

Examining the Role of Behavioural Biases in Financial Decisions: A Literature Review

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Abstract

Aim of the study: The study's main objective is to identify the behavioural biases in the available literature on behavioural finance and study their role in financial decision-making. The study also highlights the significant gaps for future research in behavioural finance.

Methods: The study has used a seven-step methodology to identify behavioural biases and their role in financial decisions and find significant gaps for future research. Articles available in the behavioural finance literature have been used for the study. The study has used 70 articles from various databases, ranging from 1970 to 2021.

Results: The study found 17 common behavioural biases that influence the financial decisions of individuals. These behavioural biases include both cognitive and emotional biases. Behavioural biases have a significant influence on the various aspects of financial decisions. The study concluded that behavioural biases could not be ignored when making financial decisions due to significant influence. Understanding and awareness of these behavioural biases can enhance individuals' overall financial well-being.

Original value: The study contributes to the literature by identifying the common behavioural biases and their role in financial decisions and found gaps for further research. The study's findings can be used to study the behavioural biases in further research.

Keywords: Behavioural biases; Behavioural finance; financial behaviour; cognitive biases; emotional biases; financial decisions

1. Introduction

Financial markets have evolved over a period, and available information is also becoming complex because now individuals have a choice to choose from various options in the financial markets (Sahi, 2017). In traditional finance, it was assumed that human beings are rational, and they take decisions only after analysing the best possible information available (Mittal, 2019). Fama (1970) proposed the efficient market hypothesis which states that markets are efficient, and prices reflect all the available information. This rationality of individual decisions was challenged in the late 20th century, and behavioural finance emerged as a field of study. Behavioural finance is an interdisciplinary approach that derives its roots

from various other disciplines such as psychology, sociology, and finance (Ritika & Kishor, 2020). Kahneman & Tversky (1979) proposed prospect theory that explains people's behaviour while valuing gains and losses. This theory states that people give different-different weights to the profits and losses of the same value. According to Simon (1979), humans have a limited capacity to process all the information, and it is not possible to take full rational decisions. Humans make more satisfying decisions than rational decisions, known as bounded rationality. This leads to psychological errors in financial decisions as well. The role of behavioural biases cannot be ignored when it comes to decisions related to finances (Singh & Jain, 2021). Behavioural biases are some irrational beliefs that affect the decision-

making process of a human being. Due to behavioural biases, humans commit errors as these biases alter the capacity of human beings in the decision-making process (Bagde et al., 2021). The financial decisions of individuals are affected by two kinds of behavioural biases, errors due to faulty reasoning, known as cognitive biases and mistakes due to emotions, known as emotional biases (Sahi, 2013).

Cognitive biases such as conservatism bias, confirmation bias, representative bias, anchoring and adjustment bias, availability bias, self-attribution bias, ambiguity-aversion bias, herding bias, mental accounting bias and emotional biases such as loss aversion bias, overconfidence bias, self-control bias, status quo bias, regret aversion bias (Ritika & Kishor, 2020) can influence the financial decisions of individuals. These behavioural biases affect investment-related decisions and other financial matters like debt, insurance planning and retirement planning. Behavioural biases have a significant influence on buying insurance, and it influences the chance of wrongly calculating risk, which increases the likelihood of underinsurance (Pithhan and Witte, 2021). Long-term financial decisions require much complex information and time to analyse all the dimensions of financial decisions. Individuals prefer to use shortcuts to make long term financial decisions like retirement planning. Due to behavioural biases such as lack of self-control, people overestimate their financial knowledge while taking decisions related to retirement planning which results in errors and lower returns over a more extended period (Trehan & Sinha, 2020). Individual needs appropriate financial planning to be stress-free from the side of finances. Still, people see financial planning as overwhelming, scary, and intimidating because of psychological beliefs, impacting their overall economic well-being (Baker, 2015). Financial decision making is a complex process but necessary. These decisions require much seriousness from the side of individuals. To ensure that financial decisions are correct and as per the needs and goals of individuals, understanding behavioural biases is essential.

Awareness of these behavioural biases helps individuals and financial planners better understand financial matters and make sound decisions.

