

**FINANCIAL RISK TOLERANCE AND
INVESTMENT DECISIONS OF RETAIL
EQUITY INVESTORS IN KERALA**

Thesis

*Submitted to the University of Calicut
for the award of the degree of*
DOCTOR OF PHILOSOPHY IN COMMERCE

By

Mr. TUSHAR SOUBHARI

Under the Supervision of

Prof. (Dr.) SATHEESH E K

Registrar

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**DEPARTMENT OF COMMERCE AND MANAGEMENT STUDIES
SCHOOL OF BUSINESS STUDIES
UNIVERSITY OF CALICUT**

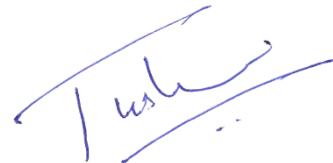
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DECLARATION

I, Mr. TUSHAR SOUBHARI do hereby declare that this thesis entitled “**Financial Risk Tolerance and Investment Decisions of Retail Equity Investors in Kerala**” is a bonafide record of research work done by me under the guidance of Prof. (Dr.) SATHEESH EK, Registrar, University of Calicut. I further declare that this thesis has not previously formed the basis for the award of any degree, diploma, associateship, fellowship, or other similar title of recognition.

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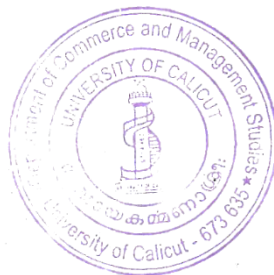
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Certificate

This is to certify that the thesis entitled “**Financial Risk Tolerance and Investment Decisions of Retail Equity Investors in Kerala**” submitted to the University of Calicut in partial fulfillment of the requirements for the award of the Degree of Philosophy in Commerce, is a bonafide record of research work carried out by Mr. Tushar Soubhari under my supervision and guidance and no part of this thesis has formed the basis for the award of any degree, diploma, associateship, fellowship or other similar title to any candidate in any university. He is permitted to submit the thesis to the University for Evaluation.

Both the examiners have not suggested any modifications or suggestions and therefore the original thesis is resubmitted as such. The soft copy attached is the same as that of the resubmitted copy.

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Prof. (Dr.) Satheesh EK
Supervising Teacher

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“The thankful heart opens our eyes to a multitude of blessings that continually surrounds us”

– James E. Foust

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TUSHAR SOUBHARI

*I dedicate my thesis to the Lotus Feet of
Goddess Mookambika Amma,
Bhagwan Sri Satya Sai Baba, and
Puja Sri Sri Ravishankar Guruji*



FINANCIAL RISK TOLERANCE AND INVESTMENT DECISIONS OF RETAIL EQUITY INVESTORS IN KERALA

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Abstract:

Risk is not just about numbers; but rather about understanding the human psyche in the face of uncertainty. In the realm of financial markets, unraveling the mysteries of financial risk tolerance unveils the intricate dance between rational analysis and the emotional decision-making of investors. In the quest to diagnose this, four major objectives were signified: (i) To understand the concept of 'Financial Risk Tolerance' and its relevance in making Investment Decisions among retail equity investors in Kerala; (ii) To examine the factors influencing the Financial Risk Tolerance and Investment Decisions of retail equity investors in Kerala; (iii) To evaluate the influence of factors contributing towards Financial Risk Tolerance and Investment Decisions of retail equity investors in Kerala; (iv) To analyse the influence of Financial Risk Tolerance towards Investment Decisions of retail equity investors in Kerala. This doctoral thesis investigates the relationship between financial risk tolerance and investment decisions among retail equity investors in Kerala, India. As one of the nation's most progressive states, Kerala has been at the forefront of bringing about significant changes to the socioeconomic makeup of the populace. The growing popularity of retail equity investment in the nation makes it worthwhile to look at how Kerala State's vibrant and enterprising citizens are positioning themselves in terms of risk appetite and equity market investment. A sequence of 7 chapters in the thesis has been aligned based on the Revised Bloom's Taxonomy. The Attractive feature of this study is its Descriptive and Analytical Research Design and the sampling procedure adopted. Exhaustive literature reviews from the SCOPUS Database, hailing from the Behavioural Finance lens, from 1992 up to 2023 have been recorded; and the variables were selected for the study using a Systematic Literature Review involving the PRISMA Methodology, Bibliometric Analysis, and the TCCM Analysis. The Conceptual model was prepared based on the existing Theories, Experiments, Paradoxes, and Models of various experts underlying this study. The peculiarity of the study involves the approach toward evaluating risk from psychological, biological, and contextual perspectives of risk. The study period spans from 2019 to 2023, and data collection occurs both during and after the pandemic. After calculating the minimum number of respondents (384.6) using Fisher's Formula, 450 respondents in total were taken into consideration for the study; selected from all fourteen districts of Kerala; using a blend of Purposive and Snowball sampling adopted. The pilot study involved 50 respondents across Kerala for reliability testing and validating the questionnaire. The Data have been collected from a mailed questionnaire as the primary source of data and; also, through secondary sources of data like reference books, journals, articles, PhD theses, newspapers, NSE BSE websites, etc. The questionnaire for the final data collection was scaled up after content validation with input from statisticians, psychologists, stock brokers, and professors with expertise in behavioural finance, commerce, and management. Data

extraction was done using SPSS version 26, MS Excel, and econometrics in preparation for additional statistical analysis. To further test the study's hypotheses, regression analysis, one-way ANOVA, and the independent samples t-test were employed. The study also highlights the importance of investing decisions, emphasizing that each investor should work to improve their level of financial risk tolerance, risk attitude, and risk perception, as well as to be wary of biased associates. Additionally, the researcher proposed that retail investors can make prudent investments by becoming well-versed in businesses and programs at the grassroots level, beginning with households and educational institutions and working their way up to companies, industries, and financial institutions. To help decision-makers, investors, and academics alike create a more knowledgeable and resilient investment climate in Kerala, this study acts as a link between scholarly inquiry and practical application. Comprehending the correlation between investment decisions and financial risk tolerance is crucial in the complex realm of finance, particularly for retail equities investors in Kerala. Individual investors' choices affect not just their financial futures but also the regional and national economy more widely. These ramifications go well beyond the confines of individual portfolios. Individuals' welfare and financial security are crucial at the social level. Further navigating the policy environment is necessary to protect investors' interests, and regulatory organizations and policymakers are key players in this regard. Governments in Kerala may ensure that financial products are appropriate for the risk profiles of their constituents by using study findings to create rules that shield them from investments that carry an excessive amount of risk. Finally delving into the managerial sphere, where financial institutions and advisors are tasked with translating research insights into practical strategies for the benefit of their clients. Given regional variations in comfort levels and demography, the researcher's tested and proposed model can be used in other states or across other geographic borders. By incorporating neuroscientific ideas into this research, we may get a deeper understanding of decision-making in the context of financial risk and shed light on the brain mechanisms that influence investor behaviour. Financial professionals ought to include behavioural finance concepts in their advising services, given the substantial influence that behavioural biases have on investing decisions. This can enable investors to recognize and counteract cognitive biases that could cause them to make less-than-ideal choices. Given the increasing impact of financial technology, it is essential to examine how the adoption of new tools and platforms influences risk tolerance and investment decisions in Kerala. This research can provide valuable insights for the creation of technological solutions that are investor-friendly. To conclude, we are reminded that every portfolio tells a tale of risk that is either accepted or avoided via our investigation of financial risk tolerance and investment choices. The ability to accept uncertainty and turn obstacles into opportunities for financial progress is what defines risk tolerance, not a fear of failing. It is the guiding principle that helps investors make wise decisions in the mist of volatile markets as they pursue wealth creation. Comprehending these stories not only enhances our understanding of market dynamics but also enables investors to negotiate the choppy waters of uncertainty more confidently and resiliently.

Keywords: Financial Risk Tolerance, Investment Decisions, Retail Equity Investors, Kerala, Risk Appetite, Risk Attitude, Risk Perception, PRISMA Methodology, TCCM Analysis, Behavioural Finance, and Resilience.



കേരളത്തിലെ റീട്ടെയിൽ ഇക്വിറ്റി നിക്ഷേപകരുടെ ഫിനാൻഷ്യൽ റിസ്ക് ടോളറൻസും നിക്ഷേപ തീരുമാനങ്ങളും

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സംഗ്രഹം

റിസ്ക് എന്നത് കേവലം സംഖ്യകളല്ല; മറിച്ച് അനിശ്ചിതത്വത്തിന്റെ പശ്ചാത്തലത്തിൽ മനുഷ്യന്റെ മനസ്സിനെ മനസ്സിലാക്കുന്നതിനെക്കുറിച്ചാണ്. ഫിനാൻഷ്യൽ മാർക്കറ്റുകളുടെ മണ്ഡലത്തിൽ, സാമ്പത്തിക റിസ്ക് ടോളറൻസിന്റെ നിശ്ചയങ്ങൾ അനാവരണം ചെയ്യുന്നത് യുക്തിസഹമായ വിശകലനത്തിനും നിക്ഷേപകരുടെ വൈകാരിക തീരുമാനങ്ങൾക്കുമിടയിലുള്ള സങ്കീർണ്ണത അനാവരണം ചെയ്യുന്നു. ഇത് കണ്ടുപിടിക്കാനുള്ള അന്വേഷണത്തിൽ, നാല് പ്രധാന ലക്ഷ്യങ്ങൾ സൂചിപ്പിച്ചു: (i) 'ഫിനാൻഷ്യൽ റിസ്ക് ടോളറൻസ്' എന്ന ആശയവും കേരളത്തിലെ റീട്ടെയിൽ ഇക്വിറ്റി നിക്ഷേപകർക്കിടയിൽ നിക്ഷേപ തീരുമാനങ്ങൾ എടുക്കുന്നതിൽ അതിന്റെ പ്രസക്തിയും മനസ്സിലാക്കുക; (ii) കേരളത്തിലെ റീട്ടെയിൽ ഇക്വിറ്റി നിക്ഷേപകരുടെ സാമ്പത്തിക റിസ്ക് ടോളറൻസിയെയും നിക്ഷേപ തീരുമാനങ്ങളെയും സ്വാധീനിക്കുന്ന ഘടകങ്ങൾ പരിശോധിക്കുന്നതിന്; (iii) കേരളത്തിലെ റീട്ടെയിൽ ഇക്വിറ്റി നിക്ഷേപകരുടെ ഫിനാൻഷ്യൽ റിസ്ക് ടോളറൻസിലേക്കും നിക്ഷേപ തീരുമാനങ്ങളിലേക്കും സംഭാവന ചെയ്യുന്ന ഘടകങ്ങളുടെ സ്വാധീനം വിലയിരുത്തുന്നതിന്; (iv) കേരളത്തിലെ റീട്ടെയിൽ ഇക്വിറ്റി നിക്ഷേപകരുടെ നിക്ഷേപ തീരുമാനങ്ങളോടുള്ള സാമ്പത്തിക റിസ്ക് ടോളറൻസിന്റെ സ്വാധീനം വിശകലനം ചെയ്യുക. ഈ ഡോക്യൂമെന്റ് തീസിസ്, ഇന്ത്യയിലെ കേരളത്തിലെ റീട്ടെയിൽ ഇക്വിറ്റി നിക്ഷേപകർക്കിടയിൽ ഫിനാൻഷ്യൽ റിസ്ക് ടോളറൻസും നിക്ഷേപ തീരുമാനങ്ങളും തമ്മിലുള്ള ബന്ധത്തെക്കുറിച്ച് അന്വേഷിക്കുന്നു. രാജ്യത്തെ ഏറ്റവും പുരോഗമനപരമായ സംസ്ഥാനങ്ങളിലൊന്നെന്ന നിലയിൽ, ജനങ്ങളുടെ സാമൂഹിക സാമ്പത്തിക ഘടനയിൽ കാര്യമായ മാറ്റങ്ങൾ കൊണ്ടുവരുന്നതിൽ കേരളം മുൻപന്തിയിലാണ്. രാജ്യത്ത് റീട്ടെയിൽ ഇക്വിറ്റി നിക്ഷേപത്തിന്റെ വർദ്ധിച്ചുവരുന്ന ജനപ്രീതി, കേരള സംസ്ഥാനത്തിലെ ഊർജ്ജസ്വലതും സംരംഭകതയായ പൗരന്മാർ റിസ്ക് ആപ്റ്റൈറ്റിയുടെയും ഓഹരി വിപണിയിലെ നിക്ഷേപത്തിന്റെയും കാര്യത്തിൽ എങ്ങനെ തങ്ങളെത്തന്നെ നിലനിർത്തുന്നുവെന്ന് നോക്കുന്നത് മൂല്യവത്താണ്. റിവൈസ്ഡ് ബ്ലാസ് ടാക്സോണമിയെ അടിസ്ഥാനമാക്കി പ്രബന്ധത്തിലെ 7 അധ്യായങ്ങളുടെ ഒരു ക്രമം വിന്യസിച്ചിരിക്കുന്നു. ഈ ഗവേഷണത്തിനായി സ്വീകരിച്ച സാംപ്ലിംഗ് നടപടിക്രമവും, വിവരണാത്മകവും വിശകലനപരവുമായ ഗവേഷണരൂപകല്പനയുമാണ് ഈ പഠനത്തിന്റെ സവിശേഷത. 1992 മുതൽ 2023 വരെയുള്ള ബിഹേവിയറൽ ഫിനാൻസ് ലെൻസിൽ നിന്നുള്ള സ്റ്റോപ്പസ് ഡാറ്റാബേസിൽ നിന്നുള്ള സമഗ്രമായ ലിറ്ററേച്ചർ അവലോകനങ്ങൾ രേഖപ്പെടുത്തിയിട്ടുണ്ട്; കൂടാതെ പ്രിന്റ് മെത്തഡോളജി, ബിബ്ലിയോമെട്രിക് അനാലിസിസ്, ടിസിസിഎം അനാലിസിസ് എന്നിവ ഉൾപ്പെടുന്ന ഒരു സിസ്റ്റമാറ്റിക് ലിറ്ററേച്ചർ റിവ്യൂ ഉപയോഗിച്ച് പഠനത്തിനായി വേരിയബിളുകൾ തിരഞ്ഞെടുത്തു. ഈ പഠനത്തിന് അടിവരയിടുന്ന വിവിധ വിദഗ്ധരുടെ നിലവിലുള്ള സിദ്ധാന്തങ്ങൾ, പരീക്ഷണങ്ങൾ, വിരുദ്ധതകൾ, മാതൃകകൾ എന്നിവയെ അടിസ്ഥാനമാക്കിയാണ് ആശയ മാതൃക തയ്യാറാക്കിയത്. മനുഷ്യാസ്സപരവും ജീവശാസ്ത്രപരവും സാമ്പത്തികവുമായ വീക്ഷണങ്ങളിൽ നിന്ന് റിസ്കുകൾ വിലയിരുത്തുന്നതിനുള്ള സമീപനമാണ് പഠനത്തിന്റെ പ്രത്യേകത. പഠന കാലയളവ് 2019 മുതൽ 2023 വരെ നീളുന്നു, പാൻഡെമിക് സമയത്തും അതിനുശേഷവും ഡാറ്റ ശേഖരണം നടത്തിയിട്ടുണ്ട്. കേരളത്തിലെ പതിനാല് ജില്ലകളിൽ നിന്നും തിരഞ്ഞെടുത്ത ആകെ സാമ്പിളുകളിൽ നിന്നും ഫിഷേഷ്സ് ഫോർമുല ഉപയോഗിച്ച് ഏറ്റവും കുറഞ്ഞ സാമ്പിൾസ് (384.6) കണക്കാക്കിയ ശേഷം, മൊത്തം 450 സാമ്പിൾസ് പഠനത്തിനായി പരിഗണിച്ചു. സ്റ്റോബോൾ സാംപ്ലിംഗും പർപോസിവ് സാംപ്ലിംഗും ഇടകലർത്തിയുള്ള രീതിയാണ് ഇതിനായി ഉപയോഗിച്ചത്. വിശ്വാസ്യത പരിശോധനയ്ക്കും ചോദ്യാവലി സാധൂകരിക്കുന്നതിനുമായി കേരളത്തിലുടനീളമുള്ള 50 സാമ്പിളുകളാണ് പൈലറ്റ് പഠനത്തിൽ ഉൾപ്പെടുത്തിയത്. ഇ-മെയിൽ വഴി അയച്ച ചോദ്യാവലി ഉപയോഗിച്ചാണ് പ്രഥമകദത്തങ്ങൾ ശേഖരിച്ചത്; കൂടാതെ, റഫറൻസ് പുസ്തകങ്ങൾ, ജേണലുകൾ, ലേഖനങ്ങൾ, പിഎച്ച്ഡി തീസിസുകൾ, പത്രങ്ങൾ, എൻഎസ്ഇ ബിഎസ്ഇ വെബ്സൈറ്റുകൾ തുടങ്ങിയാണ് ദ്വിതീയ സ്രോതസ്സുകൾ. സ്ഥിതിവിവരക്കണക്കുകൾ, മനുഷ്യാസ്സപരത, സ്റ്റോക്ക് ബ്രോക്കർമാർ, ബിഹേവിയറൽ ഫിനാൻസ്, കൊമേഴ്സ്, മാനേജ്മെന്റ് എന്നിവയിൽ വൈദഗ്ധ്യമുള്ള പ്രൊഫസർമാർ എന്നിവരിൽ നിന്നുള്ള ഇൻപുട്ട് ഉപയോഗിച്ച് ഉള്ളടക്ക മൂല്യനിർണ്ണയത്തിന് ശേഷം അന്തിമ ഡാറ്റാ ശേഖരണത്തിനുള്ള ചോദ്യാവലി വികസിപ്പിച്ചു. അധിക സ്ഥിതിവിവര വിശകലനത്തിനുള്ള തയ്യാറെടുപ്പിനായി SPSS പതിപ്പ് 26, MS Excel, ഇക്കണോമെട്രിക്സ് എന്നിവ ഉപയോഗിച്ചാണ് ഡാറ്റാ എക്സ്പ്ലോറേഷൻ നടത്തിയത്. പഠനത്തിന്റെ അനുമതികൾ

കൂടുതൽ പരിശോധിക്കുന്നതിന്, റിഗ്രഷൻ വിശകലനം, വൺ-വേ ANOVA, സ്വതന്ത്ര സാമ്പിളുകൾ ടി-ടെസ്റ്റ് എന്നിവ ഉപയോഗിച്ചു. ഓരോ നിക്ഷേപകനും അവരുടെ സാമ്പത്തിക റിസ്ക് ടോളറൻസ്, റിസ്ക് മനോഭാവം, റിസ്ക് പെർസെപ്ഷൻ എന്നിവയുടെ നിലവാരം മെച്ചപ്പെടുത്തുന്നതിനും അതുപോലെ തന്നെ നീതിയുക്തമല്ലാത്ത സഹകാരികളോട് ജാഗ്രത പുലർത്തുന്നതിനും വേണ്ടി പ്രവർത്തിക്കണമെന്ന് ഊന്നിപ്പറയുന്നു. നിക്ഷേപ തീരുമാനങ്ങളുടെ പ്രാധാന്യവും ഈ പഠനം എടുത്തുകാണിക്കുന്നു. കൂടാതെ, വീടുകൾ, വിദ്യാഭ്യാസ സ്ഥാപനങ്ങൾ തുടങ്ങി കമ്പനികൾ, വ്യവസായങ്ങൾ, ധനകാര്യ സ്ഥാപനങ്ങൾ എന്നിവയിൽ നിന്ന് താഴേത്തട്ടിലുള്ള ബിസിനസ്സുകളിലും പ്രോഗ്രാമുകളിലും നന്നായി പഠിച്ച് ചില്ലറ നിക്ഷേപകർക്ക് വിവേകപൂർണ്ണമായ നിക്ഷേപം നടത്താമെന്ന് ഗവേഷകൻ നിർദ്ദേശിച്ചു. തീരുമാനമെടുക്കുന്നവരെയും നിക്ഷേപകരെയും അക്കാദമിക് വിദഗ്ധരെയും ഒരുപോലെ സഹായിക്കുന്നതിന്, കേരളത്തിൽ കൂടുതൽ അറിവുള്ളതും പ്രതിരോധശേഷിയുള്ളതുമായ നിക്ഷേപ അന്തരീക്ഷം സൃഷ്ടിക്കുന്നതിന്, ഈ പഠനം പണ്ഡിതോചിതമായ അന്വേഷണവും പ്രായോഗിക പ്രയോഗവും തമ്മിലുള്ള ഒരു കണ്ണിയായി പ്രവർത്തിക്കുന്നു. നിക്ഷേപ തീരുമാനങ്ങളും സാമ്പത്തിക റിസ്ക് ടോളറൻസും തമ്മിലുള്ള പരസ്പരബന്ധം മനസ്സിലാക്കുന്നത് ധനകാര്യത്തിന്റെ സങ്കീർണ്ണ മേഖലയിൽ, പ്രത്യേകിച്ച് കേരളത്തിലെ റീട്ടെയിൽ ഇക്വിറ്റി നിക്ഷേപകർക്ക് നിർണായകമാണ്. വ്യക്തിഗത നിക്ഷേപകരുടെ തിരഞ്ഞെടുപ്പുകൾ അവരുടെ സാമ്പത്തിക ഭാവിയെ മാത്രമല്ല, പ്രാദേശിക, ദേശീയ സമ്പദ്വ്യവസ്ഥയെയും കൂടുതൽ വ്യാപകമായി ബാധിക്കുന്നു. ഈ ശാഖകൾ വ്യക്തിഗത പോർട്ട്ഫോളിയോകളുടെ പരിധിക്കപ്പുറമാണ്. വ്യക്തികളുടെ ക്ഷേമവും സാമ്പത്തിക ഭദ്രതയും സാമൂഹികതലത്തിൽ നിർണായകമാണ്. നിക്ഷേപകരുടെ താൽപ്പര്യങ്ങൾ സംരക്ഷിക്കുന്നതിന് പോളിസി പരിതസ്ഥിതിയിൽ കൂടുതൽ നാവിഗേറ്റ് ചെയ്യേണ്ടത് ആവശ്യമാണ്, കൂടാതെ റെഗുലേറ്ററി ഓർഗനൈസേഷനുകളും പോളിസി മേക്കർമാരും ഇക്കാര്യത്തിൽ പ്രധാന കളിക്കാരാണ്. ഈ പഠനത്തിന്റെ കണ്ടെത്തലുകൾ ഉപയോഗിച്ച് കേരളത്തിലെ ഗവൺമെന്റുകൾക്ക് അമിതമായ അപകടസാധ്യതയുള്ള നിക്ഷേപങ്ങളിൽ നിന്ന് അവരെ സംരക്ഷിക്കുന്ന നിയമങ്ങൾ സൃഷ്ടിച്ച് അവരുടെ ഘടകങ്ങളുടെ റിസ്ക് പ്രൊഫൈലുകൾക്ക് അനുയോജ്യമാണെന്ന് ഉറപ്പാക്കാം. അവസാനമായി മാനേജർ മേഖലയിലേക്ക് കടക്കുന്നു, അവിടെ സാമ്പത്തിക സ്ഥാപനങ്ങളും ഉപദേശകരും അവരുടെ ക്ലയന്റുകളുടെ പ്രയോജനത്തിനായി പ്രായോഗികതന്ത്രങ്ങളിലേക്ക് ഗവേഷണ ഉൾക്കാഴ്ചകൾ വിവർത്തനം ചെയ്യാൻ ചുമതലപ്പെടുത്തിയിരിക്കുന്നു. കംഫർട്ട് ലെവലുകളിലും ഡെമോഗ്രഫിയിലും പ്രാദേശിക വ്യതിയാനങ്ങൾ കണക്കിലെടുക്കുമ്പോൾ, ഗവേഷകന്റെ പരീക്ഷിച്ചതും നിർദ്ദേശിച്ചതുമായ മാതൃക മറ്റ് സംസ്ഥാനങ്ങളിലോ മറ്റ് ഭൂമിശാസ്ത്രപരമായ അതിർത്തികളിലോ ഉപയോഗിക്കാനാകും. ഈ ഗവേഷണത്തിൽ ന്യൂറോ സയൻ്റിഫിക് ആശയങ്ങൾ ഉൾപ്പെടുത്തുന്നതിലൂടെ, ഫിനാൻഷ്യൽ റിസ്കിന്റെ പശ്ചാത്തലത്തിൽ തീരുമാനമെടുക്കുന്നതിനെക്കുറിച്ച് നമുക്ക് ആഴത്തിലുള്ള ധാരണ ലഭിക്കുകയും നിക്ഷേപകരുടെ ബിഹേവിയറിനെ സ്വാധീനിക്കുന്ന ചിന്തകളിലേക്ക് വെളിച്ചം വീശുകയും ചെയ്യാം. നിക്ഷേപ തീരുമാനങ്ങളിൽ ബിഹേവിയറൽ ബയാസ് ചെലുത്തുന്ന ഗണ്യമായ സ്വാധീനം കണക്കിലെടുത്ത് സാമ്പത്തിക പ്രൊഫഷണലുകൾ അവരുടെ ഉപദേശക സേവനങ്ങളിൽ ബിഹേവിയറൽ ഫിനാൻസ് ആശയങ്ങൾ ഉൾപ്പെടുത്തണം. ഇത് നിക്ഷേപകർക്ക് അനുയോജ്യമല്ലാത്ത തിരഞ്ഞെടുപ്പുകൾ നടത്താൻ കാരണമായേക്കാവുന്ന വൈജ്ഞാനിക ബയാസുകളെ തിരിച്ചറിയാനും പ്രതിരോധിക്കാനും കഴിയും. സാമ്പത്തിക സാങ്കേതികവിദ്യയുടെ വർദ്ധിച്ചുവരുന്ന സ്വാധീനം കണക്കിലെടുക്കുമ്പോൾ, പുതിയ ടൂളുകളും പ്ലാറ്റ്ഫോമുകളും സ്വീകരിക്കുന്നത് കേരളത്തിലെ റിസ്ക് ടോളറൻസിനെയും നിക്ഷേപ തീരുമാനങ്ങളെയും എങ്ങനെ സ്വാധീനിക്കുന്നു എന്ന് പരിശോധിക്കേണ്ടത് അത്യാവശ്യമാണ്. നിക്ഷേപക-സൗഹൃദമായ സാങ്കേതിക പരിഹാരങ്ങൾ സൃഷ്ടിക്കുന്നതിന് ഈ ഗവേഷണത്തിന് വിലപ്പെട്ട ഉൾക്കാഴ്ചകൾ നൽകാൻ കഴിയും. ഉപസംഹാരമായി, ഓരോ പോർട്ട്ഫോളിയോയും ഫിനാൻഷ്യൽ റിസ്ക് ടോളറൻസിനെയും നിക്ഷേപ തിരഞ്ഞെടുപ്പുകളെയും കുറിച്ചുള്ള ഞങ്ങളുടെ അന്വേഷണത്തിലൂടെ അംഗീകരിക്കപ്പെടുകയോ ഒഴിവാക്കുകയോ ചെയ്യുന്ന റിസ്കിനെക്കുറിച്ച് പറയുന്നുവെന്ന് ഞങ്ങൾ ഓർമ്മിപ്പിക്കുന്നു. അനിശ്ചിതത്വം അംഗീകരിക്കാനും തടസ്സങ്ങളെ സാമ്പത്തിക പുരോഗതിക്കുള്ള അവസരങ്ങളാക്കി മാറ്റാനുമുള്ള കഴിവാണു് റിസ്ക് ടോളറൻസിനെ നിർവചിക്കുന്നത്, പരാജയപ്പെടുമെന്ന ഭയമല്ല. അസ്ഥിരമായ വിപണിയിൽനിന്ന് സമ്പത്ത് സൃഷ്ടിച്ചെടുക്കാൻ ശ്രമിക്കുന്ന നിക്ഷേപകർക്ക് ബുദ്ധിപരമായ തീരുമാനങ്ങൾ എുക്കാൻ ഈ നിർദ്ദേശങ്ങൾ സഹായിക്കുന്നു. വിപണിയുടെ ചലനാത്മകതയെക്കുറിച്ചുള്ള നമ്മുടെ ഗ്രാഹ്യത്തെ വർദ്ധിപ്പിക്കുക മാത്രമല്ല, അനിശ്ചിതത്വത്തിന്റെ ശോചനീയതയെ കൂടുതൽ ആത്മവിശ്വാസത്തോടെയും പ്രതിരോധത്തോടെയും ചർച്ച ചെയ്യാനും ഈ പഠനം നിക്ഷേപകരെ പ്രാപ്തരാക്കുന്നു.

താക്കോൽവാക്കുകൾ: ഫിനാൻഷ്യൽ റിസ്ക് ടോളറൻസ്, ഇൻവെസ്റ്റ്മെന്റ് തീരുമാനങ്ങൾ, റീട്ടെയിൽ ഇക്വിറ്റി നിക്ഷേപകർ, കേരളം, റിസ്ക് ആപ്റ്റൈറ്റ്, റിസ്ക് മനോഭാവം, റിസ്ക് പെർസെപ്ഷൻ, പ്രിസ്മ മെത്തഡോളജി, ടിസിസിഎം അനാലിസിസ്, ബിഹേവിയറൽ ഫിനാൻസ്, റെസിലൻസ്.

CONTENTS

List of Tables

List of Figures

List of Abbreviations and Acronyms

CHAPTER - 1

INTRODUCTION	1 - 34
1.1 Background of The Study.....	2
1.2 Geometry of Risk and Investment Decisions.....	3
1.3 Scanning 'Risk' Through the Behavioural Finance Lens	5
1.4 The Equity Cult and The Investors' Stake.....	8
1.5 Fight or Flight Responses and Investors' Habit Loop	10
1.6 The Vanishing Equity Tribe.....	13
1.7 Decision Paralysis and Investors' Choice Paradox.....	14
1.8 The New Normal Puzzles and The Investors' Play.....	15
1.9 Need and Significance of The Study.....	19
1.10 Statement of The Research Problem	20
1.11 Research Objectives of The Study.....	21
1.12 Research Hypotheses of The Study.....	22
1.13 Scope of The Study.....	23
1.14 Operational Definitions of Terms	26
1.15 Chapter Scheme of Thesis.....	28
References.....	30

CHAPTER - 2

REVIEW OF LITERATURE	35 - 194
2.1 Introduction	36
2.2 Bibliometric Analysis.....	37
2.3 TCCM Analysis of Filtered Literature Citing Variables Used for the Study	62
2.4 Identification of Research Gap.....	174
2.5 The Key Takeaways.....	175
References.....	177

CHAPTER - 3

THEORETICAL FRAMEWORK AND CONCEPTUAL MODEL..... 195 - 352

3.1	The Behavioural Finance Decoded.....	196
3.2	Psychology of Risk Tolerance: Whats and Wherefores of Risk.....	196
3.3	Importance of Understanding Risk Tolerance in the context of Equity Investment Decisions	200
3.4	Different Perspectives on Evaluating Risks	201
3.5	Approaches to Risk Tolerance Assessment	217
3.6	Measures of Financial Risk Tolerance in the Equity Scenario	218
3.7	Pitfalls in Practical Applications of Risk Tolerance Questionnaire.....	220
3.8	Risk-Taking Spectrum of Retail Equity Investors in Kerala	221
3.9	Insights on Investors' Personalities in India	225
3.10	Jungle of Investors' Spirits and Animal Metaphors.....	227
3.11	Theories Underlying Different Variables Used for the Study.....	232
3.12	Experiments Supporting the Selection of Variables for the Study.....	256
3.13	Puzzles Pertained to the Variables in the Study.....	273
3.14	The Future Menageries and Post-Normal Potentialities of Investors- The Risk Perspective.....	288
3.15	Models Predicting the Suitability of Variables Used in the Study	293
3.16	Conceptual Model for the Study	319
3.17	Development of Conceptual Framework	320
3.18	The Bottom Line	327
	References	328

CHAPTER - 4

RESEARCH DESIGN AND METHODOLOGY353 – 386

4.1	Research Design Framework.....	353
4.2	Research Philosophy.....	356
4.3	Method of Design Adopted in the Study.....	357
4.4	Research Approach.....	358
4.5	Nature and Source of Data.....	358
4.6	Research Instruments Used	359
4.7	Construction of Research Instruments.....	364

4.8	Scale Development and Validation.....	368
4.9	Sampling Design	371
4.10	Variables/ Factors Used in the Study	372
4.11	Testing Assumptions	372
4.12	Research Tools and Software Package Used	375
	References.....	380
CHAPTER – 5		
DATA ANALYSIS AND INTERPRETATION		387 – 448
5.0	Introduction	387
5.1	Percentage Analysis	387
5.2	Descriptive Statistics	394
5.3	Hypotheses Testing.....	411
	References.....	440
CHAPTER – 6		
FINDINGS AND CONCLUSIONS		449 – 460
6.0	Introduction	449
6.1	Summary of Key Findings.....	449
6.2	Conclusion.....	458
6.3	Limitations of the Study.....	459
CHAPTER – 7		
RECOMMENDATIONS AND DIRECTIONS FOR FUTURE RESEARCH.....		461 – 480
7.0	Introduction	461
7.1	Recommendations for Different Stakeholders	461
7.2	Implications of the Study	467
7.3	Directions for Future Research.....	470
7.4	The Key Takeaways.....	475
	References.....	476
BIBLIOGRAPHY.....		i – lxxviii
APPENDICES		i – xxii

LIST OF TABLES

Table No.	Content	Page No.
1.1	List of Dependent and Independent Variables used for the Study	25
2.1	Information about Data	39
2.2	Most Influencing Authors in the Study	42
2.3	Source Impact	48
2.4	Most Relevant Countries	54
2.5	TCCM Analysis for Selected Works of Literature for the Study	63
3.1	Theories underlying Key Variables used for the Study	254
3.2	Summary of Experiments pertaining to Variables used for the Study	258
3.3	Relationship between Trigunas, Financial Risk Tolerance, and Investment Decisions of Investors	311
4.1	Sources for the Construction of Research Instruments	364
4.2	Reliability and Validity Test Results (based on Calculations)	369
4.3	Variables/ Factors Used in the Study	372
5.1	Age-wise Classification of Retail Equity Investors	388
5.2	Gender-wise Classification of Retail Equity Investors	388
5.3	Marital-wise Classification of Retail Equity Investors	389
5.4	Educational Qualification-wise Classification of Retail Equity Investors	389
5.5	Occupation-wise Classification of Retail Equity Investors	390
5.6	Annual Income-wise Classification of Retail Equity Investors	390
5.7	Investment Experience-wise Classification of Retail Equity Investors	391
5.8	Number of Companies in which Investments are made	391
5.9	Preference towards Investment Frequencies in the Equity Market	392
5.10	Ranking of Retail Equity Investors' Objectives towards Equity Investments (based on Weights)	393

Table No.	Content	Page No.
5.11	Descriptive Statistics on Sensation-Seeking of Retail Equity Investors	394
5.12	Descriptive Statistics on Emotional Competence of Retail Equity Investors	396
5.13	Descriptive Statistics on Locus of Control of Retail Equity Investors	398
5.14	Descriptive Statistics on Overconfidence Bias of Retail Equity Investors	399
5.15	Descriptive Statistics on 'Snake-Bite Effect' Bias of Retail Equity Investors	400
5.16	Descriptive Statistics on Frame-Dependence Bias of Retail Equity Investors	402
5.17	Descriptive Statistics on Risk Perception of Retail Equity Investors	403
5.18	Descriptive Statistics on Risk Attitude of Retail Equity Investors	405
5.19	Descriptive Statistics on Financial Risk Tolerance of Retail Equity Investors	407
5.20	Descriptive Statistics on Investment Decisions of Retail Equity Investors	409
5.21	One-way ANOVA results demonstrating the significant difference between the Age of retail equity investors with their financial risk tolerance and investment decisions	412
5.22	Independent sample t-test results demonstrating a significant difference between the Gender of retail equity investors with their financial risk tolerance and investment decisions	414
5.23	One-way ANOVA results demonstrating a significant difference between the Marital status of retail equity investors with their financial risk tolerance and investment decisions	416
5.24	One-way ANOVA results demonstrating a significant difference between the Educational Qualification of retail equity investors with their financial risk tolerance and investment decisions	417
5.25	One-way ANOVA results demonstrating a significant difference between the Occupation of retail equity investors with their financial risk tolerance and investment decisions	419

Table No.	Content	Page No.
5.26	One-way ANOVA results demonstrating a significant difference between the Annual Income of retail equity investors with their financial risk tolerance and investment decisions	421
5.27	One-way ANOVA results demonstrating a significant difference between the Investment experience of retail equity investors in the equity market with their financial risk tolerance and investment decisions	423
5.28	One-way ANOVA results demonstrating a significant difference between the financial risk tolerance and investment decisions of retail equity investors with the number of companies in which investments are made	425
5.29	One-way ANOVA results demonstrating a significant difference between the financial risk tolerance and investment decisions of retail equity investors with their preference towards Investment frequencies in the equity market	426
5.30	Correlation Coefficients among factors influencing Financial Risk Tolerance of retail equity investors	428
5.31	VIF Values of factors influencing Financial Risk Tolerance of retail equity investors	429
5.32	Multiple Regression Estimates of variables influencing Financial Risk Tolerance of retail equity investors	430
5.33	White Test result showing heteroscedasticity in the residuals based on Multiple Regression Analysis	431
5.34	Correlation Coefficients among factors influencing Investment Decisions of retail equity investors	433
5.35	VIF Values of factors influencing Investment Decisions of retail equity investors	434
5.36	Multiple Regression Estimates of variables influencing Investment Decisions of retail equity investors	435
5.37	White Test result showing heteroscedasticity in the residuals based on Multiple Regression Analysis	436
5.38	Summary Results Based on Simple Linear Regression Analysis	438
6.1	One-way ANOVA and Independent sample t-test results depicting the significant difference among the Demographic variables, Financial Risk Tolerance, and Investment Decisions of retail equity investors	453

Table No.	Content	Page No.
6.2	One-way ANOVA results depicting the significant difference between the Investment experience of retail equity investors in the equity market with their financial risk tolerance and investment decisions	454
6.3	One-way ANOVA results depicting the significant difference between the financial risk tolerance and investment decisions of retail equity investors with the number of companies in which investments are made	455
6.4	One-way ANOVA results depicting the significant difference between the financial risk tolerance and investment decisions of retail equity investors with their preference towards Investment frequencies in the equity market	455
6.5	Multiple Regression Results of Factors significantly influencing the Financial Risk Tolerance of Retail Equity Investors	456
6.6	Multiple Regression Results of Factors significantly influencing the Investment Decisions of Retail Equity Investors	457
6.7	Simple Regression Results of the significant influence of Financial Risk Tolerance of Retail Equity Investors on their Investment Decisions	458

LIST OF FIGURES

Figure No.	Content	Page No.
1.1	Chapter Outcomes Inclined to the Revised Bloom's Taxonomy	1
1.2	Model stating the Formula for Financial Risk Tolerance	8
1.3	The Indian Equity Market Slowing Down Post-Budget Speech	12
1.4	Cycle of Emotions and Degrees of Risk in the New Normalcy	18
1.5	Geographical Coverage of the Study Conducted for Research	24
2.1	Chapter Outcomes Stated based on the Revised Bloom's Taxonomy	35
2.2	PRISMA Methodology for Conducting a Literature Review for the Study	37
2.3	Publication Trends for the Study	40
2.4	Average Citations per Year	41
2.5	Authors' Production over Time	43
2.6	Co-Citation with Cited Authors	44
2.7	Authors' Productivity through Lotka's Law	45
2.8	Most Globally Cited Documents	46
2.9	Reference Spectroscopy	47
2.10	Relevant Sources	49
2.11	Sources' Production over Time	50
2.12	Bradford Law	51
2.13	Most Relevant Affiliations	52
2.14	Affiliations' Production over Time	53
2.15	Country Collaboration Map	55

Figure No.	Content	Page No.
2.16	Bibliographic Coupling Based on Countries	56
2.17	Word Cloud of the Most Frequent Words Used for the Study	57
2.18	Three-Field Plot of Authors, Universities, and Keywords	58
2.19	Three-Field Plot of Authors, Universities, and Countries	59
2.20	Three-Field Plot of Authors, Countries, and Keywords	60
2.21	Trend Topics in Behavioural Finance	61
3.1	Chapter Outcomes prepared based on the Revised Bloom's Taxonomy	195
3.2	Triune Brain Model	210
3.3	Brain Maps Radiating Waves and Neural Signals	212
3.4	Investors' Personality Categories	225
3.5	Region-wise Classification of Investors' Personality Types	227
3.6	Variables Used for the Study	233
3.7	Investors' Risk Tolerance Asymmetry depicted in the Value Function	235
3.8	Inverted U-Shaped Curve	250
3.9	List of Experiments Used to Define the Variables for the Study	257
3.10	Risk Aversion as Explained in Experiment	273
3.11	Paradox Summary for Risk Tolerance and Investment Decision	274
3.12	Chain Contributions of Emotions in Snake-Bite Effect Bias Influencing the Risk Tolerance and Poor Decision-Making of Investors	285
3.13	Ostrich Effect Bias in Connection to Equity Investors' Position in Market	286
3.14	Risk Window Matrix measuring Risk Disclosure and Feedback of Events	292
3.15	Properties of the Prototype Willingness Model	296
3.16	Fogg Behavioural Model	298

Figure No.	Content	Page No.
3.17	Risk-Tolerant Position of Investors Using Risk-Attitude Spectrum	301
3.18	Relationship between Personality Models and Investors' Risk Tolerance	319
3.19	Conceptual Model Used for the Study	320
4.1	Research Design Framework	354
4.2	Research Philosophy	356
4.3	Research Design	357
4.4	Histogram Showing Financial Risk Tolerance and Investment Decision	374
4.5	Linearity between Financial Risk Tolerance and Investment Decision	375
5.1	White Test Plot Showing if there is Heteroscedasticity in Residuals or not	431
5.2	White Test Plot Showing if there is Heteroscedasticity in Residuals or not	436

LIST OF ABBREVIATIONS AND ACRONYMS

S.No.	Name	Expansion
1	MPT	- Modern Portfolio Theory
2	CAPM	- Capital Asset Pricing Model
3	GDP	- Gross Domestic Product
4	NSE	- National Stock Exchange
5	BSE	- Bombay Stock Exchange
6	SEBI	- Securities and Exchange Board of India
7	IMF	- International Monetary Fund
8	KYC	- Know Your Customer
9	PAN	- Permanent Account Number
10	UPI	- Unified Payments Interface
11	F & O Market	- Futures & Options Market
12	NSDL	- National Securities Depository Limited
13	CDSL	- Central Depository Services Limited
14	RBI	- Reserve Bank of India
15	ESG	- Environmental, Social and Governance
16	FMCG	- Fast Moving Consumer Goods
17	FRT	- Financial Risk Tolerance
18	ID	- Investment Decisions
19	FOMO	- Fear of Missing Out
20	ECI	- Emotional Competence Inventory
21	SSS	- Sensation Seeking Scale
22	PRISMA	- Preferred Reporting Items for Systematic Reviews and Meta-Analyses
23	TCCM	- Theory-Context-Characteristics-Methodology
24	SLR	- Systematic Literature Review
25	TC	- Total Citation Count

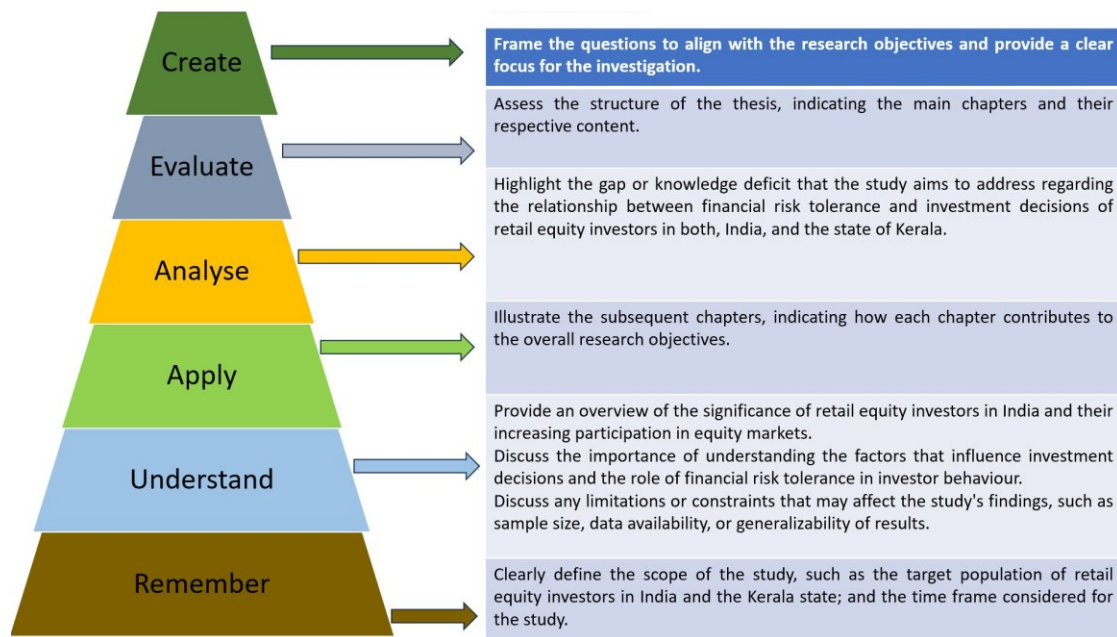
S.No.	Name	Expansion
26	NP	- Number of Publications
27	RPYS	- Reference Publication Year Spectroscopy
28	MCP	- Multi-Country Publications
29	SCP	- Single-Country Publications
30	ASIST	- American Society for Information Science and Technology
31	IIT	- Indian Institute of Information Technology
32	UAI	- Uncertainty Avoidance Index
33	PD	- Power Distance
34	fMRI	- Functional Magnetic Resonance Imaging
35	EEG	- Electroencephalography
36	GABA	- Gamma-Aminobutyric Acid
37	EUT	- Expected Utility Theory
38	PMT	- Protected Motivation Theory
39	TRA	- Theory of Reasoned Action
40	IPOs	- Initial Public Offerings
41	G & L Scale	- Grable & Lytton Scale
42	SCF	- Survey of Consumer Finances
43	PWM	- Prototype Willingness Model
44	FBM	- Fogg Behaviour Model
45	MAP	- Motivation, Action and Prompts
46	MBTI	- Myers-Briggs Type Indicator
47	OCEAN	- Openness to Experience, Conscientiousness, Extroversion, Agreeableness and Neuroticism
48	HEXACO	- Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness and Openness to Experience
49	BB & K Model	- Bielar, Biel and Kaiser Model
50	VPI	- Vedic Personality Inventory

S.No.	Name	Expansion
51	SQ	- Spiritual Quotient
52	KMSI-R	- Klontz Money Scripts Inventory Revised
53	BITs	- Behavioural Investor Types
54	FRB	- Financial Risk behaviour
55	IV	- Independent Variables
56	DV	- Dependent Variables
57	SPSS	- Statistical Packages for Social Sciences
58	ANOVA	- Analysis of Variance
59	SS	- Sensation Seeking
60	EC	- Emotional Competence
61	LC	- Locus of Control
62	OB	- Overconfidence Bias
63	SBE	- Snake-Bite Effect Bias
64	FDB	- Frame-Dependence Bias
65	RA	- Risk Attitude
66	RP	- Risk Perception
67	IT	- Information Technology

The Chapter begins by outlining its expected outcomes that would suffice for the readers, scholars, academicians, or financial experts; based on Revised Bloom's Taxonomy of Six Thinking Levels; from the title "*A Taxonomy for Teaching, Learning, and Assessment*", (Bloom, 2001) shown in Figure 1.1 as below:

Figure 1.1

Shows the Chapter Outcomes inclined to the Revised Bloom's Taxonomy



Source: Created by Author for the study purpose

By addressing these outcomes, the introduction chapter establishes the context, purpose, and significance of the study, setting the stage for the subsequent chapters that delve into the research methodology, data analysis, and findings.

1.1 BACKGROUND OF THE STUDY

The adage "Investing is simple, but not easy" was made famous by Warren Buffet. This powerful statement perfectly captures the challenges that investors and financial professionals face when trying to identify and put into practice viable investment strategies (Jacobsen et al., 2014). These challenges typically take on preferences that relate to how investors perceive risk and, as a result, act towards risk. The problem with ignoring risk tolerance is that perceptions influence behaviour. According to conventional finance theory, investors must choose investments that would maximise their return on investment (Baghani & Sedaghat, 2014; Chaudhary, 2013). Regardless of their degree of education and depth of financial and investing expertise, investors tend to act irrationally when faced with uncertainty and the fear of potential loss, as per the studies pertained to Mutswenje (2014). The desire and capacity to accept risks varies among investors as a result of the impact of monetary decisions and daily changes on investing activities (Gilliam et al., 2010). Investing decisions are frequently influenced more by the investors' perceived risk than by the real risk involved (Davey, 2012). It is crucial to comprehend the actions linked to hazards as a result.

When discussing finances, "Financial Risk Tolerance" relates to how comfortable one is with the possibility of incurring losses on their investments. It is up to the individual and may differ widely. It is possible that some individual investors from Kerala are ready to take on more risk in exchange for possibly larger profits. Some show limited tolerance for risk and would rather invest in ventures that are less likely to go down in value. Equity Investors in Kerala's retail markets may be willing to take financial risks depending on their income and general financial circumstances. Investors who have more disposable money and financial security may be more willing to take up greater risks. Low-income investors or those with other financial restrictions may wish to invest with less uncertainty. The amount of risk tolerance and investment choices made by retail investors in Kerala might be affected by their level of investing knowledge and expertise. Knowledgeable investors may be more comfortable with taking moderate risks in the stock market. On the other hand, investors with less

expertise may choose to play it safe or consult a specialist. The risk tolerance of retail stock investors is heavily influenced by their investment objectives and time horizon. It is possible that investors who are saving for things like retirement or children's education etc. have a greater risk tolerance since they have more time to ride out market fluctuations. Lower-risk investments may be preferable for short-term investors or those with more limited financial ambitions. Retail stock investors' risk aversion and investing choices may be strongly impacted by market and economic circumstances. There may be a shift towards safer assets and a reduction in risk aversion among investors during times of market volatility and economic uncertainty. Conversely, when markets are bullish, investors may be more eager to take chances. The risk tolerance and investment choices in Kerala may also be affected by the regulatory framework and investor protection measures in the state. If they have faith in the regulatory structure and investor protections, investors may be more willing to take up risks and invest in shares. These considerations are relevant not only to Kerala but to retail equities investors elsewhere. Investors should analyse their risk tolerance, think about their financial objectives, and get expert guidance if they need it before making any investment choices.

1.2 GEOMETRY OF RISK AND INVESTMENT DECISIONS

Risk is a common term, and as such, it is easy to overlook the fact that it combines two ideas that are inherently at odds with one another: the logical understanding of the chance that an event will occur and the emotional representation which we have of that event. Every investor has to balance what they know, what they think they know, what they hope for, and what makes them happy. 'Risk-taking' has been the subject of extensive study in the domains of behavioural finance, financial psychology, and behavioural accounting (Ricciardi, 2004), as well as the decision sciences and the business world (Ricciardi 2008a, 2008b, 2010). The literature demonstrates that scholars interested in risk from diverse fields have varying perspectives on how to define, explain, and evaluate risk.

A risk management paradigm known as the "Geometry of Risk" was created by financial theorist Peter L. Bernstein. It highlights how crucial it is to comprehend how

risk and return interact when making investing decisions. However, when it comes to investment decisions of retail equity investors in Kerala or any other region, several factors can come into play; which may include their risk appetite, market knowledge, market sentiments, sectoral preferences, and investors' behaviour.

- Retail equities investors in Kerala may have different levels of risk appetite depending on their personal preferences and financial objectives. While some investors may favour a more cautious strategy, others may have a larger risk appetite and be more inclined towards aggressive investing techniques.
- To make wise investment choices, Kerala's retail equity investors must have a solid grasp of the stock market and the range of available investment possibilities. Factors like financial literacy, information availability, and involvement in investor education programmes can all have an impact on this knowledge.
- Based on local industries and regional dynamics, retail equity investors hailing from Kerala may show specific sectoral preferences. For instance, they could exhibit greater interest in industries that are important to the area, such as information technology, agriculture, or tourism.
- Investment decisions can be influenced by current economic conditions and market sentiment. The propensity of retail stock investors to take risks and make appropriate investment decisions may be influenced by positive or negative moods.
- Decisions about investments can also be influenced by the behaviour of retail equities investors, including their emotional biases, thought processes, and herd mentality. To eliminate possible biases and make informed investing decisions, it is essential to understand investor behaviour.

Traditional finance (Ricciardi, 2008a) is the well-known and accepted way of looking at risk in the academic world of finance. The basis of this method is an assessment of risk at the broad level that includes all players in financial markets. The standard view of risk in finance is based on classical decision-making (also called the normative

model) and the assumption of reason, which says that a person should choose the best option to maximise their predicted benefit. One of the main ideas behind this model is that people are risk-averse and choose the best option over an investment with the same predicted value. Risk in conventional finance is mostly conceptualised via modern portfolio theory (MPT). The capital asset pricing model (CAPM) is a technique for valuing a hazardous asset within a portfolio, and the Modern Portfolio Theory (MPT) argues that rational investors use diversity to optimise their portfolios. That risk and return are positively correlated is central to the Modern Portfolio Theory. The correlation between stock price fluctuations and market-wide volatility is quantified using the Capital Asset Pricing Model (CAPM). The model computes the required rate of return on a stock by combining the beta of that stock with the typical investor's risk aversion. The greater the beta, the more the predicted return on the stock is susceptible to changes in the returns on the entire market. Of all, the Modern portfolio theory (MPT) is the most dominant risk theory in classical finance. The capital asset pricing model (CAPM) is a tool used by the Modern Portfolio Theory (MPT) to assign a value to a risky asset within a diversified investment portfolio. The positive correlation between risk and return is central to the Modern Portfolio Theory. The CAPM evaluates how closely stock price fluctuations mirror market-wide swings. To determine how much of a return an individual investor needs on a stock, the model considers both the investor's risk tolerance and the stock's beta. An increase in a stock's beta indicates that its expected return will fluctuate more in tandem with shifts in the market. The risk tolerance of investors, or their comfort level with taking on risk, is another crucial factor in MPT. There is a strong correlation between an individual's risk tolerance and their asset allocation choice within a diversified investment portfolio, as every study suggests.

1.3 SCANNING 'RISK' THROUGH THE BEHAVIOURAL FINANCE LENS

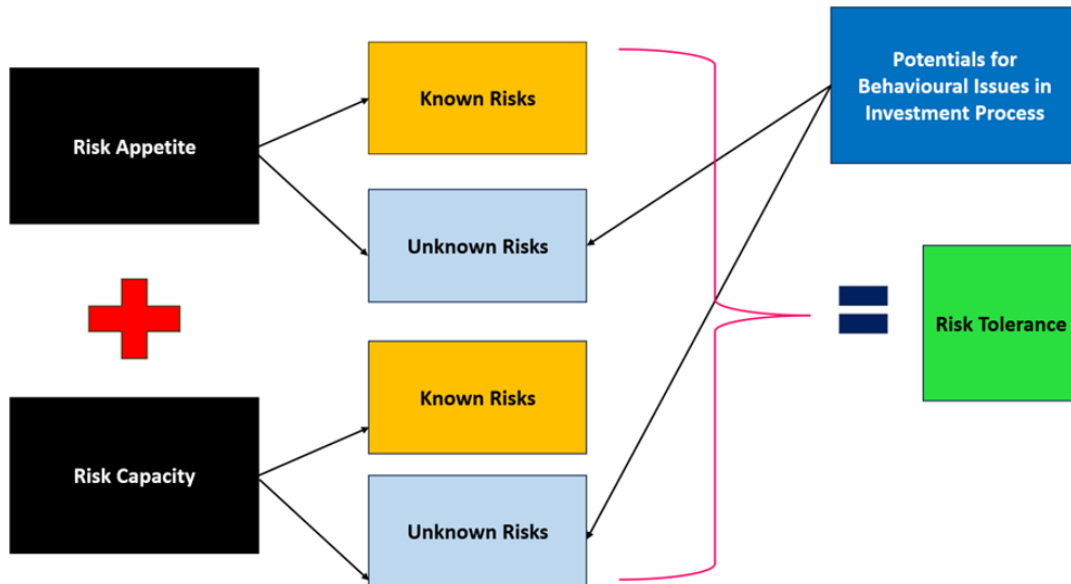
A famous article by an Investment Strategist, Joachim Klement set forth a few challenges that have been presented to financial advisors or clients; especially by the traditional risk-tolerance questionnaires. He demonstrated the extreme unreliability of the present common method of risk profiling using questionnaires, which often

accounts for less than 15% of the diversity in hazardous assets amongst investors. According to Klement, the questionnaires' design, which focuses on socioeconomic characteristics and fictitious situations to elicit the investor's behaviour, is mostly to blame for these shortcomings. Alternatively, research risk profiling has demonstrated that a number of additional indicators can offer more precise and trustworthy insight into the risk profiles of investors; which mainly include: (1) The investor's financial experiences over the course of his or her life (including the return and market volatility of the most recent period), (2) The investor's prior financial choices, (3) The influence of family, friends, and advisors, and (4) the emotional makeup of retail equities investors. No longer is understanding how investors make investment decisions a "nice-to-have" ability. Financial advisors must be able to identify irrational behaviour in this new era of turbulent markets in order to properly diagnose and counsel their customers. However, some less skilled and numerically focused counsellors needlessly struggle to comprehend the behaviour of their clients. It is the adviser's responsibility to evaluate client behaviour and make appropriate modifications in addition to the customer's responsibility to assess risk tolerance. Instead of theorising about investor behaviour, behavioural finance seeks to understand and explain real investor behaviour. It contrasts from conventional finance, which is predicated on expectations of how markets and investors would act. Understanding how individuals and groups of people make decisions is the goal of behavioural finance. It may be feasible to alter or adapt to these behaviours to better economic results by understanding how investors and markets act. In other words, how investors feel and think when making investing decisions influences how they act. Even knowledgeable investors occasionally break from logic and reason because of some of these behaviours, which are unintentionally affected by personal beliefs and prior experiences. When attempting to assess a person's risk tolerance, these effects, which may be categorised and recognised as behavioural biases, can have an impact on how risk is perceived and processed. This overview is crucial since comprehending each prejudice and how to deal with it practically depends on how it is described. There has been a lot written on the conflict between being able to take risks and being willing to do so. Generally, Risk capacity is the ability to take risk, while risk appetite is the

willingness to accept risk. We must better define risk capacity and appetite in terms of known and unknown dangers in the behavioural setting. The rationale behind this is that clients are more likely to accept the outcomes when they can at least gauge the risks they are incurring (i.e., known risks). Behavioural issues frequently start when people's perceived risks involve consequences that are outside of what they expect or can properly grasp (i.e., unknown hazards). The level of risk one is ready to incur in search of a return is referred to as risk appetite. It can be represented subjectively or quantitatively, depending on the investors' expected return. Investors with a high tolerance for risk concentrate on the possibilities for gains and are prepared to put up with a larger likelihood or severity of the loss. Those who have limited tolerance for risk, on the other hand, are concerned with stability and capital protection. Risk tolerance may be defined as the capability to accept losses without jeopardising one's financial objectives. Each person has a different amount of risk appetite and risk tolerance. Investors shouldn't define their risk appetite without taking their risk tolerance into account, although occasionally they do. Risk capacity is ultimately determined by how much actual risk a person can tolerate. On the one hand, an investor can have a high tolerance for risk but not the capacity to deal with the possible volatility or effect of risk. On the other side, the investor may choose to adopt a reduced risk appetite while having a high-risk capacity given his desire to reduce risk. When dangers are measurable and understandable—known risks—advisers may manage these difficulties with their clients much simpler. Unknown risk, on the other hand, is a dimension of risk that is harder to quantify and is frequently linked to irrational investment behaviour. Unknown risk can lead investors to act irrationally when a decision is made about how much risk to take (risk appetite) or how much loss can be sustained without compromising financial goals (risk capacity). To fully understand their risk tolerance, investors must consider their expected response to a known risk, especially an unknown risk. These ideas are all combined to create an equation for risk tolerance (as shown in Figure 1.2).

Figure 1.2

Shows the Model stating the Formula for Financial Risk Tolerance



Source: Modified by the Author from the earliest works of Pompian (2016) in *Risk Profiling through Behavioural Lens*

1.4 THE EQUITY CULT AND THE INVESTORS' STAKE

Even though independent India has only existed for 75 years, the foundation of our equities markets can be traced to the second half of the 19th century, when a group of stockbrokers began dealing securities under a banyan tree. The Indian equities journey has been fascinating to follow, going from its modest beginnings of trading under a tree to being the fifth largest market capitalization in the world. 150 years have been a rollercoaster of ups and downs. Even though a lot has changed over the years, Indian stocks continue to rise, making Indian investors richer with each passing decade. Retail equities investors have become more active in India in recent years. This tendency has been influenced by elements including increased financial knowledge, simpler access to market data and trading platforms, and the possibility of greater rewards. Like in other countries, retail investors frequently purchase shares of stock to increase their wealth and pursue financial objectives. It is difficult to offer exact statistics on the stakes of retail stock investors in Kerala without thorough and current information. However, it is plausible to believe that Kerala's retail equity

investors, like those in other Indian states, contribute to the market's total participation and trading volume. Several variables, including investor demographics, local market mood, and regional economic situations, might have an impact on the amount of involvement. The average Indian citizen is driving a paradigm change in the nation's economy, as retail equity investors seize control of the stock markets and create wealth for themselves and the country. An 'India Investment Flywheel' has begun to whirl, and this is in its early stages. The dream of the 'Aatmanirbhar Bharat' (Self-Reliant India Campaigning), championed by our esteemed Honourable Prime Minister, Mr. Narendra Modi; may finally come true. The Indian stock market continues to show strength. So far this year, the Nifty50 has gained 7.5%. And individual investors have been crucial, along with domestic institutions. An exciting stock market investment is essential for a developing country like India. The equities market has seen a significant rise in participation from regular investors, although the average investor size remains rather low. The expansion of businesses benefits from the equity market since it facilitates the transfer of personal savings to the commercial sector. Investors are the backbone of the capital market. Most people invest to provide for their future needs and to protect themselves from the debilitating effects of inflation. Internet use, technological advancements, and changing consumer preferences, emerging start-ups have all contributed to a rise in investors' interest in the stock market. Most Indian Equity Market investors put their money into equities based on their own opinions and judgements. According to the NSE, in June 2022, retail ownership in Indian firms hit a nearly 15-year high. Despite the recent rate rise, individual investors continue to account for around 9% of the Nifty 50 and Nifty 500 Indexes combined. In addition, capital invested in equity could manufacture things, increase GDP (Gross Domestic Product), and provide new employment opportunities. Because of this, a benchmark index's (like Nifty's) growth trajectory usually coincides with that of the country's economy. But sometimes, these same investors tend to go wrong in their decisions due to their conscious or unconscious biases or mental shortcuts they apply. Nowadays, Young workers and college students are now considering "starting early" in their investment careers. Access to high-quality financial information is now dispelling hurdles and anxieties associated with stock market participation. India is

already regarded as the centre of financial innovation on the planet. India's GDP is expected to increase at a 6.8% annual rate (more than twice as fast as the US and China combined); perhaps this is why the IMF (International Monetary Fund) has dubbed India a "bright spot." Aadhar, eKYC, eSign, UPI, Digilocker, and online PAN verification are just a few of the forward-thinking projects that have created the 'financial superhighway' and laid the foundation for the development of the fintech ecosystem. These platforms are becoming into global playbooks for other nations. To protect the investors and lower their amount of risk, our regulator SEBI (Securities and Exchange Board of India) is setting the standard. T+1 settlement, Demat accounts for all brokers, restrictions on margin lending, stringent security measures for customer transaction data, etc. are all India-born innovations that set the standard for the rest of the world.

1.5 FIGHT OR FLIGHT RESPONSES AND INVESTORS' HABIT LOOP

The phrase, *Fight or Flight Response* was invented for the first time by Walter Bradford Cannon in his book, "Bodily Changes in Pain, hunger, Fear and Rage" in 1915. When faced with a perceived threat or risk in the investment market, investors may experience a similar physiological response as the fight-or-flight response. This can lead to impulsive or instinctual investment decisions driven by fear or panic. For example, during a stock market crash or a significant decline in the value of investments, investors may experience a heightened sense of fear and anxiety. This triggers the fight-or-flight response, which can result in the impulsive selling of investments (flight) to avoid further losses. This behaviour becomes part of the investors' habit loop, where the cue (market decline), routine (selling investments), and reward (relief from anxiety) reinforce the behaviour. Sometimes, they may become more aggressive and take on higher risks to counteract losses or confront market challenges. This fight response can also become part of the habit loop, where the cue (perceived opportunity or challenge), routine (taking on higher risks), and reward (potential for higher returns) reinforce the behaviour. Sidhavelayudham (2023) in his famous article in *Financial Express* quotes that especially for retail investment, or non-professional individual investors, which rocketed high in 2020 and

2021, the financial markets have had a wild ride in 2023. In June 2022, retail ownership in Indian firms reached a nearly 15-year high, according to statistics from the NSE (National Stock Exchange). Post-rate rise, retail shareholding in both the Nifty 50 and Nifty 500 Index is still holding steady at 9.7%. the reasons behind such a paradigm shift include:

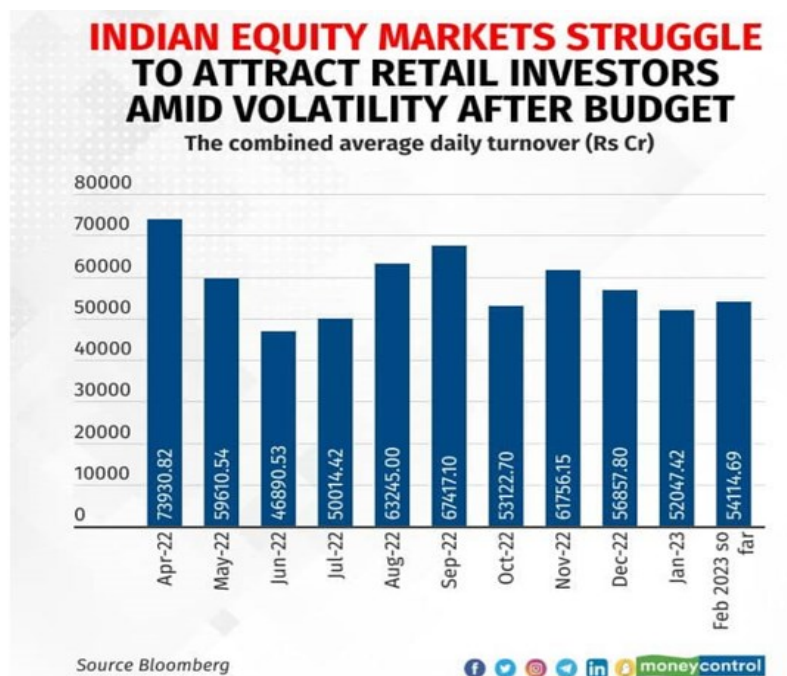
- Retail investors, also known as "the Aam Aadmi" (common people), are gaining control of the equity markets and creating wealth for both themselves and the nation.
- The government and regulators have also provided a few stimulus checks, and trading platforms that allow individual investors to execute quick trades have given Indians access to previously unavailable disposable income.
- The confidence is brought on by investors latching onto the recent stream of corporate profits that are mainly underperforming NSE's worst concerns and the slowing of inflation that is stopping the Reserve Bank of India from stepping up its stimulus programme.

Retail investors may find it challenging to trade in the F&O market and turn a profit because of recent events like the STT (Securities Transaction Tax) rise and the absence of the 'do not exercise' option from the upcoming series. On the plus side, the planned hike in STT will help the government's income in part and serve as a warning to retail traders to square off their positions in a timely manner before expiration to avoid incurring additional costs. To forecast the correct investment prospects, one only needs to pay close attention to changes in the patterns of various sectors, consumer desires, and developing technology. But it's still not rocket science. In addition to being essential for a well-performing portfolio, updating and altering investment behaviour in accordance with trends also generates exceptional returns. Similarly, Ravinder Sonavane (2023) analysed in his article featured in *Money Control* that, despite anticipations of a recovery in trade following the budget and volatility in shares of banks and Adani Group companies, cash volumes in local equities markets remained unchanged in February. From February 1st to 24th, 2023;

the average daily trading volume in the cash segment of the National Stock Exchange of India and the BSE climbed by 3.97 percent to Rs 54,114.69 crore from Rs 52,0474 crore, the lowest level in six months, for a total rise of Rs 54,114.69 crore. Compared to January, the average daily trading volume in the futures and options (F&O) market increased to a record-breaking Rs 204 lakh crore. Budget announcements and rising volatility in the shares of Adani Group companies and banking equities drove a spike in trading volumes at the beginning of February. Investors' worries about the likelihood of a spillover effect from the Adani Group's problems, which damaged both Adani Group shares and bank equities, were blamed for the turbulence. The total BSE and NSE turnover, at Rs 9 lakh crore, was less than the budget for the previous year when it was presented in the Indian Parliament on February 1st, 2023. Even though more volatility often results in higher trading volumes, there has not been a noticeable uptick in trade during the rest of February; which has been clearly depicted in Figure 1.3 (a report by Bloomberg, 2023):

Figure 1.3

Shows the Indian Equity Market slowing down post Budget Speech



Source: The Bloomberg Report (2023).

1.6 THE VANISHING EQUITY TRIBE

According to recent study results published by the 5Paisa study Team on December 10th, 2022, the number of Demat accounts has topped 100 million for the first time as of August 31st. These accounts were opened with Central Depository Services Ltd. (CDSL) for around 71% of them, and National Securities Depository Limited (NSDL) for the remaining ones. Between December 2019 and August 2022, an astounding 61.1 million new Demat accounts were established. Thus, there have been more demat account openings in the past 32 months than there were in the preceding 20 years. There has been a sharp increase in the number of persons opening Demat accounts since the year 2020 began. Various reasons were accounted for such a situation; which included the expansion of bargain brokerage businesses, Online availability for creating Demat accounts, the Low-interest rate environment following COVID, and the desire to increase one's income beyond that of savings deposits. In March 2020, during the pandemic, the stock market fell. Following this, it recovered pace, which led to an increase in new entries into the market. Around 3.5 million additional new demat accounts have been established by October 2021; as against 39.4 million Demat accounts worldwide as of December 2019. It is important to note that since the mid-1990s when Demat accounts initially gained popularity, this number of Demat accounts has been established and is still operational. As per the study, it was found that one investor could open several Demat accounts with various brokerage houses. These 100 million accounts were therefore not unique. Estimates from the industry stated that 60 million Indians, or 4.3% of the population, have established more than 100 million Demat accounts. According to the most recent financial stability report from the RBI (Reserve Bank of India), which was issued at the end of June 2023, almost 13 million individual investors traded in May. There were less than 30 million active Demat accounts with holdings worth more than Rs. 10,000. There were 92.1 million Demat accounts worldwide at that time. There could be a chance that not much has altered. 90% of the population in India earn less than Rs. 3 lakhs annually, with only 10% of the population earning more than Rs. 25000 a month. Here, it is important to keep in mind that most people lack the resources to participate in the markets.

Finally, the expert team concluded that the 100 million counts of Demat accounts alone would be insufficient to alter the entire market environment.

1.7 DECISION PARALYSIS AND INVESTORS' CHOICE PARADOX

When people have too many alternatives to choose from, they may experience decision paralysis, also known as choice overload. When there are many companies, sectors, or investing methods available, it may be difficult for individual equity investors to make a choice. Investors may feel paralysed by the sheer number of options, which prevents them from acting swiftly and confidently. Fear of making the incorrect option, searching for the "perfect" investment, a lack of self-confidence, and an abundance of available knowledge are all contributors to indecision. Investors who feel paralysed by indecision may end up passing up lucrative investing possibilities or neglecting to take crucial steps. Hence, it can be summarised as a situation in which an individual or a group of retail equity investors are unable to decide or act due to overthinking or excessive analysis.

Because of the sheer volume of data at their fingertips, retail equities investors may experience "analysis paralysis," or the inability to go on with an investment choice. Retail equity investors may experience analytical paralysis for a variety of reasons. In the age of the internet and readily available real-time financial data, ordinary investors are faced with information overload. The sheer volume of information may make it difficult to make a choice. Fear and greed, two strong emotions, may distort investors' judgment, therefore it is important to keep them in check. Fear of making a bad choice or losing out on prospective benefits might make retail investors reluctant to act. Moreover, due to a lack of self-assurance, retail investors may depend too much on the opinions of others when making investing decisions. Overthinking and second-guessing are possible results of being so reliant on others. Many individual investors just do not have the luxury of spending hours poring through market data. They may get paralysed by information overload and are unable to make decisions. Some potential investors may be perfectionists who wait for the ideal investment opportunity before putting their money down. This kind of thinking might prevent you from acting quickly and could cost you some chances. Retail investors are often

susceptible to several cognitive biases, including confirmation bias (the tendency to place greater weight on information that supports already-held opinions) and loss aversion (the tendency to react more strongly to negative than positive outcomes). These biases may lead to indecision and paralysis by analysis. Henceforth, through this study in the Kerala state context; various measures could be suggested by ways of financial counselling to overcome such paralytic situations. Investors must learn to define their investing goals and understand the degrees of risk tolerance. Knowing one's objectives helps one to ignore unnecessary information and concentrate on what counts. Secondly, they must create an Investment Strategy by planning their investments to meet their objectives. This method would help investors avoid emotional conflicts and bridge the gaps in investment decision-making. Next, staying informed is crucial, but must be limited to some information intake. Organising investment research and analysis, scheduling information gathering, and investment choices could minimise overburden. Beginning with little investments or a virtual portfolio may boost confidence and lessen the fear of blunders. In case of any trouble making judgments, they must visit a financial counsellor or any professionally experienced investors which would indeed assist them to overcome analytical paralysis with new perspectives.

1.8 THE NEW NORMAL PUZZLES AND THE INVESTORS' PLAY

There is a strong correlation between an investor's risk appetite and their readiness to deal with "black swan" situations. Those with a low-risk tolerance may choose to look for assets that provide lower returns but are less likely to see significant swings in value. By diversifying their holdings, purchasing more secure assets, and using other risk management techniques, they may reduce their vulnerability to black swan occurrences and become more conservative investors. However, an investor who is more prepared to incur risks in the hopes of greater rewards is said to have a higher risk tolerance. These traders are more used to the ups and downs of the market and may be prepared to take a loss during black swan occurrences. They may use riskier investment tactics, such as putting money into fast-growing companies, venture capital, or developing markets. There is no universally applicable strategy since

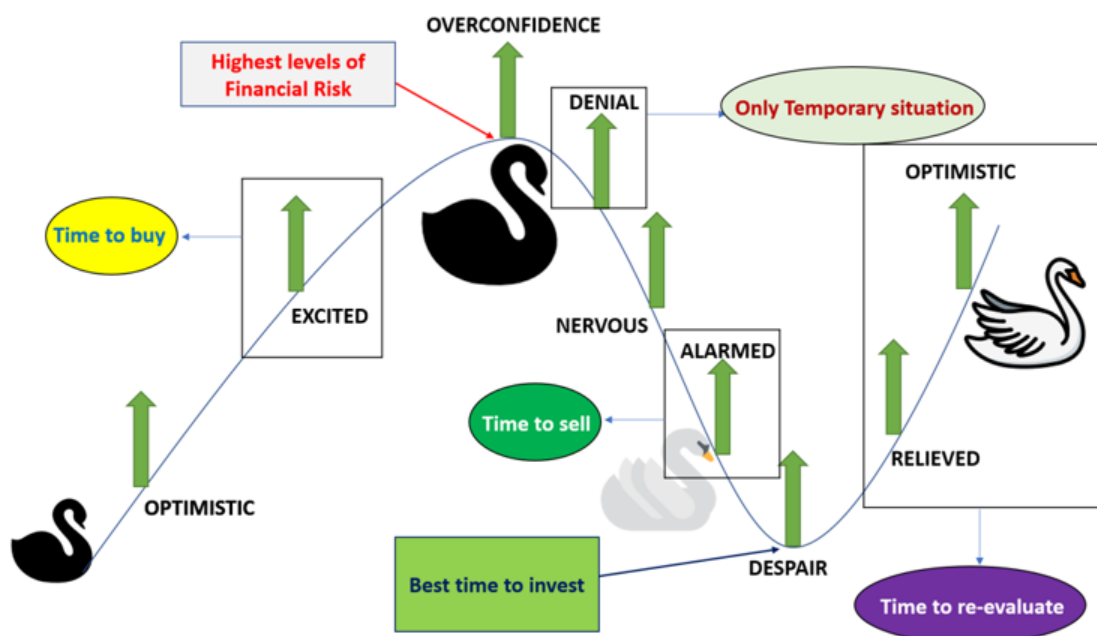
people have different levels of comfort with risk. While some investors may have a more moderate risk tolerance and aim for a happy medium between risk and profit, others may have a much higher or lower tolerance for risk due to personal factors. All investors, regardless of their comfort level with risk, should think about how black swan occurrences could affect their holdings. Diversification, appropriate asset allocation, and risk management methods may help lessen the blow of these infrequent and hard-to-forecast occurrences. Better results may be achieved during and after black swan occurrences if investors have a long-term investing view and refrain from making hasty decisions in response to short-term market fluctuations. Initially, the COVID-19 Outbreak came out to be a “black swan event”, further posing different risks to investors in society and the economy at large. Meanwhile, after the discovery of new COVID vaccines contributed by various mushrooming Pharmaceutical and healthcare industries; then this “black swan” event was found being transformed into “grey swans” and finally, into “white swan” events. The "New Normal" refers to a concept that emerged after significant disruptions or changes in the economy or society, resulting in a new set of circumstances that become the norm. The COVID-19 pandemic, for example, has led to the emergence of a new normal in various aspects of life, including the economy and financial markets. In the context of the stock market, the new normal can refer to shifts in investor behaviour, market dynamics, and investment strategies that have become more prominent following the pandemic. Here are a few key puzzles and considerations for investors in the equity stock market within this new normal. Due to the fast changes in the economic environment, volatility and uncertainty in the stock market have become the new normal. Investors should be wary of short-term changes and ready for more extreme market swings. Taking precautions and looking forward might be of paramount importance. As a result of the epidemic, digital change in many sectors moved at a breakneck pace. Companies that have successfully adapted to the Internet age and established strong online business strategies should be given serious consideration by investors. E-commerce, telecommunications, healthcare, and cyber security are just a few examples of rapidly expanding industries. Finding businesses that are set up to thrive in the digital economy may be a lucrative venture for investors. Environmental,

Social, and Governance (ESG) concerns are becoming more important. Sustainable practices, social responsibility, and strong corporate governance are all qualities that investors increasingly demand from the organisations they back. An investor's strategy may include allocating some of their capital to ESG-focused funds or to firms that operate in accordance with ESG standards. The significance of the healthcare and biotechnology industries was underscored by the epidemic. Companies working on vaccines, telemedicine, medical technology, and medicines might be good investments. In the new normal, these industries are expected to maintain their rates of development and innovation. The importance of market resilience has been highlighted by the emergence of the new normal. Strong balance sheets, consistent cash flow, and flexibility are all qualities investors should look for in a company. To build a portfolio that can survive economic shocks, it is crucial to evaluate a company's financial health and resilience. The stock market has always been volatile, and now with the new normal comes even more uncertainty. To make educated investment choices that are in line with their risk tolerance and investment goals, investors should undertake extensive research, diversify their portfolios, and, if required, engage with financial consultants. Figure 1.4 shown below very much depicts the equity investors' decision-making style based on emotional beliefs since the beginning of the Corona outbreak till date. As the figure clearly mentions, during the first phase of COVID-19 start; the market was expecting a positive change as usual and was driven by investors' sense of over-optimism and excitement, which further led to many overreactions in the market demonising the parity of risk-return expectations. Further, the investors refused to invest temporarily considering with a positive mindset that the market would not remain the same and there would be gradually greater opportunities to invest in new stocks. Though many were nervous initially, later the market was alarmed to sell the initial stocks with a sense of despair to some extent. In fact, this position was sensed by experts and financial advisors as the best time to invest showing better signs of recovery. Towards the end of the Corona period, every retail equity investor prepared their mindset to be more financially resilient and conduct investment activities with higher mindfulness. This approach indeed made many more successful than earlier and their losses were

replenished by smaller gains in the new-normal period. There are three types of swans highlighted here, namely, black swans, grey swans, and white swans. The theory popularised by Dr. Taleb was used to discuss the context during the COVID-19 period. Though initially, the virus proved to be a surprising nightmare in the stock market, and later, many investors realised that such a situation was an eye-opener to emerging sectors including Information Technology, Health and Pharmaceutical industries, Fast Moving Consumer Goods (FMCG) sectors, e-learning platforms and so on. The major contribution by many Pharma companies in the discovery of vaccines has elevated India to great heights opening a better investment arena globally. Moreover, the period post-COVID is considered a “white swan”; situations slightly improved during the virus outbreak with positive signs of recovery and easy predictions in the market representing the “gray swans” event; though at first the virus emerged as a “black swan” event.

Figure 1.4

Shows the Cycle of Emotions and Degrees of Risk in the New Normalcy



Source: Modified by the Author for the study based on *The Black Swan: The Impact of the Highly Improbable*, Taleb (2007)

1.9 NEED AND SIGNIFICANCE OF THE STUDY

This study holds several implications for academia, policymakers, and retail equity investors. By exploring the relationship between financial risk tolerance and investment decisions, the study can enhance our understanding of investor behaviour in the Indian context. The findings can provide valuable insights into the factors that influence risk tolerance, thus helping investors make informed decisions aligned with their risk preferences. Additionally, the study's recommendations can contribute to the development of investor education programs and policies aimed at promoting better financial outcomes for retail equity investors. Matching investing strategies with degrees of risk tolerance, helps investors make better-educated selections. This self-awareness can help increase the success of the portfolio and the pleasure of the investors. It aids in identifying investors who could be inclined to take excessive risks or those who might be unduly cautious; this is seen to be more important in balancing risk and reward, ensuring that investors are sufficiently safeguarded from potential losses while simultaneously maximising potential gains. It helps identify if risk-averse investors tend to diversify their portfolios across several asset classes and industries whereas risk-tolerant investors are more inclined to concentrate their assets in a small number of high-risk stocks. The study's conclusions can support efforts to educate investors and offer advice to retail equity stock investors. Investors can make well-informed choices that are in line with their risk tolerance and long-term financial objectives. Findings from the study may be used by financial institutions to create investment products that are tailored to the risk appetites and investing preferences of retail stock investors. Market participants, such as fund managers and analysts, will gain more insights into investor behaviour. This understanding can influence investment strategies, market sentiment, and pricing patterns; ultimately contributing to the overall efficiency and stability of the equity market. The Indian financial market is heavily influenced by retail stock investors, who are becoming more and more prevalent. This increased interest can be linked to developments in Internet trading platforms, higher financial awareness, and easier access to information. Both individual investors and policymakers must comprehend the elements that affect investment choices and risk tolerance among retail stock investors. An important

factor in determining investing decisions is financial risk tolerance, or the capacity and desire to tolerate financial risks in search of prospective rewards. It indicates a person's psychological and behavioural propensity for taking risks and has a big influence on how investments are made, how to allocate a portfolio, and how well off they are financially. To create effective investment strategies and help individuals connect their investment choices with their risk preferences, it is crucial to assess risk tolerance.

1.10 STATEMENT OF THE RESEARCH PROBLEM

The precise problem or knowledge gap that a research study seeks to fill is referred to as the research problem. It is the main issue or query that the researcher wants to explore and comprehend via their study. It provides the framework for the whole investigation and directs the development of the overall research design, including the objectives and questions for the study.

