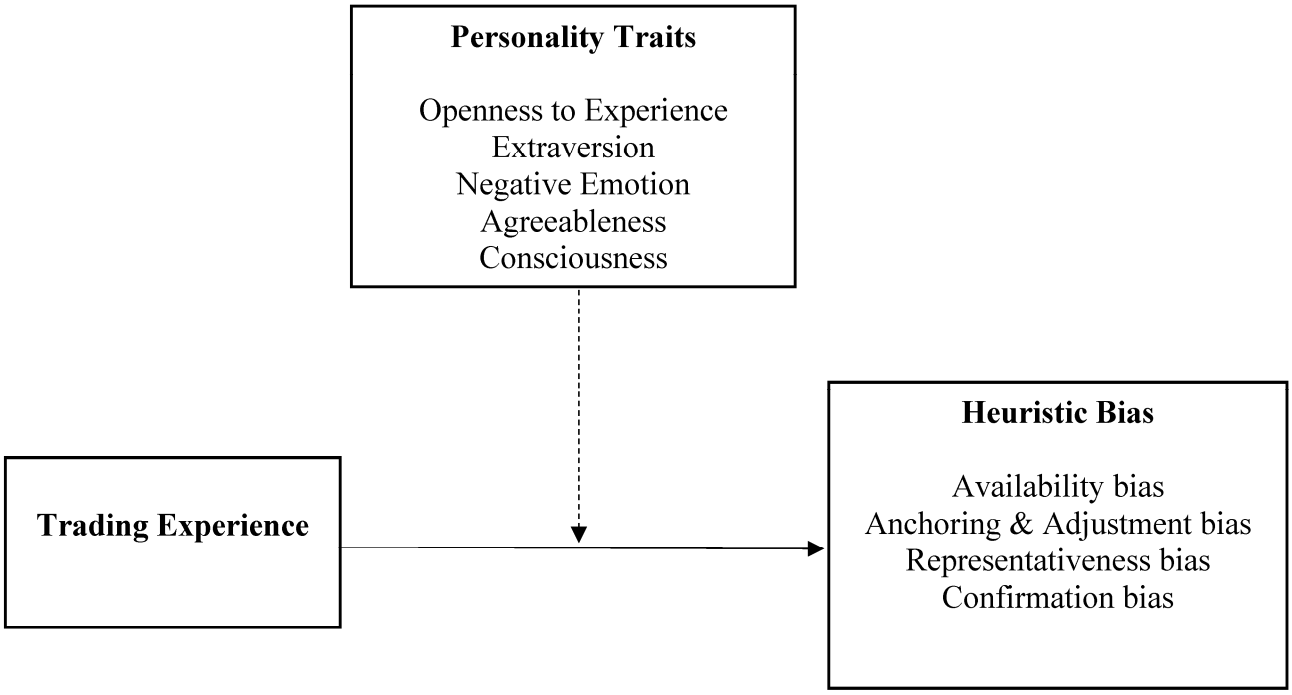

Figure 1. The theoretical model of the study, which establishes a direct relationship between investors' trading experience and heuristic biases during news announcements, and an indirect relationship through moderating variable investor personality traits.

3. Data and Methodology

3.1. Sampling Design

The primary goal of this study was to examine how trading experience affects an investor's sensitivity to heuristic biases, with the Big Five personality traits acting as a moderator. A formal questionnaire was used to gather the primary data. Individual investors from the Indian stock market made up the study population. Based on a mix of convenience and snowball sampling, the sample composition was determined. A total of 450 persons were randomly selected to take part in the study on a one-to-one basis, online. Of these, 420 replies were obtained, 12 of which were incorrect owing to missing data. A total of 408 respondents therefore made up the study's final sample.

3.2. Instrumentation of Data Collection

The questionnaire consisted of 3 sections and 36 items (Table 1). The first section deals with the demographic profile of respondents, including their age, gender, and trading experience. Section 2 comprised 20 items based on investor personality traits, which included 5 personality traits, namely openness, extraversion, neuroticism, agreeableness, and conscientiousness, with 4 items under each trait. The last section dealt with specific categories of heuristic biases, namely availability bias, anchoring and adjustment bias, representativeness bias, and confirmation bias. The questionnaire consisted of both open-ended and closed-ended questions.

Table 1. Questionnaire design.

