CHAPTER II

REVIEW OF LITERATURE

This chapter included the Theoretical framework of the research and Review of related researches. Theoretical background of the research is important in the psychological theory-based researches. Here the research is based on psychological concepts like intelligence and personality and the investment behaviour. The literature review is essential for building a basic foundation in every research process. Literature review shows that the collection of previous studies relates to the chosen research problem and provides a rationale for the conduct of present research work.

2.1. THEORETICAL FRAMEWORK

Theories related to investment behaviour are included in this section.

2.1.1. Behavioural Finance Theories

The economic well-being of a person, in the long run, depends significantly on how wisely he or she invests. Investment decision making is thus a key to a person's success in life. The different approaches in investment decision making are fundamental, psychological, academic and eclectic. In these the psychological approach is based on the assumption that security prices are guided by emotions than reason. It believes that the psychological mood of the investors influences the stock price. The investors' greed, fear, despair and excitement may lead to a price rise or fall. According to this approach, it is more profitable to analyse how investors behave in the market. It is contradictory to the traditional investment theories like Efficient Market Hypothesis (EMH). EMH is based on the notion that people behave rationally, maximize the expected utility accurately and process all available information (Shiller, 1998). Behavioural finance theories negate the EMH.

Behavioural finance is a new paradigm of finance which seeks to supplement the standard theories of finance by introducing behavioural aspects to the decision-making process. The main approach of behavioural finance is that the investors are not rational and that they are under influence, as opposed to traditional finance ((Matthew, 1998) ;(Sharna, & Sarma, 2022)). Behavioural finance seeks to understand and predict systematic financial market implications of psychological decision processes. In addition, it focuses on the application of psychological and economic principles for the improvement of financial decision-making (Olsen, 1998). Theories of behavioural finance provide reasonable explanation to investors' decision making and other investment behaviour.

2.1.2. Cognitive, Behavioural and Social Factors in Investment

According to behavioural decision-making experts, the decision-making process is subject to psychological needs and psychological constraints. Additionally, the complexity and uncertainty of the situation, together with the vague and incomplete information for which the decision should be made, makes us decide to make a difficult decision. This complex, confusing and uncertain situation forces decision-makers to make several dubious decisions. ((Luthans, 2011); (Kantomaa, 2022)). Such decisions are often taken due to social factors and several psychological dynamics.

Traditional theories on Investment assume that individuals have complete information and can process this information and make decisions rationally (Becker, 1962). A prudent/ rational investor is someone who analyses information, both past and present and other sources of information. Such investors use the balance of the combined components and reinforce the presence of other market participants with their own beliefs, which may impact prices. It is assumed that the decision is made somewhat based on the scientific value of the information obtained. There are two different and opposite ways of thinking in the decision-making process - intuition and reasoning. (Kahneman, 2011).

Irrational decisions are sometimes based on behavioural biases. Biases are classified as Emotional bias and Cognitive bias. The heuristic bias includes representativeness, availability bias, anchoring bias and gambler's fallacy. While in cognitive bias includes overconfidence bias, mental accounting bias, herd effect, and regret aversion. Behavioural biases are outcomes of non-rational thinking, and they are the factors that may depend on the performance of individual investment. Behavioural biases like Representativeness, Availability bias, Anchoring bias, Herd effect, Mental accounting, Gamblers' fallacy, Overconfidence and Regret aversion are the apparent biases in investment. (Kahneman and Tversky (1979); Benartzi and Thaler (1995); Prelec and Loewenstein (1998); Thaler (1999); Fogaat, Sharma, & Meena, 2022)).

The process of experience goes fast because it is not self-conscious by nature. Often uses the rule of thumb, biases or irrational behaviour. Rational systems that are considered new in the process of evolution work more slowly. This system brings more logical ideas and logical decisions. Quality decisions occur when these two systems operate in accordance with the corresponding values.

Behavioural finance is of comparatively recent origin, and the number of researches in this field is not sufficient compared to other finance fields. The researches related to Intelligence,

Personality, Prudence and behavioural biases related to investment patterns, decision making and preferences of different avenues are significantly less. Therefore, an attempt has been made in this research study to identify the factors that influence investment behaviour and model building which covers such aspects.

2.1.3. Rational or Irrational Decision Making

The economic well-being of a person, in the long run, depends significantly on how wisely he or she invests. Investment decision making is thus a key to a person's success in life. There are different approaches to investment decision making.

2.1.3.1. Fundamental Approach

As per Fundamental approach, there is an intrinsic value of a security that depends upon economic factors. The security's price is not much related to this intrinsic value. Analysing economic factors, and identifying the intrinsic value may help in analysing the return and help in purchasing the undervalued security and selling the overvalued security (Moeini Najafabadi, et al., 2016).

2.1.3.2. Psychological Approach

Psychological approach is based on the assumption that security prices are guided by emotions than reason. It believes that the psychological mood of the investors influences the stock price. The investors' greed, fear, despair and excitement may lead to a price rise or fall (Slovic, 1972). According to this approach, it is more profitable to analyse how investors behave in the market. Under this approach, technical analysis is more dependable in decision making.

2.1.3.3. Academic Approach

With a sophisticated method of investigation, the academic community has studied various aspects of the security market. As per their thought, stock markets are reasonably efficient in reacting quickly to the flow of information. They specify the random walk theory and the relationship between risk and return (Shiller, 2009).

2.1.3.4. Eclectic Approach

Fundamental analysis is helpful to establish standards and benchmarks, technical analysis is helpful to measure the mood of investors and relative strength of the supply and demand forces. Eclectic approach is the trade-off between these methods (Altman, 2004). It can use all the analysis like fundamental analysis can be used for establishing value anchors, technical analysis can be used for market psychology, and they can use its combination to determine to buy, hold or sell securities. In this approach, the investor should respect market price and accept the fact that his psychology can be used to search for a higher level of income.

Investors who are good in decision making must have the qualities like patience, flexibility, decisiveness, creative thinking and emotional stability. The factors affecting investment decisions are the amount, purpose, time and type of investment. Investment decision-making involves five stages: decision on investment policy, investment analysis, valuation, portfolio construction, and portfolio evaluation. There are different strategies like passive, active and buy and hold strategies (Eti, 2021).

The defensive investor is one interested chiefly in safety plus freedom from bothering. They should be able to count on the current percentage of dividend return on their stock. The defensive investors are recommended to make a compromise policy that includes a significant part of bonds and equities in their portfolios (Graham, 1973). The conservative investor prioritises capital preservation than the market return. They depend more on long term past information for investment decision making. Graham, B says that common stocks may do better in future than in the past. Thus, an intelligent investor should deal with two-time investment results like the result in the long term and short or immediate future (Graham, 1973). An aggressive investor should start from the same base as a defensive investor: his division between bonds and common stocks bought at a reasonable price. After that, he should follow the investment pattern into more good quality tax-free bonds and less common stocks (Graham, 1973).

In this context, the investment behaviour of individual investors is to be analysed with their psychological aspects. The investors' psychology is different between persons following their intelligence, memory, thought process, personality, attitude and learning. Here in this study, the cognitive and behavioural aspects of the investors are stressed, and intelligence is taken as the cognitive aspect and personality as the behavioural aspect.

2.1.4. Intelligence Theories

The term Intelligence is defined by different psychologists differently, and there are several theories on Intelligence. In classical terms, Intelligence is a uni-factor and then after several pieces of research, there aroused like two-factor theory and multifactor theory. Psychologists discuss much the measurement of Intelligence in different periods. Alfred Binet firstly introduced the concept of Intelligent Quotient (IQ). IQ was very much popular in western countries in the 18^{th} century. However, there was an issue of actual or potential Intelligence and potential intelligence's measurability. These thoughts lead to the emergence of some other measurement like the Scholastic Aptitude Test (SAT). All these scales are under uni-dimensional model or a uniform school of thought.

In uniform school all individuals treat in the same manner. Howard Gardner, professor of Cognition and Education, Harvard Graduate School of Education had introduced an alternative vision which is based on a radical different view of the mind, and one that yields a very different view of school. It is based on the pluralistic view of the mind recognising many different dimensions of cognition. He introduced the theory of Multiple Intelligence in the early 1980s. He defined Intelligence as a set of abilities, talents or mental skills. He argued that all individual human beings possess these skills but they differ in the degree of skills and the nature of their combination.