- The study seeks to explore the dynamics between financial risk tolerance and investment decisions specifically within the context of retail equity investors in the region of Kerala. Additionally, it implies an interest in identifying potential influencing factors that might play a role in shaping this relationship.
- Situations of **Overconfidence, regret, attention deficits, and trend-chasing** lead to suboptimal decisions and eat away the returns.
- Studies on the “**Frame Dependence**” and “**Snake-bite Effect**” – missing factors, but a leading opportunity to explore at the global level.
- **Sensation Seeking** and **Locus of Control** substitutes the personality traits influencing Financial Risk Tolerance and Investment Decisions. Limited studies are found in these areas at the global level.
- Studies incorporating Emotional Competence, Financial Risk Tolerance, and Investment Decisions of Retail Equity investors are limited in the Indian scenario and Kerala context.

- Different investors still are in their comfort zones hesitating to move out to take enough risks either experiencing the symptoms of Fear of Missing Out (FOMO), Choice Overload, or improper Habit Loops.

1.11 RESEARCH OBJECTIVES OF THE STUDY

The objectives for the study were framed based on a set of research questions interrogated from previous studies and research gaps identified:

- What does ‘Financial Risk Tolerance’ mean; from an equity investment context?
- What factors influence Financial Risk Tolerance and Investment Decisions among Retail Equity Investors in Kerala?
- Are the factors influencing both Financial Risk Tolerance and Investment Decisions of the retail equity investors one and the same or related?
- Is Financial Risk Tolerance important to be discussed in the Equity Investment scenario among retail equity investors in Kerala?
- Does Financial Risk Tolerance Significantly Influence Investment Decisions among retail equity investors?

The abovementioned questions helped the researcher to trace out the general and specific objectives of the study; which are given below:

1. To understand the concept of ‘Financial Risk Tolerance’ and its relevance in making Investment Decisions among retail equity investors in Kerala.
2. To examine the factors influencing the Financial Risk Tolerance and Investment Decisions of retail equity investors in Kerala.
3. To evaluate the influence of factors contributing towards Financial Risk Tolerance and Investment Decisions of retail equity investors in Kerala.
4. To analyse the influence of Financial Risk Tolerance towards Investment Decisions of retail equity investors in Kerala.

1.12 RESEARCH HYPOTHESES OF THE STUDY

H₁: There is no significant difference among the Demographic variables, Financial Risk Tolerance, and Investment Decisions of retail equity investors.

H1.1: The age of the retail equity investors is not significantly different from their Financial Risk tolerance and Investment Decisions.

H1.2: The gender of the retail equity investors is not significantly different from their Financial Risk tolerance and Investment Decisions.

H1.3: The marital status of the retail equity investors is not significantly different from their Financial Risk tolerance and Investment Decisions.

H1.4: The educational Qualification of the retail equity investors is not significantly different from their Financial Risk tolerance and Investment Decisions.

H1.5: Occupation of the retail equity investors is not significantly different from their Financial Risk tolerance and Investment Decisions.

H1.6: The annual income of the retail equity is not significantly different from their Financial Risk tolerance and Investment Decisions.

H₂: Retail Equity Investors' Investment Experience in the Equity Market is not significantly different from their Financial Risk Tolerance and Investment Decisions.

H₃: The number of companies in which investments are made; has no significant difference with their Financial Risk Tolerance and Investment Decisions.

H₄: There is no significant difference in the retail equity investors' preference towards Investment frequencies in the equity market with their Financial Risk Tolerance and Investment Decisions.

H₅: Factors like Sensation Seeking, Emotional Competence, Locus of Control, Overconfidence Bias, Snake-Bite Effect Bias, Frame-Dependence Bias, Risk

Attitude, and Risk Perception) have no significant influence on the Financial Risk Tolerance of retail equity investors.

H₆: Factors like Sensation Seeking, Emotional Competence, Locus of Control, Overconfidence Bias, Snake-Bite Effect Bias, Frame-Dependence Bias, Risk Attitude, and Risk Perception) have no significant influence on the Investment Decisions of retail equity investors.

H₇: Financial Risk Tolerance of retail equity investors does not significantly contribute towards their Investment Decisions.

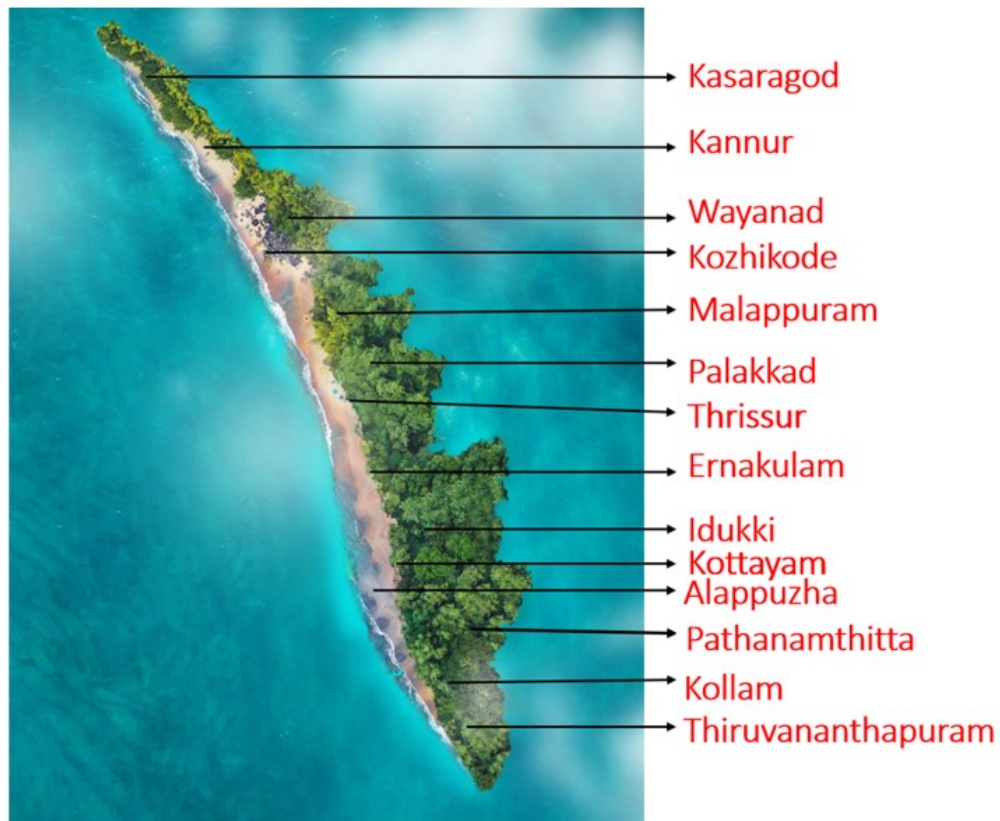
1.13 SCOPE OF THE STUDY

The bounds and restrictions that the study will operate inside are referred to as its scope. The study's scope helps to concentrate research efforts and guarantees that the goals and research questions may be successfully addressed while working within realistic limits. It encompasses various dimensions which include:

1.13.1 Geographical Scope: The study covers all fourteen districts in Kerala; namely the northern Kerala districts (Kasaragod, Kannur, Wayanad and Kozhikode); the Central Kerala districts (Malappuram, Palakkad, Thrissur, and Ernakulam); and the Southern Kerala districts (Idukki, Kottayam, Alappuzha, Pathanamthitta, Kollam and Thiruvananthapuram). (As showcased in Figure 1.5 below).

Figure 1.5

Shows the Geographical Coverage of the Study conducted for Research



Source: Created by the Author for the study purpose

1.13.2 Time Scope: The research focuses on a specific time frame from 2019 to 2023 (four years) including data collection, analysis, and reporting of the thesis.

1.13.3 Population Scope: The retail equity investors' population is unknown and hence, the standard Fisher's formula was used to determine the sample size. As per calculation, the result was 384.16; which was considered as the minimum number of respondents for the study. Further, the sample size was accelerated to 485 respondents using the Purposive and Snowball Sampling methods; which were further reduced to 450 investors ideally for the study; only after data cleaning.

1.13.4 Variable Scope: Both the dependent and independent variables were used for the study as shown in Table 1.1:

Table 1.1

Shows the list of Dependent and Independent Variables used for the Study

	To diagnose-	Variables	
		Dependent	Independent
1	Significant relationship between Demographic Variables, Financial Risk Tolerance, and Investment Decisions of respondents*	a) Financial Risk Tolerance of respondents* b) Investment Decisions of respondents*	Demographic Variables (Age, Gender, Marital status, Educational qualification, Occupation and Annual Income of respondents*)
2	A significant difference in Investment Experience, number of companies invested, and preference towards investment frequencies with Financial Risk Tolerance, and Investment Decisions of respondents*	a) Financial Risk Tolerance of respondents* b) Investment Decisions of respondents*	Investment Experience, number of companies invested, and preference towards investment frequencies
3	A significant influence of factors (Sensation seeking, Emotional competence, Locus of Control, Overconfidence bias, Snake-bite effect bias, Frame-dependence bias, Risk attitude, and Risk perception) on Financial Risk Tolerance, and Investment Decisions of respondents*	a) Financial Risk Tolerance of respondents* b) Investment Decisions of respondents*	Sensation seeking, Emotional competence, Locus of Control, Overconfidence bias, Snake-bite effect bias, Frame-dependence bias, Risk attitude, and Risk perception
4	A significant influence of Financial Risk Tolerance on Investment Decisions of respondents*	Investment Decisions of respondents*	Financial Risk Tolerance of respondents*

Note:

* Respondents refer to the Retail equity investors from Kerala used for the study.

1.14 OPERATIONAL DEFINITIONS OF TERMS

Operational definitions provide clear and measurable definitions for the concepts or variables used in a study. Various definitions outlining the research variables in the study include:

1.14.1 FINANCIAL RISK TOLERANCE: It refers to the willingness and ability of an individual to take on financial risks in their investment decisions. It can be operationalized as a self-reported scale or questionnaire measuring an individual's comfort level with various levels of financial risk.

1.14.2 INVESTMENT DECISIONS: The choices made by individuals regarding the allocation of their financial resources into different investment options. It can be operationalized as a measure of the frequency, magnitude, and types of investment decisions made by individuals, such as stock purchases, portfolio diversification, or asset allocation.

1.14.3 RETAIL EQUITY INVESTORS: The Securities and Exchange Board of India (SEBI) classifies individuals who make investments in the equity stock market of up to Rs. 2 lakhs as retail equity investors. These investors are often modestly wealthy, self-employed people who lack the support of major businesses. They are amateur investors who frequently make smaller investments than bigger institutional investors.

1.14.4 SENSATION SEEKING: The tendency of individuals to seek varied, novel, and stimulating experiences. It can be operationalized using validated scales, such as the Sensation Seeking Scale (SSS), to measure an individual's propensity for sensation-seeking behaviour.

1.14.5 EMOTIONAL COMPETENCE: The ability of individuals to recognize, understand, and manage their own emotions and those of others. It can be operationalized using validated scales, such as the Emotional Competence Inventory (ECI), to measure an individual's emotional awareness, regulation, and social competence.

1.14.6 LOCUS OF CONTROL: It refers to the extent to which individuals believe they have control over the outcomes of their investment decisions. It can be operationalized using a standardized questionnaire, such as Rotter's Locus of Control Scale, which measures an individual's belief in internal (personal control) versus external (external factors or luck) locus of control.

1.14.7 OVERCONFIDENCE BIAS: It refers to the tendency of individuals to overestimate their abilities, knowledge, or the accuracy of their predictions. It can be operationalized through self-assessment scales or tasks that measure individuals' confidence levels and compare them with their actual performance or outcomes.

1.14.8 SNAKE-BITE EFFECT BIAS: The bias in which individuals become overly cautious or risk-averse after experiencing a negative outcome or loss. It can be operationalized through experimental tasks or scenarios where individuals are exposed to negative outcomes and their subsequent risk-taking behaviour is observed and measured.

1.14.9 FRAME DEPENDENCE BIAS: The bias that individuals exhibit when making decisions based on how information is framed or presented. It can be operationalized through experimental tasks or scenarios where individuals are presented with different frames of information and their subsequent decision-making is observed and analysed.

1.14.10 RISK ATTITUDE: The individual's general propensity to take risks across different domains, including financial decision-making. It can be operationalized using scales or questionnaires that assess an individual's overall risk preferences and tendencies.

1.14.11 RISK PERCEPTION: The subjective evaluation of the likelihood and consequences of potential risks. It can be operationalized using scales or scenarios that measure individuals' perceptions of risk, such as the perceived riskiness of different investment options or their assessments of the probability and impact of potential losses.

1.15 CHAPTER SCHEME OF THESIS

This chapter scheme provides a comprehensive structure for your study, addressing the key components needed for a well-rounded thesis on the financial risk tolerance and investment decisions of retail equity investors in Kerala. Here is the suggested chapter scheme for the chosen topic:

CHAPTER 1: INTRODUCTION

This chapter sets the context for the entire research; introducing the research problem, stating the research questions with objectives, and providing a rationale for the entire study. It previews the structure of the entire thesis. It includes the background of the study, the need and significance of the study, statement of the research problem, research objectives, research hypotheses, scope of the study, limitations of the study and followed by Operational definitions.

CHAPTER 2: REVIEW OF LITERATURE

This chapter deals with summarising key research works of experts in “Financial Risk Tolerance and Investment Decisions of Retail Equity Investors”, identifying the gaps or controversies in the literature and, also justifying the need for the current study. It includes the PRISMA Framework, Bibliometric analysis, and the TCCM Analysis for the finally filtered literature work which were used to identify the research gaps and coin out the variables to be used for the study.

CHAPTER 3: THEORETICAL FRAMEWORK AND CONCEPTUAL MODEL

This chapter synchronises the classical and modern theories, models, paradoxes, and experiments that were found fit in explaining the variables used in developing the conceptual model for the study.

CHAPTER 4: RESEARCH DESIGN AND METHODOLOGY

This portion describes the research methodology adopted in the entire study; which mainly includes different sources of data collection, research instruments used,

different components of the questionnaire, description of variables used for the study, sampling design, testing assumptions, and research tools and software packages used for data analysis.

CHAPTER 5: DATA ANALYSIS AND INTERPRETATION

This chapter presents the collected data; describing the data analysis methods employed for the study. It provides the results for the analysis undertaken; followed by discussions quoting similar citations from referred works and, interpreting the findings in the context of research questions. It also enumerates the hypotheses tested at listed levels ensuring its utility for further findings.

CHAPTER 6: FINDINGS AND CONCLUSIONS

This portion of the chapter illustrates the major findings from the study based on descriptive and inferential statistics; paving ways to draw conclusions for the study.

CHAPTER 7: RECOMMENDATIONS AND DIRECTIONS FOR FUTURE RESEARCH

This chapter portrays the key suggestions identified based on the findings made from the study; specifically focussed on stakeholders including investors, financial institutions, regulatory bodies, financial advisors and professionals, and educational institutions. Furthermore, the implications of the study were made at three levels: policy-based, social, and managerial implications. This moreover led directions toward future research benefitting investors, policymakers and regulators, financial institutions, and advisors at large.

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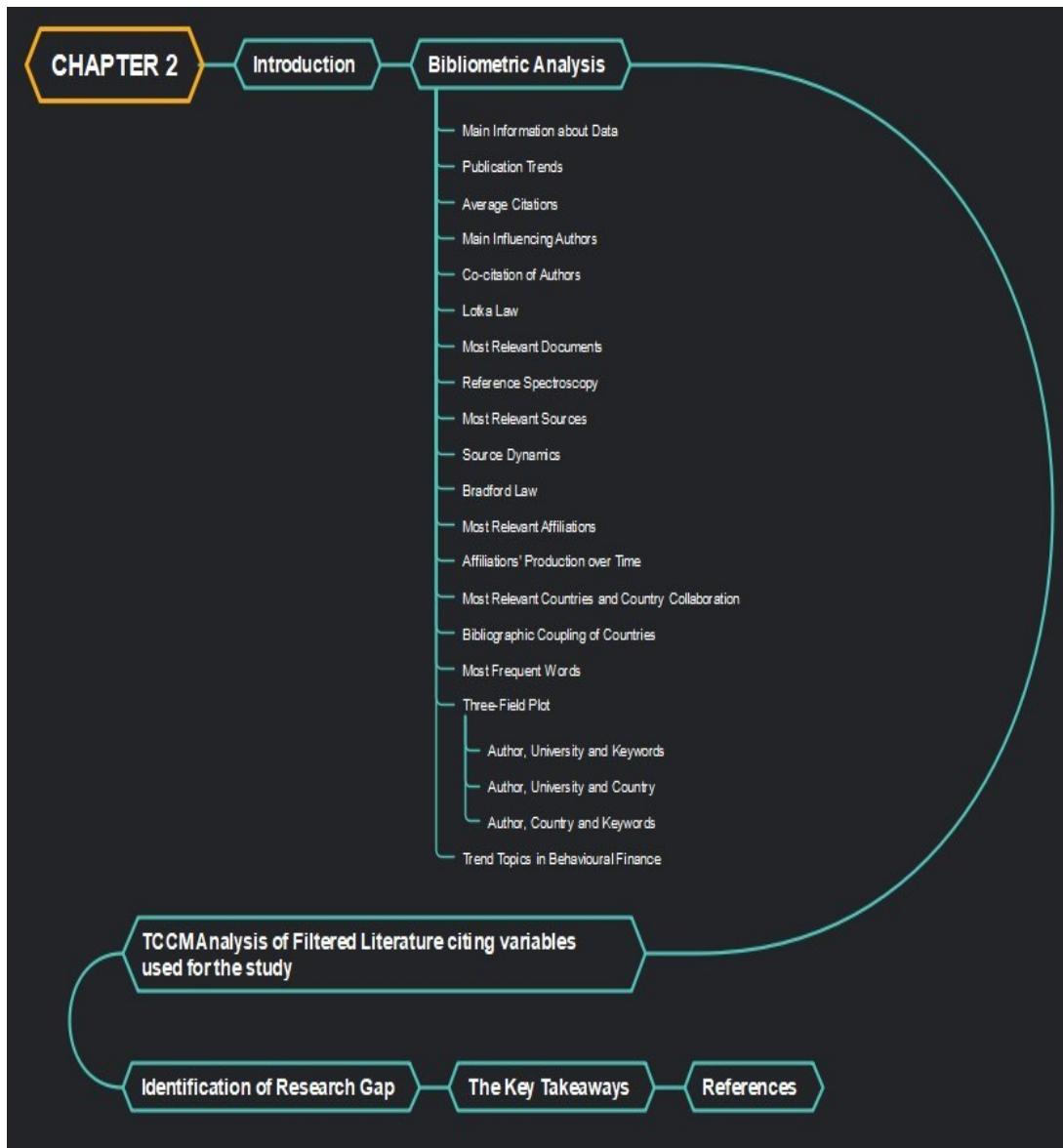
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CHAPTER 2

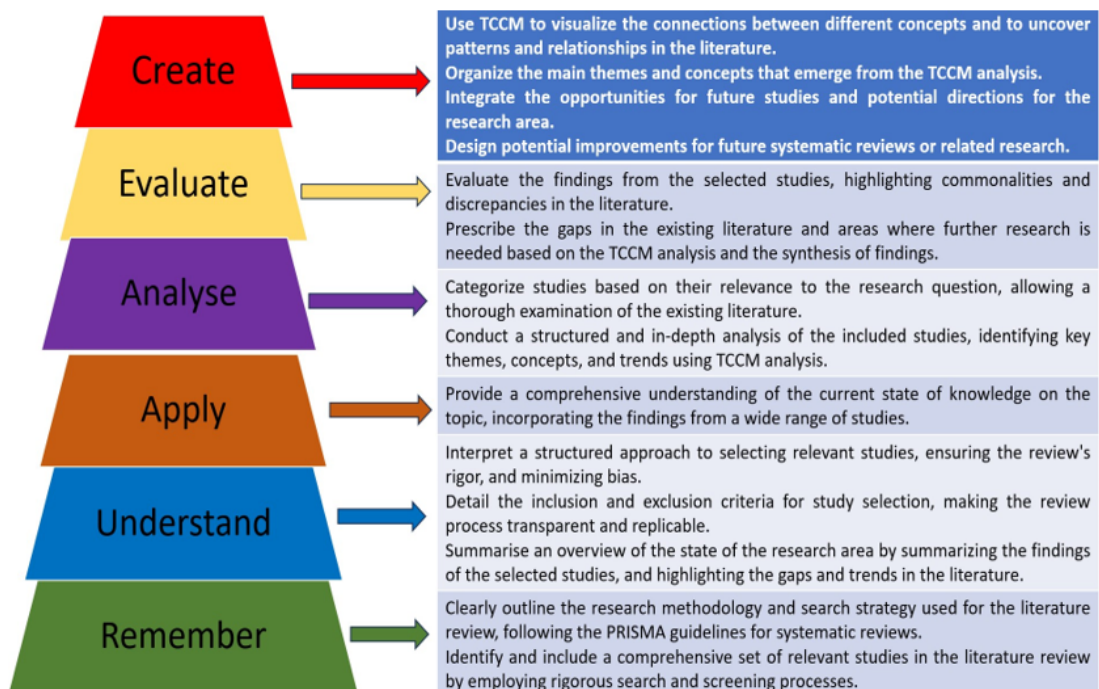
REVIEW OF LITERATURE



A literature review is an in-depth analysis of previously published works in a certain field of study, such as academic papers, books, and other relevant materials. The study has taken care to discuss the following outcomes in lieu of its discussion throughout this chapter; based on Revised Bloom’s Taxonomy of Six Thinking Levels; from the title “*A Taxonomy for Teaching, Learning, and Assessment*”, (Bloom, 2001); as evident from the Figure 2.1 below:

Figure 2.1

Depicts the Chapter Outcomes stated based on the Revised Bloom’s Taxonomy



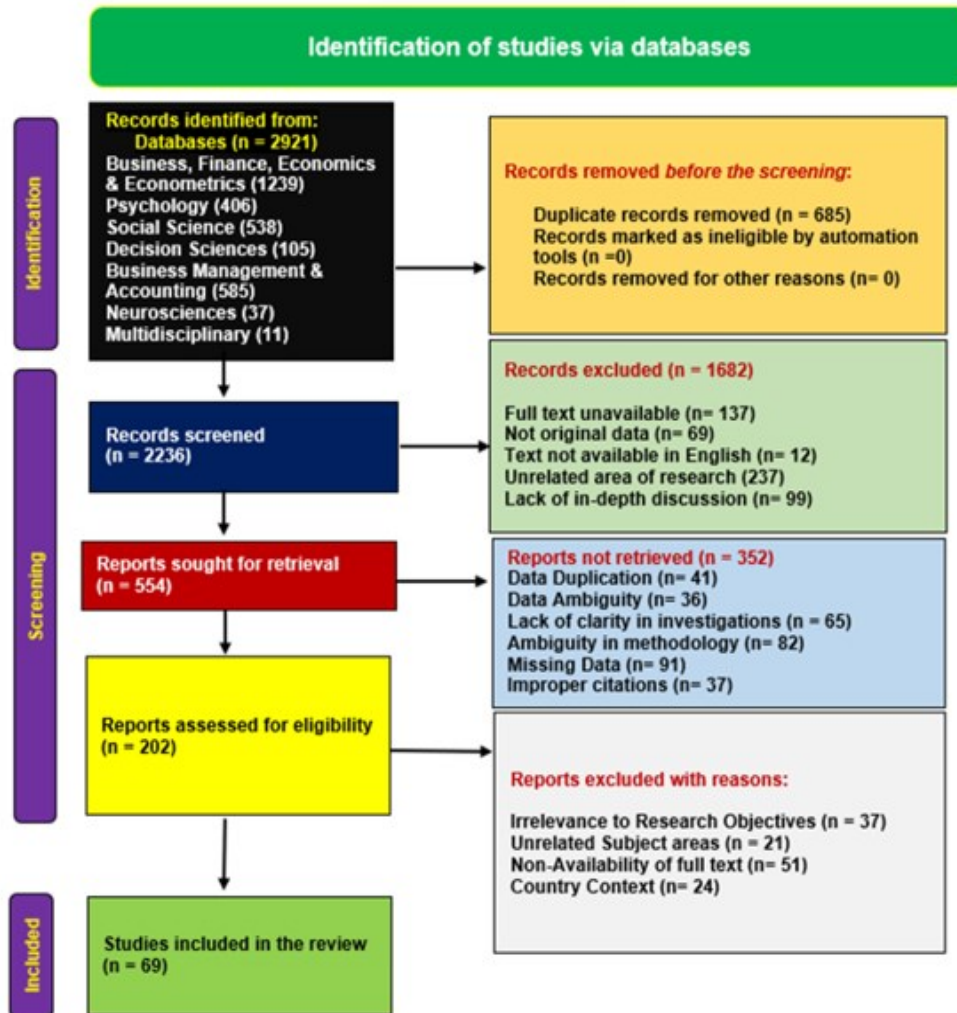
Source: Created by the Author for the study purpose.

2.1 INTRODUCTION

In this chapter, the importance of the research issue is highlighted within the existing body of literature, and the context is set via the review undertaken. Despite various methods of conducting reviews for the study, this chapter employs the Systematic Literature Review (SLR) method; which is a thorough and all-encompassing strategy for finding, selecting, evaluating, and synthesising previous work on a certain subject. To guarantee that all relevant studies are included and that bias is kept to a minimum, it adheres to a set procedure and employs rigorous search algorithms. The first half of the chapter includes reviews to be conducted rigorously undergoing a transparent methodology, the PRISMA 2020 Model Statement (Page MJ et al., 2021) has been employed; with five simple steps (as referred to in Figure 2.2 below); and further the Bibliometric Analysis has been used considering 202 journal article works. This in fact encompasses the key indicators offering insights into the nature and dynamics of scholarly writings. The PRISMA Model clearly depicts how the data has been chunked down from 2921 studies related to keywords presented before the study in the SCOPUS database; specifically, to sixty-nine which is adhering to the variable standards and research gaps identified for the study. Further, the second part of this chapter includes the reviews tabulated only for those 69 works of literature initiated through the TCCM [Theory (T), Context (C), Characteristics (C), and Methodology (M)] Analysis; a new framework suggested by Paul and Rosado-Serrano (2019); Buitrago R. & Barbosa Camargo (2021); Hassan et al., (2022); and Roy Bhattacharjee et al., (2022).

Figure 2.2

Shows the PRISMA Methodology for conducting a Literature Review for the Study



Source: Created by the Author based on the PRISMA 2020 Statement: An Updated guideline for reporting systematic reviews (Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffman TC, Murlow CD, et al, 2021).

2.2 BIBLIOMETRIC ANALYSIS

The scholar provides specific bibliometric information to enhance comprehension of the research topic. The bibliometric analysis was conducted utilizing the Scopus database by the researcher. The investigator employed specific search terms and executed a query in the Scopus database, resulting in the retrieval of 202 documents. The research employed Biblioshiny Software, an extensive feature of the Bibliometrics R package (Aria & Cuccurullo, 2017), which effectively conducts

bibliometric analysis (Moral-munoz et al., 2020). Additionally, the study utilized the VOS Viewer software due to its exceptional visualization capabilities (Moral-munoz et al., 2020). In fact, this metric has assisted the study in answering various research questions considered prior to the study:

- Identifying key authors and institutions contributed to the concepts
- Mapping research networks worldwide
- Analysing publication trends
- Analysing different keywords used and scope for developing the most cited keywords author wise or institution-wise or country-wise
- Identify highly cited papers and influential works
- Analyzing citation patterns to recognize seminal works and understand the impact of specific studies on the field.
- Analyzing publication patterns in different journals to assess their impact and relevance.
- Pinpoint areas where research is lacking or underrepresented
- Analyzing the distribution of keywords, topics, or methodologies to identify gaps that may require further investigation.
- Analyzing author affiliations to identify collaborations between researchers from different countries.
- Using metrics such as citation counts and h-index to evaluate the influence of individual authors, articles, or journals.

2.2.1 Main information about data

Table 2.1

Showing the information about data

Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	1992:2023
Sources (Journals, Books, etc)	106
Documents	202
Annual Growth Rate %	9.36
Document Average Age	6.27
Average citations per doc	96.55
References	11335
DOCUMENT CONTENTS	
Keywords Plus (ID)	122
Author's Keywords (DE)	451
AUTHORS	
Authors	395
Authors of single-authored docs	21
AUTHORS COLLABORATION	
Single-authored docs	29
Co-Authors per Doc	2.66
International co-authorships %	18.32
DOCUMENT TYPES	
Article	170
Book	4
Book chapter	4
Conference paper	3
Editorial	2
Note	4
Review	15

Source: Retrieved from Biblioshiny

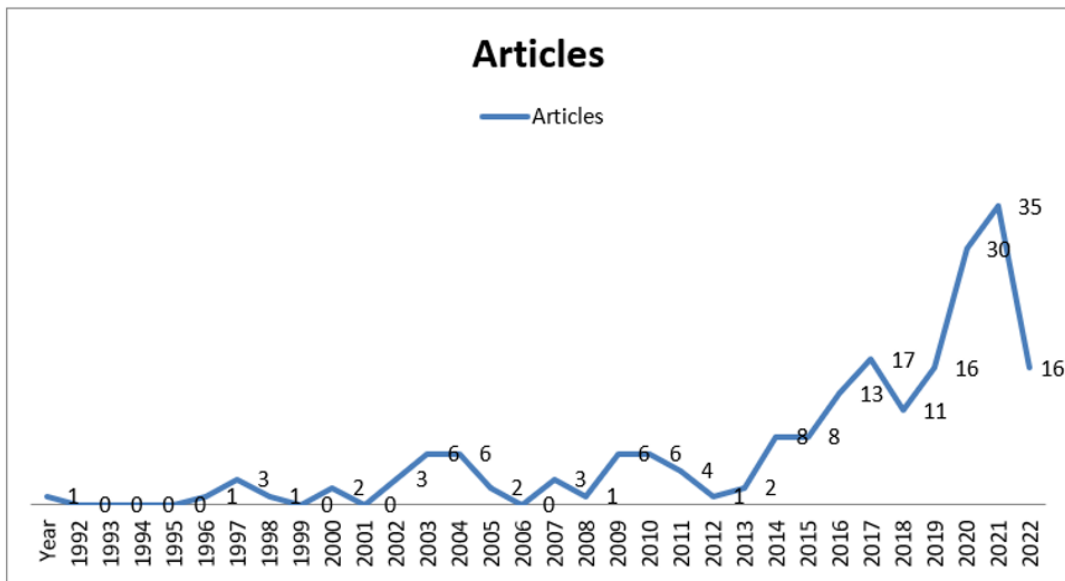
The bibliometric data presented in Table 2.1 reveals pertinent information regarding the emergence of papers in the field of 'behavioral finance', which can be traced back to the year 1992. According to the data retrieved from Scopus, a total of 202 documents were obtained from 106 distinct sources. Various sources, including scholarly articles, books, book chapters, and conference papers, serve as references to indicate the origin of documents. Most of the documents, specifically 84 percent, consist of articles, whereas the remaining 16 percent are comprised of other types of documents. The observed 9.36% annual growth in documents suggests a notable level

of interest among researchers in the topic at hand. The documents under consideration involve the participation of 395 authors, with a mere 29 documents being authored by a single individual.

2.2.2 Publication trend

Figure 2.3

Showing the Publication Trends for the Study



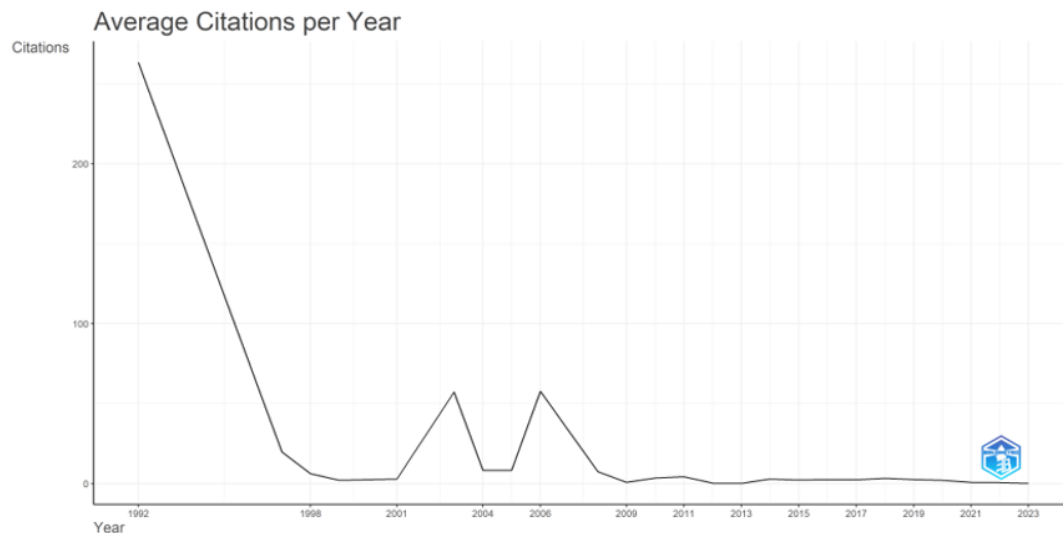
Source: Retrieved from Biblioshiny

Figure 2.3 illustrates the trend in publishing within the field of behavioral finance. The initial publication was released in 1992, while the subsequent article was not published until five years later in 1997. The region demonstrates a sustained growth trend subsequent to 2013, albeit with a reduced figure observed in 2018. There has been a consistent upward trend in the number of publications since the year 2019. The general trend observed in publications indicates a growing acceptance of the research theme among scholars.

2.2.3 Average Citations per Year

Figure 2.4

Shows the Average Citations per Year



Source: Retrieved from Biblioshiny

Figure 2.4 depicts the average citation rate per annum, revealing a notable disparity between earlier and more recent articles. Specifically, the former exhibited a higher citation rate, while the latter demonstrated a lower citation rate. The initial publication of 1992 has garnered over 200 citations. The articles that were published in the years 2003, 2004, and 2006 have also received a significant number of citations. Recent publications, having from 2009 and beyond, have received a lesser number of citations.

2.2.4 Most Influencing Authors

Table 2.2 presents a comprehensive list of prominent authors who have made significant contributions to the field of behavioral finance. The h-index was utilized to rank the top 20 authors. The evaluation of an individual's performance can be carried out through the utilization of the h-index, which considers both the number of publications and the frequency of citations received (Donthu, Kumar, Mukherjee, et al., 2021). According to Egghe (2006), the g-index encompasses all the attributes of the h-index and beyond. Additionally, the m-index is an alternative version of the h-

index that exhibits the h-index per annum since the initial publication. Kahneman D holds a prominent position in the field, as evidenced by his h-index of 17 and high rankings in the g-index, total citation count (TC), and number of publications (NP). It is noteworthy that he began publishing in this area in 1992. The authors following Kahneman D in terms of h-index ranking are GRABLE JE, JOO S-H, THALER RH, ANONG S, DAVIS E, GRABLE J, and HUDSON C. Mr. LOVALLO D's scholarly impact is noteworthy, as evidenced by his h-index ranking of 10 and his fifth-place standing in total citations. It is particularly intriguing to note that this impressive impact has been achieved through the production of only four articles. Upon analysis of the initial year of publication, it has been demonstrated that a majority of the authors commenced their publishing endeavors in the year 2018.

Table 2.2

Showing the Most Influencing 20 Authors

Element	h_index	g_index	m_index	TC	NP	PY_start
KAHNEMAN D	17	24	0.531	16447	24	1992
GRABLE JE	8	15	0.308	1194	15	1998
JOO S-H	4	5	0.2	894	5	2004
THALER RH	4	5	0.148	956	5	1997
ANONG S	3	3	0.5	15	3	2018
DAVIS E	3	3	0.5	15	3	2018
GRABLE J	3	3	0.214	128	3	2010
HUDSON C	3	3	0.5	15	3	2018
HUDSON E	3	3	0.5	15	3	2018
KNETSCH JL	3	3	0.188	33	3	2008
LOVALLO D	3	4	0.143	792	4	2003
LYTTON RH	3	3	0.115	229	3	1998
RABBANI AG	3	4	1	19	4	2021
RUDZINSKA	3	3	0.75	25	3	2020
SEKŚCIŃSKA K	3	3	0.75	25	3	2020
YOUNG J	3	3	0.5	15	3	2018
AHMAD M	2	3	0.333	71	3	2018
BAILEY JJ	2	2	0.105	66	2	2005
BHATTACHARYA A	2	2	0.4	5	3	2019
BROOKS C	2	3	0.333	56	3	2018

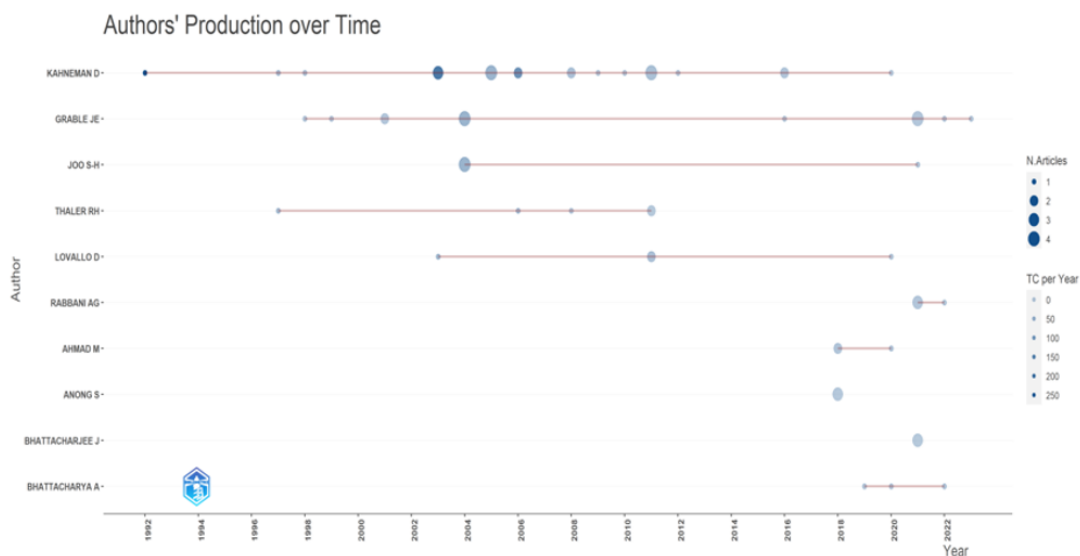
Source: Retrieved from Biblioshiny

Figure 2.5 depicts the temporal distribution of the authors' article production, thereby facilitating the identification of authors who exhibit consistent involvement in article production and their respective contributions across distinct time periods. Daniel

Kahneman is a distinguished author in this field who commenced his publications in 1992. Subsequently, he authored an article in 1997 and another in 1998. In 2003, he authored three articles, and in 2005, authored four articles. Throughout most of the year 2020, he maintained a consistent publication schedule, releasing articles on a regular basis.

Figure 2.5

Shows the Authors' Production over time



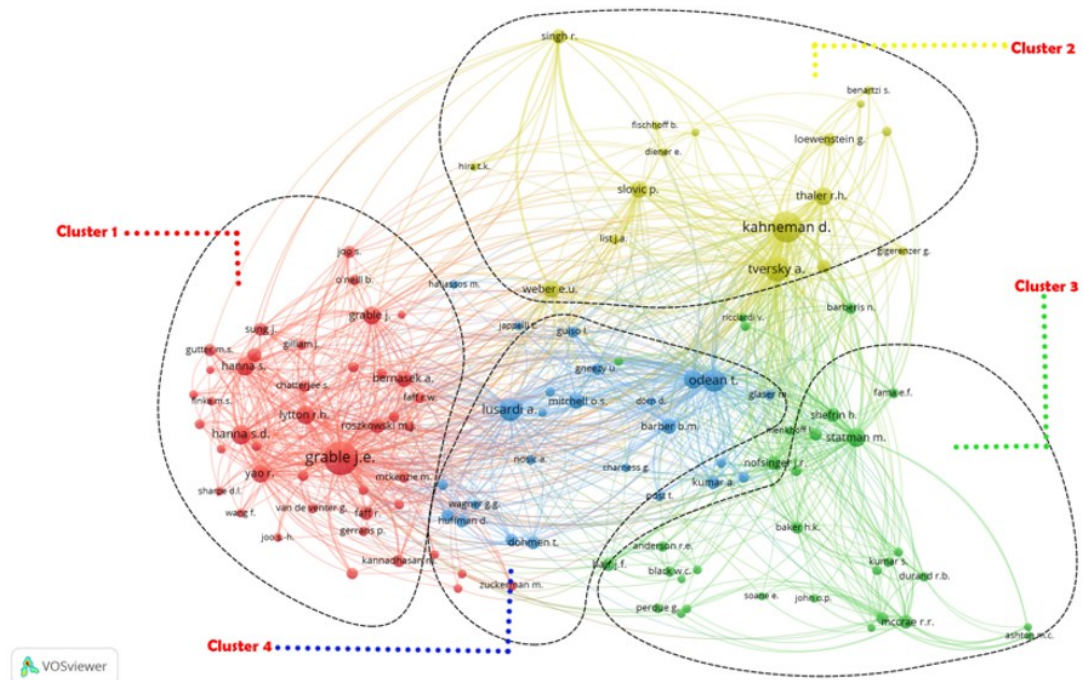
Source: Retrieved from Bibliohsiny

2.2.5 Co-Citation of authors

Co-Citation is a phenomenon that arises when two distinct scholarly articles are both cited by a third document. The methodology of co-citation analysis is predicated on the supposition that when two papers are cited jointly by other authors, they are indicative of a strong correlation between them. The utilization of author co-citation analysis entails that two authors who receive citations from a common third author are deemed to be interconnected in their respective research domains.

Figure 2.6

Shows the Co-Citation with Cited Authors



Source: Retrieved from VOS Viewer

The co-citation of cited authors is comprised of four distinct clusters. Cluster 1, denoted by red, encompasses research pertaining to Financial Risk Tolerance, Sensation-Seeking, Locus of Control, Emotional Competence, and Risk Attitude. The yellow-colored second cluster comprises 31 items that pertain to studies such as Risk Perception, Regret Avoidance, Loss Aversion, Risk Aversion, Framing, and Investment Decision-Making. The third cluster comprises 25 studies pertaining to the psychology of investors, while the fourth cluster, depicted in blue, consists of 17 studies concentrated on overconfidence bias, financial literacy, and financial knowledge (as denoted in Figure 2.6).

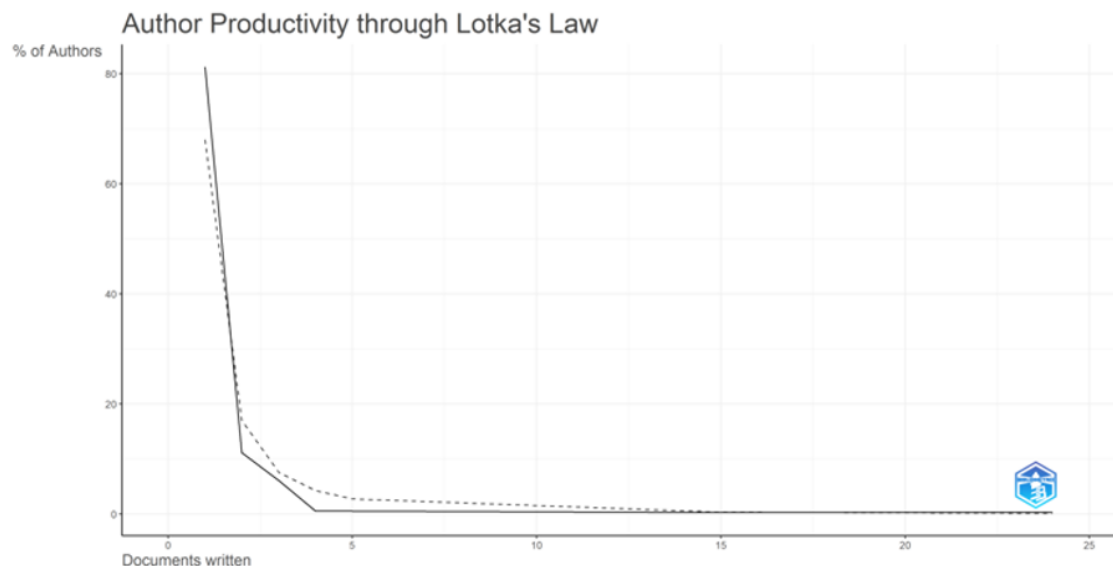
2.2.6 Lotka Law

The Lotka Law is a mathematical expression that delineates the correlation between the number of authors and their output in a specific discipline. Lotka's Law posits that there is an exponential decrease in the number of authors who have generated a

particular quantity of publications as the number of publications increases. Stated differently, a significant proportion of publications are produced by a select group of authors who exhibit high levels of productivity, whereas many authors demonstrate comparatively lower levels of productivity. Figure 2.7 provides empirical evidence in favor of the law, which posits that a small subset of authors is responsible for a significant proportion of publications in the field of behavioral finance.

Figure 2.7

Shows the Authors' Productivity through Lotka's Law



Source: Retrieved from Biblioshiny

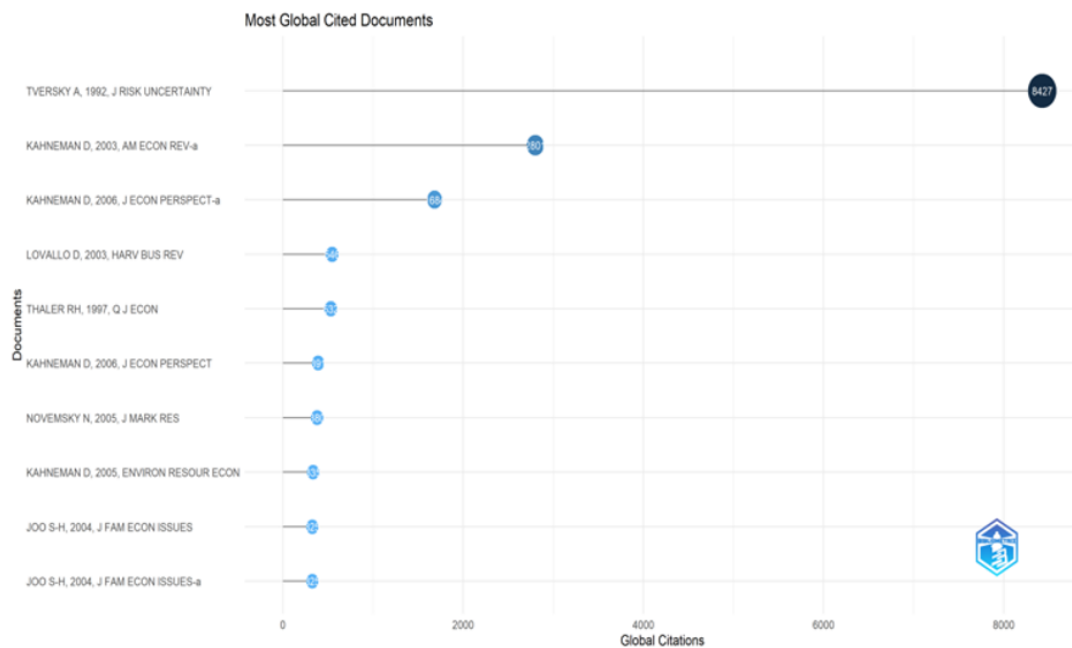
2.2.7 Most Relevant Documents

The visual representation depicted in Figure 2.8 illustrates the documents that have garnered the most citations within the discipline of behavioral finance. The Journal of Risk and Uncertainty published an article in 1992 authored by Amos Tversky and Daniel Kahneman titled "Advances in prospect theory: Cumulative representation of uncertainty." This article has garnered the highest number of citations, with a total of 8427 citations. The second most cited article is "Maps of Bounded Rationality: Psychology for Behavioral Economics," authored by Daniel Kahneman and published in the AMERICAN ECONOMIC REVIEW in 2003, with a total of 2801 citations.

The third-ranked scholarly article is titled 'Developments in the Measurement of Subjective Well-Being', which was published in the AMERICAN ECONOMIC REVIEW in 2006. A notable observation pertains to the fact that Daniel Kahneman is the author of all three aforementioned articles.

Figure 2.8

Shows the Most Globally Cited Documents

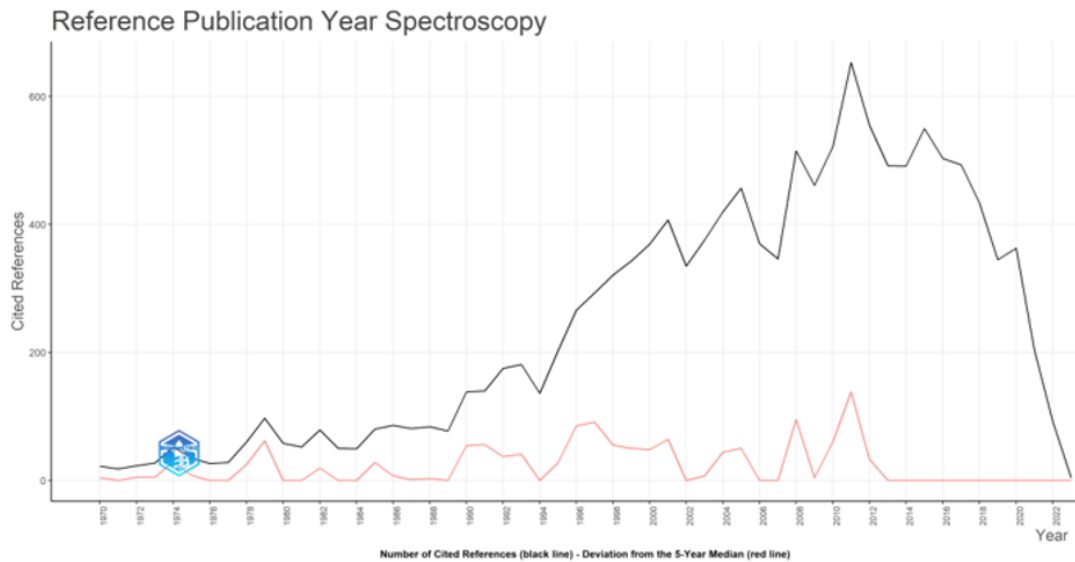


2.2.8 Reference Spectroscopy

The Reference Publication Year Spectroscopy (RPYS) methodology has been developed recently, employing an analytical approach to investigate the frequency of references cited within publications pertaining to a specific research domain. The RPYS within the domain of behavioural finance during the time frame spanning from 1970 to 2022 is depicted in Figure 2.9 The exponential increase in the quantity of cited references was observed until the year 2012, followed by a modest decrease. The red line in the graph indicates the variation from the median of cited references over a period of five years. The trend exhibits fluctuations until the year 2014, after which the value experiences a decline and becomes negative.

Figure 2.9

Depicts the Reference Spectroscopy



Source: Retrieved from Biblioshiny

2.2.9 Most relevant sources

The table labeled "2.3" presents pertinent sources categorized according to their H-index, g-index, m-index, and total citation (TC). This classification system places greater emphasis on the quality of the sources rather than their quantity. According to the h-index metric, the JOURNAL OF FINANCIAL COUNSELING AND PLANNING has the highest score of 12, followed by the REVIEW OF BEHAVIORAL FINANCE, HARVARD BUSINESS REVIEW, and other publications. When contemplating the g-index, it is typical for pertinent journals to be considered, similarly to the h-index. In terms of the Total Citations (TC), HARVARD BUSINESS REVIEW ranks highest, followed by JOURNAL OF FINANCIAL COUNSELING AND PLANNING.

Table 2.3*Showing the Source Impact*

Element	h_index	g_index	m_index	TC	NP	PY_start
JOURNAL OF FINANCIAL COUNSELING AND PLANNING	12	16	0.462	814	16	1998
REVIEW OF BEHAVIORAL FINANCE	5	7	0.833	122	7	2018
HARVARD BUSINESS REVIEW	4	6	0.19	855	6	2003
FRONTIERS IN PSYCHOLOGY	2	3	0.5	15	6	2020
JOURNAL OF WEALTH MANAGEMENT	2	2	0.4	8	6	2019
QUALITATIVE RESEARCH IN FINANCIAL MARKETS	4	5	0.667	128	5	2018
JOURNAL OF FINANCIAL SERVICES MARKETING	3	5	0.5	26	5	2018
COGENT ECONOMICS AND FINANCE	2	5	0.333	26	5	2018
INTERNATIONAL JOURNAL OF ECONOMICS AND FINANCIAL ISSUES	4	4	0.444	51	4	2015
JOURNAL OF FAMILY AND ECONOMIC ISSUES	3	4	0.15	665	4	2004

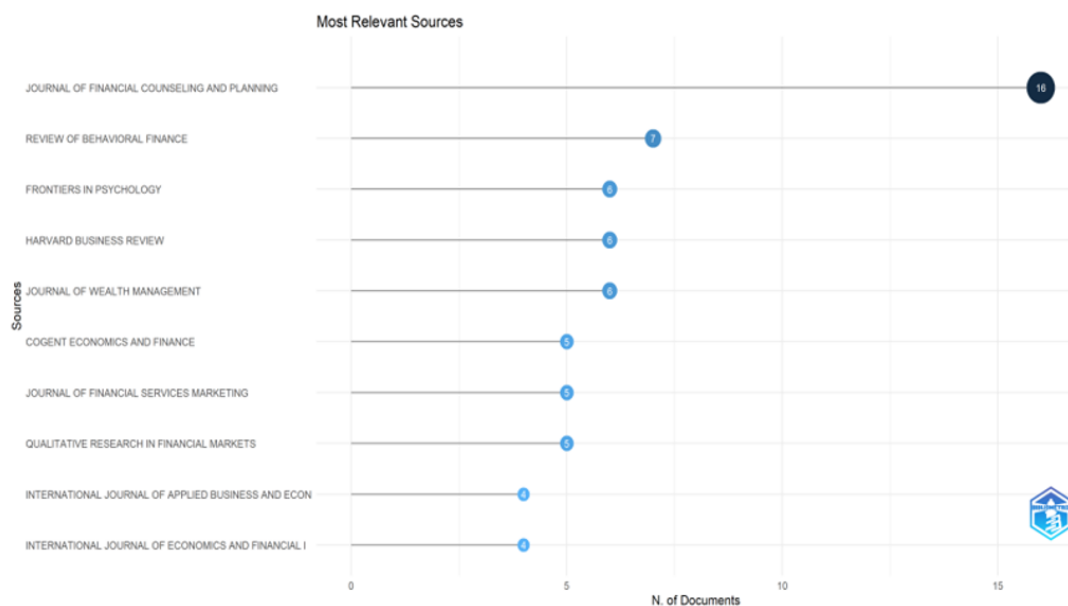
Source: Retrieved from Biblioshiny

The graphical representation depicted in Figure 2.10 displays the ranking of the ten journals that have published the highest quantity of articles. The JOURNAL OF FINANCIAL COUNSELING AND PLANNING boasts the highest number of articles, totaling 16, while the REVIEW OF BEHAVIORAL FINANCE follows with

a count of 7 articles. The publications FRONTIERS IN PSYCHOLOGY, HARVARD BUSINESS REVIEW, and JOURNAL OF WEALTH MANAGEMENT have each produced six articles, placing them in the third position. Cogent Economics and Finance, Journal of Financial Services Marketing, and Qualitative Research in Financial Markets have each published five articles pertaining to the relevant theme. The International Journal of Applied Business and Economic Research, International Journal of Economics and Financial Issues, International Journal of Financial Studies, Journal of Family and Economic Issues, and Journal of Financial Therapy have each published four articles, placing them in the following positions.

Figure 2.10

Shows the Relevant Sources



Source: Retrieved from Biblioshiny

The above figure displays the journals that are most pertinent based on their publication count.

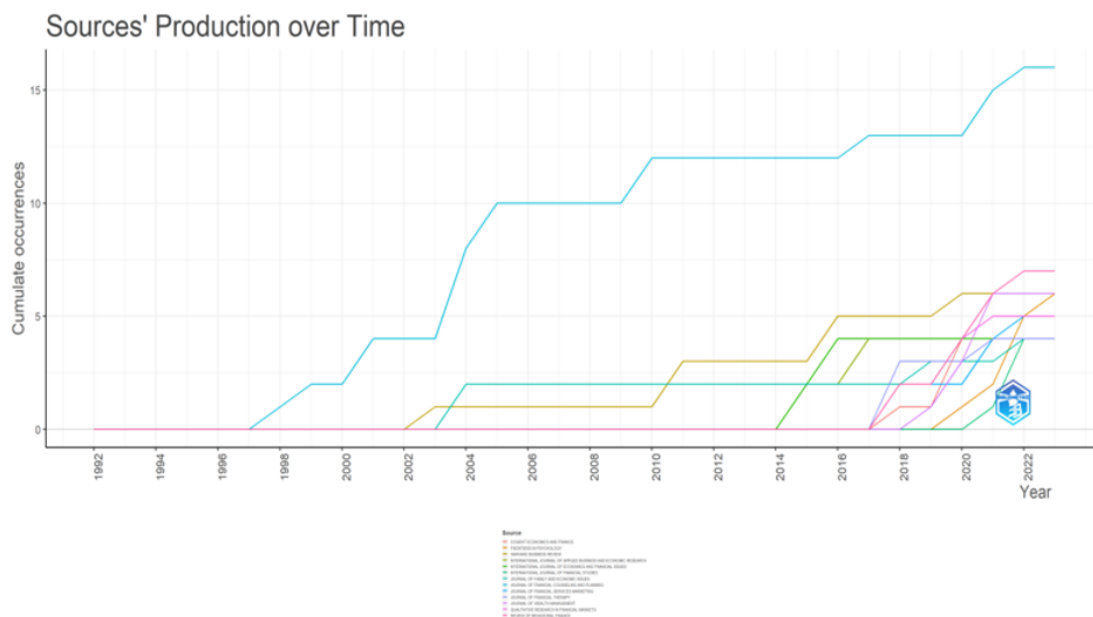
2.2.10. Source Dynamic

The Journal of Financial Counseling and Planning has featured a series of articles on the topic of behavioral finance since its inaugural publication in 1998. Over the years, the journal has continued to publish articles on this subject, with a total of 16 articles

on behavioral finance having been published as of 2023. The Behavioral Finance Journal commenced active publication on the relevant topic in 2018. Subsequently, the journal has published one or two articles in most years. The initial publication of an article by HARVARD BUSINESS REVIEW occurred in 2003, followed by a subsequent article in 2011. It is noteworthy that in the latter year, the journal released two articles. The Harvard Business Review journal has published a total of six articles, while the Frontiers in Psychology journal, which commenced publication in 2020, has also published articles on the subject matter (as evident from Figure 2.11 below).

Figure 2.11

Showing the Sources' Production over time



Source: Retrieved from Biblioshiny

2.2.11 Bradford Law

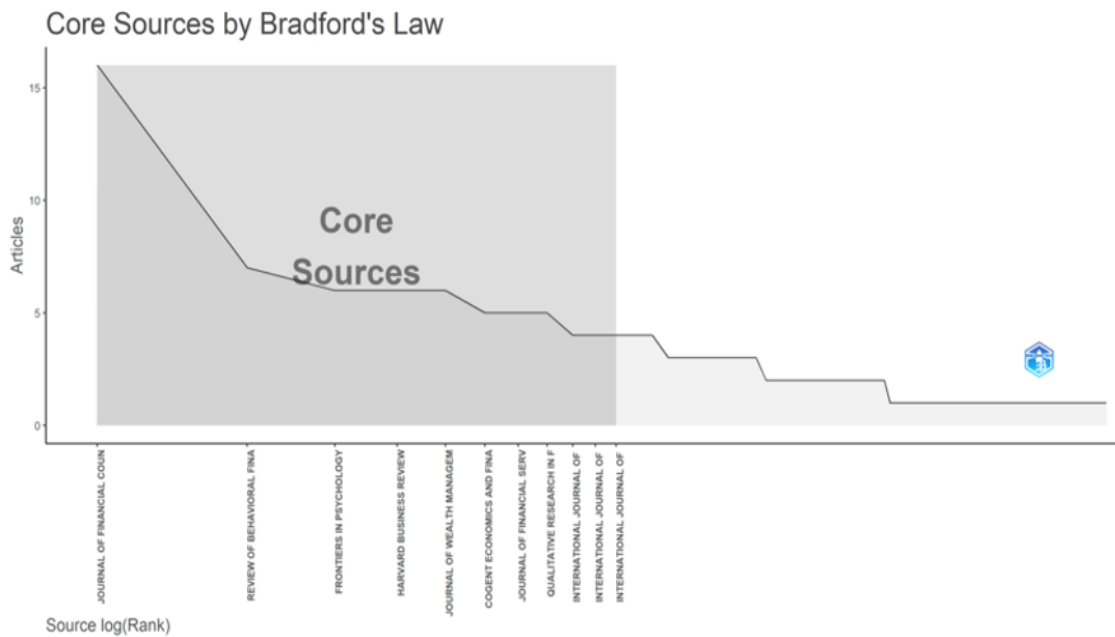
Bradford's Law categorizes scientific journals or publications within a particular discipline into three distinct zones or components. The initial region, referred to as the "core," encompasses a limited quantity of exceptionally influential academic journals that disseminate a substantial proportion of the most significant research within the discipline. The subsequent category, denoted as the "closely related" or "near-core," encompasses a greater quantity of scholarly periodicals that address interconnected

subject matters and disseminate pertinent findings, albeit with a marginally reduced level of importance. The third zone, commonly referred to as the "periphery," encompasses a considerable number of journals that disseminate articles pertaining to the subject matter, albeit with comparatively lower significance and influence in contrast to the core and near-core journals.

The figure 2.12 presented below illustrates that several journals, including the Journal of Financial Counselling and Planning, Review of Behavioral Finance, Frontiers in Psychology, Harvard business review, Journal of Wealth Management, Cogent Economics and Finance, and Journal of Financial Services Marketing, fall within the core region and have made significant contributions to the field of behavioral finance.

Figure 2.12

Shows the Bradford Law



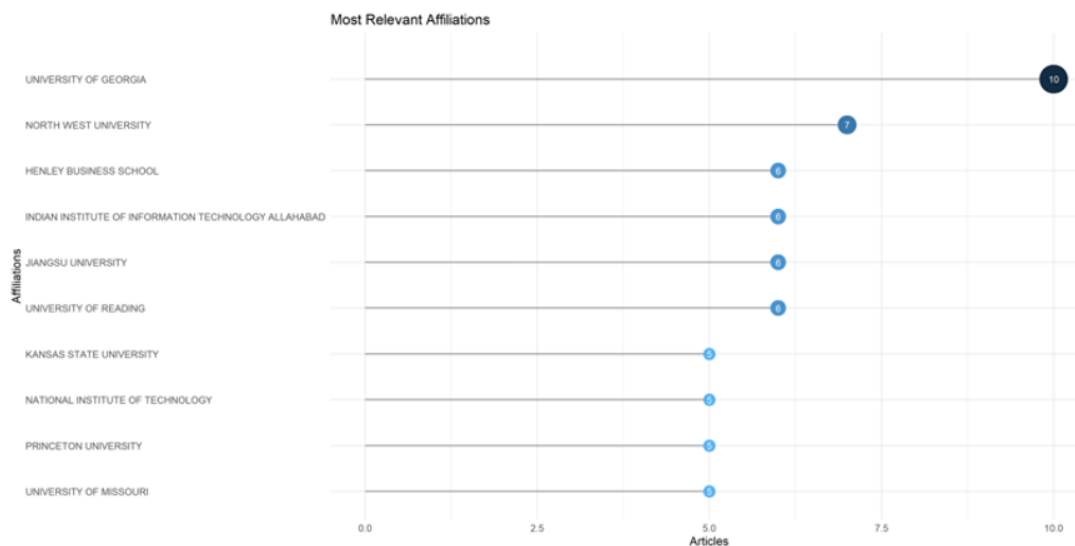
Source: Retrieved from Biblioshiny

2.2.12 Most Relevant Affiliations

The figure depicted as 2.13 illustrates the universities that are deemed most significant in their contributions to the domain. Ten articles have been produced by researchers affiliated with the University of Georgia. The North West University has secured the second position with a total of seven articles, whereas the Henley Business School, Indian Institute of Information Technology Allahabad, Jiangsu University, and the University of Reading have each produced six articles. These institutions may be regarded as universities that are actively engaged in research on "Behavioral Finance."

Figure 2.13

Shows the Most Relevant Affiliations



Source: Retrieved from Biblioshiny

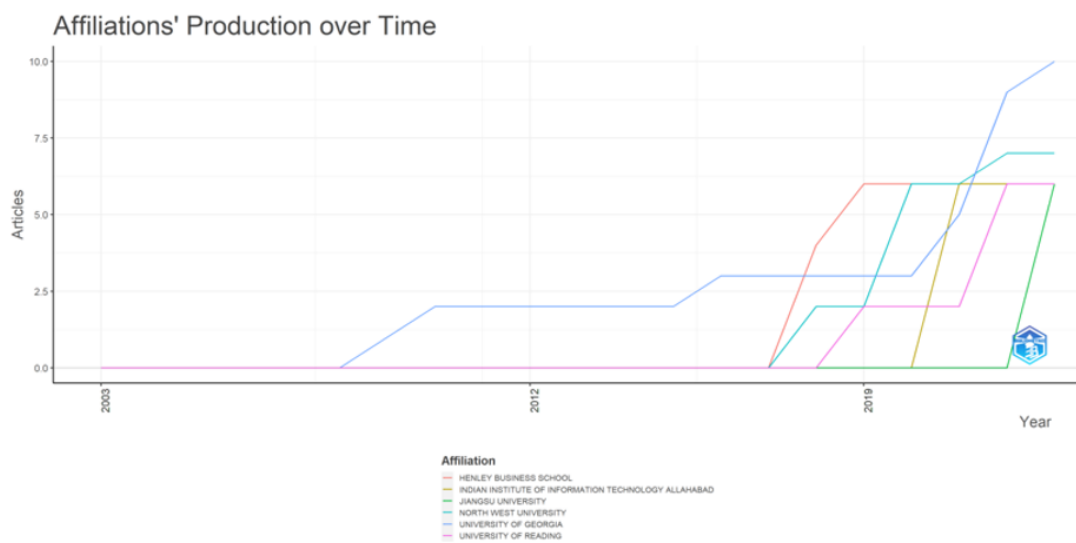
2.2.13 Affiliations' Production over Time

As previously mentioned, the University of Georgia has demonstrated the highest volume of article production. However, it is noteworthy that this institution commenced its production efforts as recently as 2010. In 2016, the university produced a total of three articles. In 2022, researchers affiliated with the university published four articles, and by 2023, the university had amassed a total of ten publications. Henley Business School commenced its publication in 2018, with four

publications. By 2023, the school had secured a total of six publications. The publication on 'Behavioural finance' was initiated by North West University as recently as 2018. Research indicates that significant institutions commenced their publishing activities in 2018 or subsequent years (shown in Figure 2.14).

Figure 2.14

Shows the Affiliations' Production over time



Source: Retrieved from Biblioshiny

2.2.14 Most Relevant Countries and Country Collaboration

Table 2.4

Showing the Most Relevant Countries

Country	Number of Articles	Total Citation	SCP	MCP	MCP Ratio
USA	83	4281	73	10	0.12
INDIA	27	285	27	0	0
PAKISTAN	21	131	18	3	0.143
CHINA	9	18	6	3	0.333
UNITED KINGDOM	8	479	4	4	0.5
ITALY	7	55	4	3	0.429
MALAYSIA	4	27	4	0	0
SOUTH AFRICA	4	24	3	1	0.25
BRAZIL	4	6	4	0	0
GEORGIA	3	6	2	1	0.333
POLAND	3	25	2	1	0.333
TURKEY	3	24	3	0	0
CANADA	3	68	2	1	0.333
GERMANY	2	38	2	0	0
LITHUANIA	2	3	2	0	0
PORTUGAL	2	2	0	2	1
ROMANIA	2	3	1	1	0.5
AUSTRALIA	2	10	1	1	0.5
BELGIUM	1	0	1	0	0
EGYPT	1	0	0	1	1

Source: Retrieved from Biblioshiny

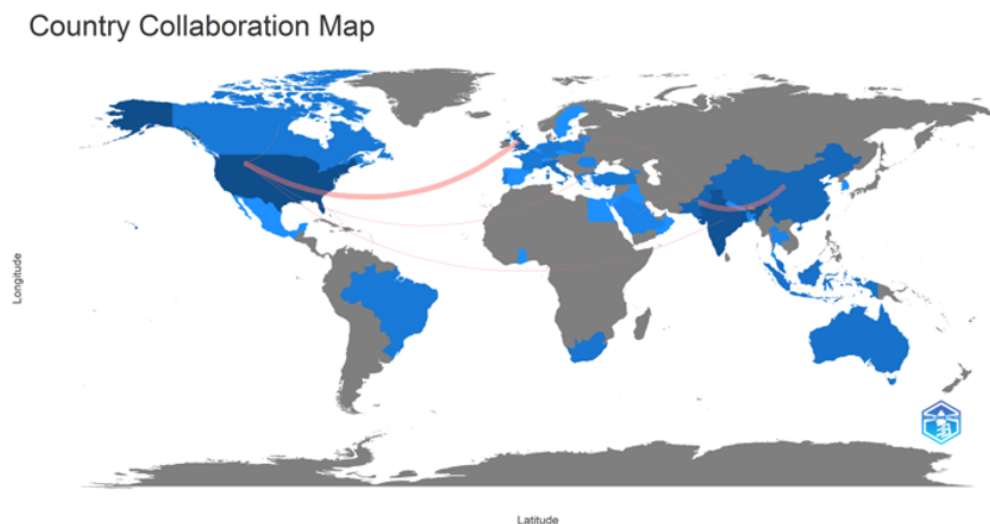
Table 2.4 presents a systematic arrangement of nations according to their respective publication counts. The top three countries, as determined by the countries of the corresponding authors, are the United States, India, and Pakistan. According to the available data, the United States has the highest number of citations, succeeded by the

United Kingdom, India, and Pakistan. In the realm of authorship and collaborative writing, many articles are produced through collaborations within a single country, also known as intra-country collaborations (SCP). Italy exhibits a high Inter-country collaboration (MCP) ratio relative to other nations. Conversely, in Egypt, the sole article produced by the country is attributed to the MCP. Several prominent nations exhibit a suboptimal MCP ratio, with India's ratio being recorded as zero.

Figure 2.15 shown below illustrates the visual representation of collaboration among authors originating from diverse nations. Based on the country collaboration map presented below, it can be inferred that most of the research articles are generated by researchers from the same country, with limited instances of collaboration. This suggests a pressing need for increased international collaboration among researchers from diverse countries, which may serve to enhance the quality of research articles.

Figure 2.15

Shows the Country Collaboration Map based on the study



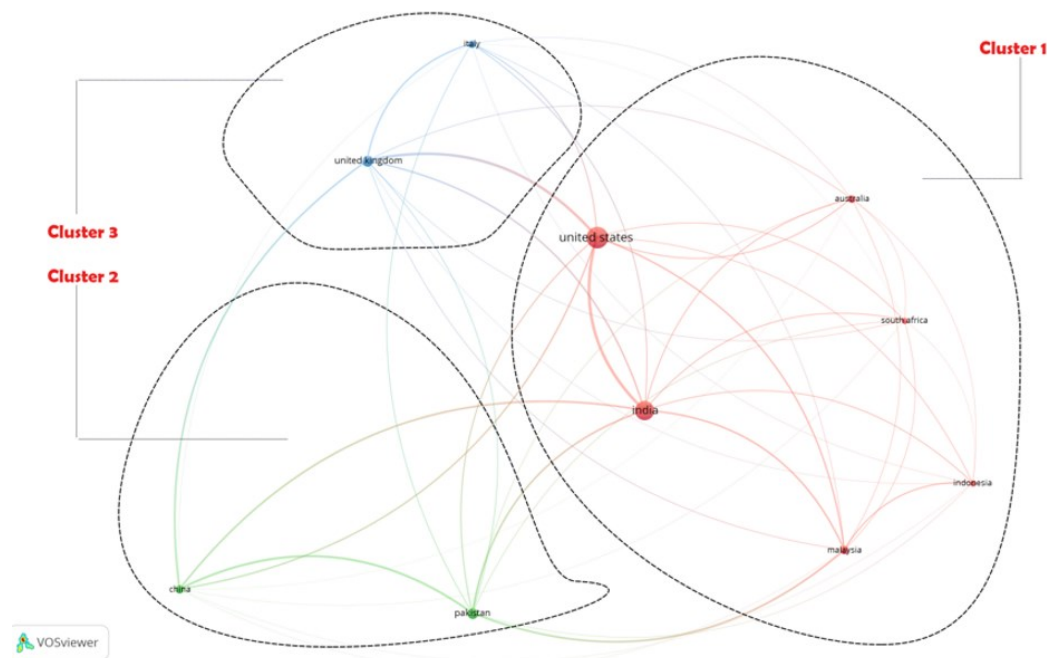
2.2.15 Bibliographic coupling of countries

Figure 2.16 illustrates the bibliographic coupling between nations. Cluster 1 is composed of six nations, namely Australia, India, Indonesia, South Africa, Malaysia, and the United States. These countries were selected by researchers who focused on risk tolerance, risk-taking attitudes, risk perceptual mapping, and financial decision-making. The cluster is visually represented in red. The second cluster is comprised

exclusively of two nations, namely China and Pakistan, as indicated by the green hue and areas of emphasis on behavioural biases, financial literacy, and financial inclusion. The third cluster is composed solely of two nations, namely Italy and the United Kingdom, represented by blue. The researchers' attention is directed toward the subjects of Financial Counselling and Portfolio decision-making, with a particular emphasis on risk preferences.

Figure 2.16

Shows from Bibliographic Coupling Based on the Countries



Source: Retrieved from Vos Viewer

2.2.16 Most Frequent Words

The word cloud depicted in Figure 2.17 illustrates the most frequently occurring terms in the field of 'behavioural finance research. The analysis of the figure and accompanying statistics reveals that the term 'risk tolerance' is the most utilized keyword, with 'financial risk tolerance', 'financial literacy', 'investment decision', and 'risk aversion' following closely behind. The prevalent vocabulary denotes the domains that have been extensively investigated by prior scholars or where their research endeavours are primarily concentrated. The infrequent lexical items in the

user's text include personality traits, behavioural economics, celebrity, and behavioural mediators. This implies that the regions have received relatively limited attention from scholars, thereby suggesting that future researchers may wish to focus their efforts on these areas for further research.

Figure 2.17

Shows the Word Cloud of the Most Frequent Words used for the study



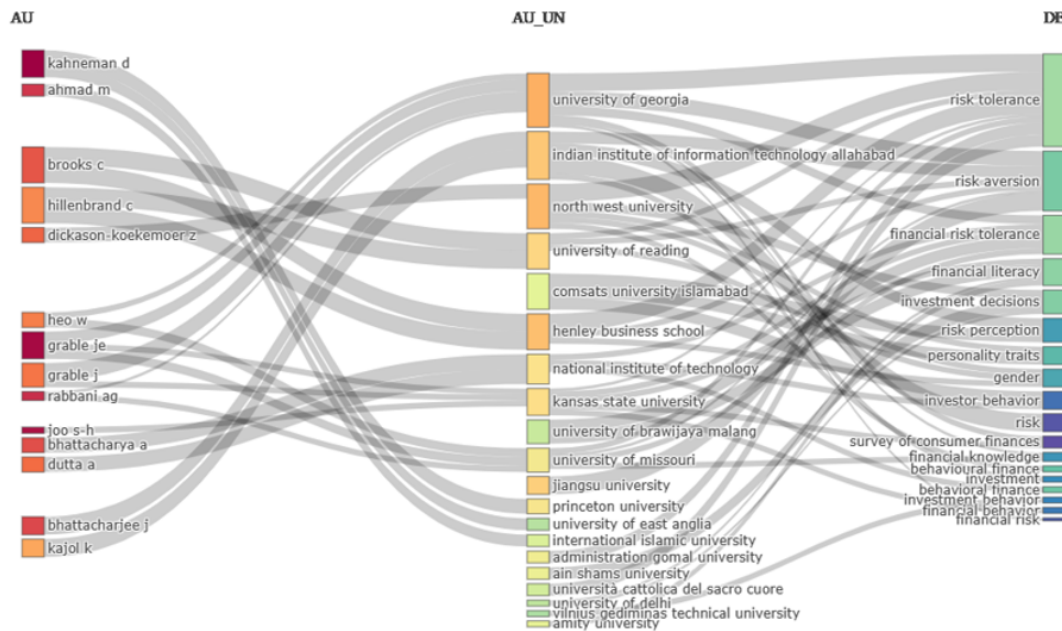
Source: Retrieved from Biblioshiny

2.2.17 Three Field Plot

The Three-field plot is a method for bibliometric analysis that provides a graphical picture of the distribution of three unique aspects of the subject matter that is the focus of the current research. The Three-field plot is a methodology that was developed by the American Society for Information Science and Technology (ASIST). Within the scope of this research, three distinct types of field plots are taken into consideration. The first field plot contains the Author, the University, and the Keyword; the second field plot contains the Author, the Country, and the Keyword; and the third field plot contains the Author, the Country, and the Keyword.

Figure 2.18

Shows the Three Field Plots of Authors, Universities, and Keywords



Source: Retrieved from Biblioshiny

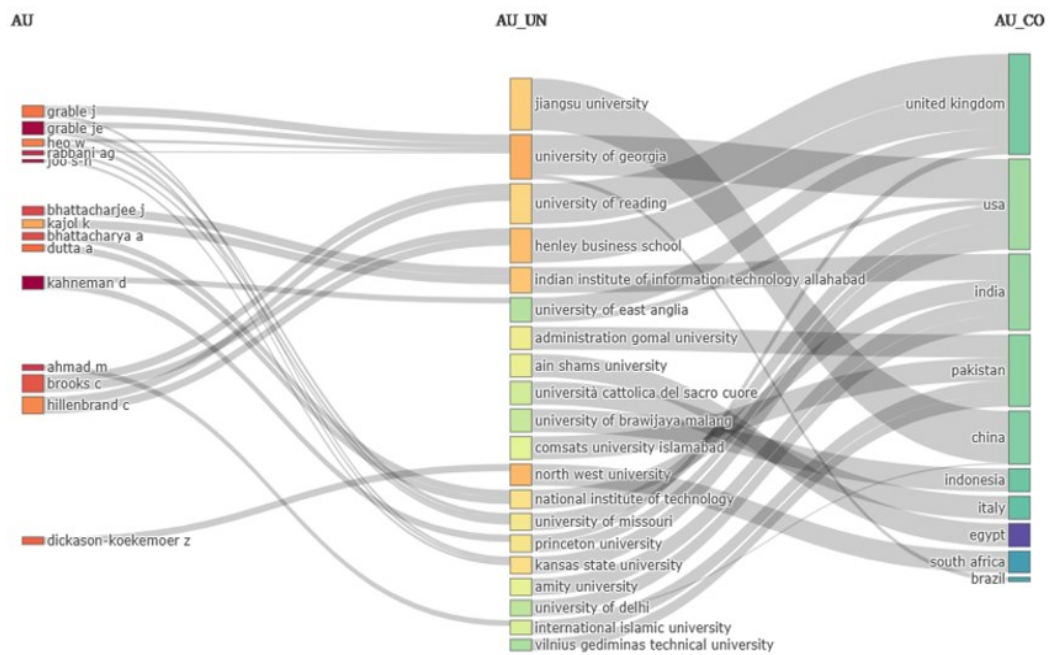
The results of a three-field plot analysis, which includes Authors, Universities, and Keywords, indicate that Heo W, Grable J, and Rabbani are affiliated with the University of Georgia. Their primary research interests are centered on the concepts of risk tolerance and risk aversion. Daniel Kahneman, a prominent scholar affiliated with Princeton University, is a significant contributor to the field of academic literature. IIT Allahabad is a prominent center for researchers in the field of behavioral finance, like the University of Georgia. The research conducted at this institution pertains to various aspects of investor behavior, such as risk, personality traits, and related topics (as portrayed in Figure 2.18 above).

The preceding tripartite diagram displays the Authors, Universities, and Keyword variables, whereas the current diagram features Country as an additional variable on the right-hand side, replacing the Author Keywords variable. This plot provides supplementary data regarding the country of origin of the respective university or institution under consideration. The Jiangsu University of China, the Georgia University of the United States, the Indian Institute of Information Technology in

Allahabad, and the University of Reading and Henley Business School in the United Kingdom are significant academic institutions within their respective countries (as pictured in Figure 2.19 below).

Figure 2.19

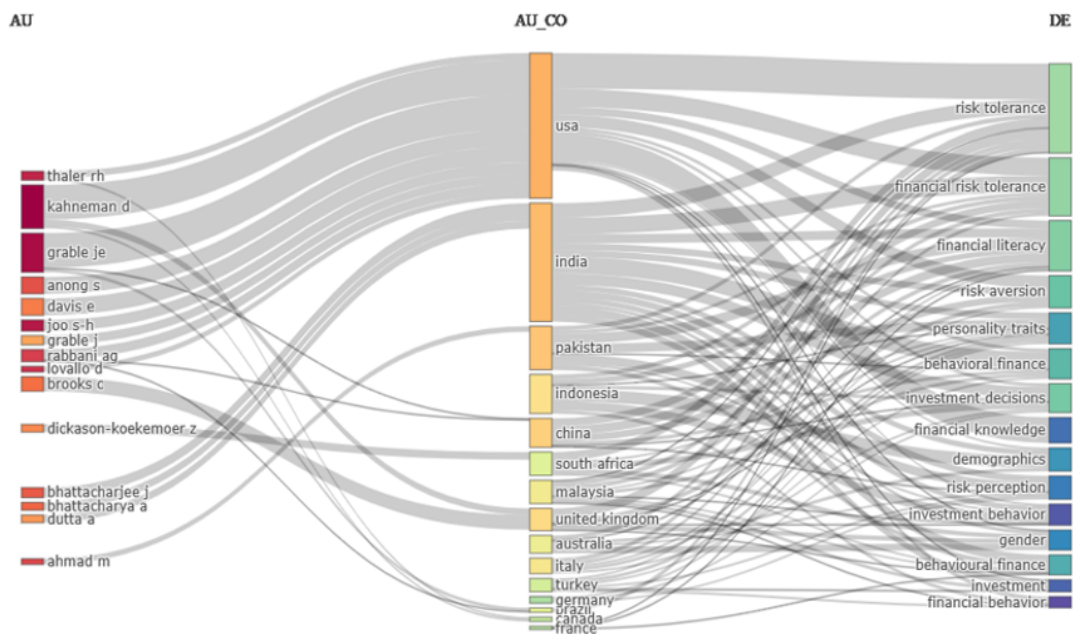
Shows the Three Field Plot of the Authors, Universities, and Countries



Source: Retrieved from Biblioshiny

Figure 2.20

Depicts the Three Field Plots of Authors, Countries and Keywords



Source: Retrieved from Biblioshiny

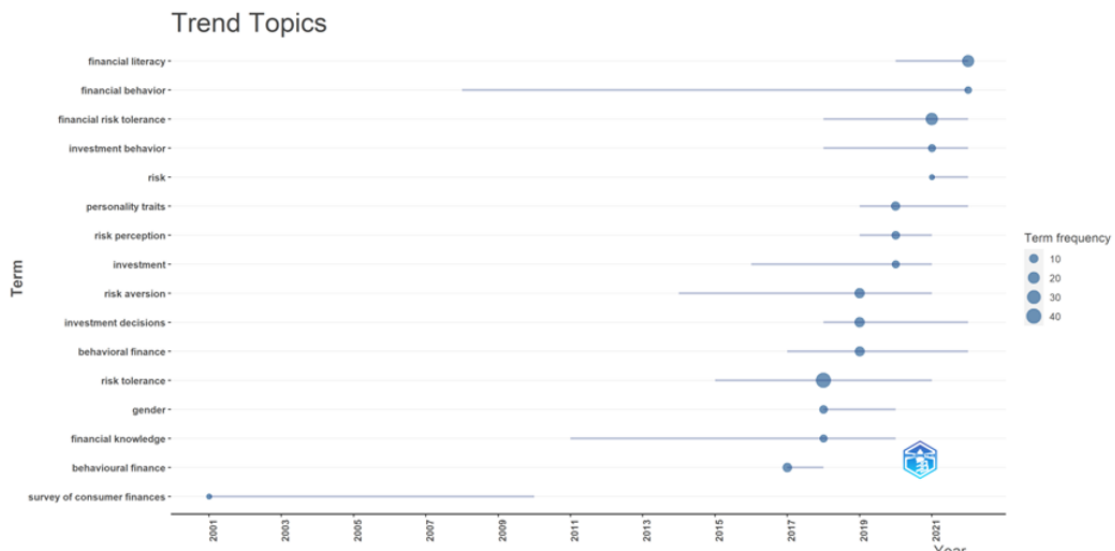
The three field plots depicted in Figure 2.20 above illustrate the relationship between Author, Country, and Keyword. When examining the three field plots, the primary emphasis is placed on the nation and authors located on the left-hand side, and the keywords situated on the right-hand side. The countries that produce the most articles include the United States, followed by India, Pakistan, Indonesia, and others. Kahneman, Grable, and Thaler are prominent authors hailing from the United States. Most keywords featured in research conducted in the United States pertaining to risk, financial risk tolerance, financial literacy, and risk aversion. Many Indian studies also center on the topics, with investment and risk perception being significant areas of focus. Bhattacharjee, Dutta, and Bhattacharya are notable authors who have made significant contributions to the field from India.