Construct			Measuring Items	Supporting Literature
Personality Traits	1.	Openness to Experience	OP 1: I am full of ideas OP 2: I have a lot of intellectual curiosity OP 3: I carry conservation to a higher level OP 4: I often enjoy playing with theories of abstract ideas	(Akhtar et al. 2018)
	2.	Neuroticism	NE 1: Under immense stress and burden, I feel like I am going to pieces NE 2: Frequently, I feel like I am totally worthless NE 3: Too often, when things go wrong, I get discouraged and feel like giving up NE 4: I often feel tense and anxious	(Akhtar et al. 2018)
	3.	Extraversion	EV 1: I really enjoy talking to others EV 2: I often feel as if I am bursting with energy EV 3: I am a cheerful and high-spirited person EV 4: I am a very active person	(Akhtar et al. 2018)
	4.	Agreeableness	AG 1: I generally try to be thoughtful and considerate AG 2: I never get into arguments with my family and friends AG 3: Most people think that I am not selfish and egotistic AG 4: Most people think of me as cold and calculating	(Akhtar et al. 2018) (Baker et al. 2021)
	5.	Consciousness	CS 1: I am pretty good at pacing myself so as to get things done on time CS 2: I am always dependable and organized CS 3: I keep my belongings neat and clean CS 4: I often waste time before settling down to work	(Akhtar et al. 2018) (Baker et al. 2021) (Tauni et al. 2017)
Heuristic-driven Biases	1.	Availability bias	AV 1: I do not take extra effort to find all the necessary information before buying a stock. AV 2: I buy a stock after continuous positive news about the stock. AV 3: I sell a stock after continuous negative news about the stock. AV 4: I prefer to buy stocks on days the value of the index increases.	(Renu and Christie 2017)
	2.	Anchoring and Adjustment bias	AA 1: I compare the current stock price with their 52 weeks' high and low prices to justify my stock purchase. AA 2: I am unlikely to buy a stock that was more expensive than last year. AA 3: When I decide to sell a stock, I keep its purchase price in mind. AA 4: In a falling market, I hold losing stocks until their price return to their purchase level.	(Baker et al. 2019)

Table 1. *Cont.*

Construct			Measuring Items	Supporting Literature
Heuristic-driven Biases	3.	Representativeness bias	RP 1: I forecast the future stock price changes based on the recent stock price. RP 2: I rely on past performance to buy a stock because I believe good performance will continue. RP 3: I try to avoid investing in companies with a history of poor earnings. RP 4: I am able to see patterns in the stock price even when the prices are volatile.	(Baker et al. 2019)
	4.	Confirmation bias	CF 1: When an investment is not going well, usually I seek information that confirms I made the right decision about it CF 2: I invest again in securities that I already own after their price goes down to justify my decision CF 3: I stick to my beliefs, even if information contradicts them. CF 4: I identify the company first and seek information that supports the company.	(Renu and Christie 2017)

3.3. Data Analysis Method

The data collected were analyzed using SPSS and AMOS. The reliability of items was measured using Cronbach's alpha and confirmatory factor analysis. Both results were found to be significant for all items, and further analysis was conducted using statistical techniques such as descriptive statistics, correlation, and multiple regression.

3.4. Measurement Model

In SEM, there are two models: a measurement model and a structural model. The measurement model assesses the fitness of the observed factors on their latent variable. The structural model assesses the fitness of the research model or hypotheses (Naveed et al. 2020). Confirmatory factor analysis was used to test the measurement model (Table 2); from the model fit summary of heuristic-driven biases and the Big Five personality traits, it was found that the measurement model fitted with the values on the threshold limit. For heuristic-driven biases, CMIN/DF was 2.056, the goodness-of-fit index was 0.921, comparative fit index was 0.962, the adjusted goodness-of-fit index is 0.937, normed fit index was 0.931, and RMSEA was 0.071. For the Big Five traits of openness, extraversion, neuroticism, agreeableness, and conscientiousness, the values were 4.649, 0.908, 0.982, 0.934, 0.987, and 0.061, respectively. This indicates that the measurement model had a good fit.

Further major parameters of the measurement models like factor loading, item reliability, average variance extracted (AVE), construct reliability, and Cronbach's alpha (Table 3) were analyzed. The factor loading of all the contract items was more than 0.7. The average variance extracted (AVE) should be >0.5, which implies adequate convergent validity of items, and for contract reliability, the threshold limit was 0.6/0.7. The Cronbach's alpha value should be greater than 0.80.