He initially introduced Multiple Intelligence in the light of the biological origins of each skill in his book "Frames of Mind" in 1983. He updated his theory in the book "Intelligence Reframed" in 1999. As per this theory, an individual has more than one Intelligence and each of them must have an identifiable core operation or set of operations. There are nine types of Intelligence as per the theory of Multiple Intelligences.

2.1.4.1. Verbal Intelligence (VI)

Verbal Intelligence is the cognitive ability to learn languages, interpret words and signs, and use words that lead towards specific goals. A person with verbal Intelligence can understand and use complex phrases or learn more than one language. They have highly developed auditory skills and marvel at the use of language. (Gardner, 1983) The professions they prefer are creative writing, public speaking and journalism. It may also term as Linguistic intelligence.

2.1.4.2. Logical Intelligence (LI)

Logical Intelligence can analyse information or problems logically and investigate issues scientifically. The person who possesses logical Intelligence thinks conceptually in analytical and numerical patterns making a connection between the bits of data, and are curious about the universe. (Gardner, 1983) They are interested in experiments and posing questions, and the preferred profession are scientists, statisticians, mathematicians or detectives.

2.1.4.3. Spatial Intelligence (SI)

Spatial or Visual Intelligence is the capacity to visualise, recognise and manipulate patterns of vast space. This ability includes manipulating images, graphic skills and spatial reasoning. The visually intelligent person tends to think in pictures and need to develop visions for processing and retaining information. (Gardner, 1983) This Intelligence is essential to sculptors, surgeons, engineers and navigators.

2.1.4.4. Kinesthetic Intelligence (KI)

Kinesthetic or bodily Intelligence is the ability to manipulate both body and object with a keen sense of timing. This is the ability to control own body movements and handle things skilfully

by eye-hand coordination. (Gardner, 1983) The people with Kinesthetic Intelligence may see success as dancers, magicians, athletes, sportspeople and builders.

2.1.4.5. Musical Intelligence (MI)

Musical Intelligence is the ability to identify different sounds distinguish between specific pitches, tones and rhythms. The person who possesses musical Intelligence is highly sensitive to environmental sounds and immediately respond to the sounds they hear. (Gardner, 1983) They are often sensitive listeners and can reflect or reproduce music quite accurately. This is related to other Intelligence like verbal, mathematical and Kinesthetic Intelligence. They are successful in the professions like musicians, composers, vocalists, or drummers. It may also term as Rhythmic intelligence.

2.1.4.6. Interpersonal Intelligence (II)

Interpersonal Intelligence is the ability to communicate effectively with others verbally and non-verbally and accurately understand others' emotions and mental states. Persons who possess this type of Intelligence try to see things from others' points of view to know how they think and feel. (Gardner, 1988) They may be good managers, organisers, teachers, counsellors, and great leaders. This Intelligence may depend on verbal and visual Intelligence.

2.1.4.7. Intra-personal Intelligence (InI)

Intra-personal Intelligence is the capacity to be aware of their own emotions, needs, interests, confidence, feelings, motivation, attitude and personality. Intrapersonal intelligent persons tend to daydream, enjoy self-reflection and analysis, and assess themselves. (Gardner, 1988) They can understand the basis of their feelings, motivation and attitude. They may be philosophers, scientists, behavioural theorists, and writers.

2.1.4.8. Naturalistic Intelligence (NI)

Naturalistic Intelligence is the ability to sensitise with the environment and distinguish and identify the living and non-living things with the specification. It involves expertise in the recognition and classification of species in the background. (Gardner, 1991) Individuals with this type of Intelligence are highly aware of even subtle changes in the environment. They may be interested in natural science and dislike studying topic which has no connection with the environment. The profession they prefer may be botanist, farmer, or meteorologist.

2.1.4.9. Existential Intelligence (EI)

Existential Intelligence is the ability to think about the meaning of life and human beings' existence and survival during unfavourable situations. The persons with this Intelligence are more futuristic and are sensitive but can take rational decisions in difficult situations. (Gardner, 1999)

The individual behaviour is much influenced by these intelligence as per the related researches. In this research study, the role of Multiple Intelligence on the investment behaviour of the government employees in Kerala are analysed.

2.1.5. Theories related to personality

The personality is the sum total of all the factors relating to an individual. It includes the physical, psychological and emotional adjustment of an individual with his/her environment. Personality traits are the stable features that describe an individual's behaviour. Psychologists have identified several traits and dimensions that differentiate individuals. There are trait theories that explain different numbers of traits and personality dimensions, like the sixteen-factor theory of Raymond Cattell and the five-factor theory of McCrae and Costa (1987). Goldberg (1992) named the five-factor theory as Big Five Personality Traits. They are:

2.1.5.1 Openness (O)

Openness is the response to the environmental and social background and changes. Otherwise, it is the response to experience and its link with intellectual activity. It is the ability to think out of the box, creative, artistic value and interest in learning new things. It tends to enjoy a unique experience and its influence on novel ideas, imagination and divergent thinking. (McCrae, and Costa, 1987). High Openness indicates the person is curious and has a wide range of interests, and low Openness indicates one's preference in routine work and conventional style.

Sub dimensions identified under this trait are Curiosity, Aesthetic, Ideas and Action.

2.1.5.2. Conscientiousness (C)

Conscientiousness is the ability to control impulses, lead a disciplined life and fulfil goals within the limitations. The person who has this trait will be thoughtful and careful and have a deep sense of duty and orderliness. (McCrae, and Costa, 1987). High conscientiousness indicates a hardworking and organised personality, while low conscientiousness indicates a careless and disorganised character. Sub dimensions identified under this trait are Competence, Deliberation, Order and Self-discipline.

2.1.5.3. Extroversion (E)

Extroversion is a person’s intensity or level of interaction with society and environment and a tendency to seek stimulation and company; make good relationships with society. It is the foundation of social, honest and emotional expression. (McCrae, and Costa,1987). High extraversion indicates external, warm, and disturbing, while low extraversion indicates quiet, reserved, and withdrawn. Sub dimensions identified under this trait are Excitement seeking, Assertiveness, Gregariousness and Warmth.

2.1.5.4. Agreeableness (A)

Agreeableness is the tendency to keep the relationship and interaction with others. It is the willingness to accept others and cooperate with fellow mates. (McCrae and Costa 1987). High agreeableness indicates an empathetic and trusty personality, and low agreeableness shows a critical suspicious personality. Sub dimensions identified under this trait are Modesty, Altruism, Straightforwardness and Trust.

2.1.5.5. Neuroticism (N)

Neuroticism is the opposite of a stable personality and describes emotional instability and the ability to experience negativity. It is the tendency to experience and expect unpleasant emotions. (McCrae and Costa 1987). High Neuroticism indicates an anxious and unpleasant personality, while low Neuroticism indicates a calm and even-tempered personality. Sub dimensions identified under this trait are Vulnerability, Self-consciousness, Depression and Anxiety.

The individual behaviour is much influenced by these personality traits as per the related researches. In this research study, the role of Big Five Personality Traits on the investment behaviour of the Government Employees in Kerala is analysed.

Behavioural Finance theories consider the psychological influence in decision making and investment behaviour of individual investors. The present study relates individual investors' cognitive and behavioural aspects to their investment behaviour. The investment behaviour here included investment patterns, preferences and decision-making. The cognitive aspects are studied using Multiple Intelligences, and behavioural aspects are studied using Big Five Personality Traits.

2.2. REVIEW OF RESEARCH LITERATURE

The researcher reviewed the relevant research related to Investment behaviour, investors' intelligence and investors' personality are discussed here.

2.2.1. Investment Behaviour

Muhammad (2009) conducted a detailed review of the literature and studied the evidence from Malaysian investors in their research entitled "Behavioural finance vs Traditional finance". It provides a brief introduction to behavioural finance. The study also reviews how psychological biases affect investor behaviour and security prices. The study found that the most common

behaviour is when making investment decisions. Investors often do not participate in all asset and security categories. Individual investors exhibit loss-averse behaviour.