2.2.18 Trend Topics in Behavioural Finance

Figure 2.21 below shows the trend topics in behavioural finance during different periods of time. Financial literacy and financial behaviour are mostly studied in 2021, which could be considered as a recent trend topic in behavioural finance. Financial risk tolerance, investment behaviour, and risk are the areas mostly studied during the 2017-2020 period, so these topics can be considered as topics relevant in the current period and researchers could consider these topics as an area that needs more studies. Risk aversion, investment decisions, behavioural finance, risk tolerance, gender, and financial knowledge are some of the trend topics during the 2017-2019 period and still, some areas are explored by researchers. Survey on consumer finance was a trending topic in the 2001-2011 period and no studies were published in the later period, so it could infer that the topic has not much importance in the current scenario and future researchers could stay away from these types of topics.

Figure 2.21

Shows the Trend Topics in Behavioural Finance



Source: Retrieved from Biblioshiny

2.3 TCCM ANALYSIS OF FILTERED LITERATURE CITING VARIABLES BEING USED FOR THE STUDY

Findings from qualitative research are analysed and interpreted using the TCCM Analysis framework; which is clearly evident in Table 2.5 below. It offers a methodical framework for assembling information, drawing conclusions, and creating models. The process includes picking out dominant ideas, digging into how those ideas relate to one another, and figuring out how outside influences shape the phenomena of interest.

Table 2.5*Shows the TCCM Analysis for Selected Works of Literature for the Study*

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
1	Grable J.E.; Rabbani A. (2023)	The Moderating Effect of Financial Knowledge on Financial Risk Tolerance	Prospect Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Regret Theory (Loomes. G & Sugden. R); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P);	United States of America	This study examines how subjective and objective financial knowledge moderate the relationship between an investor's financial risk tolerance and demographic factors thought to be important descriptors of financial risk tolerance.	The dataset comprised 80,000 cross-sectional answers. Analyses utilized a randomly chosen sub-sample of 10% of respondents (N = 8038)	Males and more-educated people have greater investment risk tolerance (IRT). SFK correlated with IRT. Objective financial knowledge (OFK) moderated the age-IRT connection, whereas SFK moderated the gender-IRT association. OFK moderated the positive link between education and IRT, whereas SFK moderated the relationship between IRT and family income.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Gambling Affinity Theory (Miller et al.); Big Five Personality Traits Theory				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			(McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey; Goleman. D); Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C)				
2	Heo. W; Rabbani. A; Grable. J.E;	The Alpha and Omega of	Prospect Theory (Kahneman.	Canada	The project will evaluate different	Classical psychometric theory-based	Reliability estimations based on Cronbach's alpha, omega, and the

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
	Roszkowski. M (2022)	Financial Risk Tolerance	D & Tversky. A); Regret Aversion Theory (Kahneman. D & Tversky. A); Framing Effect (Tversky. A & Kahneman. D); Mental Accounting Theory (Thaler. R); Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O)		reliability metrics to Cronbach's alpha for a commonly used research-focused financial risk-tolerance scale.	assessment methods employ Cronbach's alpha to estimate scale reliability. The dataset comprises 179,450 observations.	GLB vary, although they are mostly comparable.
3	Gautam C.; Wadhwa R.; Raman T.V. (2022)	Examining Behavioural Aspects of Financial	Prospect Theory (Kahneman. D & Tversky.	India (NCR Region)	The research examines working women's	The study uses a quantitative approach to predict	Financial literacy and personal finance planning are positively and significantly

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
		Decision Making: The Working Women Perspective	A); Mental Accounting Theory (Thaler. R); Regret Theory (Loomes. G & Sugden. R); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias		financial decision-making in India's National Capital Region. Financial literacy, risk behaviour, and working women's financial decisions are examined.	relationships between variables using primary data from a structured questionnaire on a 5-point Likert scale and a partial least square-structural equation modelling (PLS-SEM) approach.	associated with working women's financial decision-making. Financial literacy is linked to attitude, conduct, and knowledge.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Gambling Affinity Theory (Miller et al.); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey; Goleman. D); Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C)				
4	Chujan W.; Ngoc N.L.B.; Faizi A.S. (2022)	Locus of Control on Financial Behaviour and Financial Risk Attitude	Prospect Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Regret Theory (Loomes. G	Australia	The locus of control—the degree to which a person feels that life events are the result of his/her actions—is the non-cognitive skill studied.	The Household Income Labour Dynamics of Australia (HILDA) Survey questioned 14000 people from 7682 homes.	The research uses Australian panel data to demonstrate that locus of control positively affects risk attitudes among older people, who vary from younger people. Females alone show a risk attitude difference

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			& Sugden. R); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); ; overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman.				between young and elderly.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			D & Tversky. A); Mental Accounting Theory (Thaler. R); Gambling Affinity Theory (Miller et al.); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey;				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Goleman. D); Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C)				
5	Behera Y.D.P.; Nanda S.S.; Sharma S.; Sahoo T.R. (2022)	Examining Risk Absorption Capacity as a Mediating Factor in the Relationship between Cognition and Neuroplasticity in Investors in Investment Decision Making	Dual Process Theory (Petty. R.E & Cacioppo. J); Prospect Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Regret Theory (Loomes. G & Sugden. R); Anchoring & Adjustment	India	The research examines how risk-absorption attitudes mediate investor cognition and neuroplasticity.	Covariance-based structural equation modelling was used to assess 506 stratified random samples of retail investors.	Risk absorption links investor cognition with neuroplasticity. The study's findings are expected to help equity-related financial product marketers like depository participants, brokers, mutual funds, and SIP institutions formulate policy, heal psychological trauma from past losses, and overcome reluctance to invest in stock markets.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Mental				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Accounting Theory (Thaler. R); Gambling Affinity Theory (Miller et al.); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey; Goleman. D); Myer Briggs				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C)				
6	Singh Y.; Adil M.; Haque S.M.I. (2022)	Personality traits and behaviour biases: the moderating role of risk-tolerance	Prospect Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory	India	Risk-tolerance moderates the connection between personality characteristics and behavioural biases.	847 individual investors were surveyed in a cross-sectional study. The research used convenience sampling. SEM and SPSS PROCESS macro v3.0 were used to test hypotheses.	Neuroticism affected herding, temperament, and anchoring bias. The prospect theory and practical implications for investors and financial advisers showed that risk-tolerance moderates the link between personality factors and behavioural biases.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			(Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfiden ce Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Gambling Affinity Theory (Miller et al.); Big Five Personality				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey; Goleman. D); Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C); BB & K Personality Model				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			(Bailard et al.)				
7	Thanki H.; Shah S.; Sapovadia V.; Oza A.D.; Burduhos-Nergis D.D. (2022)	Role of Gender in Predicting Determinants of Financial Risk Tolerance	Life Cycle Theory (Modigliani. F & Brumberg. R); Human Capital Theory (Becker. G); Gender Socialisation Theory (Piaget. J); Prospect Theory (Kahneman. D & Tversky. A)	India (Gujarat state)	The study seeks to establish if financial risk tolerance was impacted by gender or by the same characteristics.	This research used Type-A and Type-B personality types, financial literacy, and six demographic parameters—marital status, age, education, income, profession, and number of dependents—as independent factors and gender as a dividing variable. This investigation used 671 investor data.	Six of eight independent factors—personality type, financial literacy, marital status, income, employment, and number of dependents—determined male investors' financial risk tolerance. Four factors—personality type, financial knowledge, marital status, and income—influence female investors' financial risk tolerance.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
8	Paisarn W.; Chancharat N.; Chancharat S. (2021)	Factors Influencing Retail Investors' Trading Behaviour in the Thai Stock Market	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A &	Thailand	In 2016, Thai retail investors traded.	The research examined investor prejudice by surveying 491 investors. Empirical research.	Experienced traders keep stocks less often. Demographic characteristics may separate investors by their overconfidence bias, as seen in Turkey, India, and Vietnam.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey; Goleman. D); Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C)				
9	Grable J.E.; Joo S.-H.; Kwak E.J. (2021)	Describing Gambling Affinity: The Role of Personality Traits	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky.	United States of America	The study examines how personality factors predict casino gamblers who spend a lot.	A Dynata-distributed Qualtrics survey gathered data. This survey included little over 500 18-year-olds.	Personalities affect gambling inclination. Using Big Five measures, highly extraverted respondents were most inclined to bet a day's salary at a casino. Moderate trait scores cluster members

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			A); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfiden ce Bias Theory (Barber & Odean); Regret Aversion Theory				gambled. Subjective financial knowledge, pleasure, and risk tolerance also influenced gambling inclination.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			(Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Gambling Affinity Theory (Miller et al.) Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman. M); Emotional Intelligence model (Mayer				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			& Salovey; Goleman. D); Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C)				
10	Bhattacharjee J.; Singh R.; Kajol K. (2021)	Risk perception in respect of equity shares: A literature review and future research agenda	Prospect Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Regret Theory (Loomes. G & Sugden. R); Anchoring & Adjustment Theory (Kahneman. D & Tversky.	Reviewed based on papers from various countries.	The paper thoroughly reviews equity investment risk perception literature.	Source of data: Secondary. Review based paper.	A systematic literature study is conducted to investigate the causes of equity-share-related risk perception and its effects on equity investing behaviour. The axiomatic, sociocultural group, emotive, marketing mix, and psychometric methods are used to quantify risk perception. Demographic factors, emotional reactions,

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R);				economic crisis, framing effects, loss aversion, heuristics, and others influence risk perception, which affects investment behaviour like portfolio choice, market-linked investment, entrepreneurial success, and retirement planning.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Gambling Affinity Theory (Miller et al.); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey; Goleman. D); Myer Briggs Type Indicator (MBTI)				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Theory (Myers. I.B & Briggs. K.C)				
11	Thanki H.; Baser N. (2021)	Determinants of Financial Risk Tolerance (FRT): An empirical investigation	Prospect Theory (Kahneman. D & Tversky. A); Regret Aversion Theory (Kahneman. D & Tversky. A); Framing Effect (Tversky. A & Kahneman. D); Mental Accounting Theory (Thaler. R); Expected Utility Theory (Bernoulli. D & Neumann. J.V. &	Malaysia	Psychological variables affect financial risk tolerance.	1204 Malaysian university students were sampled. Empirical research.	Gender and ethnicity significantly affect financial risk tolerance. Students with high financial risk tolerance (FRT) are positively connected with regret, trust, attribution of success to chance, overconfidence, and social engagement, but not happiness.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Morgenstern. O)				
12	Kumar V.; Dudani R.; Latha K. (2021)	The big five personality traits and psychological biases: an exploratory study	Prospect Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M) Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman.	India	The Big Five Personality characteristics and herd behaviour, overconfidence, and loss aversion biases are examined in this research.	Exploratory research examines biases and personalities. The research creates a systematic bias test battery. The research conceptualised and verified overconfidence, loss aversion, and herd bias items. 200 of 294 investors returned the test battery, a 68% response rate. The research used CFA to validate the	Extraversion and Openness to experience were shown to be causally linked to all three biases.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			D); Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Gambling Affinity Theory (Miller et al.); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory			psychological biases questionnaire and structural equation modelling for route analysis.	

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			(Rotter. J); Sensation- Seeking Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey; Goleman. D); Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C); BB & K Personality Model (Bailard et al.)				
13	Rasheed, Muhammad	Factors influencing	Efficient Market	Pakistan (Islamabad	The study examines the	Quantitative research.	The model shows how behavioural variables

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
	Haroon; Rafique, Amir; Zahid, Tayyaba; Akhtar, Muhammad Waqar (2020)	investor's decision making in Pakistan: Moderating the role of locus of control	Theory (Fama. E); Locus of Control Theory (Rotter. J)	, Lahore, and Sargodha)	effects of representative bias and availability bias, two of the most commonly used heuristics, on investment decision-making and whether either locus of control interacts with the said relations through the theoretical proposal and empirical evidence.	Survey questionnaire. 227 investors. Data Analysis: Baron and Kenny (1986)-based Structural Equation Modelling and Simple Linear Regression.	might drive investors to poor decisions.
14	Kappal J.M.; Rastogi S. (2020)	Investment behaviour of women entrepreneurs	Prospect Theory (Kahneman. D & Tversky. A); Mental	India (Pune, Maharashtra a state)	The research examines women entrepreneurs'	18 in-depth exploratory interviews were performed using qualitative	Women entrepreneurs were more cautious and saw investments as long-term instruments. They took business

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Accounting Theory (Thaler. R); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Overconfidence Bias Theory (Barber & Odean)		investing choices.	inquiry to determine the causes of women entrepreneurs' investing behaviour, an increasing area of investment. Open-coding assessed the data.	risks but not investment ones.
15	Karki D.; Kafle T. (2020)	Investigation of Factors Influencing Risk Tolerance among Investors	Expected Utility Theory (Bernoulli. D & Neumann. J.V. &	Nepal	The research examines the Nepalese stock market general investors' risk	The research uses ordinal logistic regression to examine how	Financial knowledge, not education, drives investor risk appetite, according to studies. It also reveals that

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
		using Ordinal Logistic Regression: A case from Nepal.	Morgenstern. O); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman. M); Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C); Prospect Theory (Kahneman. D & Tversky. A); Mental		tolerance criteria.	education, gender, financial literacy, years in trading, past loss, and margin lending affect risk tolerance.	investor experience strongly affects riskiness.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Accounting Theory (Thaler. R)				
16	Rabbani A.G.; Yao Z.; Wang C.; Grable J.E. (2020)	Financial Risk Tolerance, Sensation Seeking, and Locus of Control Among Pre-Retiree Baby Boomers	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation	United States of America	The 2014 wave of the National Longitudinal Survey of Youth 1979 explored how sensation seeking and locus of control affect financial risk tolerance among pre-retiree baby boomers.	Three OLS regression models reached a conclusion. T-tests and ANOVA evaluated demographic group variables.	Sensation-seekers have a high-risk tolerance and an internal centre of control. Non-sensation seekers and external locus of control baby boomers have lower financial risk tolerance.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Big Five Personality Traits Theory (McCrae & Costa); Locus				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			of Control Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey; Goleman. D); Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C)				
17	Grable J.E.; Heo W.; Rabbani A. (2020)	Characteristics of random responders in a Financial risk-	Expected Utility Theory (Bernoulli. D & Neumann. J.V. &	United States of America	Marjanovic, Holden, Struthers, Cribbie, and Greenglass	Research Design: Analytical Research.	Hyper-consistent respondents were older married males who made their own financial and investing

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
		tolerance Questionnaire	Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A)		(2015) presented inter-item standard deviation (ISD) scores to classify financial risk-tolerance questionnaire respondents as hyper-consistent, conscientious, or random.		choices. The least risk-tolerant were hyper-consistent. Conscientious respondents were more likely to have a good degree and to delegate financial and investment choices. Conscientious respondents had financial risk-tolerance ratings between hyper-consistent and random. Random respondents were younger, unmarried, and less educated.
18	Lawrenson J.; Dickason-Koekemoer Z. (2020)	A model for female South African investors' financial risk tolerance	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect	South Africa	The project will create a structural equation model to better characterise female investors	Independent samples and reliability Gender and investor risk tolerance were examined	Men are riskier investors than women. Investor risk tolerance was strongly impacted by education. Personality affects

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Theory (Kahneman. D & Tversky. A); Regret Aversion Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman. M)		based on their personality, risk tolerance, and education.	using t-tests. SEM was used to predict female investors' financial risk tolerance based on personality and education. The investing business sampled 1,065 investors using purposive sampling.	female investors' financial risk tolerance.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
19	Thanki H.; Karani A.; Goyal A.K. (2020)	Psychological antecedents of financial risk tolerance	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A &	India	The research links financial anxiety, financial contentment, fixation with money, personality type, self-esteem, and sensation-seeking behaviour to the FRT in a unique way.	Confirmatory factor analysis and structural equation modelling tested variables and hypotheses. 600 investors were sent surveys and 4000 were emailed surveys. Judgmental Sampling reduced the sample to 386.	Financial anxiety, fixation with money, personality type, self-esteem, and sensation-seeking behaviour positively connect with FRT, whereas financial happiness negatively correlates.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey; Goleman. D); Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C)				
20	Kuti M.; Schepp Z. (2020)	Aging society and attitude to risk	Life Cycle Theory (Modigliani. F & Brumberg. R); Human Capital Theory (Becker. G); Gender	Hungary	This study fills a gap in Hungarian academic literature by systematising the research trends of decision-making and risk	Portfolio selection and questionnaires yielded conclusions.	Risk-taking declines with age. A new investing dimension is age-dependent risk preferences.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Socialisation Theory (Piaget. J); Prospect Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Regret Theory (Loomes. G & Sugden. R); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P);		preferences at older ages according to various methodological approaches, such as experiment, questionnaire, or wealth portfolio holding, and identifying the effects of age and financial literacy.		

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean)				
21	Masenya R.W.; Dickason-Koekemoer Z. (2020)	A conceptual model of the influence of South African investor well-being on risk tolerance	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Anchoring & Adjustment Theory (Kahneman.	South Africa	South African investor well-being risk tolerance will be modelled using a structural equation model.	Quantitative research employed secondary data. Data analysis using structural equation modelling.	Risk tolerance improves investor well-being. Financial well-being increases life pleasure. Financial well-being, physical activity, gender, and income positively and significantly affect risk tolerance. Life satisfaction did not significantly affect risk tolerance.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Big Five Personality Traits Theory (McCrae & Costa)				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
22	Muktadir-Al-Mukit D. (2020)	Do sociodemographic factors have influence on risk tolerance level of stock market investors? An analysis from a developing country perspective	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A) Regret Theory (Loomes. G & Sugden. R); Efficient Market Theory (Fama. E); Overconfidence Bias Theory (Barber & Odean) Behavioural Life-Cycle	Bangladesh	The research examines sociodemographic characteristics and stock market investors' risk tolerance, as shown by their trading conduct, in a growing market economy.	The report surveyed Bangladeshi capital market investors. Risk tolerance was measured using portfolio beta and 11 sociodemographic parameters.	Marital status, family size, and financial responsibility greatly affect stock market investors' risk tolerance. The research advises integrating retail investor behaviour into stock market legislation and investment management strategy.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Model (Shefrin & Thaler); Framing Effect (Tversky. A & Kahneman. D)				
23	Grable J.; Kwak E.J.; Fulk M.; Routh A. (2020)	A Simplified Measure of Investor Risk Aversion	Prospect Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfiden	United States of America	The single-item question matches the constant relative risk aversion estimates by combining revealed preference and propensity measuring methods.	The suggested measure correlated with other risk aversion and risk-taking metrics in a survey of 500 US investors. The suggested measure was statistically related to respondent portfolio equity and cash ownership.	The proposed measure's simplicity, intuitiveness, and alignment of question response categories to estimates of constant relative risk aversion could be useful to researchers, financial educators, investors, and investment advisors.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			ce Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Emotional Intelligence model (Mayer & Salovey; Goleman. D)				
24	Antonelli-Filho P.; Bressan A.A.; Vieira K.M.; Potrich A.C.G. (2020)	Sensation Seeking and Overconfidence in day traders: evidence from Brazil	Prospect Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Regret Theory (Loomes. G & Sugden.	Brazil	Sensation Seeking and Overconfidence will be examined in Brazil's Day traders' transaction volume.	Surveys collected original data. The least explanatory factors were eliminated using stepwise linear regressions.	Thrill and Adventure Seeking and Boredom Susceptibility/Impulsivity increased day traders' trading volume, while Sensation Seeking did not.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			R); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman.				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			D & Tversky. A); Mental Accounting Theory (Thaler. R); Gambling Affinity Theory (Miller et al.); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey;				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Goleman. D); Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C)				
25	Ritika; Kishor N. (2020)	Risk preferences for financial decisions: Do emotional biases matter?	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding	India	The research examines how emotional biases—overconfidence bias, self-control bias, loss aversion bias, and regret aversion bias—affect investor risk choices.	The "domain specific risk-taking scale" (DOSPERT) and extracts from several research are used to create a structured questionnaire to assess emotional biases and risk preferences. SEM analyses the data.	Overconfidence and self-control bias positively affect risk preferences, whereas loss aversion and regret aversion bias negatively affect them.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Gambling				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Affinity Theory (Miller et al.)				
26	Ishfaq M.; Nazir M.S.; Qamar M.A.J.; Usman M. (2020)	Cognitive Bias and the Extraversion Personality Shaping the Behaviour of Investors	Prospect Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M) Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A &	Pakistan	Heuristic biases directly and indirectly affect investors' irrational decision-making via risk perception. Investor extraversion moderates the direct and indirect correlations between heuristic biases and irrational decision-making.	The Process Macro approach (Hayes, 2017) in SPSS was used to mediate and moderate 247 investors from Pakistani brokerage companies.	Heuristic biases increase investors' risk perception and irrational decision-making. Extraversion moderates heuristic biases' direct and indirect effects on investors' irrational decision-making.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Gambling Affinity Theory (Miller et al.); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey; Goleman. D); Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C); BB & K Personality Model (Bailard et al.)				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
27	Zahera, Syed Aliya Bansal, Rohit (2019)	Do investors exhibit behavioural biases in investment decision-making? A systematic review	Prospect Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Overconfidence Bias Theory (Barber & Odean)	Reviewed based on papers from different countries.	Financial markets no longer dominate the study of human emotions, conduct, and attitudes.	From the oldest foundational work to the most current, papers were gathered throughout the years. Biases, year, country, and author-separated articles.	The study focuses on individual and institutional investors and financial advisors' investors, but the behaviour of intermediaries through which some of them invest should be examined, narrowing the population into various variables and targeting expanding economies to find unexplained theories. This research summarised 17 biases in tables.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
28	Rahman M. (2019)	Propensity toward financial risk tolerance: an analysis using behavioural factors	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A &	Malaysia	Six fundamental behavioural characteristics affect financial risk tolerance (FRT). It examines how religion affects FRT and behavioural aspects.	Surveys gathered empirical data. Six Klang Valley public universities received 1,679 surveys. 1,204 surveys were completed and analysed. Structural equation modelling validates and evaluates this study's research model.	FRT is affected by regret, trust, happiness, attribution of success to chance, and overconfidence, but not social interaction.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey; Goleman. D); Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C)				
29	Jain J.; Walia N.; Gupta S. (2019)	Evaluation of behavioural biases affecting investment decision making of individual equity investors by fuzzy analytic	Prospect Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Anchoring & Adjustment	India (Punjab state)	The research ranks behavioural biases affecting Punjab, India, equities investors' investing decisions. Investors and	Punjab, India, individual stock investors were surveyed. Punjab stock investors' decision-making variables were ranked using	Herding bias, loss aversion bias, and overconfidence bias dominated.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
		hierarchy process	Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Overconfidence Bias Theory (Barber & Odean)		other capital market players might improve investing choices by understanding behavioural biases.	fuzzy analytic hierarchy.	
30	Salem R. (2019)	Examining the investment behaviour of Arab women in the stock market	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky.	Middle East (Saudi Arabia & Jordan)	This research helps us understand Arab women's investing behaviours, including risk tolerance, confidence,	547 Arab men and women investors in Saudi Arabia and Jordan answered 600 online questions.	Arab women invest less in the stock market than Arab males due to herding behaviour, weaker investing knowledge, confidence, and financial risk tolerance.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			A); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfiden ce Bias Theory (Barber & Odean)		literacy, and herding.		
31	Brooks C.; Sangiorgi I.;	Experience wears the	Expected Utility Theory	United Kingdom	A vast collection of	Over 4,000 advisor-client	Men are more financially risk-tolerant

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
	Hillenbrand C.; Money K. (2019)	trousers: Exploring gender and attitude to financial risk	(Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D);		surveys about actual investment choices is used to research gender variations in financial risk perceptions.	encounters were studied. Descriptive research.	than women, but this difference cannot be explained by age, job habits, or work status. Women's investment goods are more affected by their risk choices than men's.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Gambling Affinity Theory (Miller et al.)				
32	Bhattacharya A.; Dutta A. (2019)	Predicting a Model for the Financial Risk Tolerance of Retail Investors of Durgapur City on Their	Prospect Theory (Kahneman. D & Tversky. A); Mental Accounting Theory	India (Durgapur city, West Bengal state)	Investors in Durgapur, West Bengal, India's industrial hub, were assessed for FRT.	Investor demographics were independent variables and their questionnaire	The number of earners was the most sensitive variable in a model to predict respondents' FRT, while married status was the least sensitive.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
		Demographic Factors Using Multiple Discriminant Analysis	(Thaler. R); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory			responses were evaluated using multiple discriminant analysis (MDA).	

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			(Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Gambling Affinity Theory (Miller et al.); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman. M); ;Emotional Intelligence model (Mayer				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			& Salovey; Goleman. D) Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C); BB & K Personality Model (Bailard et al.)				
33	Dickason, Zandri; Ferreira, Sune (2018)	Establishing a link between risk tolerance, investor personality and behavioural finance in South Africa	Prospect Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Regret Theory (Loomes. G & Sugden.	South Africa	The study examined how risk tolerance and investor personality impact behavioural finance biases and investment decisions.	1171 responses. The new DOSPERT Scale assessed 28 risk-taking factors.	Loss aversion and mental accounting biases influence conservative, low-risk investors. Self-control bias impacts high-risk investors.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			R); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Expected Utility Theory (Bernoulli. D & Neumann.				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			J.V. & Morgenstern. O); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman. M); Myer Briggs Type Indicator (MBTI) Theory (Myers I.B & Briggs K.C)				
34	Ahmad M. (2018)	Impact of neurotransmitters, emotional intelligence and	Big Five Personality Traits Theory (McCrae &	Pakistan	Most investors and investing advising experts use typical	455 Pakistan stock exchange investors.	The study expands our understanding of Pakistani stock market investors' conduct and

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
		personality on investor's behaviour and investment decisions	Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey; Goleman. D); Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C)		finance models and ignore neurotransmitters, emotional intelligence, and investor personality.	Hierarchical Latent Variable Models in PLS-SEM were used to analyse data using reflective-formative constructs, following Becker et al. (2012).	decisions and calls for future research to identify universal latent characteristics for a neuro finance-behavioural finance model. openness, awareness, and emotional intelligence notably self-emotion evaluation and management, affect investor conduct, specifically investment horizon, personalising of loss, and control level. Dopamine and epinephrine also affect investors' investing choices.
35	Dickason Z.; Ferreira S.J. (2018)	The effect of age and gender on financial risk	Life Cycle Theory (Modigliani.	South Africa	Gender and age were prioritised among South	Quantitative research.	Men take greater risks than women. Male and female 35-49-year-old

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
		tolerance of South African investors	F & Brumberg. R); Human Capital Theory (Becker. G); Gender Socialisation Theory (Piaget. J)		African investors. This research sought to accurately profile South African investors' risk tolerance by gender and age. Investment organisations may utilise this research to anticipate risk tolerance depending on gender and age.	600 convenience-sampled investors. Online survey.	and over-50-year-old investors differed statistically. Based on binary regression, investors over 50 were more risk-tolerant in all age groups.
36	Oehler A.; Wedlich F. (2018)	The relationship of extraversion and neuroticism with risk attitude, risk perception, and return expectations	Prospect Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R);	Germany	The research examines how extraversion and neuroticism affect investing risk-taking.	342 undergraduate business students completed questionnaires to assess their extraversion,	Neurotic people are more risk-averse than extraverts. Risk-averse conscientious people see asset investments as riskier.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Regret Theory (Loomes. G & Sugden. R); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); ; Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean)			neuroticism, risk attitude, risk perception, and return expectations.	

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman. M); Myer Briggs Type Indicator (MBTI) Theory				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			(Myers. I.B & Briggs. K.C)				
37	Brooks C.; Sangiorgi I.; Hillenbrand C.; Money K. (2018)	Why are older investors less willing to take financial risks?	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory	United Kingdom	Age and financial risk tolerance are examined using attitude-to-risk questionnaires completed by customers while meeting with financial advisers.	Risk tolerance decreases slowly with age in a unique database of almost half a million such surveys.	The research indicates a moderate age impact in risk tolerance that cannot be explained by other differences between younger and older investors.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			(Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean)				
38	Marinelli, Nicoletta; Mazzoli, Camilla; Palmucci, Fabrizio (2017)	Mind the Gap: Inconsistencies Between Subjective and Objective Financial Risk Tolerance	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Regret Theory (Loomes. G	Italy	The method distinguishes between portfolio composition discrepancies and self-assessment inconsistencies.	Sample: 2374 investors.	Low financial knowledge, high wealth, no children, and reckless economic behaviour can cause such anomalies.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			& Sugden. R); Cultural Theory (Douglas. M & Wildavsky. A)				
39	Irاندoust, Manuchehr (2017)	Factors associated with financial risk tolerance based on proportional odds model: Evidence from Sweden	Behavioural Life-Cycle Model (Shefrin & Thaler); Framing Effect (Tversky. A & Kahneman. D)	Sweden (Malmo)	This research uses a random Swedish sample to evaluate if demographic characteristics, risk aversion, and impatience are linked.	180 people. Data collection: Random lottery buyer questionnaires and face-to-face interviews.	Portfolio structure, gender, age, education, income, financial stability, financial literacy, marital status, and family size affect financial risk-taking.
40	Cruciani, Caterina (2017)	Investor decision-making and the role of the financial advisor: A behavioural finance approach	Prospect Theory (Kahneman. D & Tversky. A); Agency Theory (Ross. S & Mitnick. B); Trust Theory (Gibb.	Italy	Discussed are advisor roles and financial advisory norms.	It examines financial advising from a behavioural viewpoint and how adviser-client relationships may impact	It discusses behavioural finance's approach to portfolio selection and how trust may help advisers meet customers' demands.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			J); Behavioural Decision Theory (Edwards. W)			advisor performance. Descriptive research.	
41	Fisher P.J.; Yao R. (2017)	Gender differences in financial risk tolerance	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M);	United States of America	Gender differences in financial risk tolerance will be examined using the large, nationally representative Survey of Consumer Finances. The model lets explanatory variables change to examine gender differences in financial risk tolerance.	2246 households. SCF statistics from 2013. Full-Interaction Model Data Analysis	Gender disparities in financial risk tolerance are caused by gender differences in individual factors, not gender itself. Income uncertainty moderates the gender-risk tolerance connection, whereas net worth moderates some risk tolerance.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean)				
42	Kourtidis D.; Chatzoglou P.; Sevic Z. (2017)	The role of personality traits in investors trading behaviour: Empirical evidence from Greek	Prospect Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing	Greece	This research investigates how personality characteristics affect investors' trading.	This research uses an integrated model and SEM (structural equation modelling) analysis to analyse assumptions in a complicated	Personalities affect investors' stock trading performance. Overconfidence affects stock trading volume, frequency, and performance the most.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman.			real-world context.	

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			M); Emotional Intelligence model (Mayer & Salovey; Goleman. D); Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C)				
43	Shobha T.S.; Chakraborty S. (2017)	Psychological factors contributing to the financial well-being of an individual: A review of empirical literature	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Anchoring &	Reviewed works of different countries.	Psychological variables affect financial well-being more than demographic, social, and economic factors, according to research. These psychological elements	This research examined 25 financial well-being studies from 2000–2016 from different electronic databases and peer-reviewed journals.	Selected articles showed considerable gaps in the interplay of psychology with financial well-being and indicated good financial habits including financial knowledge and planning as impacting financial wellbeing.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky.		required additional study to identify financial well-being-affecting psychological components. This study examined empirical and academic research.		

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			A); Mental Accounting Theory (Thaler. R); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey; Goleman. D); Myer Briggs Type Indicator (MBTI)				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Theory (Myers. I.B & Briggs. K.C)				
44	Nguyen L.; Gallery G.; Newton C. (2017)	The joint influence of financial risk perception and risk tolerance on individual investment decision-making	Prospect Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Regret Theory (Loomes. G & Sugden. R); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory	Australia	Advisers must accurately analyse clients' risk to provide effective advice.	Our Australian online survey of financial advisor customers (n = 364) shows that risk tolerance and risk perception affect risky-asset allocation directly and indirectly.	The finding shows how both risk models affect investment decisions and emphasises the significance of analysing them in client financial advisory services.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			(Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean)				
45	Chavali, Kavita; Mohanraj, M. Prasanna (2016)	Impact of demographic variables and risk tolerance on investment decisions: An empirical analysis	Life Cycle Theory (Modigliani. F & Brumberg. R); Human Capital Theory (Becker. G); Gender Socialisation Theory (Piaget. J)	India (Bengaluru , Karnataka state)	The research used Grable and Lytton's (1999) FRT Scale.	Due to incomplete questionnaires, only 101 of 257 respondents qualified for the research. Sampling technique: Non-Probability Convenient Sampling. Descriptive and cross-sectional.	Age, gender, profession, income, and education influence investor behaviour.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
						Surveying data. 5-point Likert Scale. Chi-square, Kendall Rank Correlation, SPSS, and Factor Analysis.	
46	Holzhauer, Hunter Matthew; Lu, Xing; McLeod, Robert Wang, Jun (2016)	RiskTRACK: the five-factor model for measuring risk tolerance	Prospect Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Regret Theory (Loomes. G & Sugden. R); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding	United States of America	The work seeks to develop a novel model for empirically evaluating risk tolerance and contribute to risk tolerance and risk management research.	Regression and factor analysis have identified risk tolerance variables.	The acronymed riskTRACK model comprises the five key risk tolerance elements this article identifies: conventional risk factor, reflective risk factor, allocation risk factor, capacity risk factor, and knowledge risk factor.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean)				
47	Nguyen L.T.M.; Gallery G.; Newton C. (2016)	The influence of financial risk tolerance on investment decision-making in a financial advice context	Efficient Market Theory (Fama. E); Expected Utility Theory (Bernoulli. D & Neumann. J.V. &	Australia	The research will concentrate on customer financial literacy, confidence in the financial advising service, and	Financial advisor customers in Australia (N=538) were surveyed to evaluate a novel theoretical	Client risk tolerance and investment decision-making were positively correlated. Financial knowledge and risk tolerance were positively correlated with customer trust and

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Modern Portfolio Theory (Markowitz. H)		relationship length on investment choices.	model and assumptions.	relationship duration with the service.
48	Kannadhasan M.; Aramvalarthan S.; Mitra S.K.; Goyal V. (2016)	Relationship between Biopsychosocial Factors and Financial Risk Tolerance: An Empirical Study	Prospect Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Regret Theory (Loomes. G & Sugden. R); Anchoring & Adjustment Theory (Kahneman.	India (Raipur)	Psychology, economics, and bio-sociology are used to determine risk tolerance characteristics outside of financial services. It focuses on FRT and biopsychosocial variables.	951 retail investors with varying investing experience were surveyed using a standardised questionnaire on demographic characteristics in a cross-sectional study.	The questionnaire data shows that self-esteem, personality type, and sensation seeking positively affect FRT.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Mental Accounting Theory				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			(Thaler. R); Gambling Affinity Theory (Miller et al.); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation- Seeking Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey; Goleman. D); Myer Briggs Type Indicator				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			(MBTI) Theory (Myers. I.B & Briggs. K.C)				
49	Akhtar, Fatima; Thyagaraj, K.S.; Das, Niladri (2015)	A review of literature on financial investment decisions of individual investor: Behavioural and risk related explanations	Prospect Theory (Kahneman. D & Tversky. A); Regret Theory (Loomes. G & Sugden. R); Efficient Market Theory (Fama. E); Overconfidence Bias Theory (Barber & Odean)	Reviews of different countries.	The paper uses empirical investor behavioural studies to develop a conceptual framework. This research examined the vast investor behavioural literature.	Review paper on 333 research work.	The return on a financial security affects investors' decision-making. Financial market movements depend on desire, socio-demographic profile, financial knowledge, and fostering environment.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
50	Rai, Jyoti; Kimmel, Jean (2015)	Gender differences in risk preferences: An empirical study using attitudinal and behavioural specifications of risk aversion	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A)	United States of America	Gender-based financial risk aversion was responded using attitudinal and behavioural risk aversion parameters from the 2010 Survey of Consumer Finances (SCF).	The self-reported financial risk tolerance questionnaire approximates risk aversion's attitudinal formulation. Elimination approach yielded 4532 observations from 6485.	Single women avoid riskier behaviours than males. Married women and men who manage home money have similar risk aversion.
51	Dhiman B.; Babu S.H.; Raheja S. (2015)	Influence of demographics on risk tolerance among academicians - A study	Life Cycle Theory (Modigliani. F & Brumberg. R); Human Capital Theory (Becker. G); Gender	India (Jalandhar, Punjab state)	The paper examines how demographic variables affect investors' investment choices and private sector academics' risk tolerance in	Chi-square test and correlation were used to assess 250 private sector academics from different institutions in	Age and marital status are related to academics, while gender, income, and education are not.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Socialisation Theory (Piaget. J); Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A)		Jalandhar, Punjab, India.	Jalandhar City, Punjab, India.	
52	Kannadhasan M. (2015)	Retail investors' financial risk tolerance and their risk-taking behaviour: The	Expected Utility Theory (Bernoulli. D & Neumann. J.V. &	India (Raipur, Chhatisgarh)	The study investigates whether gender, age, marital status, income,	A standardised questionnaire was used to poll 778 retail investors with	Four of the six demographic characteristics helped distinguish investors' FRT and FRB levels

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
		role of demographics as differentiating and classifying factors	Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias		occupation, and education can be used alone or in combination to classify retail investors by financial risk tolerance (FRT) and risk-taking behaviour (FRB).	varying financial expertise.	and put them into FRT and FRB groups.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A)				
53	Lubis H.; Dileep Kumar M.; Ikbar P.; Muneer S. (2015)	Role of psychological factors in individuals' investment decisions	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Anchoring & Adjustment Theory (Kahneman. D & Tversky.	Malaysia	The research seeks to discover psychological elements that may affect investment selection criteria in risk, payback, and business data.	Defence mechanisms, personality attributes, emotional intelligence, and financial literacy determined investing criteria. One-on-one survey of 320 volunteers.	Defence mechanisms and financial knowledge are critical for risk and payback criteria, respectively. Defence mechanisms, personality characteristics, and emotional intelligence are key business data criteria.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R);				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey; Goleman. D); Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C)				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
54	Hoffmann A.O.I.; Post T. (2015)	How return and risk experiences shape investor beliefs and preferences	Confirmation Bias Theory (Wason. P); Prospect Theory (Kahneman. D & Tversky. A); Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Regret Theory (Loomes. G & Sugden. R); Cultural Theory (Douglas. M & Wildavsky. A)	Netherlands	The research analyses how individual investors adjust their beliefs (return expectations and risk perceptions) and preferences (risk tolerance) in response to their return and risk experiences using a unique mix of brokerage records and matching monthly survey data.	Descriptive research. Surveying data.	Past returns affect return expectations, risk tolerance, and risk perceptions.
55	Paramashivaiah, P.; Puttaswamy;	Changing risk perception of women	Prospect Theory (Kahneman.	India (Mysuru,	The research measures women's risk	120 females The questionnaire	Two-thirds had risk tolerance scores above average. Investment

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
	Ramya, S.K. (2014)	investors: An empirical study	D & Tversky. A); Mental Accounting Theory (Thaler. R); Regret Theory (Loomes. G & Sugden. R); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfiden	Karnataka state)	appetite by socio-demographic category.	uses a 14-item financial risk-tolerance scale created by Grable and Lytton (1998) with minimal modifications. Each responder received a 5-point Likert summated risk appetite score. Scores grouped respondents.	aim and occupation are marginally negatively correlated. Risk appetite score and independent variables correlated to create a regression model. Much research corroborates the regression model's result that women's risk tolerance decreases with age. Only age and education increased women's risk appetite.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			ce Bias Theory (Barber & Odean)				
56	Campos-Vazquez R.M.; Cuiltly E. (2014)	The role of emotions on risk aversion: A Prospect Theory experiment	Prospect Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean);	Mexico, USA	This Prospect Theory research analyses how emotions affect risk and loss aversion.	Experimental research. To elicit PT parameters, Tanaka et al. (2010) used information about escalating drug violence in Mexico and adolescent unemployment to alter students' emotions. Two Mexico City colleges undertook the trial.	Sadness raises risk aversion and fury decreases loss aversion. Anger often halves loss aversion.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Regret Aversion Theory (Kahneman. D & Tversky. A); Emotional Intelligence model (Mayer & Salovey; Goleman. D)				
57	Bashir T.; Uppal S.T.; Hanif K.; Yaseen S.M.; Saraj K. (2013)	Financial risk tolerant attitude: Empirical evidence from Pakistan	Prospect Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory	Pakistan	Risk tolerant attitude and demographic characteristics were examined in reaction to stock index price movements.	To research how price changes affect risk tolerance, investors, bankers, and households provided data, while stock exchanges provided daily and weekly closing KSE index prices.	Due to a lack of financial understanding and financial market growth, KSE stock index prices do not affect risk aversion in Pakistan. People invest in gold, government savings plans, and fixed deposits due to political and economic insecurity. Men and higher-income families are

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			(Keynes. J.M) Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Gambling Affinity Theory				more risk-tolerant than women and lower-income households. Age, marital status, wealth, and education did not predict risk tolerance.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			(Miller et al.); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey; Goleman. D); Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C);				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			BB & K Personality Model (Bailard et al.)				
58	Cristian, Paun (2012)	Risk tolerance analysis: Romanian case before and during financial turmoil	Efficient Market Theory (Fama. E); Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Modern Portfolio Theory (Markowitz. H)	Romania	The research examines how societal factors impact risk aversion for various categories and how the crisis altered it.	This study tested risk aversion (inverse of risk tolerance) in Romanians before and after the crisis using a statistically meaningful sample.	Risk tolerance is affected by gender, social standing, and money.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
59	Thomas T.C.; Rajendran G. (2012)	BB&K five-way model and investment behaviour of individual investors: Evidence from India	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A &	India	The research examines how the BB&K five-way model affects individual individuals' investing decisions.	Delphi approach generates BB&K five ways model investment options.	Investor choices affect all five BB&K model dimensions. The five BB&K personalities— Adventurer, Celebrity, Individualist, Guardian, and Straight Arrow—have behaved as expected in investing choices.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Kahneman. D); Overconfidence Bias Theory (Barber & Odean); Regret Aversion Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R); Big Five Personality Traits Theory (McCrae & Costa); Locus of Control Theory (Rotter. J); Sensation-Seeking				

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Theory (Zuckerman. M); Emotional Intelligence model (Mayer & Salovey; Goleman. D); Myer Briggs Type Indicator (MBTI) Theory (Myers. I.B & Briggs. K.C)				
60	Faff R.; Hallahan T.; McKenzie M. (2011)	Women and risk tolerance in an aging world	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky.	Australia	The research examined gender and financial risk tolerance.	Finametrica's 25-question risk tolerance score (RTS) is applied in actual customer circumstances. The article examined how gender affects	Women are less risk-tolerant than men.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			<p>A); Anchoring & Adjustment Theory (Kahneman. D & Tversky. A); Herding Theory (Keynes. J.M); Confirmation Bias Theory (Wason. P); Framing Effect (Tversky. A & Kahneman. D); Overconfidence Bias Theory (Barber & Odean)</p>			<p>cross-sectional variance using multiple regression analysis using RTS as the dependent variable. Dummy variable enhanced regression analysis was used to assess if being female increased each demographic coefficient compared to being male.</p>	

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
61	Gilliam, John; Chatterjee, Swarn; Grable, John (2010)	Measuring the perception of financial risk tolerance: A tale of two measures	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Regret Theory (Loomes. G & Sugden. R); Cultural Theory (Douglas. M & Wildavsky. A)	United States of America	This research compares two empirical risk tolerance measures and explores their relationship with asset allocation.	The Survey of Consumer Finance (SCF) single-question measure and Grable and Lytton (1999) 13-item multidimensional measure are used to assess investors' financial risk tolerance. 328 Southwest college and university academics and employees answered a 38-question web-based survey.	The 13-item measure better explains respondents' risky or non-risky asset allocation preferences.
62	Neelakantan. U (2010)	Estimation and impact of gender	Expected Utility Theory (Bernoulli. D	United States of America	The research calculates risk tolerance	Estimates are based on a simple portfolio	Women are risk-averse.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
		differences in risk tolerance	& Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A)		distributions for men and women.	choice model calibrated to Health and Retirement Study data on Individual Retirement Accounts.	Risk tolerance and wealth increase are measured using estimations. Simulations reveal that risk tolerance accounts for 10% of the gender gap in wealth.
63	Bailey, Jeffrey J; Kinerson, Chris (2005)	Regret avoidance and risk tolerance	Prospect Theory (Kahneman. D & Tversky. A); Regret Theory (Loomes. G & Sugden. R); Decision Regret Theory (Roese. N & Summerville. A)	United States of America	"Experienced regret" and "anticipatory regret" are contrasted to risk tolerance on investment decision-making.	Empirical study Quantitative study	Risk tolerance and "experienced regret" shaped judgements. Investment decisions were unaffected by future regret. One's likelihood of making a comparable investment decreased after regretting one. Risk tolerance predicted investment decisions independent of regret.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
64	Grable, John E; Joo, So-Hyun (2004)	Environmental and biopsychosocial factors associated with financial risk tolerance	Irwin's Risk-taking Behavioural Model; Prospect Theory (Kahneman. D & Tversky. A); Regret Theory (Loomes. G & Sugden. R)	United States of America and South Korea	Economic environment, Personal experience with investments, Personal financial situation, Knowledge and Financial literacy, Personality traits, Social and cultural influences, Genetics, and Brain Chemistry influence the FRT of Investors.	406 random samples from 2 universities, including academics and employees. Risk-scaled dependent variables. 10-item scales examined independent variables.	Education, marital status, net worth, financial awareness, Self-esteem, and household income affect FRT.
65	Hanna, Sherman D. Lindamood, Suzanne (2004)	An improved measure of risk aversion	Expected Utility Theory (Bernoulli. D & Neumann. J.V. &	United States of America	An enhanced income gamble-based measure of financial risk	SCF investment risk web survey. 7-point risk aversion scale.	The new measure adds graphs to explain income options. The SCF investment risk question and new

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A)		aversion is used in this research.		relative risk aversion estimates are highly correlated.
66	Grable, John E. Lytton, Ruth H. (2001)	Assessing the concurrent validity of the SCF risk tolerance question	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Regret Theory (Loomes. G & Sugden. R); Cultural Theory (Douglas. M	United States of America	A 13-item risk-tolerance assessment index was compared to the frequently used one-item SCF evaluation tool.	The regularly used one-item SCF evaluation tool and a 13-item risk-tolerance assessment score were compared.	SCF questions may reflect investing choices or experience, not financial risk tolerance.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			& Wildavsky. A)				
67	Grable J.E.; Joo S. (1999)	Financial help-seeking behaviour: Theory and implications	Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A); Regret Aversion Theory (Kahneman. D & Tversky. A)	United States of America	The research explains personal financial help-seeking.	A systematic random sample of 500 southwestern state clerical employees was surveyed via mail. A directory of roughly 750 clerical workers was used to randomly choose responses.	Discriminant analysis showed that the approach provides practical insight into personal financial help-seeking behaviour. Younger people, non-homeowners, and those with higher financial stress and bad financial habits were more likely to seek assistance.
68	Grable J.E.; Lytton R.H. (1998)	Investor risk tolerance: Testing the efficacy of	Expected Utility Theory (Bernoulli. D & Neumann.	United States of America	This study examined whether gender, age, marital	The 1992 Survey of Consumer Finances (SCF)	At the $p < .0001$ level, gender, married, single but previously married, professional

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
		demographics as differentiating and classifying factors	J.V. & Morgenstern. O); Prospect Theory (Kahneman. D & Tversky. A) Regret Aversion Theory (Kahneman. D & Tversky. A)		status, occupation, self-employment, income, race, and education could be used to classify investors by risk tolerance.	(N = 2,626) was used to design and evaluate a demographic-based risk-tolerance model for investors. The typical response was wealthy and resembled an investment management client. This research employed the Leimberg, Satinsky, LeClair, and Doyle (1993) financial management model to describe how investment managers	occupational status, self-employment status, income, White, Black, and Hispanic racial background, and educational level differentiated risk tolerance levels, while age, Asian racial background, and never married did not. Multiple discriminant analysis showed that demographic characteristics explained 20% of the variation in investor risk tolerance across three levels.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
						arrange clients' restricted investment resources to accomplish financial goals.	
69	Thaler R.H.; Tversky A.; Kahneman D.; Schwartz A. (1997)	The effect of myopia and loss aversion on risk taking: An experimental test	Prospect Theory (Kahneman. D & Tversky. A); Regret Theory (Loomes. G & Sugden. R); Decision Regret Theory (Roese. N & Summerville. A); Expected Utility Theory (Bernoulli. D & Neumann. J.V. & Morgenstern. O);	United States of America	Experiments investigate two myopic loss aversion implications. 1. Less frequent investment evaluation makes myopic loss-averse investors more risk-tolerant. 2. Investors will take greater risks if all payoffs can erase losses.	Research Design: Experimental Research.	Investors learn from experience, supporting both forecasts. Investors with the greatest feedback and knowledge took the least risk and made the least money.

Sl. No.	Authors	Title of Paper	Theory (T)	Context (C)	Characteristics (C)	Methodology (M)	Findings from the Study
			Regret Aversion Theory (Kahneman. D & Tversky. A); Mental Accounting Theory (Thaler. R)				

2.4 IDENTIFICATION OF RESEARCH GAP

Combining different approaches to Systematic Literature Review including Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) and Using a Systematic Literature Review (SLR) with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) approach and the TCCM (Theory, Context, Characteristics, Methodology) Analysis in the entire study has attributed several benefits in identifying research gaps. Chunking down from 2921 works of literature to 69 most specific kinds of literature for TCCM Analysis, though was a herculean task; that involved a systematic and scientific approach to identifying the concepts, theories, models, valid experiments, unscientific explanations, and contradictory paradoxes. This indeed delved into different clusters of cited works ranging over years from 1992 to 2023. Most of the works cited highlighted the validity and reliability of using certain variables for the study. The following points were noted from reviews conducted; regarding the research problem:

- A few studies have been conducted from the Indian context in perspective to the topics of financial Risk Tolerance and Investment Decisions surveyed among Retail equity investors.
- There were hardly any studies quoting the financial risk tolerance levels and investment decisions from the state of Kerala context.
- Studies supporting variables such as “Snake-bite effect bias”, “Frame-dependence bias” and “Overconfidence bias” have not been combined together for testing and validation. Studies found that these biases would suffice in bridging the gap between cognitive and emotional biases associated with risk tolerance of retail equity investors from the Kerala context.
- Many studies reported that out of various psychological variables, personality, attitude and perception play vital roles in churning one’s behaviour. Hence, using the personality as a single variable might be confusing since it includes many types and traits. So, as per the existing literature cited here, only certain factors that kindle the “risk” factor among retail equity investors from the

Indian context have been highlighted. Therefore, derived the variables- “Locus of Control”, “Sensation Seeking” and “Emotional Competence” for this study.

- Similarly, personality variables underlying the concepts “Locus of Control”, “Sensation Seeking” and “Emotional Competence” have been less explored and scientifically proved from the contexts of the Investment arena.
- Though the study was intended to be made among investors, this has extended its horizons and possibilities in the fields of neuropsychology, decision sciences, machine learning and others. Henceforth, a fast growth of Neurofinance is traced out from the existing works of literature.
- Most of the studies have been conducted in the area of Behavioural finance or Behavioural sciences; but very few studies study the use of experiments in modern finance, and especially such studies have been cited from the popular high-rated journals. This indeed shows how evidential must be the research paving ways to conduct experiments cross-disciplinarily.
- Studies quoted from the Indian contexts do not support experimental shreds of evidence; which has otherwise been demanding for forthcoming studies to be conducted.
- Enormous studies were conducted during COVID times since 2019 in the area of “Financial Risk Tolerance”; applied in various disciplines demanding the symptoms of financial resilience. But still today, the studies highlighting “Financial Literacy” and “Financial Behaviour” have gradually gained importance since, this depicts that for an individual to be more resilient behaviour-wise, they must be more trained and financially counselled or even demand financial therapy. Moreover, this way, the need for “financial literacy” is explained here.

2.5 THE KEY TAKEAWAYS

The researcher has been successful in ensuring that the review process is thorough and transparent, minimising bias, and improving the reliability of the findings by

employing the Systematic Literature Review (SLR) throughout the study. Following the PRISMA model (2020 version) has given a better scope to design a defined framework for conducting and reporting their work; enhancing the research's overall quality and reproducibility. In order to properly establish the research topic, create inclusion and exclusion criteria, perform a thorough literature review, screen and choose studies, extract data, evaluate bias risk, synthesise and analyse data, and present the findings, the TCCM Analysis has been put to work. By employing bibliometric analysis in a literature review, the researchers could gain a more quantitative and objective understanding of the scholarly landscape, identifying influential contributions, and uncovering patterns that may inform their research focus and methodology.

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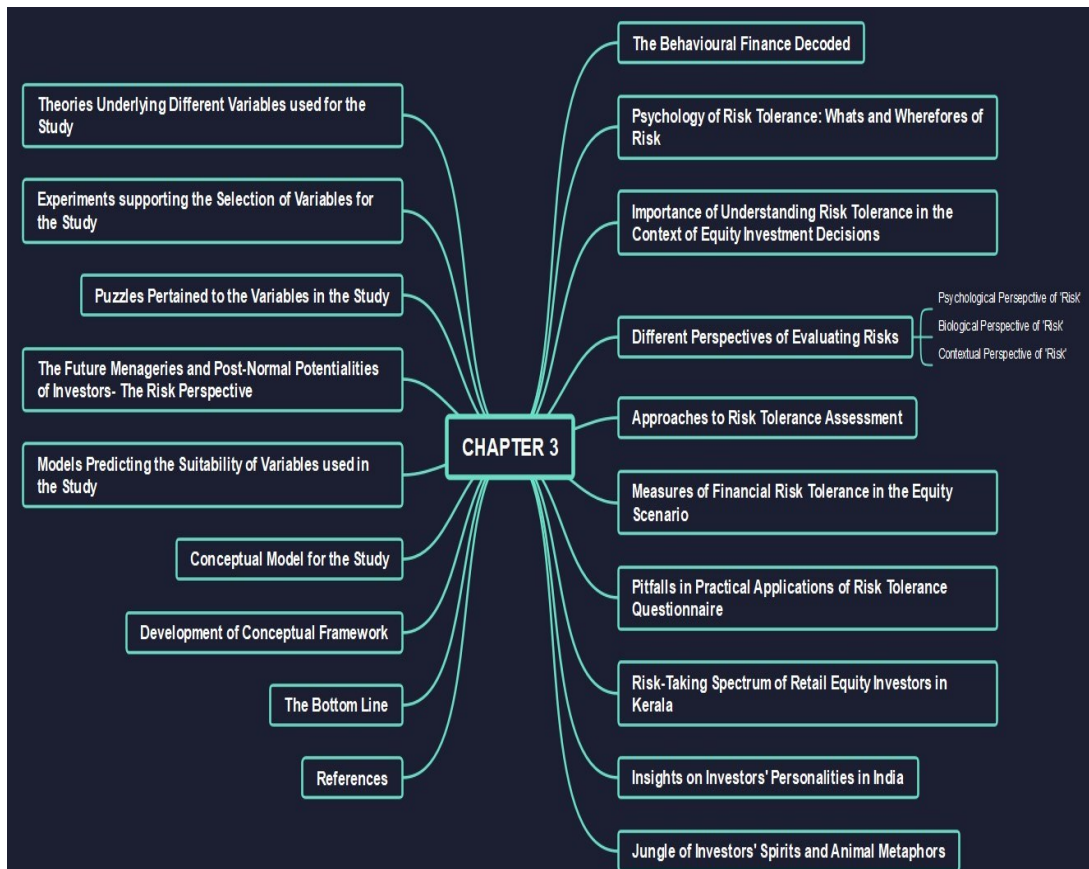
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CHAPTER 3

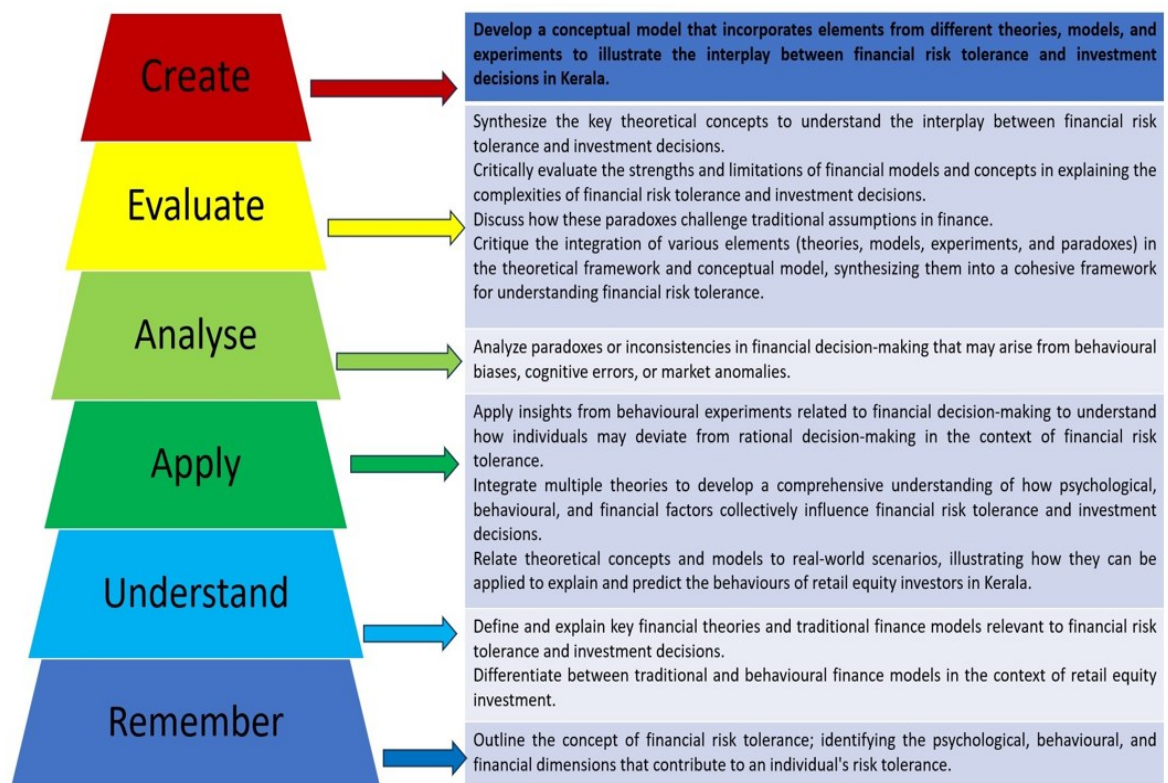
THEORETICAL FRAMEWORK AND CONCEPTUAL MODEL



This chapter begins listing out its main outcomes for the researchers; reflecting on the key concepts, theories, models, experiments, and paradoxes explained here based on Revised Bloom’s Taxonomy of Six Thinking Levels; from the title “*A Taxonomy for Teaching, Learning, and Assessment*”, (Bloom, 2001):

Figure 3.1

Shows the Chapter Outcomes prepared based on the Revised Bloom’s Taxonomy



Source: Created by the Author for the study purpose

3.1 THE BEHAVIOURAL FINANCE DECODED

Studying the effects of human psychology and cognitive biases on economic decision-making is the focus of Behavioural Finance. It acknowledges that investors aren't always making decisions based on logic and information. It extends traditional approaches to Economics by including the impact of biases, cognitive constraints, and societal factors. Often this stream has questioned conventional economic theories and shed light on what influences people's comfort with risk and their choice of investments. Studies over the years examine the rational and irrational processes behind their investment choices, providing insight into issues such as herding, overconfidence, loss aversion, and the effect of framing on risk perceptions. It stresses the need to know how investors think and act when developing investment plans, handling portfolios, and making sound fiscal choices. Many writers have discussed the psychological and behavioural pitfalls that cause individuals to make poor life choices. Quite often, investment behaviour is a direct reflection of certain classic kinds of dysfunctional psychology.

3.2 PSYCHOLOGY OF RISK TOLERANCE: WHATS AND WHEREFORES OF RISK

In 1557, Henri Estienne introduced the feminine term "risk" to the French, which would turn masculine in the 17th century. Italian *risco*, which would become *rischio* in contemporary Italian, signifies nautical risk and military luck or hardship. This name originates from the low Latin *riscum* or *risicum*, meaning destiny or chance, and the Byzantine *rizikan*, a soldier's pay. The Latin *resecare* (to cut, to separate) or *risicare* (to pass a headland, which, as every sailor knows, can be dangerous and generates the first sense of *risco*) and the Greek *rhizikon* (root) or *riza* (root in a first sense and a stumbling block in the second) are the origins of these terms. *Rhizome* (underground plant stem) is also related. The Latin etymology says that risk removes us from the familiar to face us with the unknown, whereas the Greek etymology suggests that danger leads us back to our origins, resources, and talents. Thus, the probabilistic connotation of the concept is attested to by both the Latin description (a portion of the universe of the possibility) and the Greek meaning (a root is the hidden

and "virtual" part of a plant). When the outcomes of a choice are contingent on the occurrence of events whose probabilities are either known or unknown, then it could be said that investors are facing a risk.

There is always the possibility of loss with any investment that we make. Risk, in the context of finance, is the degree of hazard and/or possibility for monetary loss associated with an investment. When investors' exposure to risk increases, they often demand larger returns in exchange for that exposure. Investment risk is the possibility of financial loss or variation in investment returns. Because of the volatility of the financial markets and the probability of unfavourable occurrences impacting the value of assets, risk is an inevitable component of investing. Market risk, credit risk, liquidity risk, and operational risk are just some of the shapes risks may take. When making investments, investors must weigh the risks involved. Tolerance for risk is a personal trait that may show wide variation across investors. Understanding one's personal risk tolerance levels and making investing choices appropriately is essential for investors, since there is no one-size-fits-all approach to risk. As one's financial situation and investing objectives evolve over time, it's wise to periodically reevaluate one's risk tolerance. A person's financial risk tolerance is their propensity to and comfort with taking calculated risks with their money. It's a measure of how much one can stand for his or her investments to fluctuate in value or suffer losses. Personal circumstances, investment objectives, time horizon, financial literacy, and psychological variables all play a role in determining one's level of comfort with financial risk. When deciding on an asset allocation and investing plan, knowing and assessing one's own risk tolerance is crucial. Tolerance for risk is most often categorised from "low" (very little) to "moderate" (moderately high) to "high" (a lot) on a scale. Those investors who are more risk-averse and focused on preserving their wealth are known as conservative investors. Bonds, fixed deposits, and other similar investments may appeal to them more. Aggressive investors, on the other hand, are willing to take on greater risk and are used to dealing with market uncertainty. They are prepared to take greater risks in search of greater rewards. They might put their money into riskier investments like stocks, properties, or commodities. Similarly, the third category, Investors that choose moderate risk are less willing to take chances.

They are permitted a certain degree of risk and are limited to a certain proportion of potential losses. They put part of their money into stocks, which are riskier, and the rest into bonds or gold, which are safer. One of the most important steps in building a successful investment portfolio is determining how much financial risk one investor would be willing to take in pursuit of their desired outcomes. It may help one to strike a balance between taking calculated risks that might result in large losses and mental turmoil and being too cautious and missing out on possible gains. To determine one's level of comfort with risk and craft a sensible investing plan, it would be wise to speak with a financial counsellor. The psychology of retail equity investors' risk tolerance and investment decisions refers to the study of the mental processes that shape the preferences of individual investors. Some factors that influence their tolerance for taking risky equity investment decisions include:

1. Tolerance for risk is strongly influenced by an investor's degree of financial literacy and investing experience. Those who are aware of the financial markets and have experience investing may be more willing to take risks than those who are not.
2. Age and life stage both have a significant role in one's level of comfort with risk. Younger investors are more willing to take risks because they know they will have more time to make up for any losses. Investors may become less willing to take chances as they move closer to retirement age and want to preserve their nest eggs.
3. Investors' risk aversion may be affected by their financial objectives and the length of time they want to invest. Long-term investors, such as those saving for retirement, may be more willing to take on risk since they have more time to ride out market ups and downs. Investors who are putting money down for something more immediate, like a down payment on a home, may be less willing to take chances in order to keep their money safe.
4. The degree to which an individual is willing to take risks is influenced by their income and wealth. Wealthier investors may be more willing to take on risk since they have the financial means to weather any losses that may occur. Investors with

less disposable income and assets may be less willing to take risks since they cannot afford to sustain large losses.

5. The current economic and market situations in India and Kerala may influence one's willingness to take risks. When the economy is doing well and investors are feeling optimistic, they may be more inclined to take chances. On the other hand, investors' risk tolerance tends to decrease and they tend to choose safer assets when the economy and/or the market are unstable.
6. Risk aversion may also be affected by a market's regulatory climate and the extent to which investors are safeguarded. Investors may be more willing to take risks if they know their capital is protected by robust rules and operates under a clear investing environment.
7. Heuristics, sometimes known as "rules of thumb," are mental shortcuts that investors employ to make decisions quickly and easily. Heuristics may be useful in certain circumstances, but they can also cause biases and poor financial choices. One such heuristic is the availability heuristic, which happens when investors base their assessments of probability on the most current information or events accessible to them. A skewed view of potential dangers and benefits may result from these decisions.
8. Investors' Herdism: This can be considered as an example of the social dynamics that might influence investors' behaviour. They herd when they behave like every other investor in the market, whether out of boredom, anxiety over being left out, or a need to be accepted by their peers. This might cause them to lack critical thinking skills and blindly follow market trends without stopping to consider their implications.

Hence, retail equity investors may make better-informed investing decisions that are in line with their financial objectives and risk tolerance if they are aware of and able to manage their psychological biases, and emotions, and promote rational decision-making.

3.3 IMPORTANCE OF UNDERSTANDING RISK TOLERANCE IN THE CONTEXT OF EQUITY INVESTMENT DECISIONS

Investors' willingness to take on financial risk is a key variable in deciphering their behaviour in the stock markets. A person's financial resilience is measured by how well they can absorb and recover from unexpected negative changes in their wealth. There is a vast variety of investment options available in the financial markets, each with its own degree of risk and possible reward. More risk-tolerant investors are ready to take on more uncertainty in the hopes of greater reward. Investors with lower risk tolerance, on the other hand, tend to choose lower-risk assets even though they may provide lower returns. To better match investing choices with the investor's financial objectives and expectations, it is important to understand the investor's risk tolerance. A retail investor's level of comfort with financial risk has a significant impact on the investor's allocation of capital between various asset classes. Investors with a low tolerance for risk would do better with safer investments like Treasuries and blue-chip stocks, while those with a greater tolerance might do better with growth companies and developing markets. Financial advisers may better serve their customers by understanding their risk tolerance and recommending investments and strategies accordingly. The financial markets are naturally unstable, and the value of assets may fluctuate over time. Those who are willing to take on more risk are less likely to sell their investments in a panic or make rash judgements when the market experiences fluctuations. Learning to control one's emotional reaction to market volatility and keeping a long-term investing perspective requires first knowing one's risk tolerance. When it comes to diversifying one's portfolio, an investor's attitude towards risk is a major factor. Investors with a lesser tolerance for risk may choose to take a more cautious approach by diversifying their holdings over a wider range of asset types. Investors with greater risk tolerance, on the other hand, maybe more likely to put all of their eggs in one basket by putting more money into high-growth industries or single equities. A prudent degree of portfolio diversity may be established by first assessing an investor's comfort with risk. Every investor has their own set of financial priorities, such as saving for retirement, buying a house, or sending their children to college. The investing plan that is most in line with these objectives is heavily

dependent on the investor's risk tolerance. When financial advisers know their clients' risk tolerance, they may provide recommendations that strike a good balance between growth and capital preservation. Moreover, it's useful for both advisers and clients since it allows for the determination of an appropriate amount of risk, the modification of investment plans, the control of emotional responses to market swings, and the achievement of specific financial objectives.

3.4 DIFFERENT PERSPECTIVES ON EVALUATING RISKS

Risk evaluation is essential for retail equity investors in Kerala to make informed investment decisions, protect their capital, align investments with financial goals, navigate market volatility, ensure investor protection, and comply with regulatory requirements. By assessing risks, investors can enhance their overall investment experience and improve their chances of achieving their financial objectives. Assailly, J.P. (2010) in his famous book, *The Psychology of Risk* discussed the three different perspectives on evaluating the risks of investors; namely The Psychological Perspective, The Biological Perspective and, The Contextual Perspective.

3.4.1 The Psychological Perspective of 'Risk':

Understanding the psychological perspectives of risk among retail equity investors is crucial for comprehending their decision-making and behaviour. Certain key psychological variables that highlight the importance of risk in equity scenario includes:

- (i) **Personality Traits:** These play a significant role in understanding the financial risk tolerance and investment decisions of retail equity investors in Kerala, as they influence an individual's attitudes, preferences, and behaviours related to risk-taking. Based on the Big Five Personality Model suggested by McCrae and Paul Costa (1987); there are basically five traits connected with risk tolerance and investment decisions of retail equity investors in Kerala. For instance, Investors with a high level of openness to experience are more likely to welcome and embrace change. They may be more open to trying new things and putting their money into possibilities that are a little outside the box. Because of their

willingness to put themselves out there, they may be more willing to take on financial risk and invest in the stock market. Conscientious investors are characterized by their self-discipline, organization, and reliability. They are more likely to conduct thorough research, adhere to investment strategies, and make informed decisions. Conscientiousness may contribute to a more conservative approach to risk, as these individuals tend to prioritize stability, long-term planning, and preservation of capital. The traits of an extrovert include friendliness, confidence, and a need for constant stimulation. It's possible that extroverts, especially when it comes to financial matters, are more likely to take chances. It's possible that they're more at ease with the uncertainty of the stock market, have a greater risk tolerance, and are more likely to participate in aggressive trading or speculative investing. The willingness to work with people and care about their well-being are hallmarks of agreeableness. Investors scoring higher on the agreeableness scale may be less likely to conduct financially risky actions and more focused on maintaining positive connections. It's possible that they would start investing with greater caution and conservatism. Anxiety, worry, and stress are all examples of unpleasant feelings associated with neuroticism. Those who score high on the neuroticism scale may be less willing to take risks because they are more emotionally invested in avoiding failure. Investors that are more risk-averse may be more likely to sell when the market is volatile or when there is a lot of uncertainty.

- (ii) **Cognitive and Emotional biases:** They can cloud judgment, distort risk perception, and lead to suboptimal investment decisions. It is crucial for retail equity investors in Kerala to be aware of these biases and actively engage in critical thinking, seek diverse perspectives, and conduct thorough analyses before making investment decisions. Investors who suffer from loss aversion react more strongly to the prospect of losing money than they do to the prospect of gaining money. They may become overly cautious or risk-averse, avoiding investment opportunities that carry a higher potential for losses. This can hinder these investors from taking necessary risks to achieve their financial goals and result in missed investment opportunities. It's possible that Kerala's retail equities

investors are more loss-averse than average, making them hesitant to engage on assets with a larger loss potential. Because of this bias, investors may make poor choices, such as cashing out of profitable assets too soon or hanging on to lost ones for too long. Sometimes, when they overestimate their talents and underestimate hazards out of their greed, then it's called overconfidence bias. Such Overconfident retail equity investors in Kerala could take on more risk than they could manage or base their judgements on insufficient data. Because of this tendency, investors may engage in risky behaviours such as making frequent trades without adequately diversifying their portfolio. Next, Herding bias is the tendency for people to do what other people are doing, even if what they are doing isn't logical or well-thought-out. When it comes to retail equities investors in Kerala, herding bias may cause a "follow-the-crowd" mindset in which people make investment choices based on the behaviour of others without doing their own research. Market bubbles, heightened volatility, and the adoption of investing ideas without careful consideration may all be attributed to this tendency. They may place too much weight on recent or noteworthy news events, market patterns, or prior investing experiences when making investment choices, due to which the investors may give too much weight to either dangers or opportunities. Anchoring bias may affect the investing choices of retail equities investors in Kerala if they choose an arbitrary price or value as a benchmark. This bias may prohibit investors from making an optimum purchase or sell choices by preventing them from making an accurate assessment of the present market circumstances. Moreover, they may be susceptible to confirmation bias if they only seek data that backs up their preconceived notions about an investment's merits.

- (iii) **Financial Knowledge:** Kerala's retail equities investors' risk aversion and investment choices are strongly influenced by the level of education they have in financial matters. Knowledge of finance helps investors understand the relationship between risk and return. Investors who have a firm grasp of the correlation between danger and reward may more accurately weigh the dangers of various investment opportunities. Knowing this allows them to make better

selections that fit in with their risk profile and long-term objectives. Understanding the financial markets helps investors better recognise and evaluate potential threats. Market volatility, firm fundamentals, economic indicators, and regulatory changes are only some of the risks that may be assessed in this way. Investors may better gauge their own risk tolerance and make investment choices accordingly if they have access to more accurate risk assessment tools. Investors who have a firm grasp of financial concepts are better equipped to appreciate the value of diversity and portfolio management. Spreading one's assets across many asset categories and industries is a tried-and-true risk management strategy. They can put up diversified portfolios with manageable levels of risk and the potential to generate higher returns. Investors who are well-versed in the financial markets tend to have greater faith in their own judgement. As a result, they are able to go on with their investing strategies without being swayed by short-term market changes or their own emotions. Retail equities investors in Kerala would do well to expand their financial literacy with help from books, classes, seminars, and adviser meetings. An investor's ability to make educated investment choices, by matching their risk tolerance with appropriate investment alternatives, and successfully traversing the stock market's changing environment is greatly enhanced by a firm grounding in their financial knowledge.

- (iv) **Past Experiences:** A greater willingness to take risks might be the outcome of prior investing experiences, particularly those that yield a positive return. Investors who have seen successful investments made in the past can feel more at ease taking bigger risks in the future. Optimism borne of good fortune might inspire financial backers to take risks on promising ventures. Negative experiences, such as significant losses or financial setbacks, can have a lasting impact on investors' risk tolerance. Investors who have encountered substantial losses in the past may become more risk-averse and cautious in their investment decisions. Such experiences can instil a sense of fear or scepticism, leading investors to prioritize capital preservation and opt for more conservative investment strategies. Learning from past experiences helps investors make more informed decisions, avoid repeating past mistakes, and adapt their risk tolerance

based on lessons learned. A particular experience could leave a lasting emotional imprint, influencing investors' perceptions of risk and their willingness to take on similar risks in the mere future. Investors who have experienced bull markets with sustained upward trends may develop a higher risk tolerance and a propensity for more aggressive investment strategies. Conversely, investors who have endured bear markets characterized by significant downturns may become more risk-averse and prioritize capital protection. Long-term investors are less likely to be swayed by temporary setbacks and more intent on achieving their ultimate financial objectives. Instead of determining their risk tolerance, their past experiences may serve as possibilities for growth. A diversified portfolio, asset allocation methods, and a methodical approach to making investments may be of utmost importance to such investors.

- (v) **Time Horizon:** Investors with a short-term view, say, a few months to a couple of years, are often less willing to take risks. They worry more about keeping their money safe and can be less ready to take risks. When making investing selections, short-term investors often prioritise liquidity and quick returns in accordance with their time horizons and risk tolerance. Similarly, those who are looking at the market for many years to a decade often have a more relaxed attitude toward risk. They may more easily explore assets with growth potential since they have more time to weather market swings. Medium-term investors may strike a balance between risk and a possible return by allocating a part of their portfolio to stocks and other growth-oriented assets. Those that invest for the long haul, perhaps 10 years or more, tend to be more willing to take calculated risks. They have a higher tolerance for short-term market fluctuations in order to achieve long-term growth. Investors with a longer time horizon are better able to ride out market fluctuations and reap the benefits of compound interest. They could put more of their money into stocks in the hopes of earning bigger profits. A thorough understanding of the relationship between time horizon, risk tolerance, and investment decisions helps investors make appropriate asset allocation choices, select suitable investment vehicles, and implement strategies that match their individual circumstances and objectives.

(vi) **Social Influences:** The popularity of a certain investment or investing technique among groups of Kerala investors might persuade individual investors to follow suit. Investors with a herd mentality tend to pool their resources and react *en masse* to market shifts, which may dilute individual exposure to risk. Investors who are seeking approval or conformity may be more risk-averse if their social group or peer network promotes conservative investing techniques. In contrast, if a social group endorses risky or speculative investing practices, its members may be more likely to adopt such practices themselves. Retail equity investors in Kerala may be influenced by the recommendations and advice of financial experts, market commentators, or influential figures in the investment community; whose opinions can shape investors' risk perceptions and risk tolerance levels, influencing their investment decisions. Investors may discuss tactics and experiences in investing clubs or internet forums. These sites let investors share ideas, debate investing possibilities, and learn from others. Social interactions in such groups might alter risk tolerance by exposing investors to varied investing viewpoints and decision-making processes.

(vii) **Role of Culture:** Cultural norms, values, and attitudes towards risk can shape individuals' perception of risk and their willingness to take on investment risks. The Hofstede Cultural Dimensions model, developed by Dutch social psychologist Geert Hofstede in 1980 and authored in the book, *Culture and Organisations*, provides insights into cultural dimensions that influence behaviour. Here's how the Hofstede model can help understand the role of culture in financial risk tolerance and investment decision-making in India, especially in the state of Kerala:

- ✓ **Uncertainty Avoidance Index (UAI):** India has a moderate to high uncertainty avoidance culture, indicating a preference for stability, conformity, and risk mitigation. This cultural dimension can impact financial risk tolerance, as retail equity investors may exhibit a lower willingness to take on high-risk investments. They may prioritize capital preservation and opt for more predictable and stable investment options. This preference for stability and risk

aversion can influence investment decision-making in terms of asset allocation and portfolio diversification.

- ✓ **Power Distance (PD):** Power distance in India is high compared to other countries, suggesting widespread acceptance of hierarchy and authority. Financial experts, institutions, and wealth managers are often looked upon for advice and suggestions while making investments. Investors' risk tolerance may be influenced by those in positions of power, leading them to adopt more conservative investing methods and look for safer Equity investment opportunities.
- ✓ **Individualism vs. Collectivism:** Family, neighbourhood, and communal bonds are highly valued in our Indian society. Individuals with a strong collectivistic attitude may consult with and weigh the advice of trusted others before making important financial decisions. Because of the pressure to conform to the group's wishes, those participating in the equity decision-making process may become more risk-averse as a result of using this method.
- ✓ **Masculinity vs. Femininity:** The Indian culture places a premium on aggressiveness, ambition, and monetary achievement, making it one of the most masculine in the world. A cultural bias towards putting an emphasis on material success and profit maximisation is one possible outcome of the decision-making process when it comes to making equity investments. It's possible that in order to reach their financial objectives, investors may have a greater risk tolerance and a willingness to take on investing hazards. The drive for material prosperity may lead one to make financial decisions that put profit first.
- ✓ **Long-Term Orientation:** India takes the long view, placing a premium on patience, thrift, and investment. Because of various differences in cultural norms, some investors may be more willing to ride through short-term market volatility in exchange for long-term rewards. They may be looking for assets with the potential for long-term growth because of their long-term investment perspective. By prioritising investments that contribute to the achievement of

long-term financial objectives and the creation of wealth, a long-term perspective may affect investment choices and their final decisions.

3.4.2 The Biological Perspective of 'Risk':

How biological elements including brain shape, neurotransmitters, and genetic predispositions influence risk preferences and decision-making is the focus of the biological view on "risk" among retail equity investors. It suggests that certain biological mechanisms and processes can influence how individuals perceive and respond to risks, including those related to financial decisions as shown in Figure 3.1.

- (i) Genetic Predispositions:** Understanding the genetic basis of risk-taking behaviour in finance is a relatively new and evolving field of research. While genetics may provide insights into individual differences in risk tolerance, it is crucial to consider a comprehensive range of factors, including psychological, cognitive, and environmental influences, when studying and assessing financial risk tolerance and investment decisions of retail equity investors. Certain genetic variations can contribute to the development of personality traits that are associated with risk tolerance. For example, genetic factors can influence the levels of traits such as sensation-seeking, impulsivity, and novelty-seeking, which are linked to risk-taking behaviour. Investors with a higher propensity for these traits may exhibit higher risk tolerance and be more willing to take investment risks. Their risk tolerance and investment choices are heavily influenced by their upbringing, level of education, and social circle, all of which are mediated by their genetic makeup.
- (ii) Learnings from Neurofinance:** Since time immemorial, various experiments and evidence-based analytical research have been conducted to explore the horizons of Risk tolerance in Behavioural Finance. Different factors hinder or support the impact of tolerance levels impacting the decision-making process of retail equity investors. Recently, research has slowly transcended to neuro-based findings highlighting the functions of the human brain and how it directly impacts the risk-taking attitude towards equity investing. Neurofinance is a new discipline that merges financial and economic theory with findings from neuroscience. The

study's overarching goal is to learn how the brain deals with money-related facts, feelings, and incentives. Neurofinance studies the neural reactions and brain activity of different investors doing financial activities using methods such as functional magnetic resonance imaging (fMRI) and electroencephalography (EEG). Neurofinance sheds light on the biological underpinnings of financial behaviour by investigating the brain correlates of risk tolerance and investing choices. These studies have significantly contributed to understanding the concepts of 'Financial Risk Tolerance' and 'Investment Decisions' in various ways:

A) The Triune System

This model of the brain has been explained by famous Neurologist, Paul MacLean; stating that the human brain may be broken down into three evolutionary layers or components: the reptile complex (or reptilian brain), the limbic system (or mammalian brain), and the neocortex (or human brain) as clear from Figure 3.2. There are several roles and actions linked to each part. Despite the triune brain system's usefulness as a framework for studying brain development, its immediate implications for risk aversion and investing choices remain a hot topic of inquiry.

- The reptilian complex represents the most primitive and instinctual part of the brain, associated with survival instincts and basic behaviours. In the context of financial risk tolerance and investment decisions, the reptilian complex may play a role in triggering fear responses to potential risks or losses. Retail equity investors with a heightened response in this brain region may exhibit a lower risk tolerance and a preference for safer investment options to protect their capital.
- Emotion, memory, and social behaviour all originate in the limbic system. The hippocampus and amygdala are two examples of the structures involved. Investors' willingness to take risks and their choices of investments may be affected by emotions like fear and greed. Those with a more reactive limbic

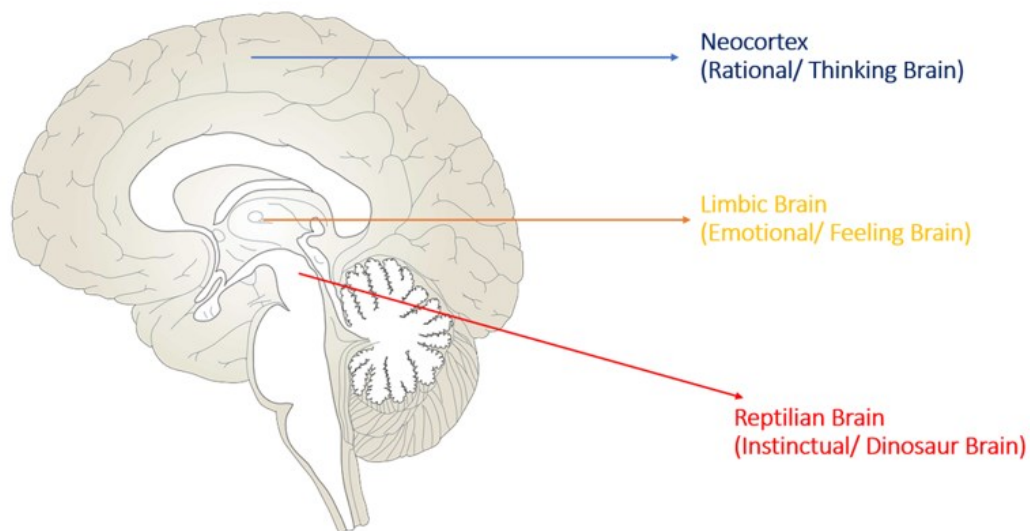
system may be more emotionally influenced while making investment decisions, which might increase their risk aversion or appetite, respectively.

