PRE-RETIREMENT FINANCIAL BEHAVIOUR AND FINANCIAL LITERACY A KEY TO RETIREMENT PLANNING AND ADEQUACY AMONG WORKING PROFESSIONALS OF IT AND ITES SECTORS IN INDIAN METRO CITIES

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By
Daniel Frank

Registration Number: 42000215

Supervised By
Dr. Rupesh Roshan Singh (21932)
Professor
Mittal School of Business

LOVELY PROFESSIONAL UNIVERSITY, PUNJAB

2023

DECLARATION

I, hereby declare that the presented work in the thesis entitled "Pre-Retirement Financial Behaviour and Financial Literacy a Key to Retirement Planning and Adequacy among Working Professionals of IT and ITES sectors in Indian Metro Cities" in fulfilment of degree of **Doctor of Philosophy (Ph. D.)** is the outcome of research work carried out by me under the supervision of Dr. Rupesh Roshan Singh, working as Professor in Mittal School of Business, Lovely Professional University, Punjab, India. In keeping with general practice of reporting scientific observations, due acknowledgements have been made whenever work described here has been based on findings of other investigator. This work has not been submitted in part or full to any other University or Institute for the award of any degree.

DANIEL FRANK
Registration No. 42000215
Mittal School of Business
Lovely Professional University,
Punjab, India

CERTIFICATE

This is to certify that the work reported in the Ph. D. thesis entitled "Pre-Retirement Financial Behaviour and Financial Literacy a Key to Retirement Planning and Adequacy among Working Professionals of IT and ITES sectors in Indian Metro Cities" submitted in fulfilment of the requirement for the reward of degree of **Doctor of Philosophy (Ph. D.)** in Mittal School of Business, is a research work carried out by Daniel Frank, Registration Number 42000215**,** is bonafide record of his original work carried out under my supervision and that no part of thesis has been submitted for any other degree, diploma or equivalent course.

DR. RUPESH ROSHAN SINGH
Professor
Mittal School of Business
Lovely Professional University,
Punjab, India

ABSTRACT

Retirement has witnessed a drift over time from the customary practise of retiring at a designated age to self-defined retirement based on individuals' retirement preparedness and confidence. If individuals can retire at the targeted retirement age and maintain their preretirement standard of living with their saved retirement funds, we can determine them as retirement-ready. Regardless of whether retirement is voluntary or involuntary, moving from active employment and being retired is a drastic change and an important event. Studies have elucidate retirement to alter individual's identity in society and affect their lifestyle and post-retirement consumption pattern (Hopkins et al., 2006). Satisfaction in retirement is a key indicator towards wellbeing and quality of life during retirement. Studies on retirement satisfaction emphasize the need and importance of individual resources (Amorim et al., 2020) and planning to the perception of satisfaction of an individual post retirement. Retirement planning predominantly include evaluation of the available resources and creation of strategies to ensure a smooth transition at the end of employment. Employees nearing retirement lack adequate preparation and possessions, which is critical for retirement planning. Early planning and saving yield better results in terms of investments and financial security for a comfortable post retirement life as individuals have limited time to plan for retirement. Planning for retirement must be initiated and implemented at the beginning of the career rather than leaving it for career end.

Employers are key to facilitate a feasible working plan for the retirement of their employees. The "New Straits Times" article sheds light on the deplorable state of the retirement policies followed by the employers across multiple industries. This can be attributed to the fact that employers considered retirement planning to be a personal decision of the employees. In addition, it is commonly seen that employers encourage the employees only after 45 years of age towards retirement planning. This scenarios needs a complete revival. Individuals who plan during their formative years of employment possess adequate flexibility to take risk, invest in multiple portfolios, evaluate the returns and learn from peers, friends and family. It is observed that only the older employees closer to retirement predominantly access resources on retirement planning like workshops, seminars, reading material etc. It would be extremely strenuous for an older individual to initiate retirement planning due to professional and personal commitments and nothing much can be achieved in such ripe years as the age for retirement in India is 58 or 60 years implying that the individual has merely 15 years to plan retirement.

Literature on retirement planning manifests the importance of superior financial literacy for effective retirement planning. It supports the idea of early planning for retirement, enabling individuals to plan effectively and customise investment portfolios according to their needs. The life-cycle model elucidates that the quality of life after retirement is greatly influenced by financial behaviours. Incoherent decision regarding retirement is often due to poor retirement planning, which is directly correlated to inadequate financial literacy. The role of personality characteristics and behavioural constraints were explored in explaining retirement saving, estimating the total funds needed for retirement. An affirmative association was identified among financial literacy and attitudes of individuals towards saving and investment. Social influence from the society, peers, family and friends helped individuals to have goal clarity, thus influencing retirement planning. This also improved their willingness to learn more about retirement planning which is the moderator of the study. Retirement self-efficacy also showed a positive relationship with individual investment behaviour. Thus, in the light of theoretical and empirical literature showing the importance of superior financial literacy, the study explored the mediating role of retirement planning to achieve retirement adequacy and retirement satisfaction.

The research conducted detailed empirical investigation on seven major information technology and information technology enabled service hubs of India viz., Bangalore, Bhubaneshwar, Chennai, Delhi, Hyderabad, Kolkata and Pune. Purposive sampling method was adopted to collect responses from these seven cities as listed by the National Association of Software and Service Companies (NASSCOM), India. The study examined the effect of superior financial literacy on individuals' financial behaviours viz., saving attitude, borrowing pattern, investment decision, insurance allocation and spending behaviour and the impact of these financial behaviours on retirement planning. The study further analysed the mediating role of retirement planning in achieve the endogenous variables retirement adequacy and retirement satisfaction. Using Smart PLS 4, the study has selected path-weighting scheme as the structural model for the data analysis. Raw data transformation provided standardised data for indicators (Hair et al, 2017). The research adopted stop criterion 1.10^{-5} for algorithm convergence as it is considered to be the threshold for the purpose of the study. The research also choose maximum number of iterations at 300 for the purpose of the study.

The hypotheses testing the relationship between the exogenous constructs of financial behaviours viz., saving attitude, borrowing pattern, investment decision, insurance allocation and spending behaviour and the endogenous constructs of retirement adequacy and retirement satisfaction was conducted using Partial Least Squares Structural Equation Modelling (PLS-SEM). The model also incorporated retirement planning as the mediating construct. Therefore, there exists model complexity for which PLS-SEM approach was found to be appropriate. PLS-SEM recommends using composite reliability to determine internal consistency reliability while measuring reliability. The research measured the absoluteness of the constructs by measuring the discriminant validity. Here, the research squared the variable correlation as measured through Average Variance Extracted (AVE). Fornell-Larcker Criterion is used to assess the discriminant validity among the latent constructs. Post the calculation of measurement models, the research also conducted structural model assessment.