Chandra and Kumar (2011) examined the factors that appear to exercise the most significant influence on individual stock (equity) investors as part of a Doctoral dissertation submitted to Jamia Millia Islamia University. Their study entitled “Determinants of Individual Investor Behaviour: An orthogonal linear Transformation Approach” included the factors from behavioural finance theories and contextual psychological experiments. The research study generated data through personal interviews that are supposed to influence the stockholders' investment decisions in the Indian stock market. Principal Component Analysis was used to interpret the data collected. The result evidenced that five variables about investment are prudence and precautions attitude, conservatism, under-confidence, information asymmetry and financial addiction.

Bikas et al. (2013) Conducted a study entitled “Behavioural Finance: The Emergence and Development Trends” funded by the Research Council of Lithuania. Their primary objectives are to analyse non-professional investors' financial behaviour from a historical-theoretical perspective, recognize emotional factors on market movements focusing on a limited number of investor rationality, and explain the psychological effects of investing activities. It was observed that most small investors feel that they have sufficient knowledge and experience in investing.

Daniel et al. (1998) proposed a theory of securities market under and overreactions in their study "Investor Psychology and Security Market -Under and Overreactions" based on U.S. security markets. The theory suggests that investors overreact to private information signals and underreact to public information signals. They found that overconfidence leads to volatility and stock market prices. Biased self-attribution gives positive momentum and leads to short-term income. Poor response to new public information is neither necessary nor sufficient for such event-based predictability. Alternatively, predictability may occur when a public event causes a prolonged overreaction.

Chetty and Greying (2001) proposed a model investor in fixed capital. The doctoral research study titled “Uncertainty and Expectations in Fixed Investment Behaviour” is submitted to Afrikaans University. It is based on the argument that the level of uncertainty in an economy at a particular time is reflected in the degree to which investors invest in fixed capital. This model focused primarily on whether to continue investing and examined investment

management decisions, which include recurring, innovation and change, as being all involved in different levels of the elements of hope and uncertainty. The model provides a mechanism to isolate investors' expectations like risk perception, risk attitude, and general sentiments. This model may help to analyse the interrelationship between uncertainty and expectations with the investment behaviour.

Shiv et al. (2004) from different universities in the U.S.A. conducted a research studies to find out the way negative emotions affect investment behaviour. The study is entitled "Investment Behaviour the negative side of emotions" It is an experimental study. The experimental analysis selected 18 normal and 15 persons with abnormality in behaviour and observed their behaviour to the 20 tasks provided related to investment. The study reported that moods and emotions could play functional and disruptive roles in decision making. Emotions can be trusted to lead to good or bad decisions.

Mayfield et al. (2008) examined several psychological antecedents to both short term long-term investment intentions with Big Five Personality Traits in their study conducted at Houston entitled "Investment management and Personality type". They used SEM to study the personality traits and investment intentions and found that extroverts are interested in short financing, and neurotic people are interested in avoiding the activity. They concluded that risk-averse people do not engage in long term investment.

Barber and Odean (2011) from the University of California, U.S.A., conducted a literature survey on 'the behaviour of individual investors', which studied long term and short-term investment behaviour of stock market investors. They studied the disposition effect, information availability, diversification, familiarity, overconfidence, and stock performance by empirical analysis. They found there is a gap between the theories and practice in investment. Individual investors tend to ignore the analyst's advice and diversification.

Suriyamurithi et al. (2012) had conducted a research study entitled "Investors Behaviour in Various Investment Avenues - A Study". The study was Tamil Nadu based, and their objectives were to identify the investor preferences in different investment avenues popular in that area. They used chi-square analysis and correlation analysis to get insight into the study. They found that individual investors prefer to invest in financial assets which give risk-free returns. They did not do much work on portfolio analysis. They thought gold and land were ideal forms of investment. Female investors prefer only less risky investments.

Praveena (2012) submitted the doctoral dissertation entitled “A Study on Investment Pattern among Investors with Special Reference to College Teachers in Madurai City” to Madurai Kamaraj University, under the guidance of Venkateswaran. The major objective of this study is to determine the pattern of investment adopted by the college teachers and explain their outlooks to make such investors to accomplish their investment objectives. Collected sample from 350 college teachers using questionnaire. The data analysis was done using ANOVA, and factor analysis. It was found that the respondents preferred to invest in sectors like FMCG and medicines as these sectors were having a minimum of market fluctuations as they were essential commodities always having market demand.

Pandit and Yeoh (2014) have published the article "Psychological Tendencies in an Emerging Capital Market: A Study of Individual Investors in India". The authors are from Australia and U.K., respectively, but they studied the psychological tendencies of the Bombay Stock Exchange because of the importance of B.S.E. in the Asian continent. They have used Factor analysis and regression analysis to analyse the data and found that investors' psychological tendencies have a significant impact on the purchase of securities. They concluded that the investor's psychological biases and subsequent investment-related behaviour are persistent and systematic.

Rushdi (2014) submitted the doctoral dissertation entitled “Impact of psychological influence on investment behaviour of salaried investors in India” to University of Lucknow under the guidance of Jaiswal, B. This study considered the psychographic factors like risk taking behaviour and personality traits and their impact on investment behaviour. For the analysis, data were collected from 1627 Salaried Investors in India using psychometric tools. The data analysis was done using Chi square test, Mann-Whitney U test, Kruskal Wallis test, Cluster analysis. The general conclusion is that the psychological impact of various aspects of investment behaviour is significant. Among the demographic factors, gender seems to have the greatest impact on all aspects of investment behaviour.

Pandian and Thangadurai (2013) studied the awareness of and the preferences of different investment avenues in their study, “A Study on Investor Preference towards various Investments Avenues in Dehradun district”. The study's primary objective is to identify investment preferences and their relationship with investors' demographic and socio-economic profiles. They found that all the investors invest their surplus money in the select avenues based on their risk-taking attitude, and there is a significant influence on the demographic and socio-

economic profile of investors with their investment preferences. However, they concluded that the investors prefer bank deposits and gold investments to other avenues.

Kavitha (2013) conducted a study entitled “Determinants of Retail Investors' Behaviour and its Impact on Investment decisions”. The objective of the study is to identify the determinants and their relative importance in shaping the behaviour of individual investors. It is found that Individuals have inconsistent attitudes towards risk in making investment decisions. They exhibit risk aversion in a profit t making situation, while risk-seeking behaviour is displayed in a loss-making condition, explains the phenomenon of mental accounting. The behaviour of individual investors is irrational to a greater extent. Individual investors have a high level of involvement and overconfidence. At the same time, they are not much optimistic about the market's future outlook, and they have an aversion to risk.

Poshakwale and MandaI (2014), from Cranfield University, Bedford, UK, in their research article entitled “Investor Behaviour and Herding: Evidence from the National Stock Exchange in India”, examined the presence of herd behaviour in the Indian stock market by using the Nifty 50 index of NSE for a period of five years. The statistical methods used were descriptive analysis, CAPM, correlation analysis, and indexing. They found that the herding behaviour is significant in both bear and bull markets. Herding behaviour is higher in emerging markets with more significant information asymmetry.

Jagongo and Mutswenje (2014) studied on investment decision making of individual investors under the Nairobi Stock exchange as part of a Doctoral study at Kenyatta University and published a research article entitled "A Survey of the Factors Influencing Investment Decisions: The Case of Individual Investors at the NSE". The statistical techniques used are Descriptive analysis, Friedman’s test and Factor analysis. They found out that the most important factors that influence individual investment decisions were: the reputation of the firm, the firm's status in the industry, expected corporate earnings, profit and condition of the statement, past performance of firms’ stock, price per share, feeling on the economy and expected dividend by investors.

Varghese (2015) from Pondicherry University has conducted a research study on salaried class people's awareness, confidence, and preferences on different investment opportunities to know their investment behaviour. The study surveyed salaried individuals from Kerala and found that they are concentrating more on long term investments like real estate, life insurance, fixed deposits and post office savings for the study entitled “An Empirical Analysis of

Investment Behaviour–A Case Study of Kerala". The significant findings are that investors prefer moderate risk-return investment. They prefer gold and real estate as long-term investments, and all other short-term financial instruments. The other opportunities preferred by them are chit funds.

Mota et al. (2015) studied the behavioural factors in the decision making of young Mozambicans for their research study entitled "Behavioural factors in the Financial Decisions of Young Mozambicans". The study shows that Mozambican youth show Great hope, the belief that good things will happen well. It can happen to them, thinking it is not good; It happens to others. Opportunity belief Depends on how the events are presented. This study reveals that the financial decision making of young Mozambicans is influenced by anchoring and adjustment bias, and they are overconfident, which can lead to irrational decision making.