Table 2. Model fit summary of CFA.

SI. No.	Indices of Common Fit	Value for Heuristic Biases	Values for Big Five Traits	Value of Good Fit
1	CMIN/DF	2.056	4.649	<5
2	*p*-value	0.061	0.059	>0.05
3	RMR	0.021	0.010	<0.05
4	Goodness-of-Fit Index (GFI)	0.921	0.908	>0.90
5	Comparative Fit Index (CFI)	0.962	0.982	>0.90
6	Adjusted Goodness-of-Fit Index (AGFI)	0.937	0.934	>0.90
7	Incremental Fit Index (IFI)	0.917	0.958	>0.90
8	Tucker Lewis Index (TLI)	0.901	0.940	>0.90
9	Normed Fit Index (NFI)	0.931	0.987	>0.90
10	Root Mean Square Error of Approximation (RMSEA)	0.071	0.061	<0.08

Source: Authors Calculation.

Table 3. Parameters of reliability measures.

Variables	No of Items		Factor Loading	Item Reliability	AVE	Construct Reliability CR	Cronbach's Alpha
Anchoring and Adjustment Bias	4	AA 1	0.879	0.773	0.762	0.773	0.826
		AA 2	0.922	0.850		0.850	
		AA 3	0.833	0.694		0.694	
		AA 4	0.855	0.731		0.731	
Availability Bias	4	AV 1	0.837	0.701	0.894	0.701	0.802
		AV 2	0.988	0.976		0.976	
		AV 3	0.884	0.781		0.781	
		AV 4	0.867	0.752		0.752	
Representativeness Bias	4	RP 1	0.899	0.808	0.905	0.808	0.710
		RP 2	0.985	0.970		0.970	
		RP 3	0.863	0.745		0.745	
		RP 4	0.872	0.760		0.760	
Confirmation Bias	4	CF 1	0.882	0.778	0.869	0.778	0.867
		CF 2	0.812	0.659		0.659	
		CF 3	0.826	0.682		0.682	
		CF 4	0.957	0.916		0.916	
Openness to Experience	4	OP 1	0.833	0.694	0.717	0.694	0.851
		OP 2	0.832	0.692		0.692	
		OP 3	0.869	0.591		0.591	
		OP 4	0.854	0.755		0.729	
Negative Emotion	4	NE 1	0.878	0.771	0.677	0.771	0.711
		NE 2	0.816	0.666		0.666	
		NE 3	0.941	0.885		0.885	
		NE 4	0.789	0.623		0.623	
Extraversion	4	EV 1	0.885	0.783	0.718	0.783	0.805
		EV 2	0.859	0.738		0.738	
		EV 3	0.843	0.711		0.711	
		EV 4	0.799	0.638		0.638	
Agreeableness	4	AG 1	0.853	0.728	0.727	0.728	0.779
		AG 2	0.826	0.682		0.682	
		AG 3	0.887	0.787		0.787	
		AG 4	0.843	0.711		0.711	

Table 3. *Cont.*

Variables	No of Items	Factor Loading	Item Reliability	AVE	Construct Reliability CR	Cronbach's Alpha
Consciousness	CS 1	0.830	0.781	0.751	0.733	0.811
	CS 2	0.799	0.800		0.699	
	CS 3	0.801	0.765		0.740	
	CS 4	0.793	0.713		0.789	

Source: Author's calculation.

4. Results and Discussion

4.1. Respondents Profile

Table 4 displays the statistics of the demographic and sophistication profile of sample respondents used for analysis. The survey consisted of 240 (58.8%) male investors and 166 (41.2%) female investors. In terms of age, the major age group was 31–40 years (28.6%), while 25.2% were in the age category of 20–30 years, 21.3% were in the age category of 41–50, 16.4% investors were in the age category of 51–60 years, and 8.5% were within the age category of above 60 years. With regards to the trading experience of investors, the majority of respondents had experience of 1–3 years (36.5%), 20% of investors had experience of 4–6 years, 14.7% of investors had prior experience of less than 1 year. At the same time, 14.2% had 1–9 years of experience in the stock market, 10% had 10–12 years of experience, and 4.6% had more than 12 years of experience.