Findings of this research on Importance Performance Matrix Analysis (IPMA) reveal that spending behaviour assumes the highest degree of importance in the structural model of the present study despite the fact that its performance is relatively more than saving attitude, borrowing pattern, and insurance allocation. According to the study, Finite-Mixture Partial Least Square (FIMIX-PLS) segment analysis has observed the confirmed heterogeneity in the inner path model. Applying FIMIX-PLS to appraise cumulative models will not have any impact on the estimated result despite the fact that it is built on the confirmed standard plan and guarantees unobserved heterogeneity. The relative segment sizes are found as four for alternative FIMIX-PLS solutions. The research has found support for location through Multi Group Analysis (MGA), which revealed distinct results for each of these seven locations. Permutation algorithm was implemented to compare the groups. Furthermore, the permutation process is used in the PLS-SEM, MICOM (Measurement Invariance Composite Model) procedure. MICOM is used to determine whether substantial inter-group differences are the result of construct variations between groups. The study concluded by emphasising the importance of superior financial behaviours as the driving force for efficient retirement planning which is for achieving retirement adequacy and retirement satisfaction.

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CHAPTER - 1

INTRODUCTION

1.0 Introduction

This chapter explains the influence of the construct financial literacy on individual's financial behaviour resulting in effective retirement planning to achieve retirement adequacy and retirement satisfaction. The first section of the chapter provides an overview of retirement, retirement planning, financial literacy and how individuals' financial behaviour is altered due to superior financial literacy. It highlights the existing retirement process in India and the satisfaction level focusing on the IT and ITES sectors. Further, this chapter includes the significance of the study, operational definitions, research aims, and the impetus for the investigation is covered in this chapter. The chapter's conclusion includes a thesis overview. A summary of this chapter's contents is shown in picture 1.1.

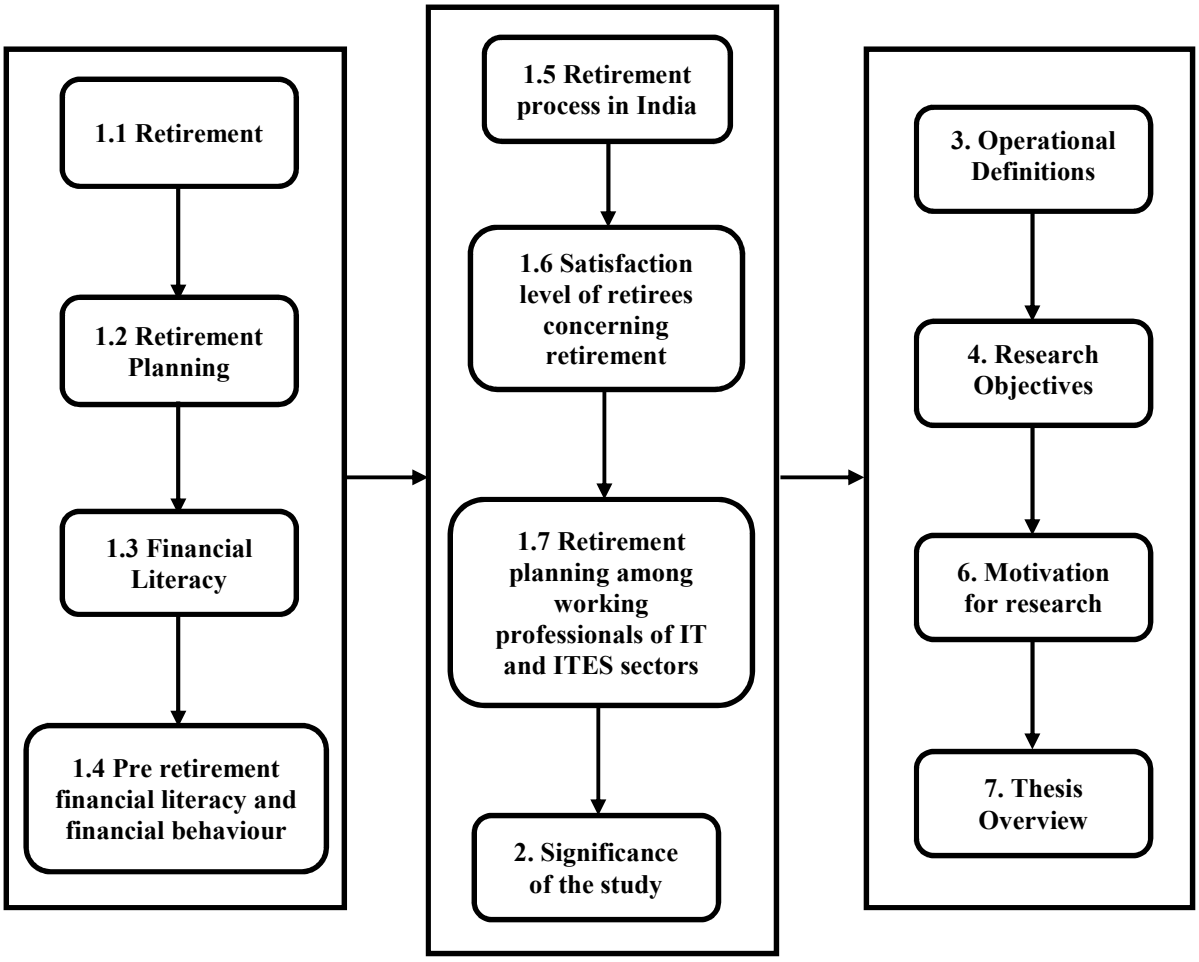

Figure 1: A summary of Chapter 1

1.1 Retirement

Retirement has drifted from traditional practice of retiring to self-defined retirement based on retirement readiness and confidence (Shultz and Wang, 2011). The ability to retire at the targeted retirement age while maintaining the pre-retirement lifestyle indicate that individuals are prepared for retirement. Whether retirement is intentional or forced, transitioning from active work to retirement is a significant adjustment. Retirement most often may change individual's social identity, lifestyle, and purchasing patterns (Hopkins et al., 2006) as it is the apex of corporate socialization and assimilation processes. Financial well-being of retired individuals depend on their accumulated savings (Vyas, 2021) as advancement in technology and health care has elongated this stage of life (Palaci et al., 2018). Early planning and saving for retirement is critical for leading a secured life. Individuals must balance the quantum of their savings based on their potential to save in order to secure a comfortable lifestyle while preparing for retirement (Shultz and Wang, 2010).

Satisfaction during retirement predicts the happiness and quality of life. Individual resources (Amorim et al., 2020) and planning (Froidevaux et al., 2016) is emphasized on retirement contentment to the feeling of satisfaction post-retirement. Table 1.1 analyses retirement indices of top 10 countries throughout the globe using the data from Mercer CFA Institute's "Global Pension Index" for the year 2021[1]. It is not ideal to make direct parallels of different countries since each country's system has a unique bearing on its historical and economic background. However, several components are uniformly beneficial, and contribute to improved financial assistance for the senior residents during retirement.