Toma (2015) from Bucharest University studied the irrational decision making of investors in their research study entitled "Behavioral biases of the investment decisions of Romanian investors in the Bucharest Stock Exchange". They focused on the representative bias, disposition effect, overconfidence and investors' characteristics. Investors' age, monthly turnover, trading frequency, and representative biases are significantly related. The end account value has a more negligible influence only over the mean monthly turnover, and the mean monthly number of stocks and disposition effect is present in the market. The representativeness bias is consistent with the independent variables, with younger investors having higher monthly abnormal returns.

Sindhuja (2015) had submitted her doctoral dissertation entitled "A Study on Income, Savings and Investment Pattern of School Teachers in Coimbatore District" to Bharathiar university under the guidance of Sasikala, S. The objectives of the study include the testing the awareness and satisfaction level of school teachers regarding different investment avenues and factors affecting investment. The survey method was used and the sample size was 500. ANOVA, correlation and regression are the major analytical tools used. The findings are future security and safety are the important factors. The personal factors have significant influence except marital status and educational qualification on the investment pattern.

Kumari (2016) has conducted a study on investment behaviour of working women as part of her doctor dissertation entitled "A Study of The Investment Behaviour of Working Women in Select Public Sector Organizations in Tinsukia District" under the guidance of Baruah, B. C. and submitted to department of Commerce, Dibrugarh University, Dibrugarh, Assam. The

major objectives of the study are to identify the preferences on different avenues by the women working under the public sector like bank, petroleum, railway and to find out the various factors affecting their investment behaviour. The data collection method was survey of 260 working women from all the three sectors proportionately. They found that least percentage of respondents were aware of corporate bond, shares and government bond and thereby the preference for this investment avenues was found to be very less in all the sectors. The study revealed that a smaller number of respondents takes investment decision on their own and majority are taking decision after discussing with family and friends. The women working in petroleum and railways were found to be neutral in risk taking and bank employees were seen to prefer low risk in investment.

Gupta and Ahmed (2016) conducted the doctoral research on 'Behavioural Finance – A Study on Investors' Behaviour towards Equity Market Investors with reference to investors of Delhi. The major objectives of the study were to examine the behavioural biases of investors and the effect of demographic factors influencing behavioural biases of investors. The data was collected using structured questionnaire and analysed using discriminant analysis, chi square test and logistic regression analysis. The biases selected for study are loss aversion, regret aversion, herding, overconfidence, anchoring, cognitive dissonance and representative biases. The research evidenced that majority of investors are affected by the behavioural biases and they are not aware of it. The familiarity of behavioural biases and its relevance in the decision-making process is necessary to develop rational decisions among investors.

Neha (2016) studied "the investors' preferences towards investment avenues of salaried persons of Gujarat". This research study focused on the investors' preferences for investment in relation to their causes of investment and the information related to the avenues. The study divided avenues into high risk, traditional and emerging avenues. The analysis was done using Factor analysis and the Chi-square test. Significant findings of the study are that investors prefer long-term investment and tangible assets. Insurance is the most preferred financial investment.

Deshmukh (2017) has tried to do an analysis on the Herd behaviour in investment in the research study entitled "Herd Investment Behaviour among Women Employees of I.T. and ITES Sector in Pune". Data were collected from hundred women employees working in I.T. and ITES sector using structured questionnaire. The study judged the existence of herd investment behaviour among IT/ITES women employees when a friends/colleagues group act

as influencers. The result is that the women employees have not been influenced by the large group, and thus herd behaviour is not present.

Mak and Ip (2017) conducted an exploratory study aimed to propose regression equation models of the investment behaviour of Chinese and Hongkong investors and published a research study entitled “An exploratory study of investment behaviour of investors”. The study results show a significant difference between the investment behaviour of mainland Chinese and Hongkong individual investors. Investors' psychological, sociological and demographic factors are significant predictors of their investment. The financial service providers can predict the individual investor's portfolio selection using the regression equation.

Thilakam and Santhanam (2017) have conducted a research study on the savings and investment behaviour as part of their Doctoral dissertation and published a research article entitled "Savings and Investment Behaviour of Private Sector Employees in Tirunelveli District". They have collected data from the health sector, education sector, banking sector, insurance sector and industries. The study concluded that the private sector employees prefer to invest in land, buildings, insurance and bank deposit and do not prefer mutual funds, stock market, or debt market.

Shunmugathangam (2017) conducted a research study entitled “Investment Decision Making for Small Individual Investors – A Study with Special Reference to Tirunelveli District”. Descriptive and Experimental designs are used for the study. Statistical techniques like t-test and chi-square test are used. The study tried to correlate the investment experience and investment decision and found that some personal factors are age, education and income has relationship. Investment decisions can be derived from various finance models on the technical side. Decisions also consider situational factors that consider the environment, the market psychology. The study suggests that Investors educate themselves about the different biases they are likely to exhibit and then take steps towards avoiding them, thus improving their effectiveness.

Vijayakumar (2017) submitted doctoral dissertation entitled “Individual Investors Behaviour in Selected Investment Avenues” to Bharathidasan University, under the guidance of Kannan B. The main objective is to assess the factors motivating the individual investors to prefer a particular investment avenue. The other objective is to analyse. the behaviour of the individual investors while selecting their investment avenues. The sample size was 589 and the data analysis techniques are ANOVA, Correlation, and multiple regression. The study concluded

that behaviour of an individual investor is constituted by the intention of the investor and the intention is caused by the three factors of attitude, objective, and decision-making capacity of the individual investor. The study proved that there is association between children's career and Investment decision in the selected investment avenues.

Lakshmi and Minimol (2018) have conducted a research study on investment decision making as part of their Doctoral dissertation entitled 'Influence of Behavioural Traits in Investment Decisions'. The major objective of the study is to find the role of behavioural traits in attitude on investment, investment pattern and decision making they have taken behavioural biases like heuristics, overconfidence bias, hind sight bias, endowment bias and status quo bias as independent variables. They used correlation, ANOVA, t test and SEM for anlysing the data collected using questionnaire. They found that the independent variables are differ from respondents form different educational backgrounds. Investment attitude and investment pattern are dependent on the behavioural traits and there is a linkage between attitude and investment decision making.

Sudha and Parimala (2018) have conducted a research study on investment decision making as part of their Doctoral dissertation entitled 'Influence of Behavioural Finance Factors on Investment Decision of Salaried Women in Coimbatore District'. They have collected data from both private and public women employees from Coimbatore district. The investment preferences were studied specifically for eleven avenues like insurance, real estate, jewellery, securities, mutual fund, public provident fund, Govt. securities, bank, post office, F D in companies and intellectual investment. The barriers are irregular dividend, hedging problems, unavailability of information and lack of liquidity. The most important factor determining the investment decision of women is personality. The other factors are economy, influencers and financial liberty. They found that majority of women are risk averse, and they depend more on family members in investment decisions even though they are getting good income. They lack in financial awareness and confidence to take investment decisions.

Lall (2018) submitted the doctoral dissertation entitled "Investors Preferences for Investment in Financial Market: A Study in Uttarakhand" at Uttarakhand Technical University under the guidance of Gupta, N. L. The major objective of the study is to assess the awareness among the individual investors towards investment in financial market instruments and the factors affecting the investors preferences for investment in Uttarakhand. The other objective is to find out the relationship of socio- economic and demographic variables with investors preferences

for financial market instruments. A sample of 600 investors were selected from all districts of the state. The statistical analysis used is chi square test and it evidenced the association of investment preferences with the socioeconomic factors like age, gender, income, marital status and occupation of investors. The study concluded that socio-demographic and socioeconomic factors are determining the investment pattern and investors preferences towards financial avenues.

Com, et al. (2018) from Aksaray University conducted a research study entitled "Determining the Factors Affecting Individual Investors' Behaviours". A descriptive survey was used to explain the relationship between personal circumstances of individual investors, social status, investment preferences, knowledge levels and the general factors affecting the investment decision. The study focused on the individual investors' socio-economic, psychological, risk perception, and investment behaviour. The result of the study evidenced that risk perception is the essential variable along with information availability. After that, the level of knowledge, personal, social situations and general factors affect the investment preferences.