Table 4. Respondent Profile.

	Category	Frequency	Percentage
Gender	Male	240	58.8
	Female	168	41.2
Trading experience (years)	20–30	103	25.2
	31–40	117	28.6
	41–50	87	21.3
	51–60	67	16.4
	Above 60	34	8.5
	Less than 1	60	14.7
	1–3	149	36.5
	4–6	82	20.0
	7–9	58	14.2
	10–12	41	10.0
	More than 12	18	4.6
N	408		

Source: Author's calculation.

4.2. Correlation Analysis among Variables

The correlation analysis output (Table 5) shows that trading experience positively related to availability bias, anchoring and adjustment bias, representativeness bias, and confirmation bias during news announcements. The Pearson's correlation coefficient $r = -0.121$ for availability bias; $r = -0.168$ for anchoring and adjustment; $r = 0.178$ for representativeness bias; and $r = 0.154$ for confirmation bias. All the values were significant. This indicates that as trading experiences increases, investors' exposure to availability bias and confirmation bias increase. The result contradicts the results of Dhar and Zhu (2006), Feng and Seasholes (2005), and Misra et al. (2020), and it supports the viewpoint of Barber and Odean (2001) and Beatrice et al. (2021), who proposed that trading experience may increase the investors' exposure to biases. At the same time, there positive correlation existed between trading experience, and representativeness and confirmation bias; as trading experience increased the exposure to representativeness and confirmation bias increased.

Table 5. Correlation matrix.

	TE	AV	AA	RP	CF	OP	NR	EV	AG	CON
TE	1									
AV	0.121 ***	1								
AA	0.168 **	0.846 **	1							
RP	0.178 **	0.732 **	−0.808 **	1						
CF	0.154 **	0.812 **	−0.774 **	−0.697 *	1					
OP	0.960 **	0.253 **	0.175 **	0.186 *	−0.193 **	1				
NR	0.252 ***	0.265 ***	0.169 **	0.170 *	0.291 **	0.951 **	1			
EV	0.241 *	0.125	−0.113	0.280	−0.140	0.632 **	0.616 **	1		
AG	0.676 **	−0.427 *	0.232 **	0.122 *	−0.247 **	−0.870 **	−0.879 **	−0.332 *	1	
CON	0.118 *	−0.108 **	−303 **	−0.221 *	0.491 **	−0.690 **	−0.880 ***	−0.980 **	−0.691 ***	1

Notes: N = 408, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. TE = trading experience, AV = availability bias, AA = anchoring and adjustment bias, RP = representativeness bias, CF = confirmation bias, OP = openness, NR = neuroticism, EV = extraversion, AG = agreeableness, CON = conscientiousness.

Among the Big Five personality traits, neuroticism was found to have a significant positive relationship with all heuristic biases, with $r = 0.265$ for availability bias; $r = 0.169$ for anchoring and adjustment bias; $r = 0.170$ for representativeness bias; and $r = 0.291$ for confirmation bias. The openness trait had a significantly positive correlation with availability, anchoring and adjustment, and representativeness biases, with a Pearson's correlation coefficient $r = 0.253$ for availability bias, $r = 0.175$ for anchoring bias, and $r = 0.186$ for representativeness bias. Furthermore, it showed a significant negative relationship with confirmation bias ($r = 0.178$). A significant negative correlation existed between agreeableness, and availability bias and confirmation bias ($r = -0.427$ for availability bias; $r = -0.547$ for confirmation bias). Conscientiousness traits showed a significant negative relationship with all heuristic biases ($r = -0.108$ for availability bias; $r = -0.303$ for anchoring bias, $r = -0.221$ for representativeness bias), except for confirmation bias ($r = 0.491$). All the above values were found to be significant. Extraversion traits did not show a significant relationship with any of the heuristic-driven biases.

4.3. Regression Analysis

Table 6 shows the regression estimate of heuristic-driven biases. The dependent variables in heuristic-driven biases were availability bias, anchoring and adjustment bias, representativeness bias, and confirmation bias. Table 4 presents the direct effect of investors' trading experience on their susceptibility to heuristic-driven biases. The result of the estimate indicates that trading experience negatively affects the exposure to availability bias ($\beta = -0.716$, $p < 0.01$) and anchoring bias ($\beta = -0.598$, $p < 0.05$). It indicates that investors with increased trading experience are less prone to availability and anchoring biases. On the other hand, there was a positive relationship between trading experience, and representativeness bias ($\beta = 0.164$, $p < 0.01$) and confirmation bias ($\beta = 0.520$, $p < 0.05$). The estimated results indicate that investors with increased trading experience are prone to representativeness and confirmation biases when making an investment decision. The result supports the findings of Feng and Seasholes (2005), who proposed that trading experience reduces the susceptibility to behavioral biases.