Table 1.1: Retirement income schemes among the top 10 countries

Country	Overall Value	Adequacy	Sustainability	Integrity
Iceland	84.2	82.7	84.6	86.0
Netherlands	83.5	82.3	81.6	87.9
Denmark	82.0	81.1	83.5	81.4
Israel	77.1	73.6	76.1	83.9
Norway	75.2	81.2	57.4	90.2
Australia	75.0	67.4	75.7	86.3

[1] Retrieved July 16, 2022, from Mercer.com website: https://www.mercer.com/content/dam/mercer/attachments/private/gl-2021-global-pension-index-mercer.pdf

Finland	73.3	71.4	61.5	93.1
Sweden	72.9	67.8	73.7	80.0
United Kingdom	71.6	73.9	59.8	84.4
Singapore	70.7	73.5	59.8	81.5

Table 1.1 divides the factors into three sub-indices (i). Adequacy, which is the base income level of a country's private pension system and its structures. (ii). Sustainability, which is the state's pension age, the extent to which the government has advanced financing, and the extent to which the government has borrowed. (iii). Integrity, the rules and procedures established by the administration. Forty-three countries' pension schemes were ranked based on the above three identifiers. Overall, Iceland's system ranks the best across the board. Mandatory contributions from employees, companies and voluntary contributions to state-approved pension systems form the basis of the Iceland's retirement plan. Look at the Indian scenario, India ranks 40 among the total participants of 43, indicating that the government needs to make major changes to modernize its pension system to secure sustainable retirement income. With the unorganized sector employing more than 90% of the total workforce, policy makers should take action to improve labour involvement in pension savings. The Indian government in an attempt to address the situation has established numerous Programmes to aid the unorganized sector as part of its universal social security scheme. Fundamental and planned transformations in the system will improve the level of adequacy and sustainability within the social security system for the benefit of every Indian citizen (Sanyal and Singh, 2013).

Individual retirement funds have been a source of concern for governments worldwide. According to the "Natixis Global Retirement Index," published in 2017 by "Natixis Global Asset Management," the retirement savings deficit is likely to reach $400 trillion US dollars by 2050 (Tripathi, 2019). As per the EBRI 2017 poll (Employee Benefits Research Institute, USA), 39% of families in the United States of America did not protect earnings for retirement. It can be said that a large number of workers are worried about their capability to form a secure superannuation plan. Learn to Trade, a UK-based forex teaching firm, has commissioned a survey that predicts pension crisis in United Kingdom by the end of 2028. "The United Kingdom's "Department for Work and Pensions" has claimed that four out of every ten employees may be eligible for auto-enrolment in its flagship saving programme and be considered "under-saving" for retirement. The abolition of fixed retirement practice by the UK

government has made it hard for businesses to demand their employees to retire just because they have reached the age of 65 or are older[2]. A survey conducted by CIBC in 2018 found that one-third of Canadians between the ages of 45 and 64 do not have any savings set up for retirement[3]. This fluctuation, along with increases in average life expectancy, is pushing a considerable number of individuals to work past the age at which they expected to retire even though the process and technicality of retirement is approached in multiple dimensions globally.

Indian employees are more hopeful about retirement in 2022 as compared to their global contemporaries (Voydanoff, 1990). Aegon Retirement Readiness Survey 2021 declared India as the most prepared nation among respondents from 15 nations with regards to superannuation. Personal responsibility, awareness, financial comprehension, superannuation preparation, financial readiness, and income replacement are the six characteristics used to calculate the Aegon Retirement Readiness Index (ARRI). According to the survey, Indians have different expectations for how they will finance their retirement than the worldwide norm. Approximately 43% of respondents expect to finance most of their retirement income from their savings and investments as compared to 30% pensioner worldwide who plan to self-fund their retirement and rely on payments from their companies and the government to keep them going. While 60% of Indian employees save regularly, about 25% set away money for retirement from their infrequent surpluses. Only 16% of Indian employees indicated they do not save at all, a substantially lower proportion than the worldwide figure of 37% of employees who do not save.

1.2 Retirement Planning

Early planning for retirement with a well-structured financial plan helps working individuals devise a robust and safe shelter after retirement. Working individuals have different attitudes regarding retirement planning. A person's conduct towards retirement planning is influenced by age, education, income level, objective clarity and attitude toward retirement. Initiating a retirement plan at an early age is ideal (Moorthy et al., 2012a). This facilitates higher retirement savings during retirement as opposed to those who did not plan their retirement during their

[2] Gov.UK., "Default Retirement Age to End This Year." https://www.gov.uk/government/news/default-retirement-age-to-end-this-year.

[3] CIBC. "Am I Saving Enough to Retire? Vast Majority of Canadians Just Don't Know" https://cibc.mediaroom.com/2018-02-08-Am-I-saving-enough-to-retire-Vast-majority-of-Canadians-just-dont-know-CIBC-poll

early employment years. Most individuals see retirement as the period where they are no longer compelled to work and earn, but spend their time traveling, engaging in hobbies and interests (Hopkins et al, 2006). This can be achieved with thorough financial planning, as it not only include the capacity to engage in chosen leisure activities but also managing daily living expenditures. To be free of financial insecurity and to be able to enjoy retire life; individuals need to save throughout, which enables them to finance both enjoyable and unpleasable costs (Jappellli and Padula, 2013). Retirement planning thus develops and implements a systematic savings strategy taking into consideration inflation, healthcare costs, and other unforeseen expenses. The study attempts to analyze the behavioral patterns involved in financial decision-making for an improved understanding of individual's capacity to take decisions concerning the idea of investments and savings for retirement.

Methodical financial planning and its execution results in the accumulation of sufficient money for a pleasant life post retirement. Individuals estimate the overall funds necessary for the future while preparing for retirement and savings are allocated to various products and a comprehensive portfolio of financial products that yield interest or dividends are created to earn the desired savings after retirement. Government-run pension funds, employee-run pension funds, a class of fixed income financial assets, market-related stocks, and other derivative products are among the financial goods available. The individual's risk tolerance and the number of years until retirement influence the selection of investment product(s). The process of retirement financial planning entails several difficult choices that must be taken (Lussardi, 2003). To maximize welfare, the standard economic theory implies efficiently analyzing all information and making unbiased probabilistic judgments. Herbert Simon (1956) contended that there are cognitive constraints to analyzing all available information to make a sensible choice. Behavioral economic theory entails that humans have limited self-control, which may contribute to low savings performance. Behavioral economics research on retirement savings has verified the importance of behavioral economics ideas (Henrich et al, 2010). It would be fascinatig to look at the role of these behavioral obstacles in the context of Indian respondents, who may vary from their western counterparts owing to social conditioning (Hofstede et al, 2010).