- The neocortex is the brain's most advanced region and is responsible for complex mental processes including thinking, analysis, and decision-making. It is often used in analysing intricate financial data and making calculated business decisions. Investors in the retail equities market who have a developed neocortex may be better able to analyse risk and make calculated judgments.

While the triune brain model provides a useful theoretical framework, it is vital to keep in mind that making sound financial decisions is inherently complicated due to cognitive biases, prior experiences, and cultural norms. Neurofinance and behavioural finance are still developing our understanding of the neural circuits that influence our risk tolerance and financial choices.

Figure 3.2

Shows by the Author for the study purpose



Source: Created by the Author for the study purpose

B) Role of Brain Waves:

Electroencephalography (EEG) provides light on the mental processes and brain activity related to various retail equities investors' financial risk tolerance and their decisions made; as evidenced by Figure 3.3; extracted from the latest works of Dispenza, Joe (2022).

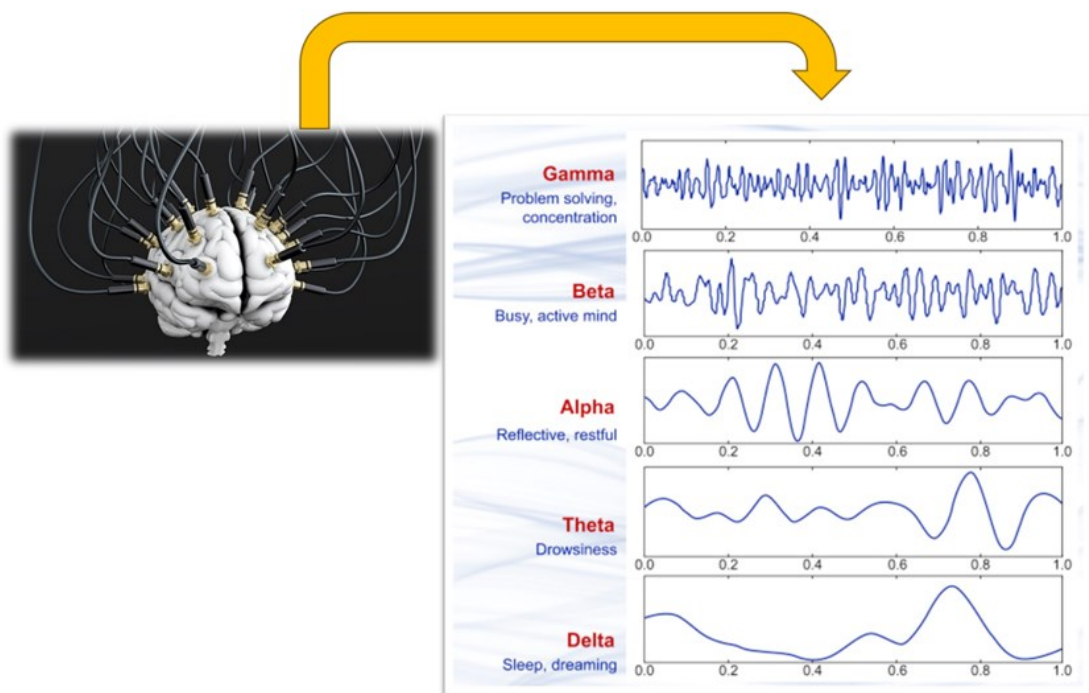
- The presence of alpha waves in the brain has been linked to feeling peaceful and at ease. Alpha-wave dominant individuals have been shown to have a greater risk tolerance and be more prone to participate in risky behaviour. High levels of alpha wave activity among retail equities investors are associated with a greater willingness to take investing risks and a better tolerance for market volatility.
- Mental levels of activity and concentration are reflected in the presence of beta waves. When investors are deep in analytical thought or contemplating a choice, their beta wave activity tends to rise. In the context of making investing and risk-taking choices, stronger beta wave activity may imply more active thought and deeper consideration of the costs and benefits of various options.
- Information processing, learning, and the consolidation of separate mental processes are all linked to the presence of gamma waves. Enhanced cognitive agility and the capacity to evaluate complicated circumstances have both been related to higher gamma wave activity. Higher gamma activity in retail equities investors is associated with better evaluation and integration of several sources of financial information, which might lead to better investment choices.
- Relaxation, meditation, and processing information at the subliminal level are hallmarks of the delta and theta brain wave states. Although these brainwaves have indirect effects on risk tolerance and financial choices, they are important for healthy brain function and emotional stability nevertheless. One's risk tolerance and investing decisions may be affected by one's state of mind, and a calm disposition might help.

Financial decision-making involves a complex interaction of cognitive, emotional, and behavioural components, of which brain wave patterns represent only one

aspect. Caution should be given when interpreting and implementing results from studies on brain waves and financial decision-making since these studies are still in their infancy. A better comprehension of the neurological processes governing risk tolerance and investing choices among retail equities investors may nonetheless be gained by analysis of brain wave activity.

Figure 3.3

Shows the Brain Maps Radiating Waves and Neural Signals



Source: Modified based on the original works of Kumart et al., (2022) for the study purpose

C) Role of Neurotransmitters:

Chemical messengers called neurotransmitters carry impulses between brain cells. They are crucial in regulating a wide range of processes, including those that affect retail equities investors' risk tolerance and equity choices. Research by Khan & Mubarik (2020); Babu et al., (2021); Yang (2019); Freels et al., (2019); Ahmad (2018), and Kuhnen & Chiao (2009) has summarised the findings on the role of the following neurotransmitters in equity investors' risky decision-making process:

- Dopamine is often linked to feelings of pleasure and inspiration. It's involved in feeling good and wanting more when the time is right, thanks to its function in the brain's reward system. Dopamine levels may have a role in the desire to take on financial risks, according to the findings of a recent study. Investors with higher dopamine activity levels may be more willing to take risks and more motivated to seek out possible benefits while making financial investments.
- The neurotransmitter Serotonin has a role in controlling feelings and behaviour. It affects a wide range of mental operations, including deliberation and self-regulation. Risk perception and decision-making may be influenced by serotonin levels, according to the latest neuro-research. Lower risk tolerance and a preference for safer investment alternatives may result from a more cautious and conservative attitude to financial risks brought on by higher serotonin levels.
- As an inhibitory Neurotransmitter, GABA (Gamma-Aminobutyric Acid) plays a role in controlling how excited neurons become. It helps by easing nerves and making individuals feel more relaxed. It has been hypothesised from studies that GABA levels affect both risk-taking and decision-making. Increased GABA activity has been linked to a decreased appetite for risk and a preference for safer investments.
- The hormone Noradrenaline (Norepinephrine) has a role in the body's arousal and stress response. Attention, attentiveness, and alertness are all influenced by it. Noradrenaline has been shown to affect decision-making when faced with risk and uncertainty. Increased noradrenaline activity has been linked to a heightened level of arousal, which in turn may affect how people evaluate risk and make decisions when it comes to money.
- The hormone Oxytocin has also been linked to controlling how we feel. There is evidence that oxytocin might mitigate the negative emotional responses to losses and alter one's sense of risk. A more positive view and a willingness to take greater financial risks might result from this. It's worth noting, too, that

oxytocin's impact on risk perception and emotional reactions may vary greatly from one individual investor to the next and from one situation to the next.

While neurotransmitters are involved in the neurological processes that underlie risk tolerance and investing choices, full knowledge of their precise contributions and interconnections remains elusive. Several ideas have been evolving to explain the neurological systems involved in financial decision-making, despite Neurofinance being a young area of research. Firstly, 'how people make choices when confronted with risk and uncertainty' is the subject matter of Prospect theory, a concept put forward by psychologists Daniel Kahneman and Amos Tversky (1979). According to this theory, investors make decisions based on how they subjectively value potential gains and losses in comparison to some reference point, which is influenced by the shape of the value function and the shape of the probability weighting function. The effects of these mechanisms on decision-making have been investigated in the field of Neurofinance. Secondly, financial decision-making, according to the Dual Process Theory (Petty & Cacioppo, 1986), is the result of the cooperation of two distinct parts of the brain: the intuitive, automatic system (also called "System 1") and the reflective, regulated system (sometimes called "System 2"). System 1 is responsible for rapid information processing through heuristics and emotions, whereas System 2 is responsible for more deliberate, analytical thought. Financial decision-making includes factors including risk perception, risk tolerance, and judgment biases, all of which have been the focus of Neurofinance research. Thirdly, Investors learn from their experiences by seeking to maximise rewards and minimise penalties, as described by the Reinforcement learning theory (Skinner, 1957), a computational framework. This theory proposes that investors learn to make sound financial decisions via a combination of trial and error and the incorporation of both positive and negative feedback into their future expectations and actions. The neurological processes of reinforcement learning, such as the dopaminergic system's function in reward processing and the prediction error signal, have been the subject of neuro-financial studies. Fourthly, the decisions that require considering both the present and the future are said to include inter-temporal choice. Researchers in the field of neuroeconomics have looked at how the brain calculates the worth of future benefits

and how individual variations in discounting future rewards are linked to neural activity in areas like the prefrontal cortex and striatum. These results help us better comprehend the brain underpinnings of responsible monetary practices including economising, investing, and postponing pleasure.

(iii) Role of Hormones:

Hormones like testosterone and cortisol may help us make sense of the financial risk tolerance and investing choices of average people. The male hormone testosterone is linked to aggression, confidence, and risk-taking. Scientists have discovered a relationship between testosterone and a person's propensity to take financial risks, indicating that men with higher testosterone levels are more likely to be risk-takers. High-testosterone retail equities investors may be more willing to take risks and adopt more daring investing techniques. There are several variables, including individual variations and environmental influences, that complicate the link between testosterone and risk-taking. However, stress causes the body to secrete the hormone cortisol. It's involved in the body's stress response system and has been shown to affect how people see danger and make choices under pressure. Investment caution and reduced risk tolerance have both been linked to chronically elevated cortisol levels. Individuals' risk tolerance and, therefore, their investing choices, may be impacted by elevated cortisol levels during periods of market volatility and financial uncertainty. It's also possible that different hormones have different impacts on people, and that these effects might mix with other psychological and environmental elements to shape a person's risk tolerance and investing choices; as studied in the latest works of Herbert. J (2018).

(iv) Intuition and Cognitive Processing:

There are several reasons why it's important to take into account retail equity investors' intuition and mental processing power; while trying to grasp the risk tolerance and investing choices of retail equities investors. Intuition helps such investors see trends or pick up on small indications that could otherwise escape their analytical gaze. This may be useful for seeing patterns in the market, gauging the likely direction of prices, and locating promising equity investment openings. The

insight gained via intuition would suffice complementing their logical reasoning. Emotions are signals that may affect how risks are interpreted and handled. Their risk aversion and investing choices might be affected by their intuitive assessments of their emotional reactions to possible dangers and rewards. Savvy investors have likely honed their intuitive understanding of the market through years of practice. Their risk tolerance and investment decisions might be informed by their innate wisdom and skill gained over years of experience. Similarly, information acquisition, analysis, and synthesis are all components of cognitive processing, which aids in generating sound judgments. It involves intentional thinking, data processing, and bias detection. Investors' perceptions and assessments of financial risks are influenced by the way their brains process information. Their attention, memory, and cognitive biases are all elements that play a role in their investment decision-making process. Risk perception and the propensity to take risks may be influenced by their cognitive biases including confirmation bias and availability prejudice. Hence, deliberate examination of information and assessment of risks and prospective rewards are made possible by cognitive processing, allowing for logical decision-making. The probability and consequences of various investments are weighed in rational decision-making frameworks like anticipated utility theory (Bernoulli, 1738).

3.4.3 The Contextual Perspective of 'Risk':

Understanding 'risk' in the context of investment decision-making places an emphasis on the role that exogenous variables play. It considers the fact that the context in which investment choices are made also plays a role in determining risk. Investment-related anxiety is significantly influenced by the state of the market and the economy. An investor's risk perception and tolerance may change depending on factors including market volatility, economic stability, interest rates, and sector developments. Investors, for instance, may shift their risk tolerance upwards during times of economic uncertainty or market downturns because they believe the hazards to be greater. The risk profile for investors may change depending on the regulatory structure and laws that regulate financial markets. Investment opportunities, disclosure norms, and safeguards are all susceptible to the influence of strict rules or

shifts in regulatory practices. When weighing the merits of various investment possibilities, investors must take regulatory considerations into account. One factor that might influence how people perceive risk is the health of the financial system as a whole and the institutions within it. The confidence of investors and the associated fear of loss may be bolstered by a secure financial system. However, investors' risk aversion may be exacerbated by the impression of financial instability or systemic threats. Financial news, market data, and investing insights are widely available via the media. Common sources of information for retail stock investors include television, newspapers, financial websites, and social media. Investors' views of the risks and rewards of various investment opportunities may be skewed by the information offered in the media. Investors' risk tolerance and outlook on investing prospects might be influenced by the storylines and headlines in the media. Fear may be stoked, for instance, by sensationalised news coverage of market crashes or economic crises, which can make investors more hesitant to take chances.

3.5 APPROACHES TO RISK TOLERANCE ASSESSMENT

Subjective risk tolerance and objective risk tolerance are two different approaches to assessing the risk tolerance of retail equity investors. Here is a breakdown of each:

1. An investor's *subjective risk tolerance* is their own attitude or perspective on the appropriateness of taking on financial risks. It considers subjective aspects like one's own feelings and inclinations. An investor's subjective risk tolerance considers his or her ease, nervousness, and acceptance of prospective losses. It's possible that investors with a higher subjective risk tolerance may be more at ease with market fluctuations and prepared to take on more risks in the search for greater profits. Market volatility may be seen as an opportunity for those people, who may have a more optimistic viewpoint. A lower subjective risk tolerance is associated with a higher likelihood of loss aversion and a lower likelihood of investment success. They are more concerned with capital preservation and hence choose fewer volatile assets. Questions concerning an individual's risk perceptions, investment objectives, prior experiences, and emotional responses to

various risk scenarios are often asked in interviews and surveys designed to measure subjective risk tolerance.

2. An investor's *objective risk tolerance* considers their financial resources and risk tolerance. An investor's risk tolerance is calculated by taking into account their income, net worth, liquidity, and financial responsibilities. Quantitative elements that might affect an investor's risk tolerance are taken into account when assessing objective risk tolerance. It's possible, for instance, that investors with more disposable income, less debt, and a larger net worth have a more objectively high-risk tolerance. The opposite is true for investors who may have a reduced objective risk tolerance due to limited financial resources, excessive debt, or big financial obligations.
- By giving a more concrete and quantitative estimate of an investor's risk capacity, objective risk tolerance supplements subjective risk tolerance. Hence, it is important to consider one's own financial status and capacity to withstand losses while making investing selections. For a complete picture of an investor's risk profile, it is necessary to include both their subjective and objective risk tolerance levels. By taking these into account, financial advisers and investment experts may design investment plans that meet the needs of their clients while staying within their means.

3.6 MEASURES OF FINANCIAL RISK TOLERANCE IN THE EQUITY SCENARIO

The financial risk tolerance of retail equities investors may be measured using a number of different measures. Some instances are listed below.

- Questionnaires designed to assess one's comfort with financial uncertainty are called "risk tolerance" questionnaires. An investor's risk tolerance, investing goals, time horizon, and emotional stability may all be gauged with the use of one of these surveys. According to their answers, investors are classified as either conservative, moderate, or aggressive. The FinaMetrica Risk Tolerance Toolkit

and the Riskalyze questionnaire are two examples of well-liked risk tolerance surveys.

- The risk an investor is willing to take is quantified by their degree of comfort with the inherent volatility of investment returns, as measured by the standard deviation scale. Investors are asked how much variation they are ready to take on in terms of standard deviation. Scoring lower on the scale indicates a lesser tolerance for risk, while scoring higher indicates a greater tolerance for risk.
- Investors' risk tolerance is measured using the time horizon scale, which takes into account how long they want to keep their money in the market. It factors in the expected duration of an investor's exposure to the stock market. Those who invest for the long haul are assumed to be more risk-tolerant because they have more time to ride out market volatility and reap the rewards of compounding gains.
- The risk tolerance of an investor is quantified by the portfolio allocation scale, which takes into account the proportion of various asset classes held by the individual. Equity allocation is measured against other asset types like bonds and cash. One common assumption about investors is that individuals with a larger equity allocation are more willing to take risks than those with a lower allocation.
- The risk tolerance of an investor may be determined by gauging how much they fear losing money on their investments using the loss aversion scale. It takes into account people's emotional reactions to losses and their calculations of possible benefits. Investors who are more emotionally invested in avoiding losses are stereotyped as being less risk tolerant.

These indices and gauges serve as a basis for assessing the level of financial risk that retail equities investors are willing to take. These scales should not be taken as gospel, and it may be necessary to use more than one to get a full picture of an investor's risk tolerance. Investors may better understand their risk tolerance and make sound investing selections by consulting with a financial adviser or investment specialist.

3.7 PITFALLS IN PRACTICAL APPLICATIONS OF RISK TOLERANCE QUESTIONNAIRE

Measuring the financial risk tolerance of retail equity investors can be a complex task due to several challenges. Risk tolerance is a subjective assessment that may be affected by one's own views, emotions, and biases due to its reliance on self-report. Due to cognitive biases or a lack of self-awareness, investors may deliver erroneous or inconsistent replies. Risk tolerance tests may be affected by self-report bias, making it difficult to reflect an investor's actual risk preferences. There is a lack of recent data on which to base accurate judgments of investors' risk tolerance. However, an investor's actions in the past may not be indicative of their actions in the future. Assessments of risk tolerance may be hampered by a lack of historical data, particularly during times of extreme market volatility or structural change. Bull markets and bear markets might cause investors to have contrasting risk preferences. Assessing an investor's risk tolerance during times of low volatility and uncertainty in the market may not be indicative of their genuine risk tolerance. Accurate and complete information regarding an investor's financial status, investing expertise, and investment objectives is essential for conducting a risk tolerance evaluation. However, it may be difficult to effectively estimate risk tolerance since investors may not have a thorough grasp of their own risk preferences or may not reveal all essential information. If an investor lacks investing expertise or education, they may be unprepared for the possible consequences of a stock investment. They may misjudge their level of comfort with risk by either ignoring or underestimating the dangers. Sometimes, their risk tolerance may be greatly altered by cognitive biases including loss aversion, overconfidence, and herd mentality. Behavioural biases, such as loss aversion, overconfidence, or herd mentality, can significantly impact an investor's risk tolerance. These biases can lead investors to deviate from their stated risk preferences or make suboptimal investment decisions. Assessing risk tolerance requires accounting for these biases, which can be challenging to capture accurately. Investors' risk tolerance may be affected by their unique set of life circumstances, financial objectives, investment horizon, and level of expertise. These variables may cause a wide range of variations from one person to another. It may be difficult to account for

the multifaceted nature of these context elements in risk tolerance evaluations. Incorporating qualitative aspects like investor talks and behavioural observations, as well as using a variety of measuring techniques, might help offset these difficulties. A more precise evaluation of an investor's risk tolerance and mitigation of these obstacles may be attained by consultation with a skilled financial counsellor or investment expert.

3.8 RISK-TAKING SPECTRUM OF RETAIL EQUITY INVESTORS IN KERALA

Retail equity investors in both India and the state of Kerala may have varying risk tolerances throughout their equity investing decision-making process. The term "market risk" is used to describe the general unpredictability and swings in the stock market. Depending on the economic circumstances, global events, and investor mood, retail equity investors in India and Kerala may be willing to risk market downturns, price volatility, and uncertainty in stock prices. Hazards that are unique to a particular business and its operations are known as "company-specific risks." Stock prices may be negatively impacted by a variety of factors, including but not limited to poor financial performance, management concerns, competitive hurdles, and product failures. "Sectoral risk" refers to the fact that various industries face different dangers. Factors include legislative changes, technology advances, market demand, and sector-specific hurdles that may be tolerable for retail stock investors in India and Kerala. They evaluate the hazards and benefits of investing in various fields. The danger of being unable to quickly acquire or sell an investment at a reasonable price is known as "liquidity risk". When purchasing stocks or other assets with smaller trading volumes or limited market depth, retail equity investors may be willing to suffer liquidity risk. They're cognizant of the fact that it might take more time to make transactions or close out holdings without materially altering the stock price. Changes in political stability, government policies, or laws are examples of "political and regulatory risks" that may have an effect on a company's bottom line. Some legislative changes, reforms, or geopolitical developments may be acceptable risks for retail equities investors in India and Kerala to take. Sometimes, investing in equity

denominated in a foreign currency exposes individual investors to "currency risk." Foreign stock or companies with worldwide exposure may be tolerated by retail equity investors in India and Kerala who are willing to take on currency risk. They are aware of the fact that changes in the value of the dollar relative to other currencies might affect the purchasing power of their assets. When talking about the stock market or individual equities, "event risk" refers to the danger of unforeseen occurrences having a major effect. Event risks, such as those caused by natural catastrophes, geopolitical conflicts, business scandals, or unexpected shifts in market circumstances, may be acceptable to retail stock investors. Investors may be willing to take a chance at the loss of part or all of their initial investment. They weigh the risks of investing in stocks against the possible benefits of doing so, taking into account the possibility of a loss of cash as well as the possibility of a profit. Each investor has a unique combination of financial objectives, investing horizon, expertise, and risk appetite that determines the level of risk they are willing to take on. Investors should think about consulting with specialists or financial advisers to help them assess and understand the risks involved with their investments.

Among the investors in Kerala, the psychology of risk-taking and investing choices is a deep and nuanced issue. Some points which needed to be pondered prior to their risk-absorption capacity include:

- The risk appetite and risk tolerance of investors are major factors in their choices. Individual differences in experience, expertise, financial objectives, and time horizons may all play a role in shaping risk perception. It's possible that some investors have a greater risk tolerance and would be more comfortable with riskier investments, while others would rather play it safe.
- In Kerala and elsewhere in India, ordinary equity investors often act in a herd mentality. Investors may be swayed by the choices and activities of others around them, typically due to FOMO (fear of missing out) or a desire to fit in. Investors that adopt the herd mentality often do so without doing enough due diligence or taking into account their individual risk profiles, both of which may enhance their losses.

- Several types of cognitive bias may skew financial judgments. Confirmation bias, in the context of investing, refers to the tendency of investors to look for data that supports rather than challenges their preexisting theories. When investors put too much stock in a single piece of data, a phenomenon known as "anchoring bias," they are more likely to make poor judgments. Investment choices, including risk assessment, asset allocation, and timing, are all susceptible to cognitive biases.
- Fear, greed, and hope are all emotions that may have a major influence on financial choices. Investors may take on more risk than they bargained for out of fear of losing money or missing out on possible benefits. The need for immediate cash might motivate similarly hasty and dangerous financial decisions. While emotions take precedence over logic and caution while making a choice, the results may be disastrous.
- It is possible that retail investors' portfolios are not as diversified as they may be, and this includes Indian and Kerala-based investors. When money is put into a small number of stocks or industries, it raises the investor's vulnerability to certain threats. Either greed for more profits or ignorance of the value of diversity might motivate such actions. If such investments aren't spread around, then such investors could become more vulnerable to the ups and downs of the market.
- Individual investors tend to be overconfident. It's possible they have inflated notions of their own stock-picking and market-timing skills. Because of this inflated sense of self-assurance, investors may make poor choices that expose them to unnecessary danger. Besides confirmation bias, other cognitive biases including loss aversion, mental accounting, and recency bias may affect how we evaluate risks and make choices.
- There may be a disparity in the information that retail and institutional investors have access to, known as "information asymmetry." Investment choices and the perception of risk might be affected by this knowledge gap. Common investors may depend on news reports, social media, and other sources that may not always be truthful or objective.

- Kerala's unique history and culture may also have an impact on the way local retail stock investors there evaluate risk and make investments.

There are many forms of financial risk tolerance shown by retail investors when making stock investing choices. Retail equities investors often exhibit different degrees of financial risk tolerance here. Investors with a low-risk tolerance are wary of taking chances and would rather keep their money safe than chase bigger profits. They would rather forego growth potential for more stability and security in their assets. Blue chip stocks, bonds, and cash equivalents tend to make up a larger share of the portfolios of conservative investors. Certainly, Investors with a moderate risk tolerance weigh potential rewards against potential losses. They are prepared to take some risks in the hopes of earning more money. Moderate investors often have a portfolio that is diversified over a variety of asset types, including stocks, bonds, and other investments. They strive for moderate growth, with the risk of being managed by diversification and periodic portfolio reviews. Subsequently, Investors with a high tolerance for risk are ready to take on more financial uncertainty in the hopes of a greater reward. They have a tolerance for risk and a potentially longer investing horizon because of this. Growth companies, developing markets, and industries with strong growth potential are common holdings for the equity portions of aggressive investors' portfolios. To the core, Growth-oriented risk tolerance is characterised by a preference for long-term growth and capital gain above safety and predictability in the near term. They expect better profits, thus they are ready to take more risks. Long-term growth potential is the primary consideration for growth investors, who therefore gravitate towards high-growth industries, small-cap firms, and developing countries. Similarly, those with a focus on income seek opportunities to get dividends and interest payments on a consistent basis. They are less willing to take chances and prefer guaranteed income over rapid growth in their investment portfolio. Investors who are focused on earning income often put their money into dividend equities and bonds. Moreover, they may display traits from more than one risk tolerance type, since the four categories reflect a range. An investor's risk tolerance is unique to their personal situation, investment objectives, investing expertise, and investment horizon. To guarantee that investment selections are in accordance with the investor's financial

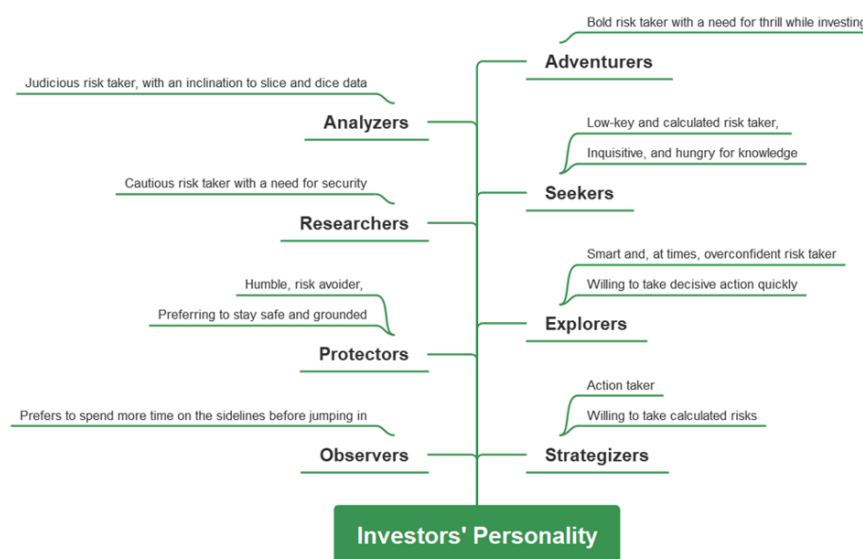
objectives, financial advisors play a significant role in determining the investor's risk tolerance and matching investment strategies with the investor's risk preferences.

3.9 INSIGHTS ON INVESTORS' PERSONALITIES IN INDIA

In the last two years, India has experienced an influx of investors on a scale never seen before. The number of Demat accounts has increased from 4.3 billion to 9.65 billion in only 24 months. Similarly impressive was the expansion of the mutual fund sector. It increased the number of retail investors by 50 percent. Due to the abundance of data made accessible by social media, investors have become more astute. They may choose from a wider variety of superior banking services. Financial technology firms have simplified and democratised the investment process. There was a recent study conducted by a leading Indian Fintech and Wealth Management Platform, ET Money; by providing certain findings in their report on Investors' Personalities. The functionality has been shown effective via more than three decades of study in the fields of psychology, behavioural science, and economics. Based on their risk preference, aversion to loss, financial expertise, and level of arrogance, investors were placed into one of eight distinct personality types; as evident from Figure 3.4.

Figure 3.4

Shows the Investors Personality Categories



Source: Modified by the Author based on ET Money Investors' Personality Report (2022)

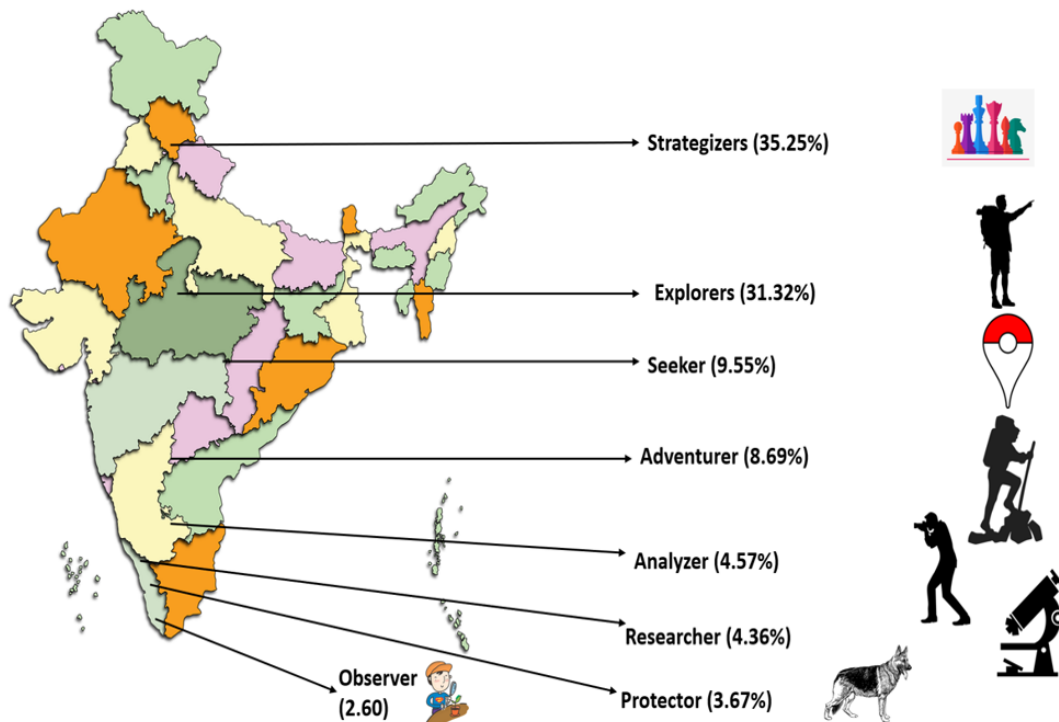
Millions of investors participated in the survey, and the following responses were recorded:

- "Strategizers" account for more than a third of Indian investors. These financiers are willing to take chances and are more likely to put their spare wealth to use in the market than their peers. 'Explorers' (31%), who are ready to move fast and boldly, come in second. Two-thirds of investors accounted in the country were found to be of these two personality types.
- An average Indian person knows 70 out of 100 about handling money. It indicates that buyers are often knowledgeable about financial matters. There are occasions when investors' financial literacy actually leads to more reckless behaviour.
- The typical investor tends to have a little arrogance when it comes to making financial commitments. A loss sensitivity of just 30 is rather low. Though normally risk-tolerant, the ordinary investor may get anxious as market conditions worsen.
- Investors' habits change as they have more experience under their belts. 'Seekers' (individuals who are curious and eager to learn) decrease beyond the age of 45. The same is true for those who are "Adventurers" (investors who want excitement).
- The number of 'Researchers' and 'Strategizers' (calculated risk takers) is greater in the older age group. The positive results show the intriguing maturation of Indian investors in recent times.
- The research emphasises the risk-taking attitude of Indian investors. However, many people invest without first assessing their risk tolerance. Such people should have less of their portfolio invested in stocks. However, the investigation revealed that around 63% of their portfolio is invested in equities. Investors may make costly errors, such as selling stocks at a loss if their expectations and reality are out of sync during severe market downturns.
- Investors often forget about risk management during sustained market rallies.

These findings have been clustered as depicted below in Figure 3.5; where the personalities of different individual investors have been categorised as regions; to imply their contribution towards equity investment for forthcoming years keeping in mind their financial knowledge, loss aversion, overconfidence, and risk tolerance levels. The lesson risen as in this case shows that the best long-term profits may be found in stock market investments which could help investors build wealth and provide returns that exceed the rate of inflation. The risk profile that they would choose to use when determining their equity allocation is more important.

Figure 3.5

Shows the Region-wise Classifications of Investor Personality Types



Source: Modified by the Author based on ET Money Investors' Personality Report (2022)

3.10 JUNGLE OF INVESTORS' SPIRITS AND ANIMAL METAPHORS

In the stock market, the phrase "animal spirits" is used to describe the psychological and emotional variables that affect investor behaviour and market movements. In his well-known book "The General Theory of Employment, Interest and Money," economist John Maynard Keynes, who contended that market players are motivated

by illogical and unpredictable impulses, like animal behaviour, popularised it in 1936. Normally, Retail Equity Investors include day traders, swing traders, Scalp traders, growth investors, or value traders. Extracts of various works of Oberoi (2016) mentioned in his article entitled, *Chickens, Stags and Pigs: The Stock Market is a Jungle of Animals*; Ansari, T (2022) in his article, *The Call of the Wild: The Most Referenced Animals in the Stock Market*; and Abhishek (2023) in his article, *11 Most Frequently Used trading Animals in the Share Market* provide valid kinds of literature specifying the connection between investors' personality, emotional competence and risk-taking attitude in the equity stock market, namely;

- **Bulls** are among the most well-known and frequently mentioned animals in the stock market. Bulls are traders and investors that have a bullish outlook on the market. Bulls have an unwavering sense of optimism and think that the market will always rise. Bulls are always present to support and drive the price of a stock higher, even if a certain occurrence lowers its price. Rakesh Jhunjhunwala was referred to as "The Big Bull" of the Indian stock market before to his untimely demise. When the stock market is in an uptrend, bulls are driving the price upward with their horns.
- The bull's greatest opponent is the **Bear**. They are pessimistic investors that represent the exact opposite mentality of bulls and think that the price will decline after a certain point. The market's ups and downs are caused by the conflict between bulls and bears. Bears attempt to drive the price lower and obstruct upward price movement. In the stock market, a falling trend indicates that the bears are busy and pushing the price lower with their powerful paws.
- Stocks that have underperformed and been knocked down by the market are known as **Dogs**. As they anticipate a recovery in the dog stocks over the next several days, many financial analysts pay special attention to these stocks.
- Traders that purchase shares in a firm during its initial public offering (IPO) and then sell it after the stock is listed and trading starts are known as **Stags**. They stag in the hopes of gaining listed benefits, which is why these people are known as stags. These traders and investors aren't really concerned about bull or bear

markets. They simply search for opportunities. They don't lean either way, either way.

- The dealers that do relatively brief transactions are known as ***Rabbits***. These traders enter and exit the market in a matter of minutes rather than maintaining positions for an extended period of time. The majority of rabbits are scalpers and intraday traders who want to earn a rapid profit in a matter of minutes or hours. To reach their profit goals, these traders do a number of deals each day.
- ***Tortoises*** purchase and sell assets slowly over a lengthy period of time because they are more concerned with a stock's long-term success than with short-term corrections and volatility. Tortoise traders occasionally lose money after purchasing a stock, but it doesn't important to them because they are more interested in long-term success.
- Investors that play it safe on the stock market are known as ***Snails***. Snail investors invest in life insurance, policies, and fixed deposits and get yearly returns because they are content with the minimum returns, they receive after their investments. One significant drawback of being a snail investor is that, while some snail investors are unaware of it, inflation eats up a significant portion of returns.
- Investors who adhere to a single investment strategy and do not alter it in response to market conditions are referred to be ***Sheep***. Typically, they are the last to join an uptrend and the last to exit a slump. They choose to align themselves with the herd and adhere to a guru. They have no desire to create their own investment or trading strategy.
- The stock market usually makes chickens nervous. If a market or asset sees an abrupt downturn, these investors freak out. ***Chickens*** attempt to play it safe and avoid taking any chances since they don't want to have their feathers ruffled. However, because they may invest and trade at random, without any analysis, or on the basis of tips and calls, chickens are the ones that suffer the most from the market. But most of the time, hens avoid the market and make secure investments in bonds and banks.

- Some traders and investors become greedy because of the early beginner's luck in the stock market. These traders and investors aspire to generate significant profits in a short amount of time. **Pigs** are willing to accept high amounts of risk in order to satiate their greed and ignore the loss if the price changes contrary to their expectations. Regardless of market conditions, these traders and investors strive to maximise their returns. They are regarded as the biggest losers on the market as a result of this feature since they are constantly butchered.
- The names **Hawks** and **Doves** are used to characterise the various sorts of policymakers who adopt pessimistic viewpoints towards various economic circumstances. In essence, it implies a policymaker's sensitivity to an economic condition. A "dove" seeks to be accommodative in an economic scenario, whereas a "hawk" wants to take a harsh position.
- Powerful traders and investors known as **Wolves** take advantage of the stock market by using unethical methods. These wolves are typically associated with the schemes that, when discovered, influence the stock market. Harshad Mehta, for instance, may be described as Dalal Street's wolf. He was accused of a number of financial offences related to the Securities Scam of 1992. Similarly, the famous Hollywood movie 'The Wolf of Wall Street' depicted Jordan Belfort, who was convicted on charges of stock fraud in his penny stock operation and stock market manipulation
- A **Lame-duck** trader or investor is one who engages in trading yet incurs a significant loss. Due to their incapacity to recoup trade losses, lame ducks have either defaulted on their obligations or declared bankruptcy. The origins of the expression may be found in the early days of commodities trading and the growth of the London Stock Exchange in the middle of the eighteenth century.
- **Ostriches** bury their heads in the ground when circumstances are tough in the hopes that things would get better eventually. These investors frequently choose to ignore unfavourable effects on their portfolio and do nothing because they think the market will soon return to normal.

- **Sharks** are a collection of traders and investors that rig the market. By trading among themselves, they can drive up the price of a stock, luring in regular traders drawn by the rising price. Sharks quickly dump the stock whenever regular traders begin making purchases before dissipating. Sharks are a risky indicator for ordinary investors, and it may be quite hard to recognise one in the market.
- **Whale** investors can be wealthy individuals or large institutions with deep finances. They do this by making a large order, the magnitude of which has the power to drastically change the price of a stock. Retail investors and traders may make money when they invest with whales. In any event, to predict the market's future position, traders and investors should recognise whales and keep a watch on them.
- **Dolphins** represent agile and intelligent investors who adapt quickly to changing market conditions. They are known for their ability to navigate through market volatility and make strategic investment decisions based on careful analysis.
- **Owls** symbolize wise and patient investors who take a long-term approach to investing. They are characterized by their ability to research thoroughly, analyse fundamental factors, and make informed investment decisions with a focus on sustainable growth.

To sum up, Bullish emotions are frequently fostered by optimistic and self-assured animal spirits. As a result, investors may be more willing to take on risk and choose to invest in stocks more aggressively. In contrast, unfavourable animal spirits, such as dread and pessimism, can foster a bearish attitude, making investors risk-averse and thus pushing them to make more cautious investing choices. Investors and market players must comprehend how animal spirits, risk tolerance, and investment choices interact. It emphasises how sentiment among investors, psychological influences, and risk preferences influence the choice of investment strategies and asset allocation in the equity market. By considering these variables, investors may better match their investment choices to their risk appetite and handle market volatility with more assurance and clarity.

3.11 THEORIES UNDERLYING DIFFERENT VARIABLES USED FOR THE STUDY

In research, the term, ‘variables’ refers to measurable characteristics or factors that can vary or change. They are used to understand and analyse relationships between different phenomena or to test hypotheses. In Behavioural Finance, researchers have been using this term to investigate the underlying psychological and cognitive processes that shape investors’ decision-making. By examining the relationships between the committed variables, researchers aim to understand and explain deviations from traditional economic models and provide insights into the behaviour of investors in financial markets. Possibly for the study on “Financial Risk Tolerance and Investment Decisions of Retail Equity Investors in Kerala”; a few variables pertaining to the study based on the available literature, emerging research gaps and contributions to direct further research have been identified Figure 3.6 shows the variables used for the study from the theories, models, experiments, paradoxes discussed previously by experts in this area.

Figure 3.6

Represents the Variables used for the study



Source: Designed by the Author based on available literature

The above-picturised variables have been coined from the following theories as detailed by various behavioural experts and authors over time.

3.11.1 PROSPECT THEORY

Individuals' decision-making processes when faced with uncertainty are described by Prospect Theory, which was created by Daniel Kahneman and Amos Tversky in 1979. It sheds light on how individuals conceptualise and weigh the benefits and costs of various options available to them. It shows how investors estimate possible profits

and losses and how these views affect risk tolerance. It influences the FRT of any retail equity investors in ways which include-

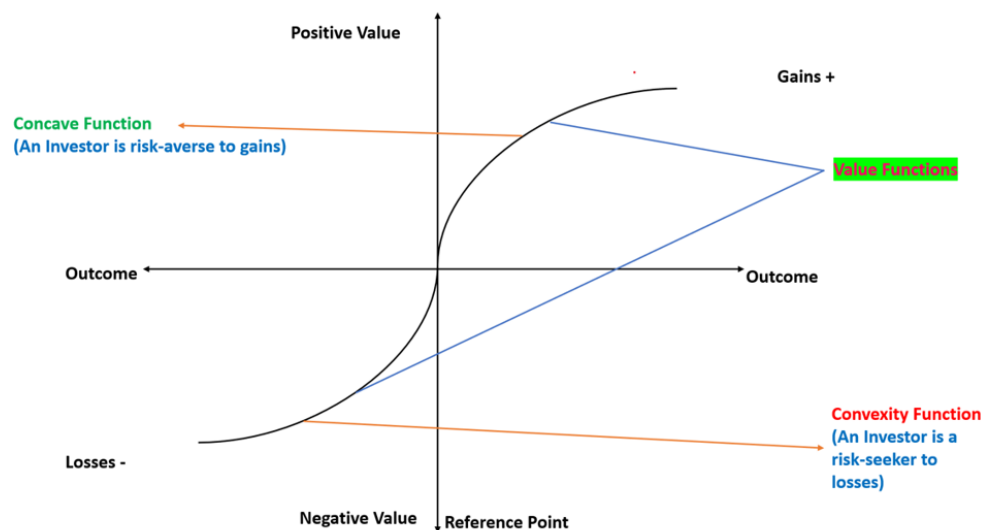
- (a) **Loss Aversion:** According to Prospect Theory, investors tend to react more strongly emotionally to losses than to gains of the same magnitude. This may make them more risk-averse when it comes to equities investing, which would have ramifications for risk tolerance. They could be more likely to shun investments with significant downside risk in favour of those with lower risks.
- (b) **Reference Point:** As per this theory, investors judge the quality of a result in relation to a reference point, which acts as a mental standard. Many things, including one's own history, one's expectations, and one's culture, might affect one's reference point. In most cases, they don't judge results in absolute terms but rather in relation to this standard.
- (c) **Probability Weighting:** Investors, according to Prospect Theory's probability weighting, do not always correctly assign probabilities to occurrences. The likelihood of more probable occurrences may be underestimated while the likelihood of less likely ones is emphasised. In the context of financial risk tolerance, investors may incorrectly estimate the likelihood of extreme market outcomes like a dramatic market collapse. Their risk appetite and equity investment propensity might be affected by how they see these factors.
- (d) **Framing Effect:** The term, 'Framing' refers to how the presentation of a decision or an investment option affects the audience's ultimate choice. Investors, according to the Prospect Theory, make various decisions depending on the presentation of possibilities, even though the consequences are the same. Options expressed in terms of rewards may cause the investors to be more risk-cautious, while those framed in terms of losses may cause them to be risk-takers. Investors tend to be more risk-averse when choices are framed in terms of potential losses, preferring safer options. Conversely, they may be more risk-seeking when choices are framed in terms of potential gains; such a situation is called, "Gain-Loss Framing". Similarly, Positive framing emphasizes the benefits and potential gains, while negative framing emphasizes the drawbacks and potential losses. Hence, the

investors respond differently based on how the information is framed. For instance, an investment opportunity can be framed as short-term or long-term, with different implications for risk and return expectations. Temporal framing can influence risk tolerance and the perceived urgency of taking action.

- (e) Value Function: Investors' subjective evaluations of the worth or utility of various outcomes are represented in the theory by an S-shaped value function. The value function is concave for gains, showing less susceptibility to larger gains, and convex for losses, showing more sensitivity to negative changes. This indicates that people display loss aversion, in which losses are felt more intensely than similar gains, and declining marginal value for gains. It's evidently proved by Kahneman and Tversky (1979) that the Value Function depicts the Asymmetry of Retail Equity Investors' Risk Tolerance; which is much clear from the Figure 3.7 shown below.

Figure 3.7

Shows Investors' Risk Tolerance Asymmetrically depicted in the Value Function



Source: Modified for study purpose based on the Prospect Theory (Kahneman & Tversky, 1979)

Practical Implications of this Theory towards understanding the FRT and the Investment Decisions of Investors in Kerala:

- ✓ It explains risk aversion in wins and risk-seeking in losses. It illuminates decision-making biases such as loss aversion, framing effects, and probability distortions.
- ✓ It challenges rational choice theory by bringing psychological insights into uncertainty-based decision-making. It has shaped behavioural economics and has been used to understand and forecast economic and financial behaviours.
- ✓ It emphasises the relevance of investors' perceptions, biases, and framing of prospective outcomes when measuring risk tolerance. This knowledge in fact helps financial counsellors and investment professionals match their investors' risk preferences and objectives.

3.11.2 EXPECTED UTILITY THEORY

The early seeds for this theory were sown by famous Mathematicians, David Bernoulli and Gabriel Cramer (1738). Further, this was developed, replanted and popularised axiomatically by John Von Neumann and Oskar Morgenstern (1944). This was initially propounded just to challenge the St. Petersburg Experimental findings. This theory is a well-known economic and financial paradigm for thinking about how investors act when faced with ambiguity which is truly helpful in deducing how much retail stock investors are willing to take on financial risk and why they do so. Firstly, the theory has been predicated based on the idea that investors make choices based on their own subjective levels of pleasure or preferences. Their individual preferences for risk vs reward are captured by the utility function. Individuals with a higher risk tolerance are more likely to engage in risk-seeking behaviour because they are found getting ready to take on more uncertainty in exchange for the possibility of greater reward. Secondly, it understands that investors must balance risk and reward when making choices. Maximising anticipated utility must be the goal of investors, who weigh potential gains and losses when deciding which investments to prefer. Investments with a higher risk profile might provide larger returns but also increase the investor's exposure to loss. An investor's risk tolerance determines how much they

are prepared to stomach the risk and probable losses in the quest for better returns. Thirdly, the notion of ‘Certainty Equivalent’ has been promulgated through the introduction of this theory that an investor would judge to be comparable in utility to a hazardous investment alternative. Investors who would be ready to take on higher risk and tolerate uncertainty in exchange for possibly better rewards would be wanting a lower certainty equivalent. Rational investors, in line with EUT, strive to maximise their utility by choosing the investments with the greatest predicted utility. They weigh the benefits and drawbacks of potential investments based on the likelihood of various scenarios.

3.11.3 REGRET THEORY

The theory was developed by Graham Loomes, Robert Sugden, David E. Bell, and Peter C. Fishburn in 1982; aimed to describe why and how people feel regret after making certain choices. It sheds light on how retail equities investors' regret aversion affects their risk tolerance and investing choices. The theory found that investors wish to avoid feeling regret since it causes them mental anguish or sorrow when they consider how their choices would have been different and turned out better. Those who invest their own money in the stock market may demonstrate regret aversion if they focus more on the danger of loss than on the prospects of gain. Because of their desire to avoid disappointments, some investors may be found too cautious in their investing strategies. It also highlights that investors anticipate regret based on their expectations and counterfactual thinking. When faced with investment decisions, retail equity investors may consider the potential outcomes and evaluate the regret they may experience if they make suboptimal choices. This consideration of regret can in fact influence their risk tolerance by making them more risk-averse and less willing to take on uncertain investment opportunities. It proposes that people gain insight from their mistakes and utilise it to guide their future investment choices. Individuals who invest in the stock market could use their past regrets as a factor in their analysis. If, for instance, they've learned their lesson from prior losses, their risk tolerance may actually decrease; as supported by this theory. The way equity investment options are framed can influence the experience of regret and subsequent

risk tolerance. The Regret Theory suggests that investors are more likely to take risks to avoid certain regret, rather than to pursue potential regret. Investors may frame investment choices in terms of avoiding potential regret, which can impact their risk tolerance and lead to more conservative investment decisions.

3.11.4 BEHAVIOURAL LIFE CYCLE THEORY

The framework for this theory as laid down by Richard Thaler and Shefrin (1988) combines insights from behavioural economics and the life cycle theory of savings to understand the financial risk tolerance and investment decisions of retail equity investors. It considers how individuals' attitudes and behaviours change over their life course and how these factors interact with their risk tolerance and investment choices. Certain findings with this theory that replicate its usefulness in identifying the research gap for the study include:

- ❖ Investors who are still young and in the "accumulation" stage of their lives tend to take on greater risk since they have more time to make up for any losses they may incur. Individuals tend to become more risk-averse as retirement nears in order to safeguard their savings. The investing choices made by retail equities investors at various periods of life may be better comprehended if one is aware of these age-related alterations in risk tolerance.
- ❖ Investors' risk perception is impacted by both objective and subjective variables. Individual differences in risk perception and risk framing over the lifespan of retail equities investors impact their risk tolerance. For instance, investors of different ages have different priorities when it comes to protecting their money. Younger investors may be more ready to endure volatility in their portfolios owing to their longer investment horizon. Their risk tolerance and decision-making may be enhanced by presenting investment alternatives and information in a manner that is consistent with their beliefs and perspectives.
- ❖ Investors' risk-aversion and investment choices are affected in different ways at various points in their life cycles. Early-life setbacks, such as the failure to accumulate money or achieve long-term financial objectives, may have a more

profound effect on their financial risk tolerance than their later-life setbacks. Their risk-taking behaviour may be better understood and investment strategies be better informed if they would have a better grasp on the dynamics of loss aversion across the life cycle.

- ❖ As the Recent scenarios proclaim that investors today are vulnerable to a number of cognitive biases and heuristics that might affect their risk tolerance and investment choices. Investors' risk perceptions and subsequent decisions may be negatively impacted by certain cognitive biases such as overconfidence, herd behaviour, and mental accounting. The degrees of their risk tolerance and investing performance may both benefit from the recognition and reduction of these biases.

3.11.5 MENTAL ACCOUNTING THEORY

Richard Thaler, an Emeritus Professor of Economics from the University of Chicago's Booth School of Economics had taken great steps to emerge the Mental Accounting Theory; popularised in 1999. The theory describes how investors' preconceived notions influence their evaluation of monetary events and investment transactions. Such findings have got enough to significantly ramify our knowledge of retail equities investors' risk aversion and investing preferences. It suggests that investors mentally segregate their cash into distinct "accounts" with their own set of rules for how and when to spend it. For instance, they mentally divide their money into three different buckets: saves, investments, and consumption. Individuals may be more ready to accept risks with investing money, whereas they may be more risk-averse with savings or emergency funds, due to this segmentation's potential impact on their risk tolerance and investment selections. It emphasises the fact that investors' risk perceptions vary depending on the mental account being used. Investors' subjective evaluations of the same amount of risk may vary, depending on which mental account the risk is filed under. For instance, even though the total portfolio risk is appropriately diversified, investors may be more risk-averse when thinking about prospective losses from their own accounts. Investors' risk tolerance and their readiness to take on risks in certain investment categories may be better understood if these differences in risk perception

across mental accounts are considered properly. According to the theory of Mental Accounting, individual investors' perceptions of their own successes and failures change depending on which mental account they credit each event to. Losses in one mental account may affect investors more than profits in another. This might result in different attitudes towards risk and hence, investing choices. To protect their retirement funds, investors may be more risk-averse, opting for a more cautious investment strategy, while in their investment account set aside for greater potential returns, they may be more ready to accept risks. Similarly, the sunk cost fallacy or the stubborn insistence on continuing to invest in a losing venture is something that may be understood through the lens of this theory. Even though selling a poorly performing asset would be the logical thing to do, investors may be emotionally attached to their original investments and be hesitant to do so. The emotional connection to the starting capital and the fear of taking a loss is at the root of this hesitation. Investors' risk aversion and propensity to either reduce losses or take on greater risks in an attempt to recoup from previous losses may be illuminated by gaining an appreciation for this cognitive bias.

3.11.6 LOSS AVERSION THEORY

Developed by Daniel Kahneman and Amos Tversky in 1979, as a byproduct of the Prospect Theory. The theory suggests that investors feel the pain of losses more strongly than the pleasure of their equivalent gains. The emotional toll of financial setbacks much outweighs the emotional high of financial success. Therefore, investors are more likely to avoid taking risks when such risks include losses rather than returns of the same size. Investors' loss aversion might cause them to be more conservative and risk-averse in their approach to the markets, with capital preservation taking precedence above return maximisation. In an effort to preserve capital and prevent further losses, investors may sell high-performing holdings before their time. This way of behaving might cause people to lose out on potential benefits. When it might be financially prudent to sell a losing investment, some investors may be hesitant to do so. In such a case, the 'disposition effect' describes how this kind of behaviour might influence one's willingness to take risks and reduce losses. Sometimes, when

making equity investment decisions, loss aversion may distort the weight given to risks or returns. It's possible that investors' decision-making processes are swayed more by the prospect of losses than by the opportunity for rewards. Avoiding losses may become more important than considering their long-term investing goals and prospects, which may lead to poor decision-making.

3.11.7 MYOPIC LOSS AVERSION THEORY

Shlomo Benartzi and Richard Thaler attributed this theory to explaining the idea behind the Equity Premium Puzzle in 1995; stating that investors are more sensitive to short-term losses than long-term investment performance. They tend to focus on immediate losses and may make decisions based on short-term fluctuations rather than considering the long-term potential returns. It may make investors overly concerned about short-term losses, leading them to behave irrationally in response to market fluctuations and make poor investment choices and because of which, they may make poor investing decisions and become more risk-averse. Overreacting to short-term market swings may cause retail equity investors to purchase or sell based on immediate losses rather than the fundamentals of the assets themselves. The effect may be more frequent trading and poorer profits. Compared to safer investments like government bonds, stocks have historically provided returns that are larger than the premium predicted by conventional financial theories like the Capital Asset Pricing Model (CAPM). This discrepancy came to be known as the “Equity Premium Puzzle”. It has important implications for understanding retail stock investors' risk tolerance and investing choices as discussed below:

- The Puzzle illustrates the inherent tension between taking on more risk and earning more money. Stocks are more volatile than bonds, thus they are seen as a riskier investment. On the other hand, they may provide better long-term returns. Those with a greater risk tolerance among retail equities investors may be more prepared to ride out the stock market's short-term volatility in return for the opportunity for long-term wealth growth.

- It highlights the need for maintaining a long-term investing view. Although stock market losses and volatility are possible, research shows that equities often provide greater returns in the long run. The inherent volatility of stocks may be more tolerable for retail investors who have a longer investment horizon and are prepared to remain involved for the long term.
- The need for diversity in risk management is highlighted by The Equity Premium Puzzle. Historical stock returns may have been greater, but stock prices fluctuate often. Retail equities investors may reduce the volatility of their portfolios and improve the consistency of their returns by spreading their investments over a variety of asset classes, industries, and geographies.
- The stock Premium Puzzle stresses the need for educating and informing retail stock investors. Investors may better match their risk tolerance with appropriate investing strategies when they have a thorough grasp of the data from the past, the risk-return trade-offs, and the long-term advantages of equity investments.

3.11.8 REGRET AVERSION THEORY

According to Kahneman and Tversky's Regret Aversion Theory (1979), investors are driven to make choices in such a way that they would feel the least amount of regret possible. This hypothesis proposes that they are more likely to avoid taking risks because they are more concerned with the consequences of their actions than they are with the benefits. It provides light on how the dread of future remorse affects the risk tolerance and investing decisions of retail equity investors. The inclination to put a higher value on avoiding losses than earning benefits is known as loss aversion, and it is strongly connected to regret aversion. Common investors in stocks may be risk-averse since they don't want to look back and feel bad about their decisions. They may place a premium on avoiding losses and be hesitant to take on risks with a high potential for payoff. Such a situation may also be termed the "*Snake-Bite Effect*". Investors who are "regret-averse" work hard to reduce the chances that they would later feel regretful about their choices. They could choose investments that are less risky, diversify their holdings, or use other conservative tactics. They want to prevent

disappointment by opting for safer investments, regardless of the possibility of lower returns. Financial Advisors could assist these investors prevent regret by evaluating their fear of regret; which might entail presenting a variety of risky investment alternatives, educating them about the risks and benefits, and helping them acquire a long-term perspective to reduce regret aversion.

3.11.9 AFFECTIVE FORECASTING THEORY

The theory was propounded by Timothy Wilson and Daniel Gilbert in 2003 focussing on how investors predict and evaluate their emotional responses to future events. It implies that they anticipate their future emotional states, including how they will feel about probable investment results. Based on their expectations of investment returns and dangers, investors may anticipate feelings like pleasure, regret, worry, or exhilaration. Sometimes, this theory is also termed, “Impact Bias” since, it refers to the tendency to overestimate the intensity and duration of emotional reactions to future events. The emotional effect of wins or losses for retail equities investors may be exaggerated; due to which, they may become more risk-averse in their financial dealings. The way investment options and potential outcomes are presented or framed can influence affective forecasts and subsequent risk tolerance. Different frames, such as gains versus losses or positive versus negative framing, can elicit different emotional responses and impact risk perception. Wilson and Gilbert stressed on four components in this theory, namely; the degree to which the feeling is good or negative; discrete feelings such as revulsion, rage, or panic; emotional ferocity; and the length of time an emotion lasts.

3.11.10 THEORY OF EMOTIONAL INTELLIGENCE

Daniel Goleman’s Theory of Emotional Intelligence (1995) is built upon five important components: self-awareness, self-regulation, motivation, empathy, and social skills. Being self-aware is being in touch with and accepting one's own feelings, abilities, and limitations. An investor’s risk tolerance and emotional biases and dispositions may be better assessed by a self-aware retail investor in the equities market. Investors who take time to consider and evaluate their prior selections might better tailor future decisions to their own risk tolerances and goals. Self-controlled

investors are better able to withstand market storms and deal with unforeseen improvements. They have a level head in the face of uncertainty and are not easily swayed by greed or fear. With the ability to self-regulate, investors may put their emotions to the side and make financially sound judgments based on their long-term objectives. Having the drive to achieve one's objectives requires one to do it with enthusiasm and determination. Highly driven investors are better able to handle the dangers and uncertainties of the stock market. They are more likely to invest with the long-term in mind, be laser-focused on their financial goals, and be able to handle the ups and downs of the stock market. Motivated investors are driven by their aspirations rather than being solely influenced by short-term market trends. Investors with strong empathy skills could consider the perspectives of different market participants, understand investors' sentiments, and anticipate market trends. This broader understanding can enhance their risk perception and help them make more informed investment decisions. Moreover, this could also enable them to engage in effective communication with financial advisors and other stakeholders, fostering better collaboration and decision-making. Hence, it is better understood that successful investors have the social skills to network, seek advice from, and learn from the industry's experts. They may have fruitful conversations, reach mutually beneficial agreements, and get access to lucrative investment possibilities. Such investors with strong social skills are better equipped to handle the complexity of the equity stock market.

3.11.11 PROTECTED MOTIVATION THEORY

PMT was developed by Rogers in 1975 to explain how individuals respond to threats and engage in protective behaviours. Although PMT has been found mostly in use in the realm of health-related behaviours, it may also be useful in comprehending the risk tolerance and investment choices made by ordinary individual investors in the stock market. To determine how much of a financial risk, they are willing to take, investors consider the consequences of their investments. Investors who perceive a greater level of risk may be less willing to take chances and more interested in securing their capital. On the other side, investors who see less danger may be more

eager to take chances in hopes of greater rewards. Perceived efficacy in the context of finance is defined as investors' belief in their own capacity to make prudent investment choices, mitigate financial risks, and realise their financial objectives. Those who have a greater sense of their own abilities as an investor may be more inclined to take risks and put their money into stocks since, they are confident in their decision-making abilities and their capacity to weather market volatility. PMT emphasizes the role of coping strategies in responding to threats. Also, investors assess the effectiveness of various coping strategies to mitigate risks, which may include diversifying their investment portfolio, seeking professional advice, or staying updated on market trends. Investors who perceive these coping strategies as effective may have higher risk tolerance and feel more confident in their investment decisions. When making an investment choice, investors weigh the pros and cons, including transaction fees, time commitment, and prospective returns. Investors with a greater risk tolerance may be more prepared to incur risks if they believe the possible rewards will exceed the expenses.

3.11.12 HOMEOSTASIS THEORY

The theory is also called the Risk Compensation Theory; which was popularised by a Professor of Psychology from Queen's University Gerald J.S. Wilde in 1982. It argues that investors have a natural inclination to keep their own sense of danger at a constant and that they will modify their actions accordingly. While this has been seen primarily applied in the context of safety and risk-taking behaviours, it can also provide insights into financial risk tolerance and investment decisions of retail equity investors. The theory states that investors have a subjective risk tolerance. Based on their personality, experiences, and financial objectives, they may expose their varying degrees of risk tolerance. Some investors favour low-risk investments, while others prefer equity investments for larger returns. For example, if they perceive equity investments as riskier, then they would compensate by conducting thorough research, diversifying their portfolio, or seeking professional advice. Conversely, if they perceive equity investments as less risky, they may take on more risk without implementing compensatory strategies. Similarly, positive outcomes may reinforce

their risk-taking behaviour, leading to increased risk tolerance and more equity investments. Conversely, negative outcomes may result in reduced risk tolerance and a shift towards safer investment options.

3.11.13 SITUATED RATIONALITY THEORY

Rhodes presented a theory named Situation Rationality Theory in 1997 to sketch out the risk takings of individuals in various social settings. This theory acknowledges that individuals learn and adapt their decision-making strategies based on feedback and experience. In the financial domain, investors may adjust their risk tolerance and investment decisions based on the outcomes of their previous investments. They may update their beliefs, revise their strategies, and learn from their successes or failures. This adaptive decision-making process takes into account the situated nature of decision-making, where investors continuously refine their approach based on their experiences and the feedback they receive.

3.11.14 ROTTER'S SOCIAL LEARNING THEORY

Julian Rotter's theory of social learning highlights the importance of expectations in shaping actions. Rotter (1954) argues that an individual's behaviour is governed not only by the kind or relevance of goals or reinforcements but also by the individual's anticipation or expectation that these goals or reinforcements will occur. This theory of Locus of Control is a psychological concept that explores individuals' beliefs about the degree to which they have control over events and outcomes in their lives. Those who have a firm conviction in their own agency are said to have an "internal locus of control." It has been hypothesised that investors who have an internal locus of control are more likely to accept personal responsibility for their investment choices and to have the conviction that their efforts may affect the financial outcomes they want. They could feel more certain in their abilities to weigh costs and benefits, examine data, and choose appropriate investments. In contrast, those investors who have a strong external locus of control attribute much of their success to random chance. The success or failure of an investor's portfolio may be seen as the result of forces outside the control of the investor, such as market fluctuations, economic trends, or the actions of others. They may be less likely to take credit for their own decisions and more

likely to attribute outcomes to luck or chance. If they feel helpless to influence the results of their own investments, then they would become less willing to take risks. One's sense of danger may also be affected by their locus of control. Investors who place their sense of agency inside themselves may think that they can affect the outcomes of their investments through their own choices and activities. They might see danger as an exciting new experience or a chance to develop their skills. Investors who have an external locus of control may be more anxious and less willing to take risks since they see these threats as beyond their control. Similarly, it does shape the investors' decision-making strategies in the equity investment domain. For instance, those who place their sense of agency inside themselves as investors may make better-informed decisions, actively seek out data, and take more measured risks. They may be better able to handle risk and make impartial choices about their savings and investments. On the other side, investors who place their sense of agency outside of themselves may be more hesitant to take risks and more reliant on the opinions of others.

3.11.15 ZUCKERMAN'S SENSATION-SEEKING THEORY

The concept of "Sensation-Seeking" was first formulated by great efforts put in by Marvin Zuckerman of the University of Delaware in 1969. This personality trait came out as a by-product of the development of the Sensation Seeking Scale; measuring the individual differences in terms of sensory stimulation preferences. This theoretical framework investigates the human need for novelty and intensity in encounters. Although the emphasis of this theory is not on risk aversion or investing choices, it nonetheless provides some useful context for understanding investors' propensity for novel experiences. One dimension of Zuckerman's theory is thrill and adventure seeking, which refers to individuals' desire for exciting and stimulating experiences. In the context of taking financial risks, those investors with a strong need for excitement may be more likely to put their money into high-reward ventures. They may seek out more financially risky investing possibilities only because of the thrill and novelty they give. Investors' propensity to seek out novel and different experiences is another facet of sensation seeking. High-experience seekers may be

more willing to diversify their portfolios by investigating new opportunities in the form of developing markets, novel financial products, or non-traditional investing techniques. They may be prepared to take more risks in order to broaden their investment horizons and expertise. Investors that have a strong need for novelty may have a different understanding of risk than those with a lesser need for novelty. Instead of seeing the danger, they could see dangers as exciting new experiences that would help them develop as an opportunity. This shift in risk perception might influence their risk tolerance, making them more likely to accept risks in order to pursue fresh and exciting experiences. Sensation seekers may make more impulsive decisions because they want instant satisfaction and excitement, which may lead to impulsive trading, short-term rewards, and risk-taking without proper analysis. Such impulsiveness may affect their risk tolerance and investing performance to the core.

The basis of this theory has been derived from the earliest works of McCrae and Costa (1978); based on Carl Jung's principles of personality classification (1933). The relationship between Sensation-Seeking behaviours and the Five Factor theory has been shown below:

- Extraverted investors crave sensations (Cheng, 2018 and Aluja et al., 2003). Those who score high on extraversion tend to be outgoing, and sociable and seek external stimulation, would like to engage in thrill-seeking activities, and actively seek novel experiences to satisfy their need for excitement and social interaction.
- Openness to experience promotes sensation-seeking (Aluja et al., 2003). Those who score high on openness are characterized by their curiosity, creativity, and willingness to explore new ideas and experiences. They are more likely to engage in sensation-seeking behaviours to satisfy their need for novel and varied experiences.
- Neuroticism and sensation-seeking behaviour are more complex and context-dependent (Rattel et al., 2020). Neuroticism increases anxiety, depression, and emotional instability. Sensation-seeking may help neurotic investors avoid unpleasant feelings and due to their heightened sensitivity to hazards and bad

consequences, other investors would try imitating to become more risk-averse and cautious.

- Agreeableness and sensation-seeking have a modest negative correlation (de Vries et al., 2009 and Johnson, 2021). Investors high in agreeableness tend to prioritize social harmony, cooperation, and maintaining positive relationships. They may be less inclined to engage in risky or impulsive behaviours that could disrupt social dynamics or cause conflicts.
- Sensation-seeking adversely affects conscientiousness (Johnson, 2021 and Rumbold et al., 2021). Investors high in conscientiousness are typically disciplined, organized, and focused on long-term goals. They tend to exhibit more cautious and risk-averse behaviours, as they prioritize stability and adherence to rules and responsibilities over seeking novelty or excitement.

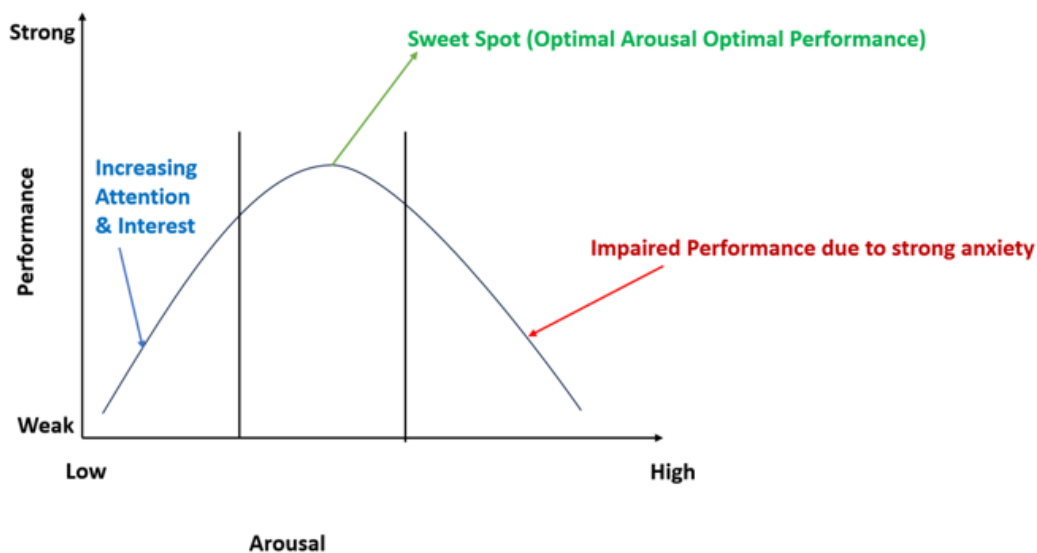
3.11.16 INVERTED U-SHAPED THEORY

The theory illustrates the relationship between pressure and performance. Also called the Yerkes-Dodson Law since it was propounded firstly by two psychologists, Robert Yerkes and John Dillingham Dodson (1908). It shows how to determine the sweet spot of positive pressure where individual investors thrive. Their performance might suffer under either too much or too little strain. It shows that there is an ideal level of arousal for performance, and departures from this level might affect financial risk tolerance and investment choices. According to this theory, performance increases with arousal up to a degree, then declines. This hypothesis proposes that there is an ideal amount of arousal or excitement for making educated and productive financial risk tolerance and investing decisions. This ideal range is likely to produce well-considered investors. When investors experience low arousal levels, such as boredom or apathy, their risk tolerance and motivation to engage in investment decision-making may be diminished. They may be less likely to actively seek out investment opportunities, conduct thorough research, or make informed decisions; which could result in missed investment opportunities or suboptimal investment choices. When investors are anxious or panicky, their risk tolerance and decision-making may suffer. Excessive arousal may cause impulsive or illogical actions, such as taking

unnecessary risks or investing without sufficient analysis or consideration of long-term repercussions; which might worsen their equity investing results. Finding a balance between engagement, motivation, and anxiety is key to effective arousal. Mindfulness, clear investing objectives, portfolio diversification, and expert assistance may help investors regulate their arousal. Investors may make more reasonable financial risk tolerance and investing decisions by maintaining optimum arousal; which is very much evident from below Figure 3.8.

Figure 3.8

Shows the Inverted U-shaped curve



Source: Modified for the study purpose based on the Yerkes-Dudson Law (1908)

3.11.17 RATIONAL CHOICE THEORY

The theory explains why investors prioritise their own interests above those of the group when making decisions. Rational agents, self-interest, and the "invisible hand" are the three mainstays of this theory. The philosopher and "father of modern economics," Adam Smith, is often regarded as the creator of this school of thought in 1776 in his book titled, *"An Inquiry into the Nature and Causes of the Wealth of Nations"*. As per this theory, individuals aim to maximize their utility, which represents their satisfaction or well-being. In the context of financial risk tolerance, retail equity investors seek to optimize their investment returns while minimizing the

risks involved. They evaluate the potential benefits and drawbacks of different investment options to make decisions that maximize their expected utility. When making investment choices, retail stock investors place a monetary value on the likelihood of different events, including prospective returns and losses. Investors may make educated decisions that are in line with their risk tolerance and investment objectives by calculating the anticipated utilities of various investment alternatives and comparing them.

3.11.18 BOUNDED RATIONALITY THEORY

The Theory was proposed by Herbert A. Simon in 1955, suggests that individuals have limited cognitive abilities and information-processing capabilities, which restrict their ability to make fully rational decisions. It acknowledges that they have cognitive restrictions such as short attention spans, difficulty processing large amounts of information, and a lack of spare time. Retail stock investors may not have complete data or the resources to collect and analyse massive volumes of data when making investment choices. They use heuristics, rules of thumb, and other simplification tactics to make difficult judgments quickly. As opposed to always looking for the best option, they often participate in satisficing behaviour, in which they settle for a "good enough" solution. Depending on how much they are willing to take on in the way of financial risk, retail equity investors may choose investments that fulfill specific criteria and are adequate for their requirements and objectives without doing a comprehensive analysis of all available options. This method recognises the importance of weighing the time and effort of decision-making against its potential payoffs.

3.11.19 HABITUATED ACTION THEORY

According to this theory developed in, retail equities investors' risk aversion and investment decisions may be influenced by their habitual actions in the financial markets. The theory suggests that individuals who repeatedly engage in high-risk behaviour without experiencing negative consequences become desensitised to the risks involved. Those who engage in high-risk behaviour on a regular basis without experiencing negative outcomes may become desensitised to the danger (Kasperson

et al. 1988; Weyman & Kelly 1999). People who use leverage to invest in stocks, but who have never experienced a loss, tend to keep raising the size of their margin bets. Some individuals have knowledge of stock market investing and the computation of returns on equity investments (Deb and Singh 2016, Singh and Bhowal 2011, Powers 2009). Deb and Singh (2016), Singh and Bhowal (2010b, 2011), the existence of a local coaching/counselling/share investors' forum and a subsequent shift in investor behaviour, etc., all lend credence to the idea that investors may benefit from education on equity share investing.

3.11.20 COGNITIVE DISSONANCE THEORY

Leon G. Festinger created a theory called “Cognitive dissonance Theory” in 1957; to explain how individuals might feel uneasy when they possess contradictory ideas or attitudes. As a result, it's likely that they will try to harmonise their thoughts, feelings, and actions in order to feel less cognitive dissonance; which arises when their views and expectations about an event are at odds with that outcome. For instance, cognitive dissonance may arise when an investor's expectations about the result of a high-risk investment don't match up with the actual outcome of that investment. Investors may try to lessen this dissonance by engaging in activities like rationalising their choice, gathering more information, or changing their perspective on risk. It shows that they are more likely to look for evidence that supports their own opinions and shun that which challenges them. In the context of financial risk tolerance, investors may seek data that either validate their existing beliefs or minimises the risks associated with trying new things. Because of this bias, investors may feel more secure in their choices and experience less internal conflict. The theory proposes that when investors suffer losses as a result of their risk-taking behaviour, they may reevaluate their risk tolerance in order to lessen the pain produced by the discrepancy between their actions and their results, which might cause them to reevaluate their risk tolerance, leading them to make less risky investments in the future. When investors come upon data that contradicts their current investing methods, they may experience such a situation. Investors may suffer dissonance if they get information that implies their current approach is not in line with their financial objectives or bears excessive risk. It's

possible that feeling uneasy about their investments would encourage them to make changes, such as diversifying their holdings or seeing a financial advisor.

3.11.21 SELF-EFFICACY THEORY

Albert Bandura's theory of self-efficacy (1977) highlights the significance of an individual's own perceptions of their own abilities in influencing their actions, motivation, and choice-making. One's sense of self-efficacy is their confidence in their own abilities to carry out a range of planned actions and responses. Investors' risk perceptions and risk assessments are influenced by their sense of self-efficacy. Higher degrees of risk tolerance may be seen as acceptable by investors who have a greater sense of confidence in their own financial knowledge and decision-making ability. Those with lesser self-efficacy, on the other hand, may see risks as more dangerous and have a lower risk tolerance, preferring to stick to more secure investments. High levels of investor self-efficacy are associated with greater confidence in the investor's capacity to analyse financial data, evaluate investment alternatives, and make sound judgments. If people believe they can effectively manage and minimise risks, they may be willing to take greater chances. Self-confident investors are more likely to stick with their plans through ups and downs in the market. Investors who have faith in their own abilities to weather storms and keep their eye on the prize tend to be more comfortable taking risks. Those who have confidence in their own abilities as an investor are more inclined to strive for lofty objectives. Because of the incentive to succeed financially, people may become more willing to take risks.

3.11.22 REASONED ACTION THEORY

The Theory of Reasoned Action (TRA), developed by Martin Fishbein and Icek Ajzen in 1975, is a psychological theory that aims to explain and predict human behaviour based on an individual's intentions. The theory suggests that an individual's behavioural intentions are determined by their attitudes towards the behaviour and subjective norms, which are influenced by the beliefs and evaluations of significant others. Intention and instrumentality (the conviction that a certain action will produce the desired result) are the most reliable indicators of future actions; as mentioned in this theory. Their attitude towards the behaviour in question, their subjective

standards, and their sense of behavioural control all play a role in establishing whether they are being instrumental. Individuals are more likely to act on their intentions to engage in a behaviour when their attitudes towards it, the subjective norms of others, and their sense of agency over the situation are all positive.

The important theories as discussed above have been summarised depicting the utility of key variables used for the study in Table 3.1 as given below:

Table 3.1

Theories Underlying Key Variables used for the study

THEORIES STATED	KEY VARIABLES IDENTIFIED FOR THE STUDY
Prospect Theory	Snake-bite effect bias (Loss Aversion), Risk Attitude, Risk Perception, Frame-dependence, Financial Risk Tolerance, Investment decisions
Expected Utility Theory	Snake-bite effect bias (Regret Aversion), Risk Attitude, Risk Perception, Frame-dependence, Financial Risk Tolerance, Investment decisions
Regret Theory	Snake-bite effect bias (Regret Aversion), Risk Attitude, Risk Perception, Frame-dependence, Financial Risk Tolerance, Investment decisions, Investment experience, Preferences towards frequency of investments, Demographic variables
Behavioural Life Cycle Theory	Demographic variables, Investment decisions, Investment experience, Risk Attitude, Risk Perception, Frame-dependence, Overconfidence
Mental Accounting Theory	Frame-dependence, Financial Risk Tolerance, Investment decisions, Investment experience, Preferences towards frequency of investments, Demographic variables
Loss Aversion Theory	Frame-dependence, Financial Risk Tolerance, Snake-bite effect bias (Regret Aversion), Risk Attitude, Risk Perception, Investment decisions, Demographic variables
Myopic Loss Aversion Theory	Snake-bite effect bias, Investment experience, Preferences towards frequency of investments, number of companies invested, Demographic variables, Frame-dependence, Financial Risk Tolerance, Investment decisions, Risk Attitude, Risk Perception

THEORIES STATED	KEY VARIABLES IDENTIFIED FOR THE STUDY
Regret Aversion Theory	Frame-dependence, Financial Risk Tolerance, Investment decisions, Risk Attitude, Risk Perception, Investment experience, Preferences towards frequency of investments, Snake-bite effect bias
Affective Forecasting Theory	Frame-dependence, Financial Risk Tolerance, Investment decisions, Risk Perception, Risk Attitude, Demographic variables, Overconfidence, Snake-bite effect bias
Theory of Emotional Intelligence	Emotional Competence, Investment decisions, Risk Attitude, Risk Perception, Demographic variables
Protected Motivation Theory	Risk Perception, Risk Attitude, Investment decisions, Financial Risk Tolerance, Demographic variables
Homeostasis Theory	Risk Perception, Risk Attitude, Investment decisions, Frame-dependence, Financial Risk Tolerance, Demographic variables
Situated Rationality Theory	Frame-dependence, Financial Risk Tolerance, Investment decisions, Risk Attitude, Risk Perception, Investment experience, Preferences towards frequency of investments
Rotter's Social Learning Theory	Locus of Control, Investment decisions, Risk Attitude, Risk Perception, Frame-dependence, Demographic variables
Zuckerman's Sensation Seeking Theory	Sensation-seeking, Investment decisions, Risk Attitude, Risk Perception, Frame-dependence, Demographic variables
Inverted U-Shaped Theory	Risk Attitude, Risk Perception, Frame-dependence, Financial Risk Tolerance, Investment decisions, Overconfidence
Rational Choice Theory	Investment decisions, Risk Attitude, Risk Perception, Frame-dependence, Financial Risk Tolerance, Investment experience, Preferences towards frequency of investments, number of companies invested
Bounded Rationality Theory	Investment decisions, Risk Attitude, Risk Perception, Frame-dependence, Financial Risk Tolerance, Investment experience, Preferences towards frequency of investments, number of companies invested

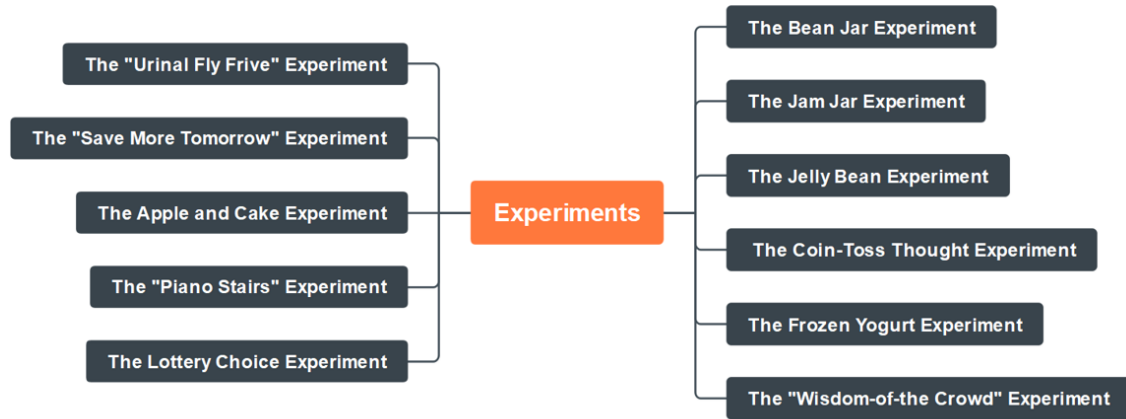
THEORIES STATED	KEY VARIABLES IDENTIFIED FOR THE STUDY
Habituated Action Theory	Snake-bite effect bias, Investment decisions, Risk Attitude, Risk Perception, Frame-dependence, Financial Risk Tolerance, Investment experience, Preferences towards frequency of investments, number of companies invested, overconfidence
Cognitive Dissonance Theory	Snake-bite effect bias, Investment decisions, Risk Attitude, Risk Perception, Frame-dependence, Financial Risk Tolerance, Investment experience
Self-Efficacy Theory	Investment decisions, Risk Attitude, Risk Perception, Frame-dependence, Financial Risk Tolerance, Demographic variables
Reasoned Action Theory	Snake-bite effect bias, Investment decisions, Risk Attitude, Risk Perception, Frame-dependence, Financial Risk Tolerance, Investment experience, Preferences towards frequency of investments, number of companies invested, overconfidence

3.12 EXPERIMENTS SUPPORTING THE SELECTION OF VARIABLES FOR THE STUDY

Over the years, various researchers found that Experiments are well-designed scientific studies that collect data and put ideas to the test. Such studies in the field of Behavioural Finance have inevitably contributed to the identification of factors influencing risk tolerance and investment decisions of retail-equity investors in Kerala. Some noteworthy experimental findings have been highlighted below in Figure 3.9; that really validated the studies conducted and made it reliable and useful universally. The summary of entire experiments in relation to our study has been prioritised in Table 3.2 as given below:

Figure 3.9


Showing the list of Experiments used to define the variable for the study





Source: Created by the Author for the study purpose


Table 3.2

Showing the summary points of various experiments conducted differently leading to the variables of our study:

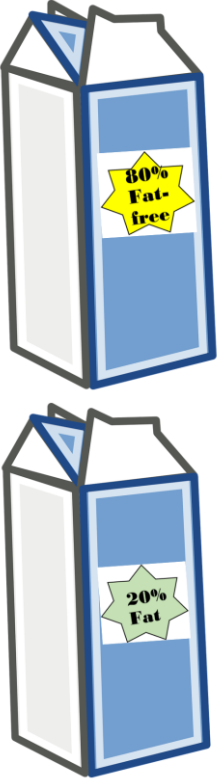
S.No.	Experiment Name	Authors responsible	Objectives	Procedure	Findings	Variables studied
3.12.1	<p>Jam Jar Experiment</p> 	Sheena Iyengar & Mark Lepper (2000)	Study the impact of choice overload on decision-making	<p>The experimenters placed jam jars on two tables. One table has 6 flavours, while the other has 24.</p> <p>Taste the jams at the tables.</p> <p>They choose a table and buy a jar of jam.</p> <p>Each table's purchase count is recorded.</p> <p>Participants' flavours are also highlighted.</p>	<p>Having fewer selections makes people more inclined to buy. "Choice overload" occurs when too many options reduce decision satisfaction keeping them overthinking or ending in indecisiveness.</p>	<p>Decision-Making, Framing, Risk Perception, Risk Attitude, Emotional Competence, Overconfidence, Sensation Seeking, Locus of Control, Risk Tolerance and Loss Aversion, Regret Aversion, Risk Aversion.</p>
3.12.2	Jelly Bean Experiment	Jack Treynor (1987)	Examine how individuals arrive at their estimates and	The jar held 850 jelly beans, with a group estimate of 871 beans in it;	One of the fifty-six people made a better guess. There was a	Framing, Anchoring, Overconfidence, Availability Heuristics, Mental Accounting, Loss

S.No.	Experiment Name	Authors responsible	Objectives	Procedure	Findings	Variables studied
			<p>whether their estimates are accurate.</p> <p>Illustrate the concept of market irrationality and the role of psychological biases in decision-making.</p>	<p>proving that invariably the group estimates are superior to individual guesses.</p> <p>Participants saw each other's estimations in the group experiment.</p> <p>After collecting estimations, the jar's jelly bean count was disclosed.</p>	<p>substantial discrepancy between individuals' projections and jelly bean count.</p> <p>The effect of cognitive biases such as anchoring bias, where people are affected by early signals or irrelevant information, and availability heuristic, where people make judgments based on conveniently available information.</p>	<p>Aversion, Regret</p> <p>Aversion, Risk Aversion.</p>
3.12.3	Bean Jar Experiment	Jenness (1932)	Understand certain aspects	He used a glass bottle filled with	When given another chance	Herd Mentality, Framing, Risk Perception, Risk

S.No.	Experiment Name	Authors responsible	Objectives	Procedure	Findings	Variables studied
			<p>of decision-making and risk perception in financial contexts.</p> <p>Investigate how social influence and group dynamics impact investment decisions and risk tolerance.</p>	<p>811 white beans. His sample consisted of 101 psychology students, who individually estimated how many beans the glass bottle contained. Groups of three were then invited to discuss a group estimate. After the discussion, participants estimated the amount of beans again to determine whether they altered their minds.</p>	<p>to estimate the number of beans in the glass container, most participants modified their figure. Men modified their replies by 256 beans and women by 382 beans. These findings show the strength of compliance in uncertain situations and are likely due to informational social influence. This experiment's participants modified their replies because</p>	<p>Attitude, Overconfidence, Decision-Making, Financial Risk Tolerance, Emotional Intelligence, Loss Aversion, Regret Aversion, Risk Aversion.</p>

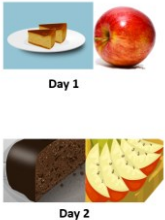
S.No.	Experiment Name	Authors responsible	Objectives	Procedure	Findings	Variables studied
					they thought the group estimate was more accurate than their own.	
3.12.4	Coin-Toss Thought/ Coin Flip Conundrum 	Bernoulli (1738)	Illustrate the concept of risk aversion and decision-making under uncertainty. (Illustrated as St. Petersburg Paradox)	A Coin flip was considered. If the coin landed on heads, then the predictor would get \$100; if tails, then receive nothing.	If individuals were risk-averse, then they would decline the coin toss game to avoid their potential loss, even though there would be a chance of gaining \$100. If they are prepared to accept the risk of \$100 for the coin toss game, they may be more likely to play. Similarly,	Gambler's Fallacy, Overconfidence, Framing, Mental Accounting, Decision-Making, Risk Perception, Comfort level, Emotional competence, Loss Aversion, Regret Aversion, Risk Aversion.