Table 6. Regression analysis on the relationship between trading experience and heuristic biases.

	Availability Heuristic		Anchoring and Adjustment Heuristic		Representativeness Heuristic		Confirmation Heuristic	
	Estimate	**S.E**	**Estimate**	**S.E**	**Estimate**	**S.E**	**Estimate**	**S.E**
Trading experience	−0.716 ***	0.461	−0.598 **	0.098	0.673 ***	0.164	0.520 **	0.403
Constant	0.929		1.44		1.84		1.91	
F-statistics	4.210 **		4.881 **		5.022 **		2.991 **	
R^2	0.613		0.741		0.788		0.751	
Adj.R^2	0.621		0.798		0.801		0.768	
Observation	408		408		408		408	

Source: Authors Calculation, *** Denotes significance at 1%, ** denotes significance at 5%.

The moderating influence of the Big Five personality traits on the relationship between investors' trading experience and exposure to heuristic-driven biases, namely availability bias, anchoring and adjustment bias, representativeness bias, and confirmation bias, are presented in Table 7, through Model I to Model IV.

Table 7. Regression analysis of the moderating effect.

	MODEL I			MODEL II			MODEL III			MODEL IV		
Independent Variables	**Availability**			**Anchoring and Adjustment**			**Representativeness**			**Confirmation**		
	Estimate	**S.E**	***t*-Statistics**	**Estimate**	**S.E**	***t*-Statistics**	**Estimate**	**S.E**	***t*-Statistics**	**Estimate**	**S.E**	***t*-Statistics**
Intercept	1.285 **	0.178	6.951	1.368 ***	0.164	8.029	1.531 ***	0.184	8.106	1.391 ***	0.176	8.178
Trading Experience	−0.716 ***	0.461	7.001	−0.598 **	0.098	6.999	0.673 ***	0.164	8.022	0.520 **	0.403	8.110
Openness	0.757 **	0.401	8.110	0.186 ***	0.356	7.002	0.321 **	0.201	8.210	−0.801 ***	0.312	7.990
Extraversion	0.310	0.201	8.012	−0.298	0.381	8.220	0.290	0.311	7.645	−0.710	0.292	8.001
Neuroticism	0.189 ***	0.073	8.112	0.165 ***	0.071	6.909	0.148 **	0.087	7.189	0.218 **	0.077	7.190
Conscientiousness	−0.211 ***	0.221	7.669	−0.310 ***	0.410	7.491	0.281 **	0.101	8.000	0.418 *	0.141	8.999
Agreeableness	−0.198 **	0.199	9.001	0.211 **	0.310	8.211	0.311 **	0.211	7.911	−0.297 **	0.221	6.009
TE → OP	1.582 **	0.788		−0.649 ***	0.601		1.821 **	0.391		−0.981 **	0.282	
TE → NR	0.191 **	0.094		1.156 **	0.702		0.622 *	0.089		0.184 ***	0.069	
TE → EV	−0.169	0.179		−0.193	0.149		0.219	0.358		−0.733	0.281	
TE → AG	0.599 ***	0.033		−0.550 **	0.044		0.593 ***	0.026		−0.588 **	0.312	
TE → CON	−0.167 **	0.194		−0.376 ***	0.142		0.269 **	0.311		0.592 ***	0.412	
R Square	0.378			0.289			0.218			0.198		
F-Statistics	8.111 ***			7.990 ***			8.189 ***			6.903 ***		
Observation	408			408			408			408		

Note: The table presents the regression estimate of heuristic-driven biases. The dependent variables are heuristic-driven biases, namely availability bias, anchoring and adjustment bias, representativeness bias, and confirmation bias. Model I through Model IV show the moderating role of the Big Five personality traits, namely openness (OP), extraversion (EV), neuroticism (NR), conscientiousness (CON), and agreeableness (AG) on the relationship between investor's trading experience (TE) and exposure to heuristic-driven biases. * Denotes significance at 10%, ** denotes significance at 5%, and *** denotes significance at 1%.