1.3 Financial Literacy

Financially literate refers to the practice of being able to use information and skills in a way that renders effective management of all the financial resources available to them (Kapoor et

al., 2014). An individual will comprehend their financial situation and choose to improve it to impart certain positive habits of managing finances, such as making personal budgets, saving and investing on time plans. Financial literacy affects the quality of financial planning and is an important criterion to ensure the economical sustainability along with financial security. Planning personal finances is not a one-time thing. It should be done by following a methodology keeping the specific objectives. The primary purpose of personal financial planning is to guarantee the attainment of life goals via effective financial management by participating in different personal financial planning fields, such as planning one's tax payments, property purchasing, and life after superannuation (Patel and Kumar, 2017). Financial planning enables individuals who attain the retirement age with sufficient funds and make them independent (Botha et al., 2014). It also offers financial security since a strong personal retirement plan assures a higher quality of living and helps governmental spending and expenditures (Kock et al., 2012).

Financial literacy entails the understanding of fundamental economic and financial ideas. It is the mental capacity to utilize this understanding and other money management skills to properly accomplish fiscal resource accumulation (Hung, 2009). It is the thought process involved in deciphering the quantum of spending (Lusardi and Mitchell, 2014). Financially literate individuals make solid financial choices to mitigate their financial troubles and utilization of resources. The awareness of personal finance management comes from consistency in controlling the expenditure because financial information also includes skills of self-control, attitudes towards the differentiated expenditure, and behavioral patterns (Sebstad et al., 2014). Studies show that financial literacy is critical for making comprehensive financial choices for saving, investing, and retirement planning. It's also required to link retirement plans to financial literacy which is the ability to transform individuals' plan for creating and compounding wealth. Individuals cannot merely calculate effectively but comprehend the effects of inflation and understand its risks. Financial literacy helps to analyze wealth diversification and prepare for retirement. Therefore, financial literacy might be a significant predictor of personal finance and retirement planning.

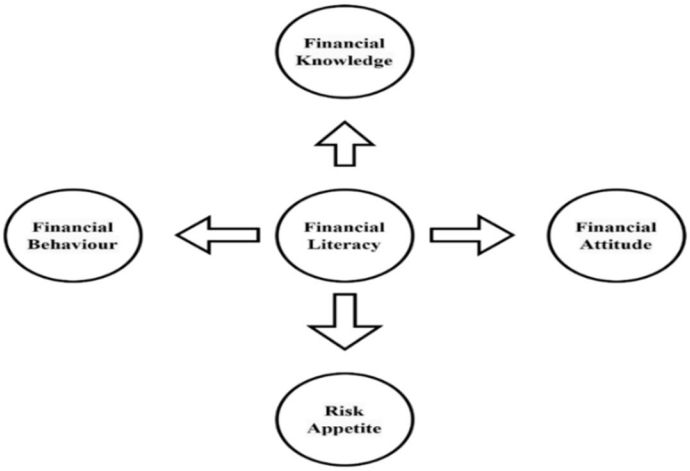

Figure 1.1: Dimensions to Financial Literacy

Financial literacy is composed of two components: knowledge and experience (Fig. 1.1). It includes the capability to communicate on matters related to different types of financial theories or concepts; the ability to utilize various financial concepts and their instruments; the capability to take appropriate financial decisions; the attitude towards the utilization of financial tools; individual's confidence in the financial operations being performed; the real financial behavior; and other multiple measures (Baron-Donovan et al., 2005).

1.3.1 Financial Knowledge

Understanding the fundamental concepts underpinning savings and debt, the worth of money, the effect of price rise on investment returns, interest, and the influence of inflation on price levels are references to having a good amount of financial knowledge for a financially secured future. The depth of financial knowledge can be assessed through a comprehensive understanding of the relationship between the components of the basic economy. The relationship between inflation and investment returns should be clear, and one must be able to diversify their investments to mitigate risks.

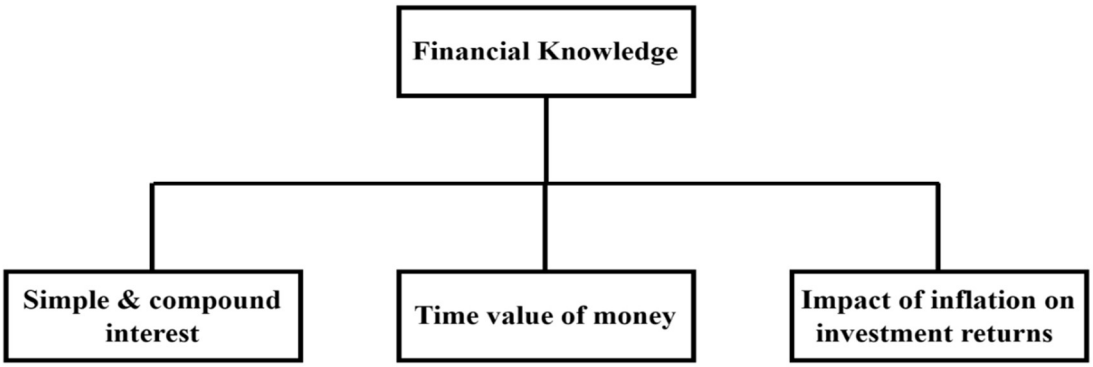

Figure 1.2: Dimensions of Financial Knowledge

1.3.2 Financial Behaviour

How individuals handle their finances daily is a good indicator of their overall financial behavior. It covers eight main categories to capture the key aspects of an individual's money management skills. These characteristics comprise an evaluation of the degree to which items and expenditures are within an individual's monetary sources, behaviors associated with the payment of bills, the creation and observing of a household budget, active saving conducts, and borrowing tendencies.