2. Rationale and objectives of the study

Financial decisions are crucial in human life because they affect almost all areas of life. Every day humans make financial decisions related to investments, debt, spending, long term financial planning that affects their overall financial well-being. Humans try to be rational in their decisions, but the emotional part of the human mind also plays an essential part in decision making. Human psychology has an essential role in the decisions making of individuals, so it is essential to be aware of the biases that affect financial decisions. The main objective of this study is to identify the behavioural biases and how they affect the financial decisions of individuals with the help of a literature review. The study also highlights the significant gaps in behavioural finance for future research.

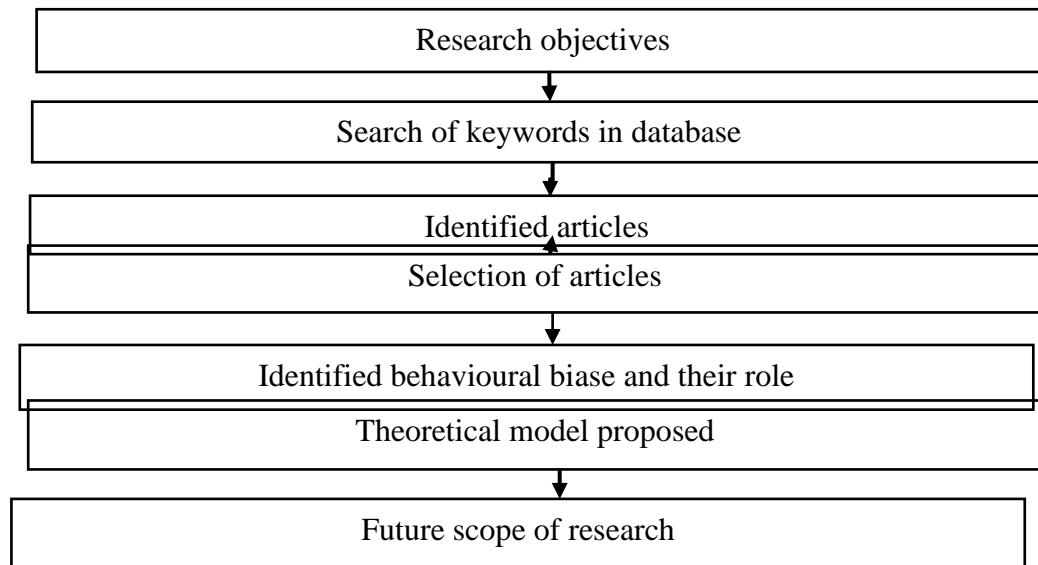
3.

Research Methodology:

This research is based on the secondary data available in the literature. Secondary data was collected through articles published in academic journals to study behavioural biases. The studies related to behavioural biases and their role in financial decisions have been explored in the behavioural finance literature, which ranges from 1970 to 2021. The articles have been collected from databases such as Emerald, Elsevier, Google Scholar, Semantic Scholar, JSTOR, Taylor and Francis and Science Direct. The keywords are identified and used in search of databases are behavioural biases, cognitive biases, emotional biases, heuristics, financial decisions, and financial planning. Only those articles are selected in the study that is specifically related to the study of behavioural biases. The seven-step methodology has been used in the study is as follows:

Figure 1

Seven step methodology used by researcher

**Table 1**

Year-wise classification of articles used in the study

| Year of Publication | No. of Articles |
|---------------------|-----------------|
| 1970 | 1 |
| 1979 | 1 |
| 1985 | 1 |
| 1988 | 1 |
| 1991 | 1 |
| 1994 | 1 |
| 1995 | 1 |
| 1998 | 2 |
| 1999 | 1 |
| 2001 | 2 |
| 2003 | 1 |
| 2005 | 4 |
| 2006 | 3 |
| 2007 | 2 |
| 2009 | 1 |
| 2010 | 2 |
| 2011 | 3 |
| 2012 | 2 |
| 2013 | 4 |
| 2014 | 2 |
| 2015 | 5 |
| 2016 | 3 |
| 2017 | 3 |
| 2018 | 6 |
| 2019 | 7 |
| 2020 | 3 |
| 2021 | 7 |
| Total | 70 |