Model I of Table 7 presents the result of the moderating influence of the Big Five personality traits on the relationship between investors' trading experience and their susceptibility to the availability heuristic. The co-efficient of intersection term TE → OP, TE → NR, and TE → AG, positively moderated the relationship between investor's trading experience and their exposure to the availability heuristic, with $\beta = 1.582$ ($p < 0.05$) for openness, $\beta = 0.191$ ($p < 0.05$) for neuroticism, and $\beta = 0.599$ ($p < 0.01$) for agreeableness. This indicates that people with openness, negative emotional, and agreeableness traits

have more chances to exhibit the availability heuristic as their trading experience increases. Open-minded investors and investors with a high degree of emotions and sympathy trade more frequently and make quick decisions based on readily available or recallable information. At the same time, the interaction term TE → CONS (conscientiousness) negatively moderates the above relationship, with $\beta = -0.167$ ($p < 0.05$). This means that people with conscientiousness traits are less prone to availability heuristics as their trading experience increases. People who are responsible and organized may search for all the available information and then make an investment decision, even if they are experienced investors. The interaction term TE → EV did not significantly moderate the relationship.

In Model II of Table 7, the moderate role of the Big Five personality traits on the relationship between investors' trading experience and their exposure to anchoring and adjustment bias was presented. The interaction term TE → NR positively moderated the relationship between investors' trading experience and their susceptibility to the anchoring and adjustment heuristic, $\beta = 1.156$ ($p < 0.05$). The estimated result indicates that people with personality traits of neuroticism are more prone to anchoring and adjustment heuristics as their trading experience increases. On the other hand, the interaction term TE → OP, TE → AG, and TE → CON negatively moderated the relationship between trading experience and susceptibility to anchoring and adjustment bias, with $\beta = -0.649$ ($p < 0.01$) for openness, $\beta = -0.550$ ($p < 0.05$) for agreeableness, and $\beta = -0.376$ ($p < 0.01$) for conscientiousness. The result shows that people with openness and agreeable personality traits and who are more self-reliant and determined are not prone to anchoring and adjustment heuristics as they have increased trading experience. This may happen because people who are extroverts and determined may change their reference point and not anchor on wrong estimates as they have increased trading experience. The interaction term TE → EV did not significantly moderate the relationship between investors' trading experience and susceptibility to anchoring bias.

Model III of Table 7 shows the moderating role of the Big Five personality traits on the relationship between investors' trading experience and their exposure to the representativeness heuristic. Except for the interaction term TE → EV, all other interaction terms positively moderated the relationship between investor's trading experience and susceptibility to the representativeness heuristic, with $\beta = 1.821$ ($p < 0.05$) for TE → OP, $\beta = 0.622$ ($p < 0.10$) for TE → NR, $\beta = 0.269$ ($p < 0.05$) for TE → CON, and $\beta = 0.593$ ($p < 0.01$) for TE → AG. The estimate indicates that people with openness, negative emotional, responsibility, and self-centeredness traits are more likely to exhibit representativeness heuristic as their trading experience increases. An experienced investor with personality characteristics of curiousness, impulsiveness, friendliness, and sympathy may assume the present situation is representative of the past and make decisions based on the action they have taken in the past. But, in the case of the interaction term TE → EV, it did not significantly moderate the relationship between the trading experience of investors and their exposure to the representativeness heuristic.

The co-efficient of interaction terms TE → OP and TE → AG in Model IV of Table 7 showed that openness and agreeableness traits negatively moderated the relationship between investor's trading experience and susceptibility to confirmation bias, with $\beta = -0.981$ ($p < 0.05$) for openness and $\beta = -0.588$ ($p < 0.05$) for agreeableness traits. In order to avoid making decisions based on their pre-existing beliefs, people with openness traits do not immediately believe the information they receive from others. Instead, they hunt for information until they find reliable information. Likewise, people with agreeableness traits tend to be outgoing, trustworthy, and compassionate and tend to maintain conformity in social relations, so they consider opinions from others also. This helps to reduce susceptibility to confirmation bias while making an investment decision. The coefficient of interaction terms TE → NR and TE → CON positively moderated the above relationship, with $\beta = 0.184$ ($p < 0.01$) for neuroticism and $\beta = 0.592$ ($p < 0.01$) for conscientiousness. Individuals with a higher degree of negative emotional traits are characterized by anxiety, tension, and anger, and people with conscientiousness traits are characterized by self-confidence and reliance;

as their trading experience increases, their susceptibility to confirmation bias also increases. People with negative emotions and high self-confidence may make quick decisions based on their beliefs. The estimated result indicates that the interaction term TE → EV did not significantly moderate the relationship between trading experience and investors' exposure to confirmation bias.