Sarkar and Sahu (2018) had conducted a research study entitled "Analysis of Investment Behaviour of Individual Investors of Stock Market: A Study in Selected Districts of West Bengal". They analysed the investment behaviour of individual investors of the stock market to enquire whether there is any impact of three independent variables, namely Demographic Factors, Awareness and Perceived Risk Attitude, on only one dependent variable, Investment Behaviour. They had collected primary data from four hundred individual investors of the stock market from various districts of West Bengal using a structured questionnaire. The study found that the awareness levels of the individual investors are on a moderate level and financial awareness is more than social learning. Perceived Risk Attitude is mainly guided by effect rather than cognition.

Chandrakumar (2018) studied "Investors' preferences towards various investment avenues in the Namakkal district". The research study concentrates on the investor's awareness of different avenues and their preferences in relation to risk perception and gender. The analysis was done using the Chi-square test, Rank analysis and descriptive analysis. It is found that a Bank deposit is the preferable investment avenue, most of the investors are risk-averse, and males take more systematic decisions than females.

Kohli (2019) submitted doctoral dissertation to University of Jammu entitled 'Behavioural Finance in the Investment Decision Making Process of Mutual Fund Investors'. The major

objectives of the study are identifying the factors influencing decision of mutual fund investors and the role of behavioural factors in investment decision making. The impact of cognitive dissonance, representative heuristics and self confidence of mutual fund investors. Primary data for the study were collected from mutual fund investors of Jammu region using questionnaire. Exploratory and Confirmatory Factor Analysis, Correlation, Regression, ANOVA and SEM are used for data analysis. The study found a significant positive correlation between the variables; self confidence, cognitive dissonance and representative heuristics. All these variables have impact on investment decision making of investors.

Kengatharan (2019) Conducted a research study to identify factors that influence individual investors' investment decisions and explore how these factors are connected to the investors' socio-economic characteristics in the Sri Lankan Stock Market. The identified factors in investment decisions are the past performance of the company's stock, company stability, firm's goodwill, firm's reputation in the industry, dividend paid, expected corporate earnings and expected dividend. They found the least influencing factors on investment decisions like opinions of the firm's majority stockholders, accessibility to obtaining borrowing funds, diversification needs, friends/co-workers' opinions, forms of the governing body and social status.

Rejani (2020) submitted her doctoral dissertation entitled “Behavioural Biases and The Investment Decision A Study on Individual Investors in Visakhapatnam City” to Andhra University, Visakhapatanam under the guidance of Dr. Veni and Dr. Uma. The major objectives of the study are to analyse the socio-economic profile and investment profile and the influence of socio-economic factors on behavioural biases of individual investors in Visakhapatnam city. The study also aims at analysing the impact of behavioural biases on investment decisions and the risk-taking capacity of individual investors. The convenience sampling techniques was used to select 400 individual investors from Visakhapatnam city. ANOVA, t test, factor analysis, MANOVA and Multiple regression analytical tools were used. It is found that age group of 41-50 years shows more behavioural biases of availability bias, overconfidence, herd behaviour and cognitive dissonance than others and Female are more influenced by biases in decision making. It is also found that the risk taking capacity of individual investors mainly influenced by the biases of, overconfidence, anchoring, loss aversion, regret aversion, herd behaviour, cognitive dissonance and confirmation and hindsight bias.

Ankurita and Pooja (2020) conducted doctoral research titled 'Investment Patterns of Individual Investors – A comparative study of Punjab and Haryana'. The objectives are to study the investment preferences, psychological biases, their investment behaviour and compare the investment patterns of investors from Punjab and Haryana. The study was followed descriptive and analytical design and judgement sampling technique was used for data collection. Data were analysed using chi square test, ANOVA, Factor analysis and independent sample t test. The preferences of investment avenues of both states are differing each other. Investors of Punjab might take decision more rationally than investors from Haryana.

Balamurugan, and Soundararajan (2020) submitted Doctoral dissertation entitled **'**A Study on Investor Behaviour towards Systematic Investment plan SIP of Mutual Fund in Tamil Nadu'. The objectives are to study the investors' behaviour towards SIP and financial advisors' perception on mutual funds. Questionnaires were used for collecting data and ANOVA, correlation and regression are statistical techniques used for data analysis. Investors' attitude, opinion and awareness on SIP are influenced by occupation, education, gender, locality and income level. Financial advisors' perceptions were also affect the investors' satisfaction.

Gautami et al. (2020) submitted doctoral dissertation entitled **'**A Study of the leading determinants influencing Investment Decision making in the context of evaluating personality types among women'. The objectives of the study are to know the psychological factors affect decision making of women and the extent of influence of risk-taking personality in decision making. The study found confidence, loss aversion, and self-control as the psychological factors influencing decision making. The study evidenced an association between financial wealth perception and investment decision making. Taking investment decision can give psychological surety and nurtures overall sense of wellbeing for women.

Kandregula et al. (2020) have conducted doctoral study entitled **'**Behavioural biases and the investment decision – A study on individual investors in Vishakhapatnam City'. The major objectives of the study are to know the influence of socio-economic factors and behavioural biases on investment decisions of individual investors. Behavioural biases taken for study are heuristic biases like overconfidence, representativeness, availability, gamblers' fallacy, prospect factors like loss/regret aversion, and mental accounting, market factors like past trends, and price changes, cognitive dissonance, confirmation bias and herding. Data analysis tools used are t test, ANOVA, Multiple regression, and factor analysis. The analysis found the biases most affected are availability bias, representativeness, overconfidence, anchoring,

mental accounting, loss/regret aversion, herding, confirmatory bias and gamblers' fallacy. Education level, gender and age are factors influencing the investment decision along with the biases.

Kumar and Kumar (2020) have submitted doctoral dissertation entitled 'Investment Behaviour of Women in Indian Stock Market' with the objective of analysing the awareness level, problem faced and factors affecting investment decision making of women investors in Indian stock market. The data were collected from Haryana using a structured questionnaire and analysed using ANOVA, t test, and regression analysis. The study found that the women investors used the information from advisors to select their securities and they used to reinvest the money raised as income from the securities. The investment profile of women are varying with their age, marital status, education, income and occupation.

Malik and Sinha (2020) conducted doctoral research 'Effect of Behavioural Biases on Investment Decisions of Equity investors in India – A Multidimensional Investigation'. The objectives of the study are to find the impact of herding, overconfidence and disposition effect in Indian Equity market. Data analysis tools used are chi square test, ANOVA, Regression and correlation analysis. The three independent variables have significant relationship with the decision making. Herding has the lowest impact on equity investment decision making as compared with the other two variables like overconfidence and disposition effect.

Rai and Yadav (2020) have conducted a research study on behavioural investment as part of their Doctoral dissertation entitled 'Dynamics of Behavioural Finance: A Study on Selected Indian Life Insurance Companies'. The primary objective is to study the perception and behaviour of investors while making investment decisions regarding Life insurance policies. The research design is exploratory and descriptive and data analysis tools used were t test, chi square test and ANOVA. The study evidenced family background, marital status and gender have association with investment decision making. The study compared the life insurance investment with mutual fund investment. Majority of investors prefer life insurance than mutual fund.

Rekha and Prakash (2020) conducted doctoral research on 'Behavioural Finance Paradigms in Equity Market – A Study in Bangalore' with the objective of identifying the behavioural factors influencing investment decision making in equity market and the perception of investors on the behavioural aspects and its effects on their investment pattern. The behavioural factors identified are overconfidence, availability bias, representativeness, regret aversion, loss

aversion, mental accounting, past trends, market information, recommendations and decisions of other investors. Factor analysis, Chi-square and ANOVA are used for analysing the data collected using questionnaire. The study evidenced the significance of behavioural factors on the investment decision making and investment pattern.

Reshma and Saxena (2020) have conducted doctoral research on **'**Role of Behavioural Finance in Individual Investment Decisions with Special Reference to Mutual Fund Investors' with the objective of assessing the applicability of behavioural finance in individual investment decisions. The study has included six biases namely loss aversion, regret aversion, mental accounting, overconfidence, disposition effect and anchoring bias on mutual fund investment intention. The study found that risk associated with mutual fund affects the emotional biases of investors. The demographic factors like age, income and financial literacy affects the investment decision of mutual fund investors. Both mutual fund investors and advisors are affected by the behavioural biases and thus the investment decisions are highly behavioural in nature.