Table 2

Variable wise classification of articles used in the study

| Behavioural biases | No of Articles |
|-------------------------|----------------|
| Confirmation bias | 3 |
| Conservatism bias | 3 |
| Representativeness bias | 5 |
| Availability bias | 6 |
| Anchoring bias | 3 |
| Hindsight bias | 4 |
| Self-attribution bias | 5 |
| Herding bias | 6 |
| Mental accounting | 8 |
| Ambiguity aversion bias | 3 |
| Disposition effect | 7 |
| Framing bias | 4 |
| Loss aversion bias | 4 |
| Self-control bias | 6 |
| Overconfidence bias | 6 |
| Status quo bias | 6 |
| Regret aversion bias | 4 |

Table 3

Top five articles by citation score

| Title | Author | Journal | Citations |
|--|------------------------------|----------------------------------|-----------|
| Prospect theory: An analysis of decision under risk | Kahneman & Tversky, 1979 | Econometrica | 71435 |
| Efficient capital markets: A review of theory and empirical work | Fama, 1970 | The Journal of Finance | 33179 |
| Mental accounting and consumer choice | Thaler, 1985 | Marketing Science | 8209 |
| The endowment effect, loss aversion, and status quo bias | Kahneman et al., 1991 | Journal of Economic Perspectives | 7093 |
| Status quo bias in decision making | Samuelson & Zeckhauser, 1988 | Journal of Risk and Uncertainty | 6598 |

4. Review of literature

4.1 Confirmation bias: In confirmation bias, people select only those ideas that validate their existing beliefs and ignore those that disapprove of them (Ritika & Kishore, 2020). People actively search for information that confirms their existing beliefs and viewpoints, allowing them to believe that others share similar viewpoints (Sahi et al.,

2013). Jones et al. (2001) stated that if the information is presented sequentially rather than simultaneously, people represent a strong preference for existing information, reflecting that confirmation bias is due to the sequential presentation of information rather than the sequential processing of information.

4.2 Conservatism bias: This bias refers to the tendency of people not to update their prior

beliefs and stick with their existing beliefs. In financial decisions, investors may stick to prior forecasts and underestimate the effect of the new lousy forecast (Luo, 2012). Irrespective of providing new evidence, people hesitate to change their prior viewpoints and stick to the prior probabilities (Hoppe & Kusterer, 2011). Conservatism bias depends on the personality type of individuals (Moradi & Mostafaei, 2013).

4.3 Representative bias: Representative bias refers to the tendency of people to give weightage to past events while interpreting future events (Busenitz, 1999). In this bias, investors think that a company's past performance represents future performance (Boussaidi, 2013). Due to representativeness bias, investors violate traditional financial theory (Toma, 2015). Representative bias is found more in individual investors, not in institutional investors (Chen et al., 2007). Due to this bias, people make extreme forecasts based on the available information (De Bondt & Thaler, 1994).

4.4 Availability bias: In availability bias, people rely on existing available information instead of examining the other possible alternative (Javed et al., 2017). In investing, people make decisions based on information that is easy to recall (Sahi et al., 2013). Salman et al. (2021) reported the existence of availability heuristics among investors with an external locus of control. During the covid 19 pandemic, availability bias was enhanced among investors who preferred available information to make decisions (Kathpal et al., 2021). Due to this bias, investors take more risk after a gain, and after a loss, they take less risk (Mittal, 2019). A risky event having a significant impact on communication, vivid memories and coverage in media increases the demand for insurance due to availability heuristics (Pitthan & Witte, 2021).

4.5 Anchoring bias: In anchoring bias, people rely on the first piece of information they get (Shin & Park, 2018). This bias arises due to a lack of information and knowledge (Kubiley & Bayrakdaroglu, 2016). All anchoring effects among investors do not result from the same psychological

phenomena, and it is not a unitary phenomenon (Epley & Gilovich, 2006).