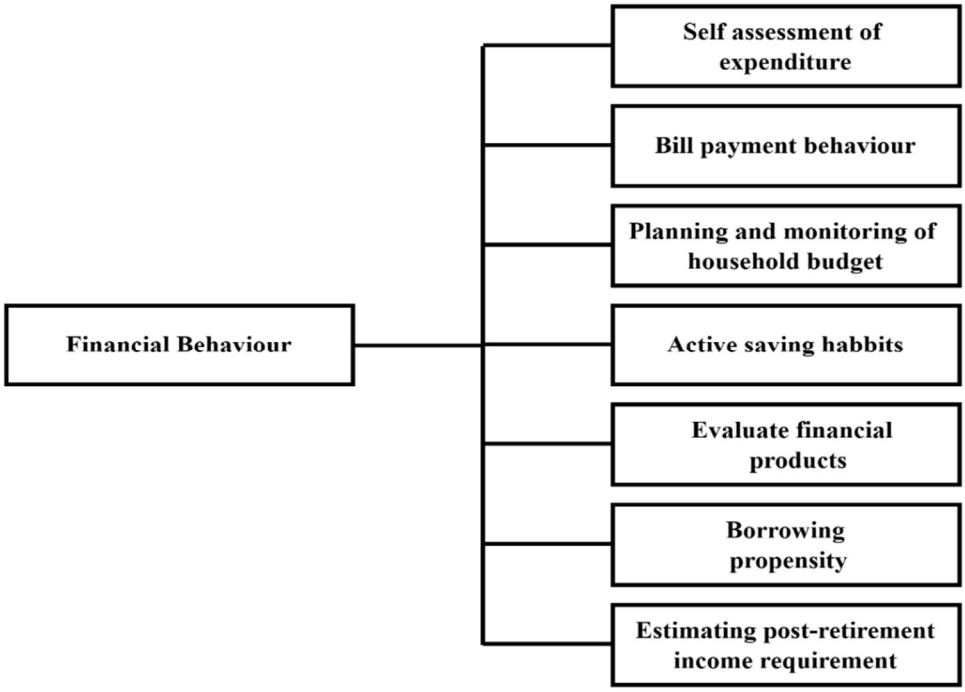

Figure 1.3: Dimensions of Financial Behaviour

1.3.3 Financial Attitude

Financial attitude may be characterized by individual's attitude towards financial planning and consumption. Both of these characteristics are intertwined with one another. It is often held that one's perspective on money and financial matters may influence their behavior in various areas, including how much they save, how much they borrow, how willing they are to take risks, and so on. Therefore, three aspects of a person's financial attitude may be regarded as (i) the amount they believe in planning; (ii) their tendency to save money; and (iii) their tendency to spend their money.

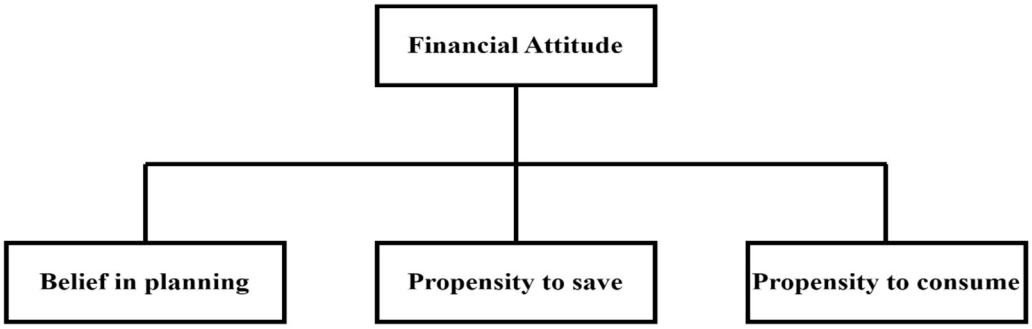

Figure 1.4: Dimensions of Financial Attitude

1.3.4 Risk Appetite

When considering the new developments that have raised the level of complexity in the economic environment, academics, personal financial planners, investment counselors, and policy makers have found that financial choices have become more crucial. Within the realm of making choices about one's finances, individuals propensity to handle risks is significant. How individuals construe risks, how they approach the problems of profit or loss, and how their wants and individuality influences the entire decision-making scenario. (Vlahos, 2001).

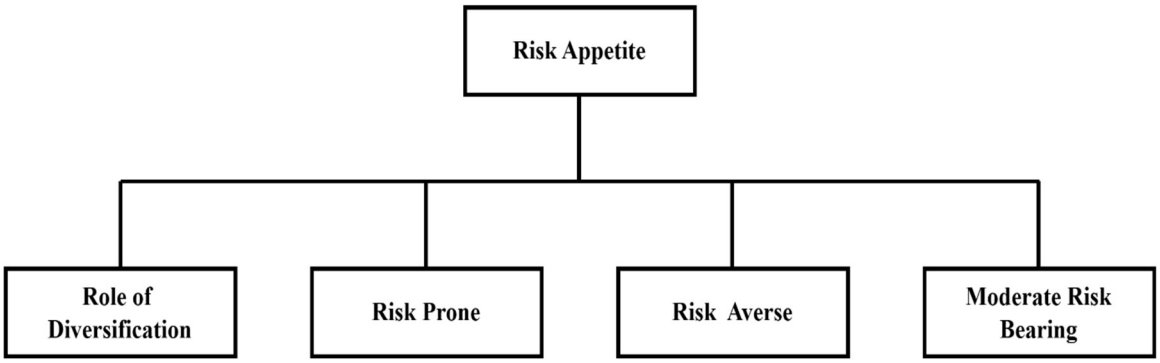

Figure 1.5: Dimensions of Risk Appetite

1.4 Pre-Retirement Financial Behaviour and Financial Literacy

Financial literacy affects individual's financial behavior post-retirement, including savings and investments. Studies found financial awareness and literacy to suffer because its analysis largely depends on limited standard survey questions shaping research for years (Lusardi and Mitchell., 2014). A restricted set of queries may not be able to effectively describe specific retirement savings variations, notwithstanding their connection to this behavior. Financial decision-making has long been valued by in contemporary societies making savings and

choices related to it more fruitful. One factor is that new rules force more obligations on individual residents to save for their future (Benartzi and Thaler, 2007). Currently, the global schemes permit and welcome active engagement, and the income streams post-retirement are increasingly dependent on specific resources (Hauff et al, 2014; Poterba et al, 2008). Therefore individuals are increasingly confronted with financial choices affecting retirement income (Munnell et al., 2007). Insufficient retirement savings are a severe worry when it is joined with an increasing requirement for retirement income owing to higher life expectancies (McKenzie and Liersch, 2011). This worry prompts the current investigation on individuals capacity to manage growing financial responsibility. Individuals' lack of engagement in financial concerns is one possible reason for poor financial responsibility management. Research shows lower engagement will lead to insufficient financial content and information research, leading to inactivity in fund selection in pension plans (Hauff, 2006). Communication with a stronger emphasis on pleasant sentiments is a proactive response to inadequate engagement (Hauff et al., 2016).