Suman and Tejinder (2020) conducted a doctoral study entitled 'An analytical study of investment behaviour among women investors in Haryana' with the objective of studying the investment awareness, investment preferences and investment decision making of women investors. Factor analysis, chi square analysis, t test and ANOVA are used for data analysis. The factors identified for investment decision making from factor analysis are return, rationality, risk aversion, investment consistency, high risk propensity and conservatism investment.

Upadhayay and Shah (2020) conducted the doctoral research titled 'A study of impact of Behaviour Finance on Individual investment Decision in Ahmedabad'. The objective is to establish the relevance of fundamental biases driven by various demographic and psychographic traits during the investment decision making process. Questionnaires are used for data collection. The data analysis tools used were correlation analysis, Mann Whitney test, Kruskal Wallis test and Chi square test. The study focused on the behavioural biases namely confirmation bias, innumeracy, narrow framing, emotional bias, shadow of the past, familiarity, overconfidence, anchoring and herd biases. The study concluded that effect of biases is very dominant in the investors of Ahmedabad city.

Gazala and Shamin (2021) have studied and submitted doctoral dissertation entitled 'Saving and Investment Pattern of Employees Serving in Public and Private Sector'. The objectives are

to study the differences in perception of employees serving in private and public sector towards various savings and investment alternatives and to study the constraints for savings and investments. The data collected were analysed using Friedman rank test, ANOVA, Factor analysis, t test and Multiple regression. The study found no significant difference in in the perception of public and private employees. Both categories are satisfied with the return they received from their investment. The constraints found are low income and low financial literacy.

Patel (2021) had submitted his doctoral dissertation entitled "A Study on Preferred Avenues and Factors Considered for Investment among Salaried Class Investors in various Districts of Gujarat, India" to C. U. Shah University, Wadhwan City under the guidance of Sanghvi, D. The major objective of the study was to examine and analyse salaried class investors' perceptions with respect to preferred avenues, investment objective, attitude towards risk and factors considered for investment in Gujarat State. Survey data among 600 salaried class investors were collected and analysis was done using ANOVA, Correlation and Regression analysis. The study found that there is a significant impact of aggressive investment behaviour, it is reflected by the statement of knowledgeable investor not concerned about short-term fluctuations in the market on Satisfaction shown by salaried class of investors after investing in the investment avenue.

Panwar (2021) had submitted his doctoral dissertation entitled "Investment Pattern and Financial Planning A study of Indian Army Personnel" to Rayat Bahra University, Mohali, under the guidance of Kavitha, A. The study aims at exploring the determinants influencing Investor Behaviour and perception of Investors on various Investment Avenues in Indore City. Data were collected from 400 investors and the analysis techniques used are ANOVA and t test. It was found that there exists significant statistical difference of investment behaviour in selecting various investment avenues available according to gender but no differences according to age and occupation.

Quaicoe and Eleke-Aboagye (2021) published an article entitled "Behavioral factors affecting investment decision-making in bank stocks on the Ghana stock exchange". The study aims to investigate the psychological factors that tend to influence investors investment decisions. The study was conducted among 350 investors from Ghana Stock Exchange. The study found that the most dominant factor or bias found to be influencing investment decisions of respondents was herding. Then, biases such as regret aversion and gambler's fallacy were also found to

strongly influence the decisions of investors, along with mental accounting, overconfidence and anchoring.

Pankhuri et al. (2022) have studied investment in relation to tax planning and submitted the thesis entitled 'A Study of Investment Preferences and Tax Planning with reference to Moradabad and Barelly'. The major objective of the study is to analyse the relationship between investment patterns and preferences in tax planning. Tools used for data analysis are -the t-test, chi-square, Mann-Whitney test and Kruskal Wali's test. The investors' awareness of different investment avenues differs from the high awareness of bank deposits and the low awareness of mutual funds. The investment preferences of investors differed according to their gender and age. The investors' awareness of tax planning is moderate, and their attitude toward tax planning is affected by their type of employment and availability of information.

Almansour, Elkrghli, & Almansour (2023) studied the behavioural factors in decision making and risk perception. The study reveals that three behavioural finance factors - herding, disposition effect, and blue-chip bias - significantly and positively impact risk perception. In contrast, overconfidence only significantly influences investment decision-making without affecting risk perception. Furthermore, risk perception is strongly linked to investment decision-making. Notably, all four behavioural finance factors indirectly yet significantly impact investment decision-making, mediated by risk perception.

Priyadarshini and Tamizhjyothi (2023) have submitted a Doctoral dissertation on 'Investment pattern and spending pattern of Indians and Singaporeans - A comparative study'. The study's objectives are to explore the preferred options and spending patterns of Indians and Singaporeans and to analyse the factors affecting their investment behaviour. Data analysis tools used are t-test, ANOVA and regression. Age, gender, occupation, and education influence both categories of investors.

Kavita et al. (2023) have submitted a Doctoral dissertation on 'Customers perception towards gold as an investment'. The primary objectives are to study the consistency and pattern of investing in gold and identify the perception of investors and its effect on investment in gold. Factor analysis, correlation, ANOVA and multiple regression are tools used for analysis. The study found that customers prefer physical gold to gold bonds.

Sapkota (2023) studied behavioural finance and stock investment decisions in the Chitwan district, Nepal. The study analysed the decision-making processes of 284 individuals using

multiple regression analysis. The results revealed evidence of herding, loss aversion, overconfidence, and risk propensity in investment decisions among investors. The study concluded that behavioural finance is crucial in stock investment decisions. Investors should understand financial behaviour biases to make informed investment decisions, which can facilitate superior investment choices. Additionally, recognising risk propensity can help investors become aware of their fears, nervousness, and uncertainty towards risks that may arise during stock investment decisions.

Sharma and Sharma (2023) performed a conceptual analysis of behavioural finance, integrating behavioural and cognitive psychological theories with conventional economics and finance. A literature review was conducted to explore various dimensions and perspectives on behavioural finance theories, models, and studies that complement existing research. While biases and heuristics are evident, the psychological causes of these biases remain unidentified. Empirical studies have shown that retail investors in the stock market are susceptible to behavioural biases when making investment decisions.

Summary

The research study has reviewed literature related to investment behaviour – especially, Investment Pattern, investment decision making and investment preferences. The investment decision making has further reviewed and identified the rational and irrational behaviour related to investment decision making. After reviewing the literature related to investment behaviour, it identified the factors affecting investment behaviour like psychological, social, economic and demographic factors. This research study selected psychological factors like intelligence and personality to study its relation to the investment behaviour of Government employees in Kerala.

2.2.2. Investors' intelligence

Lam and Kirby (2002) from Texas University, USA published a research article entitled "Is Emotional Intelligence an Advantage? An Exploration of the Impact of Emotional and General Intelligence on Individual Performance". They have collected data from 304 undergraduates from the U.S.A. by using Emotional intelligence scale and general IQ test and cognitive-based performance scale. They studied the role of emotional intelligence in individual cognitive-based performance is more than that of traditional general intelligence. They found that overall emotional intelligence, emotional perception, and emotional regulation distinctively described individual cognitive-based performance over general intelligence.

Kaur and Chikkara (2008) conducted a study entitled "Assessment of Multiple Intelligence among Young Adolescents (12-14 Years)". The study aims at assessing the Multiple Intelligence levels and sex differences among rural adolescents of Haryana, India. They collected data from 200 adolescents using the nine components intelligence scale and analysed the data using the z test. They found a significant difference between males and females in Multiple Intelligences. Girls found more Linguistic and Musical intelligence than Boys, whereas boys have more Logical and Kinesthetic intelligence than girls.

Hollander (2012) had published a research study entitled "Intelligent participation: engaging citizens through a framework of Multiple Intelligences" and explored how the psychological concept of Multiple Intelligences can enhance the public participation model. The research study included the development of a public engagement program based on Multiple Intelligences and a study of the implementation of the model in suburban Boston. The study included all the eight Multiple Intelligence and excluded musical intelligence for the study. He has used the Chi-square test and correlation coefficient for data analysis. The study proved the significance of Multiple Intelligences in community participation.