4.6 Hindsight bias: Hindsight bias occurs when people think that they could easily predict a particular event after an event, which also refers to knowing it all along with phenomena (Roese & Vohs, 2012). Hindsight bias reduces volatility estimates from the side of investors, and it results in poor choice in the portfolio, overtrading and poor risk management (Biais & Weber, 2009). There are three levels of hindsight bias: inevitability, memory distortion and foresee ability (Kelman et al., 1998; Nestler et al., 2010).

4.7 Self-attribution bias: This bias refers to the tendency of people to give credit to success to their skills and put the reason for failure on external factors (Hoffmann & Post, 2014). Self-attribution bias consists of self-enhancing bias, the irrational tendency to take credit, and self-protecting bias, which is the irrational tendency not to take responsibility for failure (Mishra & Metilda, 2015). Traders with self-enhanced bias tend to underperform, but self-protection bias harms their performance (Czaja & Order, 2020). Due to self-attribution bias, investors do not learn from their mistakes (Mahina et al., 2018). Self-attribution bias can deviate investors from reality and is more potent than overconfidence bias (Naveed & Taib, 2021).

4.8 Herding bias: Herding bias refers to the tendency of people to follow the crowd by observing and imitating their behaviours (Yu et al., 2018; Madaan & Singh, 2019). In herding bias, rational people start behaving irrationally because they imitate the actions of others while taking their financial decisions (Kumar & Goyal, 2015). Stocks show extreme volatility when masses react quickly to an event simultaneously because of the herd mentality (Javed et al., 2017). Investors having low self-confidence shows herd behaviour more often in financial markets (Kubiley & Bayrakdaroglu, 2016). There is a high degree of herding bias among short term investors than long term investors (Lakshmi et al., 2013).

4.9 Mental accounting bias: Mental accounting bias refers to the tendency of people to give different weightage to the same amount of money based on various subjective

criteria (Thaler, 1985; Bagde et al., 2021; Ritter, 2003). Individuals divide their financial assets and liabilities into different parts, considered mental accounts (Baker et al., 2015). Due to mental accounting, people separate the decisions that could be combined (Ritter, 2003). Mental accounting bias largely influences individuals' financial planning process (Mahapatra et al., 2016). Investor behaviour is not only influenced by the opening or closing of a mental account but also by the evaluation frequency of a mental account (Zhang & Sussman, 2017). Besides investing, mental accounting bias also influences individuals' budgeting and spending behaviour (Zhang & Sussman, 2018).

4.10 Ambiguity aversion bias: Ambiguity aversion bias refers to the tendency of people to select known information over unknown and uncertain information (Baltzer et al., 2014). When people feel incompetent, they display ambiguity aversion bias (Dimmock, 2016). When investors think that there is uncertainty in investment decisions, they avoid that decision (Pompian, 2006).

4.11 Disposition effect: Disposition effect bias in financial markets refers to the tendency of investors to sell their profitable investments and hold on to loss-making investments (Noviamggie&Asandimitra, 2019; Baker et al., 2015; Barber & Odean, 2011). This behaviour of selling winners and holding losers is not motivated by rebalancing the portfolio but due to tax motivation (Odean, 1998). Barberis&Xiong (2009) observed that annual gains and losses are unreliable in predicting disposition effect, realized gains and losses are more reliable than unrealized ones. Investors who show disposition effect in their stock portfolios reflect contradictory behaviour in mutual fund choices which implies that the disposition effect is less frequent when the portfolio is managed professionally (Bailey, 2011). Sophistication and trading experience can eliminate the disposition effect (Feng & Seasholes, 2005).

4.12 Framing bias: When information is presented positively, people act positively, and if the same information is presented negatively, people tend to react negatively, known as framing bias (Kahneman and Tversky, 1979; DoNascimento Junior et al.,

2021). How insurance investors act towards a particular opportunity depends on how information is presented in front of them (Badge et al., 2021). The intensity of framing bias depends on the context, and individual characteristics are the main determinants of framing bias (Tabesh et al., 2019).

4.13 Loss aversion bias: When individuals feel more pain in losses than pleasure at the time of gains is known as loss aversion bias (Benartzi& Thaler, 1995). People show more sensitivity to loss than gains of the same amount (Barberis and Huang, 2001). Kahneman et al. (1991) and Moshinsky& Hillel (2010) reported that loss aversion bias leads to another bias called status quo bias.