S.No.	Experiment Name	Authors responsible	Objectives	Procedure	Findings	Variables studied
					if they are neutral in their decision, then the decision would be stagnant (as evident from Figure 3.10).	
3.12.5	The Frozen Yogurt	Tversky & Kahneman (1981)	<p>Explore the concept of loss aversion and its impact on decision-making.</p> <p>To study how people's choices are influenced by the framing of options as gains or losses.</p> <p>It demonstrates the influence</p>	<p>Two frozen yogurt alternatives are given. Option A is a sure win (ie 80% fat-free), whereas Option B is a risk (ie 20% fat only). In the gain frame condition, participants are informed that if they pick Option A, they will get 80% fat-free frozen yogurt, a</p>	<p>In the loss frame situation, participants choose Option A to prevent a loss, whereas in the win frame condition, they prefer Option B to assure a gain.</p>	<p>Loss Aversion, Framing, Risk Attitude, Risk Aversion, Regret Aversion, Emotional influence, Risk Tolerance, Decision-Making.</p>


S.No.	Experiment Name	Authors responsible	Objectives	Procedure	Findings	Variables studied
			of loss aversion on decision-making.	healthy reward. In the loss frame condition, participants are informed that if they pick Option B, they must pay for a 20%-fat frozen yogurt, which might be dangerous. Hence, the participants are asked to choose between Option A (guaranteed gain) and Option B (potential loss).		
3.12.6	Wisdom of the Crowd	James Surowiecki (2004)	To analyse how group judgments are typically more	Pick a number or result to estimate or forecast. It might be anything	Errors and biases balance out when various people	Herd-mentality, Risk perception, Risk Attitude, Mental Accounting, Loss Aversion,


S.No.	Experiment Name	Authors responsible	Objectives	Procedure	Findings	Variables studied
			correct than solo-judgments.	<p>from weight to financial worth.</p> <p>Ask each participant to estimate the number or result without discussing it. This keeps each person's judgment independent of others.</p> <p>Calculate the group's estimate by averaging or medianing all individual estimations.</p> <p>Check the group's estimate as against the actual value or result.</p>	<p>independently judge, resulting in a more accurate collective assessment.</p> <p>Financial markets frequently benefit from the collective wisdom of many participants. If there is enough variety, independence, and decentralisation in decision-making, a crowd's knowledge may frequently exceed</p>	Overconfidence, Framing, Regret Aversion, Risk Aversion.


S.No.	Experiment Name	Authors responsible	Objectives	Procedure	Findings	Variables studied
					individual judgments.	
3.12.7	Save More Tomorrow	Richard Thaler & Shlomo Benartzi (1998)	<p>To introduce a new Financial Nudging tool.</p> <p>To help individuals increase their savings for retirement.</p> <p>To positively reinforce a new positive behaviour creating a positive change.</p> <p>To improve decision-making, recognising human biases, and build choice</p>	<p>Participants are offered the opportunity to commit to increasing their retirement savings contributions in the future.</p> <p>The savings expand automatically with each wage rise after a pre-commitment. Such Inertia and automatic enrolment let people save more without compromise.</p>	<p>Over time, many programme participants increased their retirement savings rates, improving their retirement security.</p> <p>Thaler's nudging tale showed that modest measures may improve financial results. showcases how nudging can be a powerful tool in promoting positive behaviour</p>	<p>Decision-making, Framing, Risk Perception, Risk Tolerance, Risk Attitude, Locus of Control, Sensation-Seeking, Behavioural Biases.</p>

S.No.	Experiment Name	Authors responsible	Objectives	Procedure	Findings	Variables studied
			structures that match behavioural inclinations.		change, particularly in the realm of personal finance and retirement savings.	
3.12.8	<p>Apple and Cake</p> 	Hansen (2017)	<p>Promote sustainable and green nudging with zero wastage.</p> <p>Promote Healthy food for Healthy life.</p> <p>Become mindful of what we eat and spend.</p> <p>Examine unit bias in two-day communication conference break buffets.</p>	<p>A restaurant arranged break buffets for a two-day conference. A couple of attendees were offered one full apple and a few cake pieces displayed on plates in the dining on Day 1. Similarly, on Day 2, the same attendees were offered small pieces of apples and tiny pieces of cake (much</p>	<p>On the first day, just 32.9 percent of participants ate apples, but 85.3 percent did after they were sliced into smaller pieces. When the cake was cut into smaller pieces on day two of the conference, the percentage of attendees who ate it dropped from 83.5% on day one to 74.7%.</p>	<p>Decision-Making, Framing, Mental Accounting, Behavioural Biases (namely Unit Bias), Personality traits, Emotional stability, Comfort zone of groups, Choice Architecture.</p>

S.No.	Experiment Name	Authors responsible	Objectives	Procedure	Findings	Variables studied
				<p>smaller than the pieces of cake on the previous day). On both days, observations were made indirectly via a hidden camera.</p>	<p>The role of subtle cues and environmental factors in shaping our decisions and behaviour is highlighted here. Similar nudging techniques can be employed to encourage individuals to make better investment decisions. Providing clear information about the risks and benefits of different investment options, simplifying complex</p>	

S.No.	Experiment Name	Authors responsible	Objectives	Procedure	Findings	Variables studied
					financial terms and concepts, or offering default options that align with long-term financial goals can nudge investors toward making more informed and beneficial investment choices.	
3.12.9	<p data-bbox="416 927 633 959">Urinal-Fly Drive</p> 	Richard Thaler & Cass Sunstein (2008)	Provide Incentives, understand mappings, Defaults, give feedback, expect error, and structure complex choices.	Initially, a fly was noticed on the Urinal toilet bowl at the Amsterdam Schiphol Airport. He brought this to the notice of the Airport Manager, Aad Kieboom who reported a stunning decrease in the urinal	There was found an 8% reduction in toilet cleaning costs at the airport. A regulation barring poor aim and hiring attendants to enforce the policy by	Irrationality in Decisions, Locus of Control, Sensation-Seeking, Mental Accounting,

S.No.	Experiment Name	Authors responsible	Objectives	Procedure	Findings	Variables studied
				spillover after a few more flies were introduced.	issuing penalties to offenders would be necessary to decrease urine spilling, but this would be costly, divisive, and very invasive.	
3.12.10	Piano Stairs (The Fun Theory Initiative) 	Volkswagen (2009)	<p>To change the behaviour of people positively through fun, pun, and play.</p> <p>To nudge in making people use stairs in spite of using much of escalators; which could prove them more healthy living.</p>	In a Swedish subway station, the groups transformed an ordinary staircase into a 'piano staircase', where each stair was connected to a speaker and played a different note when stepped on. When the staircase was decorated to seem like a piano,	<p>Initiative- a great success in Auckland, Melbourne, Stockholm, Milan, Istanbul, and Colombia.</p> <p>People using escalators were inclined to use the musical Piano Stairs for a longer time. Indeed, the rewiring of the brain towards</p>	Decision-Making, Framing, Mental Accounting, Unconscious biases, Personality traits, Emotional stability, Comfort zone of participants.

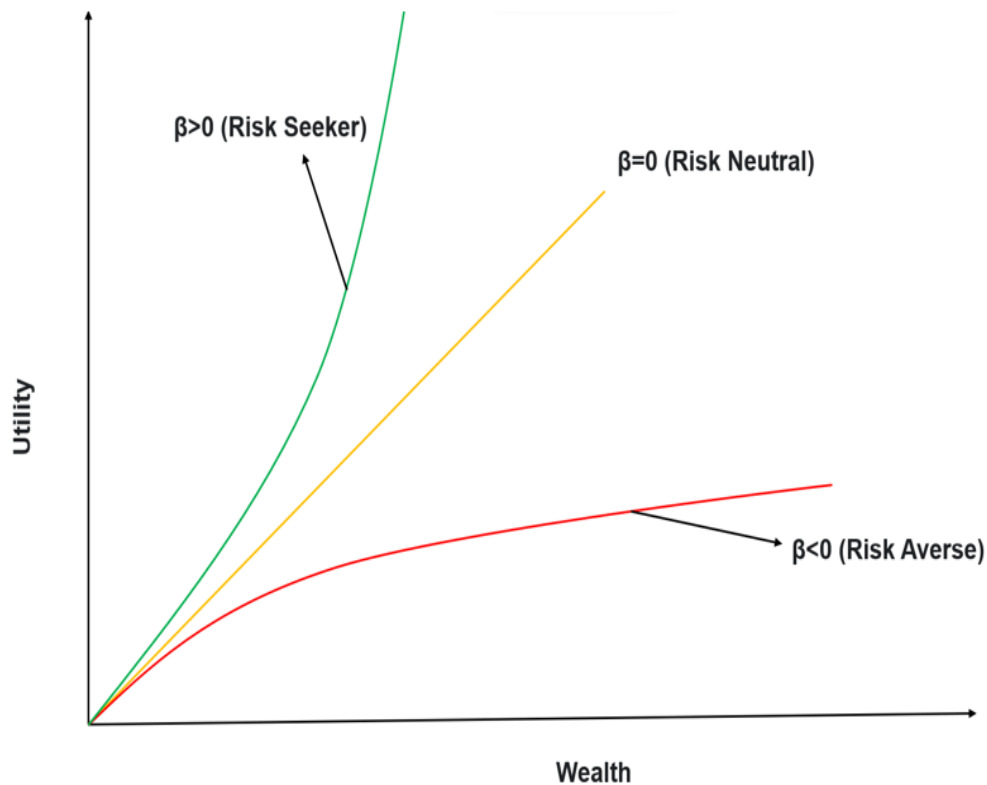
S.No.	Experiment Name	Authors responsible	Objectives	Procedure	Findings	Variables studied
				rather than a conventional staircase, commuters opted to use the stairs rather than the escalator by a large margin.	“health consciousness” was nudged. 66% more people than normal choose the stairs over the escalator. Most of the participants of all ages were moved by this noble initiative of the Company. Obviously, Fun could encourage healthy choices.	
3.12.11	Lottery Choice 	Holt & Laury (2002)	To examine how people react to danger and make choices when faced with ambiguity.	The participants are presented with a number of lotteries, each of which has its own payout structure and chance of winning. They	If participants consistently prefer the certain outcome over the riskier lottery, it suggests a higher level of	Risk Attitude, Risk perception, Risk tolerance, Decision-Making, Framing, Loss Aversion, Regret Aversion, Risk Aversion,, Overconfidence, Locus of Control and

S.No.	Experiment Name	Authors responsible	Objectives	Procedure	Findings	Variables studied
				<p>may, for instance, be offered the opportunity to win \$100 or the assurance of \$50.</p> <p>Participants are tasked with picking one of many lotteries at random. They could make a succession of decisions, each with its own set of probability and potential outcomes.</p> <p>Researchers collect and analyze participants' choices to understand their risk preferences. Key metrics include the</p>	<p>risk aversion. If they consistently choose the riskier lottery over the certain outcome, it indicates risk-seeking behaviour. The experiment helps in understanding how individuals make decisions when faced with uncertain outcomes. It provides insights into risk preferences and can help inform models and theories in behavioural finance related</p>	<p>Sensation-Seeking behaviour.</p>

S.No.	Experiment Name	Authors responsible	Objectives	Procedure	Findings	Variables studied
				<p>proportion of choices made for the riskier option (indicating risk-seeking behaviour) or the safer option (indicating risk-aversion).</p>	<p>to risk aversion, decision-making under uncertainty, and investment behaviour.</p>	

Figure 3.10

Showing the Risk Aversion as explained in the Experiment



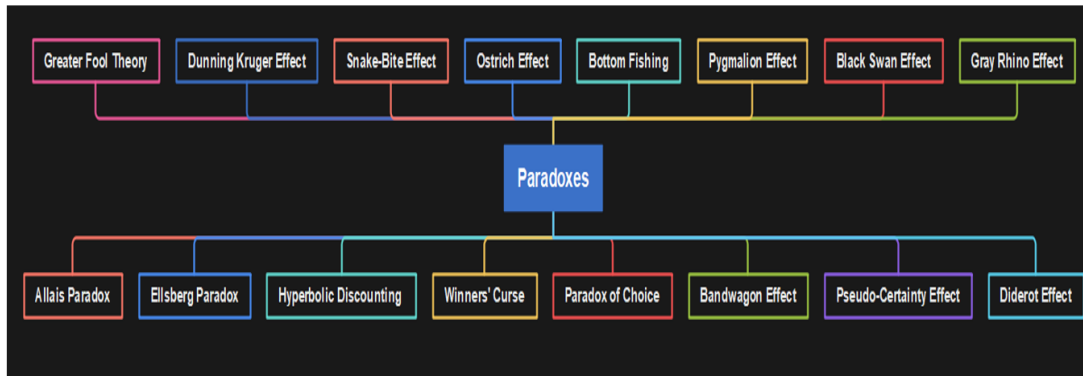
Source: Modified by the Author for the study. Extracted from the works of Bernoulli's EUT (1738)

3.13 PUZZLES PERTAINED TO THE VARIABLES IN THE STUDY

Investors in the Indian stock market encounter a number of mysteries and difficulties that may affect their judgment and performance. Investor education, increased financial literacy, access to objective information, and the creation of disciplined investing strategies are all necessary to solve these mysteries. Some of the effects of these difficulties may be softened by regulatory actions and investor protection programmes. Investors who seek competent financial guidance and have a long-term perspective on their investments stand a better chance of successfully navigating the Indian stock market and its many complexities. Some of the common puzzles observed in the Indian stock market is included in Figure 3.11:

Figure 3.11

Showing Paradox summary for Risk Tolerance and Investment Decisions



Source: Created by the Author for the study purpose

3.13.1 ALLAIS PARADOX

The paradox was created by Maurice Allais (1953) as a decision issue to demonstrate a discrepancy between observed choices and the expectations of anticipated utility theory. There have been two options discussed here, each with advantages and disadvantages.

Option A1: A safe bet yielding a reasonable profit (say, \$1,000,000).

Option A2: a bigger payoff (say, \$5 million) with a specified chance (say, 80%) and no payoff (say, 20%) at all.

Additionally:

Option B1: A moderate payoff (say, \$1 million) at a high likelihood (say, 80%) and no payoff at all at a low probability (20%).

Option B2: a greater payout (say, \$5 million) with a lower likelihood of success (say, 90% chance) and no gain at all with a higher chance of success (10% chance).

Inconsistent preferences, in which A1 is preferred over A2 but B2 is preferred over B1, despite the fact that B2 includes A2 as a subset, which gave birth to this conundrum.

Cognitive biases and irrational behaviour may have a role in people's risk tolerance and investing choices, as shown by the Allais paradox. It contradicts the conventional view of anticipated utility theory, which holds that people always make decisions based on the value and likelihood of their options. Other elements, such as loss aversion, reference points, and the framing of options, may have a greater impact on an individual's decision. Understanding people's risk preferences and decision-making biases is crucial in the context of retail equities investors, as shown by the Allais paradox. Even if two options have the same anticipated value or probability, an investor's risk tolerance may react differently depending on the situation. It stresses the need for financial counselors and investment experts to take into account the mental processes involved in making investment choices and adjusting their suggestions appropriately.

3.13.2 ELLSBERG PARADOX

This paradox (also known as Ellsberg's dilemma) is a conundrum in decision theory that arises when individual choices run counter to the subjective anticipated utility hypothesis. In his article "Risk, Ambiguity, and the Savage Axioms" (1961), Daniel Ellsberg brought the dilemma to the forefront of public consciousness. It shows how people dislike ambiguity and how rational decision-making under uncertainty is tested. For the Ellsberg conundrum, a choice of one of two urns holding different coloured urns has been selected:

Urn A has fifty red balls and fifty black balls.

Exactly what is made up of Urn B is a mystery. The precise ratio of red to black balls is unspecified, although there are a lot of them.

There are two options for participants to wager on:

Option 1: Gamble that either urn contains a red ball.

Second wager: whether a black ball is drawn from urn A or b.

The paradox occurs when people show a preference for Bet 1 over Bet 2, which indicates a preference for known probabilities (such as a 50% probability of drawing a red ball from Urn A) over ambiguous probabilities.

As per this paradox, people tend to avoid uncertainty and choose known hazards, even when those risks have the same anticipated value and likelihood. Retail equities investors' risk aversion and investing choices may be affected by their dislike of uncertainty. They may be more likely to put their money into assets or securities when the data is readily available and the dangers are clear. There is some evidence to suggest that retail stock investors are less tolerant of uncertainty and ambiguity than institutional investors and that they are more likely to choose investments in large, well-established firms or sectors. They may be less willing to put money into ventures with uncertain returns, such as new markets or startups. Investors and financial professionals may better accommodate clients' preferences for known risks and aversion to ambiguity if they have a firm grasp of how the Ellsberg paradox affects risk tolerance. It stresses the need of supplying retail investors with clear and accessible information to increase their confidence and risk tolerance.

3.13.3 HYPERBOLIC DISCOUNTING

Psychologist Richard Herrnstein coined the term "hyperbolic discounting" for this kind of cognitive bias in 1961. He found that the people he studied evaluated incentives not only in terms of their rates and quantities but also in terms of how soon they would be received. It's the human inclination to place less emphasis on potential gains in the future than on gains in the now. Hyperbolic discounting, when applied to financial decision-making, may cause a person to prioritise instant pleasure or short-term advantages above long-term benefits. This concept among retail equities investors may lead them to trade more impulsively or speculatively, prioritising short-term gains above the potential and hazards of their assets. Hyperbolic discounters may be more reluctant to take long-term investment risks than they are to take short-term ones. They may be more inclined to choose assets with low potential returns or to prioritise short-term rewards at the expense of longer-term security. When faced with this kind of dilemma, retail stock investors may find it difficult to stick to a disciplined

investing approach and are more likely to make rash choices based on temporary market swings. They may struggle with long-term financial planning and fail to see the potential gains from maintaining stock market exposure over the long term. Recognising this bias and taking steps to mitigate its effects might help investors make better, more disciplined decisions.

3.13.4 WINNERS' CURSE

It refers to the phenomenon when the highest offer at an auction ends up being far more than the item's actual worth. Incomplete knowledge, emotions, or other subjective variables may affect bidders and account for the discrepancy between the auctioned and intrinsic value. Three engineers from Atlantic Richfield (Capen, Clapp and Campbell) came up with the term when they saw low returns on investment from firms competing for the privilege to explore for oil in the Gulf of Mexico in 1971. This phenomenon may occur in the equity investment market during times of aggressive bidding for stocks or initial public offerings (IPOs). Investors' actions in such a circumstance may be motivated by FOMO (Fear of Missing Out, McGinnis & Herman, 2000) and the need to seize a desirable investment opportunity. This might cause a disconnect between the market price and the real worth of the IPO shares if investors drive up the price of the stock or pay more than they need to purchase them. Those who are susceptible to the winner's curse may feel compelled to outbid competitors in order to secure the investment, even if the price is more than they would want or the asset is worth. Risk and possible losses may increase as a consequence. Investors who pay more than an asset is worth may also become less willing to take risks in the future. The fear of more losses may cause the investor to avoid taking any further risks or to sell the investment before it has fully appreciated. Consistently falling into the winner's curse trap; might cause investors to lose faith in their own abilities, which might make them less likely to take advantage of lucrative investment and bidding possibilities in the future.

3.13.5 PARADOX OF CHOICE

This explains how having too many alternatives may make people feel overwhelmed, unhappy, and less content with their lives. The paradox of choice may have a bearing

on the degree of risk an individual is willing to take while investing in the stock market. Retail stock investors may find it difficult to make investment selections when presented with a wide variety of investment opportunities. The inability to act swiftly to take advantage of investing opportunities or make necessary adjustments to one's portfolio may result from this. When American psychologist Barry Schwartz wrote "The Paradox of Choice: Why More is Less" in 2004, the concept took off. Investors' discontent with investing selections may increase when they are given with a plethora of investment possibilities, since this increases their risk aversion. Investors' exposure to higher-risk assets that may generate larger returns may be limited by the fear of regret or losing out on superior options, leading to more cautious investing methods.

3.13.6 BANDWAGON EFFECT

In 1848, during Zachary Taylor's campaign for president, the term "jump on the bandwagon" was first used in American politics. Taylor was asked to join the circus by the time's most well-known clown, Dan Rice. since it encourages people to purchase or sell with the majority, it may cause asset bubbles and busts. In any instance, investors may put their money down out of FOMO rather than after doing their own thorough research and analysis. It was coined to explain the human tendency to conform to social norms when a large number of individuals exhibit a certain behaviour, style, or attitude. Investors may feel pressured to join the herd when they observe others placing a large bet on a certain investment or investing strategy. Investors may become more comfortable with taking on higher-risk investments if they see that their peers are doing the same. In addition, it might affect the way money is invested by making people discount or disregard their own investigation and analysis. Investors may place a high degree of trust in the actions and views of others, rather than making independent investing choices based on their own risk tolerance and financial objectives. This may lead to a reduction in analytical thinking and research, which in turn raises the risk of making bad financial decisions. It also leads to speculative market bubbles. Prices may become artificially inflated when more investors chase rising trends in a specific investment or asset class. This may cause a

market bubble, and when it busts, individuals who got in late or didn't get out would lose a lot of money.

3.13.7 PSEUDO-CERTAINTY EFFECT

The term "certainty effect" (or "certainty bias") describes people's propensity to place a greater value on known outcomes than on unknown ones, even though the latter has a larger predicted value. Daniel Kahneman, who shared the Nobel Prize in economics with Amos Tversky for his research on the psychology of decision-making, illustrated the concept. People are risk-averse when a pleasant result is anticipated, but will take calculated risks to prevent unfavourable consequences. Restating the value of the same outcomes in a different way might influence their decision-making. Because of this, it may influence investors to disregard or undervalue the risks involved with specific investments. Investors may be more concerned with the seeming stability of returns and less so with the volatility or negative risks associated with the assets themselves; which might cause a skewed view of risk and a propensity towards avoiding financial uncertainty.

3.13.8 DIDEROT EFFECT

In 1988, Grant McCracken invented the term "Diderot Effect"; exploring the connections between cultural anthropology and consumer behaviour, intended to describe how consumers' purchasing decisions are influenced by factors other than an item's use. It refers to the phenomenon where the introduction of a new possession leads to a spiral of consumption as individuals seek to maintain consistency and upgrade their existing belongings. When investors see increases in their portfolios, they may be tempted to take on more risk in the hopes of making even more money. One possible motivation for this is the need to show off one's newfound money by engaging in conspicuous consumption or otherwise improving one's standard of living. In an effort to keep or grow their newfound riches, investors may be tempted by the Diderot Effect to take more risks and make irrational judgements about their portfolios.

3.13.9 GREATER FOOL THEORY

Professor Burton Malkiel is credited with developing the “Greater Fool Hypothesis”. It's the idea that an investment may generate a return by being sold to another party at a greater price, even if the investment has no lasting worth on its own. Investors that display the Greater Fool Effect may be more likely to take on more risk and put their money into overpriced assets or securities. The investor hopes to find a "greater fool" to sell to for an even higher price so that he or she may earn a profit. The urge for rapid profits and a speculative frame of mind might motivate such actions. This situation could be proved fatal if a second person is found ready to purchase the investment at a higher price. Investors might suffer losses if there are no takers or if market conditions deteriorate. Increased risk tolerance and rash investment choices based on short-term speculation rather than a thorough evaluation of an asset's inherent worth might result from such actions.

3.13.10 DUNNING KRUGER EFFECT

David Dunning and Justin Kruger of Cornell University initially identified and documented the “Dunning-Kruger Effect” in 1999. It's a cognitive bias in which people who aren't very good at something tend to think they are much better than they really are. The Dunning-Kruger effect might cause investors to be overconfident in their ability to evaluate and control financial risks. This might drive individuals to take more risks than they can handle since they think they are more knowledgeable and competent than they really are. This kind of assurance, however, is dangerous since it might cause the investor to make risky choices. It may lead retail equities investors to make risky trades, invest in sophisticated financial instruments they don't comprehend, or forego standard risk management procedures. They may not diversify their portfolios enough and, as a result, incur unnecessary losses. Also, it can be sometimes detrimental to investment performance as it can lead to losses and suboptimal outcomes. According to Lim's (2012) research, investors are influenced positively by traits like overconfidence, conservatism, and remorse, but are unaffected by traits like herd mentality. Similar research by Kengatharan and Kengatharan (2014) indicated that all except anchoring bias had a minor effect on investment choices. This

includes herding bias, prospects, availability, and market considerations. According to Ngoc (2014), market variables have a more significant effect on investment choices than do overconfidence, loss aversion, market factors, and regret. Similarly, Kafayat (2014) discovered that investment choices are inversely associated with traits including overconfidence, over-optimism, and self-attribution impact. Investing choices may be affected by overconfidence bias, as discovered by Ramiah et al. (2016). Overconfidence bias and the "illusion of control" were shown to have a positive impact on investing choices by Qadri and Shabbir's (2014) research. According to Tripathy (2014), investors are affected by cognitive biases such as overconfidence, anchoring, regret bias, and loss aversion. The behavioural characteristics such as herding, prospecting, risk aversion, and anchoring bias were shown to affect investing choices in Kenyan research by Wamae (2013). Study participants also showed signs of herding bias, prospecting bias, anchoring bias, and risk aversion, in that order. The findings of a study done by Bashir et al. (2013) demonstrate the positive and substantial impact of overconfidence bias, confirmation bias, the illusion of control, and excessive optimism on financial choices. Moreover, investment choices were not affected by preferences like loss aversion, mental accounting, or maintaining the status quo. Research by Nofsinger and Varma (2014) demonstrated that the "recency effect" influences the frequency with which shareholders repurchase their own shares. Overconfidence bias, loss aversion, framing, and status quo were shown to impact investing choices but had a modest negative link to stock market performance by Babajide and Adetiloye (2012). Decision-making in Pakistan is significantly aided by representational bias, gamblers fallacy, anchoring, overconfidence bias, availability bias, and risk aversion, as shown by Qureshi et al. (2012). Mbaluka et al. (2012) discovered that framing and regret have a role in investors' choices. Investment choices are somewhat impacted by overconfidence bias, market variables, availability bias, anchoring, and prospecting, with market considerations having the most impact, according to research by Luong et al. (2011). Three preferences (herding, prospect, and overconfidence) were also shown to influence investing outcomes.

3.13.11 SNAKE BITE EFFECT

When the same pattern of conduct arises again, investors are more wary due to the snakebite effect. When the repeated action involves the reinvestment of previously earned profit, however, the reverse pattern of behaviour is shown. It indicates that people are less likely to invest in anything that has previously resulted in a loss of significant capital since the pain of that loss is still too fresh in their minds. When an investor suffers a loss, they may be hesitant to invest again (Chin, 2012; Ghelichi et al., 2016). This phenomenon is known as the "Snakebite Effect Bias". If repeated action is tied to the reinvestment of previously profitable stock, a distinct pattern of behaviour emerges (Ghelichi et al., 2016). To explain the conduct of investors while making decisions in conditions of uncertainty, the "Snakebite" effect has emerged as a leading explanation (Kahneman & Tversky, 2013; Ghelichi et al., 2016). Investors' confidence decreases due to the "snakebite" effect (Chin, 2012). After suffering a financial loss, investors feel hesitant to take any further chances, say Barber and Odean (2013). According to research by Das and Mohapatra (2017), investors are susceptible to making rash choices because of the "snakebite" effect. Another assessment of the literature found that investors' fear of "snakebite" prevents them from locking in profits, which lowers their investment returns (Kartasova et al., 2014). Individual investors experience regret when they think about the money, they lost in the stock market in the past (Chin, 2012; Shefrin, 2002). Because of the potential negative consequences of an investment, investors who suffer from regret aversion may be unable to make a choice or forgo the opportunity altogether. As a result of this bias, investors are less likely to take action when it is required, leading to more losses (Chin, 2012; Shefrin, 2002). Inasmuch as some individuals periodically worry about not purchasing the proper financial assets or purchasing the wrong assets, regret aversion may be associated with risk aversion. Potential investors may want to eliminate the mental anguish they experience while making poor choices. People who have experienced investment losses, for instance, may become more risk-averse in the future. Fearful traders may make it a practice to buy short-term bonds as a hedge against the stock market's swings (Chin, 2012). Investors who are prone to regret may keep tabs on the prices of equities they've previously sold, and they may feel remorse

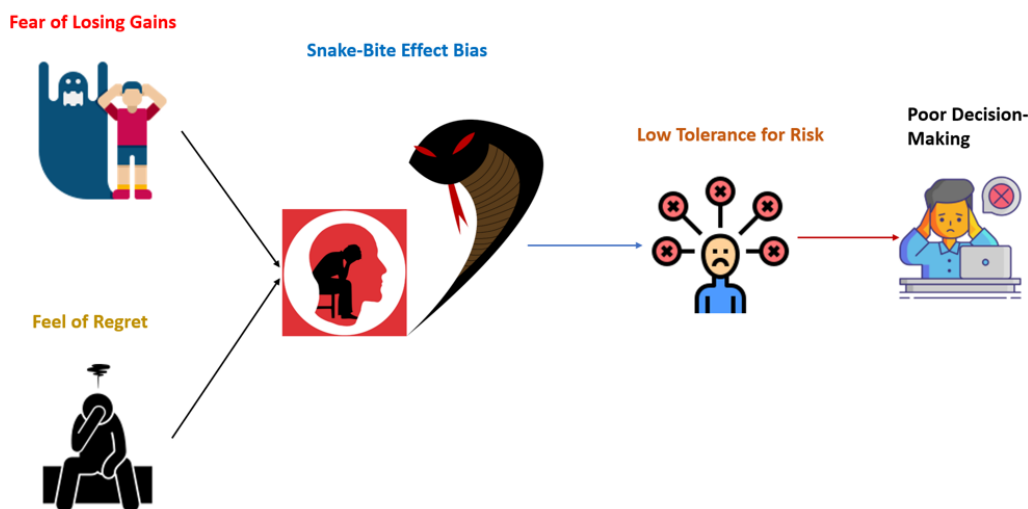
if the prices rise thereafter. People will factor in the likelihood that they may feel regret in the future if they make a decision that turns out to be incorrect, as predicted by Raheja and Dhiman (2017). Since investors are averse to lost chances, regret bias may drive them to feel and focus more on investing wins than losses. Regret, according to Das and Mohapatra (2017), might aid in reflection. According to Shefrin (2010), investors experience regret bias when they feel the "emotion of pain and anger" that comes from realising they are in a terrible venture. Once again, according to Shefrin's (2010) findings, selling shares for less than what was paid for causes investors to feel regret. The phrase "Snake Bite Effect" describes a potential harm to investors. According to studies, people's emotions and perspectives are sparked by a loss that is generally equivalent to a profit multiplied by two. The theory of decision-making under uncertainty is the preeminent theory, and the presence of a snake bite is a foretelling trait (Kahneman & Tversky, 1979). In behavioural finance, the risk aversion is replaced with a preference for the safest asset. While they may take certain risks, investors tend to avoid those that may result in a loss. In other words, investors' risk aversion and risk tolerance fluctuate depending on the circumstances, and none is inherently more common than the other. People's goal to maximise their own financial gain leads them to exhibit a behavioural trait known as "loss aversion," in which they avoid situations where they stand to lose money. According to studies, the ratio of loss to profit may be doubled to significantly impact people's emotions. Kahneman and Tversky's (1979) prospect theory, which is the leading explanation for explaining the behaviour of decision-making in an uncertain environment, highlights loss aversion as a forecasting trait. Therefore, investors expect a return of two units for every unit of risk they assume. Consequently, investment opportunities that do not provide 2 units of risk-adjusted returns are unacceptable. Therefore, the first inquiry after receiving the proposed investment should relate to the level of risk involved. Investors' fear of losing money on their stock sales might be attributed to loss aversion, which encourages them to sell after making a profit. Loss aversion and a focus on the short term characterise human behaviour. Naturally, this attitude is reflected in the actions of firm directors and shareholders, who prioritise the current year's profit above any other factor in the time horizon when making deals and decisions. The year

is the primary focus of financial metrics like earnings per share and price-to-earnings ratios. In 1995, Benartzi and Thaler (Benartzi, Thaler, 1995) coined the phrase "myopic loss aversion" to describe people's tendency to be insensitive to losses over the long run. Daily traders who experiment with short-term investments in securities are, of course, rightly taking myopic loss aversion into account. The tendency to avoid taking a loss while making investments is not simply undone. The human spirit becomes weary and dejected as a result of regret, whereas confidence and inner calm are bolstered by a crushing setback. It's for this reason that people tend to avoid regret and mourn losses. In general, loss aversion drives people to take more risks when there is a loss and fewer risks when there is no loss (for when an investment horizon concludes with a profit). This theory relies heavily on the concept of regret. Individuals will choose the option that has the greater potential benefit over the one with the greater potential loss, however, a hypothesis will emerge that states individuals anticipate regret if they make a bad decision. Side by side, Bell, Lopez, and Sajana defined minimising anticipated regret as maximising expected utility after conducting a number of experiments. The basic premise of this theory is that a person would consider both potential gains and losses when making a decision, rather than only the gains from the covered directional option. Lost opportunities and unnecessary expenditures have a toxic effect on individuals. As a result, individuals weigh the gains from choosing an option and the costs from not choosing one (their delight from choosing an option and their regret from not choosing one) as two equally weighted factors. Investors need to avoid regret causes them to reflect on their previous choices. They might feel one of two types of remorse: 1) making a blunder or 2) not admitting an error. When a person makes a bad choice and follows through with a bad course of action, the result is a mistake. An individual feels remorse for his/ her actions and decisions. Making a choice to do nothing when normal performance might have been achieved by taking action is an example of willful ignorance. Moreover, the regret factor is amplified when the decision's outcomes are objective and observable. Numerous empirical research has been conducted to test this notion after Lopez bemoaned his team's utility function failures. His path to 'happiness' is paved with self-respect and confidence until he finds inner serenity; which has been proved often

to maintain financial resilience improving the quality of decision-making with an optimum tolerance towards risk-taking. The entire explanation prior to the “Snake-Bite Effect” bias is depicted in Figure 3.12 as given below:

Figure 3.12

Depicting the chain contribution of Emotions in Snake-Bite Effect Bias; influencing Risk Tolerance and Poor Decision-Making of Investors



Source: Created by the Author for the study based on theory from Literature

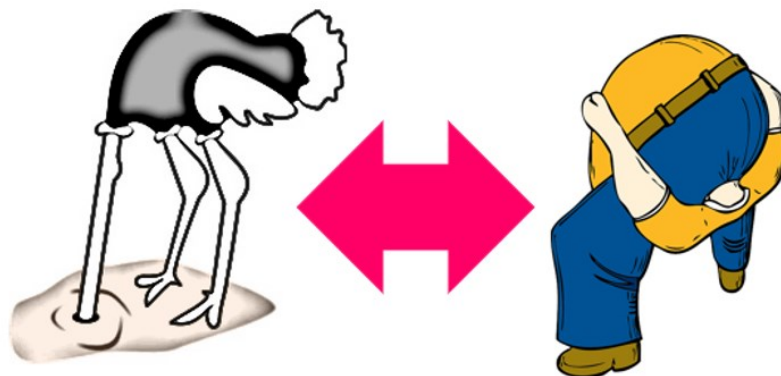
3.13.12 OSTRICH EFFECT

The ostrich effect is a term used in behavioural finance to describe the propensity of investors to avoid hearing about probable temporary losses. During a bear market, people prefer to overlook their financial problems and act as if they don't exist. This phrase was coined for the first time in the field of economics in a 2006 study by scholars Dan Galai and Orly Sade to characterise those who "hide" when their financial circumstances were negative. As a result, investors may be more likely to make decisions based on skewed or insufficient data, increasing the likelihood that they may suffer losses. It's possible that retail equity investors who demonstrate the ostrich effect are more willing to take chances. Investors might get caught up in the apparent advantages of their investments and lose sight of any possible drawbacks. Because of this, people may increase their risk-taking without adequately weighing

the benefits and drawbacks. Investors may put off making adjustments to their portfolios or taking essential activities to manage risks out of fear of experiencing a poor result or losing money. To avoid the possible unpleasantness involved with recognising and managing risks, they may stubbornly hold on to their current assets despite red flags or shifting market circumstances. The ostrich effect may be harmful to retail equities investors' risk management efforts. Investors run the danger of incurring greater losses if they play it safe and avoid or ignore possible threats. Investors should be aware of this bias and work to counteract it by maintaining a high level of knowledge and awareness, doing extensive risk assessments, and periodically reevaluating investment choices in light of new information or shifting circumstances. This is quite evident from the Figure 3.13 where investors act like ostriches taking the risk-averse positions neither ready to accept new risk or keep postponing their existing risk; out of fear, anger, overconfidence or their negative frame.

Figure 3.13

Showing the Ostrich Effect Bias in connection to Equity Investors' position in market



Source: Created by the Author based on theory stated by Galai & Sade (2006)

3.13.13 BOTTOM FISHING

When a stock or other asset falls in price significantly, some investors may try to "bottom fish," or acquire at the lowest possible price. This plan is predicated on the assumption that the assets are now underpriced and have room for substantial future

price growth. An investor's comfort level with risk plays a role in deciding whether or not to participate in bottom fishing. Potential bottom-fishing investors include those with a greater risk tolerance. They are confident in the possibility for large profits and are willing to take on the risk of investing in assets that have recently seen large falls. Investors with this mindset are prepared to ride through the ups and downs that come with betting on cheap assets. It usually takes time for the assets to recover and attain their "intrinsic value," so investors need to be patient. Those who are ready to wait for the possible reversal include those with a longer time horizon and a greater risk tolerance. They are realistic about the possibility of more short-term swings in the investment's value. Finding assets that are actually cheap and have recovery potential needs extensive investigation and analysis. Those that are ready to take on greater risk may be the ones who investigate the assets thoroughly, do in-depth research, and then make calculated risks based on their findings. Investors may incur further losses if their analysis is inaccurate or if market circumstances do not improve, and there is no assurance that the assets will recover or perform as planned. That's why we call it a paradox.

3.13.14 PYGMALION EFFECT

The Greek story of Pygmalion is the inspiration for the naming of the Pygmalion Effect. A sculptor named Pygmalion created a statue of a lovely lady, who became the object of his affection. He longed to marry a lady who was as stunning as his sculpture. When expectations are high, performance improves, and when they are low, performance suffers; this is known as the Rosenthal Effect. Robert Rosenthal, an early proponent of behavioural science, and Lenore Jacobson, an elementary school principal in 1968, set out to determine whether or not pupils' academic performance was affected by teachers' expectations. They thought that if teachers had high expectations for their pupils, the kids would internalise those expectations and continue to perform well. It implies that people's actions and outcomes may be affected by the expectations of others around them. The opinions and behaviours of retail equities investors might be influenced if they are consistently exposed to those who have high expectations for their investment success. If investors have high hopes

for their portfolio's performance, they may be tempted to take on greater risk in the hopes of achieving those goals. Higher degrees of risk tolerance may be shown by retail equities investors when they have a favourable opinion of their own investing ability. When people have confidence in their investing decision-making abilities, they are more likely to take on riskier ventures and be less shaken by setbacks. Additionally, it may affect how retail equities investors understand and use data. They may be more prone to ignore or minimise hazards if they have high expectations of their investment success and perceive information in a manner that matches their previous conceptions and views. As a consequence, having optimistic expectations and beliefs might boost one's confidence and willingness to take risks, perhaps leading to greater financial rewards. Overconfidence and risk-taking because of inaccurate or exaggerated expectations may leave investors vulnerable to avoidable losses.

3.14 THE FUTURE MENAGERIES AND POST-NORMAL POTENTIALITIES OF INVESTORS- THE RISK PERSPECTIVE

Three animals symbolise incidents that might drastically alter the future, either for the better or for the worse, and they make up the menagerie of post-normal opportunities. The menagerie of post-normal possibilities includes the initial three hypotheses, which were first proposed by Ziauddin Sardar and John A. Sweeney in their work, *The Three Tomorrows of Post-normal Times* (2015): the Black Elephant, the Black Swan, and the Black Jellyfish. The Gray Rhino is occasionally included in the carousel of post-normal alternatives, despite the fact that it is not formally part of the menagerie. The Johari window framework, devised by Joseph Luft and Harrington Ingham, and developed in 1955; is a technique designed to help individual investors learn more about their risk responses to understand how conscious and unconscious biases help increase their self-awareness through their attitude towards risk outside. As per the model, the creatures were located in four quadrants (as shown in Figure 1.2) with axes spanning the known and undiscovered spectrums. Using these creatures permits them to consider possibilities that would have otherwise been overlooked.

The first quadrant discusses occurrences with a high likelihood and significant potential effect that are often gone unnoticed or rejected until it is too late to take appropriate action. The author and risk expert, Michele Wucker first popularised and phrased it out to be “Black Elephants”. Further, it was familiarised by the *New York Times* Columnist, Thomas L Friedman in 2014; describing them as events tending to exist where fear-based drivers outweigh the desire for progress. They represent known risks or challenges that are not adequately addressed or prepared for, despite their clear visibility. These risks often arise due to various factors such as complacency, denial, or a lack of effective action. Unlike black swans, which are characterized by their rarity and unpredictability, black elephants are events that are expected or anticipated to some extent but are not given the attention or action they deserve. They are akin to a large, looming elephant in the room that is ignored or disregarded until it becomes impossible to ignore. Examples of black elephants can vary across different contexts. In the financial world, it could be a foreseeable economic crisis, a debt bubble, or the unsustainable growth of an industry or market. In the environmental sphere, it could represent the looming threat of climate change, the depletion of natural resources, or the impact of a particular industrial practice on ecosystems; that we have been witnessing in our day-to-day lives. The concept of “Black elephants” serves as a reminder of the importance of proactive risk management and addressing known challenges before they escalate into crises. It emphasizes the need for individuals, organizations, and societies to acknowledge and address these known risks in order to prevent or minimize their potentially devastating impacts.

Similarly, Michele Wucker came up with the term "**gray rhino**" in her article, *The Gray Rhino: How to Recognise and Act on the Obvious Dangers We Ignore* to characterise the catastrophic but highly likely situations that, unlike "black swans," may be predicted and perhaps prevented or lessened with proper preparation and forethought. The second quadrant has been cornered for “Gray Rhinos” based on the studies by Sardar and Sweeney (2015). The phrase naming has been made based on the metaphor of a charging rhinoceros, which represents a clear and present danger that might have severe consequences if not dealt with immediately. The “gray rhino”

is a symbol of the inability of people, groups, and civilizations to confront evident problems. These occurrences often include hazards or obstacles that are well-known but are ignored for various reasons, such as arrogance, lack of coordination, or the hope that they can be handled with little effort. This phrase is often used in the context of the stock market to describe an obvious and potentially market-moving legislative change, economic upheaval, or disruptive technology. Examples include new technology that challenges established markets, alterations in customer preferences, and new laws and regulations. The “gray rhino” notion serves as a warning that, despite the obviousness of certain threats or obstacles, proper measures to address them are often put off. Individuals and groups of retail equity investors may do more to prepare for these foreseeable but often disregarded hazards if they are made aware of and respond to the “gray rhino” incidents in advance.

Thirdly, the category has been allotted for “Black Jellyfish”; representing events that are known to occur, in spite of carrying unforeseen risks events are exponentially scaled up. Although they have been pictured as likely small events, most often there could be a prediction that this could lead to many unforeseeable changes in the future. The term was biologically named after; inspired by jellyfish blooms happening in the ocean, crippling coastal power plants and undermining naval military fleets. Admiring the beauty of “jellyfish”, it might look calm, soft, and, colourful at times. But in fact, it is just a fantasy that cautions an emergency exit to be made to escape from its venom which might enter to the body, assuming it to be its prey; which is very much fatal indeed. Henceforth, such fad and fashionable events could be thought to be known, but really not knowing their complexities.

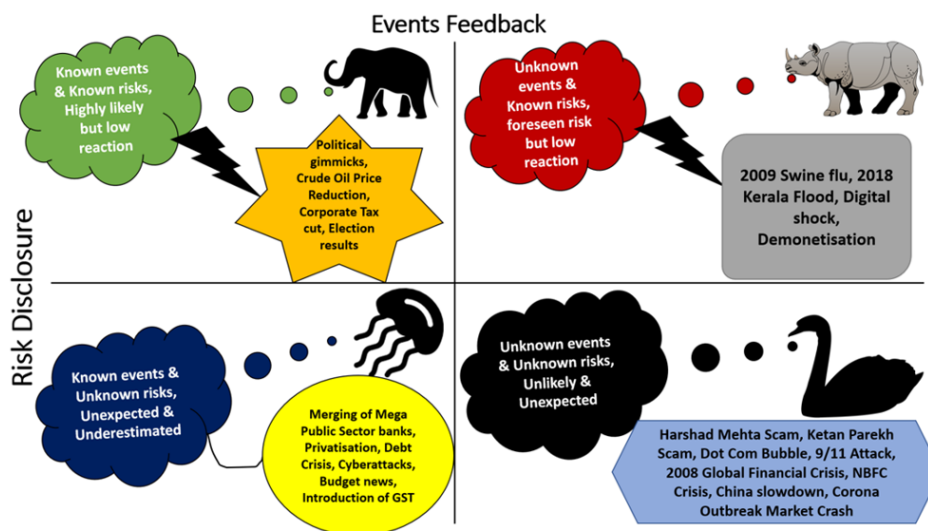
The final quadrant is spaced out for “**Black Swans**”, most often described as the events that lie beyond the limits of our experiences. Originally termed by Nassim Nicholas Taleb in his famous book, *The Black Swan: The Impact of the Highly Improbable* in 2007. In the context of the Indian stock market, a black swan event would be an unexpected and extraordinary occurrence that leads to substantial disruptions in the market. A black swan event, in the context of the Indian stock market, is an extreme outlier that causes a significant shift in the market. Some

instances of black swan occurrences that could have an effect on the Indian stock market have been quoted here. The Indian stock market might be significantly impacted by another global financial crisis on the scale of the one in 2008. Share prices and investor mood may be adversely affected by a domino effect of factors, such as a sudden drop in global markets, a lack of available liquidity, or an economic slump. Stock markets may be severely impacted by rising uncertainty caused by escalating geopolitical tensions between states. Wars, trade disputes, and other forms of international tension may have a negative impact on the economy and the confidence of investors. Earthquakes, cyclones, and floods are just some of the natural calamities to which India is vulnerable. The stock market might be impacted if a major natural catastrophe destroyed a large number of buildings and infrastructure, lowering investor confidence. Unanticipated changes in the law or policy may have a significant effect on the stock market. Business operations and investor expectations might be thrown off by sudden changes in tax policy, financial regulations, or industry-specific restrictions, leading to market volatility. Disruptions in several sectors may result from the rapid pace of technological progress and innovation. Stock prices in particular industries may be affected by the introduction of disruptive technologies such as artificial intelligence, blockchain, or automation. It is in fact vital to note that black swan occurrences, by definition, defy precise prediction or anticipation. Market players and investors need to take steps to mitigate risks, but it's hard to completely eradicate their influence. To lessen the blow of black swan occurrences, investors may diversify their holdings, stick to a strategy of investing over the long term, and do in-depth analysis and research. Portfolios may be shielded from the effects of volatile markets with the use of risk management tactics like stop-loss orders and hedging. This theory of “Black Swan” is associated with the “death spiral effect”, also known as a negative feedback loop or vicious cycle, which can occur when selling pressure and negative sentiments in a market lead to a self-reinforcing downward spiral. It typically starts with a decline in asset prices or market conditions, which triggers a sell-off by some investors. As prices fall, it can trigger margin calls or forced selling by leveraged investors, further driving down prices. It is often associated with panic or fear in the market, as investors rush to sell their holdings due to the perception of

worsening conditions or uncertainty. The selling pressure can result in a rapid and significant decline in prices, leading to further selling and amplifying the downward movement. This negative feedback loop can continue until a point of equilibrium is reached, or until external factors or interventions halt the decline. Both the information cascade and death spiral effect highlight the influence of psychological and herd behaviour on market dynamics. They demonstrate how investor actions can be driven by the behaviour of others rather than objective analysis or information. These effects can lead to market inefficiencies, heightened volatility, and potential mispricing of assets. It is important for investors to be aware of these dynamics and make decisions based on their own analysis and decide their degrees of risk tolerance rather than blindly following the crowd. Figure 3.14 depicts the Risk Window Matrix summarising the four types of creatures scaling down the impact of known or unknown events creating known or unknown risks that, have been found affecting the Indian stock market either favourably or unfavourably.

Figure 3.14

Showing the Risk Window Matrix measuring Risk Disclosure & Feedback of events



Source: Created and Modified by Author based on *The Three Tomorrows*, by Sardar & Sweeny (2015)

3.15 MODELS PREDICTING THE SUITABILITY OF VARIABLES USED IN THE STUDY

In the field of behavioural finance, "models" refer to theoretical frameworks or methods developed to better understand and foresee how people and markets will act when faced with financial choices. These models allow for the fact that decisions may be influenced by a person's inherent biases and heuristics.

3.15.1 GRABLE AND LYTTON RISK ASSESSMENT MODEL

At first, Grable and Lytton (1999) struggled to find questions that (1) were relevant to the concept of risk, (2) would allow anyone to combine question answers into a risk scale, (3) were applicable to situations in which typical consumers make financial decisions, (4) were simple to administer, and (5) offered validity and reliability when combined into a scale. Grable and Lytton relied on advice from MacCrimmon and Wehrung (1986) to help them zero in on the right questions to ask. These included making sure that (1) the items were consistent and not redundant, (2) the items were interesting to answer, (3) the completion times would be reasonably short, and (4) the items assessed the multidimensionality of risk tolerance by including both simple and complex situational items. Modern Portfolio Theory (MPT) scale development theory and propositions formed the backbone of their work in creating a financial risk-tolerance assessment instrument. The theoretical link between risk and investment returns was laid out in detail by Markowitz in his 1952 essay outlining the foundations of MPT. Given Markowitz's observation that risk and return are positively connected, it follows that investors seeking a higher return must be prepared to tolerate greater portfolio volatility. Since then, this understanding has been an essential validation standard for every risk assessment tool developed.

According to Grable and Lytton (1999), any new and meaningful risk-tolerance test should confirm the hypothesis that higher scores indicate a greater propensity to take financial risks. There ought to be a positive correlation between, for instance, risk scores and stock ownership in the context of a financial risk-tolerance scale. A scale should also have high levels of validity in other areas, such as psychometrics. Starting with over a hundred risk-assessment questions from the literature, Grable and Lytton

(1999) set out to demonstrate the reliability and validity of a new scale. They found 50 things that passed all of the tests conducted based on the information gathered in the pilot research. These 50 questions served as the foundation for the risk-tolerance questionnaire created by Grable and Lytton (1999). Further, they used standard item-response techniques to narrow the list down to 20 risk questions. The items were then classified into one of eight groups: (1) sure bets versus probabilities, (2) general risk selection, (3) sure loss versus sure gain, (4) risk as exposure, (5) risk tolerance, (6) speculative risk, (7) prospect theory, and (8) investment risk. These measures were designed to guarantee at the very least that the new scale would have high face validity amongst professionals and academics. That is, these eight areas were shown to have the strongest correlation with a person's risk attitude in their examination of the research. To find the fewest possible variables, we employed factor analysis techniques on data collected from a convenience sample. Only 13 items remained after Grable and Lytton's (1999) rigorous culling. Investment risk, risk comfort and experience, and speculative risk were all found to be represented on the finalised scale. The dependability of the scale was calculated using Cronbach's α . The original value of 0.75 was reported by Grable and Lytton. This degree of trustworthiness was consistent with that which is commonly seen in psychology and marketing research, as pointed out by Cortina (1993) and Peterson (1994). Grable and Lytton (1999) took further efforts to evaluate the scale's construct validity, which refers to how well the scale evaluates the construct for which it was designed. They found a correlation between how people fared on the 13-item scale and their answers to a famous risk assessment question from the Survey of Consumer Finances (SCF). The SCF item has been widely used in the research as a surrogate for consumer risk perceptions (Yao, Hanna, & Lindamood, 2004).

Grable and Lytton (2003) went back to the scale four years later to examine its concurrent validity. How strongly a scale correlates with real behaviour is what we mean when we talk about its concurrent validity. A risk-tolerance scale for the financial sector should, in principle, show a strong association with actual financial actions like investing. They found a positive correlation between scale scores and ownership of equities and a negative correlation with fixed-income and cash holdings.

Both univariate and multivariate analyses, taking into account variables such as age, gender, marital status, level of education, and income, confirmed this result. Their findings lent credence to the original measurement tool. College students and adults were used in Yang's (2004) reliability and validity study. She found that, as was to be anticipated, there were some inconsistencies in the variations in ratings between younger and older respondents. Those under the age of 30 were more likely to invest in tangible assets, while those beyond the age of 30 were more likely to engage in risky securities like stocks and bonds. However, Yang did point out that there was no discernible difference in total scale scores by respondent age. Cronbach's α was also larger than $\alpha = 0.70$ for both the younger and older groups. Yang found that the scale had some validity for both younger and older respondents, and she offered several ideas for improving the scale and adding more elements. Additionally, a concurrent validity test of the G&L scale was carried out by Gilliam, Chatterjee, and Grable (2010). They compared the scale's results with those from the SCF risk question. They also found a substantial connection ($r = 0.60$), like Grable and Schumm (2010). Furthermore, Gilliam and his colleagues found that there was a significant correlation between higher scores on the G&L scale and the possession of more high-risk investment assets. When compared to a single-item measure like the SCF item, they found that the scale did a better job of gauging a person's comfort with financial risk and provided a more reliable indicator of their readiness to take on investment risks.

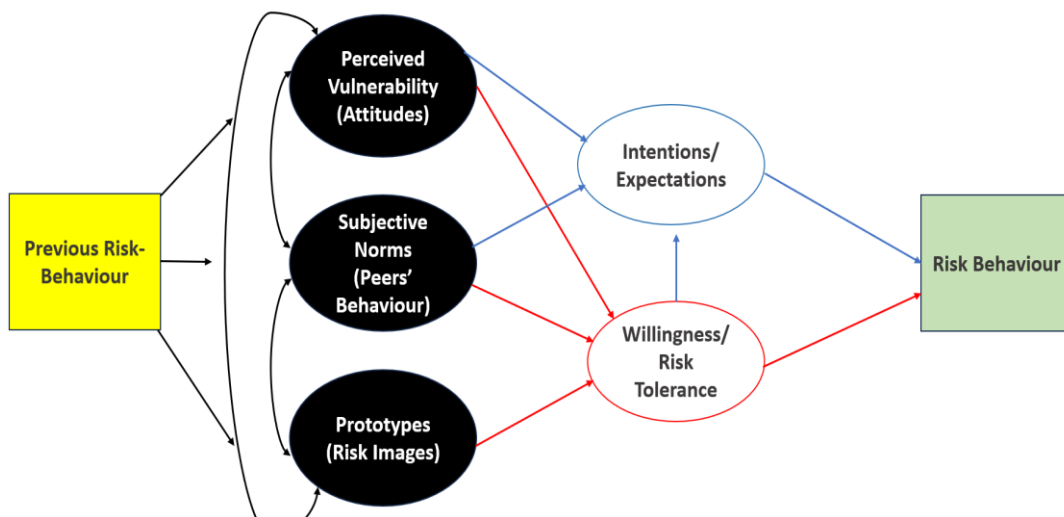
3.15.2 PROTOTYPE WILLINGNESS MODEL

Health- and risk-related behavioural intentions and actions are the focus of the Prototype Willingness Model (PWM), a theoretical framework. In 2008, its creators, Gerrard, Gibbons, Houlihan, Stock, and Pomery, introduced it to the world. It suggests that people's willingness to engage in a particular behaviour is influenced by two key factors: prototypes and willingness. (i) Prototypes are cognitive representations or mental images of the typical person who engages in a specific behaviour. In the context of the PWM, prototypes represent the characteristics, traits, and perceived social norms associated with individuals who engage in the behaviour of interest. For example, a prototype for risky behaviour might include traits such as adventurousness,

excitement-seeking, and perceived social approval for engaging in such behaviours. (ii) Willingness refers to an individual's personal inclination or readiness to engage in a specific behaviour. It is influenced by both the perceived benefits and the perceived costs or risks associated with the behaviour. In the context of the PWM, willingness is shaped by an individual's personal evaluations of the anticipated outcomes of the behaviour, such as the potential rewards, enjoyment, and social approval versus the potential negative consequences, risks, and disapproval. Risk tolerance may be seen as a component of willingness in the context of the PWM. An individual's willingness to take on risk depends on how they weigh the prospective rewards and losses of an equity investment. According to the PWM, people are more likely to create intentions and really carry them out when they have a strong sense of identity with the prototype and a high degree of motivation to act in the same way. When making financial choices, retail equity investors may lean towards purchasing stocks if they have a strong risk tolerance and believe their personalities are comparable to that of the archetypal successful investor (as evident from Figure 3.15).

Figure 3.15

Showing the properties of the Prototype Willingness Model



Source: Modified for the study based on works of Houlihan, Stock and Pomery (2008)

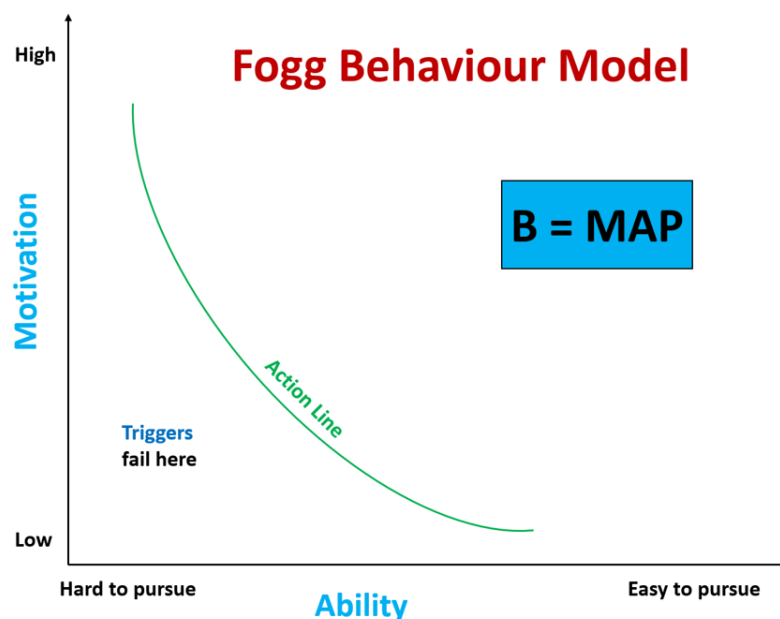
3.15.3 FOGG BEHAVIOUR MODEL

BJ Fogg's framework (2009) for understanding human behaviour and how it might be altered is known as the Fogg Behaviour Model (FBM). It posits that behaviour results from the interaction of three factors—drive, competence, and cues. The FBM states that all three components must coincide for a behaviour to take place. (i) Motivation refers to the level of desire or drive to engage in a particular behaviour. It can be influenced by factors such as personal goals, values, emotions, and social influences. Motivation can be divided into three types: sensation (seeking pleasure and avoiding pain), anticipation (pursuing future benefits), and belonging (seeking acceptance and connection). In the context of investment decisions, motivation can be related to an investor's financial goals, their desire for wealth accumulation, or their need to achieve specific targets. Risk tolerance, which reflects an investor's willingness to accept uncertainty and potential losses, can also be seen as a component of motivation. Investors with higher risk tolerance may be more motivated to pursue equity investments. (ii) Ability refers to the capability and resources required to perform a behaviour. It takes into account factors such as knowledge, skills, resources, time, and physical and mental capabilities. If behaviour is too difficult or requires too much effort, even if motivation is present, the behaviour may not occur. From the purview of investment decisions, the ability can encompass financial knowledge, understanding of investment principles, access to investment platforms or advisors, and the ability to analyse and evaluate investment options. Retail equity investors with higher levels of financial literacy and access to resources may have a greater ability to make informed investment decisions. Fogg divides the "ability" part into six different groups. The conduct, as predicted by the Fogg conduct Model, has to be time-efficient. When the resources necessary to engage in a certain action are limited, the likelihood of that action being taken decreases. Most people will find a habit easy to adopt if it can be worked into their existing routine. When dealing with non-routine behaviours, it might be challenging for certain individuals. People tend to keep to their routines and habits out of a desire for ease of life. Since most people have a hard time breaking the mould, it's not easy to engage in an activity that calls for social deviation. Our brains are constantly bombarded with new information, and this may cause

mental fatigue. It could be easy and straightforward to make conduct that does not need a lot of thought. (iii) Triggers are external or internal cues that prompt or prompt a behaviour. In the investment context, triggers can include market events, financial news, recommendations from experts, or personal financial circumstances; which can influence an investor's decision-making process and may prompt them to adjust their risk tolerance or make investment decisions. The FBM asserts that when motivation is high and ability is sufficient, even a small trigger can lead to behaviour. Alternatively, when motivation or ability is low, a larger trigger may be required to prompt action. When the resources necessary to engage in a certain action are limited, the likelihood of that action being taken decreases. In fact, the higher the financial stakes, the greater the inspiration for action must be. Triggers are generally of three types: (a) Spark - Those who have the capability but lack the motivation are the typical recipients of additional motivation or spark. (b) Facilitator: Overflowing with enthusiasm but without the skills to bring about the desired behaviours. (c) Signal – Some people are both capable and motivated; all they need is a little push in the right direction. All they need is a clear signal to let them know what they need to accomplish. This is clearly pictured in the Figure 3.16 as shown below:

Figure 3.16

Representing the Fogg Behavioural Model



Source: Modified by the Author based on the Model (B H Fogg, 2007)

3.15.4 RISK-ATTITUDE SPECTRUM MODEL

The term "risk attitude" is used to describe one's overarching propensity towards risk. It reveals how someone evaluates and handles hazardous or ambiguous circumstances. The range of risk attitudes includes those who are very risk-averse, those who are ambivalent, and those who are willing to take certain calculated risks. People vary widely in their comfort with and propensity for taking risks in a variety of contexts, including financial ones. It exemplifies the diversity of individuals' risk perceptions, assessments, and reactions. Hillson and Murray (2006) were the first to provide proof of this. There are three primary kinds of risk attitudes throughout the range.

First, those who are *risk-averse* tend to be more concerned with the possibility of loss than the possibility of gain. Those who are concerned with keeping their money safe like investments that have lower risk and more consistent returns. Investors who choose safety over risk are more likely to settle for lesser returns.

Those who are *risk-neutral* are apathetic towards danger and can remain calm under pressure. They make financial choices based purely on projected profits without taking the associated risks into account. To accomplish their investing goals, risk-neutral investors are often not too concerned with minimising losses and are instead looking to maximise projected utility or profit.

Third, those who are more *risk-tolerant* are able to tolerate more uncertainty and uncertainty-based rewards. They are prepared to take more chances in the hopes of a bigger payoff. People who are ready to take on more risk have a longer time horizon and are prepared to see their assets fluctuate in value. They could put more money into growth-oriented investments like stocks and developing markets.

When it comes to investing, for example, a person's risk tolerance is a major factor in their decision-making process. Some of the most compelling arguments for investigating people's risk tolerance are as follows:

a) A person's risk attitude aids in tailoring investing plans to one's own preferences. Investors may better achieve their financial objectives when their risk tolerance is taken into account when choosing investment alternatives and portfolios. By being on

the same page, you'll be less likely to deviate from your plan out of impulse or emotion.

b) An individual's risk attitude affects how much they are prepared to take a chance in pursuit of a reward. Informed judgements on the degree of risk an investor is ready to face may be made if they have a firm grasp on their own risk attitude. Knowing this might help you establish more reasonable expectations and objectives for your investments.

Investors' risk aversion affects their propensity to diversify. A portfolio with a larger allocation to low-risk assets may appeal to those who are risk-averse, while those who are willing to take on more uncertainty may benefit from diversifying over a wider variety of assets. A well-diversified portfolio that accounts for one's risk preferences may be created with the help of one's risk attitude.

d) An individual's risk mindset affects how they handle market changes. Being self-aware of one's risk attitude might help one develop emotional fortitude and prevent knee-jerk responses to short-term market fluctuations. Maintaining a long-term perspective helps investors ride out market volatility without giving in to panic.

Various factors shaping investors' risk attitude in equity investment scenarios can be summed up as given below:

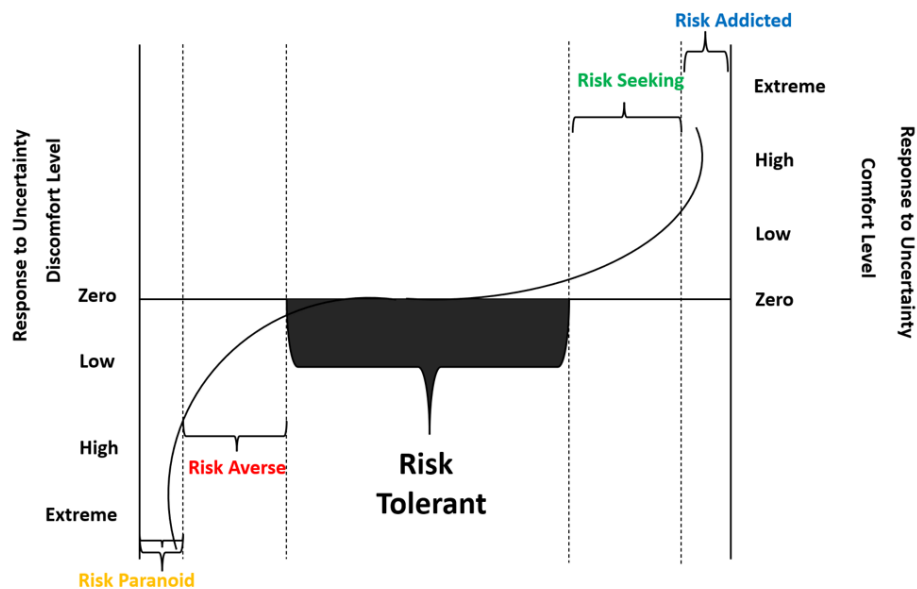
- Attitudes towards risk may be influenced by one's unique personality characteristics, such as their propensity for adventure, their willingness to try new things, and their need for safety. Those who have a strong need for security are more likely to be risk averse, whereas those who have a high need for novelty are more likely to be risk takers.
- Financial literacy and investment experience might influence one's perspective on risk. Those who are well-versed in a subject may be more at ease taking chances, while those who know less may be more inclined to play it safe.

- The willingness to take financial risks may be affected by how far in the future one plans to look. Since those with longer time horizons have more time to recover from short-term market swings, they may be more willing to take risks.
- Personal circumstances in terms of one's income, wealth, and debts might have an impact on one's risk tolerance. Those who are financially stable are often more willing to take chances than those who are struggling or unsure about their financial futures.
- Cultural, social, and demographic factors can also shape risk attitudes. For instance, cultural norms and societal influences may influence risk preferences, with some cultures being more risk-averse or risk-tolerant than others.

Based on the information discussed above, the risk-attitude spectrum conceived in the minds of Hillson & Murray (2006) in the article, *Understanding and Managing Risk Attitude* has been modelled as shown in Figure 3.17:

Figure 3.17

Showing the Risk-Tolerant position of investors using Risk-Attitude Spectrum



Source: Created and Modified by the Author based on the Matrix suggested by Hillson & Murray (2006)

3.15.5 HIPPOCRATES' TEMPERAMENTS MODEL

Beginning with Hippocrates in 370 BCE (Fazeli, 2012), the notion of personality has been explored for at least 2000 years. The *sanguine*, *choleric*, *melancholy*, and *phlegmatic* temperaments make up the Hippocratic temperament personality model, often known as the Four Humours hypothesis. Despite its historical relevance, this paradigm is seldom applied in the modern fields of psychology or finance. While the Hippocratic temperament model has been shown to have some correlation with risk tolerance and investing choices among retail equities investors, there is a lack of research that draws strong conclusions. One characteristic of sanguine people is that they are always up for an adventure. They might be more willing to try out novel financial strategies. They may be better able to handle stock market volatility because of their upbeat perspective and craving for excitement. Second, those who are choleric tend to be confident in their abilities and want to take charge. They could be more willing to take chances and make daring financial moves. They may be more willing to take moderate risks because of their self-assurance and assertiveness. Third, melancholic people tend to be contemplative, careful and focused on the smallest of details. They may be less willing to take chances with their money and give greater weight to safety and security when making investments. They may be more risk-averse investors because of their propensity for overanalysis and focus on the negatives. Phlegmatic people are steady in their disposition and seldom show signs of emotion. They may not be very risk-loving or risk-averse, but fall somewhere in the middle. They may choose a more moderate and safe investing approach because of their need for peace and quiet.

3.15.6 MYERS-BRIGGS TYPE INDICATOR MODEL

MBTI is a popular personality test that draws heavily on Carl Jung's theory of psychological types. Based on these four pairs of opposites—extraversion (E) vs. introversion (I), sensing (S) vs. intuition (N), thinking (T) vs. feeling (F), and judging (J) vs. perceiving (P)—sixteen distinct personality types are identified. The instrument was created by Isabel Briggs Myers and Katharine Briggs in 1962. Instead of

analysing particular money habits, it looks at how someone communicates, how they absorb information, and how they make decisions.

Risk-taking propensities and financial choices may be influenced by the personality qualities linked with a person's MBTI type. For instance:

- a) Compared to introverts (I), those who are extraverted (E) are more likely to seek out social engagement and excitement via investing techniques that include taking greater risks. However, introverts may choose a more deliberate and introspective strategy, choosing instead to make prudent financial decisions after careful consideration.
- b) Sensing (S) types may be more grounded looking at past data and hard evidence when deciding how to allocate capital. But intuitive (N) people may have an easier time understanding speculative ideas and planning for the future, making them more likely to take chances in search of possibilities.
- c) Those who think (T) analytically, as opposed to emotionally, may base their investment choices on facts and patterns in the financial markets. On the other hand, the risk tolerance of feeling (F) types may be influenced by their emphasis on personal values, ethical concerns, and the effect of investments on others.
- d) People with the Judging (J) personality tend to choose methodical and organised investment strategies that strictly adhere to set objectives and goals. On the other side, those who are more perceptive (P) may be more receptive to change and novelty, making them more likely to take calculated risks and try out unproven investing strategies.

3.15.7 OCEAN MODEL

Known widely as the OCEAN model or the Big Five personality traits, the Five-Factor Model was developed in the 1970s by two separate research teams led by Paul Costa and Robert R. McCrae of the National Institutes of Health and Warren Norman and Lewis Goldberg of the University of Michigan at Ann Arbor and the University of Oregon, respectively. It has five main components, which are:

- Individuals' propensity for openness to new ideas, curiosity, and intellectual inquiry are all reflected in this characteristic of openness to experience. The willingness to take risks and investigate nontraditional investing possibilities may increase with one's degree of openness.
- The term "conscientiousness" is used to describe a person's level of responsibility, organisation, and self-control. People who score high on the conscientiousness scale tend to be meticulous and attentive to detail, traits that may manifest in an inclination towards doing extensive analysis and giving serious thought to financial investments.
- The traits of extraversion include openness to new experiences, confidence in one's own abilities, and a desire to interact with others. Individuals with a high degree of extroversion may be more at ease with active investing tactics that require them to connect with others and network.
- Cooperation, empathy, and compassion are all aspects of a person's agreeableness. Individuals high in agreeableness may contemplate the effect of their investing choices on others, which may sway their risk tolerance in favour of more socially responsible investments, even though agreeableness itself may not directly affect risk tolerance.
- The degree to which one experiences emotional instability, anxiety, and stress sensitivity is reflected by a trait known as neuroticism. Individuals with elevated neuroticism may be less willing to take financial risks because they worry and fret about the possibility of financial loss.

3.15.8 HEXACO MODEL

In their book, *The H Factor of Personality*, Ashton and Lee provided the HEXACO model of personality structure in 2000, which is a six-dimensional model of human personality based on the results of lexical investigations found in numerous European and Asian languages. When the Big Five model was expanded to incorporate the "Honesty-Humility" component, it came to be known as the HEXACO model. It provides a more comprehensive framework for understanding personality traits and

their potential influence on risk tolerance and investment decisions; enlightening thoughts over its key components:

- ✓ Avoidance of Greed and Exploitation are all characteristics of an honest and humble person. Higher Honesty-Humility scores may predict less comfort with high-risk, unethical investing techniques and a greater propensity towards more conservative options.
- ✓ Anxiety, fear, and sorrow are all examples of unpleasant feelings associated with someone who is very emotional. People who score higher on the Emotionality scale may be less willing to take risks because they are more likely to be emotionally distressed by the prospect of financial loss.
- ✓ Similar to the Big Five model, extraversion in the HEXACO model represents sociability, assertiveness, and positive affect. Higher extraversion may be associated with a greater propensity to take risks and engage in active investment strategies.
- ✓ Agreeableness in the HEXACO model is similar to the Big Five model and reflects cooperation, empathy, and compassion. As with the Big Five, high levels of agreeableness may influence risk tolerance in favour of socially responsible investments.
- ✓ Similar to the Big Five model, the HEXACO concept of conscientiousness emphasises the need of being well-organized, taking personal responsibility, and exercising self-discipline. People who score high on the conscientiousness scale may prefer to take their time, do their homework, and be more cautious when making financial choices.
- ✓ Curiosity, inventiveness, and intellectual engagement all represent Openness to Experience in the HEXACO paradigm, which is why it is related to the Big Five model. A more accepting attitude may prompt you to look into less traditional investing alternatives and take more measured risks.

3.15.9 BARNEWALL TWO-WAY MODEL

Investors are assumed to act rationally in the standard financial model. As a result, they anticipate that all savers will arrive to the same conclusion with regards to financial commitments. Behavioural finance takes into consideration the fact that investors have varying decision-making styles. Those who use behavioural finance don't take for granted that all investors are similar. Instead, it holds the view that investors fall into a small number of broad types. Investors' psychological profiles are created in this way. In 1987, Marilyn Barnewall created what is now known as the "Barnewall Model". This paradigm predates all other psychographic models by at least three decades. The goal of this framework is to facilitate better client-advisor communication by highlighting key differences in client goals and wants. In this framework, investors are categorised as either "active" or "passive." It is for this reason that this two-way model is another name for this framework. The model's strength lies in the simplicity with which investors may be categorised. No personal or financial information is needed. Instead, a quick, painless evaluation of some fundamental financial behaviours may help sort out the savers from the spenders.

- Those who have amassed significant money using mostly hands-off strategies are known as *passive investors*. Investors seldom take an active role in the decision-making process. Comparatively, those with less financial means are more likely to take a hands-off approach to investing. This is because those with less financial means have a greater psychological need for safety; which means that they have one of the lowest risk tolerances possible. As a result, they favour sticking to the tried and true methods of investing. Executives, company owners, attorneys, journalists, bankers, etc., are the typical members of this group. They might also include folks who have inherited a large sum of money and are content to live off the interest alone. The need for absolute security compels such investors to opt for passive investing strategies. True to form, those with less financial means are disproportionately represented among passive investors.
- However, *active investors* are those who have amassed money via their own hands-on involvement in making investment choices. These financiers are used to

taking calculated risks. They tend to gather and analyse information independently, relying on expert opinion less often. They take more risks and exhibit more confidence. First, they are better capable of absorbing losses than a passive investor, and second, they achieved their wealth in part by taking calculated risks. Moreover, they have a deeper familiarity with the inner workings of the financial markets since they operate in the sector either directly or indirectly. Investors who take a hands-on approach to their portfolios do so with the implicit notion that they will be better able to mitigate risk as a result. Even if this isn't the case, in fact, in their minds it always has been. In order to properly advise their customers, financial advisers must first categorise them and get insight into their investing habits. Advisors are also expected to guide their clients through the investment process and assist them in overcoming any ingrained behavioural biases they may have. As an example, active investors think that their diligence may mitigate losses and ensure profits.

Despite this, the two-way approach suffers from the issue of oversimplification. Those versed in the field of behavioural finance believe that there are several sorts of investors. Therefore, pigeonholing individuals into just two categories is simplistic. For this reason, models built after Barnewall's two-factor model tend to divide investors into a wider variety of categories.

3.15.10 BB & K FIVE-WAY MODEL

The Barnewall model was mostly criticised due to the fact that it only provided a binary classification of investors. As a result, everything became too easy. The professionals working in behavioural finance advocated for a more comprehensive and precise categorization. This is why work on a new psychographic model was initiated. The initials BB and K stand for the model developed by Bielard, Biel, and Kaiser. In this paradigm, there are two less distinct groups of investors than there were before. This model was proposed by Fund Managers- Thomas Bailard, David Biehl and Ronald Kaiser in 1987. This methodology used a single criterion to categorise investors. Therefore, it was possible to plot them along a single axis. As with the model developed by Bielard, Biel, and Kaiser, this is not the case. Due to the two-

dimensional nature of the model, two axes are used. There are four types of investors because the two sets of quadrants connect to form a square:

- Investor confidence serves as the first axis in the BB & K model. Investors who are optimistic about their health, financial situation, and other aspects of their lives tend to be similarly optimistic about their investments. Investors may be roughly divided into two categories along this axis: the confident and the apprehensive.
- The second axis of this paradigm is the kind of intervention being considered. The second axis evaluates the investor's level of sanity. The key concern here is whether the investor is systematic and predictable in their information gathering and analysis processes prior to making investment selections. On the other hand, the investor may act impulsively and emotionally, without considering all of the relevant factors. On this axis, investors are categorised as either cautious or rash.

There are four distinct categories of investors when these two dimensions are combined. Here are some of their distinguishing features:

- a) Bold and quick to act
- b) Tendency to be anxious and act rashly
- c) Self-Assured and Cautious
- d) Worried and Cautious

Category 1: Adventurers- They are willing to take on more financial risks because they are often self-assured. They have more confidence and have high faith in themselves to put everything on the line in a single wager. They are hard to guide since they already have their own investment strategies in mind. From the perspective of investment advice, they are risk-takers and unpredictable clients.

Category 2: Celebrities-

They like to be in the thick of things. Fear of missing out (FOMO) is a common problem for them. Due to their lack of financial expertise, they are more susceptible to being misled. They are not normally risk-averse but might suffer from buyer's

remorse when their investments briefly underperform. They wish to make more money but have no better ideas of their own.

Category 3: Individualist-

They have developed a remarkable capacity for autonomy. They tend to be cautious, meticulous, and analytical in nature. They tend to be very logical thinkers who have expert knowledge in a certain field. Financial advisers are always on the lookout for customers like these. Their success in making money lies in their market frame and confidence in their investing strategies.

Category 4: Guardian-

These traders want to keep their money safe and are terrified of market swings. This sort of investor lacks faith in their own abilities to foresee the future and is more likely to seek expert guidance for their financial decisions.

Category 5: Straight Arrow-

The intersection of the two axes, here, represents this class. These investors are said to embody a blend of the four qualities, making them rather well-rounded. Most of the investors that one comes across will fit the profile of the "average investor," so named since they represent the largest single group. They can make financially-related choices without becoming upset and are prepared to take certain calculated risks to get their goals.