Stanovich et al. (2013) conducted a research study at Canada entitled "the myside bias, rational thinking and intelligence in the Canadian environment". The myside bias is the bias related to information processing raised from the investors' beliefs, opinions and attitudes. They identified a positive correlation between bias avoidance and cognitive ability from reviews. Nevertheless, the empirical analysis found absolutely no association between the magnitude of the bias obtained and intelligence. When people are not warned to avoid biased processing, individuals of higher intelligence are often just as likely to engage in biased reasoning as those of lesser intelligence.

Von Stumm (2013) from Goldsmith University, London, has carried out a research study entitled "Investment Traits and Intelligence in Adulthood Assessment and associations". A sample of 200 British adults was selected and collected data by using standardised tools. Z test and correlation are the statistical techniques used. The study found that investment traits were positively associated with intelligence and knowledge. Openness to experience has more influence than the need for cognition. The associations between investment and intelligence-as-knowledge reduced when adjusting to intelligence-as-process but remained significant.

Mahasneh (2013) conducted a research study at Jordan entitled "The relationship between Multiple Intelligence and Self-efficacy among a sample of Hashemite university students". The

study aimed to examine the relationship between Multiple Intelligence and self-efficacy. The sample size is 576 students, and Means, standard deviations, regression and correlation analysis were used for data analysis. The results showed a positive relationship between self-control and self-efficacy. These variables also have a relationship with bodily kinesthetics, intrapersonal, logical, interpersonal, visual, musical, existential, and linguistic intelligence.

Gill and Phythian (2015) have conducted a study entitled "What is intelligence studies?". The study from United Kingdom tried to answer some questions related to intelligence, like what it studies and identifies the main areas of work within contemporary intelligence studies in terms of historical, methodological organisational and policy perspectives. They compared the earlier and contemporary intelligence studies on account of definition, focus, level of analysis and primary audience.

Adetula (2016) conducted a research study on "Emotional, Social, and Cognitive Intelligence as Predictors of Job Performance Among Law Enforcement Agency Personnel". The study samples were collected from police, prison and court employee of Akure metropolis. The data analysis techniques used were Product moment correlation and Multiple regression. Job performance was not influenced by emotional intelligence but by social and cognitive intelligence. Thus, the study suggested selecting the law enforcement agency personnel who possess high score on these tests.

Sarwar and Afaf (2016) researched to understand and determine the difference between the influence of mental and financial factors on an individual Investor's decision and published a research paper "A comparison between psychological and economic factors affecting individual investor's decision making behavior". They collected data from 254 investors, and data analysis was done using Factor analysis, Regression, t-test, and ANOVA. They found that there is a significant relationship between mental factors and financial factors in individual investors' decision making.

Jabeen et al. (2018) from the University of Lahore conducted a research study entitled "Cognitive Behavior Affecting Investment Decision-making Processes". The study aimed to examine the emotions and beliefs of people to influence their financial choices. This was done by an in-depth methodological interview of twenty-five investors and open analysis method is used for examining the rationality of investor behaviour by identifying the causes of discriminatory behaviour. The psychological factors of investors are leading the market and setting the trends in the market. In order to make good decisions, a profound study is essential,

which would record the intense intellectual behaviour of investors in a typical equity market setting.

Raheja (2018) studied investment decision making and its relations with risk tolerance, personality traits, emotional intelligence, and behavioural biases as part of her doctoral dissertation entitled "A Study on Individual Investment Decisions, Risk Tolerance and Influencing Factors in Stock Market". The study collected data from 500 Individual Investors who invest through LSC Securities Ltd. Moreover, the analysis techniques used were Correlation and Multiple regression. The study evidenced that there is a relationship between behavioural biases and investment decisions, but the prediction level is lessened when controlling for risk tolerance. Personality traits are a better predictor of investment decisions while taking risk tolerance as a mediator. Then also, personality traits have a better impact on decisions. The investors' risk tolerance acts as a partial mediator between emotional intelligence and the investors' investment decisions. There is no significance to demographic attributes in the investment decision and risk tolerance.

Ahmad (2018) researched the impact of emotional intelligence and Personality on investors' decisions and the behaviour of individual investors. A research paper was published entitled "Impact of Neurotransmitters, Emotional Intelligence and Personality on Investor's Behavior and Investment Decisions". It studied the variables using multivariate analysis and Structural Equation Model. The study found that these aspects with neural transmitters can cause several mistakes while investing in the stock market. The personality dimensions like Openness and Conscientiousness have significant relations with the behavioural features of investors. Emotional intelligence also has a significant role in investor behaviour, mainly in investment horizon, personalisation of loss and control level.

Sashikala and Chitramani (2019) studied "the impact of equity investors' Personality, Emotional Intelligence and Risk Aversion on Behavioural Factors and Investment Intention". They assessed Personality and Emotional Intelligence in general parameters and not in specific investment-related decisions using both Qualitative and Quantitative methods. Collected data from 430 investors using a Questionnaire. They have done a Structural equation model, MANOVA, Cluster and Discriminant analysis to analyse the data. Moreover, found a one-way relationship between the constructs. The models developed are consolidated and comprehensive. The analysis was done clearly, passing through the relationships between Personality, Emotional Intelligence, Risk Aversion, Behavioural factors, Investment Intention

and Demographic variables. They suggested that Investment based strategies based on Personality, emotional intelligence and risk aversion can be designed to reduce behavioural bias and improve investment decisions and effective portfolio management.

Raheja and Dhiman (2019) conducted a research study entitled "How do emotional intelligence and behavioral biases of investors determine their investment decisions?" The study found that the positive linking between the behavior dispositions of the financial specialists and venture choices of the speculators and positive linking between enthusiastic insight of the financial specialists and their venture choices. Yet, the authors found that the enthusiastic insight better foresees the venture choices of the financial specialists than the behavior dispositions of the speculators. Among the different elements of behavior predispositions of the speculator's lament and carelessness are identified with the financial specialist's venture choices.

Arora and Kumari (2020) studied whether behavioural and risk appetites function as a link between emotional intelligence and stock preferences in their research article entitled "Mediating role of Behavioural Biases between Emotional Intelligence and Financial Decision making". The data were tested using SEM, and the results showed that people with lesser score emotional intelligence are less prone to risk in their financial decisions than people with higher score emotional intelligence. Moreover, risk appetite and biases such as loss acceptance, regret, and even risk appetite have been found to mediate the impact of emotional intelligence on the presence of risk factors.

Ishfaq et al. (2020) published a research study entitled "Cognitive Bias and the Extraversion Personality Shaping the Behavior of Investors", It had discussed direct and indirect effects (due to the perception of risk by investors) heuristic biases about the irrational behaviour of investors when making decisions. Based on the data collected from 247 investors from the Pakistan Stock market, they have done Structural Equation Model. The research study also explored the moderating effect of investor extraversion as a direct and indirect link between heuristic biases and irrational decision making. The research study showed that bias positively affects the unfair decision making by consumers, both directly and indirectly, through awareness of risks. The results show that extroversion reduces the direct and indirect association between heuristic biases and irrational behaviour in making decisions.

Shearer (2020) conducted a research study entitled "Multiple Intelligences in Gifted and Talented Education: Lessons Learned from Neuroscience after 35 Years" and examined the

relationship between creativity and intelligence. The study reviewed the implications for understanding the minds of gifted individuals with the goal of personalising instructions to maximise achievement and development. The study proposed five principles drawn from neuroscience as guidelines to using Multiple Intelligence theory to enhance instruction and curriculum design to satisfy the unique cognitive qualities of gifted children.

Summary

The research literature reviewed related to intelligence, especially multiple and Emotional intelligence. It is found that there are a number of psychological studies related to Multiple Intelligence concerning education, leadership and so on. However, there are few researches related to financial knowledge or investment behaviour.

2.2.3. Investors' personality

Chitra and Sreedevi (2011) studied the stock market investors' personality traits and choice of investment and published a research article entitled "Does Personality Traits Influence the Choice of Investment?". They concentrated on seven personality traits and found that these personality traits of the investors have an impact on the individuals while taking decisions and also have a strong influence on determining the method of investment. They used descriptive statistics, Discriminant analysis and the Chi-square test for the data analysis. The study found that the influence of personality traits on the investment decision is more compared to that of demographic variables.