4.14 Self-control bias: Self-control refers to the control of people on the postponement of current consumption for the future (Riaz & Iqbal, 2015; Xiao & Porto, 2019). People who suffer from self-control can put high debt and credit outstanding on them due to lack of self-control (Sahi, 2017). Many people lack adequate savings for retirement due to this self-control bias (Baker et al., 2015; Trehan& Sinha, 2020). Some people do not control their tendency to spend money today, so they force themselves to save and reduce their tendency to save (Sahi et al., 2013).

4.15 Overconfidence bias: Overconfidence bias refers to the tendency of people to overestimate their ability while making decisions related to finances (Deaves et al., 2005). Investors who credit success to their skills and failure to bad luck are more prone to overconfidence bias (Chen et al., 2007). Overconfidence bias helps investors trust their abilities in managing their financial affairs, enabling them to feel financial satisfaction (Sahi, 2017). Overconfidence is a significant bias affecting the decision making of equity investors (Jain et al., 2019). Overconfidence investors underestimate their inability, and they suffer from the winner's curse (Biais et al., 2002). Overconfidence is significant among people who are open to experience (Kubilay&Bayrakdaroglu, 2016).

4.16 Status quo bias: Status quo bias refers to the tendency of people to maintain their current state (Kahneman et al.,

1991). Individuals who suffer from status quo bias tend to choose the same option they have chosen earlier, even if that option is not optimal (Kempf and Ruenzi, 2006). Status quo bias has a significant effect on the decision making of individuals (Samuelson & Zeckhauser, 1988). People who have more experience suffer from status quo bias because experience controls their thoughts (Burmeister & Schade, 2007). Status quo bias is also a result of the tendency of people to avoid losses and uncertainty (Rubaltelli et al., 2005). Status quo bias does not have a significant role in the non-optimal portfolio choices of individuals (Filiz et al., 2018).

4.17 Regret aversion bias: Regret aversion bias refers to giving extra weight to regret arising from mistakes and bad decisions (Kubilay & Bayrakdaroglu, 2016). To avoid the pain of mistakes, individuals tend to behave irrationally (Ritika and Kishor, 2020). When people suffer losses in their investments, they hesitate to take essential investment decisions because of fear of regret (Sahi et al., 2013). Due to regret aversion bias, people do not take decisions that impact their future decisions (Zahera & Bansal, 2018).

5. Findings and Conclusion

Financial decisions of individuals are not only influenced by the level of financial literacy and knowledge they have, but the psychology

of the individuals largely influences it. The study found that people make decisions based on their beliefs and values. People are prone to committing errors while processing financial information that affects their financial decision-making process.

The study found that the psychology of individuals influences various aspects of financial decisions. It is observed from the study of literature that behavioural biases significantly influence the decisions related to investment planning, debt planning, insurance planning, retirement planning and spending of individuals.

The study found that behavioural biases are present among all individuals to certain degrees. The degree of behavioural biases among individuals depends on the individual experiences and personality. The study found that behavioural biases have a significant relationship with individuals' level of financial satisfaction. Based on the literature review, the study found that behavioural biases are divided into two parts: cognitive biases and emotional biases. Cognitive biases arise due to faulty reasoning of individuals during the decision-making process, and emotional biases arise due to emotional instincts.

The study found the following common behavioural biases based on the literature review:

Table 4

Behavioural biases

| Behavioural biases | Literature Support |
|----------------------------|---|
| 1. Cognitive biases | |
| 1.1 Confirmation bias | Ritika and Kishore (2020); Sahi et al. (2013); Jones et al. (2001) |
| 1.2 Conservatism bias | Luo (2012); Hoppe & Kusterer (2011); Moradi & Mostafaei (2013) |
| 1.3 Representative bias | Busenitz (1999); Boussaidi (2013); Toma (2015); Chen et al. (2007); De Bondt & Thaler (1994) |
| 1.4 Availability bias | Javed et al. (2017); Sahi et al. (2013); Salman et al. (2021); Kathpal et al. (2021); Mittal (2019); Pitthan & Witte (2021) |