3.15.11 VEDIC PERSONALITY INVENTORY (VPI)

The Sanskrit word veda means "knowledge," and the Vedic texts include a wide range of disciplines, from medicine and physics to aviation, theatre, and warfare. The Vedas state that the three forms of material nature, or the three gunas, pervade all aspect of our lives, from the food we consume to the job we perform to the way we interact with others. Tamas is the mode of inertia; rajas is the mode of activity; and sattva is the mode of enlightenment; these are the three gunas. A deep grasp of human psychology may be found in books like the Bhagavad-gita and the Srimad-Bhagavatam, which replicate with examples of the gunas and their interactions. By

far the most studied and verified three-gunas-based psychological diagnostic instrument is Dr. David Wolf's Vedic Personality Inventory (VPI) since 1999. It is possible to get valuable insight into the sorts of careers that will bring you the greatest satisfaction by learning about your guna profile. The VPI's findings may also provide the basis for a methodical, scientific approach to enlightenment. This scale develops an idea on how the Spiritual Intelligence governs an individual to tolerate the risk before and during the investment decision-making process. It encompasses qualities such as self-awareness, compassion, empathy, and a sense of purpose or meaning. An individual's emotional control, serenity, and capacity to make sound judgements in the face of market volatility or financial uncertainty are all improved. People with greater SQ (Spiritual Quotient, Zohar 1997) may be better able to handle the emotional ups and downs of investing because of their ability to better regulate their emotions (Zucchi, 2022). Because of this larger viewpoint, retail equities investors may be more likely to take the long view and ignore short-term swings in favour of pursuing their beliefs. When SQ is high, greater emphasis is laid upon ethical and moral values in their decision-making, including their investment choices. Investors may be more inclined to invest in companies or industries that align with their values, such as socially responsible or sustainable investments. This could impact their risk tolerance and willingness to invest in certain high-risk sectors. From the literatures available on this inventory, ideas have been summarised on the relationship between Investors' Trigunas and their Risk tolerance and also, subsequently how it leads to decision-making process (as evident from Table 3.3).

Table 3.3

Showing the relationship between Trigunas & Risk-Tolerance and Investment decision of Investors

Gunas	Qualities	Degree of Risk Tolerance	Reflections on Investment Decisions
Sattva	Purity, Knowledge, Harmony, Nobility, Contentment, fearlessness, forgiveness, gratitude, calmness, harmonious, clean conscience, self-control, empathetic.	Moderate	Unbiased market predictions, Empathetic, Analytical, Risk-Neutral type, accommodative, openness to new experiences, high internal locus of control, Creative decisions, optimistic in every financial crisis, higher financial resilience, higher financial mindfulness.
Rajas	Anger, anxiety, fear, Restlessness, worried, stress, ego-inflated, greed, disillusioned, joylessness, revenge, jealous.	High/ Very High	Overconfidence, overreaction, impatience, defect-seekers, self-centeredness, risk-lovers, panic selling & buying, poor resilience, mindless investing, and rash decisions putting situations in discomfort.
Tamas	Imbalance, disordered thinking, laziness, pessimism, viciousness, ignorance.	Low/ Very low	Risk-averse, chaotic decisions, lack of creativity & contentment

Source: Created by the author for the study based on available literature

3.15.12 KLONTZ MONEY SCRIPTS INVENTORY REVISED (KMSI-R)

Investors’ Money Scripts are the assumptions the investors have made about how they should think about and handle financial matters throughout their lives. Their risk tolerance and investing preferences, for example, may be drastically altered by these scripts. In the field of financial therapy, "Money Script" was first coined by an industry pioneer Brad Klontz in 2004; when he published his article in *Conscious Finance* in 2005. Initially, Money scripts were identified to be the underlying assumptions that we have about money shaping our actions and attitudes as investors. Further, this was revisited and developed as a scale; when it was published in 2011 in the *Journal of Financial Therapy* Article, entitled: “Money Beliefs and Financial Behaviours: Development of the Klontz Money Script Inventory”; when it was co-authored by Brad Klontz, Ted Klontz, Sonya L. Britt, and Jennifer Mentzer. Mainly, four types of financial behaviours have been highlighted here. Money avoidance,

money worship, money status, and money vigilance were recognised by the writers. They created the Klontz Money Script Inventory, a 72-question test, using a collection of 72 money scripts. This assessment ranks money script categories from most prominent to least troublesome. In 2011, KMSI got improved to 32 questions; and hence, the name was revised to the KMSI-R, an updated assessment. Findings over years by these authors about the types of Money Scripts have been summarised below:

- A) **Money Status Seekers** of social standing often equate their value with their financial standing. The appearance of riches may be more important to them. They may run the danger of going into debt due to their spending habits. They could have come from less privileged backgrounds as children or they would have come from a family that has seen financial success as a sign of social status. Those with higher Money Status scores are more prone to be reckless with their finances. It's not uncommon for them to go over their budgets. They might be prone to compulsive gambling. Seekers of material status are often financially reliant on others around them. It's possible that they're concealing purchases from their partners as well.

- B) Those who worship money hold the view that material wealth brings fulfilment. They consider financial success essential to solving their issues. They also share the view that it's impossible to amass too much wealth. They realise that striving for wealth is never fulfilling. A higher **Money Worship** score indicates a greater propensity to use credit cards. A better score here is often accompanied with a smaller wealth. People who put a high value on money often resort to material goods in search of fulfilment. They tend to prioritise business over family life. They often help people financially, even when they too are in a precarious position.

- C) The **Money Vigilant** are always on the lookout for any threats to their financial security. They place a premium on having a sense of financial security. They consider it crucial to put money aside. They are not holding out hope for a sudden influx of cash. They are not anticipating a lotto victory. They hold the view that individuals should earn their living wages. They disagree with the concept of

giving people money. Those who are more financially vigilant tend to be in better financial shape. They've started making wise decisions already. Their requirements are being fulfilled. The Money Savvy are less inclined to make large purchases on credit. They spend just what is reasonable for them. They're the kind to jump on a good deal. They may also worry about their future financial stability. People save more because of this anxiety. People in this group tend to keep their financial situation to themselves. They would like that no one learn about their financial status. In most cases, they don't hide money from their significant others. Unfortunately, this may also cause unnecessary scepticism or worry about financial matters.

- D) Wealthier individuals tend to avoid discussing finances. They have greater experience and knowledge and are better educated. Higher *Money Avoidance* scores indicate a negative attitude towards financial success. Some people who avoid financial situations may also feel unworthy of financial rewards. They could generalise about the rich and assume the worst about them. Many of these people think that economising is a virtue. The success of those who avoid dealing with money may be jeopardised. They make a terrible adversary in themselves. They look down on those who are financially secure and successful. They could be habitual benefactors. This is an inadvertent attempt at minimalism. One way to avoid dealing with one's financial situation is to ignore it entirely. Financial statements may be disregarded by these thinking. They often waste their money on frivolous purchases or on helping out others less fortunate. They could struggle to keep their finances in order.

3.15.13 POMPIAN'S BEHAVIOURAL ALPHA MODEL

This Behavioural model was used to classify various investors into four Behavioural Investor Types (BITs); as proposed by Dr. Michael M. Pompian in 2008 in his famous article, "Using Behavioural Investor Types" published in the *Journal of Financial Planning*. This therapeutic model proved satisfactory when applied for financial counselling at global level upon various clients. He argued that an advisor should undergo a four-step process to determine the investors' BITs; which follows:

- (i) The client needs to be interviewed to assess if he/ she is an active or passive investor followed as an indication of their risk tolerance.
- (ii) The same clients must be plotted on a risk tolerance scale to understand the magnitude of their tolerance levels (from high to moderate to low).
- (iii) Further, the testing of their behavioural biases (at both emotional and cognitive levels) need to be undergone.
- (iv) Finally, classifying them into one of the BITs.

The doubt normally arisen from the test results were that if an investor could be of only one type or a combination of both. This was then investigated by Pompian and he concluded stating that an investor can come under one dominant Behavioural Investor Type; meaning which that he or she could have a combination of various types too. Each BIT has a unique risk tolerance and is dominated by either a cognitive bias (based on flawed thinking) or an emotional bias (based on impulses or emotions). This has been detailed as given below:

- Investors that put more stock in safety and asset preservation than in taking calculated risks to increase their fortune are known as "*passive preservers.*" Many have amassed riches via traditional means, such as inheritance or steady employment at a big corporation. They may lack financial savvy since they have amassed fortune without taking any risks with their own money. Some people who identify as Passive Preservers are "worriers" who focus excessively on short-term performance and delay making financial choices due to their aversion to novelty. This is in line with how they have handled their careers so far: cautiously and without taking any unnecessary risks. Because they didn't work for the money, some of them who come into affluence may have extreme emotions of guilt or poor self-esteem, along with a fear of failure and a lack of desire. Most people who practise passive preservation are concerned about the well-being of their loved ones, particularly their children and grandchildren. Emotional, rather than logical, biases characterise the Passive Preserver because of the priority they place on family and safety. This BIT is increasingly widespread as the population ages

and as incomes rise. Many Passive Preservers are terrific customers because they take pleasure in the wealth management process and like the concept of being catered to because of their financial condition. Endowment bias, loss aversion, the status quo bias, and regret are all examples of emotional, security-focused biases that are common among Passive Preservers. The cognitive biases of anchoring and mental accounting are also present in these people.

- Investors that follow the herd without contributing their own thoughts are known as "***friendly followers.***" Many people make investing choices based on the advice of their peers rather than considering the long-term implications of their actions. Working with Friendly Follower is difficult since they typically overestimate their risk tolerance. Advisors should exercise caution when recommending "hot" financial ideas to Friendly Followers since those clients will likely want to implement every single one of them. Some people dislike or even dread the process of investing, so they keep large amounts of cash on hand because they put off making investment choices on their own. Since they don't have an interest in or natural talent for investing, there may be a pain at times, but they are typically compliant with expert advice and try their best to educate themselves financially. The cognitive biases of such investors include recency, hindsight, framing, cognitive dissonance, and aversion to ambiguity.

- The term "***Independent Individualist***" refers to a kind of investor that is both proactive and independent, with a tolerance for moderate to high risk. Self-confident Independent Individualists "trust their gut" when making choices; nevertheless, while doing independent research, they may be tempted to act on the original knowledge rather than gaining validation from other sources. Financial advisers may discover that an Independent Individualist client has invested without their knowledge or input. Due to their strong sense of autonomy, these investors often refuse to adjust their original assessment of the market, despite subsequent shifts. They tend to like investing and are not afraid of taking chances, but they are stubborn about sticking to a budget. Some advocates of the independent individualist philosophy see investment as a means to financial

independence. They make for excellent customers since they are always on the move, but some of them will not take financial advice. Some people have an unhealthy preoccupation with attempting to outperform the market and may have highly concentrated portfolios. They are the most likely to be contrarian of the several kinds of behavioural investors, and this might work to their advantage and encourage them to continue being contrarian. There are a number of cognitive biases associated with these investors, namely; conservatism, availability, confirmation, representativeness, and self-attribution.

- The “*Active Accumulator*” investor profile is the most risk-taking profile. Customers who fall into this category are even more ambitious and self-assured than the Independent Individualists you may already know. They at the highest levels of wealth typically feel they can control the results of investing since they have already done so with noninvestment activities. This kind of thinking may lead to reckless investment. Without guidance, Active Accumulators' high rates of portfolio turnover may be a drag on their investments. They are willing to tolerate volatility and are willing to take on risk in pursuit of a high rate of return. Fast-thinking and decisive, they may seek out riskier assets than their peers. When their investments pay off, they feel a sense of satisfaction. They might be challenging to counsel since they often reject conventional wisdom on investing topics like asset allocation and diversification. Although some of them confess they lack investing expertise, they tend to be very hands-on and want to be extensively engaged in making investment decisions. Overconfidence, perfectionism, pessimism, and the illusion of control are all common flaws among these Active Accumulators.

3.15.14 SIX THINKING HATS MODEL

Dr. Edward de Bono, a renowned psychologist, created the "six thinking hats" and published them in 1985. The idea for the book emerged from attempts to put some order into the chaos that is creative thought, particularly when it occurs in a communal setting. Together, the "hats" facilitate efficient and well-structured brainstorming. His concept has been widely regarded as an effective tool for improving problem-solving

and decision-making from several angles. Each "hat" reflects a distinct mode of thought and offers a systematic framework within which to analyse different facets of a problem. It encourages individuals to consider different perspectives and modes of thinking. By wearing different hats, investors can approach investment decisions from multiple angles, considering both the positive and negative aspects, facts and figures, emotions, and creative possibilities. This balanced thinking can help investors make more informed and well-rounded decisions. The focus of this model towards improving decision-making skills and risk-taking ability of retail equity investors can be dealt through its various principles:

- (i) The White Hat represents factual and objective thinking. When considering investment decisions, investors can use this hat to gather and analyze relevant data, market information, and financial metrics. It helps ensure that investment decisions are based on accurate and reliable information.
- (ii) The Red Hat represents emotional and intuitive thinking. In the context of investment decisions, this hat allows investors to express their gut feelings, instincts, and emotions about a particular investment. It helps investors tap into their intuition and consider the emotional aspect of investing, which can impact risk tolerance and decision-making.
- (iii) The Black Hat represents critical and cautious thinking. When wearing this hat, investors can identify potential risks, challenges, and downsides associated with an investment. It prompts investors to think critically and objectively evaluate the potential drawbacks and pitfalls of an investment opportunity.
- (iv) The Yellow Hat is about thinking on the bright side of life. Investors might put on this hat and think about all the possible upsides and possibilities that come with a certain investment. It's useful for gauging future returns and thinking forward to the best possible outcomes for an investment.
- (v) The Green Hat represents creative and innovative thinking. While wearing this hat, investors can think outside the box, explore alternative investment

strategies, and generate new ideas. It encourages investors to seek innovative approaches to investing and consider unconventional investment opportunities.

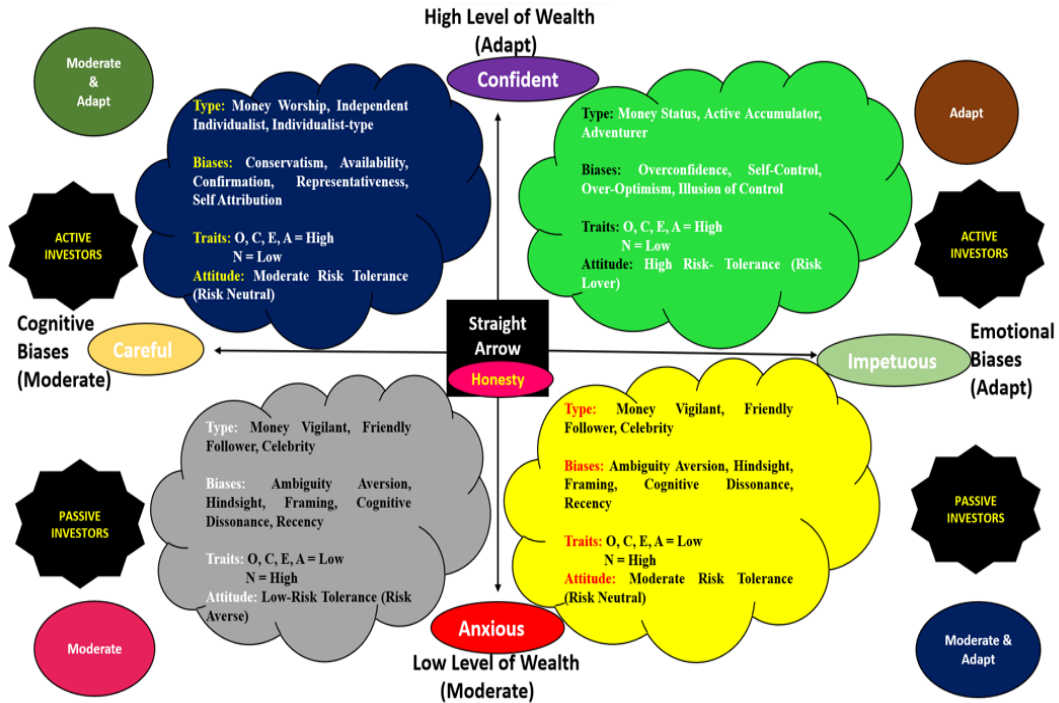
- (vi) The Blue Hat represents the role of the facilitator or organizer. It focuses on managing the thinking process, setting goals, and ensuring productive discussions. It helps the investors to structure their decision-making process, set objectives, and manage the overall investment decision-making session effectively.

Investors may reduce the effects of biases and restricted thinking by using the various "thinking hats" to methodically study different facets of an investment choice. More informed and balanced choices may be made as a result of factoring in facts, emotions, dangers, opportunities, and creative potential. Hence, this model is suggested as a therapeutic model in the area of Positive Psychology to debrief various medical simulations (Zhang, 2018). Similarly, there could be a few possibilities or horizons that could be explored in the field of financial counselling for clients' empowerment towards efficient investment decision-making; keeping an equanimity at both cognitive and emotional level unbiased in thoughts and clarity in actions undertaking with reasonable levels of risk tolerance. All the hats are compulsory to be worn by every investor during their crisis times. The hat we wear at times, need to be flexible to market changes upbrining creative solutions in the New Normal era.

The above-discussed models have been diagnosed clearly based on facts, practical applications and available theorised literatures; to include a new comprehensive model (as shown in Figure 3.18) suggesting the similarities in every model mentioned here and, better understand the new scopes of evolving new models for future decades to come.

Figure 3.18

Depicting the relationship between Personality Models and Investors' Risk Tolerance



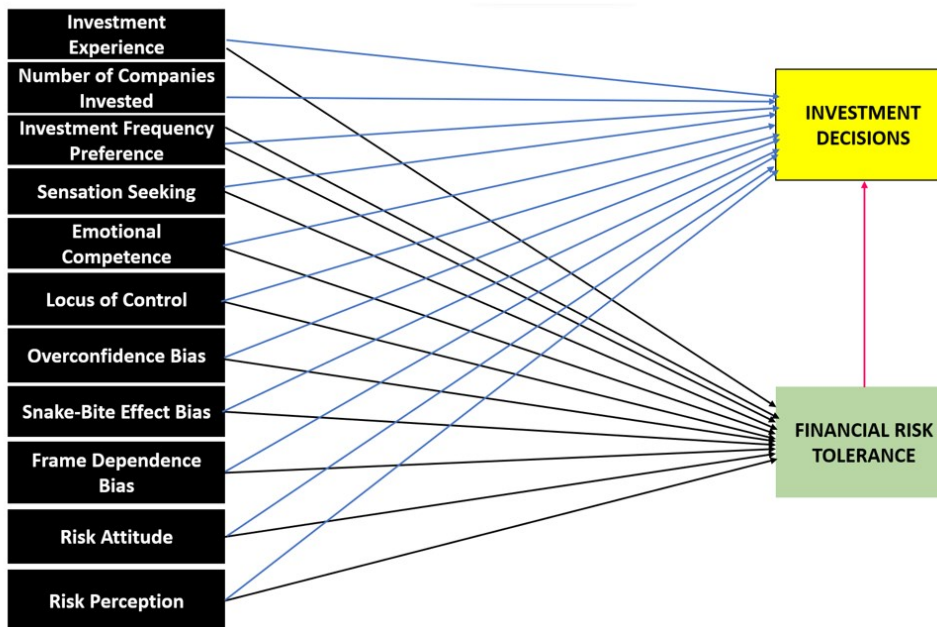
Source: Created by Author for the study purpose based on available literature

3.16 CONCEPTUAL MODEL FOR THE STUDY

A conceptual model is a high-level description of a phenomenon or system's fundamental elements, interconnections, and operations, helping us to conceptualise how several elements interact with one another to affect the topic under the study. Based on the previously mentioned theories, experiments, paradoxes and models from this chapter, certain variables were identified for the study. Besides this, the research gap was explored, in fact inducing the researcher develop a conceptual model for the entire study (as shown below in Figure 3.19).

Figure 3.19

Showing the Conceptual Model used for the study



Source: Created by the Author based on Research Gap

3.17 DEVELOPMENT OF CONCEPTUAL FRAMEWORK

The study intends to evaluate the factors influencing the Financial Risk Tolerance (FRT) and Investment Decisions (ID) of Retail Equity investors in Kerala. certain variables act either as mediators or moderators between other variables. For the intention of the investigator to be fulfilled, the conceptual model was devised to test the reliability, and validity of their relationships and, hence, the model could be stated as good fitness.

3.17.1 Relationship among Demographic factors of retail equity investors with their Financial Risk Tolerance and investment decisions:

The association between FRT and ID may be influenced by other demographic factors, one of which is age. Younger investors may be more willing to take on risky investing methods because of their greater risk tolerance. A decreased risk tolerance and a preference for safer investments may characterise elderly investors. Investment choices may be affected differently by risk tolerance at various ages. Besides this,

there is also evidence to show that males and females approach risk and financial investments differently. In general, males have a greater risk tolerance and are more likely to make risky bets, whereas women are more likely to take a more conservative stance. Similarly, the education level of investors can moderate the relationship between FRT and ID. Higher education levels generally correspond to greater financial knowledge and understanding of investment concepts. Well-educated investors may have a higher risk tolerance and be more comfortable making complex investment decisions. Conversely, lower education levels might lead to lower risk tolerance and a preference for simpler, less risky investments. Next, Income can also act as a moderator between FRT and ID. Investors with higher incomes may have greater financial resources and, therefore, higher risk tolerance. They may be more willing to invest in riskier assets with potentially higher returns. Conversely, investors with lower incomes may have lower risk tolerance and prefer more conservative investment options that prioritize capital preservation. Religion can influence an individual's values, beliefs, and attitudes toward risk and investment decisions. Different religious teachings and practices may shape one's risk tolerance. For example, some religions may encourage conservative financial behaviours and discourage excessive risk-taking, leading to lower risk tolerance and more conservative investment choices. Marital status can have an impact on an individual's risk tolerance and investment decisions. Married individuals may consider factors such as family responsibilities and long-term financial goals when making investment choices, potentially leading to lower risk tolerance and a preference for more stable investments. Single individuals, on the other hand, may have more flexibility and higher risk tolerance in their investment decisions. Furthermore, Geographical location can influence risk tolerance and investment decisions due to varying economic conditions, cultural norms, and regulatory environments. For example, investors residing in regions with higher income disparities or economic volatility may exhibit lower risk tolerance and opt for more conservative investments. Cultural factors can also influence risk perceptions and investment behaviour in different geographical locations. Also, their risk tolerance and investment choices may be affected by one's degree of financial literacy, which is in turn influenced by one's level

of education. Investors with greater education could be more financially literate, which might help them analyse risks more accurately and be willing to take on more of them. On the other side, those with less education may not know as much about managing money, leading to a reduced tolerance for risk and a preference for safer assets. Occupational factors can influence risk tolerance and investment decisions. Professionals in high-risk occupations, such as entrepreneurs or investment bankers, may exhibit higher risk tolerance due to familiarity with risk-taking in their work environment. Conversely, individuals in more stable or risk-averse occupations may have lower risk tolerance and prefer more conservative investments. Finally, Investors' confidence and willingness to take risks are both influenced by income. Wealthier people may be able to take on more risk and are more likely to do so in the pursuit of bigger investment returns. People with less disposable income may be more risk-averse because of their limited financial resources and a general preference for safer investments. Several literatures supporting the above-made justifications include that where, the Investors' risk tolerance may be predicted using demographic indicators, which can then be used to calculate the appropriate degree of financial risk. (Sulaiman, 2012). Demographic characteristics may be utilised to identify and categorise retail investors, which in turn can aid in the creation of more effective financial strategies, as mentioned by Chang et al. (2004). Demographic factors include things like age, marital status, income, employment, level of education, and more. Financial risk tolerance (FRT) and financial risk behaviour (FRB) were measured among 778 respondents in Raipur, Chhattisgarh, India in January and February 2013 by Kannadhasan (2015). Based on a model with 6 independent variables (gender, age, marital status, education, occupation, and income) and 2 dependent variables (Financial Risk Tolerance, Financial Risk Behaviour), the results indicate that gender, age, education, and occupation significantly play a role in determining FRT and FRB levels, while marital status and incomes do not contribute in the differentiation of FRT and FRB levels. Three hundred employees from two Indian institutions, the University of Kerala and Mahatma Gandhi University, participated in an empirical study conducted by Sulaiman (2012) that analysed their financial risk tolerance and demographic features as individual investors in 2010. In

a statistical model with one dependent variable (Financial Risk Tolerance) and six independent variables (gender, age, marital status, education, annual income, and number of dependents), it is found that age, marital status, education, annual income, and number of dependents play a significant role in determining FRT. Gender is unrelated to FRT in other ways. The 258 respondents from the Indian city of Ahmedabad that Thanki (2015) surveyed reveal a link between their demographic features and their risk tolerance, as well as between their personality type and their risk tolerance. Using Risk Tolerance as a dependent variable, we find that women tend to be risk-averse, that single investors take more risks, that investors between the ages of 25 and 45 have the lowest risk tolerance, that there is a positive correlation between income and risk tolerance and no correlation between education and risk tolerance, and that investors who own their own businesses tend to be more risk-taking than those who work for others.

3.17.2 Relationship among Investment experience, Number of Companies invested, Preference towards frequency of investments in equity market of Retail Equity Investors with their Financial Risk Tolerance, and Investment Decisions:

Greater investment experience may lead to a better understanding of market dynamics, potentially resulting in higher financial risk tolerance. Investors with more experience may have encountered various market conditions and learned to navigate them, influencing their risk perception. Diversification, represented by a higher number of companies in a portfolio, is often associated with lower overall risk. Investors who diversify may demonstrate a more conservative approach to risk, suggesting a positive relationship between the number of companies invested and financial risk tolerance. Investors who prefer frequent trading may be more exposed to short-term market fluctuations. This inclination toward active trading could suggest a higher risk tolerance, as they are comfortable with the potential volatility associated with more frequent transactions. Based on their exposure to diverse market circumstances, seasoned investors may make more intelligent investment judgements. The entire risk and return profile of a portfolio can be impacted by the number of

firms, which can then affect decision-making. Traders who make more trades may employ short-term tactics or try to profit from market movements. This choice may have an impact on the sorts of investments they choose, favouring more tactical and nimble strategies. Investment choices are strongly influenced by one's level of financial risk tolerance. Increased risk-tolerant investors may choose more aggressive investing methods, accepting the prospect of increased volatility in exchange for better returns. Concepts framed for the study were trivialised in various teachings from the studies of *Khan (2022)*; *Singh (2022)*; *Kumari, J. (2017)*; *Van de Venter et al., (2012)*; *Hemrajani et al., (2021)*; *Bayar et al., (2020)*; *Zaleskiewicz (2001)*; *Chhatoi & Mohanty (2023)*; *Chang, C. (2004)*; *Hussain (2022)*; *Patel et al., (2021)*; *Sivarajan (2018)*; *Sung & Hanna (1996)*; *Grable & Lytton (1999a and 1999b)*; *Grable (2000)*; *Kannadhasan (2015)*; *MacCrimmon & Wehrung (1986)*; and *O'Neill (1996)*.

3.17.3 Influence of factors like Sensation Seeking, Emotional Competence, Locus of Control, Overconfidence Bias, Snake-Bite Effect Bias, Frame-Dependence Bias, Risk Attitude, and Risk Perception) on the Financial Risk Tolerance and investment decisions of retail equity investors:

Investors with strong tendencies towards sensation-seeking may be more tolerant of risk. They might be drawn to riskier investments or trading techniques. As we all know, those who seek sensation may be more prone to participate in speculative or risky investments, which might affect the risk of their whole portfolio. Like how improved decision-making under pressure may result from stronger emotional competence, a more reasonable and balanced risk tolerance may result. Investors who have emotional intelligence may be less likely to act rashly out of fear or greed, making more thoughtful investing decisions. A higher risk tolerance may be influenced by an internal locus of control or the conviction that one can control one's own destiny. Investors with an internal locus of control could feel more confident taking measured risks and choosing their investments after careful consideration. Additionally, overconfident investors could exaggerate their capacity for managing risk, thus increasing their risk tolerance. Such overconfidence may result in increased

trading activity, excessive risk-taking, or a failure to consider potential drawbacks in financial choices. According to studies, investors who have suffered substantial losses in the past can become more risk-averse, which would affect their risk tolerance. Due to this prejudice, investors may become more risk-averse and unwilling to make investments that mimic previous losses. Risk perception can be affected by the way information is presented. Positive situational framing might increase risk tolerance. When the same information is presented in a good or negative light, investors may respond differently, which might influence their choices. An investor's risk tolerance is strongly influenced by their attitude towards risk. Risk-averse people could have a reduced tolerance for risk, whereas risk-takers might have a larger tolerance. It directs the kind of investments a person feels at ease with, affecting the makeup of their entire portfolio. Regardless of the objective degree of risk, an investor's risk tolerance can be affected by how they view risk. Even in circumstances where the real danger may be lower, investors with a higher perception of risk may choose more cautious investing methods. The research motivation to pick out these variables was mentioned from the studies of *Rabbani, Yao, Wang & Grable (2021); Gilliam & Grable (2010); Grable & Lytton (2001); Grable and Rabbani (2014); Rabbani et al., (2019); Wong & Carducci (2013); Chitra & Sreedevi (2011); Grable & Joo (2004); Soane et al., (2010); Corter & Chen (2006); Nicholson et al. (2005); Wong and Carducci (2016); Irwin's (1993); Leeman et al., (2014); Quinn & Harden (2013); Hemrajani et al., (2021); Sjoberg & Engelberg (2006); Williams (2023); Thanki, Karani & Goyal (2021); Jhonsi & Sunitha (2019); Behera (2021); Ghelichi, Nakhjavan and Gharehdaghi (2016); Pompian (2017); Ranaweera (2022); Mouna, Amari (2015); Jain & Kesari (2020); Kannadhasan (2015); Kuo, Huang and Jane (2013); Weber and Zuchel (2005); Chin (2012); Hsu and Chow (2013); and Wen, Chao and Liu (2012).*

3.17.4 Influence of Financial Risk Tolerance on the Investment decisions of retail equity investors:

A bigger percentage of an investor's portfolio is likely to be allocated to higher-risk, higher-reward assets, such as stocks, for those with a high-risk tolerance. A more

conservative asset allocation, on the other hand, can be preferred by investors with lesser risk tolerance, with an emphasis on less volatile assets like bonds or fixed-income instruments. Longer investment horizons may be preferred by investors who are at ease with greater levels of risk. They could be more willing to endure brief market swings in the hopes of achieving possible long-term rewards. Shorter investment horizons and a preference for assets with more steady returns and lower short-term volatility may be characteristics of investors with lesser risk tolerance. High-risk-taking investors could be more willing to keep a concentrated portfolio of industries or equities. While a lower risk tolerance may make a diversified portfolio more appealing since it spreads the risk over a variety of asset classes, lessening the effect of unsatisfactory performance in any one area. Investors who are at ease with risk may be more inclined to use dynamic rebalancing techniques, which allow them to take advantage of market opportunities by changing the composition of their portfolio. Investors who are less willing to take on risk may choose to keep their portfolio stagnant or only make minor adjustments occasionally. High-risk-tolerance investors may be less prone to panic or sell during volatile market times. They could view economic downturns as a time to purchase. Investors with poor risk tolerance, on the other hand, could be more likely to respond emotionally to market changes, which could result in their selling during market downturns to prevent perceived losses. All these major findings culminating the influence of Financial risk tolerance of retail equity investors on their investment decisions were supported by *Ainia & Lutfi (2019); Hemrajani et al., (2021); Kannadhasan (2015); Nguyen et al., (2016); Saivasan (2022); Sutejo (2018); Singh (2016); Prabha (2016); Mangala & Verma (2018); Prasad, Kiran & Sharma (2020); Ahmad (2020); Mubaraq (Aruna & Rajasekhar (2016); Murhadi (2023); Dash (2010); Sharma (2020); Chakkaravarthy (2021); Vohra & Kaur (2016); Bhattacharjee & Singh (2017); Mittal and Vyas (2011); Ayuub et al. (2015); Annamalah et al. (2019); Caglayan and Abdieva (2014); Baruah and Kumar (2018); Muralidhar and Berlik (2017); Rahmawati et al. (2015); and Chang et al., (2004).*

3.18 THE BOTTOM LINE

The chapter on the theoretical framework and conceptual model lays the groundwork for comprehending the interplay of the variables that shape retail shareholders' comfort with risk and their choice of equity investments. Insights into the complex interaction of psychological, cognitive, and environmental elements that shape investor behaviour have been acquired via the investigation of numerous ideas, models, and concepts in behavioural finance. Financial risk perception, processing, and response have been the subject of several theoretical frameworks, including the Prospect Theory, Rational Choice Theory, Bounded Rationality Theory, and the Habituated Action Theory. The cognitive biases, heuristics, and decision-making processes that these theories highlight is crucial to understanding how people approach risk and make financial investments. Investor behaviour may also be influenced by factors like an individual's views, attitudes, and social influences, as has been shown via the study of behavioural models like the Theory of Informed Choice, Cognitive Dissonance Theory, and Reasoned Action Theory. The cognitive and social aspects that impact risk tolerance and financial decision-making are shed light on by these models. Decision-making under ambiguity and framing effects may influence risk tolerance and investment preferences, as discussed in the discussion of experimental research in behavioural finance, such as the jelly bean experiment and the lottery choice experiment. This chapter has also emphasised the mediating or moderating impact of demographic characteristics, risk perception, and risk attitude in the link between retail equities investors' financial risk tolerance and their investing choices. Investor behaviour may be better understood if we take into account not just similarities but also variances across investors. The overall knowledge of the aspects and interactions that contribute to retail equities investors' risk tolerance and investment choices is provided by the theoretical framework and conceptual model chapter. It gives a road map for future studies and sheds light on how we might improve investor outcomes via better education and decision-making.

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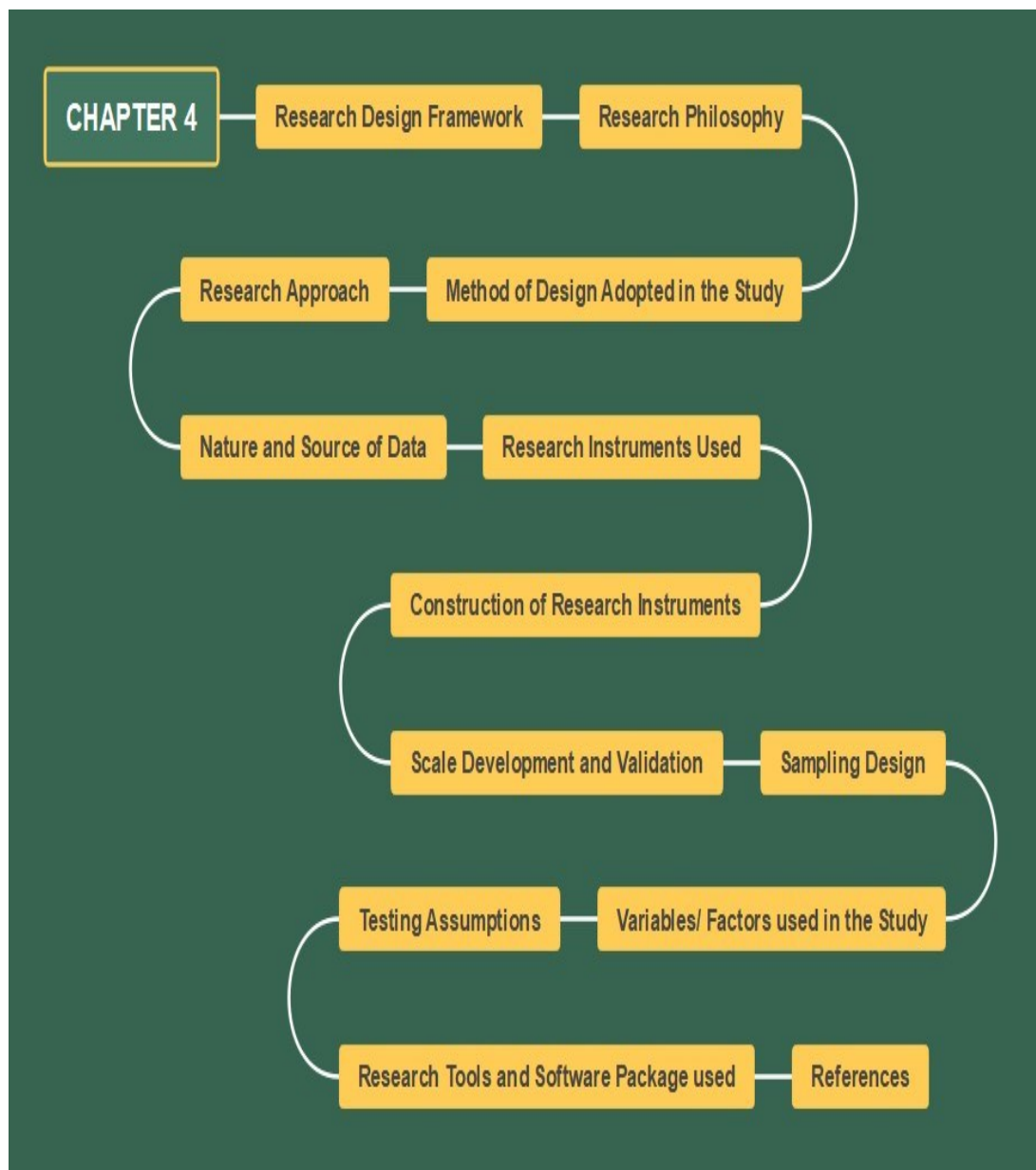
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CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY



Investing in the financial markets is an intricate decision-making process that involves a multitude of factors, one of the most crucial being an individual's risk tolerance. Understanding how investors perceive and manage financial risks is essential in comprehending their investment decisions. This chapter outlines the research design and methodology employed to investigate the intricate relationship between financial risk tolerance and the investment choices made by retail equity investors in the vibrant state of Kerala. A systematic approach to gathering, assessing, interpreting, and presenting the necessary data for a chosen research topic is made possible by the effort to create an effective research framework. This chapter explains the applied research approach for acquiring pertinent information needed to make judgments on the significance of "Financial Risk Tolerance" and its relevance in making investment decisions and to evaluate the relationship strength of factors contributing to financial risk tolerance and investment decisions among retail equity investors in Kerala. In order to ensure the development of the most appropriate research methodology for this study, a quick overview of the selected research methodology has been offered below.

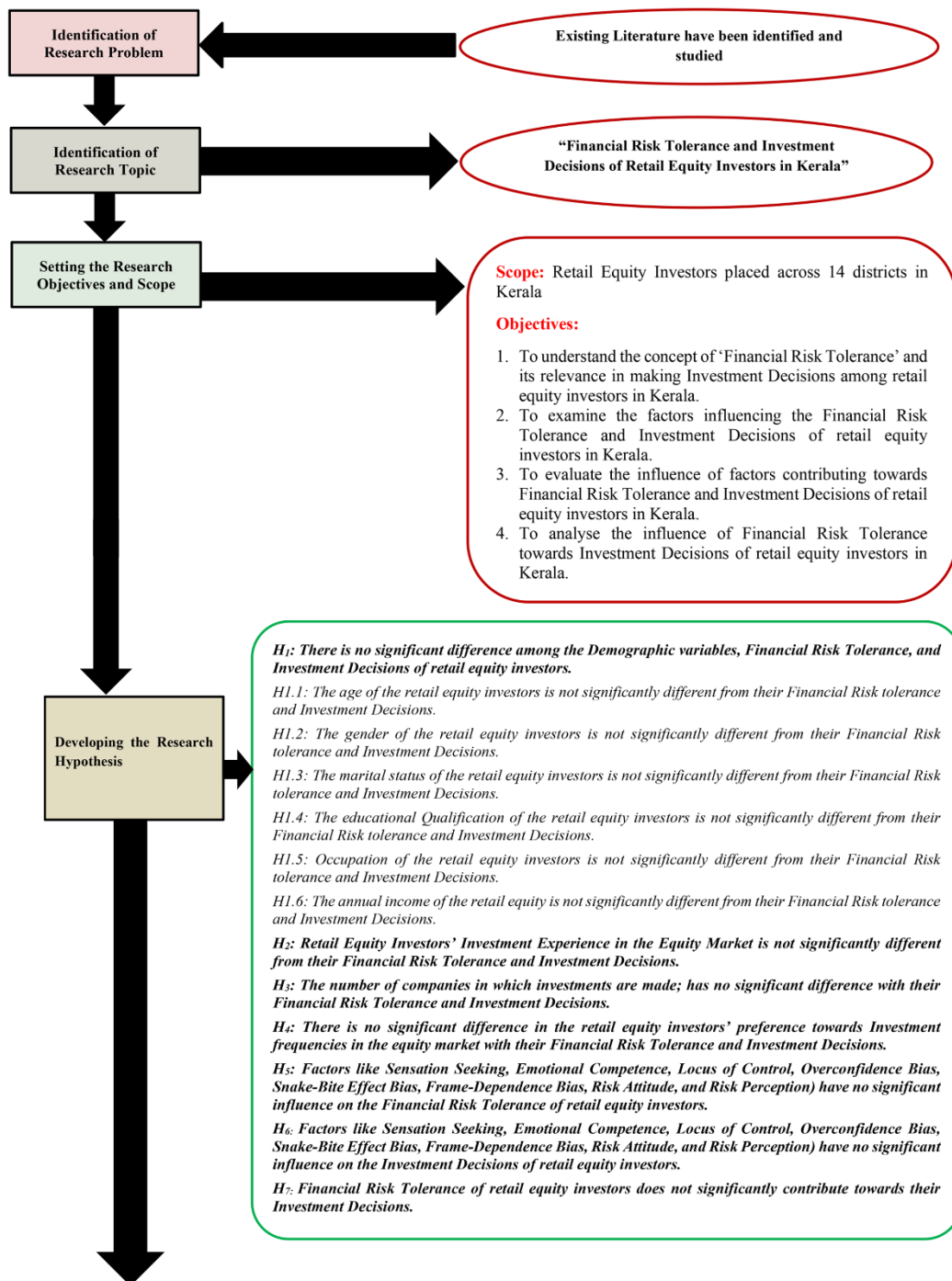
4.1 RESEARCH DESIGN FRAMEWORK

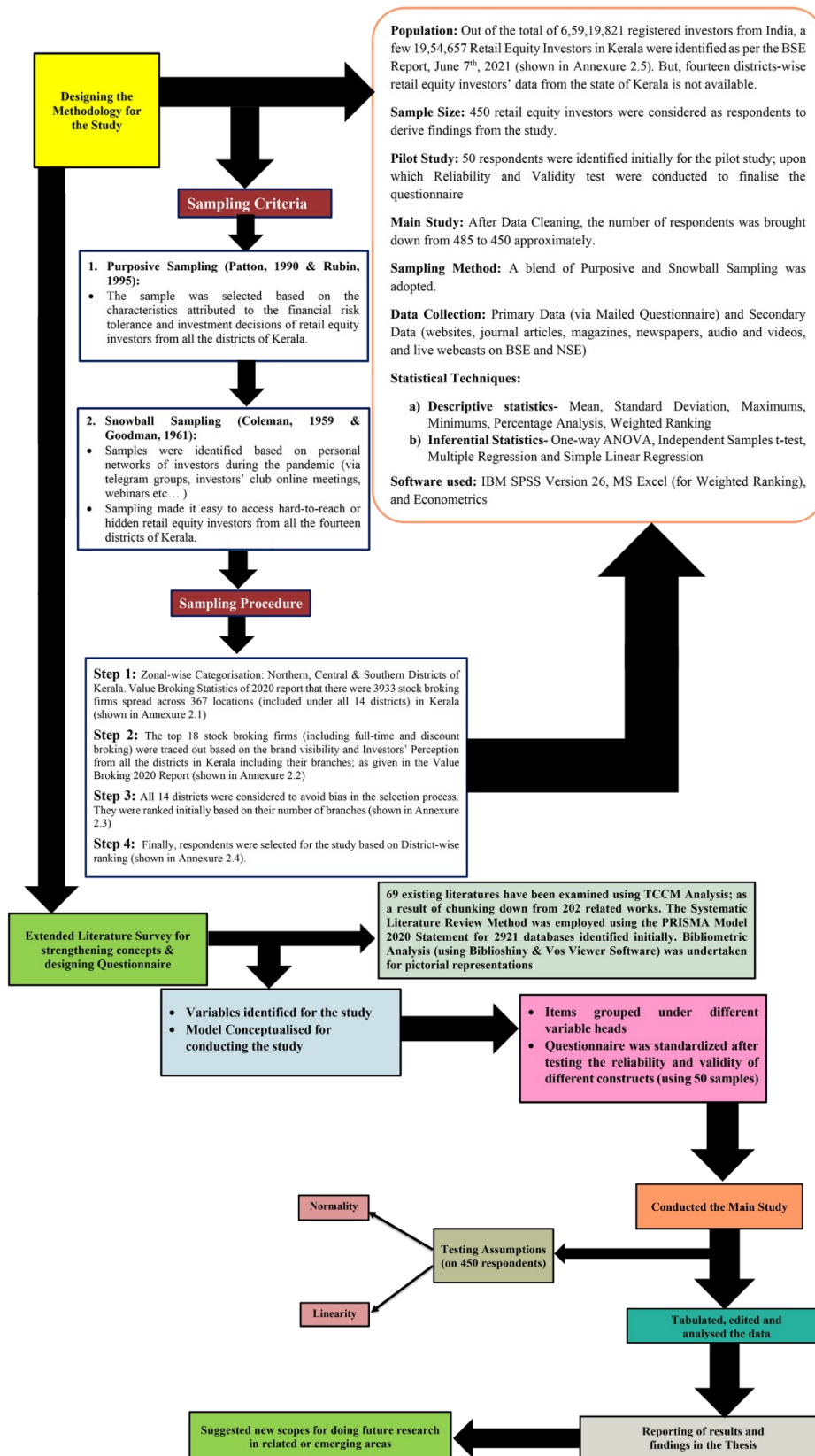
A well-developed research design framework is essential for shaping the research study, guiding the researcher through the various stages of the research process, and ensuring that the study is conducted with rigor, integrity, and relevance to the specific context of financial risk tolerance and investment decisions among retail equity investors in Kerala. The step-by-step procedure of how the entire research was conducted has been designed and depicted clearly in Figure 4.1 as shown below:

RESEARCH DESIGN FRAMEWORK

Figure 4.1

Research Design Framework for the Study





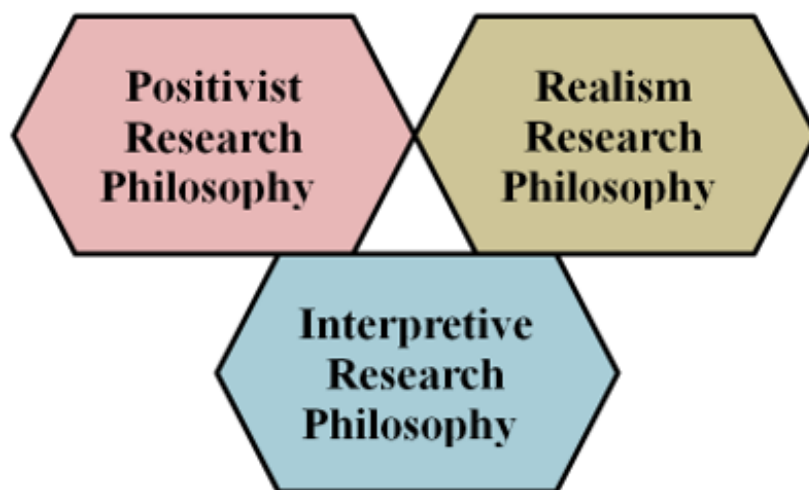
Source: Created by the Author for the study purpose

4.2 RESEARCH PHILOSOPHY:

According to Saunders, Lewis, and Thornhill (2009), research philosophy refers to the knowledge and presumptions that serve as the foundation for the study. These academics also contend that knowledge creation and its foundation are included in research philosophy. Since answering the research questions also leads to the production of a body of new information, the knowledge being developed need not be wholly original. Business researchers need to be aware of their philosophical commitment since it affects their views, problem-solving strategies, and research methods. Positivism, realism, and interpretivism are the three primary categories of research philosophies, according to Saunders, Lewis, and Thornhill's (2009) research; as shown in Figure 4.2 below:

Figure 4.2

Research Philosophy



Source: Saunders, Lewis, and Thornhill, 2009

The study has utilised positivist philosophy in light of the research issue, to explore financial risk tolerance and investment decisions among retail equity investors in Kerala. The positivist concept aids in acquiring facts that are founded on factual knowledge and gathered from observations. The researcher was able to follow the positivist philosophy in this case because the purpose of exploring factors contributing

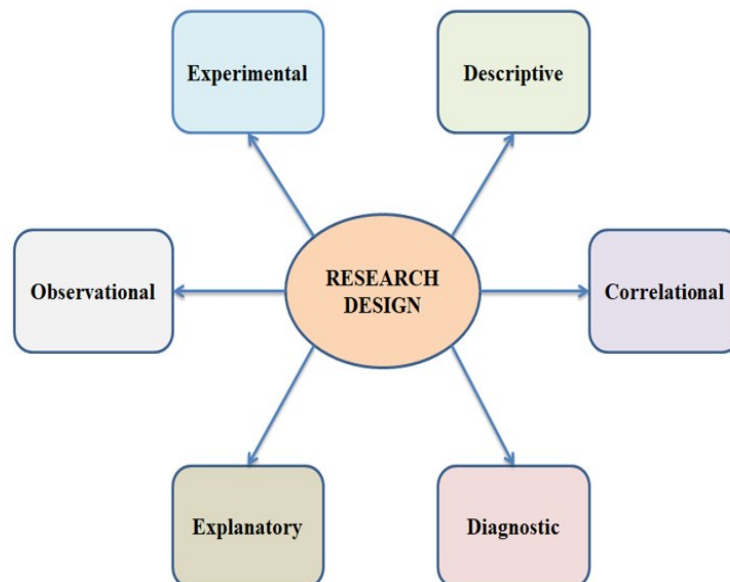
to the financial risk tolerance and investment decisions of retail equity investors in Kerala allowed the researcher to follow the positivist philosophy for gathering both quantitative and qualitative data. As a result, the positivist philosophy has been successful in gathering data based on observations related to this natural occurrence. Additionally, it has been successful in obtaining both qualitative and quantitative data on the elements influencing Kerala's retail stock investors' investment choices and financial risk tolerance in order to meet the study's objectives.

4.3 METHOD OF DESIGN ADOPTED IN THE STUDY

The two main categories of research designs are qualitative and quantitative studies. Using mathematical and statistical tools, the gathered data are quantified and assessed in a qualitative research technique. In contrast, a larger sample size is used in quantitative research, and the findings from statistics can be useful to society (Purna et al., 2023). Figure 4.3 displays the many study design kinds.

Figure 4.3

Research Design



Source: Research design, What it is, Elements and Types, (2022)

A mix of *Descriptive and Analytical Research design* has been selected here to proceed with the research and comment on factors contributing to the financial risk tolerance and investment decisions of retail equity investors in Kerala. It aids in investigating the relationship between the study variables and proved to be the most suited among the three research designs that may be used in this situation (Grey, 2019). Moreover, the Analytical research design would then delve deeper, examining the relationship between financial risk tolerance and investment decisions of retail equity investors in Kerala. this further offers insights into various factors influencing the investors' behaviour and potential strategies for managing the risk effectively. Such a design has been successful in examining various factors since the goal of this research has been to offer both theoretical and empirical findings on the significance of financial risk tolerance on investment decisions in the Kerala context. Moreover, this has been advantageous to test the connection among research variables such as investment experience, number of companies invested, preference towards investment frequency, sensation-seeking, locus of control, emotional competence, overconfidence bias, 'snake-bite effect' bias, frame dependence bias, risk perception, risk attitude, financial risk tolerance, and investment decisions.

4.4 RESEARCH APPROACH

To evaluate the pre-developed hypotheses about the link between the research variables, the study used a deductive technique. To properly evaluate the hypothesis that is formed based on a thorough literature synthesis, a deductive method must be included. Abductive reasoning is crucial for generating theories and performing empirical research based on them, but the inductive technique aids in creating new theoretical models from models and theories that already exist. Inductive and abductive reasoning has been overlooked in this study since it aims to analyze the various factors contributing to the financial risk tolerance and investment decisions of retail equity investors in Kerala. To evaluate the hypotheses and determine the factors contributing to the financial risk tolerance and investment decisions of retail equity investors in Kerala, deductive reasoning was chosen henceforth.

4.5 NATURE AND SOURCES OF DATA:

In theory, there are several data-gathering methods to select from when constructing a survey, including face-to-face and telephone interviews, postal questionnaires,

Internet surveys, and other combinations. Paper-and-pencil forms, in which an interviewer writes down the responses, or sophisticated computer-assisted forms, are also options. All forms can produce high-quality data, and the technique of data collection used is determined by the research objectives, concepts to be assessed, and population under investigation. The researcher made the decision to carry out a survey through a mailed questionnaire. The data is obtained from the sources listed below:

4.5.1 Primary data:

The researcher generated the data using survey questionnaires specifically geared to understand and solve the study topic at hand. The questionnaire obtained the necessary information on retail equity investors' investment experience, number of companies invested, preference towards investment frequency, sensation-seeking, locus of control, emotional competence, overconfidence bias, 'snake-bite effect' bias, frame dependence bias, risk perception, risk attitude, financial risk tolerance, and investment decisions.

4.5.2 Secondary data:

For the current study, secondary data was collected from various secondary sources including reference books, journal journals and articles, Ph.D theses, internet - vlogs, blogs, websites, newspapers, NSE/BSE Websites, News/Press Releases, magazines, and live webcasts on BSE and NSE.

4.6 RESEARCH INSTRUMENTS USED:

The purpose of a research instrument is to collect information from respondents about their attitudes, experiences, and views which helps to gather quantitative and/or qualitative data. In the study conducted here, mailed questionnaires are often utilised. Various components of the research instrument are outlined below;

4.6.1 Components of the questionnaire:

Section-1: Demographic Details:

As a first section of the questionnaire demographic details were obtained from the retail equity investors from Kerala which included name (optional), age, gender, marital status, place of residence, educational qualification, occupation, and annual

income of the retail equity investors. Any basic details of the respondents are necessary to understand their influence on their behaviour and attitude.

Category 1: Investors' Investment Experience:

Incorporating questions about investors' investment experience in the questionnaire enables researchers to explore the multifaceted relationship between experience, risk tolerance, and investment decisions. It adds depth and context to the study, allowing for a more comprehensive understanding of how individuals navigate the complexities of financial markets. This category was formulated with the notion that retail equity investors's experience in equity market could be classified under "upto 5 years", "6 to 9 years" and "10 years and above".

Category 2: Number of Companies in which investments are made:

Including a category on the "number of companies in which investments are made" enriches the study by providing nuanced information about investors' portfolio composition, risk management strategies, and investment behavior. It contributes to a more comprehensive understanding of how retail equity investors make decisions and manage risks in their investment portfolios. For this to be understood, it has been categorised as "less than 10 companies", "11 to 20" and "21 and above" companies.

Category 3: Preference towards the frequency of investments made in the equity market:

Studies quote that the frequency of investments is closely related to an investor's investment horizon. Different investors may have varying preferences for market timing. Some may prefer to actively trade in response to short-term market movements, while others may adopt a more passive approach. Understanding the frequency of investments allows researchers to explore the prevalence of different market timing strategies. Findings related to investors' preferences for the frequency of investments can have implications for financial education programs, investment product design, and regulatory policies. Understanding these preferences can inform efforts to support and educate investors. This section of the study has been bifurcated

as “less than a year”, “intraday”, and “less than 3 months” to reach at research conclusions.

Category 4: Sensation-Seeking

Furthermore, the researcher attempted to analyse the level of sensation seeking by obtaining information on retail investors' opinions pertaining to earning most of the wealth through equity investments, having risked their own capital, tolerance for risk to build wealth being more important, degree of control over investments, 100% faith in abilities, motivated to build wealth from equity, self-starter seeking, willing to put capital at risk to build wealth., concept of borrowing money, active trader to accumulate wealth through equity, I act quickly on opportunities, Listening to experts' knowledge, feeling excited and anxious, trusting the advice of gut instincts, Following an investment plan, plans being not permanent, feeling most confident, intellectual curiosity, loving active trading, Short-term fluctuations and friend suggesting a “sure thing” on investment.

Category 5: : Emotional Competence:

Category 4 of the research instrument collected retail equity investors' view on power of emotions, persuasive approach, portfolio decisions, fear, being the last, industry news, overanalysing situations, compulsive habits, compulsive habits, emotional comfort zone, unpleasant situation, Emotions, emotional reactions, market reactions, Others' emotions, ethical consequences, logic, re-evaluate, and crisis.

Category 6: Locus of Control:

Category 2 under questionnaire collects the information on the local of control of the retail equity investors. It includes their opinion on Careful Investing, investment losses, investment plans, long run financial well-being, protecting investment interest, smart investments, predict unforeseen changes and decision on intuitions.

Category 7: Overconfidence Bias

Category 7 of research instrument deals with overconfidence bias of retail equity investors by obtaining their view on rash decisions, confident on investment

knowledge being above average, overestimating the ability to evaluate a company, like taking independent investment decisions, believe that their choice of investment avenues is the right one, investment expertise leading to trade excessively, always wait to pick the next big stock, rely on own estimations, do not easily change views and buy certain company stocks.

Category 8: 'Snake-Bite Effect' Bias

Category 8 of the questionnaire ponders on the snake bite effect bias of the retail equity investors by obtaining their opinion on pain of financial loss, changing equity portfolio, avoid buying stocks, invest in high-risk stocks, opportunities for repeated buying, sell the stocks to prevent losses, fooling in investment, very much cautious in further decisions, and investing in inappropriate stocks.

Category 9: Frame Dependence Bias

Category 6 obtained information on frame dependence bias of retail equity investors which consists opinion on buying certain company stocks, Poor past financial decisions, attached to certain investments, act on a new investment, successful investments being attributed to decisions, trusting the advice on investment, investing in companies that make products they like, reflecting on past investment mistakes, investment choices based on knowledge and focusing on the positive aspects.

Category 10: Risk Perception:

Category 3 describes retail equity investors' risk perception containing diversified portfolio, investment, yield rate, familiar investment, cautious and wait, having more money, best investment option, Older investors, New Generation of investors, liquidated investment choices, significant value and consequences of investment behaviour.

Category 11: Risk Attitude

It was intended to obtain the information on risk attitude which consists the collection retail equity investors on considering 'Risk' as an opportunity or a thrilling event, amusing drive towards aggressive stocks, minimise the consequences of risk-taking,

control over outcomes, try to anticipate the factors influencing outcomes, motivate Potential negative consequences, Every minute details, pros and cons, plan for the “worst case” scenario, offer an appealing reward, tolerance for capital fluctuation, Accepting risky investment projects, ethical culture of the company, comfortable, Worried about loss and concerned about the volatility.

Category 12: Financial Risk Tolerance

Category 10 collects the data on retailers equity investors opinion on expecting income and investment earnings to grow substantially, able to accept negative returns annually, more risk with entire portfolio, Assuming normal market conditions, lose money, wouldn't worry about losses in the time frame, modest gain from the investment, would continue, willing to accept investments, market value for stock, willing to withstand some fluctuations, Protecting portfolio, willing to bear the consequences, prefer investing in blue-chip stocks, and describe investment attitude as very aggressive.

Category 13: Investment Decision

Further as the most important variable (i.e. Dependent variable) category 9 obtained investment decision of the retail equity investors by collecting their opinion on trusting inner feelings and reactions, make an investment that feels right, having the highest standards for equity investment decisions, like to discuss financing options, consider different levels of risk associated with stock, like to realise the gain as soon as the stock increases in price, make sure that investment in stock has a higher degree of safety, like to search for information about firms', take advice on market options from friends/ family, best time to invest, event affecting international financial markets, rely on past experience, to be in control of finances, other investors' decisions of buying, select the company stocks based on their performance, companies certified ethically strong are of greater priority, financial setback, accepting reality and taking action, criticised for the wrong decision, ready to contribute some portion of portfolio for economic growth and development, ready to change goal path, and financially independent and solely responsible my portfolio decisions, making one

decision at a time, financial stress, pocket going out of balance, and flexible approach to keep investment alternatives sustained.

The Likert scale is a well-known psychometric technique for gauging responses. This scoring system has a method that simplifies survey design and administration, data coding and analysis, and survey design (Li, 2013). The Likert scale was employed in the current study to gauge the degree of agreement among retail equities investors. Strongly agree (5), agree (4), neutral (3), disagree (2), and Strongly disagree (1) were used in the questionnaire that was presented to them. Apart from that, nominal and ordinal scales were also obtained to collect their demographic details.

4.7 CONSTRUCTION OF RESEARCH INSTRUMENTS:

Any empirical study begins with the development of a preliminary model of the problem or system being studied, which requires compiling a list of all the different elements, outcome variables, independent and dependent variables, and the interactions between them. The preliminary model may be used by researchers to develop hypotheses to test the model. A survey-based research questionnaire consists of a number of questions, sometimes referred to as items, each of which is intended to provide light on a particular study topic. This study has also gathered a variety of indicators for each component and variable, which are displayed in the table below, based on the research model and assumptions.

Table 4.1

Sources for Construction of Research Instruments

Sl. No.	Variables	Source
1	Demographic Details	Parashar, N. (2010); Wilaiporn, P., Nongnit, C., & Surachai, C. (2021); Gupta, S., & Shrivastava, M. (2022); Talwar, S., Talwar, M., Tarjanne, V., & Dhir, A. (2021)
2	Investment Experience	Belsky, G., & Gilovich, T. (1999); Barber, B. M., & Odean, T. (2000); Statman, M. (2000); Shefrin, H., & Statman, M. (1985); Kahneman, D., & Tversky, A. (1979); De Bondt, W. F., & Thaler, R. (1985)

Sl. No.	Variables	Source
3	Number of companies in which investments are made	Hirshleifer, D. (2015); Barber, B. M., & Odean, T. (2000); Frazzini, A., & Pedersen, L. H. (2014); Gervais, S., & Odean, T. (2001); Statman, M. (2000)
4	Preference towards the frequency of investments in equity market	Mangala, D., & Verma, A. (2018) ; Sharma, D. S., Mittal, K., & Srivastava, S. P. (2021) ; Cox, J. D., & Greene, E. F. (2007) ; Jaiyeoba, H. B., & Haron, R. (2016)
5	Investment Objectives	Garman & Fogue (2011); Grable (1997); Trone et al., (1996); Chang et al., 2004); Grable & Lytton (1999a, 1999b)
6	Sensation-Seeking	Zuckerman et al. (1978); Zuckerman & Kuhlman (1993); Jackson (1976); Eysenck & Eysenck (1975, 1978); Arnett (1994); MacCrimmon & Wehrung (1985); Sjöberg, L., & Engelberg, E. (2009); Grinblatt, M., & Keloharju, M. (2009); Brown, S., Lu, Y., Ray, S., & Teo, M. (2018); Rabbani, A. G., Yao, Z., Wang, C., & Grable, J. E. (2020); Worthy, S. L., Jonkman, J., & Blinn-Pike, L. (2010); Grinblatt, M., & Keloharju, M. (2008); Gray, J. M., & Wilson, M. A. (2007)
7	Emotional Competence	Toubiana, M., Greenwood, R., & Zietsma, C. (2017); Jukes, M., Gabrieli, P., Mgonda, N. L., Nsolezi, F., Jeremiah, G., Tibenda, J., & Bub, K. L. (2018); Saarni, C. (1999); Giehl, B. (2020); Goleman (2001); Chin (2012); Hameed (2012); MacCann, C., & Roberts, R. D. (2008); Mayer, J. D., & Geher, G. (1996); Mayer, J. D., & Salovey, P. (1993); Petrides, K. V., & Furnham, A. (2001); Singh, Y., & Bhargava, M. (1991); Zeidner, M., Matthews, G., & Roberts, R. D. (2004); and Schutte, N. S., Malouff, J. M., Hall, L. E., Haggerty, D. J., Cooper, J. T., Golden, C. J., & Dornheim, L. (1998)
8	Locus of Control	Kasilingam, R., & Sudha, S. (2010) ; Pinger, P., Schäfer, S., & Schumacher, H. (2018) ; Caliendo, M., Cobb-Clark, D. A., Obst, C., Seitz, H., & Uhlendorff, A. (2022) ; Salamanca, N., de Grip, A., Fouarge, D., & Montizaan, R. (2016); Rotter, J. B. (1966); Levenson, H. (1974); Moshki, M., Ghofranipour, F.,

Sl. No.	Variables	Source
		Hajizadeh, E., & Azadfallah, P. (2007); Boshoff, E., & Van Zyl, E. S. (2011); and Galvin, B. M., Randel, A. E., Collins, B. J., & Johnson, R. E. (2018)
9	Overconfidence Bias	Scott, J., Stumpp, M., & Xu, P. (2003); Malmendier, U., & Tate, G. (2005); ul Abidin, S. Z., Qureshi, F., Iqbal, J., & Sultana, S. (2022); Kumar, S., & Goyal, N. (2015); Jain, J., Walia, N., & Gupta, S. (2020); Stanovich and West (1998); Barber & Odean (2001); Condon and Revelle (2014); Aczel et al., (2015); Teovanović et al., (2015); Michailova (2010); Colvin & Block (1994); Dunning (2005); Kurt & Paulhus (2008); Taylor & Brown (1988); Alpert & Raiffa (1982); Fischhoff, Slovic, & Lichtenstein (1977); and Lichtenstein, Fischhoff, & Phillips (1982)
10	'Snake-Bite Effect' Bias	SJ, S. (2017); Ghelichi, M. A., Nakhjavan, B., & Gharehdaghi, M. (2016); Dureha, S., & Jain, V. (2022); Pin, T. B., Mustapha, N., & Muhammad, N. M. N. (2019); Kahneman and Tversky (1979); Lehner (2004); Chin (2012); Chin (2012); Kartasova et al., (2014); Carmon et al., (2003); and Mandrik and Bao's (2005)
11	Frame Dependence Bias	Charles, A., & Kasilingam, R. (2016); Charles, A., & Kasilingam, R. (2014); Wheale, P. R., & Amin, L. H. (2003); Zaleskiewicz, T. (2015); Prosad, J. M. (2014); Li, C. A., & Yeh, C. C. (2011); Tversky & Kahneman (1981); Fischhoff (1983); Bazerman (1984); Fagley and Kruger (1986); Svenson and Benson (1993); Highhouse & Paese (1996); Bruine de Bruin et al. (2007); and De Martino, Kumaran, Seymour & Dolan (2006)
12	Risk Perception	Biais, B., & Weber, M. (2009); Wang, M., Keller, C., & Siegrist, M. (2011); Weber, E. U., Siebenmorgen, N., & Weber, M. (2005); Aren, S., & Zengin, A. N. (2016); Gentile, M., Linciano, N., Lucarelli, C., & Soccorso, P. (2015); Shafi, H., Akram, M., Hussain, M., Sajjad, S. I., & Rehman, K. U. (2011); Ademola, S. A., Musa, A. S., & Innocent, I. O. (2019); Klos, A., Weber, E. U., & Weber, M. (2005); Lerner, Gonzalez, Small, & Fischhoff (2003); and Shahrabani, Benzion, Rosenboim, & Shavit (2012)

Sl. No.	Variables	Source
13	Risk Attitude	Fossen, F. M. (2012); Fossen, F. M. (2011); Charness, G., & Gneezy, U. (2010); Heo, W., Grable, J. E., & O'Neill, B. (2017); Nosić, A., & Weber, M. (2010); Eckel, C. C., & Grossman, P. J. (2008); Weber, E. U., Blais, A., & Betz, N. E. (2002); Lejuez et al. (2002); Rohrmann (2005); Bechara et al. (1994); Lopes & Oden (1999); MacCrimmon & Wehrung (1985); Lauriola et al. (2007); Grol et al. (1990); Kogan & Wallach (1964); Fromme et al. (1997); Weber et al. (2002); Zhang, Highhouse, & Nye (2018); Keinan & Bereby-Meyer (2012); Shure & Meeker (1967); Nicholson et al. (2004); and Jackson et al. (1971, 1972)
14	Financial Risk Tolerance	Grable, J., & Lytton, R. H. (1999); Gibson, R. J., Michayluk, D., & Van de Venter, G. (2013); Bannier, C. E., & Neubert, M. (2016); Grable, J. E. (2016); Pinjisakikool, T. (2018); Heo, W., Rabbani, A. G., & Lee, J. M. (2021); Grable, J., Roszkowski, M., Joo, S. H., O'Neill, B., & Lytton, R. H. (2009), Irwin (1993); Bailey & Kinerson (2005); Chang et al., (2004), Coleman, 2003, Grable et al., (2008); Coleman (2003); Delpechitre & DeVaney, (2006); Finke & Huston (2003); Grable (2000); Grable et al., (2008); Grable & Joo (2004); Grable & Lytton (1999a, 1999b); Grable & Roszkowski (2008), Hanna & Chen (1998); Morin & Suarez (1983); Roszkowski & Grable (2005) ; Schooley & Worden (1996); Van de Venter (2006); Wang & Hanna (1998) and Yip (2000)
15	Investment Decisions	Hunjra, A. I., Rehman, K. U., & Ali Qureshi, S. (2012); Zhang, G. (2000); Troise, C., Matricano, D., Sorrentino, M., & Canelo, E. (2022); Farooq, A., & Sajid, M. (2015); Varadharajan, P., & Vikkraman, P. (2011); Guild, P. D., & Bachher, J. S. (1996); Kahneman and Tversky (1979); Weber et al., (2002); Waweru et al. (2008); Mayfield et al. (2008), Klapper & Love (2004), and Pasewark & Riley (2010); Barberis (2001); Nagy & Obenberger (1994); Wong & Cheung (1999) and Singh & Yadav (2016)

4.8 SCALE DEVELOPMENT AND VALIDATION:

Validity and item reliability are two essential elements of a questionnaire used in empirical research. Based on the questionnaire's design, development, and goal, a variety of verifying and statistical approaches are employed to evaluate its reliability and validity (Taherdoost, 2016). The researcher had to follow a number of guidelines in order to construct a top-notch questionnaire for this study. The current study used two main strategies for generating data and validating data, which is noteworthy.

- Validity Testing
- Reliability Testing

4.8.1 Validity Testing:

Establishing the validity of a questionnaire will be made easier by knowing what an evaluation is supposed to measure. Validity refers to how well the data obtained represents the intended subject of the study (Ghauri, Grnhaug, & Strange, 2020). The validity process also looks at the validity of the inferences and conclusions derived from the survey replies. As a result, the current study has adopted content validity.

4.8.1.1 Content Validity:

Content validation is the process of analysing the survey responses' content to see if they accurately reflect the whole theoretical construct of the intended model of the topic under investigation. Content validation may start once a questionnaire is developed and its validity is assessed. The content validation is carried out by a group of experts having knowledge of the questionnaire's design and the capacity to assess content validity. The questionnaire questions are examined by the content validation team to determine their suitability for measuring the constructs and the items' suitability for assessing the variables in the domain (Aithal & Aithal, 2020). As part of content validation, Ten senior student researchers seeking doctorates in behavioural finance were first given the questionnaire, and their feedback was integrated into the instrument. The professors who specialise in behavioural finance, commerce, and management then validated the questionnaire. The validation question was also sent

to psychologists and statisticians, who suggested removing a few elements. Three stock brokers were given the mailed questionnaire after it had been modified to hear their opinions. These comments were carefully considered, and the questionnaire's elements were appropriately modified, eliminated, and added.

4.8.2 Reliability Testing:

A pilot study was conducted with a sample of 50 respondents spread across the northern, central, and southern zones of Kerala (covering all fourteen districts) using purposive sampling to ensure that no errors were missed and to check the measurement scale. Following the pilot survey, established protocols were used to confirm the scale's dependability. The evaluation criteria were modified as and when necessary. The researcher might use this procedure to update the questionnaire as necessary. The improvements were made after a thorough investigation and advice from financial advisors, behavioural finance experts, academicians, and research scholars. The researcher used Cronbach's alpha after the pilot study to verify the accuracy of the data (Cronbach, 1951). The most used metric for assessing data on internal consistency is Cronbach's alpha. An acceptable alpha value is often between 0.7 and 0.8 (Nunnally, 1978).

Table 4.2

Reliability and Validity Test Results (Based on Calculations)

Construct	No. Of Items	Reliability				Validity	
		Composite Reliability	Cronbach Alpha	AVE	MSV	Convergent	Discriminant
Sensation-Seeking	13	0.878	0.864	0.682	0.553	AVE>0.5	MSV<AVE
Emotional Competence	12	0.709	0.739	0.699	0.688	AVE>0.5	MSV<AVE
Locus of Control	8	0.832	0.721	0.788	0.776	AVE>0.5	MSV<AVE
Overconfidence Bias	10	0.893	0.832	0.722	0.675	AVE>0.5	MSV<AVE
'Snake-Bite Effect' Bias	9	0.774	0.721	0.709	0.701	AVE>0.5	MSV<AVE

Construct	No. Of Items	Reliability		Validity			
		Composite Reliability	Cronbach Alpha	AVE	MSV	Convergent	Discriminant
Frame Dependence Bias	10	0.769	0.780	0.712	0.653	AVE>0.5	MSV<AVE
Risk Perception	12	0.754	0.731	0.712	0.691	AVE>0.5	MSV<AVE
Risk Attitude	15	0.843	0.799	0.742	0.698	AVE>0.5	MSV<AVE
Financial Risk Tolerance	15	0.813	0.799	0.742	0.678	AVE>0.5	MSV<AVE
Investment Decisions	21	0.737	0.721	0.672	0.631	AVE>0.5	MSV<AVE

Based on the various previous studies, 10 constructs have been identified, including Sensation-Seeking (13 items), Emotional Competence (12 items), Locus of Control (8 items), Overconfidence Bias (10 items), ‘Snake-Bite Effect’ Bias (9 items), Frame Dependence Bias (10 items), Risk Perception (12 items), Risk Attitude (15 items), Financial Risk Tolerance (15 items) and Investment Decision (21 items). The Cronbach Alpha test has been used to assess the data's internal consistency, and a study is regarded as reliable if the alpha value is more than 0.70. Sensation-Seeking (13 items), Emotional Competence (12 items), Locus of Control (8 items), Overconfidence Bias (10 items), ‘Snake-Bite Effect’ Bias (9 items), Frame Dependence Bias (10 items), Risk Perception (12 items), Risk Attitude (15 items), Financial Risk Tolerance (15 items) and Investment Decisions (21 items) have been found with Cronbach's alpha value higher than 0.7. The results show that all the aforementioned constructions and indicators satisfy the fundamental requirements since their alpha values are greater than 0.7. Convergent validity was assessed by examining the factor loadings and average variance extracted (AVE) of the constructs. Each parameter strongly loaded onto its associated latent structures, as seen in the aforementioned table, with values ranging from 0.672 to 0.788 (P.001). Sensation-Seeking (0.682), Emotional Competence (0.699), Locus of Control (0.788), Overconfidence Bias (0.722), ‘Snake-Bite Effect’ Bias (0.709), Frame Dependence Bias (0.712), Risk Perception (0.712), Risk Attitude (0.742), Financial

Risk Tolerance (0.742), and Investment Decisions (0.672) had found AVE values for each construct that were greater than or equal to 0.50, further confirming the constructs' convergent validity. The Maximum Shares Variance and Average Variance Extracted may be compared to assess the discriminant validity, according to *Hair et al. (2010)*. The discriminant validity of the components is supported by the fact that Sensation-Seeking (0.553), Emotional Competence (0.688), Locus of Control (0.776), Overconfidence Bias (0.675), 'Snake-Bite Effect' Bias (0.701), Frame Dependence Bias (0.653), Risk Perception (0.691), Risk Attitude (0.698), Financial Risk Tolerance (0.678), and Investment Decisions (0.631) had the lowest maximum shared variance (MSV) of each construct, which supports the discriminant validity of the constructs. As a result, the measurement model showed good construct validity and advantageous psychometric characteristics.

4.9 SAMPLING DESIGN:

4.9.1 Population of the study: Retail Equity Investors

4.9.2 Period of the study: From 2019 to 2023.

4.9.3 Primary Data: Mailed Questionnaire

4.9.4 Primary data collection period: During and post-pandemic

4.9.5 Sampling Technique: Purposive and Snowball Sampling

4.9.6 Sample size: Total respondents- 450 where,

384.16 minimum determined using Fisher's Formula calculation-

$$n = p \left(1 - p \right) \left(\frac{Z}{E} \right)^2$$

Note: Z = 1.96 for 95%, E= 0.05 and p= 0.5

4.10 VARIABLES / FACTORS USED IN THE STUDY

Table 4.3: Variables/Factors Used in the Study

Sl.No.	Variables/Factors	
1	Demographic Details	Age
		Gender
		Marital Status
		Educational Qualification
		Occupation
		Annual Income
2	Investment Experience in the Equity market	
3	Number of companies in which investments are made	
4	Preference towards Frequency of investments made	
5	Investment Objectives	
Factors		No. Of Items
6	Sensation-Seeking	13
7	Emotional Competence	12
8	Locus of Control	8
9	Overconfidence Bias	10
10	'Snake-Bite Effect' Bias	9
11	Frame Dependence Bias	10
12	Risk Perception	12
13	Risk Attitude	15
14	Financial Risk Tolerance	15
15	Investment Decisions	21

4.11 TESTING ASSUMPTIONS

Testing the data to guarantee that it fulfills specific statistical assumptions is necessary to ensure that the gathered data is appropriate for the application of various statistical analyses. In this study, the concepts of normality, homogeneity, linearity, and multicollinearity were employed to validate the data. A normality test must be

performed to ensure that the data distribution is normal before a parametric or nonparametric test is run. All of these presumptions must be true in order to apply regression analysis.

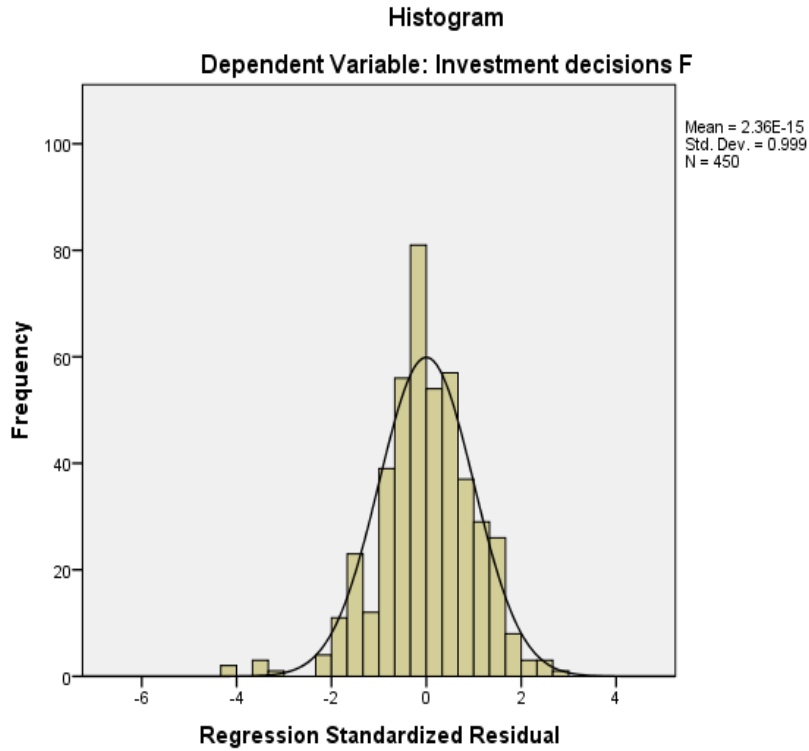
4.11.1 Normality

When doing several statistical tests, the normalcy test is crucial. The validity tests' base is the data's normalcy. If the data are not determined to be normal, the test's results are no longer reliable, and hence, a non-parametric test may be employed in its place. The following tests were run throughout the inquiry.

4.11.1.1 Histogram: The data currently available, measured in metric units, is consistent with the idea of a normal distribution. The histogram shows how a given quantity's normal distribution might look. The bell-shaped graphs show that the assumed normality of the data has been met. Even though, for the study Purposive sampling (a non-probability sampling technique) has been adopted since the normality distribution assumption is met and hence, it can be concluded that using a parametric test would suffice in hypothesis testing (Field, 2013; Driscoll, Lecky & Crosby, M. 2000). It is clearly stated as follows based on Figure 4.4.

Figure 4.4:

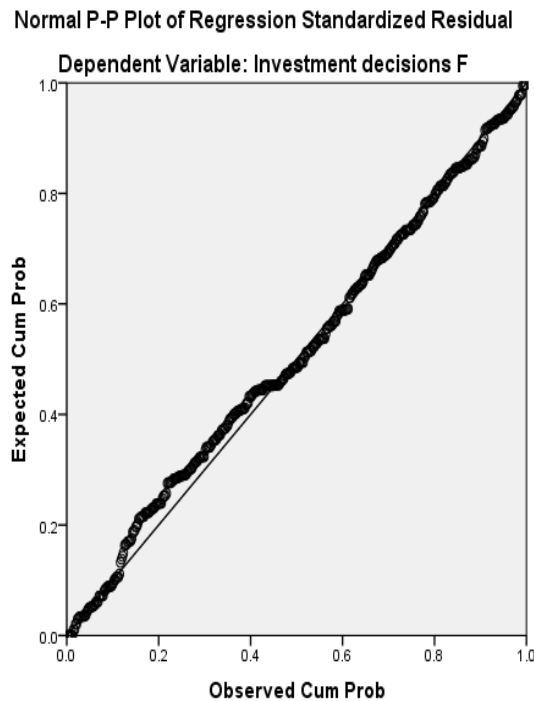
Histogram showing Financial Risk Tolerance (IV) and Investment Decision (DV)



4.11.1.2 Linearity: The linearity test is crucial for ensuring that the regression analysis assumptions are satisfied. Regression analysis is used to explain the dependent and independent variables' linear connection. Figure 4.5 depicts the linear link between Financial Risk Tolerance (IV) and Investment decision (DV).

Figure 4.5

Linearity between Financial Risk Tolerance (IV) and Investment decision (DV)



4.12 RESEARCH TOOLS AND SOFTWARE PACKAGES USED

According to the requirements of the aims, the responses received were codified and included in the software system. To assess the data, SPSS Version 26, MS Excel, and Econometrics were applied. The study used mean, standard deviation, and percentages as descriptive statistics. Several statistical techniques were used to analyse the collected data inferentially, including

1. Reliability Test and Validity,
2. Percentage Analysis,
3. Descriptive Analysis,
4. Weighted Ranking Method,
5. One-way Anova,
6. Independent Sample t-test,
7. Multiple Regression Analysis, and
8. Simple Linear Regression analysis

4.12.1 Reliability Test:

In 1951, Lee Cronbach developed Alpha, a number between 0 and 1, to reflect the internal consistency of a test or scale. Internal consistency, which is associated with the inter-relatedness of the test, describes the degree to which each test item evaluates the same idea or concept. One definition of this point of view on dependability is the connection between the test and itself. All the constructs of the research instrument were considered to be reliable.

4.12.2 Percentage Analysis:

The population distribution has been examined using percentage analysis to examine demographic characteristics and other information about retail equity investors. Here, percentage analysis has been used to analyse the demographic details such as age, gender, marital status, educational qualification, occupation, and annual income of the retail equity investors from Kerala.

4.12.3 Descriptive Statistics:

The basic means, minimums, maximums, and standard deviations were employed for the descriptive analysis. The method is used to compute averages, standard deviations, and maximum and lowest response levels from retail equity investors. It involved examining several structures involving Sensation-Seeking, Emotional Competence, Locus of Control, Overconfidence Bias, 'Snake-Bite Effect' Bias, Frame Dependence Bias, Risk Perception, Risk Attitude, Financial Risk Tolerance, and Investment Decision.

4.12.4 Weighted Ranking Method:

A weight-based ranking technique, also known as weighted ranking, is giving various criteria or features varying weights, which are then utilized to determine an overall rating for a group of things. This technique is frequently applied when there is a requirement to represent priority in the final rankings and some criteria are seen to be more significant than others. As per the study, the Investment Objectives of Retail Equity Investors were identified and ranked based on weights; including their

retirement savings, savings for children's education, tax benefits, buy homes, long-term capital gain, recreation, and others (diversification, liquidity, dividends, hedge against inflation). This was processed using the MS Excel Software.

4.12.5 One-way ANOVA:

To determine if there is statistical evidence in favour of a statistically significant difference between the means of the related populations, an ANOVA compares the means of two or more independent groups. One of the parametric tests is the one-way ANOVA. In order to evaluate research hypotheses, the study used one-way ANOVA to look into the differences between distinct demographic profiles of retail equity investors with their financial risk tolerance and investment decisions. This was practiced using the IBM SPSS Version 26.