Deciphering an intelligent way to acquire wealth is often challenging. individuals postpone this idea and sucums to the challenge. Therefore, individuals who lack adequate financial knowledge and expertise may benefit from the instructions and the simplified methods. (van Rooij et al., 2012). For example, motivating them to formulate decisions catering to their needs post retirement, decisions that will be best suited to their interests (Thaler and Sunstein, 2008). Studies on financial literacy stress the nature of individuals' hesitancy to take on extra financial obligations. These sources describe the nature of incapacity and analyze them in the pursuit of the measure of people's ability to solve financial difficulties. The study has crucial role to play concerning retirement planning, such as how to build wealth, accumulate money, and what kind of attitude to possess for comprehensive financial management. (van Rooij et al., 2011a), Wealth building is one of the most important aspect to financial learning. (Behrman et al., 2012). Individuals cannot succeed in financial management without the right attitude to tackle unexpected hazardous investments (Nicolini et al., 2017). This study examines five significant variables of financial behaviour - Saving Attitude, Borrowing Pattern, Investment Decision, Insurance Allocation, and Spending Behaviour. The idea is to find out how certain behavioral attitudes influences the process of self-control, leading to spending more than one needs to save.

1.5 Financial Literacy in India

Governmental announcements in recent years aimed at containing the country's pay and pension obligations are predicated on an accurate forecast of future growth in government-related costs tied to human capital. The current level of knowledge and research is inadequate, and judgments has indeed been reached based on assumptions that are not supported by the facts nor justified. Corroboration from throughout the globe indicate worrisome and pervasive financial literacy inadequacies. Several studies have attempted to investigate India's degree of financial literacy. According to most of them, India's degree of financial literacy is poor by worldwide standards. Furthermore, it is observed that the inexperience causes individuals to give charge to fraudsters of their money. As a result, financial literacy is becoming increasingly important in the nation. Scholars highlighted the importance of financial learning to prevent fraud, especially in unorganized sectors. Financial awareness tends to be proactive in identifying financial frauds leading to financial inclusion and alleviating poverty. It is more important in the Indian context since India has a huge population that depends on local moneylenders for loans. These impoverished classes should be provided information on how to manage their finances to understand the right way to utilize limited resources. Initiatives to protect from dishonest moneylenders are extremely important for safeguarding their hard-earned money.

India as a country is near a lower level of financial literacy as compared to the international scenario. India is ranked low when it comes to overall financial literacy and capability. According to the "Visa's International Financial Literacy Barometer," people from India though well educated in most aspects lacks financial literacy as compared to many other nations. According to this survey, women in India have the most difficulty developing an efficient financial management plan. (Falahati, 2011). This is attributed to their lack of access to financial information and literacy. Furthermore, the “misplaced financial optimism” directly results from Indian families' lack of financial awareness (Garman, 2006). The findings state that India is ranked 23 out of the 28 nations studied, with around 35% of its people classified as financially educated. More than 70% of poll respondents said they could not survive a three-month personal economic emergency. Furthermore, the poll discovered that Indians save an average of 1.9 months for an emergency, which is near the average presented by the survey of 2 months (Visa's International Financial Literacy Barometer, 2012)[4]. The problem is not

[4] https://www.africamoneyskills.com/downloads/FL_Barometer_Final%20Apr%202012.pdf

because Indians do not save money but because they are habitual of parking their money in schemes or securities that do not compound their savings, says Jariwala (2013). The reason associated with habit is to understand how inflation affects their money (Thilakam 2012). The inability to comprehend the negative impact of inflation on their money results in them losing a significant amount of interest.

The concept of financial literacy is picking up the tempo and is gaining popularity in India. Prudent financial education is pointing towards the right direction and has evolved into an essential policy goal to improve financial consumer protection, inclusion, and prudential regulation. The nationwide activities organised towards financial education vary with respect to the needs and necessities of the surroundings, recipients, concerns and issue. (Becker-Olsen et al, 2006). Several organizations are collaborating to execute programs on financial education. The Reserve Bank of India, The Ministry of Human Resource Development, The Ministry of Corporate Affairs, The Securities and Exchange Board of India, The Insurance Regulatory and Development Authority, NABARD, The Financial Stability and Development Council. Self-regulatory organisations such as The National Stock Exchange Ltd. and The Bombay Stock Exchange Limited and financial institutions are the frontrunners for organizing such activities. The project of these administrations aims to empower individuals on the issue of personal finance by providing them with basic information on managing their spending alongside their earnings and instilling good financial habits to provide them with the means necessary to live a respectable life after retirement. Here is a condensed rundown of some of the efforts being carried out In India to raise the country's effect on financial knowledge:

1.5.1 Reserve Bank of India Initiatives to Promote Financial Education

In 2016, the RBI launched the Project on Financial Literacy to disseminate knowledge on common and basic banking principles to the citizens of India. It raises financial awareness among the general public via presentations, booklets, brochures, videos, and its website, with the assistance of banks, schools, and universities (Henrich, et al, 2010).

1.5.2 Securities and Exchange Board of India" (SEBI)'s Initiatives

The "SEBI" has launched a countrywide program to increase the general knowledge about finance management. The priorities include income savings, investments, and personal finance, such as banking, insurance, and retirement planning. In addition, there have been multiple

efforts to propagate financial literacy. An investor education website with study resources to improve financial understanding and publish study materials in English and Spanish.

1.5.3 Indian Insurance Regulatory Development Authority Initiatives

The organization is into the publication of a fun filled book series along with a handbook for the Indian policyholders. In the realm of insurance, there is now a specialized website for customer service and protection.

1.5.4 Pension Fund Regulatory and Development Authority (PFRDA) Initiatives

PFRDA has hired intermediaries to enhance people's understanding of pensions and retirement planning, in addition to building a frequently asked questions (FAQ) section on its website about topics associated with pensions.

1.5.5 Initiatives by other Market Players

Financial institutions and banks have rolled initiatives to promote financial literacy like innovative counseling centers to popularize the idea of financial literacy and advanced Rural Self Employment Training Institutes. These initiatives are intended to raise public knowledge of the topic. As of the end of December 2012, there were 658 Financial Literacy Centers (FLCs) operating around the country, and 1.5 million people received education from these centers between April 2012 and the end of "December 2012. (Reserve Bank of India, 2012)". The “Financial Stability and Development Council (FSDC),” which was led by the Union Finance Minister at the time, was given the authority to, among other things, emphasize financial inclusion and financial literacy. Financial Literacy should be included in the school curriculum on a national basis. This decision was made under the umbrella of the FSDC, which oversaw the preparation of the draught National Strategy for Financial Education (NSFE) for India. The council members worked to build a framework that would help expand financial knowledge and inclusion as part of this initiative, making it easier for young people to adopt the most appropriate financial commitment; the policy as a whole was conceived of and developed in a way that seeks to instill financial literacy ideas among teenagers. The policy is reviewed on a regular basis by government committees, and the government has investigated the National Institute of Financial Education (NIFE) as a specialized institute operating under the National Institute of Securities Markets (NISM) to report on and oversee the implementation of the Strategy for Financial Education in schools.