| | |
|------------------------------|--|
| 1.5 Anchoring bias | Shin & Park (2018); Kubiley&Bayrakdaroglu (2016); Epley & Gilovich (2006) |
| 1.6 Hindsight bias | Roese and Vohs (2012); Biaise & Weber (2009); Kelman et al. (1998); Nestler et al. (2010) |
| 1.7 Self-attribution bias | Hoffmann & Post (2014); Mishra & Metilda, (2015); Czaja & Order (2020); Mahina et al (2018); Naveed & Taib (2021) |
| 1.8 Herding bias | Yu et al. (2018); Madaan & Singh (2019); Kumar & Goyal (2015); Javed et al. (2017); Kubiley&Bayrakdaroglu (2016); Lakshmi et al. (2013) |
| 1.9 Mental accounting | Thaler (1985); Bagde et al. (2021); Ritter (2003); Baker et al. (2015); Ritter (2003); Mahapatra et al. 2016; Zhang & Sussman (2017); Zhang & Sussman (2018) |
| 1.10 Ambiguity aversion bias | Baltzer et al. (2014); Dimmock (2016); Pompian (2006) |
| 1.11 Disposition effect | Noviamggie&Asandimitra (2019); Baker et al. (2015); Barber & Odean (2011); Odean (1998); Barberis&Xiong (2009); Bailey (2011);Feng &Seasholes (2005) |
| 1.12 Framing bias | Kahneman & Tversky (1979); Do Nascimento Junior et al. (2021); Badge et al. (2021); Tabesh et al. (2019) |
| 2. Emotional biases | |
| 2.1 Loss aversion bias | Benartzi& Thaler (1995); Barberis and Huang (2001); Kahneman et al. (1991); Moshinsky& Hillel (2010) |
| 2.2 Self-control bias | Riaz & Iqbal (2015); Xiao & Porto (2019); Sahi (2017); Baker et al. (2015); Trehan& Sinha (2020); Sahi et al. (2013) |
| 2.3 Overconfidence bias | Deaves et al. (2010); Chen et al. (2007); Sahi (2017); Jain et al. (2019); Biaise et al. (2005); Kubilay&Bayrakdaroglu (2016) |
| 2.4 Status quo bias | Kahneman et al. (1991); Kempf&Ruenzi (2006); Samuelson & Zeckhauser (1988); Burmeister & Schade, (2007); Rubaltelli et al. (2005); Filiz et al. (2018) |
| 2.5 Regret aversion bias | Kubilay&Bayrakdaroglu (2016); Ritika & Kishor (2020); Sahi et al. (2013); Zahera& Bansal (2018) |