4.12.6 Independent sample t-test:

Using the independent sample t-test, the means of just two groups—neither more nor less—were compared. To ascertain if the means of two populations differ, this test is frequently performed. This method is an inferential statistical hypothesis test since it uses samples to infer population characteristics. The independent samples t-test is also known as the two-sample t-test. This test was employed in the current study to measure if there is a significant difference between the gender of the retail equity investors (independent variable) with their financial risk tolerance and investment decisions (dependent variable). This was processed using the IBM SPSS Version 26.

4.12.7 Multiple Regression Analysis:

Multiple regression analysis is a statistical technique used to examine the relationship between a dependent variable and two or more independent variables. It extends the concept of simple linear regression, where there is only one independent variable. In multiple regression, the goal is to model the relationship between the dependent variable and multiple predictors, allowing for a more comprehensive understanding of the factors influencing the dependent variable. To determine how closely related different independent variables and dependent variables are to one another linearly, multivariate regression is utilised. The relationship seems to be linear as a result of

the relationship between the variables. Multiple regression analysis has been employed in the current study to examine the influence of different factors (Independent variable) on the financial risk tolerance of retail equity investors (Dependent variables); and the influence of different factors (Independent variable) on the investment decisions of retail equity investors (Dependent variables). The following points were considered while applying multiple regression analysis using econometrics:

- Visualise the correlation matrix and construct the correlation values for all pairs of variables (considering both dependent and independent factors). (***Correlation Test***)
- Calculate the Variance Inflation Factor (VIF) for each independent variable to identify multicollinearity; whereby the VIF must not exceed a certain threshold (commonly 5) indicating no multicollinearity. If multicollinearity is detected, consider removing highly correlated variables or using regularization techniques. (***Multicollinearity Test***)
- Plot the residuals against the predicted values by using a scatter plot or a residuals plot to identify patterns or unequal spread. If the spread of residuals increases or decreases systematically with the predicted values, it suggests heteroscedasticity. (***Heteroscedasticity Check***)
- Run a White test to formally check for heteroscedasticity; which refers to the situation where the variability of the residuals is not constant across all levels of the independent variables. If heteroscedasticity is found, transforming variables or using robust regression techniques may help. (***Heteroscedasticity/ White Test***)
- Formulate the multiple regression model by specifying the functional form of the relationship between the dependent variable and multiple independent variables. The general form is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + \varepsilon,$$

where Y is the dependent variable, X₁, X₂, ..., X_k are the independent variables, β₀ is the intercept, β₁, β₂, ..., β_k are the coefficients, and ε is the error term.

4.12.8 Simple Linear Regression Analysis:

Simple linear regression analysis is a statistical method used to model the relationship between a single independent variable and a dependent variable. The goal is to establish a linear relationship that can be used to predict the value of the dependent variable based on the value of the independent variable. The relationship between Financial Risk Tolerance and investment decisions was examined in the current study using simple linear regression analysis. The following points were considered while applying multiple regression analysis using econometrics:

- Calculate the correlation coefficient (e.g., Pearson correlation) between the independent variable (X) and the dependent variable (Y). Furthermore, visualize the relationship with a scatter plot.). (**Correlation Test**)
- Plot the residuals (Y - Predicted Y) against the independent variable (X) by looking for patterns or unequal spread in the residuals. (**Heteroscedasticity/ White Test**)
- Formulate the regression model by specifying the functional form of the relationship between the dependent and independent variables. In simple regression, the model is often written as:

Formulate the regression model by specifying the functional form of the relationship between the dependent and independent variables. In simple regression, the model is often written as:

$$Y = \beta_0 + \beta_1 X + \varepsilon,$$

where Y is the dependent variable, X is the independent variable, β_0 is the intercept, β_1 is the slope coefficient, and ε is the error term.

4.12.9 About Econometrics

Econometrics is a powerful statistical tool used in economics for hypothesis testing, estimation, and forecasting. It involves applying statistical methods to economic data to test economic theories and make predictions about economic phenomena. Having this term first coined by Polish economist, Pawel Ciompa in 1910; it was developed by Ragnar Frisch and Jan Tinberg earning them the Nobel Prize in Economics in 1969.

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CHAPTER 5

DATA ANALYSIS AND INTERPRETATION



5.0 INTRODUCTION

In the domain of Behavioural finance, measuring investment decisions is very vital, as the investment decision leads to the active participation of investors in the equity market. Considering which this study intended to understand the concept of 'Financial Risk Tolerance' and its relevance in making investment decisions along with identifying the various factors influencing the Risk Tolerance level and investment decisions of retail equity investors in Kerala. Moreover, the study also attempts to evaluate the factors contributing to the financial risk tolerance and investment decisions of retail equity investors in Kerala. Considering these objectives, this chapter seeks to clarify the specifics of the survey data analysis conducted using the mailed questionnaire. Suitable statistical tools such as one-way ANOVA, Independent Sample t-test, simple linear regression, and multiple linear regression have been used in the appropriate context for the study; which were analysed using software like IBM SPSS 26, and Econometrics. This chapter is broadly classified into three parts which include percentage analysis, descriptive statistics, and hypotheses testing with specific results and discussions; in order to infer the collected data and provide recommendations for further improvement of the selected domain.

5.1 PERCENTAGE ANALYSIS:

Percentage analysis determines the precise number or quantity by establishing "how much" and "how many." It assists in the extraction of measurable facts from a collection of information. A key application of percentages is to assess and compare various proportions. It can be applied to compare and review outcomes and progress. In the present study, percentage analysis has been used to understand the classification of collected data such as demographic details (i.e. Age, Gender, Marital Status,

Educational qualification, Occupation and Annual Income) and Investment Experience and; Number of companies in which investments are made.

5.1.1 Demographic Attributes of Retail Equity Investors:

Table 5.1

Age-wise classification of the retail equity investors

Particular	Frequency	Percentage
Up to 35	114	25.3
36 to 55	213	47.3
56 & Above	123	27.3
Total	450	100.0

Source: Survey Data

Table 5.1 depicts the age group of the retail equity investors. From the above results, we can observe that 47.3% of the respondents belong to the age category of 36 to 55, similarly, 27.3% of the respondents belong to the age category of 56 years and above. However, 25.3% of the respondents belong to the age category of up to 35. The majority are from the age category of 36 to 55.

Table 5.2

Gender-wise classification of the retail equity investors

Particular	Frequency	Percentage
Male	339	75.3
Female	111	24.7
Total	450	100.0

Source: Survey Data

Table 5.2 represents the gender of the retail equity investors. The data has been divided into two groups male and female. As per the results, 75.3% of the respondents are male. And 24.7% of the respondents are female. Therefore, the majority are male.

Table 5.3*Marital status-wise classification of the retail equity investors*

Particular	Frequency	Percentage
Married	320	71.1
Unmarried	99	22.0
Divorcee	16	3.6
Widow(er)	15	3.3
Total	450	100.0

Source: Survey Data

Table 5.3 shows the marital status of the retail equity investors. From the results we can observe that 71.1% of the respondents are married, 22.0% of the respondents are unmarried, and 3.6% of the respondents are divorced. Yet only 3.3% of the results are widows/widowers. Most of the respondents are married.

Table 5.4*Educational qualification-wise classification of the retail equity investors*

Particular	Frequency	Percentage
Post Graduate	174	38.7
Under Graduate	218	48.4
School Education	58	12.9
Total	450	100.0

Source: Survey Data

Table 5.4 shows the qualification of retail equity investors. The data has been divided into three groups that are post-graduate, undergraduate, and school education. As per the results, 48.4% of the respondents are Undergraduates, and 38.7% of them are Post-graduates. Yet, only 12.9% of them have completed school education.

Table 5.5*Occupation-wise classification of the retail equity investors*

Particular	Frequency	Percentage
Salaried	215	47.8
Business	148	32.9
Student	45	10.0
Housewife	13	2.9
Retired	29	6.4
Total	450	100.0

Source: Survey Data

Table 5.5 indicates the occupation of the retail equity investors. As per the results, 47.8% of the respondents are salaried persons, 32.9% of them are businessmen/women, 10.0% of the respondents are students, and 6.4% of them are retired persons. However, only 2.9% of them are housewives. The majority of the respondents are salaried people.

Table 5.6*Annual income-wise classification of the retail equity investors*

Particular	Frequency	Percentage
Up to 3,00,000	244	54.2
3,00,001 - 6,00,000	14	3.1
6,00,001 - 9,00,000	43	9.6
9,00,001 and Above	149	33.1
Total	450	100.0

Source: Survey Data

Table 5.6 shows the annual income of the retail equity investors. As per the results, 54.2% of the respondents' annual income is up to 3,00,000, 33.1% of the respondents' annual income is 9,00,001 and above, and 9.6% of the respondents' annual income is 6,00,001-9,00,000. However, only 3.1% of the respondents' annual income is 3,00,001-6,00,000. Most of the respondents' annual income is up to 3,00,000.

5.1.2 Investment Experience in Equity Market (in Years)

Table 5.7

Investment Experience in Equity Market (in Years)

Particular	Frequency	Percentage
Up to 5	172	38.2
6 to 9	152	33.8
10 & Above	126	28.0
Total	450	100.0

Source: Survey Data

Table 5.7 represents the Investment Experience in the Equity market (in Years) of the retail equity investors. As per the results, 38.2% of the retail equity investors' Investment Experience in the Equity market is up to 5 years, and 33.8% of the respondents' Investment Experience in the Equity market is 6 to 9 years. Nevertheless, 28.0% of the respondents' Investment Experience in the Equity market is above 10 years.

5.1.3 Number of companies in which investments are made

Table 5.8

Number of companies in which investments are made

Particular	Frequency	Percentage
Less than 10	279	62.0
11 to 20	117	26.0
21 and above	54	12.0
Total	450	100.0

Source: Survey Data

Table 5.8 depicts the Number of companies in which investments are made by retail equity investors. As per the results, 62.0% of the respondents have invested in less than 10 companies, and 26.0% of the respondents have invested in 11 to 20 companies. However, only 12.0% of the respondents have invested in 21 and above companies.

5.1.4 Preference towards Investment Frequencies in the Equity Market by retail equity investors

Table 5.9

Preference towards Investment Frequencies in the Equity Market

Particular	Frequency	Percentage
Less than a year	182	40.44
Intraday	107	23.78
Less than 3 months	121	26.89
Less than 5 years	22	4.89
More than 5 years	18	4
Total	450	100.0

Source: Survey Data

Table 5.9 depicts the Preference of retail equity investors toward investment frequencies in the equity market. As per the results, 40.44% of the respondents were inclined to prefer investing in the equity market frequently for less than a year; rather compared to intraday, less than 3 months or less than and more than 5 years. Secondly, an account of 26.89% preferred to invest frequently for less than 3 months, with 23.78% falling for Intraday equity transactions. The least preference was shared by those who preferred investing in equity considering only for years ranging from 1 year onwards up to more than 5 years.

5.1.5 Retail equity investors' objectives toward equity investments

Table 5.10

Ranking of Retail equity investors' objectives toward equity investments based on Weights

Investment Objectives	Weighted Average Mean for Male Respondents	Weighted Average Mean for Female Respondents	Weighted Average Mean for Total Respondents	Ranks
Retirement Savings	4.87	4.91	4.88	II
Savings for Children's Education	5.18	5.20	5.19	I
Tax Benefits	4.68	4.69	4.68	V
Buy Homes	3.61	3.58	3.60	VI
Long-Term Capital Gain	4.68	4.69	4.69	IV
Recreation	4.71	4.76	4.72	III
Others (Diversification, Liquidity, Dividends, Hedge against Inflation)	2.83	2.88	2.84	VII

From Table 5.10, it is evident that retail equity investors give different weights for various objectives considered by them important; prior to their 'financial risk tolerance' and 'investment decisions' components. The ranking of the objectives was conducted based on weights separately for male and female respondents. The table portrays almost similar responses gender-wise; almost equally spelled on the grounds of their investment objectives. The study has reported that the respondents were keen on observing savings for their children's education fund as the priority; followed by the second preference for their retirement savings. But simultaneously, they seem to find time to spend on their recreational activities (like a vacation on tour, family engagement outings, visiting amusement centers or adventurous journeys, and so on).

Equal weights were provided by investors keeping “Long-term capital gain” and “Tax benefits” as objectives considering that the impact of both as an objective influences them equally. Very few retail equity investors were found “buying homes” or “others” as the least preferred options.

5.2 DESCRIPTIVE STATISTICS:

Descriptive statistics are used to characterise the fundamental aspects of a study's data, providing short summaries of the sample and measurements. It simply summarises what the data is or reveals in an easy-to-understand way by offering explicit explanations. In the present study, descriptive statistics have been calculated to get a descriptive picture of the agreement level of retail equity investors on Sensation-Seeking, Emotional Competence, Locus of Control, Overconfidence Bias, ‘Snake-Bite Effect’ Bias, Frame Dependence Bias, Risk Perception, Risk Attitude, Financial Risk Tolerance, and Investment Decision. The results are shown in Tables 5.11 to 5.20.

Table 5.11

Descriptive Statistics on Sensation-Seeking among retail equity investors

Sensation-Seeking	Min.	Max.	Mean	S.D.
My tolerance for risk to build wealth is more important to me than the desire to preserve wealth.	3.00	5.00	3.9311	.64512
I have 100% faith in my abilities as an investor.	3.00	5.00	4.1289	.68474
I am motivated to build wealth from equity stocks at the expense of my lifestyle.	3.00	5.00	4.0889	.70702
Describing myself as an active trader to accumulate wealth through equity investments is the most appropriate.	3.00	5.00	4.0956	.70457
When it comes to financial matters, I act quickly on opportunities to make money.	3.00	5.00	3.9933	.72034
Listening to experts’ knowledge and experiences favours me in taking the right investment decisions.	3.00	5.00	4.1067	.71085

Sensation-Seeking	Min.	Max.	Mean	S.D.
When deciding on equity investments, I trust the advice of my gut instincts.	3.00	5.00	3.9022	.72145
My plans are not permanent unless it gets fulfilled.	3.00	5.00	4.1511	.67028
I feel most confident when I invest in stocks that have the highest appreciation potential.	3.00	5.00	4.0822	.71253
I have a lot of intellectual curiosity to take risks toward equity investments.	3.00	5.00	4.1933	.66771
I love actively trading my account to accumulate wealth.	3.00	5.00	3.8422	.71540
Short-term fluctuations in my portfolio make me sense opportunities and think about buying.	3.00	5.00	4.1356	.71685
When my friend suggests a “sure thing” investment idea, I would take action right away if needed.	3.00	5.00	4.2867	.62612
Sensation Seeking			4.0721	.22414

Source: Survey Data

Table 5.11 represents descriptive statistics on Sensation-Seeking among retail equity investors. The above statements to measure Sensation-Seeking have been adopted and modified based on the related works of Zuckerman et al. (1978); Zuckerman & Kuhlman (1993); Jackson (1976); Eysenck & Eysenck (1975, 1978); Arnett (1994); MacCrimmon & Wehrung (1985); Sjöberg, L., & Engelberg, E. (2009); Grinblatt, M., & Keloharju, M. (2009); Brown, S., Lu, Y., Ray, S., & Teo, M. (2018); Rabbani, A. G., Yao, Z., Wang, C., & Grable, J. E. (2020); Worthy, S. L., Jonkman, J., & Blinn-Pike, L. (2010); Grinblatt, M., & Keloharju, M. (2008); and Gray, J. M., & Wilson, M. A. (2007). Here the mean value is in the range of 3.8422 to 4.2867 and the minimum here indicates 1 (Strongly disagree) and a maximum of 5 (strongly agree). The statement, which says when a retail equity investor’s friend suggests a “sure thing” investment idea, they would act right away if needed (M= 4.2867) seems to be the most rated mean value, compared to the statement which says that the retail equity investors have a lot of intellectual curiosity to take risks toward equity investments (M= 4.1933), retail equity investors plans are not permanent unless it gets fulfilled (M= 4.1511) and other statements. Nevertheless, the statement which says that retail

equity investors love actively trading my account to accumulate wealth ($M= 3.8422$) seemed to be the least agreed statement. Altogether, the descriptive statistics on Levels of Sensation-Seeking show the mean and SD as $4.0721 \pm .22414$. The overall result suggests a high level of Sensation-Seeking among retail equity investors.

Table 5.12

Descriptive Statistics on the Emotional Competence of retail equity investors

Emotional Competence	Min.	Max.	Mean	S.D.
I tend to postpone my portfolio decisions when I find myself not in a good mood.	3.00	5.00	3.8911	.68660
I fear being the last to know about the news that is relevant to my investment portfolio.	3.00	5.00	4.0978	.71525
Sometimes I tend to overanalyse situations, finding problems that really do not exist.	3.00	5.00	4.1889	.69830
My certain compulsive habits dominate my decisions to invest.	3.00	5.00	3.9733	.68986
I am aware of such situations which I can handle and that takes me out of my emotional comfort zone.	3.00	5.00	4.0378	.71003
I feel surprised by my emotional reactions to situations I encounter in my life.	3.00	5.00	4.1289	.67821
When I get upset about market reactions, I remind myself to focus on the good things about equity investment.	3.00	5.00	4.0511	.73084
Others' emotions appeal to me a lot while taking decisions to invest in equity stocks.	3.00	5.00	3.9911	.66735
I consider the ethical consequences of the decisions I make.	3.00	5.00	3.9800	.67540
When making important decisions, logic should come into play more than emotions.	3.00	5.00	4.0733	.65150
Some of the major events of my life have led me to re-evaluate what is important and unimportant.	3.00	5.00	4.0178	.71860
Whenever I face a crisis, I look at the brighter side of the situation.	3.00	5.00	4.0511	.74293
Emotional Competence			3.6961	.21189

Source: Survey Data

Table 5.12 indicates descriptive statistics on Emotional Competence among retail equity investors. The above statements to measure Emotional Competence have been adopted and modified based on the related works of Goleman (2001); Chin (2012); Hameed (2012); MacCann, C., & Roberts, R. D. (2008); Mayer, J. D., & Geher, G. (1996); Mayer, J. D., & Salovey, P. (1993); Petrides, K. V., & Furnham, A. (2001); Singh, Y., & Bhargava, M. (1991); Zeidner, M., Matthews, G., & Roberts, R. D. (2004); and Schutte, N. S., Malouff, J. M., Hall, L. E., Haggerty, D. J., Cooper, J. T., Golden, C. J., & Dornheim, L. (1998); Toubiana, M., Greenwood, R., & Zietsma, C. (2017); Jukes, M., Gabrieli, P., Mgonda, N. L., Nsolezi, F., Jeremiah, G., Tibenda, J., & Bub, K. L. (2018); Saarni, C. (1999); Giehl, B. (2020). Here, the mean value is in the range of 3.8911 to 4.1889 and the minimum here indicates 1 (Strongly disagree) and a maximum of 5 (strongly agree). The statement says sometimes retail equity investors tend to overanalyse situations, finding problems that really do not exist. (M= 4.1889) seems to be the highly agreed statement, compared to another statement which says that the retail equity investors feel surprised by their emotional reactions to situations they encounter in their life (M= 4.1289) followed by retail equity investors fear being the last to know about the news that is relevant to their investment portfolio (M= 4.0978) and other statements. However, the statement which says that retail equity investors tend to postpone their portfolio decisions when they find themselves not in a good mood (M= 3.8911) seemed to be the least agreed statement. Altogether, the descriptive statistics on emotional competence show the mean and SD as $3.6961 \pm .21189$. The overall result suggests a moderate level of Emotional Competence among retail equity investors.

Table 5.13*Descriptive Statistics on Locus of Control of retail equity investors*

Locus of Control	Min.	Max.	Mean	S.D.
Careful Investing is the key factor to becoming wealthy.	3.00	5.00	4.1511	.63619
People suffer investment losses due to their own idleness.	3.00	5.00	4.2244	.65108
When I make investment plans, I am almost certain to make them work.	3.00	5.00	4.2356	.46487
In the long run, people who take care of their investments show greater signs of financial well-being.	3.00	5.00	4.2756	.60773
I am usually able to protect my investment interest.	3.00	5.00	3.8711	.64798
When I get what I want, it is usually because my smart investments have worked out well.	3.00	5.00	4.1933	.71288
I can pretty much predict what unforeseen changes are likely to happen in the market.	3.00	5.00	3.8289	.69651
My decision on my intuition motivates me to take risky investments to challenge my future.	3.00	5.00	3.8956	.66085
Locus of Control			4.0844	.24512

Source: Survey Data

Table 5.13 represents the descriptive statistics on the Locus of Control among retail equity investors. The above statements to measure Locus of Control have been adopted and modified based on the related works of Rotter, J. B. (1966); Levenson, H. (1974); Moshki, M., Ghofranipour, F., Hajizadeh, E., & Azadfallah, P. (2007); Boshoff, E., & Van Zyl, E. S. (2011); and Galvin, B. M., Randel, A. E., Collins, B. J., & Johnson, R. E. (2018); Kasilingam, R., & Sudha, S. (2010); Pinger, P., Schäfer, S., & Schumacher, H. (2018); Caliendo, M., Cobb-Clark, D. A., Obst, C., Seitz, H., & Uhendorff, A. (2022); Salamanca, N., de Grip, A., and Fouarge, D., & Montizaan, R. (2016). The result indicates the mean values ranging from 3.8289 to 4.2756; minimum here indicates 1 (Strongly disagree) and maximum 5 (strongly agree). As per the mean values, investors showed high level of agreement for the statement “in long run, people who take care of their investments show greater signs of financial

well-being” (M= 4.2756) followed by “When retail equity investors make investment plans, they are almost certain to make them work” (M= 4.2356), “People suffer investment losses due to their own idleness” (M= 4.2244) and other statements. Yet, the statement which says retail equity investors can pretty much predict what unforeseen changes are likely to happen in the market (M= 3.8289) seemed to be the least agreed statement. Altogether, the descriptive statistics on locus of control showed the mean and SD as $4.0844 \pm .24512$. The overall result suggests high level of Locus of Control among retail equity investors.

Table 5.14

Descriptive Statistics on Overconfidence Bias of retail equity investors

Overconfidence Bias	Min.	Max.	Mean	S.D.
I take rash decisions rather than informed ones.	3.00	5.00	4.2244	.66462
I am confident that my investment knowledge is above average.	3.00	5.00	4.1289	.64798
I overestimate my ability to evaluate a company.	3.00	5.00	4.2711	.62773
I like taking independent investment decisions which give me better outcomes.	3.00	5.00	4.2444	.69216
I believe that my choice of investment avenues is the right one.	3.00	5.00	3.9178	.71253
My investment expertise leads me to trade excessively.	3.00	5.00	4.0933	.68402
I would always wait to pick the next big stock that makes me feel more special.	3.00	5.00	4.1778	.68026
I rely on my own estimations and ideas of things rather than facts	3.00	5.00	4.1400	.75829
I do not easily change my views about investments once they are made.	3.00	5.00	4.1400	.69708
I buy certain company stocks I want even if they are not the best financial choices.	3.00	5.00	4.0756	.71171
Overconfidence Bias	3.50	4.90	4.1413	.23611

Source: Survey Data

Table 5.14 shows descriptive statistics on Overconfidence Bias among retail equity investors. The above statements to measure Overconfidence Bias have been adopted and modified based on the related works of Stanovich and West (1998); Barber & Odean (2001); Condon and Revelle (2014); Aczel et al., (2015); Teovanović et al., (2015); Michailova (2010); Colvin & Block (1994); Dunning (2005); Kurt & Paulhus (2008); Taylor & Brown (1988); Alpert & Raiffa (1982); Fischhoff, Slovic, & Lichtenstein (1977); Scott, J., Stumpp, M., & Xu, P. (2003); Malmendier, U., & Tate, G. (2005); ul Abdin, S. Z., Qureshi, F., Iqbal, J., & Sultana, S. (2022); Kumar, S., & Goyal, N. (2015); Jain, J., Walia, N., & Gupta, S. (2020) and Lichtenstein, Fischhoff, & Phillips (1982). Here, the mean value is in the range of 3.9178 to 4.2711 and minimum here indicates 1(Strongly disagree) and maximum 5 (strongly agree). The statement, which says retail equity investors overestimate their ability to evaluate a company (M= 4.2711) seems to be the highly agreed statement, comparing to the statement which says that the retail equity investors like taking independent investment decisions which gives them better outcomes (M= 4.2444), retail equity investors take rash decisions rather than informed ones (M= 4.2244) and other statements. But, the statement which says that retail equity investors believe that their choice of investment avenues is the right one (M= 3.9178) seemed to be the least agreed statement. Altogether, the descriptive statistics on Overconfidence Bias of retail equity investors shows the mean and SD as $4.1413 \pm .23611$. The overall result suggests high level of Overconfidence Bias among retail equity investors.

Table 5.15

Descriptive Statistics on 'Snake-Bite Effect' Bias

'Snake-Bite Effect' Bias	Min.	Max.	Mean	S.D.
The pain of financial loss is at least two times stronger than the pleasure of financial gain.	3.00	5.00	4.1156	.67404
When considering changing my equity portfolio, I spend time thinking about options but often end up changing nothing sometimes.	3.00	5.00	3.9311	.64856
I try to avoid buying stocks in which I had incurred losses earlier.	3.00	5.00	4.0578	.77330

'Snake-Bite Effect' Bias	Min.	Max.	Mean	S.D.
I don't want to invest in high-risk stocks though they bring huge returns.	3.00	5.00	4.0933	.66084
I search for opportunities for repeated buying of such stocks in which I made gains earlier.	3.00	5.00	4.1956	.65527
When the price drops temporarily, I sell the stocks to prevent losses.	3.00	5.00	4.2778	.52186
I believe in the saying, "fool me once shame on you, fool me twice shame on me".	3.00	5.00	4.0867	.71512
Having lost my investments initially, I am very much cautious in my further decisions.	3.00	5.00	4.0667	.66406
I am not ready to challenge my bright future by investing in inappropriate stocks.	3.00	5.00	4.2178	.67843
'Snake-Bite Effect' Bias			4.1158	.23085

Source: Survey Data

Table 5.15 represents descriptive statistics on the 'Snake-Bite Effect' Bias among retail equity investors. The above statements to measure 'Snake-Bite Effect' Bias have been adopted and modified based on the related works of Kahneman and Tversky (1979); Lehner (2004); Chin (2012); Chin (2012); Kartasova et al., (2014); Carmon et al., (2003); SJ, S. (2017); Ghelichi, M. A., Nakhjavan, B., & Gharehdaghi, M. (2016); Dureha, S., & Jain, V. (2022); Pin, T. B., Mustapha, N., & Muhammad, N. M. N. (2019) and Mandrik and Bao's (2005). Here the mean value is in the range of 3.9311 to 4.2778 and minimum here indicates 1(Strongly disagree) and maximum 5 (strongly agree). As per the mean values, investors strongly agree that when the price drops temporarily, they sell the stocks to prevent losses (M= 4.2778), comparing to the other statement which says that the retail equity investors not ready to challenge my bright future by investing in inappropriate stocks (M= 4.2178), retail equity investors search for opportunities for repeated buying of such stocks in which they made gains earlier. (M= 4.1956) and other statements. However, the statement which says that When considering changing their equity portfolio, retail equity investors spend time thinking about options but often end up changing nothing sometimes (M= 3.9311) seemed to be the least agreed statement. Altogether, the descriptive statistics

on 'Snake-Bite Effect' Bias shows the mean and SD as $4.1158 \pm .23085$. The overall result suggests high level of Snake-Bite Effect' Bias among retail equity investors.

Table 5.16

Descriptive Statistics on Frame Dependence Bias among retail equity investors

Frame Dependence Bias	Min.	Max.	Mean	S.D.
I buy certain company stocks I want even if they are not the best financial choices.	3.00	5.00	3.9622	.67133
Poor past financial decisions have caused me to change my current investing decisions.	3.00	5.00	3.9822	.69336
I sometimes get attached to certain of my investments, which may cause me not to act on them.	3.00	5.00	4.1489	.68880
I often act on a new investment right away if it makes better sense to me.	3.00	5.00	3.9689	.71192
I often find that many of my successful investments can be attributed to my decisions, while those that did not work were based on others' guidance.	3.00	5.00	4.1222	.67451
I trust the advice on investment from rationally advertised firms than from smaller, local firms.	3.00	5.00	4.0600	.64945
I invest in companies that make products I like or that reflect my personal values.	3.00	5.00	4.0689	.72938
When reflecting on my past investment mistakes, I see that many could have been easily avoided.	3.00	5.00	4.1289	.71029
Many investment choices I make are based on knowledge of how similar past investments have performed.	3.00	5.00	4.2756	.65364
While making investment decisions, I tend to focus on the positive aspects of such investments rather than on what would go wrong with the investment.	3.00	5.00	3.9244	.71483
Frame Dependence Bias			4.0642	.22738

Source: Survey Data

Table 5.16 depicts descriptive statistics on Frame Dependence Bias among retail equity investors. The above statements to measure Frame Dependence Bias have been adopted and modified based on the related works of Tversky & Kahneman (1981); Fischhoff (1983); Bazerman (1984); Fagley and Kruger (1986); Svenson and Benson (1993); Highhouse & Paese (1996); Bruine de Bruin et al. (2007); Charles, A., & Kasilingam, R. (2016); Charles, A., & Kasilingam, R. (2014); Wheale, P. R., & Amin, L. H. (2003); Zaleskiewicz, T. (2015); Prosad, J. M. (2014); Li, C. A., & Yeh, C. C. (2011); and De Martino, Kumaran, Seymour & Dolan (2006). Here the mean value is in the range of 3.9244 to 4.2756 and minimum here indicates 1(Strongly disagree) and maximum 5 (strongly agree). The statement, which says Many investment choices retail equity investors make are based on knowledge of how similar past investments have performed (M= 4.2756) seems to be the highly agreed statement, comparing to the other statement which says that the retail equity investors sometimes get attached to certain of their investments, which may cause them not to act on them (M= 4.1489) , When reflecting on retail equity investors past investment mistakes, they see that many could have been easily avoided. (M= 4.1289) and other statements. Yet, the statement which says that While making investment decisions, retail equity investors tend to focus on the positive aspects of such investments rather than on what would go wrong with the investment (M= 3.9244) seemed to be the least agreed statement. Altogether, the descriptive statistics on Levels of Sensation-Seeking shows the mean and SD as 4.0642 ±.22738. The overall result suggest high level of Frame Dependence Bias among retail equity investors.

Table 5.17

Descriptive Statistics on Risk Perception of retail equity investors

Risk Perception	Min.	Max.	Mean	S.D.
A diversified portfolio reduces my risk.	3.00	5.00	4.1200	.68636
The higher an investment yield rate, the greater will be its associated risk.	3.00	5.00	4.1756	.67592
The more familiar an investment, the less risky it ought to be.	3.00	5.00	3.9267	.63768

Risk Perception	Min.	Max.	Mean	S.D.
My approach is to be cautious and wait while given an option to choose risky investments.	3.00	5.00	4.0356	.76597
The more money one has, the more investment risk he/ she can take.	1.00	5.00	3.9378	.65436
My broker decides the best investment option for me.	3.00	5.00	3.9956	.64706
Older investors take lesser investment risks comparatively.	3.00	5.00	4.0400	.63890
The New Generation of investors are risk lovers and prefer making profits out of aggressive stocks.	3.00	5.00	3.9178	.71876
The need to liquidate quickly doesn't prohibit me from considering risky projects.	3.00	5.00	4.0800	.63513
The investment choices perform well in line with my goals.	3.00	5.00	4.1578	.66372
The investments I choose have a significant value and will perform better in the future.	3.00	5.00	4.0778	.72234
I believe that the consequences of my investment behaviour are within my control.	3.00	5.00	4.0600	.71786
Risk Perception			4.0437	.19203

Source: Survey Data

Table 5.17 illustrates descriptive statistics on Risk Perception of retail equity investors. The above statements to measure Risk Perception have been adopted and modified based on the related works of Lerner, Gonzalez, Small, & Fischhoff (2003); Biais, B., & Weber, M. (2009); Wang, M., Keller, C., & Siegrist, M. (2011); Weber, E. U., Siebenmorgen, N., & Weber, M. (2005); Aren, S., & Zengin, A. N. (2016); Gentile, M., Linciano, N., Lucarelli, C., & Soccorso, P. (2015); Shafi, H., Akram, M., Hussain, M., Sajjad, S. I., & Rehman, K. U. (2011); Ademola, S. A., Musa, A. S., & Innocent, I. O. (2019); Klos, A., Weber, E. U., & Weber, M. (2005) and Shahrabani, Benzion, Rosenboim, & Shavit (2012). Here the mean value is in the range of 3.9178 to 4.1756 and minimum here indicates 1 (Strongly disagree) and maximum 5 (strongly agree). As per the results, retail equity investor highly agree that the higher an investment yield rate, the greater will be its associated risk (M= 4.1756) comparing to

the statement which says that The investment choices perform well in line with retail equity investors goals (M= 4.1578), A diversified portfolio reduces retail equity investors risk (M= 4.0978) and other statements. But, the statement which says that the new generation of investors are risk lovers and prefer making profits out of aggressive stocks (M= 3.9178) seemed to be the least agreed statement. Altogether, the descriptive statistics on risk perception shows the mean and SD as 4.0437±.19203. The overall result suggests high level of Risk Perception among retail equity investors.

Table 5.18

Descriptive Statistics on Risk Attitude of retail equity investors

Risk Attitude	Min.	Max.	Mean	S.D.
When I think of the word “Risk”, I consider it as an opportunity or a thrilling event.	3.00	5.00	3.9244	.75129
I define investment in equity as an amusing drive towards aggressive stocks.	3.00	5.00	4.0244	.71061
I can minimise the consequences of risk-taking by forward planning and prepare for each outcome.	3.00	5.00	4.0489	.78250
I have control over my outcomes even if the portfolio is difficult to attain.	3.00	5.00	4.1933	.68092
Before taking any decision, I try to anticipate the factors influencing my outcomes.	3.00	5.00	4.1222	.69404
Potential negative consequences motivate me to take huge risks.	3.00	5.00	4.0267	.69947
Every minute details cost me valuable in taking my decision towards equity investments.	3.00	5.00	4.0733	.69131
Evaluating a portfolio based on its pros and cons is important to me before making any final decision.	3.00	5.00	3.9889	.75942
When I make any risky decision, I plan for the “worst case” scenario.	3.00	5.00	3.9511	.65209
I believe that the best way to motivate myself to take risks is to offer an appealing reward.	3.00	5.00	4.0111	.65212

Risk Attitude	Min.	Max.	Mean	S.D.
I would describe my tolerance for capital fluctuation as high.	3.00	5.00	4.0533	.64487
Accepting risky investment projects is a sign of my prestige-seeking behaviour.	3.00	5.00	3.9267	.72588
I believe that my trust is fostered based on the strong ethical culture of the company I invest.	3.00	5.00	3.8822	.73226
If I undergo a risk of loss, I would rather take steps towards improvement without considering it as a matter of luck or fate.	3.00	5.00	4.1822	.72967
I feel comfortable if my investment decisions are made by automated programs.	3.00	5.00	4.1956	.72313
Risk Attitude			4.0403	.19942

Source: Survey Data

Table 5.18 depicts descriptive statistics on the risk attitude of retail equity investors. The above statements to measure Risk Attitude have been adopted and modified based on the related works of Weber, E. U., Blais, A., & Betz, N. E. (2002); Lejuez et al. (2002); Rohrmann (2005); Bechara et al. (1994); Lopes & Oden (1999); MacCrimmon & Wehrung (1985); Lauriola et al. (2007); Grol et al. (1990); Kogan & Wallach (1964); Fromme et al. (1997); Weber et al. (2002); Zhang, Highhouse, & Nye (2018); Keinan & Bereby-Meyer (2012); Shure & Meeker (1967); Nicholson et al. (2004); Jackson et al. (1971, 1972); Fossen, F. M. (2012); Fossen, F. M. (2011); Charness, G., & Gneezy, U. (2010); Heo, W., Grable, J. E., & O'Neill, B. (2017); Nosić, A., & Weber, M. (2010); and Eckel, C. C., & Grossman, P. J. (2008). Here the mean value is in the range of 3.8822 to 4.1956 and minimum here indicates 1 (Strongly disagree) and maximum 5 (strongly agree). The statement, which says that the respondent feels comfortable if their investment decisions are made by automated programs (M= 4.1956) seems to be the highly agreed statement, comparing to the statement the control over their outcomes even if the portfolio is difficult to attain (M= 4.1933). If the respondents undergo a risk of loss, they would rather take steps towards improvement without considering it as a matter of luck or fate (M= 4.1822) and other statements. However, the statement which says they believe that their trust is fostered based on the strong ethical culture of the company they invest (M= 3.8822) seemed

to be the least agreed statement. Altogether, the descriptive statistics on Risk Attitude shows the mean and SD as $4.0403 \pm .19942$. The overall result suggests high level risk attitude of retail equity investors.

Table 5.19

Descriptive Statistics on Financial Risk Tolerance of retail equity investors

Financial Risk Tolerance	Min.	Max.	Mean	S.D.
I expect my income and investment earnings to grow substantially over the next 10 years.	3.00	5.00	4.1733	.74391
I am able to accept negative returns annually during difficult phases in the market cycle.	3.00	5.00	3.9933	.64876
If I were to potentially improve my investment returns by taking more risky investments fluctuating in value over time, then I would take a lot more risk with my entire portfolio.	3.00	5.00	4.0356	.66979
I don't mind if I lose money during the next three year's performance of my investment.	3.00	5.00	4.1200	.63231
I wouldn't worry about losses in the time frame during the next three months' performance of my investment.	3.00	5.00	4.1533	.71325
Suppose the stock market performs unusually poor over the next decade, I expect to make a modest gain from the investment.	3.00	5.00	4.1667	.67157
Once made an investment, I expect to withdraw them sooner within 5 years.	3.00	5.00	4.1733	.71956
Once I begin to make my withdrawals, I would continue the same for up to 10 years.	3.00	5.00	4.2978	.66087
I am willing to accept investments with a higher degree of volatility and risk of loss in exchange for the potential to achieve higher average returns over time.	3.00	5.00	4.2422	.68486
If the market value for my stock has dropped by 25%, then I would move my money to different investments to reduce the potential for future losses.	3.00	5.00	4.1156	.75802
I am willing to withstand some fluctuations in my investment.	3.00	5.00	3.9622	.79860

Financial Risk Tolerance	Min.	Max.	Mean	S.D.
Protecting my portfolio is more important to me than high returns.	3.00	5.00	3.9667	.74394
I am willing to bear the consequences of a loss to maximise my returns.	3.00	5.00	3.9111	.72260
I prefer investing in blue-chip stocks that pay dividends.	3.00	5.00	4.0822	.71253
I describe my investment attitude as very aggressive.	3.00	5.00	4.1511	.70272
Financial Risk Tolerance			4.1030	.23552

Source: Survey Data

Table 5.19 indicates descriptive statistics on Financial Risk Tolerance of retail equity investors. The above statements to measure Financial Risk Tolerance have been adopted and modified based on the related works of Grable, J., & Lytton, R. H. (1999); Gibson, R. J., Michayluk, D., & Van de Venter, G. (2013); Bannier, C. E., & Neubert, M. (2016); Grable, J. E. (2016); Pinjisakikool, T. (2018); Heo, W., Rabbani, A. G., & Lee, J. M. (2021); Grable, J., Roszkowski, M., Joo, S. H., O'Neill, B., & Lytton, R. H. (2009), Irwin (1993); Bailey & Kinerson (2005); Chang et al., (2004), Coleman, 2003, Grable et al., (2008); Coleman (2003); Delpechitre & DeVaney, (2006); Finke & Huston (2003); Grable (2000); Grable et al., (2008); Grable & Joo (2004); Grable & Lytton (1999a, 1999b); Grable & Roszkowski (2008), Hanna & Chen (1998); Morin & Suarez (1983); Roszkowski & Grable (2005); Schooley & Worden (1996); Van de Venter (2006); Wang & Hanna (1998) and Yip (2000). Here the mean value is in the range of 3.9111 to 4.2978 and minimum here indicates 1(Strongly disagree) and maximum 5 (strongly agree). The statement, that says once they begin to make the withdrawals, the respondents would continue the same for up to 10 years (M= 4.2978) seemed to be the highly agreed statement, comparing to the statement which says that the respondents are willing to accept investments with a higher degree of volatility and risk of loss in exchange for the potential to achieve higher average returns over time (M= 4.2422), Once made an investment, they expect to withdraw them sooner within 5 years (M= 4.1733), they expect their income and investment earnings to grow substantially over the next 10 years. (M= 4.1733) and other statements. However, the statement which says that they are willing to bear the consequences of a loss to

maximise their returns (M= 3.9111) seemed to be the least agreed statement. Altogether, the descriptive statistics on Financial Risk Tolerance show the mean and SD as $4.1030 \pm .23552$. The overall result suggests a high level of Financial Risk Tolerance among retail equity investors.

Table 5.20

Descriptive Statistics on Investment Decisions of retail equity investors

Investment Decision	Min.	Max.	Mean	S.D.
When making an equity investment, I trust my inner feelings and reactions.	3.00	5.00	4.1622	.67596
I generally make an investment that feels right to me.	3.00	5.00	4.0622	.75251
No matter what I do, I have the highest standards for my equity investment decisions.	3.00	5.00	4.2089	.61958
I like to discuss financing options before making a final decision about them.	3.00	5.00	4.0889	.68135
I consider different levels of risk associated with stock before investing in the stock market.	3.00	5.00	4.1689	.67597
I would like to realise the gain as soon as the stock increases in price.	3.00	5.00	4.1956	.68842
I make sure that my investment in stock has a higher degree of safety investment decision-making.	3.00	5.00	4.1356	.71061
I would like to search for information about firms' expected earnings before investing in their share.	3.00	5.00	4.1489	.66243
I would take advice on market options from friends/ family before taking final decisions on my investment.	3.00	5.00	4.0556	.70571
I rely on my past experience in the market for the next investment to be made.	3.00	5.00	4.0667	.73718
It's important for me to be in control of my finances.	3.00	5.00	3.8489	.72149

Investment Decision	Min.	Max.	Mean	S.D.
I select the company stocks based on their performance in the market along with their historical records.	3.00	5.00	4.0156	.71399
Companies certified ethically strong are of greater priority for me to invest.	3.00	5.00	4.2667	.68714
When I suffer a financial setback, I can influence the situation to the greater extent possible.	3.00	5.00	4.2800	.68831
Accepting reality and taking action accordingly is the key to tolerating highly risky situations.	3.00	5.00	4.0978	.67024
I am ready to contribute some portion of my portfolio for economic growth and development.	3.00	5.00	4.1067	.69500
I am ready to change my goal path if my existing decisions taken prove fatal to my returns.	3.00	5.00	4.1644	.53773
I would like to be financially independent and solely responsible for my portfolio decisions.	3.00	5.00	4.1156	.69678
Making one decision at a time reduces my stress and anxiety about my investment.	3.00	5.00	4.1933	.74046
If my pocket goes “out of balance”, I believe that such consequences wouldn’t last forever.	3.00	5.00	4.2889	.65468
I adopt a flexible approach to keep my investment alternatives sustained.	3.00	5.00	4.0711	.73676
Investment Decisions			4.1306	.15599

Source: Survey Data

Table 5.20 illustrates descriptive statistics on Investment Decisions among retail equity investors. The above statements measuring Investment Decisions were adopted and modified for the study based on the works cited from studies of Kahneman and Tversky (1979); Weber et al., (2002); Waweru et al. (2008); Mayfield et al. (2008), Klapper & Love (2004), and Pasewark & Riley (2010); Barberis (2001); Nagy & Obenberger (1994); Wong & Cheung (1999); Singh & Yadav (2016); Hunjra, A. I.,

Rehman, K. U., & Ali Qureshi, S. (2012); Zhang, G. (2000); Troise, C., Matricano, D., Sorrentino, M., & Candelo, E. (2022); Farooq, A., & Sajid, M. (2015); Varadharajan, P., & Vikkraman, P. (2011); and Guild, P. D., & Bachher, J. S. (1996). Here, the mean value is in the range of 3.84891 to 4.2889 and minimum here indicates 1 (Strongly disagree) and maximum 5 (strongly agree). The statement, which says if the respondents pocket goes “out of balance”, they believe that such consequences wouldn’t last forever (M= 4.2889) seems to be highly agreed statement, comparing to the statement which says that when respondents suffer a financial setback, they can influence the situation to the greater extent possible (M= 4.2800), Companies certified ethically strong are of greater priority for the respondents to invest. (M= 4.2667) and other statements. However, the statement which says that It’s important for the respondents to be in control of their finances (M= 3.8489) seemed to be the least agreed statement. Altogether, the descriptive statistics on Investment Decision shows the mean and SD as 4.1306 ± 1.15599 . The overall result suggests high level Investment Decision among retail equity investors.

5.3 HYPOTHESES TESTING:

A hypothesis is a logical assumption based on facts. This is the initial phase in any inquiry in which research concerns are converted into forecasts. It is made up of variables, a population, and the variables' relationships. A research hypothesis is a theory that is used to investigate the relationship between two or more components. The researcher identified several factors in this study, taking into account the potential link between the variables created by earlier theories and conceptions. To draw a valuable inference from the given data set, this formulated hypothesis was tested using various inferential analysis such as independent sample t-test, one-way ANOVA, simple regression, simple regression (multi-group and multiple regression analysis), and advanced statistics such as structural equation modelling (SEM), which is discussed below.

H₁: There is no significant difference among the Demographic variables, Financial Risk Tolerance, and Investment Decisions of retail equity investors.

H1.1: The age of the retail equity investors is not significantly different from their Financial Risk tolerance and Investment Decisions.

H1.1 addresses checking if there is no significant difference between the Age of retail equity investors (independent variable) with their financial risk tolerance and investment decisions (dependent variables), which are examined through one-way ANOVA after checking the Levene test to prove the test of homogeneity and, the results of which are shown in Table 5.21.

Table 5.21

One-way ANOVA results demonstrating the significant difference between the Age of retail equity investors with their financial risk tolerance and investment decisions

Indicators	Up to 35	36 to 55	56 & Above	F	P	Levene Statistic	Sig.
Financial Risk Tolerance	3.898	4.093	4.104	6.064	.000**	1.101	.333
Investment decisions	4.148	4.180	4.089	1.583	.026*	.076	.926

*** 1% Significance Level*

**5% Significance Level*

Results

As per Table 5.21, initially, the test of homogeneity was enabled. Since the P-values using the Levene test were found to be more than 0.05, and hence it was proved that the test of homogeneity is satisfied to apply the One-way ANOVA (parametric test) here (Levene, 1960). Also, it was observed that the financial risk tolerance of retail equity investors (F=6.064, P<0.01**) is significantly different from their age. Similarly, their age has been found significantly different from their investment decisions (F=1.583, P<0.05*), as the p-value was found to be less than 0.05. Besides that, the retail equity investors belonging to the age category of 56 years and above

(M=4.104) showed high financial risk tolerance compared to others. Moreover, investors aged between 36-55 years (M=4.180) were found to have comparatively better investment decision-making ability. Overall, it was witnessed that the age of the retail investors was significantly different from their financial risk tolerance and investment decisions. Therefore, the H1.1 frame failed to be accepted.

Discussions

The studies based on *Hemrajani, P., Rajni, & Dhiman, R. (2021); Kannadhasan (2015); Sutejo et al., (2018); Praba, S. (2016); Bhattacharya & Dutta (2019); Al-Ajmi (2008); Bajtelsmit, VanDerhei (1997); Dohmen et al, (2011); Grable, (2000); Grable et al., (2011); Hallahan et al., (2004); Kannadhasan (2015); Hariharan et al., (2000), Hawley, Fujii (1993); Sultana (2010); Sung, Hanna (1996)* support the results of our study on how Financial risk tolerance is significantly different by age of the investors. Younger individuals often have fewer immediate income needs and can afford to take on more risk in pursuit of higher returns. They may be more willing to allocate funds to higher-risk, higher-return investments. Their less experience and knowledge about the complexities of financial markets can influence their risk tolerance and investment decisions. They may be focused on long-term financial goals, such as buying a home, starting a family, or saving for retirement. Their investment decisions may reflect these goals, with an emphasis on growth-oriented assets. On the contrary, Individuals in or near retirement have a shorter time horizon. Consequently, they may opt for lower-risk investments to protect their capital, as they have less time to recover from market downturns. They may prioritize income generation and capital preservation over the potential for high returns, that favour investments providing a steady income stream. Individuals with significant financial responsibilities, such as mortgages, education expenses, or healthcare costs, may adopt a more conservative approach to mitigate risks associated with these obligations. The psychological impact of market downturns can be more significant for retirees who rely on their investments for income. Preserving wealth becomes a higher priority.

H1.2: The gender of the retail equity investors is not significantly different from their Financial Risk tolerance and Investment Decisions.

H1.2 addresses pondering if there is a significant difference in Gender (independent variable) with the financial risk tolerance and investment decisions (dependent variables) of the retail equity investors, which has been examined through an Independent Sample t-test and the results of which have been shown inclusive of the test of homogeneity in table 5.22.

Table 5.22

Independent sample t-test results demonstrating a significant difference between the Gender of retail equity investors with their financial risk tolerance and investment decisions

Indicators	Male		Female		t value	P Value	Levene's Test for Equality of Variances	
	Mean	S.D.	Mean	S.D.			F	Sig.
Financial Risk Tolerance	4.155	.529	4.159	.516	.928	.354	.914	.349
Investment decisions	3.945	.337	3.944	.328	1.855	.064	.552	.458

Results

As per Table 5.22, first, the test of homogeneity was supposed to be satisfied; for which the Levene test was to be conducted. Levene's test for equality of variances assumed showed the P-values were more than 0.05 and hence, the test of homogeneity was proved to be satisfactory so as to decide to apply the Independent sample t-test for the data (Levene, 1960). It has been observed that the financial risk tolerance ($t=.928$, $P>0.05$) and investment decision ($t=1.855$, $P>0.05$) of retail equity investors is not significantly different from their gender, as the p-value was found to be more than 0.05. Besides this, it was also observed that the female retail investors showed high

financial risk tolerance (M=4.159), and, investment decision-making-wise, it was male equity investors who showed better ability (M=4.0252) compared to females. Overall, as per the results, it was viewed that the gender of the retail investors does not have any significant difference from their financial risk tolerance and investment decision. Therefore, H1.2 was accepted.

Discussions

From the above results, it was evident that female investors were keener to show higher financial risk tolerance than males and, similarly the male investors were shown as better investment decision-makers than females. This was clearly supported in the studies of *Roszkowski et al., (1993)*; *Slovic (1966)*; *Bajtelsmit & Bernasek (1997)*; *Sung & Hanna (1996)*; *Grable & Lytton (1999a and 1999b)*; *Schubert et al., (1999)*, *Grable (2000)*; *Hallahan et al., (2004)*; *Moreschi (2004)*; *Yao et al., (2005)*; *Al-Ajmi (2008)*; *Gilliam et al., (2010)*; *Neelakantan (2010)*; *Kannadhasan (2015)* and *Dohmen et al., (2011)*. Factors such as individual personality traits, financial knowledge, experience, and cultural influences can significantly contribute to variations in risk tolerance. Assessing the ability to make investment decisions can be subjective and multifaceted. Sometimes, cultural and social factors play a crucial role in shaping gender-related financial behaviours. Societal expectations, stereotypes, and cultural norms can influence how individuals perceive and approach financial decisions. Hence, the study demands efforts to promote financial education and address gender-related biases that can contribute to more informed and equitable financial decision-making.

H1.3: The marital status of the retail equity investors is not significantly different from their Financial Risk tolerance and Investment Decisions.

H1.3 showcases if there could be a significant difference between marital status (independent variable) with the financial risk tolerance and investment decisions (dependent variables) of the retail equity investors, which was examined again through one-way ANOVA only after checking with the test of homogeneity of variances using the Levene test and, the results of which are shown in table 5.23.

Table 5.23

One-way ANOVA results demonstrating a significant difference between the Marital status of retail equity investors with their financial risk tolerance and investment decisions

Indicators	Married	Unmarried	Divorcee	Widow(er)	F	P	Levene Statistic	Sig.
Financial Risk Tolerance	4.014	4.077	4.109	4.013	.778	.506	1.421	.236
Investment decisions	4.023	3.979	4.016	3.961	.446	.720	.830	.478

Results

As per Table 5.23, since the Levene test values were found more than $P = 0.05$ and hence, the test of homogeneity of variances was approved as satisfactory (Levene, 1960). Further, the decision was taken to apply the One-way ANOVA test. It was observed that the financial risk tolerance ($F = .778$, $P > 0.05$) and investment decisions ($F = .446$, $P > 0.05$) of retail equity investors were not significantly different from their marital status, as the p-values were found to be more than 0.05. It was also witnessed that, the Divorcee respondents showed high financial risk tolerance ($M = 4.109$) and, further the Married investors showed comparatively higher investment decisions ($M = 4.023$). Overall, as per the results, it was viewed that the marital status of the retail investors does not have any significant difference with their financial risk tolerance and investment decision. Therefore, H1.3 was accepted.

Discussions

Research on the relationship between marital status and financial risk tolerance has produced mixed results. While some studies suggest that divorcees may exhibit higher risk tolerance, others find no significant difference. Individual characteristics such as income, education, personality traits, and life experiences may play a more substantial role in determining risk tolerance than marital status alone. Conversely, the link between marital status and investment decisions is multifaceted. Married individuals may have joint financial goals and responsibilities, potentially influencing their

investment decisions. On the other hand, divorcees may have more autonomy in decision-making. Individual financial knowledge, experience, and goals are crucial factors that can override the influence of marital status on investment decisions. Married couples may be saving for joint goals like homeownership, education for children, or retirement whereas, Divorcees may have different financial priorities. These differences in goals can impact investment decisions, with individuals aligning their portfolios with their specific needs and circumstances. Valid responses to this study correlate to further studies referred from works of *Grable, Kwak & Chen (2022); Kannadhasan (2015); Grable (2000); Grable & Joo (1997); Lee & Hanna (1991); Roszkowski et al., (1993); Sung & Hanna (1996); Hallahan et al., (2004); Yao & Hanna (2005); Hanna & Chen (1998); Nairn (2005); Grossman & Shiller (2008); and Grable et al., (2008).*

H1.4 The educational Qualification of the retail equity investors is not significantly different from their Financial Risk tolerance and Investment Decisions.

H1.4 serves the assumption to check if there is a significant difference in educational qualification (independent variable) on the financial risk tolerance and investment decisions (dependent variables) of the retail equity investors, which were examined through one-way ANOVA; after acknowledging with the test of homogeneity using the Levene test, and the results of which are shown in table 5.24.

Table 5.24

One-way ANOVA results demonstrating a significant difference between the Educational Qualification of retail equity investors with their financial risk tolerance and investment decisions

Indicators	Post Graduate	Under Graduate	School Education	F	P	Levene Statistic	Sig.
Financial Risk Tolerance	4.035	4.065	4.050	.873	.025*	.262	.770
Investment decisions	4.007	4.084	3.978	1.311	.017*	.601	.549

*5% Significance Level

Results

As per Table 5.24, since the Levene test values were found more than $P = 0.05$ and hence, the test of homogeneity of variances was approved as satisfactory (Levene, 1960). It was observed that the financial risk tolerance ($F = .873$, $P < 0.05$) and investment decisions ($F = 1.311$, $P < 0.05$) of the retail equity investors were significantly different from their educational qualifications, as the p values were found to be less than 0.05. It was also witnessed that, investors having an Undergraduate education showed comparatively higher financial risk tolerance ($M = 4.065$) and investment decisions ($M = 4.084$). Overall, as per the results, it was viewed that the educational qualifications of the retail equity investors did show significant differences in their financial risk tolerance and investment decisions. Therefore, H1.4 failed to be accepted.

Discussions

Studies from the earliest works of *Al-Ajmi (2008)*; *Grable (2000)*, *Grable & Lytton, (1999a & 1999b)*; *Hallahan et al., (2004)*; *Lee & Hanna (1991)*; *Maccrimmon & Wehrung (1986)*; *Sung & Hanna (1996)*; *Hemrajani et al., (2021)*; and *Kannadhasan (2015)* support that Higher education is often associated with higher income levels. Investors with more education may have greater financial resources, enabling them to engage in various investment opportunities and potentially influencing their risk tolerance. While education can be a contributing factor, there are many well-educated individuals who may have conservative investment approaches and less-educated individuals who may be comfortable with higher levels of financial risk. Individual differences and personal circumstances play a crucial role. The study confirms the fact that Education can foster analytical and critical thinking skills, which are valuable in the realm of investment decisions. Investors with strong analytical skills may be better equipped to assess risks and opportunities in the market.

H1.5: Occupation of the retail equity investors is not significantly different from their Financial Risk tolerance and Investment Decisions.

H1.5 addresses verifying if there exists any significant difference between the occupation (independent variable) with the financial risk tolerance and investment decisions (dependent variables) of the retail equity investors, as examined through one-way ANOVA; immediately satisfying the test of homogeneity using the Levene test, and the results of which are shown in table 5.25.

Table 5.25

One-way ANOVA results demonstrating a significant difference between the Occupation of retail equity investors with their financial risk tolerance and investment decisions

Indicators	Salaried	Business	Student	Housewife	Retired	F	P	Levene Statistic	Sig.
Financial Risk Tolerance	4.016	4.102	4.088	3.701	4.057	2.010	.092	.612	.755
Investment decisions	3.996	4.009	3.937	3.743	4.089	1.758	.136	.670	.553

Results

As per Table 5.25, since the Levene test values were found more than $P=0.05$ and hence, the test of homogeneity of variances was approved as satisfactory (Levene, 1960). It was observed that the financial risk tolerance ($F=2.010$, $P>0.05$) and investment decision ($F=1.758$, $P>0.05$) of retail equity investors were not significantly different among their occupations, as the p-values were found to be more than 0.05. It is also witnessed that, investors having business showed high financial risk tolerance ($M=4.102$) and retired investors showed comparatively higher investment decisions ($M=4.088$). Overall as per the results, it was viewed that occupation of the retail investors does not have any influence on their financial risk tolerance and investment decision. Therefore, H1.5 is accepted.

Discussions

Individuals with a business background, particularly those who own or manage businesses, often face financial risks as part of their entrepreneurial endeavours. This exposure to risk in the business world can lead to a higher comfort level with financial risk in other areas, including investment portfolios. Their experience in decision-making can translate into a more proactive and risk-tolerant approach when it comes to managing personal investments. On the contrary, retired individuals may have a need for income to sustain their lifestyle during retirement. Equity investments, particularly dividend-paying stocks, can provide a source of regular income through dividends. Retirees might choose equity investments with the goal of generating income. They may seek capital appreciation to ensure that their wealth grows over time. While equity investments carry higher market risk, they also offer the potential for higher returns compared to more conservative assets, which may be appealing to retirees with a growth-oriented investment strategy. These findings have been clearly justified by the expert works of *Sung & Hanna (1996)*; *Grable & Lytton (1999a and 1999b)*; *Grable (2000)*; *Hallahan et al., (2004)*; *Hawley & Fujii (1993)*; *Bajtelmit & VanDerhei (1997)*; *Al-Ajmi (2008)*; *Kannadhasan (2015)* and *Haliassos & Bertaut (1995)*.

H1.6: The annual income of the retail equity is not significantly different from their Financial Risk tolerance and Investment Decisions.

H1.6 justifies if there is a significant difference in the Annual income (independent variable) with the financial risk tolerance and investment decisions (dependent variables) of the retail equity investors, as examined through one-way ANOVA, after satisfying the test of homogeneity of variances using the Levene test; and the results of which are shown in table 5.26.

Table 5.26

One-way ANOVA results demonstrating a significant difference between the Annual Income of retail equity investors with their financial risk tolerance and investment decisions

Indicators	Up to 3,00,000	3,00,001 - 6,00,000	6,00,001 - 9,00,000	9,00,001 and Above	F	P	Levene Statistic	Sig.
Financial Risk Tolerance	4.013	4.037	4.082	4.113	.963	.410	.405	.789
Investment decisions	4.021	3.940	4.002	4.033	.705	.550	1.251	.291

Results

As per Table 5.26, since the Levene test values were found more than $P = 0.05$ and hence, the test of homogeneity of variances was approved as satisfactory (Levene, 1960). It was observed that the financial risk tolerance ($F = .963$, $P > 0.05$) and investment decisions ($F = .705$, $P > 0.05$) of retail equity investors were not significantly different among their Annual income, as the p-values were found to be more than 0.05. It was also witnessed that, retail equity investors having an annual income of '9,00,001 and Above' showed high financial risk tolerance ($M = 4.113$) and investment decision ($M = 4.033$) compared to others. Overall, as per the results, it was viewed that the Annual income of the retail investors does not have any significant difference with their financial risk tolerance and investment decisions. Therefore, H1.6 was favourably accepted.

Discussions

Popular studies by Maccrimmon & Wehrung (1986); O'Neill (1996); Grable (2000); Grable & Lytton (1999a and 1999b); Hallahan et al., (2004); Nairn (2005); Hemrajani et al., (2021); Isidore, R, (2019); Sutejo (2018); Kannadhasan (2015); and Singh, J (2016) state that Individuals with higher incomes often have greater access to financial education and resources. This access may contribute to a better

understanding of financial markets, investment instruments, and risk management, leading to higher financial risk tolerance. The observation that retail equity investors with an annual income of '9,00,001 and Above' tend to show high financial risk tolerance and investment decisions compared to others is in line with certain expectations and socioeconomic factors. They may have a more secure financial foundation, allowing them to be more comfortable with taking on financial risks. They may view market volatility as an opportunity rather than a threat and be more inclined to make investment decisions that involve higher risk. They may have more aggressive financial goals, such as wealth accumulation, retirement planning, or other long-term objectives. Such goals may drive them to make investment decisions that involve higher levels of risk, potentially aiming for higher returns. Their psychological traits such as confidence and a willingness to take risks, could influence their financial behaviour. These traits can be seen contributing to higher financial risk tolerance and a more active approach to investment decisions.

H₂: Retail Equity Investors' Investment Experience in the Equity Market is not significantly different from their Financial Risk Tolerance and Investment Decisions.

H₂ addresses that there is no significant difference between the retail equity investors' investment experience in the equity market (independent variable) with their financial risk tolerance and investment decisions (dependent variables), as examined through one-way ANOVA after proving the test of homogeneity using the Levene test and, the results of which have been shown in table 5.27.

Table 5.27

One-way ANOVA results demonstrating a significant difference between the Investment experience of retail equity investors in the equity market with their financial risk tolerance and investment decisions

Indicators	Up to 5	5 to 9	Above 9	F	P	Levene Statistic	Sig.
Financial Risk Tolerance	4.081	3.958	4.104	1.718	.000**	.755	.519
Investment decisions	3.968	3.999	4.054	0.995	.045*	1.215	.320

** 1% Significance Level

*5% Significance Level

Results

As per Table 5.27, since the Levene test values were found more than $P=0.05$ and hence, the test of homogeneity of variances was approved as satisfactory (Levene, 1960). It was observed that the financial risk tolerance of retail equity investors ($F=1.718$, $P<0.01^{**}$) and their investment decision ($F=0.995$, $P<0.05^{*}$) are significantly different from their investment experience in the equity market, as the p-value was found to be lesser than 0.01 and 0.05 respectively. It was also observed that retail investors having 'above 9 years of experience' ($M=4.104$) showed high financial risk tolerance and made better investment decisions ($M=4.054$). Overall, it was witnessed that the investment experience in the equity market of the retail investors was significantly different from their financial risk tolerance and investment decisions. Therefore, H_2 has failed to be accepted.

Discussions

The observation that retail equity investors with 'above 9 years of experience' tend to show high financial risk tolerance and make better equity investment decisions; which is influenced by various factors like their investment experience, financial literacy, market knowledge and expertise, risk management skills, long-term perspective, adaptability to market changes and, emotional competence. This is found in studies catalogued by *Van de Venter et al., (2012)*; *Hemrajani et al., (2021)*; *Bayar et al.,*

(2020); Zaleskiewicz (2001); Chhatoi & Mohanty (2023); Chang, C. (2004); Hussain (2022); Patel et al., (2021); Sivarajan (2018); Sung & Hanna (1996); Grable & Lytton (1999a and 1999b); Grable (2000); Kannadhasan (2015); Maccrimmon & Wehrung (1986); and O'Neill (1996). From these studies, it is also found that Investors with more years of experience may have developed a higher level of financial literacy. This increased financial knowledge can contribute to a better understanding of investment risks and opportunities, leading to higher financial risk tolerance. With greater experience, investors often gain a deeper understanding of market dynamics, economic trends, and the factors influencing various asset classes. This market knowledge can empower investors to make more informed and strategic equity investment decisions. Seasoned investors often develop the ability to adapt to changing market conditions. This adaptability allows them to make better-informed decisions in response to market trends and economic developments. Experience in the financial markets may contribute to the development of certain behavioural factors, such as discipline and emotional control. These factors can positively impact decision-making, especially in the context of equity investments that may be subject to market volatility.

H₃: The number of companies in which investments are made; has no significant difference with their Financial Risk Tolerance and Investment Decisions.

H₃ addresses checking if there is any significant difference between the Financial risk tolerance and investment decisions (dependent variables) of retail equity investors with the number of companies in which investments are being made (independent variable); which were examined through one-way ANOVA after the test of homogeneity using the Levene test; and the results of which were shown in table 5.28.

Table 5.28

One-way ANOVA results demonstrating a significant difference between the financial risk tolerance and investment decisions of retail equity investors with the number of companies in which investments are made

Indicators	Less than 10	11 to 20	21 and Above	F	P	Levene Statistic	Sig.
Financial Risk Tolerance	4.022	4.062	4.137	1.106	.332	1.336	.555
Investment decisions	3.987	4.043	3.993	.662	.517	.748	..991

Results

As per Table 5.28, since the Levene test values were found more than $P = 0.05$ and hence, the test of homogeneity of variances was approved as satisfactory (Levene, 1960). It was observed that the financial risk tolerance ($F = 1.106$, $P > 0.05$) and investment decision ($F = .662$, $P > 0.05$) of retail equity investors were not significantly different with the Number of companies in which investments are made, as the p-values were found to be more than 0.05. It is also observed that retail equity investors investing in '21 and above' companies showed high financial risk tolerance ($M = 4.137$); whereas investors investing in '11 to 20 companies' showed high investment decisions ($M = 4.043$). Overall, as per the results, it was viewed that the Number of companies in which investments are made does not have any significant difference with their financial risk tolerance and investment decisions. Therefore, H_3 is accepted.

Discussions

Studies by *Nguyen (2022)*; *Singh (2016)*; *Kasoga (2021)*; *Kumari (2017)*; *Kannadhasan (2015)*; *Sutejo, Pranata and Mahadwartha (2018)*; *Al-Ajmi (2008)*; *Abideen (2023)*; *Singh & Sharma (2020)*; *Hemrajani et al., (2021)*; *Grable (2000)*; *Grable & Lytton (1999a and 1999b)*; and *Hallahan et al., (2004)* suggest that The

choice of the number of companies in which to invest may be driven by different financial goals. Those investing in a larger number of companies might be prioritizing diversification for risk management, while those investing in a more moderate number of companies might be focused on specific growth or income objectives. The decision to diversify across a larger number of companies may indicate a higher risk tolerance, as these investors are willing to spread their investments across a broader range of opportunities. Managing a portfolio with a moderate number of companies requires active decision-making and ongoing monitoring of each investment.

H₄: There is no significant difference in the retail equity investors' preference towards Investment frequencies in the equity market with their Financial Risk Tolerance and Investment Decisions.

H₄ addresses checking if there is any significant difference between the Financial risk tolerance and investment decisions (dependent variables) of retail equity investors with their preference towards investment preferences in the equity market (independent variable); examined through one-way ANOVA through verification applying the Levene test using the test of homogeneity of variances; and, the results of which are shown in table 5.29.

Table 5.29

One-way ANOVA results demonstrating a significant difference between the financial risk tolerance and investment decisions of retail equity investors with their preference towards Investment frequencies in the equity market

Indicators	Less than year	Intraday	Less than 3 months	F	P	Levene Statistic	Sig.
Financial Risk Tolerance	4.053	3.938	4.037	.091	.913	.929	.441
Investment decisions	4.015	4.278	3.976	.739	.478	1.028	.308

Results

As per Table 5.29, since the Levene test values were found more than $P = 0.05$ and hence, the test of homogeneity of variances was approved as satisfactory (Levene, 1960). It was observed that the financial risk tolerance ($F = .091, P > 0.05$) and investment decisions ($F = .739, P > 0.05$) of retail equity investors were not significantly different from their Preference towards the frequency of investments in the equity market, as the p-values were found to be more than 0.05. It was also observed that the respondents preferring to invest for 'less than a year' showed high financial risk tolerance ($M = 4.053$); whereas investors preferring 'Intraday' showed high investment decisions ($M = 4.278$). Overall, as per the results, it was viewed that Preference towards the frequency of investments in the equity market does not have any significant difference with their financial risk tolerance and investment decisions. Therefore, H4 is accepted.

Discussions

Investors with a preference for shorter-term investments (less than a year) often face a higher degree of market volatility and risk compared to those with longer-term investment horizons. Investing for a shorter duration might involve more frequent buying and selling, exposing them to market fluctuations and volatility. The fact that they are comfortable with this implies a higher tolerance for financial risk. Investors engaged in Intraday trading demonstrate a high level of decisiveness in their investment actions. This could be due to the fast-paced nature of Intraday trading, where quick decisions are essential to capitalize on short-term price movements. All these explanations were clear and evident from the elaborate studies made by *Coleman (2003); Delpechitre & DeVaney (2006); Finke & Huston, (2003); Grable (2000); Grable et al., (2008); Grable & Joo (2004); Grable & Lytton (1999a and 1999b); Grable & Roszkowski (2008); Hanna & Chen (1998); Morin & Suarez (1983); Roszkowski & Grable (2005); Schooley & Worden (1996); Van de Venter (2006); Wang & Hanna (1998); and Yip (2000)*.

H₅: Factors like Sensation Seeking, Emotional Competence, Locus of Control, Overconfidence Bias, Snake-Bite Effect Bias, Frame-Dependence Bias, Risk Attitude, and Risk Perception have no significant influence on the Financial Risk Tolerance of retail equity investors.

H₅ discusses the factors that may or may not have a significant influence on the financial risk tolerance of retail equity investors. It was conducted using the multiple regression analysis with the help of Econometric software. The correlation values have been displayed in Table 5.30 below:

Table 5.30

Correlation Coefficients among factors influencing Financial Risk Tolerance of retail equity investors

	<i>FRT</i>	<i>SS</i>	<i>EC</i>	<i>LC</i>	<i>OB</i>	<i>SBE</i>	<i>FDB</i>	<i>RA</i>	<i>RP</i>
<i>FRT</i>	1								
<i>SS</i>	0.584	1							
<i>EC</i>	0.506	0.081	1						
<i>LC</i>	0.493	0.608***	0.032	1					
<i>OB</i>	0.597	0.372***	0.118	0.375***	1				
<i>SBE</i>	0.113*	0.439***	0.056	0.399***	0.696***	1			
<i>FDB</i>	0.148**	0.079	0.022	0.177***	0.096*	0.111*	1		
<i>RA</i>	0.696***	0.143	0.098*	0.083	0.057	0.082	0.136**	1	
<i>RP</i>	0.232	0.028	0.075	0.174	0.039	0.061	0.176***	0.572***	1

Source: Survey Data

(Note: *FRT*: Financial Risk Tolerance [**Dependent Variable**]; *SS*: Sensation Seeking, *EC*: Emotional Competence, *LC*: Locus of Control, *OB*: Overconfidence Bias, *SBE*: Snake-Bite Effect Bias, *FDB*: Frame-Dependence Bias, *RA*: Risk Attitude, *RP*: Risk Perception [**Independent Variables**])

Table 5.30 shows the correlation coefficients between the variables under the study. There is a significant correlation between FRT and independent variables. All the independent variables are positively correlated with FRT, among them RA reported the highest positive correlation followed by OB, SS, and EC. The largest correlation among independent variables is 0.696, it is between OB and SBE and it is coming under the threshold limit of 0.80. While analysing the correlation between independent variables, it could be concluded that there is no issue of multicollinearity

as all the values are below the threshold limit. To check if there is any issue of multicollinearity between independent variables VIF test was also applied. Table 5.31 lists the variables and the corresponding VIF, as shown below. VIF measures the degree of correlation among variables in a regression model, since all variables are less than the threshold limit, i.e., 5, there is no evidence of multicollinearity. The table below portrays different values of VIF (Variance Inflation Factor) of independent variables influencing the Financial Risk Tolerance of retail equity investors. The results are found satisfactory since, the VIF values are below 5 and hence, there is no trace of multicollinearity.

Table 5.31

VIF Values of factors influencing Financial Risk Tolerance of retail equity investors

SS	EC	LC	OB	SBE	FDB	RA	RP
1.741343	1.027236	1.709223	3.635822	3.871893	1.065346	1.862092	1.869174

Source: Survey Data

The following multiple regression model is used to estimate different explanatory variables to FRT.

$$\text{FRT} = \beta_1 + \beta_2\text{SS} + \beta_3\text{EC} + \beta_4\text{LC} + \beta_5\text{OB} + \beta_6\text{SBE} \\ + \beta_7\text{FDB} + \beta_8\text{RA} + \beta_9\text{RP} + u_i$$

Results

The results of multiple regression estimates of FRT on different independent variables are shown in Table 5.32 below. The F value is significant at 1% (p-value equal to 0.000), indicating that the regression model is fit, and the Adjusted R² value is 0.6465, inferring that the explanatory variables explain 64.65% of the variance in the dependent variable; as evident from the below table. The estimate represents how much the response or dependent variable changes for a one-unit change in the predictor variable. It quantifies the strength and direction of the relationship between the predictor and response variables. The result from Table 5.32 shows that RA has the highest estimate of 0.552917, which is statistically highly significant. Further, EC, SS, and LC also show a positively significant estimate. Based on the regression result,

the null hypotheses which state RA, EC, SS, and LC have no significant influence on FRT were rejected.

Table 5.32

Multiple Regression Estimates of variables influencing Financial Risk Tolerance of retail equity investors

Variables	Estimate (P-Value)	Result
SS	0.296329 (0.018**)	Significant
EC	0.414878 (0.029**)	Significant
LC	0.200243 (0.046**)	Significant
OB	0.103125 (0.1264)	Not Significant
SBE	0.197166 (0.2594)	Not Significant
FDB	0.067771 (0.2516)	Not Significant
RA	0.552917 (<2e-16 ***)	Highly Significant
RP	0.002079 (0.3172)	Not Significant

Note:

*****1% Significance Level**

****5% Significance Level**

Regression Results:

Multiple R-squared: 0.6528, **Adjusted R-squared: 0.6465**

F-statistic: 103.6 on 8 and 441 DF, **p-value: < 2.2e-16**

Heteroscedasticity indicates that the variance of the residuals is not constant across different levels of the independent variables. The White test assesses whether the residuals of a regression model exhibit heteroscedasticity. The test result shows a Chi-square value of 0.00085545 with a p-value of 0.73493, so, failing to reject the null hypothesis, there is insufficient evidence to conclude that the residuals are heteroscedastic. This is clear from Table 5.33 as given below:

Table 5.33

White Test result showing heteroscedasticity in the residuals based on Multiple Regression Analysis

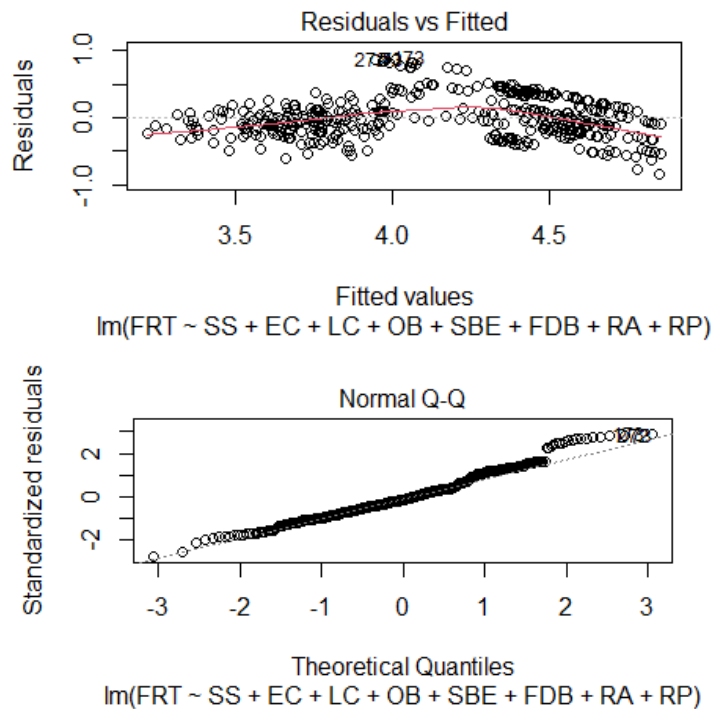
Chi-square = 0.00085545	Df = 1	p = 0.73493
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Result: Since the p-value \geq significance level (5%): Fail to reject the null hypothesis. Hence, there is insufficient evidence to conclude that the residuals are heteroscedastic.

Based on the afore-discussed White test results, the plot pictures clearly how evident that there is insufficient proof to conclude that residuals are heteroscedastic. It is shown below in Figure 5.1:

Figure 5.1

White Test Plot showing if there is Heteroscedasticity in Residuals or not



Discussions:

Findings from the studies quoted by *Rabbani, Yao, Wang & Grable (2021); Gilliam & Grable (2010); Grable & Lytton (2001); Grable and Rabbani (2014); Rabbani et*

al., (2019); Wong & Carducci (2013); Chitra & Sreedevi (2011); Grable & Joo (2004); Soane *et al.*, (2010); Corter & Chen (2006); Nicholson *et al.* (2005); Wong and Carducci (2016); Irwin's (1993); Leeman *et al.*, (2014); Quinn & Harden (2013); Hemrajani *et al.*, (2021); Sjoberg & Engelberg (2006); Williams (2023); Thanki, Karani & Goyal (2021); Jhonsi & Sunitha (2019); Behera (2021); and Kannadhasan (2015) reveal that If an investor has a high-risk attitude, they may be more inclined to tolerate higher levels of financial risk in their investment decisions. In the context of investing, emotional competence could play a role in how investors react to market fluctuations and unexpected events. Those with higher emotional competence may be better equipped to make rational decisions during times of market volatility. As we all know Sensation seeking is a personality trait associated with the desire for novel and intense experiences. In the context of investing, individuals with a high sensation-seeking trait may be more prone to take risks to experience the excitement or thrill associated with potential financial gains. Similarly, investors with an internal locus of control believe they have control over their investment outcomes, while those with an external locus of control may attribute outcomes to external factors like luck or chance.

H₆: Factors like Sensation Seeking, Emotional Competence, Locus of Control, Overconfidence Bias, Snake-Bite Effect Bias, Frame-Dependence Bias, Risk Attitude, and Risk Perception) have no significant influence on the Investment Decisions of retail equity investors.

H₆ discusses the factors that may or may not have a significant influence on the Investment Decisions of retail equity investors. It was conducted using the multiple regression analysis with the help of Econometric software. The correlation values have been displayed in Table 5.34 below:

Table 5.34

Correlation Coefficients among factors influencing Investment Decisions of retail equity investors

	<i>ID</i>	<i>SS</i>	<i>EC</i>	<i>LC</i>	<i>OB</i>	<i>SBE</i>	<i>FDB</i>	<i>RA</i>	<i>RP</i>
<i>ID</i>	1								
<i>SS</i>	0.232***	1							
<i>EC</i>	0.593	0.341	1						
<i>LC</i>	0.364***	0.608***	0.187	1					
<i>OB</i>	0.269***	0.372***	-0.005	0.375***	1				
<i>SBE</i>	0.315***	0.439***	0.098	0.399***	0.741***	1			
<i>FDB</i>	0.188***	0.079	0.126	0.177***	0.096*	0.111*	1		
<i>RA</i>	0.761***	0.204	0.098*	0.083	0.103	0.089	0.136**	1	
<i>RP</i>	0.537	-0.002	0.075	0.074	0.100	0.061	0.176*	0.606**	1

Source: Survey Data

(Note: *ID*: Investment Decisions [**Dependent Variable**]; *SS*: Sensation Seeking, *EC*: Emotional Competence, *LC*: Locus of Control, *OB*: Overconfidence Bias, *SBE*: Snake-Bite Effect Bias, *FDB*: Frame-Dependence Bias, *RA*: Risk Attitude, *RP*: Risk Perception [**Independent Variables**])

Table 5.34 shows the correlation coefficients between the variables under the study. There is a significant correlation between ID and independent variables. All the independent variables are positively correlated with FRT, among them RA reported the highest positive correlation followed by EC, LC, and SBE. The largest correlation among independent variables is 0.741, which is between OB and SBE and it is coming under the threshold limit of 0.80. While analysing the correlation between independent variables, it could be concluded that there is no issue of multicollinearity as all the values are below the threshold limit. To check if there is any issue of multicollinearity between independent variables VIF test was also applied. Table 5.35 lists the variables and the corresponding VIF, as shown below. VIF measures the degree of correlation among variables in a regression model, since all variables are less than the threshold limit, i.e., 5, there is no evidence of multicollinearity. The table below portrays different values of VIF (Variance Inflation Factor) of independent variables influencing the Financial Risk Tolerance of retail equity investors. The

results are found satisfactory since, the VIF values are below 5 and hence, there is no spell of multicollinearity found here.

Table 5.35

VIF Values of factors influencing Investment Decisions of retail equity investors

SS	EC	LC	OB	SBE	FDB	RA	RP
1.556782	1.113571	1.218134	3.081765	3.331769	1.100420	1.702817	1.876631

Source: Survey Data

The following multiple regression model is used to estimate different explanatory variables to ID.

$$ID = \beta_1 + \beta_2 SS + \beta_3 EC + \beta_4 LC + \beta_5 OB + \beta_6 SBE + \beta_7 FDB + \beta_8 RA + \beta_9 RP + u_i$$

Results

The results of multiple regression estimates of ID on different independent variables are shown in Table 5.36 below. The F value is significant at 1% (p-value equal to 0.000), indicating that the regression model is fit, and the Adjusted R² value is 0.6881, inferring that the explanatory variables explain 68.81% of the variance in the dependent variable; as evident from the below table. The estimate represents how much the response or dependent variable changes for a one-unit change in the predictor variable. It quantifies the strength and direction of the relationship between the predictor and response variables. The result from Table 5.36 shows that RA has the highest estimate of 0.452624, which is statistically highly significant. Further, EC, LC, and SBE also show a positively significant estimate. Based on the regression result, the null hypotheses which state RA, EC, LC, and SBE have no significant influence on ID were rejected.