1.5.6 The World Bank Five Pillar Initiative: Indian perspective[5]

Since the 1980s, the World Bank has worked to alter the old-age security system, considering global social and economic developments. The bank's primary aim has been to provide tailored formats of these recommendations appropriate for situations while preserving the interests of individuals in their golden years. Each nation has its own set of circumstances which need to be dealt with strategically. In the Indian context, these five pillars are as follows:

Pillar Zero: This is a non-contributory social security scheme for elderly persons below the poverty level. This framework aims to provide minimal financial and other aid to low-income elderly persons to reduce their fight for existence. This pillar's applicability is global. Governments fund the schemes under this system.

Pillar 1: This is based on a pay-as-you-go method. This pillar's coverage is limited to government personnel and is funded by tax income. It aims to safeguard government personnel from numerous dangers such as inadequate pay, poor money management, and the negative effects of inflation, among others. This is phased out in 2003 as part of pension reforms and to reroute improved social security coverage.

Pillar 2: It is a defined contribution-based pension system and is intended for non-government employees. The Employees Provident Fund Organization (EPFO) has been the primary authority in its responsibilities to run this pillars mechanism. To encourage maximum employer and workers' involvement, the government has permitted contributions to such plans to be deducted from income tax.

Pillar 3: This pillar is optional for participants and offers a variety of alternatives to fit their tastes varying from low-risk investment options such as PPF and insurance company annuity schemes to middling-risk investment options such as the voluntary component of NPS and index funds to high-risk investment options such as equities and growth-focused mutual funds. Because this category is voluntary, market-driven, and highly diversified, it requires a high level of investor awareness and financial knowledge. Because this pillar covers the bulk of our country's population, it has the most potential to be strengthened.

Pillar 4: This pillar includes non-financial assistance schemes and programs for the elderly, such as free or reduced-cost health care, nursing homes, providing a positive social environment for the elderly, and physical fitness programs. Given India's diverse population, creating a solid old-age security system is a significant.

[5] The World Bank Pension Conceptual Framework: World Bank Pension Reform Primer.

1.6 Importance of Pre-Retirement Financial Behaviour and Financial Literacy

Financial literacy has grown in importance in both developed and developing countries in recent years. Financial markets are becoming increasingly complex, making it difficult for individuals to understand the complexities involved and preventing them from making informed decisions. The aged population in many Asian countries have not kept pace with economic development, causing them to grow old before their time. (National Research Council, 2010). As a result, many individuals approach retirement with little or no money as they do not save enough and do not fully comprehend the importance of investing in the future (Alam, 2004). Complicated financial goods, growing retirement age, and the introduction of electronic and internet banking add to the demand for personal finance. Financially knowledgeable individuals can perceive potential eventualities better and save for rainy days or the nights of their life in an acceptable way (Hershey, 2007). This is achievable because financial literacy promotes access to money by establishing incentives and surroundings that encourage the habit of saving, budgeting, and intelligently utilizing credit. A more knowledgeable person will save more effectively for his future, retirement, unexpected events, and crises, enabling him to live more efficiently without excessive expenditure and waste (Jappelli, 2021). Enhanced knowledge of financial goods and services foster higher financial confidence in picking the most suitable products and organizing those products in the best possible manner (Banks et al., 2011).

The capacity to make sound financial choices is essential for those at the bottom of the economic scale. The impoverished lack resources to compensate for lost savings or investments or to recover from misfortune (Miller et al., 2009). Financially illiterate people reject financial skills regarded as difficult to grasp. Consequently, the best way for a financially illiterate individual is to avoid market involvement, establish a bank account, and acquire investment goods. This approach provides financial education that promotes participation and sensible investing practices such as prudence and diversification. Access to secure savings may significantly influence the financial prospects of disadvantaged individuals in their older years. Proper retirement preparation will undoubtedly assist them in retiring wealthy (Hofstede et al, 2010).

1.7 Satisfaction level of Retirees concerning Retirement

Retirement is a life event influenced by personal, societal, and economic factors. It is a period when a person withdraws from active working life and is not engaged in employment, business,

or other activities. Retirement is different for everyone. It may entail working part-time or beginning a small company while transitioning to retirement. Retirement and financial independence are sometimes used interchangeably since both are reached with adequate savings, investment income, and pension income to pay living costs. It is important to save for retirement. Each individual anticipates spending their post-retirement years blissfully. Most nations' industry and government employees are treated differently inside the pension plan (Hassan et al., 2016). Only 11% of the Indian population has a regular retirement pension program. Employees in the public sector who started before 2004 would get a monthly retirement pension. On the other hand, employees who entered the workforce after 2004 and those working in the private sector are not covered by this plan. There is a substantial need for retirement planning in such situations. Retirement planning in India has recently acquired a lot of traction among the working population, and its relevance has never been more felt than it is today. The goal of personal finance is to accumulate enough funds to cover one's personal financial commitments after retiring, prepare for unforeseen events via retirement planning, maintain a happy view of life, understand the effect of inflation, invest in high-quality medical care, secure family's future, stay current on retirement plans and perks and protect savings.

Retirement is not the same as it was in previous generations. Individuals nowadays have various expectations for how they want to spend their retirement years. Many planning aspects are interrelated, necessitating careful thought while designing a retirement strategy. Improving financial literacy in the nation for post-retirement is critical for the financial well-being of people and the economy. Sufficient financial literacy is essential for the individual's and family's financial well-being. It influences short-term needs such as day-to-day money management and long-term needs such as property ownership, child education, and retirement security. Ineffective money management may also lead to consumer behavior that increases their vulnerability to a financial catastrophe (Loewenstein et al., 2001). Insurance and pension plans are critical for guaranteeing financial stability in retirement. This necessitates market understanding, financial items, a positive mindset and behavioral abilities. These tasks need budgeting and planning, as well as savings and investments.

Retirement corpus must be kept distinct from other crucial medium-term aspirations, like purchasing a dream house or funding children's weddings and schooling. Individuals often begin on a high note and stick to the plan for two to three years. Retirement then takes a back place or is abandoned due to other factors. While programs on debt and equity in the market

help individuals prepare for their later years, a lot relies on when they commence saving for superannuation. Before 2003, all government employees were required to save for their retirement, which was withdrawn from their pay from day one and was popularly referred to as a pension. As a consequence of a change in the policies of the government workers in India, all new entrants to government services beginning in 2003, except for the armed forces, would not be eligible for a regular contributing pension. As a result, it has become a source of worry for the government and private persons to save for the unforeseeable period following retirement. A safety net from the government and social support is vital since it significantly impacts one's risk tolerance while investing in retirement plan accounts and extra personal savings. A person with a stronger safety net is likely to be more comfortable making riskier investments than others who do not have the same support.