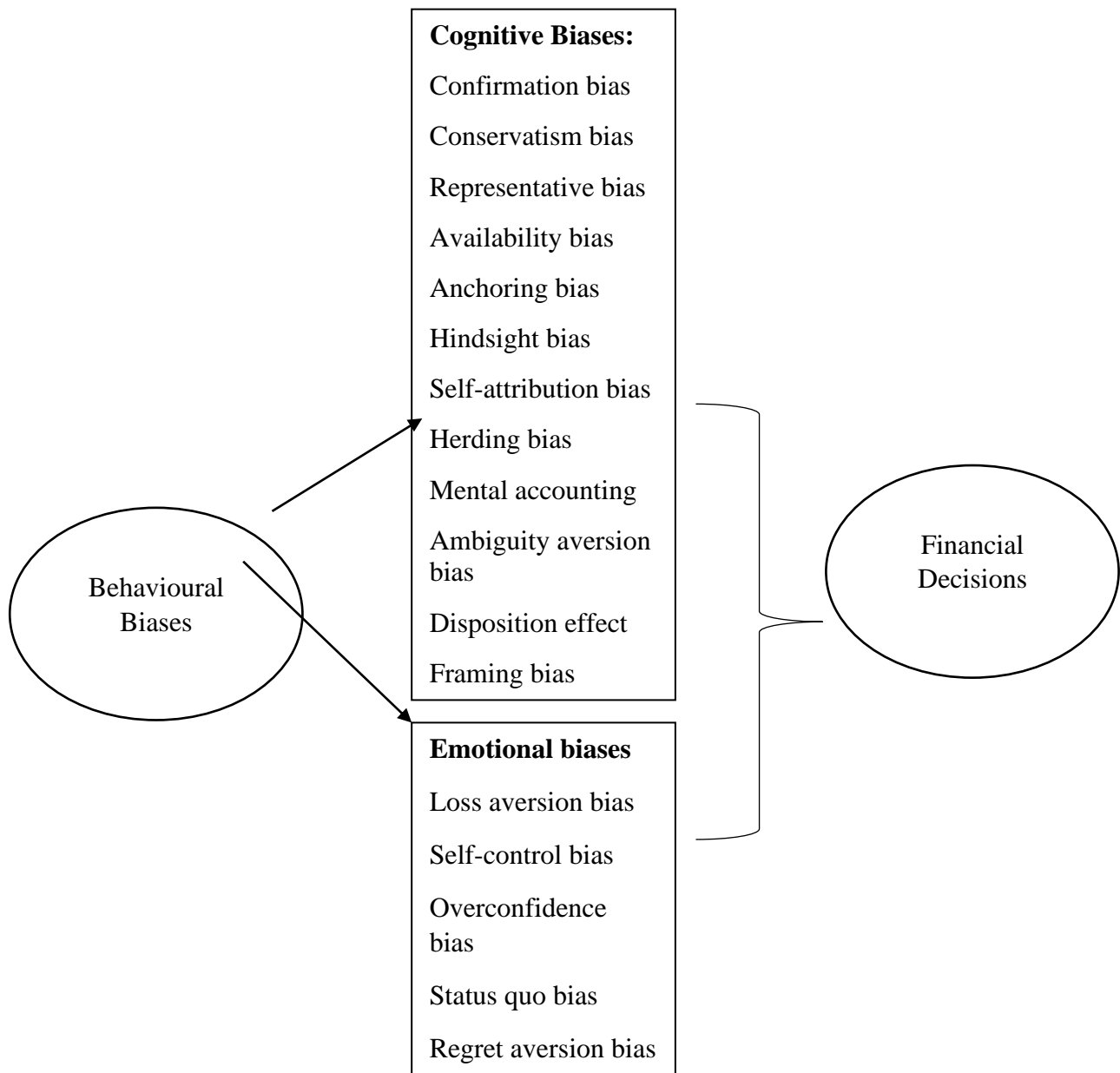
The study concluded that the psychology of individuals significantly influences financial decision making. People carry irrational beliefs known as behavioural biases, including cognitive and emotional biases, which play an essential role in their decision-making.

Individuals cannot ignore the role of behavioural biases and financial advisors and understanding these behavioural biases can improve the financial decision-making process.

6. Proposed Model

Figure 2

Behavioural biases and financial decisions: Proposed model by the researcher



The above proposed model by the researcher depicts the behavioural biases affecting financial decision-making based on the academic literature related to behavioural biases. Behavioural biases can be categorized into two classes: cognitive biases and emotional biases. Cognitive biases arise due to faulty reasoning, whereas emotional biases arise due to emotions and intuitive judgements in financial decisions.

7. Contribution of the study

It is evident from the study that behavioural biases significantly influence the financial decision making of individuals. Understanding the technical part of finance is not enough for a sound financial future; at the same time, understanding psychology is also very important for individuals and financial advisors. The study shall help the financial services and advisory industry to understand

the behavioural biases that influence the financial decisions of their clients that can help in guiding the individuals. The study shall also help the researchers who aspire to work in the area of behavioural finance to conduct a more comprehensive study on behavioural biases and their impact on the financial decision making of individuals.

8. Future scope for the research

The study concluded that behavioural finance is an emerging field and has significant scope for research. Most of the research related to behavioural finance has been conducted in foreign nations so the research can be conducted in various parts of India to know the role of behavioural biases in financial decisions. Only the impact of behavioural biases on investment decisions has been explored in most of the literature so the study can be extended to the other areas of personal finance such as insurance planning, money management, debt management, retirement planning, tax planning and estate planning. The area of neurofinance can also be explored to study the effect of psychology on financial decision making.

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