To obtain a clearer picture regarding the findings of the study, Table 8 provides a summary of hypotheses and the decision on each of these hypotheses.

Table 8. Hypotheses Decisions Summary.

Relationship	Hypothesis	Decision
Relationship between investors' trading experience and susceptibility to heuristic-driven biases	There is a significant relationship between trading experience of investors and susceptibility to availability bias	Accepted
	There is a significant relationship between trading experience of investors and susceptibility to anchoring bias	Accepted
	There is a significant relationship between trading experience of investors and susceptibility to representativeness bias	Accepted
	There is a significant relationship between trading experience of investors and susceptibility to confirmation bias	Accepted
Moderating role of openness in the relationship between trading experience and heuristic-driven biases	Openness significantly moderates the relationship between trading experience and availability bias	Accepted
	Openness significantly moderates the relationship between trading experience and anchoring bias	Accepted
	Openness significantly moderates the relationship between trading experience and representativeness bias	Accepted
	Openness significantly moderates the relationship between trading experience and confirmation bias	Accepted
Moderating role of extroversion in the relationship between trading experience and heuristic-driven biases	Extroversion significantly moderates the relationship between trading experience and availability bias	Rejected
	Extroversion significantly moderates the relationship between trading experience and anchoring bias	Rejected
	Extroversion significantly moderates the relationship between trading experience and representativeness bias	Rejected
	Extroversion significantly moderates the relationship between trading experience and confirmation bias	Rejected
Moderating role of neuroticism in the relationship between trading experience and heuristic-driven biases	Neuroticism significantly moderates the relationship between trading experience and availability bias	Accepted
	Neuroticism significantly moderates the relationship between trading experience and anchoring bias	Accepted
	Neuroticism significantly moderates the relationship between trading experience and representativeness bias	Accepted
	Neuroticism significantly moderates the relationship between trading experience and confirmation bias	Accepted

Table 8. *Cont.*

Relationship	Hypothesis	Decision
Moderating role of agreeableness trait in the relation between trading experience and heuristic-driven biases	Agreeableness significantly moderates the relationship between trading experience and availability bias	Accepted
	Agreeableness significantly moderates the relationship between trading experience and availability bias	Accepted
	Agreeableness significantly moderates the relationship between trading experience and anchoring bias	Accepted
	Agreeableness significantly moderates the relationship between trading experience and representativeness bias	Accepted
	Agreeableness significantly moderates the relationship between trading experience and confirmation bias	Accepted
Moderating role of Conscientiousness trait in the relation between trading experience and heuristic-driven biases	Conscientiousness significantly moderates the relationship between trading experience and availability bias	Accepted
	Conscientiousness significantly moderates the relationship between trading experience and anchoring bias	Accepted
	Conscientiousness significantly moderates the relationship between trading experience and representativeness bias	Accepted
	Conscientiousness significantly moderates the relationship between trading experience and confirmation bias	Accepted