Table 5.36

Multiple Regression Estimates of variables influencing Investment Decisions of retail equity investors

Variables	Estimate (P-Value)	Result
SS	0.059731 (0.32338)	Not Significant
EC	0.044870 (0.29140)	Not Significant
LC	0.277294 (8.5e-10***)	Significant
OB	0.007779 (0.88358)	Not Significant
SBE	0.187211 (0.00529**)	Significant
FDB	0.034817 (0.28663)	Not Significant
RA	0.452624 (<2e-16 ***)	Highly Significant
RP	0.056481 (0.40872)	Not Significant

Note:

*****1% Significance Level**

****5% Significance Level**

Regression Results:

Multiple R-squared: 0.6936, **Adjusted R-squared: 0.6881**

F-statistic: 124.8 on 8 and 441 DF, **p-value: < 2.2e-16**

Heteroscedasticity indicates that the variance of the residuals is not constant across different levels of the independent variables. The White test assesses whether the residuals of a regression model exhibit heteroscedasticity. The test result shows a Chi-square value of 0.000445247 with a p-value of 0.98317, so, failing to reject the null hypothesis, there is insufficient evidence to conclude that the residuals are heteroscedastic. This is clear from Table 5.37 as given below:

Table 5.37

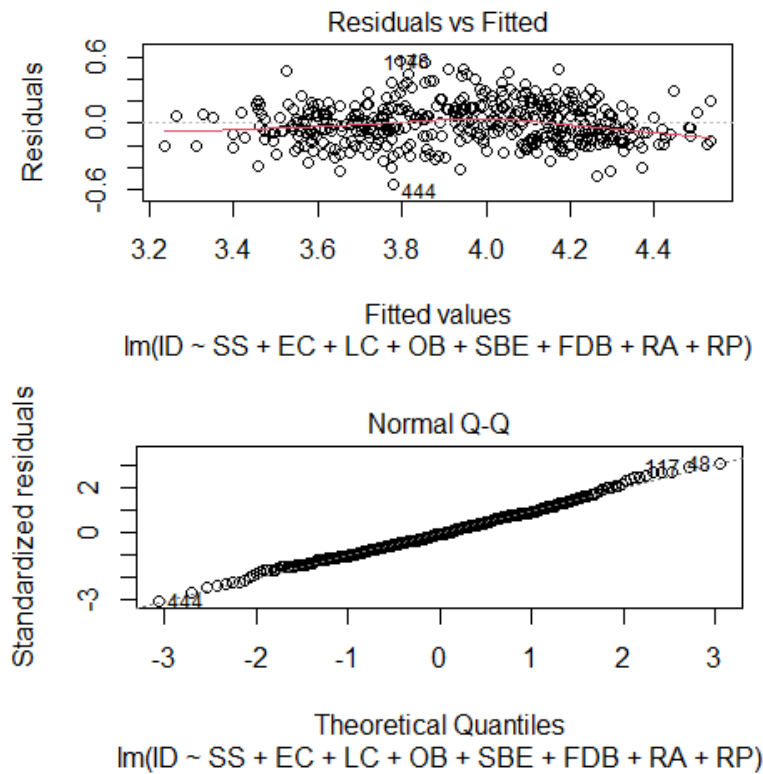
White Test result showing heteroscedasticity in the residuals based on Multiple Regression Analysis

Chi-square = 0.000445247	Df = 1	p = 0.98317
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Result: Since the p-value \geq significance level (5%): Fail to reject the null hypothesis. Hence, there is insufficient evidence to conclude that the residuals are heteroscedastic. Based on the afore-discussed White test results, the plot picturises clearly how evident that there is insufficient proof to conclude that residuals are heteroscedastic. It is shown below in Figure 5.2:

Figure 5.2

White Test Plot showing if there is Heteroscedasticity in Residuals or not



Discussions

Hemrajani et al., (2021); Kartasova, Gaspareneine & Remeikiene (2014); Das & Mohapatra (2017); Shakya (2021); Shukla, Rushdi & Katiyar (2020); Pompian

(2017); Ranaweera (2022); Mouna, Amari (2015); Jain & Kesari (2020); Kannadhasan (2015); Ghelichi, Nakhjavan and Gharehdaghi (2016); Thaler & Johnson (1990); Kuo, Huang and Jane (2013); Weber and Zuchel (2005); Chin (2012); Hsu and Chow (2013); and Wen, Chao and Liu (2012) discuss collectively the factors that contribute to the psychological and emotional aspects of decision-making in the financial markets. Understanding how these elements influence investment decisions is crucial for both investors and financial professionals. It highlights the significance of investor education, emotional intelligence, and awareness of cognitive biases in making informed and rational investment choices. Investors with a high-risk tolerance are generally more willing to accept higher levels of risk in pursuit of potentially higher returns. Conversely, those with a low-risk tolerance may prioritize capital preservation over the possibility of higher gains. Similarly, emotionally competent investors are better equipped to make rational decisions, especially during periods of market volatility or unexpected events. Further, Investors with an internal locus of control believe they have a significant impact on the outcomes of their investment decisions, while those with an external locus of control attribute outcomes more to external factors, luck, or chance. As the concept rightly says, the snake bite effect bias is a cognitive bias where investors become overly cautious or risk-averse after experiencing a negative event, like someone becoming overly cautious about snake encounters after being bitten once. In investing, this bias might lead investors to avoid equity investments due to a past negative experience irrespective of their rationality.

H₇: Financial Risk Tolerance of retail equity investors does not significantly contribute towards their Investment Decisions.

H₇ discusses the factors that may or may not have a significant influence on the Investment Decisions of retail equity investors. It was conducted using the Simple Linear Regression analysis with the help of Econometric software. Table 5.38 shows the correlation coefficients between the variables under the study. There is a significant and positive correlation between FRT and ID. It was reported that the FRT

(Independent variable) has a higher correlation with the ID (Dependent variable) based on the value estimated at 0.806.

The following multiple regression model is used to estimate different explanatory variables to FRT.

$$ID = \beta_1 + \beta_2 FRT + u_i$$

Results

The results of Simple Linear Regression estimates of ID on FRT are shown in Table 5.38 below. The F value is significant at 1% (p-value equal to 0.000), indicating that the regression model is fit, and the Adjusted R² value is 0.6494, inferring that the explanatory variables explain 64.94% of the variance in the dependent variable; as evident from the below table. The estimate represents how much the response or dependent variable changes for a one-unit change in the predictor variable. The result shows that FRT has an estimate of 0.51304, which is statistically highly significant. Based on the result obtained, the null hypothesis framed that FRT has no significant influence on the ID of the retail equity investors has failed to be accepted.

Table 5.38

Summary Results based on Simple Linear Regression Analysis

Correlation between ID and FRT: 0.806***		
Estimate	P-Value	Result
FRT	<2e-16***	Highly Significant

Note:

*****1% Significance Level**

Regression Results:

Multiple R-squared: 0.6502

Adjusted R-squared: 0.6494

F-statistic: 832.6 on 1 and 448 DF,

p-value: < **2.2e-16**

Discussions:

Investors with high-risk tolerance are more likely to allocate a significant portion of their portfolio to equities, which have the potential for higher returns but also come with higher volatility. Conversely, investors with lower risk tolerance may allocate more to lower-risk assets like bonds or cash. Investors with a high financial risk tolerance are generally more comfortable with the inherent volatility of equity markets. They may be willing to invest in individual stocks, sectors, or other equity instruments that have a higher risk-return profile. On the other hand, risk-averse investors may prefer more stable and established stocks or diversified equity funds. Investors' risk tolerance also influences behavioural biases. Those with higher risk tolerance may be less influenced by fear during market downturns, while those with lower risk tolerance may succumb to panic-selling or other emotional reactions. All these explanations were supported by the works of *Ainia & Lutfi (2019); Hemrajani et al., (2021); Kannadhasan (2015); Nguyen et al., (2016); Saivasan (2022); Sutejo (2018); Singh (2016); Prabha (2016); Mangala & Verma (2018); Prasad, Kiran & Sharma (2020); Ahmad (2020); Mubaraq (Aruna & Rajasekhar (2016); Murhadi (2023); Dash (2010); Sharma (2020); Chakkaravarthy (2021); Vohra & Kaur (2016); Bhattacharjee & Singh (2017); Mittal and Vyas (2011) ; Ayuub et al. (2015); Annamalah et al. (2019); Caglayan and Abdieva (2014); Baruah and Kumar (2018); Muralidhar and Berlik (2017); Rahmawati et al. (2015); and Chang et al., (2004).*

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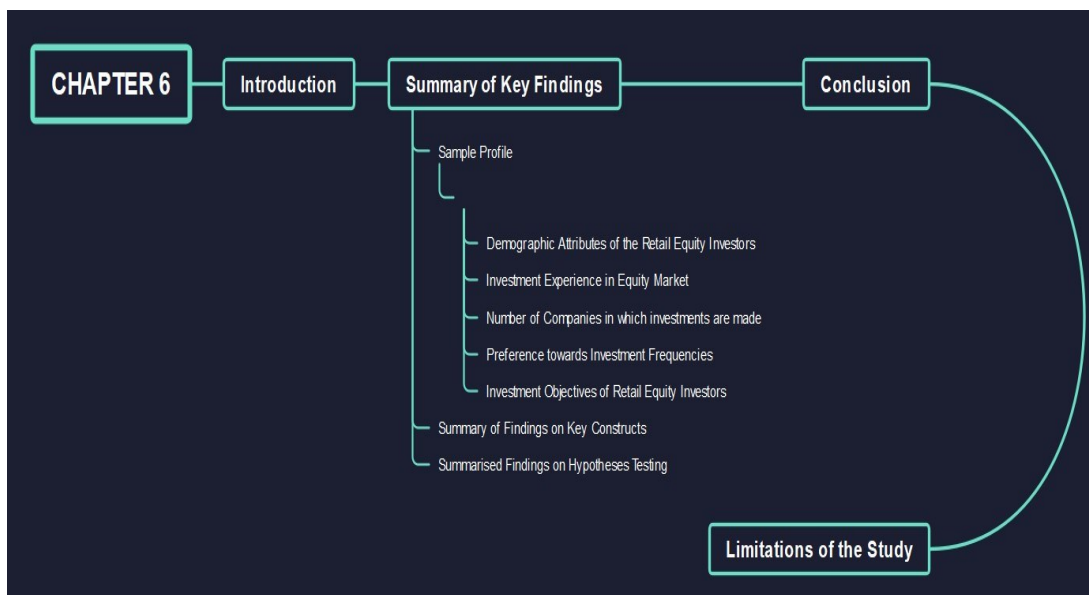
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CHAPTER 6

FINDINGS AND CONCLUSIONS



6.0 INTRODUCTION

As the study intended to understand the concept of 'Financial Risk Tolerance' and its relevance in making investment decisions along with identifying the various factors influencing the Risk Tolerance level and investment decisions of retail equity investors, sufficient data was collected in a systematic manner. This data was then analysed which revealed various interesting findings which are presented in this chapter. It revealed various significant findings, which are given in this chapter by categorizing them as sample profiles, major findings on key constructs, and summarized findings on hypothesis testing. The chapter presents the conclusion here and provides direction for future research further. Ultimately, this chapter presents the findings, conclusions, and limitations of the study.

6.1 SUMMARY OF KEY FINDINGS:

6.1.1 SAMPLE PROFILE:

6.1.1.1 Demographic Attributes of the retail equity investors:

- 47.3% of the respondents belong to the age category of 36 to 55, similarly, 27.3% of the respondents belong to the age category of 56 years and above.
- The majority of the (75.3%) retail equity investors are male and the remaining 24.7% of them are female.
- The majority (71.1%) of the retail equity investors are married and 22.0% of the respondents are unmarried.
- In the selected sample, 48.4% of them are Undergraduates and 38.7% of them are post-graduates.

- 47.8% of the investors are salaried persons; 32.9% of them are businessmen/women and 10.0% of the respondents are students.
- 54.2% of the investors earn an annual income of ‘up to 3,00,000’ and 33.1% of them earn ‘9,00,001 and above’ annually.

6.1.1.2 Investment Experience in Equity Market:

38.2% of the retail equity investors’ Investment Experience in the Equity market is up to 5 years, and 33.8% of the respondents’ Investment Experience in the Equity market is 6 to 9 years.

6.1.1.3 Number of Companies in which Investments are made:

As far as the number of companies the investors have invested in the equity market is concerned, a majority (62%) of the investors have invested in less than 10 companies and 26.0% of them have invested in 11 to 20 companies. However, only 12.0% of the respondents have invested in more than 21 companies.

6.1.1.4 Preference towards Investment Frequencies:

40.44% of the respondents were inclined to prefer investing in the equity market frequently for less than a year. an account of 26.89% preferred to invest frequently for less than 3 months, with 23.78% falling for Intraday equity transactions. The least preference was shared by those who preferred investing in equity considering only for years ranging from 1 year onwards up to more than 5 years.

6.1.1.5 Investment Objectives of Retail Equity Investors (Based on Ranks):

the respondents were keen on observing savings for their children’s education fund as the priority; followed by the second preference for their retirement savings. But simultaneously, they seem to find time to spend on their recreational activities (like a vacation on tour, family engagement outings, visiting amusement centers or adventurous journeys, and so on). Equal weights were provided by investors keeping “Long-term capital gain” and “Tax benefits” as objectives considering that the impact

of both as an objective influences them equally. Very few retail equity investors were found “buying homes” or “others” as the least preferred options.

6.1.2 SUMMARY OF FINDINGS ON KEY CONSTRUCTS:

6.1.2.1 Sensation-Seeking among retail equity investors:

- Retail equity investors strongly agree that when their friend suggests a “sure thing” investment idea, they would take action right away if needed (M= 4.2867).
- However, they showed a comparatively low agreement level on actively trading their account to accumulate wealth (M= 3.8422).

6.1.2.2 Emotional Competence among retail equity investors:

- Investors highly agree that sometimes they tend to overanalyse situations, finding problems that really do not exist (M= 4.1889).
- However, investors showed a low agreement level on retail equity investors tending to postpone their portfolio decisions when they find themselves not in a good mood (M= 3.8911).

6.1.2.3 Locus of Control among retail equity investors:

- Investors highly agree that in the long run, people who take care of their investments show greater signs of financial well-being (M= 4.2756).
- Yet, the statement that says retail equity investors can pretty much predict what unforeseen changes are likely to happen in the market (M= 3.8289) seemed to be the comparatively least agreed statement.

6.1.2.4 Overconfidence Bias of retail equity investors:

- Retail equity investors highly agree that they overestimate their ability to evaluate a company (M= 4.2711).
- However, they showed a comparatively low agreement level on believing that their choice of investment avenues is the right one (M= 3.9178).

6.1.2.5 'Snake-Bite Effect' Bias among retail equity investors:

- Investors strongly agree that when the price drops temporarily, they sell the stocks to prevent losses (M= 4.2778).
- However, investors showed comparatively low agreement levels. When considering changing their equity portfolio, they spend time thinking about options but often end up changing nothing sometimes (M= 3.9311).

6.1.2.6 Frame-Dependence Bias among retail equity investors:

- Retail equity investors strongly agree that many investment choices they make are based on knowledge of how similar past investments have performed (M= 4.2756).
- Yet, investors showed a comparatively lower agreement level on the statement. While making investment decisions, they tended to focus on the positive aspects of such investments rather than on what would go wrong with the investment (M= 3.9244).

6.1.2.7 Risk Perception of retail equity investors:

- As per the results, retail equity investors highly agree that the higher an investment yield rate, the greater will be its associated risk (M= 4.1756).
- However, the agreement level on the new generation of investors being risk lovers and preferring to make profits out of aggressive stocks (M= 3.9178) seems to be lower.

6.1.2.8 Risk Attitude of retail equity investors:

- Investors strongly agree that they feel comfortable if their investment decisions are made by automated programs (M= 4.1956).
- However, they showed a relatively lower level of agreement on them believing that their trust is fostered based on the strong ethical culture of the company they invest (M= 3.8822).

6.1.2.9 Financial Risk Tolerance of retail equity investors:

- Investors strongly agree that once they begin to make the withdrawals, they will continue the same for up to 10 years (M= 4.2978).
- However, the agreement level on their willingness to bear the consequences of a loss to maximise their returns (M= 3.9111).

6.1.2.10 Investment Decision of retail equity investors:

- The investors highly agree that when their pocket goes “out of balance”, they believe that such consequences wouldn’t last forever (M= 4.2889).
- However, their agreement level on its importance for them to be in control of their finances (M= 3.8489).

6.1.3 SUMMARISED FINDINGS ON HYPOTHESES TESTING:

6.1.3.1 One-way ANOVA and Independent sample t-test results:

Table 6.1

One-Way ANOVA and Independent sample t-test results depicting the significant difference among the Demographic variables, Financial Risk Tolerance, and Investment Decisions of retail equity investors

Serial No.	Dependent variable	Demographical variable	Test	Result
H₁: <i>There is no significant difference among the Demographic variables, Financial Risk Tolerance, and Investment Decisions of retail equity investors.</i>				
1.	Financial Risk Tolerance	Age	.000**	H1.1 rejected
		Gender	.354	H1.2 accepted
		Marital status	.506	H1.3 accepted
		Educational Qualification	.025*	H1.4 rejected
		Occupation	.092	H1.5 accepted
		Annual income	.410	H1.6 accepted

Serial No.	Dependent variable	Demographical variable	Test	Result
	Investment Decision	Age	.026*	H1.1 rejected
		Gender	.064	H1.2 accepted
		Marital status	.720	H1.3 accepted
		Educational Qualification	.017*	H1.4 rejected
		Occupation	.136	H1.5 accepted
		Annual income	.550	H1.6 accepted

Note:
****1% Significance Level**
***5% Significance Level**

Table 6.2

One-Way ANOVA results depicting the significant difference between the Investment experience of retail equity investors in the equity market with their financial risk tolerance and investment decisions

Serial No.	Dependent variable	Demographical variable	Test	Result
H₂	<i>Retail Equity Investors' Investment Experience in the Equity Market is not significantly different from their Financial Risk Tolerance and Investment Decisions.</i>			
2	Financial Risk Tolerance	Investment experience in equity market	.000**	H2 rejected
	Investment Decision		.045*	H2 rejected

Note:
****1% Significance Level**
***5% Significance Level**

Table 6.3

One-Way ANOVA results depicting the significant difference between the financial risk tolerance and investment decisions of retail equity investors with the number of companies in which investments are made

Serial No.	Dependent variable	Demographical variable	Test	Result
<i>H₃: The number of companies in which investments are made; has no significant difference with their Financial Risk Tolerance and Investment Decisions.</i>				
3	Financial Risk Tolerance	Number of companies in which investments are made	.332	H3 accepted
	Investment Decision		.517	H3 accepted

Table 6.4

One-Way ANOVA results depicting the significant difference between the financial risk tolerance and investment decisions of retail equity investors with their preference towards Investment frequencies in the equity market

Serial No.	Dependent variable	Demographical variable	Test	Result
<i>H₄: There is no significant difference in the retail equity investors' preference towards Investment frequencies in the equity market with their Financial Risk Tolerance and Investment Decisions.</i>				
4	Financial Risk Tolerance	Preference towards the frequency of investments in the equity market	.913	H4 accepted
	Investment Decision		.478	H4 accepted

6.1.3.2 Findings on Multiple Regression Analysis using Econometrics:

Table 6.5

Multiple Regression Results of Factors significantly influencing the Financial Risk Tolerance of Retail Equity Investors

H₅: Factors like Sensation Seeking, Emotional Competence, Locus of Control, Overconfidence Bias, Snake-Bite Effect Bias, Frame-Dependence Bias, Risk Attitude, and Risk Perception) have no significant influence on the Financial Risk Tolerance of retail equity investors.

Serial No.	Independent variable	Dependent Variable	Test	Result
1	Sensation Seeking	Financial Risk Tolerance	0.018**	Significant
	Emotional Competence		0.029**	Significant
	Locus of Control		0.046**	Significant
	Overconfidence Bias		0.1264	Not Significant
	Snake-Bite Effect Bias		0.2594	Not Significant
	Frame Dependence Bias		0.2516	Not Significant
	Risk Attitude		<2e-16***	Highly Significant
	Risk Perception		0.3172	Not Significant

Note:

*****1% Significance Level**

****5% Significance Level**

Table 6.6

Multiple Regression Results of Factors significantly influencing the Investment Decisions of Retail Equity Investors

H₆: *Factors like Sensation Seeking, Emotional Competence, Locus of Control, Overconfidence Bias, Snake-Bite Effect Bias, Frame-Dependence Bias, Risk Attitude, and Risk Perception) have no significant influence on the Investment Decisions of retail equity investors.*

Serial No.	Independent variable	Dependent Variable	Test	Result
	Sensation Seeking		0.32338	Not Significant
	Emotional Competence		0.29140	Not Significant
	Locus of Control		8.5e-10***	Significant
	Overconfidence Bias		0.88358	Not Significant
2	Snake-Bite Effect Bias	Investment Decision	0.00529**	Significant
	Frame Dependence Bias		0.28663	Not Significant
	Risk Attitude		<2e-16***	Highly Significant
	Risk Perception		0.40872	Not Significant

Note:

*****1% Significance Level**

****5% Significance Level**

6.1.3.3 Findings on Simple Linear Regression Analysis using Econometrics:

Table 6.7

Simple Regression Results of the significant influence of Financial Risk Tolerance of Retail Equity Investors on their Investment Decisions

H₇: Financial Risk Tolerance of retail equity investors does not significantly contribute towards their Investment Decisions.

Serial No.	Independent variable	Dependent Variable	Test	Result
1	Financial Risk Tolerance	Investment Decision	<2e-16***	Highly Significant

Note: ***1% Significance Level

6.2 CONCLUSION

Investment decisions must be founded on a thorough examination of the current conditions, but investors are eager to minimize uncertainties connected with the final judgments they make, regardless of the various knowledge available that supports rationality and irrationality. With respect to this, the researcher found various contributing factors that determine an investor's investment decision through review. Considering which the main intention of the study was to understand the concept of 'Financial Risk Tolerance' and its relevance in making investment decisions along with identifying the various factors influencing the Risk Tolerance level and investment decisions of retail equity investors. Moreover, the study also evaluated the significant differences among demographic attributes, financial risk tolerance, and investment decisions of retail equity investors in Kerala. The key results revealed that demographic attributes such as age and educational qualification significantly differ with respect to their financial risk tolerance and investment decisions. Further, the relevance of Sensation-Seeking, Emotional Competence, Locus of Control, and Risk Attitude of retail equity investors was found to significantly influence their financial risk tolerance. Besides this, the 'snake-bite effect' bias, Locus of Control, and Risk Attitude were found to significantly contribute to their investment decision. Further,

the financial risk tolerance was also judged showing significant influence on the investment decisions of the respondents. Key findings of the study further revealed the significance of investment decisions where each individual investor should make necessary efforts to enhance their financial risk tolerance level, risk attitude, risk perception and be careful of various biases associated. However, extensive awareness campaigns and programmes must be initiated at the grassroots level starting from educational institutions, and households to companies and industries, and financial institutions. There are various financial literacy programmes that have been initiated by SEBI, NSE, BSE, and other financial and non-financial institutions but to what extent these initiatives are successful in encouraging retail equity investors to make such investments is very crucial.

6.3 LIMITATIONS OF THE STUDY

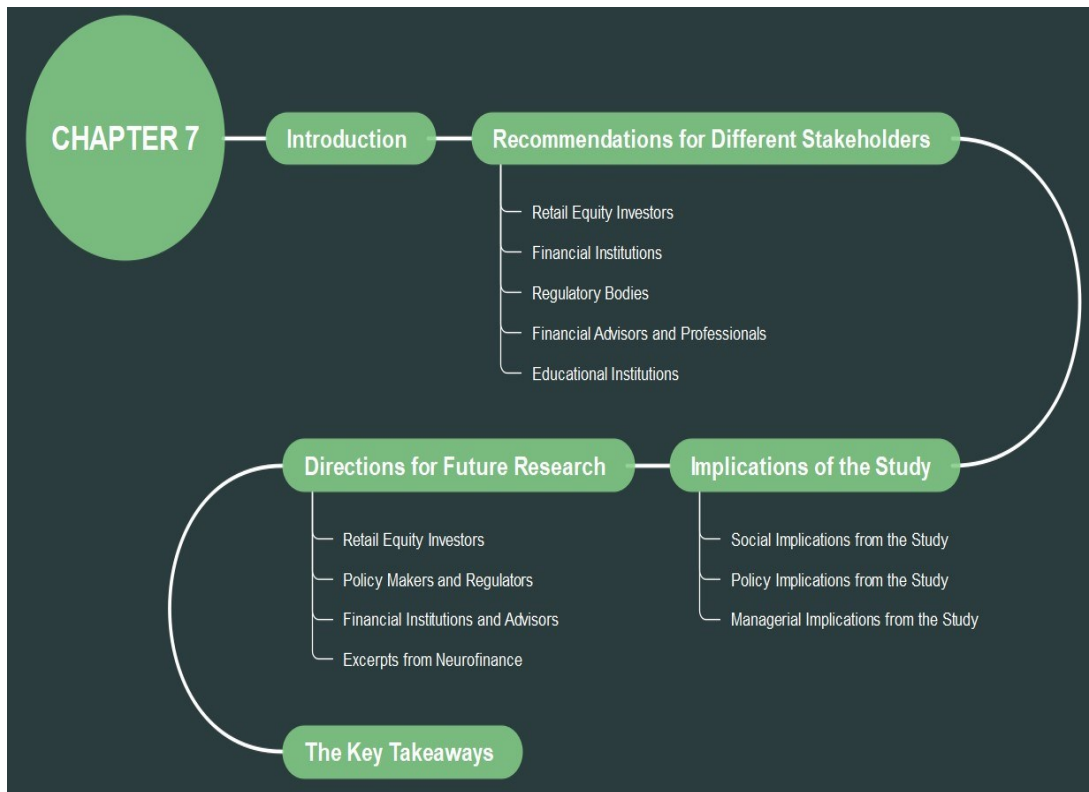
Recognizing the limitations shown below is crucial for interpreting the study's results appropriately and for guiding future research endeavours to address these constraints and deepen the understanding of financial risk tolerance and investment decisions among retail equity investors in Kerala:

- ✓ Investment decisions are inherently subjective and complex. The study may not have fully captured the intricacies of decision-making, including the psychological and emotional elements that influence investor choices.
- ✓ The study focuses specifically on retail equity investors in Kerala, which may have limited the generalizability of findings to other regions or demographic groups within India or globally.
- ✓ Studies depict that the Investors' risk appetite and their investment decisions have been strongly influenced by external economic conditions and events, such as severe market volatility or economic crises. Here, the study did not adequately account for these extraneous variables.
- ✓ Data collected through questionnaires and self-reported measures may be subject to biases, such as social desirability bias or recall bias. Participants may not always accurately represent their true risk tolerance or investment behaviour.

- ✓ The sample size and representativeness of the participants have an impact on the study's findings. The generalizability of the results may be hampered if the sample is not diverse or reflective of Kerala's larger community of retail stock investors only.

CHAPTER 7

RECOMMENDATIONS AND DIRECTIONS FOR FUTURE RESEARCH



7.0 INTRODUCTION

In the preceding chapters, the study has delved into the intricate dynamics of financial risk tolerance and investment decisions among retail equity investors in Kerala. It has provided valuable insights into the risk profiles, behaviors, and preferences of this specific investor group, shedding light on their unique characteristics. In this chapter, efforts have been made to translate insights into practical recommendations and identify promising avenues for future research that can contribute to the enhancement of financial decision-making in Kerala's retail equity market. By addressing these recommendations and pursuing further research in these areas, stakeholders can actively contribute to the development of a more informed and resilient retail equity investment landscape in Kerala, ultimately benefiting both investors and the broader financial ecosystem.

7.1 RECOMMENDATIONS FOR DIFFERENT STAKEHOLDERS

7.1.1 Recommendations for Retail Equity Investors:

- As per the results, the age of the retail investors significantly influences their financial risk tolerance whereas the investors aged above 56 years have high risk tolerance. Investors below 55 years must take the initiative to obtain advice from the senior investors to build their risk tolerance level which is essential to making effective investment decisions.
- Only for retail equity investors who have a business and are salaried persons, the financial risk tolerance level is very high which contributes to higher investment decisions but students, housewives, and retired investors have the lowest risk tolerance level and insignificant investment decisions. Hence there is a need to

encourage students by providing compulsory subjects on financial literacy and investment decisions irrespective of their selected courses. Basic stock-related details must be known by each student.

➔ Considering the factors influencing the Financial risk tolerance of retail equity investors, only sensation seeking, emotional competence, locus of control, and risk attitude were found to significantly influence. Rather, the influence of other variables including overconfidence bias, ‘snake-bite effect’ bias, frame-dependence bias, and risk perception was found insignificant. Hence, the study suggests them to undertake the following considerations to improve their levels of financial risk tolerance:

- Stay informed about financial markets, investment products, and the factors that can influence investments. Education can help counter overconfident bias by promoting a more realistic understanding of the complexity of financial markets.
- Diversification can help mitigate the impact of biases such as the ‘snake-bite bias effect’. A well-diversified portfolio can spread risk across different assets, reducing the impact of negative experiences with specific investments.
- Recognize and be aware of one's own behavioural biases. Regularly assess one's decision-making process and consider seeking the advice of a financial professional who can provide an objective perspective.
- Establish clear and realistic financial goals. Setting achievable objectives can help manage risk perceptions and frame-dependence bias by providing a rational basis for investment decisions.
- Engage with a financial advisor who can provide guidance based on one's own financial goals and risk tolerance. A professional can help to navigate biases of themselves, make informed decisions, and construct a well-balanced portfolio.

- Periodic review and reassessment of one's own investment portfolio and financial goals can help ensure that their investment strategy remains aligned with their financial risk tolerance and objectives.
 - Invest in financial education. Attending seminars, workshops, and online courses to enhance one's understanding of financial markets, investment products, and risk management could really help to meet any further financial or investment setbacks.
- ➔ Considering the factors influencing the Investment decisions of retail equity investors, only locus of control, 'snake-bite effect' bias, and risk attitude were found to significantly influence. Rather, the influence of other variables including overconfidence bias, sensation seeking, emotional competence, frame-dependence bias, and risk perception was found insignificant. Individual differences among participants, including personality traits, cognitive styles, and financial literacy, may have introduced variability that diluted the impact of the studied biases. These individual differences could contribute to a complex web of factors influencing decision-making. Hence, the study suggests them to undertake the following considerations to improve their equity-investment decision-making ability:
- Incorporating mindfulness practices into an investor's routine can lead to a more balanced and mindful approach to financial decision-making. It promotes financial resilience with a state of calm awareness that is conducive to making rational and well-considered investment choices, ultimately contributing to the improvement of Financial Risk Tolerance.
 - Explore stress management techniques to ensure that stress or emotional factors do not unduly impact their investment decisions. Techniques such as regular exercise, relaxation exercises, or mindfulness practices can contribute to financial stress reduction and improve financial well-being. Also, it broadens one's own intuition to make skewed predictions.

- Avoid reacting to short-term market fluctuations, and instead, focus on the long-term goals of their own investments. This approach can help in maintaining a steady course during market volatility.
- Continuous monitoring, regular updates to algorithms, and a combination of automated and human decision-making can contribute to more effective and well-informed investment strategies.
- Being adaptable and responsive to market conditions without succumbing to short-term biases can contribute to a more resilient investment approach.
- Engage with other investors by joining investment clubs, or participating in forums where they can share experiences and learn from the strategies of others. Such collaborative efforts and shared insights can broaden their perspectives on equity investments.

7.1.2 Recommendations for Financial Institutions:

Financial institutions and regulatory bodies should collaborate to develop investment products that align better with the risk tolerance of Kerala's retail investors. Clearer risk disclosure and prudent investment limits should be imposed to protect investors from excessive risk exposure.

- **Customized Products:** Develop investment products and services tailored to the varying risk tolerances of retail equity investors in Kerala. Offer diversified portfolios and risk-appropriate options.
- **Investor Education:** Collaborate with educational institutions to enhance financial literacy among potential investors.
- **Robust Advisory Services:** Strengthen advisory services to provide personalized investment guidance, considering the unique risk profiles of investors.

7.1.3 Recommendations for Regulatory Bodies:

- Results indicated that retail investors having above 10 years of experience have high financial risk tolerance; this indicates that higher the experience in equity market, higher will be the risk tolerance level of the investors. Therefore it is recommended to the investors to be actively involved in equity market to get the risk exposure and to act accordingly to reduce the risk and increase the return. As notified earlier, students must be provided with basic theoretical learning environment with respect to investment, at the same time practical experience of participating in equity market should be taught.
- The results indicates that the investors intending to buy home, minimise the tax burden and expect long-term capital gain can make better investment decisions. Investors intention to buy home, minimise tax and expect long term capital gain depicts the higher knowledge and literacy level on the benefits of these intentions, hence NSE, BSE, SEBI must undertake an extensive financial literacy programmes and campaigns to spread the knowledge on the benefits of making an effective investment decision which will help them to buy their own house, minimise the tax burden and provides long term capital gain.
- SEBI, NSE, BSEs are extensively conducting financial literacy programmes but to what extent these programmes are effective for the investors and non-investors must be researched by these institutions.
- **Others:**
 - **Stringent Regulations:** Enforce regulations that ensure transparency and fairness in financial markets, protecting investors from excessively risky investments.
 - **Clear Risk Disclosure:** Mandate clear and concise risk disclosure in investment product documentation to enable informed decision-making.
 - **Investor Protection:** Implement measures to safeguard the interests of retail equity investors, especially those with lower risk tolerance.

7.1.4 Recommendations for Financial Advisors and Professionals:

- Stockbrokers also must aid the investors in the training of a mobile application that allows investors to purchase or sell shares with a single click in seconds, keep track of their investments, establish watch lists, communicate with the community, and much more.
- When the investors face the ‘snake-bite effect’ bias, then the stock brokers must extend funding facilities to allow investors to take leveraged positions and further encourage them from getting demotivated.

Recognizing the significant role of behavioral biases in investment decisions, financial professionals should incorporate principles from behavioral finance into their advisory services. This can empower investors to identify and mitigate cognitive biases that may lead to suboptimal decisions.

- Behavioral Finance Training: Equip financial advisors with knowledge of behavioral finance to better understand and guide clients in managing cognitive biases.
- Personalized Advice: Provide personalized investment advice that aligns with the risk tolerance and financial goals of clients in Kerala.
- Continuous Education: Invest in ongoing education to stay updated with market trends and best practices.

7.1.5 Recommendations for Educational Institutions:

Based on the findings, it is imperative to design and implement tailored financial education programs that cater to the diverse risk tolerance levels observed among retail investors in Kerala. These programs should emphasize the importance of risk assessment, diversification, and prudent investment strategies. Furthermore, they should be accessible and user-friendly, ensuring inclusivity.

- **Curriculum Enhancement:** Integrate financial literacy courses into the curriculum to equip students with the necessary knowledge and skills for sound financial decision-making.
- **Seminars and Workshops:** Organize seminars and workshops on financial literacy and investment for students and the wider community.
- To capture evolving trends and the efficacy of interventions, future research should consider conducting longitudinal studies tracking changes in the risk tolerance and investment behavior of retail investors in Kerala over extended periods.
- Comparative studies across different regions within India or internationally can provide insights into how cultural and regional factors influence investment behavior. This research can help identify strategies that resonate with investors in Kerala.
- With the growing influence of financial technology, investigating how the adoption of new tools and platforms affects risk tolerance and investment decisions in Kerala is crucial. This research can inform the development of investor-friendly technological solutions.

7.2 IMPLICATIONS OF THE STUDY

In the intricate world of finance, understanding the relationship between financial risk tolerance and investment decisions is paramount, especially in the context of retail equity investors in Kerala. The decisions made by individual investors not only shape their own financial destinies but also have broader implications for the regional and national economies. As we delve into the social, policy, and managerial implications of our study on the "Financial Risk Tolerance and Investment Decisions of Retail Equity Investors in Kerala," it becomes evident that these implications extend far beyond the boundaries of individual portfolios. This section in this chapter embarks on a journey to explore the multifaceted consequences of our findings and how they can inform the actions of various stakeholders. We will examine the implications at

the social level, where the well-being and financial security of individuals are paramount. We will then navigate through the policy landscape, where regulatory bodies and policymakers play a pivotal role in safeguarding the interests of investors. Finally, we will delve into the managerial sphere, where financial institutions and advisors are tasked with translating research insights into practical strategies for the benefit of their clients. Serving as a bridge between academic inquiry and real-world impact, aiming to guide decision-makers, investors, and researchers alike toward a more informed and resilient investment environment in Kerala; the study's implications encompass three heads-

7.2.1 Social Implications from the Study

- **Financial Inclusion:** Understanding the risk tolerance of retail equity investors in Kerala can promote financial inclusion by tailoring investment products and services to cater to a wider range of investors, including those with lower risk tolerance.
- **Wealth Accumulation:** Improving financial literacy and aligning investment decisions with risk tolerance can help individuals in Kerala accumulate wealth over the long term, potentially reducing financial disparities.
- **Retirement Planning:** Insights into risk tolerance can inform retirement planning strategies, ensuring that individuals in Kerala can make suitable investment choices to secure their financial future.
- **Reduced Stress:** Adequate risk assessment and management can reduce financial stress and anxiety among investors, contributing to overall well-being.

7.2.2 Policy Implications from the Study

- **Regulation and Investor Protection:** Policymakers can use research findings to develop regulations that protect retail equity investors in Kerala from excessively risky investments, ensuring that financial products are suitable for their risk profiles.

- **Financial Education:** Implement financial education initiatives at schools and colleges in Kerala to improve financial literacy and promote responsible investment decisions from a young age.
- **Consumer Awareness:** Policy efforts should focus on enhancing consumer awareness about the importance of understanding one's risk tolerance and making informed investment choices.
- **Market Transparency:** Encourage transparency in financial markets to help retail investors in Kerala make well-informed investment decisions, with clear information about risks and returns.

7.2.3 Managerial Implications from the Study

- **Customer Segmentation:** Financial institutions and asset management firms can use insights into risk tolerance to segment their customer base and tailor investment products and services accordingly.
- **Customized Investment Solutions:** Asset managers and financial advisors can develop personalized investment solutions that match the risk tolerance and financial goals of their clients in Kerala.
- **Behavioral Finance Integration:** Managers can integrate behavioral finance principles into their advisory services, helping investors overcome cognitive biases and make rational decisions.
- **Product Innovation:** Use research insights to innovate and create financial products that are better suited to the risk preferences of retail equity investors in Kerala.
- **Risk Management Strategies:** Develop and offer risk management strategies that align with the risk tolerance of investors, ensuring a more balanced and suitable investment portfolio.

- **Continuous Education:** Financial professionals should continually educate investors about their investment choices and risk exposure, fostering a culture of responsible investing.

7.3 DIRECTIONS FOR FUTURE RESEARCH:

As research is a journey from known to unknown, this research has also opened a door to unknown facts in the area of investment decisions. Based on the present study, various limitations and further researchable areas have been jotted down.

- The same model proposed and tested by the researcher can be implemented in other states of the country or on other geographical boundaries as the demographic and comfort level vary throughout the regions.
- Further studies can be conducted on other populations such as by considering specified retail equity investors who are into IT sectors only, teaching profession only, and other occupational categories.
- Here, the study was restricted to concepts such as risk tolerance, risk attitude, risk perception, investment decision, Financial Personality Traits, behavioral biases, demographic attributes, and comfort level, hence future researchers can identify a few more concepts that can affect the present model can contribute to new knowledge.
- This study was cross-sectional in nature further study can be done through longitudinal procedure by altering the independent variable.

This portion of the chapter acts as a guidepost, illuminating the uncharted territories that await exploration, with the aim of elevating the financial landscape of Kerala to new heights. However, the journey does not end here; in fact, it is merely the beginning. The realm of finance is ever-evolving, and the dynamic nature of investment behaviour calls for continuous inquiry and adaptation.

7.3.1 For Retail Equity Investors:

- **Investment Strategies:** Research different investment strategies tailored to various risk tolerance levels among Kerala's retail equity investors. Evaluate the historical performance and suitability of these strategies.
- **Behavioural Finance:** Explore the application of behavioural finance principles to self-awareness and decision-making among investors in Kerala. Develop strategies to mitigate behavioural biases effectively.
- **Portfolio Optimization:** Investigate advanced portfolio optimization techniques that consider individual risk profiles and the local economic environment in Kerala.
- **Alternative Investments:** Explore the potential benefits and risks of alternative investments, such as cryptocurrencies or socially responsible investments, for retail investors in Kerala.
- **Impact of Local Factors:** Analyse how Kerala's unique cultural and economic factors influence investment decisions and risk tolerance, with a focus on regional industries like tourism and agriculture.

7.3.2 For Policy Makers and Regulators:

- **Regulatory Frameworks:** Evaluate the effectiveness of existing regulatory frameworks in protecting retail investors in Kerala. Identify areas for improvement in terms of risk disclosure and investor protection.
- **Market Transparency:** Conduct research on market transparency and information accessibility for retail investors in Kerala, focusing on the impact of information disparities on investment decisions.
- **Financial Inclusion:** Investigate ways to promote financial inclusion in Kerala, ensuring that even those with lower risk tolerance have access to appropriate investment options.

- **Economic Impact:** Assess the economic impact of retail investors' risk tolerance and investment behaviour in Kerala, including their role in local capital formation and economic development.

7.3.3 For Financial Institutions and Advisors:

- **Robo-Advisors:** Research the adoption and effectiveness of robo-advisory platforms in assisting retail investors in Kerala in aligning their investments with their risk tolerance.
- **Client Profiling:** Develop and test client profiling tools and methodologies that accurately assess the risk tolerance of investors in Kerala, with a focus on enhancing personalized advice.
- **Impact of Financial Education:** Evaluate the impact of financial education initiatives and tools provided by financial institutions to improve risk understanding and investment decisions among clients.
- **Ethical Investing:** Investigate the demand for and feasibility of ethical or socially responsible investment products among retail investors in Kerala.
- **Local Market Insights:** Explore the unique dynamics of the local equity market in Kerala, including the performance of regional companies and their influence on investor behaviour.

7.3.4 Neurofinance, which explores the neural underpinnings of financial decision-making, offers a fascinating avenue for deeper understanding and enhancing the study of financial risk tolerance and investment decisions among retail equity investors in Kerala. Incorporating neuroscientific insights into this study can shed light on the neurological processes that drive investor behaviour and provide a richer understanding of decision-making in the context of financial risk.

7.3.4.1 Neuroscientific Assessments of Risk Tolerance (based on the works of Koivula, 2014; Grable & Roszkowski, 2007; Georgi, Peterman & Schipper, 2013; and Gutterman, 2023):

- Conduct neuroimaging studies, such as functional magnetic resonance imaging (fMRI) or electroencephalography (EEG), to examine the neural correlates of risk tolerance among retail equity investors in Kerala.
- Investigate whether specific brain regions or neural activation patterns are associated with higher or lower risk tolerance levels in this population.

7.3.4.2 Cognitive Biases and Brain Activity (based on the works of Sharma & Firoz, 2020; Linciano.N, 2011; Zhang & Zhang, 2023; Choudhary, Yadav & Srivatsava, 2021; Lu & Lin, 2006; Mohanty, Patnaik, Satpathy & Sahoo, 2023; Dhakal & Lamsal, 2023):

- Explore how cognitive biases, such as loss aversion or overconfidence, manifest in the brain activity of investors in Kerala.
- Assess whether interventions aimed at mitigating these biases can lead to observable changes in neural responses.

7.3.4.3 Emotional Processing in Investment Decisions (based on the works of Shiv, Lowenstein & Bechara, 2005; Fradcourt, Baciú & Campagne, 2013; Dierks & Tiggelbeck, 2021; Priyadarshini.V & Tamizhthy.K, 2018; Armansyah.F.R, 2022; Gulzar, 2023; and Armansyah.F.R, Ardianto & Rithmaya, 2023):

- Investigate the role of emotions in investment decisions among retail investors in Kerala by examining the neural substrates of emotional responses to financial gains and losses.
- Analyse how emotional processing influences risk perception and subsequent investment choices.

7.3.4.4 Neural Responses to Market Events (based on the works of Sumarmi et al., 2021; Erkens & Gan, 2022; Radoczy & Toth-Pajot, 2021; and Wibowo, 2014):

- Study how neural responses change during significant market events, such as market crashes or economic downturns, and assess whether these responses correlate with changes in risk appetite and investment decisions.

7.3.4.5 Neurofeedback Interventions (based on the works of Wooddell, 2021; Punj, 2023; Xuan, 2022; Saxena & Ahuja, 2018; Vukovic & Pivac, 2023; Yasmin & Firduous, 2023; Gong, 2021; and Young, 2023):

- Develop and test neurofeedback interventions aimed at training investors to modulate their neural responses to financial risk, potentially helping them make more rational and less emotionally driven decisions.

7.3.4.6 Individual Differences (based on the works of Saxena & Ahuja, 2018; Vukovic & Pivac, 2023; Yasmin & Firduous, 2023; Gong, 2021; Young, 2023; ; Punj, 2023; Xuan, 2022; Niv, 2013; and Chaudary, 2019):

- Investigate whether individual differences in neurobiology, such as variations in brain structure or function, are associated with differences in risk tolerance and investment behaviour among retail equity investors in Kerala.

7.3.4.7 Cross-Cultural Neurofinance Studies (based on the works of Koekemoer & Ferreira, 2018; Baechler & Germain, 2021; Bhandari & Hallowell, 2022; Shou, Onley & Wang, 2022; Chhatoi & Mohanty, 2023; Banerjee, 2023; and Mazzoli & Palmucci, 2023):

- Compare the neural mechanisms of financial decision-making in Kerala with those in other regions or countries to identify potential cross-cultural differences in risk perception and investment choices.

7.3.4.8 Practical Applications:

- Explore how neurofinance insights can be translated into practical applications, such as personalized neurofeedback-based investment advisory services or neuro-inspired financial literacy programs.

7.4 THE KEY TAKEAWAYS

The amalgamation of recommendations, implications, and research directions collectively forms a roadmap—a roadmap designed to empower stakeholders, policymakers, financial institutions, advisors, and, most importantly, the investors themselves in forging a more resilient, informed, and inclusive investment environment in Kerala. We have recommended tailored financial education programs, product innovation, and the integration of behavioural finance principles to enhance the financial literacy and decision-making abilities of investors. These recommendations hold the potential to guide investors toward making choices that align with their unique risk profiles and financial aspirations. Through stringent regulations, improved market transparency, and a focus on financial inclusion, Policymakers, and regulators can contribute to a safer and more equitable investment landscape in the region. Financial institutions and advisors, on the other hand, must refine their approaches to meet the individualized needs of investors, leveraging advancements in technology and behavioural insights to provide top-notch advisory services. The scope for further research outlined in this chapter sets the stage for ongoing exploration and growth. The pursuit of knowledge in areas such as behavioural finance, neurofinance, and cross-cultural comparisons can offer fresh perspectives and innovative solutions to the multifaceted challenges faced by investors in Kerala. In closing, this study underscores the importance of synergy among stakeholders, each playing a unique role in fortifying the financial foundation of Kerala's retail equity investors. It is our hope that the recommendations, implications, and research directions outlined here will serve as catalysts for positive change, ultimately leading to a more prosperous and secure financial future for all involved. As the financial landscape continues to evolve, so too must our collective efforts to empower investors in their pursuit of financial well-being.

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2	Bon, G. L. (1896, January 1). <i>The Crowd</i> .	Group Psychology
3	<i>Trust Finance; a Study of the Genesis, Organization, and Management of Industrial Combination</i> . (1903, January 1).	Role of trust in finance
4	Garrett, G. (1911, February 11). <i>Where the Money Grows and Anatomy of the Bubble</i> . Wiley.	Bubbles
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6	Hamilton, W. P. (1922, January 1). <i>The Stock Market Barometer</i> .	Dow Jones Investment Approach
7	Lefevre, E. (1923, January 1). <i>Reminiscences of a Stock Operator</i> . Chump Change.	Trader Psychology
8	Rukeyser, M. S. (1924, September 24). <i>The Common Sense of Money and Investments</i> . John Wiley & Sons.	Investment and financial issues
9	Carret, P. L. (1930, January 1). <i>The Art of Speculation</i> .	Speculative Behaviour
10	Allen, F. L. (1931, November 22). <i>Only Yesterday: An Informal History of the 1920's</i> . DigiCat.	Historical perspective of the 1920s.
11	Graham, B., Dodd, D., & Dodd, D. L. F. (1934, January 1). <i>Security Analysis: The Classic 1934 Edition</i> . McGraw Hill Professional.	Value Investing
12	Loeb, G. M. (1935, January 1). <i>The Battle for Investment Survival</i> .	Investing in different securities and markets
13	Williams, J. B. (1938, January 1). <i>The Theory of Investment Value</i> , by John Burr Williams.	Financial services valuation
14	Schwed, F. (1940, January 1). <i>Where are the Customers' Yachts? Or, A Good Hard Look at Wall Street</i> .	Financial service issues and practices
15	Graham, B. (1949, July 8). <i>The Intelligent Investor</i> . Harper Business.	Value Investing

S.No.	Published Citations	Subject Matter
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17	Galbraith, J. K. (1954, January 1). <i>The Great Crash, 1929</i> . Houghton Mifflin Harcourt.	Stock market crash of 1929
18	Neill, H. B. (1954, January 1). <i>The Art of Contrary Thinking</i> . Caxton Press.	Popular opinion and group behaviour
19	Sargeant, W. P. (1957, January 1). <i>Stock Market Behavior</i> .	Stock market psychology
20	Fisher, P. A. (1958, November 7). <i>Common Stocks and Uncommon Profits</i> . John Wiley & Sons.	Investing in common stocks
21	Brooks, J. (1969, January 1). <i>Once in Golconda</i> .	The investment history of the 1920s
22	Appleman, M. J. (1970, January 1). <i>The Winning Habit</i> .	Investors' personality and individual behavior
23	Scheinman, W. X. (1970, January 1). <i>Why Most Investors are Mostly Wrong Most of the Time</i> .	Bad investment decisions by financial advisors
24	Brooks, J. (1973, September 20). <i>The Go-Go Years</i> . John Wiley & Sons.	The investment history of the 1960s
25	Malkiel, B. G. (1973, January 1). <i>A Random Walk Down Wall Street</i> . W. W. Norton.	Random walk theory of stock prices
26	Dreman, D. N. (1977, January 1). <i>Psychology and the Stock Market</i> . New York : AMACOM.	Investor psychology and group behaviour
27	Kindleberger, C. P. (1996, January 1). <i>Manias, Panics and Crashes</i> .	Historical financial crises

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2	Chandra, P. (1977, January 1). <i>Valuation of Equity Shares in India</i> .	Equity Scenario sensitisation
3	Haugen, R. A. (1995, January 1). <i>The New Finance</i> .	Stock market inefficiencies
4	Wood, A. S. (1995, January 1). <i>Behavioral Finance and Decision Theory in Investment Management</i> .	Investor psychology
5	Argyle, M., & Furnham, A. (1998, October 23). <i>The Psychology of Money</i> . Routledge.	Money behaviors
6	Belsky, G., & Gilovich, T. (1999, January 1). <i>Why Smart People Make Big Money Mistakes- and how to Correct Them</i> . Simon and Schuster.	Various topics of behavioral finance and investor behavior
7	Lifson, L. E., & Geist, R. A. (1999, March 25). <i>The Psychology of Investing</i> . John Wiley & Sons.	Psychological trading strategies
8	Shefrin, H. (2000, January 1). <i>Beyond Greed and Fear</i> .	Investor psychology
9	Shiller, R. J. (2000, January 1). <i>Irrational Exuberance</i> . Broadway.	Investor speculative bubble of the 1990s
10	Shleifer, A. (2000, March 9). <i>Inefficient Markets: An Introduction to Behavioral Finance</i> . OUP Oxford.	Stock market inefficiencies
11	Wrneryd, K. E. (2001, January 1). <i>Stock-market Psychology</i> . Edward Elgar Publishing.	Psychology of stock investors
	Nofsinger, J. R. (2002, July 1). <i>The Psychology of Investing</i> . Routledge.	Investment behavior
12	Geist, R. (2003, September 23). <i>Investor Therapy</i> . Currency.	Investor psychology
13	Gandhi, R. (2019, January 1). <i>Perception and Preference of Investor's for Equity Based Mutual Funds</i> .	Risk Perception

S.No.	Published Citations	Subject Matter
14	Oberlechner, T. (2004, November 30). <i>The Psychology of the Foreign Exchange Market</i> . Wiley.	Trader psychology
15	Fenton-O'Creevy, M., Nicholson, N., Soane, E., & Willman, P. (2005, September 16). <i>Traders: Risks, Decisions, and Management in Financial Markets</i> . OUP Oxford.	Trader psychology
16	Pompian, M. M. (2006, January 31). <i>Behavioral Finance and Wealth Management</i> . John Wiley & Sons.	Individual investor behavior
17	Montier, J. (2007, January 1). <i>Behavioural Investing</i> .	Investor psychology
18	Peterson, R. L. (2007, January 11). <i>Inside the Investor's Brain</i> . John Wiley & Sons.	Neurofinance and investor decisions
19	Schindler, M. (2007, January 1). <i>Rumors in Financial Markets</i> .	Stock market psychology
20	Zweig, J. (2007, January 1). <i>Your Money and Your Brain</i> . Simon and Schuster.	Neuroeconomics and investor psychology
21	Reid, G. C., & Smith, J. A. (2007, September 6). <i>Risk Appraisal and Venture Capital in High Technology New Ventures</i> . Routledge.	Risk Perception and Risk Attitude
22	Klontz, B., Kahler, R., & Klontz, T. (2008, May 1). <i>Facilitating Financial Health</i> .	Financial trauma, money disorders
23	Klontz, B., & Klontz, T. (2009, January 1). <i>Mind Over Money</i> . Broadway Business.	Financial trauma, money disorders
24	Baker, H. K., & Nofsinger, J. R. (2010, October 5). <i>Behavioral Finance</i> . John Wiley & Sons.	Psychological concepts, investor biases, investor behavior, and social influences
25	Statman, M. (2010, November 19). <i>What Investors Really Want: Know What Drives Investor Behavior and Make Smarter Financial Decisions</i> . McGraw Hill Professional.	Individual investor psychology
26	Zacks, L. (2011, October 4). <i>The Handbook of Equity Market Anomalies</i> . John Wiley & Sons.	Investor anomalies
27	Nicholson, C. (2011, November 30). <i>Building Wealth in the Stock Market</i> . John Wiley & Sons.	Financial Behaviour and Money Attitude

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29	Davies, G. B., & De Servigny, A. (2012, January 12). <i>Behavioral Investment Management: An Efficient Alternative to Modern Portfolio Theory</i> . McGraw Hill Professional.	Individual investor behavior and decisions
30	Pompian, M. M. (2012, July 3). <i>Behavioral Finance and Investor Types</i> . John Wiley & Sons.	Investor personality
31	Shull, D. (2012, December 30). <i>Market Mind Games: A Radical Psychology of Investing, Trading and Risk</i> . McGraw Hill Professional.	Trader psychology
32	Tuckett, D., & Taffler, R. J. (2012, August 1). <i>Fund Management</i> .	Emotional aspects of investing
33	Davies, G. B., & De Servigny, A. (2012, January 5). <i>Behavioral Investment Management: An Efficient Alternative to Modern Portfolio Theory</i> . McGraw Hill Professional.	Trader psychology
34	Park, D. E. (2013, January 1). <i>Financial Risk Attitude and Behavior</i> .	Risk Attitude
35	Azza, B., & Adel, K. (2014, January 1). <i>Towards an Integrated Model of Antecedents and Consequences of Perceived Risk of Investors in Tunisian Stock Market</i> .	Risk Perception
36	Widger, C., & Crosby, D. (2014, October 10). <i>Personal Benchmark</i> . John Wiley & Sons.	Investor psychology
37	Arjaliès, D. L., Grant, P., Hardie, I., MacKenzie, D., & Svetlova, E. (2017, June 16). <i>Chains of Finance</i> . Oxford University Press.	Developments in Behavioural Finance
38	Phung, T. (2017, January 1). <i>Perceived Risk, Investment Performance and Intentions in Emerging Stock Markets</i> .	Risk Perception
39	Phung, T. (2017, January 1). <i>Personality Traits, Perceived Risk, Uncertainty, and Investment Performance in Vietnam</i> .	Risk Personality

S.No.	Published Citations	Subject Matter
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41	Sarkar, A. K., & Sahu, T. N. (2018, July 16). <i>Investment Behaviour</i> . Emerald Group Publishing.	Investor Psychology
42	Phoen, S. (2018, July 15). <i>Personality-Driven Portfolio: Invest Right for Your Style</i> . Marshall Cavendish International Asia Pte Ltd.	Risk Personality traits and types
43	Hemrajani, P. (2018, January 1). <i>Influence of Urgency on Financial Risk-Taking Behavior of Individual Investors</i> .	Financial Risk-taking
44	Statman, M. (2019, December 2). <i>Behavioral Finance: The Second Generation</i> . CFA Institute Research Foundation.	Investor Psychology and Rise of Neurofinance
45	Gandhi, R. (2019, January 1). <i>Perception and Preference of Investor's for Equity Based Mutual Funds</i> .	Risk Perception
46	Chandra, P. (2019, January 1). <i>BEHAVIORAL FINANCE</i> .	Investor Psychology
47	Hawaldar, I. T. (2020, January 1). <i>Investors Perception Towards Stock Market</i> .	Risk Perception
48	Ervolini, M. A. (2023, May 9). <i>Managing Equity Portfolios</i> . MIT Press.	Risk Attitude towards equity Portfolio
49	Jiang, Z. (2023, January 1). <i>Personality Differences and Investment Decision-Making</i> .	Personality and Investment differences
50	Viale, R., Mousavi, S., Alemanni, B., & Filotto, U. (n.d.). <i>The Behavioural Finance Revolution</i> . Edward Elgar Publishing.	Investor Psychology

APPENDICES



APPENDIX- I

QUESTIONNAIRE

I am Mr. Tushar Soubhari; conducting a study on the topic: “**FINANCIAL RISK TOLERANCE AND INVESTMENT DECISIONS OF RETAIL EQUITY INVESTORS IN KERALA**” under the guidance of Prof. (Dr.) Satheesh E.K., Registrar, University of Calicut, Kerala; as a requirement for the completion of my Ph.D. Thesis. It is my honour to record your views and suggestions to improve the study. Also, I assure you that whatever information is being furnished here will not be shared elsewhere.

Section-1: DEMOGRAPHIC DETAILS

1.1 Name (Optional): _____

1.2 Age (in Years):

Up to 35 36 to 55 56 & Above

1.3 Gender:

Male Female

1.4 Marital Status:

Married Unmarried Divorcee Widow(er)

1.5 To which district do you belong in Kerala? _____.

1.5 Educational Qualification:

Post Graduate Under Graduate School Education

Others (If yes, Please specify _____)

1.6 Occupation:

Salaried Business Student Housewife Retired

1.7 Annual Income:

Up to ₹ 3,00,000 ₹ 3,00,001 - ₹ 6,00,000 ₹ 6,00,001 - ₹ 9,00,000

₹ 9,00,001 and Above

Section-2: TECHNICAL DETAILS

2.1 Investment Experience in Equity market (in Years):

Up to 5 6 to 9 10 & Above

2.2 Number of companies in which investments are made:

Less than 10 11 to 20 21 and Above

2.3 My preference towards Frequency of investments in the Equity market

Less than a year

- Intraday
- Less than 3 months
- Less than 5 years
- More than 5 years

2.4 My objectives toward equity investments (Rank from 1 to 7):

- Planning for retirement _____
- Saving for children’s education _____
- Tax Benefits _____
- Buy Homes _____
- Long-term Capital Gain _____
- Recreation _____
- Others (if any, please specify) _____

Category 1: Sensation-Seeking						
SS1	My tolerance for risk to build wealth is more important to me than the desire to preserve wealth.					
SS2	I have 100% faith in my abilities as an investor.					
SS3	I am motivated to build wealth from equity stocks at the expense of my lifestyle.					
SS4	Describing myself as an active trader to accumulate wealth through equity investments is the most appropriate.					
SS5	When it comes to financial matters, I act quickly on opportunities to make money.					
SS6	Listening to experts’ knowledge and experiences favours me in taking the right investment decisions.					
SS7	When deciding on equity investments, I trust the advice of my gut instincts.					
SS8	My plans are not permanent unless it gets fulfilled.					
SS9	I feel most confident when I invest in stocks that have the highest appreciation potential.					

SS10	I have a lot of intellectual curiosity to take risks toward equity investments.					
SS11	I love actively trading my account to accumulate wealth.					
SS12	Short-term fluctuations in my portfolio make me sense opportunities and think about buying.					
SS13	When my friend suggests a “sure thing” investment idea, I would take action right away if needed.					
Category 2: Emotional Competence						
EC1	I tend to postpone my portfolio decisions when I find myself not in a good mood.					
EC2	I fear being the last to know about the news that is relevant to my investment portfolio.					
EC3	Sometimes I tend to overanalyse situations, finding problems that really do not exist.					
EC4	My certain compulsive habits dominate my decisions to invest.					
EC5	I am aware of such situations which I can handle and that takes me out of my emotional comfort zone.					
EC6	I feel surprised by my emotional reactions to situations I encounter in my life.					
EC7	When I get upset about market reactions, I remind myself to focus on the good things about equity investment.					
EC8	Others’ emotions appeal to me a lot while taking decisions to invest in equity stocks.					
EC9	I consider the ethical consequences of the decisions I make.					
EC10	When making important decisions, logic should come into play more than emotions.					

EC11	Some of the major events of my life have led me to re-evaluate what is important and unimportant.					
EC12	Whenever I face a crisis, I look at the brighter side of the situation.					
Category 3: Locus of Control		SA	A	NA	DA	SDA
LC1	Careful Investing is the key factor to becoming wealthy.					
LC2	People suffer investment losses due to their own idleness.					
LC3	When I make investment plans, I am almost certain to make them work.					
LC4	In the long run, people who take care of their investments show greater signs of financial well-being.					
LC5	I am usually able to protect my investment interest.					
LC6	When I get what I want, it is usually because my smart investments have worked out well.					
LC7	I can pretty much predict what unforeseen changes are likely to happen in the market.					
LC8	My decision on my intuition motivates me to take risky investments to challenge my future.					
Category 4: Overconfidence Bias						
OB1	I take rash decisions rather than informed ones.					
OB2	I am confident that my investment knowledge is above average.					
OB3	I overestimate my ability to evaluate a company.					
OB4	I like taking independent investment decisions which give me better outcomes.					

OB5	I believe that my choice of investment avenues is the right one.					
OB6	My investment expertise leads me to trade excessively.					
OB7	I would always wait to pick the next big stock that makes me feel more special.					
OB8	I rely on my own estimations and ideas of things rather than facts					
OB9	I do not easily change my views about investments once they are made.					
OB10	I buy certain company stocks I want even if they are not the best financial choices.					
Category 5: Frame Dependence Bias						
FDB1	I buy certain company stocks I want only if they are the best financial choices.					
FDB2	Poor past financial decisions have caused me to change my current investing decisions.					
FDB3	I sometimes get attached to certain of my investments, which may cause me not to act on them.					
FDB4	I often act on a new investment right away if it makes better sense to me.					
FDB5	I often find that many of my successful investments can be attributed to my decisions, while those that did not work were based on others' guidance.					
FDB6	I trust the advice on investment from rationally advertised firms than from smaller, local firms.					
FDB7	I invest in companies that make products I like or that reflect my personal values.					
FDB8	When reflecting on my past investment mistakes, I see that many could have been easily avoided.					

FDB9	Many investment choices I make are based on knowledge of how similar past investments have performed.					
FDB10	While making investment decisions, I tend to focus on the positive aspects of such investments rather than on what would go wrong with the investment.					
Category 6: 'Snake-Bite Effect' Bias						
SBE1	The pain of financial loss is at least two times stronger than the pleasure of financial gain.					
SBE2	When considering changing my equity portfolio, I spend time thinking about options but often end up changing nothing sometimes.					
SBE3	I try to avoid buying stocks in which I had incurred losses earlier.					
SBE4	I don't want to invest in high-risk stocks though they bring huge returns.					
SBE5	I search for opportunities for repeated buying of such stocks in which I made gains earlier.					
SBE6	When the price drops temporarily, I sell the stocks to prevent losses.					
SBE7	I believe in the saying, "fool me once shame on you, fool me twice shame on me".					
SBE8	Having lost my investments initially, I am very much cautious in my further decisions.					
SBE9	I am not ready to challenge my bright future by investing in inappropriate stocks.					
Category 7: Risk Perception						
RP1	A diversified portfolio reduces my risk.					
RP2	The higher an investment yield rate, the greater will be its associated risk.					

RP3	The more familiar an investment, the less risky it ought to be.					
RP4	My approach is to be cautious and wait while given an option to choose risky investments.					
RP5	The more money one has, the more investment risk he/ she can take.					
RP6	My broker decides the best investment option for me.					
RP7	Older investors take lesser investment risks comparatively.					
RP8	The New Generation of investors are risk lovers and prefer making profits out of aggressive stocks.					
RP9	The need to liquidate quickly doesn't prohibit me from considering risky projects.					
RP10	The investment choices perform well in line with my goals.					
RP11	The investments I choose have a significant value and will perform better in the future.					
RP12	I believe that the consequences of my investment behaviour is within my control.					
Category 8: Risk Attitude						
RA1	When I think of the word "Risk", I consider it as an opportunity or a thrilling event.					
RA2	I define investment in equity as an amusing drive towards aggressive stocks.					
RA3	I can minimise the consequences of risk-taking by forward planning and prepare for each outcome.					
RA4	I have control over my outcomes even if the portfolio is difficult to attain.					

RA5	Before taking any decision, I try to anticipate the factors influencing my outcomes.					
RA6	Potential negative consequences motivate me to take huge risks.					
RA7	Every minute details cost me valuable in taking my decision towards equity investments.					
RA8	Evaluating a portfolio based on its pros and cons is important to me before making any final decision.					
RA9	When I make any risky decision, I plan for the “worst case” scenario.					
RA10	I believe that the best way to motivate myself to take risks is to offer an appealing reward.					
RA11	I would describe my tolerance for capital fluctuation as high.					
RA12	Accepting risky investment projects is a sign of my prestige-seeking behaviour.					
RA13	I believe that my trust is fostered based on the strong ethical culture of the company I invest.					
RS 14	If I undergo a risk of loss, I would rather take steps towards improvement without considering it as a matter of luck or fate.					
RA15	I feel comfortable if my investment decisions are made by automated programs.					
Category 9: Financial Risk Tolerance						
FRT1	I expect my income and investment earnings to grow substantially over the next 10 years.					
FRT2	I am able to accept negative returns annually during difficult phases in the market cycle.					
FRT3	If I were to potentially improve my investment returns by taking more risky					

	investments fluctuating in value over time, then I would take a lot more risk with my entire portfolio.					
FRT4	I don't mind if I lose money during the next three year's performance of my investment.					
FRT5	I wouldn't worry about losses in the time frame during the next three months' performance of my investment.					
FRT6	Suppose the stock market performs unusually poor over the next decade, I expect to make a modest gain from the investment.					
FRT7	Once made an investment, I expect to withdraw them sooner within 5 years.					
FRT8	Once I begin to make my withdrawals, I would continue the same for up to 10 years.					
FRT9	I am willing to accept investments with a higher degree of volatility and risk of loss in exchange for the potential to achieve higher average returns over time.					
FRT10	If the market value for my stock has dropped by 25%, then I would move my money to different investments to reduce the potential for future losses.					
FRT11	I am willing to withstand some fluctuations in my investment.					
FRT12	Protecting my portfolio is more important to me than high returns.					
FRT13	I am willing to bear the consequences of a loss to maximise my returns.					
FRT14	I prefer investing in blue-chip stocks that pay dividends.					
FRT15	I describe my investment attitude as very aggressive.					

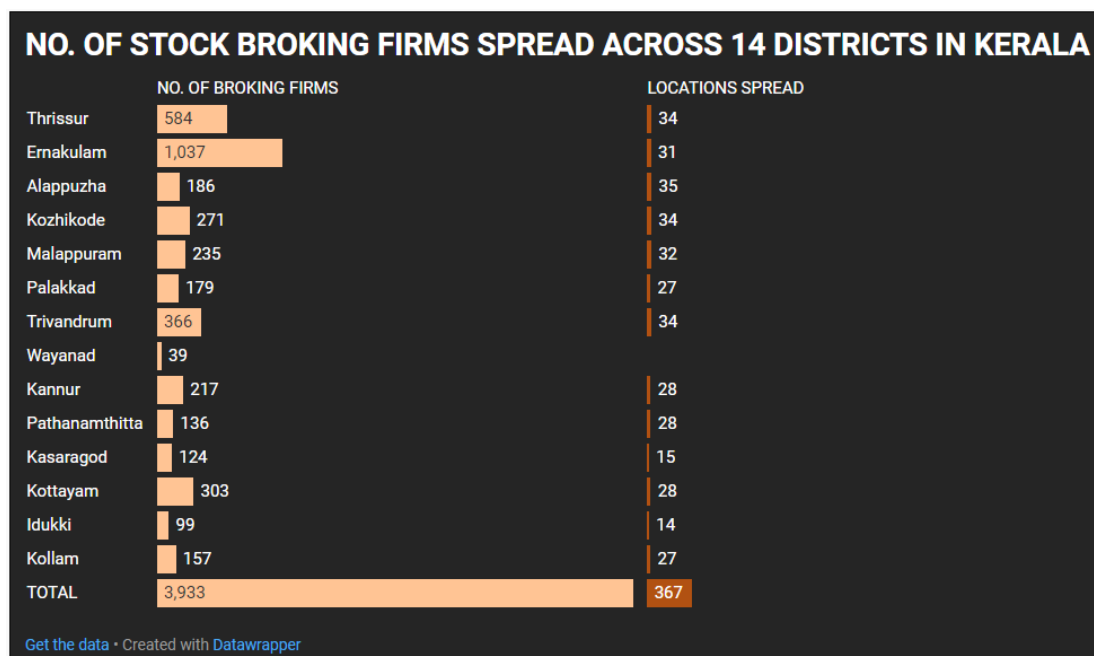
Category 10: Investment Decision						
ID1	When making an equity investment, I trust my inner feelings and reactions.					
ID2	I generally make an investment that feels right to me.					
ID3	No matter what I do, I have the highest standards for my equity investment decisions.					
ID4	I like to discuss financing options before making a final decision about them.					
ID5	I consider different levels of risk associated with stock before investing in the stock market.					
ID6	I would like to realise the gain as soon as the stock increases in price.					
ID7	I make sure that my investment in stock has a higher degree of safety investment decision-making.					
ID8	I would like to search for information about firms' expected earnings before investing in their share.					
ID9	I would take advice on market options from friends/ family before taking final decisions on my investment.					
ID10	I rely on my past experience in the market for the next investment to be made.					
ID11	It's important for me to be in control of my finances.					
ID12	I select the company stocks based on their performance in the market along with their historical records.					
ID13	Companies certified ethically strong are of greater priority for me to invest.					
ID14	When I suffer a financial setback, I can influence the situation to the greater extent possible.					

ID15	Accepting reality and taking action accordingly is the key to tolerating highly risky situations.					
ID16	I am ready to contribute some portion of my portfolio for economic growth and development.					
ID17	I am ready to change my goal path if my existing decisions prove fatal to my returns.					
ID18	I would like to be financially independent and solely responsible for my portfolio decisions.					
ID19	Making one decision at a time reduces my stress and anxiety about my investment.					
ID20	If my pocket goes “out of balance”, I believe that such consequences wouldn’t last forever.					
ID21	I adopt a flexible approach to keep my investment alternatives sustained.					

Thank You for your sincere responses.

APPENDIX 2.1

VALUE RESEARCH ONLINE RESULTS, 2020:



APPENDIX 2.2

DETAILS OF FULL BROKING AND DISCOUNT BROKING SHARE TRADING FIRMS (BASED ON BRAND VISIBILITY AND INVESTORS' PERCEPTION- AS PER THE VALUE BROKING RESEARCH REPORT, 2020)

References:

<https://www.valuebroking.com/stock-broker>

<https://www.valuebroking.com/stock-broker/kerala>

Broking Firm	SEBI Registration	Segments @ NSE & BSE	Current Status	Type of Investors served	Branches in India	Branches in Kerala
Zerodha	INZ000031633	Equity, Commodity, Derivatives, Mutual Funds, WDM, Currency Derivatives	Active	Retail	231 Sub brokers across 22 states & 108 cities	12 branches (Kozhikode, Ernakulam, Thrissur, Trivandrum, Pathanamthitta, Kollam, Wayanad, Palakkad)
ICICI Securities	INZ000183631	Equity, Derivatives, New Debt Segment, WDM, Mutual Funds, Currency Derivatives	Active	Retail & Institutional	13 branches (8 states & 9 cities)	7 offices (Kozhikode, Ernakulam, Thrissur and Trivandrum)

Broking Firm	SEBI Registration	Segments @ NSE & BSE	Current Status	Type of Investors served	Branches in India	Branches in Kerala
HDFC Securities	INZ000186937	Equity, Derivatives, Mutual Funds and Currency Derivatives	Active	Retail & Institutional	282 branches (26 states & 162 cities)	10 offices in 7 cities (Ernakulam, Kozhikode, Kannur, Thrissur, Trivandrum, Palakkad and Pathanamthitta)
Sharekhan	INZ000171337	Equity, Derivatives, Mutual Funds, Currency Derivatives, Commodities	Active	Retail	240 branches (22 states & 103 cities)	10 offices in 5 cities (Thrissur, Palakkad, Trivandrum, Ernakulam and Kozhikode)
Kotak Securities	INZ000200137	Equity, Commodity, WDM, Mutual Funds, Currency Derivatives	Active	Composite Corporate	42 branches (13 states & 21 cities)	20 offices (Kozhikode, Palakkad, Thrissur, Kottayam, Ernakulam, Malappuram and Kannur)
Angel Broking	INZ000161534	Equity, Derivatives, Mutual Funds, Currency	Active	Retail & Institutional	142 cities (14 states & 35 cities)	15 offices (Kozhikode, Thrissur, Kollam, Kannur,

Broking Firm	SEBI Registration	Segments @ NSE & BSE	Current Status	Type of Investors served	Branches in India	Branches in Kerala
		Derivatives, Commodities				Malappuram, Ernakulam & Pathanamthitta
Axis Securities Ltd.	INZ000161633	Equity, Derivatives, Mutual Funds, Currency Derivatives, Commodities & New Debt Segment	Active & Inactive	Corporate	204 stock brokers in toto (23 states & 74 cities)	8 branches & 6 cities (Kozhikode, Trivandrum, Thrissur, Malappuram, Kottayam & Ernakulam)
Motilal Oswal Financial Services	INZ000158836	Equity, Derivatives, Mutual Funds, Currency Derivatives, Commodities & New Debt Segment	Active	Composite Corporate	29 branches (14 states & 19 cities)	20 branches (Malappuram, Kozhikode, Kannur, Alappuzha, Thrissur & Palakkad)
SBI Cap Securities	INZ000200032	Equity, Derivatives, WDM, Mutual Funds &	Active	Retail & Institutional	132 branches (26 states & 70 cities)	3 offices (2 cities- Ernakulam & Trivandrum)

Broking Firm	SEBI Registration	Segments @ NSE & BSE	Current Status	Type of Investors served	Branches in India	Branches in Kerala
		Currency Derivatives				
Upstox	EXCHREGD	Equity, Derivatives, Commodity	Active & Inactive	Retail	3 corporate offices & 11 partner offices	9 branches (Wayanad, Palakkad, Kollam, Trivandrum, Thrissur, Ernakulam, Kozhikode & Kannur)
Geojit Financial Services	INZ000104737	Equity, Derivatives, Mutual Funds, Currency Derivatives	Active	Retail & Institutional	213 branches (19 states & 2 Union Territories)	60 Offices & 12 cities (Kannur, Ernakulam, Trivandrum, Thrissur, Malappuram, Kottayam, Kollam, Kozhikode, Palakkad, Kasaragod, Idukki, Pathanamthitta)
Vertex Securities Limited	INZ000204731	Equity, WDM and Mutual Funds	Active	Retail	98 Authorised persons	54 sub-brokers spread across 13 cities (Kottayam, Palakkad,

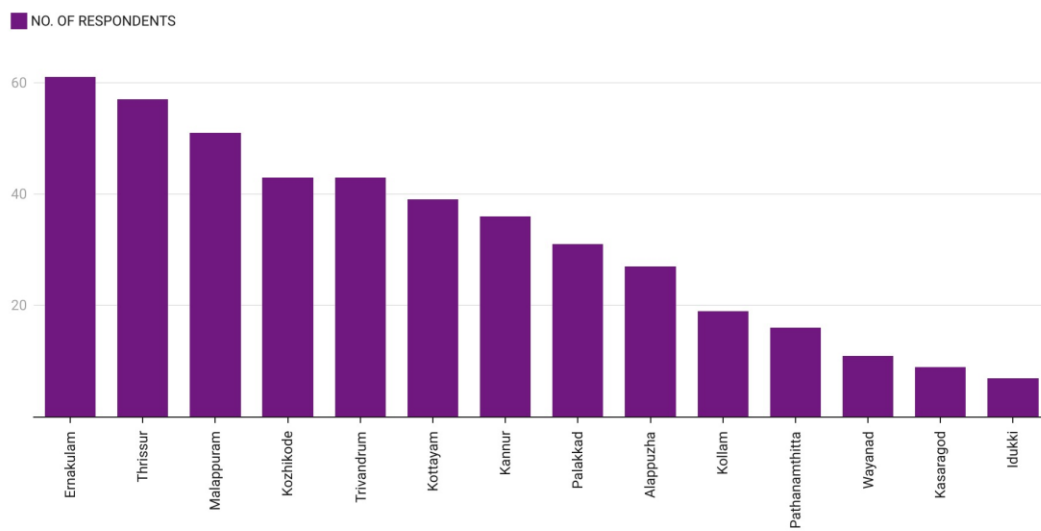
Broking Firm	SEBI Registration	Segments @ NSE & BSE	Current Status	Type of Investors served	Branches in India	Branches in Kerala
						Alappuzha, Trivandrum, Kannur, Ernakulam, Idukki, Kozhikode, Thrissur, Pathanamthitta, Wayanad, Kollam & Malappuram)
DBFS Securities Limited	INZ000178534	Equity, Mutual Funds	Active	Retail & Institutional	298 Authorised persons	156 sub-brokers spread across 13 cities (Kottayam, Palakkad, Alappuzha, Trivandrum, Kannur, Ernakulam, Idukki, Kozhikode, Thrissur, Pathanamthitta, Kasaragod, Kollam & Malappuram)
Capstocks & Securities India	Exchange Registered	Equity, Derivatives, Mutual Funds, Currency	Active & Inactive	Retail & Institutional	208 Authorised persons	123 sub-brokers across 13 cities (Kottayam, Palakkad, Alappuzha,

Broking Firm	SEBI Registration	Segments @ NSE & BSE	Current Status	Type of Investors served	Branches in India	Branches in Kerala
		Derivatives & Commodity				Trivandrum, Kannur, Ernakulam, Idukki, Kozhikode, Thrissur, Kasaragod, Wayanad, Kollam & Malappuram)
Sharewealth Securities	Exchange Registered	Equity, Derivatives, Mutual Funds & Currency Derivatives	Active	Retail & Institutional	156 Authorised persons	119 sub-brokers across 12 cities (Kottayam, Palakkad, Alappuzha, Trivandrum, Kannur, Ernakulam, Kozhikode, Thrissur, Kasaragod, Pathanamthitta, Kollam, & Malappuram)
5Paise	INZ000010231	Equity, Derivatives, Mutual Fund & Commodity	Active & Inactive	Retail	2 Authorised persons	1 branch (Trivandrum)

Broking Firm	SEBI Registration	Segments @ NSE & BSE	Current Status	Type of Investors served	Branches in India	Branches in Kerala
Acumen Capital Market	INZ000170434	Equity & Derivatives	Active	Retail & Institutional	23 offices (6 states & 13 cities)	10 offices & 7 cities (Trivandrum, Palakkad, Thrissur, Kottayam, Ernakulam, Kollam & Pathanamthitta)
IIFL Securities	INZ000164132	Equity, New Debt Segment, WDM, Mutual Funds, Currency Derivatives & Commodity Derivatives	Active	Retail & Institutional, Proprietors, Arbitrage	378 branches (24 states & 209 cities)	29 offices & 13 cities (Ernakulam, Kollam, Kasaragod, Pathanamthitta, Thrissur, Kozhikode, Palakkad, Kottayam, Malappuram, Wayanad, Kannur, Alappuzha & Idukki)

APPENDIX 2.3

TOTAL NUMBER OF RESPONDENTS SELECTED FOR THE STUDY (BASED ON DISTRICT-WISE RANKING)



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APPENDIX 2.4

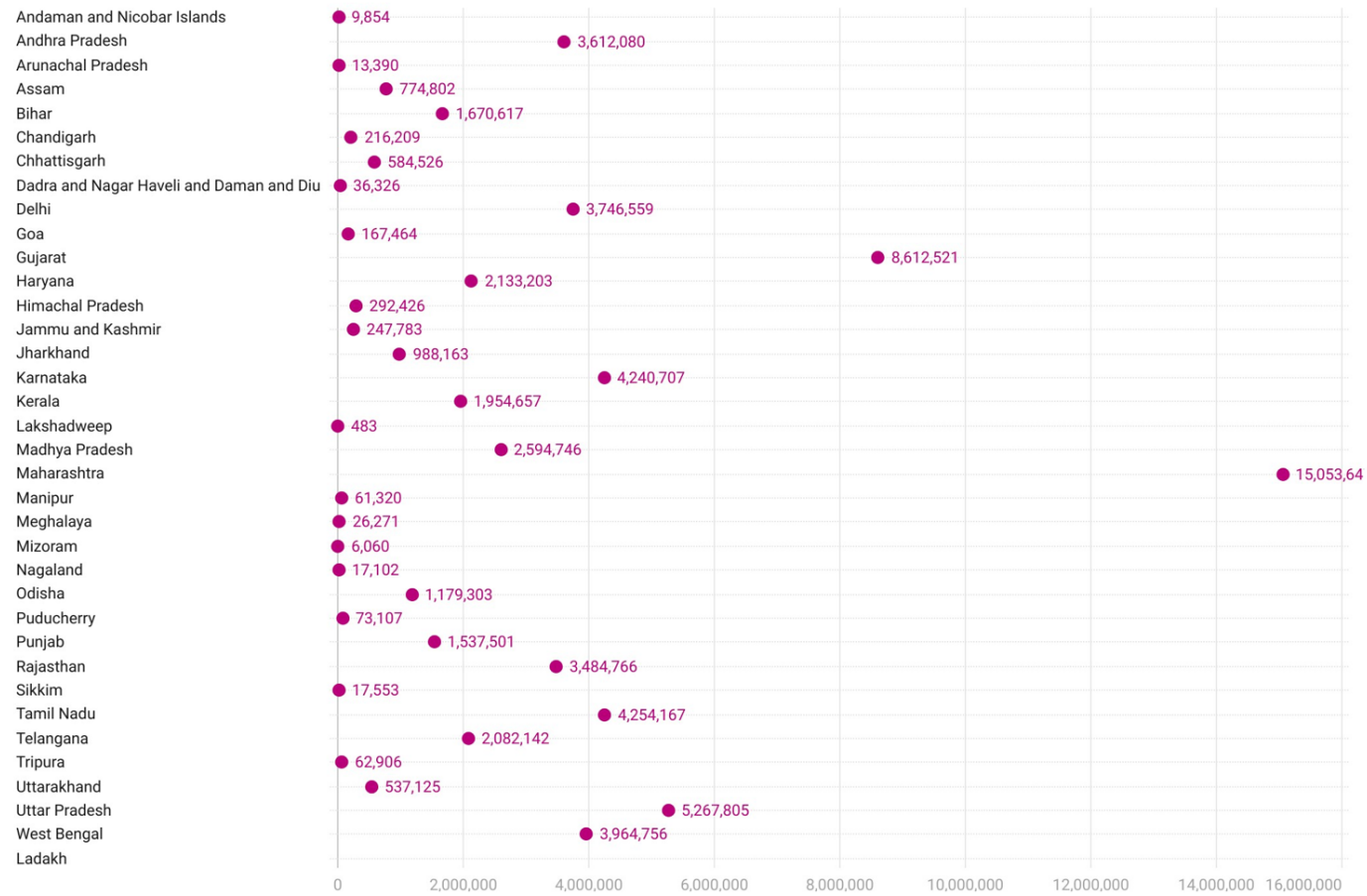
TOTAL NUMBER OF RESPONDENTS SELECTED FOR THE STUDY (BASED ON DISTRICT-WISE RANKING)

DISTRICT ZONES	NO. OF RESPONDENTS
NORTH	
Kozhikode	43
Kannur	36
Kasaragod	9
Wayanad	11
CENTRE	
Ernakulam	61
Thrissur	57
Malappuram	51
Palakkad	31
SOUTH	
Trivandrum	43
Kottayam	39
Alappuzha	27
Kollam	19
Pathanamthitta	16
Idukki	7
TOTAL	450

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APPENDIX 2.5

REGISTERED INVESTORS WITH BSE (2020-2021)



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