Rizvi and Fatima (2014) conducted a research study entitled "Behavioral Finance: A Study of Correlation Between Personality Traits with the Investment Patterns in the Stock Market". They studied the relationship between the personalities of investors with stock market investment, type, objectives, factors influencing the investments, and so on among 100 investors. They used correlation and regression for the analysis of data, and they found that there is a relationship. They helped their clients to develop portfolios according to their Personalities. The study concluded that investors' personality traits such as extraversion, agreeableness, conscientiousness, neuroticism, and Openness have a relationship with the individual investor behaviour.

Babu and Nagaraj (2016) conducted "A Study of Behavioural Finance on Investment Decisions among Individual Investors: Effect of Demography, Investors Personalities and

Investment Choices in Bengaluru". They studied the effect of demographical variables on investors' personalities on the investment instrument among individual investors in the city. The demographic factors and Personality affect investment in some of the investment avenues like the debt market. The selection of other investment avenues is not related to Personality. Behavioural biases are influenced by Personality.

Ahmad et al. (2016) conducted an empirical study to analyse the impact of Personality and demographics on investment behaviour for their research paper entitled “Impact of Investors’ personality Types with interaction Effects of Demographics on Investment Behavior: Evidence from Pakistan”. They collected data from a cross-sectional survey from 300 investors in the stock market and used Factor analysis, Pearson’s correlation and Multiple regression for analysis. The result revealed that investors’ personality types significantly influence individual investment behaviour.

Kourtidis et al. (2017) examined whether, and to what extent, specific personality traits drive investors’ trading behaviour for the research paper entitled "The Role of Personality Traits in Investors Trading Behaviour: Empirical evidence from Greek". The study have used Structural Equation Model for the analysis of data. The study found that personality traits influence investors' trading behaviour and stock trading performance. The irrational behaviour called overconfidence is most related to personality traits. The behavioural biases have a relationship with stock trading volume, frequency and performance.

Gakhar and Prakash (2017) studied the personality types and behavioural biases. The research study included INTJ personalities (Intuitive, Introvert, Thinking and Judging type), ESTJ personality type (Extrovert, Observant, Thinking and Judging), ENITJ (Extraverted, Intuitive, Thinking, and Judging type) and other types, but the majority are of INFJ personality type (Introverted, Intuitive, Feeling, and Judging). They analysed the risk tolerance and behavioural biases of each personality type. The relationship between MBTI personality types and overconfidence bias observes that ESTP, ESFP, ENTP, INFJ and ISFJ are balanced investors. ENFJ are found to be overconfident, and ISTP are less confident investors. The study concluded that the personality type of respondents does not affect the level of optimism and overconfidence level. But the risk-taking ability is affected by personality type. They suggested a model to investment advisors to construct customised behavioural portfolios so as to maximise the financial as well as psychological well-being of the investors.

Oehler et al. (2018) conducted "An Experimental Study on the Influence of Personality Traits like Extroversion and Neuroticism on Investment Decisions". In the experimental study with students from Bamberg university, correlation and regression were used for the analysis of data. The experiment's findings evidenced that personality traits significantly affect the investment decisions. More neurotic persons hold less risky assets as compared to less neurotic persons.

Showndhariya and Kavitha (2018) studied "The Influence of personality type on the investment decision of individual investors". The study aimed to identify the personality traits, investment preferences, and satisfaction levels of investors. Statistical techniques used were Chi-Square Test, One Way ANOVA and Multiple Regression. They found that the personality type of the individual investors has no influence on the preference of the traditional investment avenues but has an influence on modern investment avenues.

De Bortoli et al. (2019) studied individual investors' personality traits and investment profiles in Brazil. The research study investigated the risk profile manifest by investors in their financial asset investment decisions. The paradigms used to explain this profile were: prospect theory, Investor Profile Analysis (I.P.A.), the Big Five Personality Test, and the Cognitive Reflection Test (C.R.T.). They found that those with more Openness scores are likely to take more risks, and all the four other traits are not influenced by risk. Investors with higher levels of education and intelligence exhibit higher risk tolerance and the relationship between risk tolerance and cognitive capacity is non-linear. It was also found that a rise in the level of risk due to the I.P.A. increased the probability that respondents would exhibit a brave risk profile on the investment simulant.

Sarwar et al. (2020) conducted an "Empirical Analysis of Personality Traits and Risk Aversion on Investment Intention of Investors in Balochistan". The Partial Least Square path modelling technique and SEM used the data analysis technique. This study shows that all variables statistically influence investors' investment goals. In addition, extraversion, consciousness, agreeableness, and risk are positively related. The risk aversion is the most influencing predictor of investment decisions, while neuroticism is negatively linked to the investor's investment intent. The expanded results of this study can be used to diversify the financial resources available to financial planners and investment bankers for different investors.

Summary

The research study has reviewed literature related to Personality, especially Big Five Personality Traits. Some studies are there which connect the investment behaviour and personality traits. Different studies give different results. Hence this research intended to study the Big Five Personality Traits in relation to investment decision making and investment preferences.

2.2.4. Research Gap

A literature review suggests several studies have been conducted on investment behaviour in different geographical areas.

The scopes of most of the existing studies are limited to the investment pattern and socio-demographic profile studied the awareness of and the preferences of different ((Suriyamurithi et al. ,2012); (Praveena, 2012); (Pandian & Thangadurai, 2013)). Only some studies are there dealing with the psychological factors of the investors ((Shiv et al., 2004); (Mayfield et al., 2008); (Pandit & Yeoh, 2014); (Rushdi, 2014)). It is observed that only a few researches have been done to know the investors' behaviour, investors' personality and Investor's Emotional intelligence ((Lam & Kirby, 2002); (Adetula, 2016); (Raheja, 2018); (Ahmad, 2018); (Sashikala & Chitramani, 2019); (Raheja & Dhiman, 2019); (Arora & Kumari, 2020)). Nevertheless, the studies concerning the general intelligence, Multiple Intelligences of investors and investment behaviour are very rare. The research study has reviewed nineteen international pieces of research and thirty-nine national research studies on variables of investment behaviour. In the case of international studies, the research related to behavioural finance theories is much more than that in national studies. In national studies, some recent studies ((Sharma & Sharma, 2022); (Raheja, 2018); (Raheja & Dhiman, 2019); (Arora & Kumari, 2020)) have taken the irrational behaviour of investors as a variable. A research gap is identified in the specific analysis of rational and irrational behaviour of investors in their investment. There needs to be more research studies in the behavioural and cognitive aspects of investors. Thus, a research gap is identified in studying the investors' intelligence and personality traits concerning their investment behaviour.

Thus, the reviews considered intelligence and personality related studies. Intelligence-related studies reviewed are eleven International and six National researches. The studies related to Multiple Intelligences are reviewed from international research ((Lam and Kirby, 2002); (Hollander, 2012); (Shearer, 2020)). In national studies, intelligence in general and emotional

intelligence are taken for analysis ((Adetula, 2016); (Raheja, 2018); (Ahmad, 2018)). Thus, a research gap is identified in Multiple Intelligence related studies in financial behaviour.

Regarding personality, six International and four National studies are reviewed. All have taken the Big Five Personality Traits specifically for analysis. All the international studies analysed five personality traits in depth concerning financial behaviour ((Ahmad et al., 2016); (Kourtidis et al., 2017); (Oehler et al., 2018); (De Bortoli et al., 2019); (Sarwar et al., 2020)). In the national level, a few studies are found with in-depth analyses of five personality traits ((Chitra & Sreedevi, (2011); (Rizvi & Fatima (2014); (Babu & Nagaraj, 2016); (Gakhar & Prakash, 2017)). Only very few studies analyse about the influence of Multiple Intelligence and Big Five Personality Traits on investment behaviour.

After finding this research gap, further in-depth reviews were conducted to set hypotheses. This research study has taken Multiple Intelligences and Big Five Personality Traits for the analysis. The investors' personality and intelligence have been identified as independent variables, and the investment pattern, investment preferences and investment decision making (rational and irrational decision-making) are taken as dependent variables. The government employees represent the middle-class population of Kerala and the research studies among the Government employees are very rare till the date. So, Government employees in Kerala is here taken as population.