The main aim of this study was to test the relationship between investors' trading experience and their susceptibility to heuristic-driven biases along with the presence of personality differences. Many researchers have previously tried to explore this relationship and proposed divergent results (List 2003), (Mishra and Metilda 2015), (Feng and Seasholes 2005). To achieve the research objectives, primary data collected through structured questionnaires were analyzed using SPSS and AMOS. A total of 408 individual investors who trade on the Indian stock market made up the sample; they were chosen based on convenience. To evaluate the accuracy and dependability of the data, confirmatory factor analysis and Cronbach's alpha were used. Multiple regression and Pearson's correlation were used for additional analysis. The findings of this study prove that increased trading experience does not always reduce the susceptibility to heuristic biases. Increased trading experience reduces the susceptibility to availability and anchoring, and adjustment heuristics of individual investors who are operating on the Indian stock market. At the same time, the result was contradicted in the case of representativeness and confirmation heuristics. Investors are more prone to representativeness and confirmation heuristics as their trading experience increases. This result was consistent with that of Nicolosi et al. (2009), Feng and Seasholes (2005), List (2003), and Mishra and Metilda (2015), who proposed that the increased trading experience of investors reduces susceptibility to biased judgment and helps them to achieve better investment performance. It also supports the studies of G. Chen et al. (2007) and Beatrice et al. (2021), who proposed that increased trading experience does not always reduce the susceptibility to biased judgment. The Big Five investor personality qualities have been employed in prior studies to predict investors' trading behavior in the Indian stock market, but the results of the current study go beyond the findings of those studies. The proposed conceptual model of the study differed from the previous literature, in which the Big Five personality traits interacted with investors' trading experience to predict the relationship between investors' trading experience and their exposure to heuristic-driven biases. The result of moderation proves that the Big Five personality traits of investors are significant predictors of susceptibility to heuristic-driven biases, except extraversion traits. This result supports the previous studies of McElroy and Dowd (2007), Barry and Friedman (1998), Basheer and Siddiqui (2020), Caputo (2014), and Kumar et al. (2021), who

proposed that there is a significant influence of personality traits in the investment behavior of individuals.

5. Conclusions and Policy Implications

The aim of the present study was to evaluate whether trading experience reduces exposure to heuristic-driven biases, namely availability bias, anchoring and adjustments bias, representativeness bias, and confirmation biases of individual investors operating in the Indian capital market. This was through the moderating role of the Big Five personality traits, namely openness, extraversion, neuroticism, agreeableness, and conscientiousness. The study found that there is a strong relationship between investors' trading experience and susceptibility to heuristic-driven bias. Some of the biases were negatively correlated and some were positively correlated with increased trading experience. As trading experience increases, some investors become overconfident in their abilities to choose and to make trading decisions. This may lead to an increased chance of exhibiting non-normal trading decisions, with biases including availability bias, anchoring bias, representativeness bias, and confirmation bias. Due to personality differences, the chance of being more heavily reliant on emotional feelings while making a trading decision may change. This study found that there is a significant role of personality traits of individual investors in exhibiting behavioral bias. Even though investors are highly experienced, based on their personality characteristics, their tendency to follow different heuristics changes. With the exception of the extroversion trait, all other personality traits were found to play a significant role in the relationship between trading experience and susceptibility to heuristic-biases. Investors who are open, agreeable, conscientiousness, and have negative emotions have a higher chance of following heuristics, even if they having increased trading experience.

The present study has relevant implications for investors, portfolio managers, financial advisors, and other interested persons in the stock market. More experienced investors may make quick decisions as they have prior experience. They may over/underestimate the information, attach the present situation to past events, and make quick decisions based on their existing beliefs. This study will help them to understand various personality traits that affect investment decisions by taking into account their trading experience. Persons with openness, neuroticism, agreeableness and conscientiousness traits should be much more careful when making an investment decision. This will help them to act accordingly in the financial market. Financial advisors will benefit most from this study, since it will help them to better understand the psychology and personality traits of their clients. It can help them create behaviorally adapted portfolios that best match the inclinations of their clients.

Limitations and Future Scope

There are a few limitations of this study. As the exact number of retail investors who actively participate in the stock market is large and not exactly known, we only used 408 samples. More samples are needed for further studies. Furthermore, this study focused on the effect of trading experience and the role of only a few behavioral biases that affect investors' decision-making. In the future, researchers can incorporate additional factors like financial literacy, risk tolerance, and other factors that affect investors' decision-making. Further studies are encouraged to incorporate many other biases.

Author Contributions: Conceptualization and methodology, N.C., M.I.T., T.M.N.; software, L.N.D., N.C., T.M.N.; validation, I.M.A., M.I.T. and N.C.; formal analysis, N.C.; investigation, M.I.T.; resources, T.M.N.; data curation, M.I.T.; writing—original draft preparation, N.C., M.I.T., T.M.N. writing—review and editing, I.M.A.; visualization, N.C.; I.M.A., Supervision, L.N.D.; project administration, N.C.; funding acquisition, M.I.T. and L.N.D. All authors have read and agreed to the published version of the manuscript.

Funding: There is no external funding for this study.

Data Availability Statement: The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

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

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