1.8 Retirement Planning among working professionals of IT and ITES sectors

The Bogleheads' guide to investing notes that, if out of 100 young IT professionals job starting at the age of 25 years, by 65 years of age are considered as sample, one will be rich and four will be financially independent. The rest of 95 will reach the age of retirement without being able to sustain the life-style they have had during their active employment period. The survey bring out the importance of savings for retirement in the IT and ITES sector. Multinational organizations are laying off people in India and globally. Because of the rapid advancement in technology and business models throughout the globe, talents will be outdated. During the DotCom boom in the 1990s, many occupations that had existed for decades were destroyed. Organizations seldom engage an engineer to accomplish a task that an automation program can accomplish quickly and effectively. Majority of IT operations and customer service tasks are increasingly being automated. IT administrators must become DevOps specialists or risk losing employment. Skills from the past are no longer applicable now, and this tendency will continue in the future. Inadequate retirement planning will pose financial risks during the retirement period.

Social attitudes influence retirement planning and shape financial planning related to retirement goals. This enumerates individual's thinking pattern and explains their spending or savings behavior. An individual's general attitude and motivation to either control expenditure or spend will detail the relevance of financial planning (Icek, 1991). Money is the mechanism through which products and services are obtained to meet the basic needs and live comfortably. A working life spans around 38 years (22 years to 60 years) and the money obtained during this

period must be handled sensibly to meet present obligations while saving for the golden years of retirement. Many senior individuals cannot afford to retire due to inadequate financial preparation for retirement. According to World Economic Forum study on Global Human Capital[6], only 12% of the actively working population in India is covered by a pension plan. Individuals who are not protected by a pension program must rely on family members for assistance. The report on household finance in India by RBI (April 2016)[7], shows that 77% of the Indian population without a retirement plan. To prepare for retirement, individuals needs to comprehend various financial products, their benefits and drawbacks, and clarity in financial objectives, that impact financial planning for retirement. Aside from financial literacy, an individual's attempt to prepare for the future, known as "planned behavior," also serves as a control variable in retirement planning.

Empirical studies conducted in India indicate that individuals are not saving enough for retirement. According to Willis Tower Watson's Global Benefits Attitudes Survey 2022, around 54% of almost 2,000 employees in India are concerned about their future financial situation. One-third of employees indicated concern about having enough financial inventory 25 years post retirement. This has necessitated a larger portion of our retirees to get back into the market and seek employment to make their livelihood. According to the 2020 "Aegon Retirement Readiness Survey" (Aegon Life Insurance Company Ltd., India), just 71% of Indian employees will save for retirement. Pensions benefits are available to only 8% of pensioners in the private sector, but the government gives pensions to all retired government employees and 30% of the elderly in need. According to the CRISIL estimate (CRISIL, 2020), if private coverage continues persistently inadequate, the government would be compelled to create a pension program to support the whole old population, with such a retirement cost of 41% of GDP by 2030.

According to Old Age Social and Income Security (OASIS) research (2000)[8], more than 28% (13 million) of paid employees in India and majority i.e., 89.2% (280 million) of workers (including self-employed and farmers) are not covered by any pension scheme that allows them to save for economic security in old life. The committee advised that economic safety during the end of ones life should be unavoidably the result from long-term planning through life-long

[6] https://www.weforum.org/reports/the-global-human-capital-report-2017/
[7] https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/HFCRA28D0415E2144A009112DD314ECF5C07.PDF

contributions, with the government stepping in only when people do not have enough income to prepare for old age. The National Pension System (NPS) established in 2004 provide retirement income to all residents including workers of business organizations and Public Sector Unite (PSU). Unfortunately, the initiative has failed to meet its objectives (Sane and Thomas, 2014) as compared to other industrialized nations, as there were no solid governmental initiative programme designed. Understanding the factors influencing financial decision-making, savings behavior, and attitude towards investing for retirement can guide the efforts of financial industry regulatory bodies and financial firms to assist in achieving their respective goals as most countries shift the responsibility for retirement savings from the government to the individual (Thaler and Benartzi, 2004).

India has a high savings rate compared to other nations and the cost of elementary and higher education is rising faster than expected inflation rates. The buying and consumption habits have shifted in recent years in India. According to the 2017 TransUnion CIBIL Survey on Credit Card Usage[8], credit card usage among Indians has surged and may lead to overspending. According to BCG's consumer behavior research (2022)[9], among Indian consumers, quick satisfaction is becoming more essential than wealth development. The Credit Suisse Emerging Consumer Survey 2021[10], shows that Indian consumers' are willing to borrow in order to acquire assets such as new houses and automobiles. This trend is needs to be controlled since consumers are shifting away from asset and wealth building. Individuals must make financial judgments to fight the financial uncertainty and temptation in the temporary economic environment. It will be ideal to invest for the future while still providing for immediate necessities and potential indulgences. Individuals must be better planners and save to avoid old-age poverty.

The classic economic theory of saving behavior elucidates that savers amass assets and decumulate at a later point to optimize lifetime utility function (Jha and Acharya, 2013). Once the best lifetime consumption route has been selected, families have the willingness to carry it through. Consumers lured to reject delayed gratification and keep spending for their wants without taking care of investments may fail to have funds when they retire from their last jobs.

[8] https://www.transunioncibil.com/resources/tucibil/doc/insights/reports/transunion-google-credit-distributed-report.pdf
[9] https://www.bcg.com/publications/collections/consumer-sentiment-series
[10] https://www.credit-suisse.com/media/assets/corporate/docs/about-us/research/publications/emerging-consumer-survey-2021.pdf

According to financial planning studies, majority of individuals are not financially prepared for retirement (O'Donoghue and Rabin, 2000; Thaler and Benartzi, 2004). Behavioral Economics investigates the impact of cognitive and emotional aspects on individual and organizational economic choices and the repercussions for returns and resource allocation. Models on temporal construal (Trope et al., 2003), heuristic use (Tversky and Kahneman, 1991), hyperbolic time discounting (Strotz, 1955, Laibson, 1997), procrastination (Akerlof, 1991) observations have been used to a wide range of topics, including saving behavior, addiction, consumer behavior, and public policy. Applying Behavioral Economics observations to savings behavior, specifically retirement savings, has produced a better understanding of savings behavior, especially the inclination to save insufficiently (Thaler and Benartzi, 2004).

The present knowledge gap is in determining which behavioral determinants play a key role in retirement planning to achieve retirement adequacy and retirement satisfaction in India and how these factors that influences software professionals' investment behavior. This research aims to address this vacuum by examining Indian IT and ITES employees' retirement financial savings and investment behavior and finding numerous behavioral elements influencing their financial retirement plan. The research examines individuals' retirement financial planning behavior in the organized sectors like the Information Technology (IT) and Information Technology Enabled Services (ITES) within the Indian Metro Cities. Many IT firms have established themselves in the Indian Metro Cities and because the IT industry has been one of the primary drivers of India's development, the companies have a huge pool of IT workers whose savings and investment patterns are identified. The study attempts to obtain insight into how and if financial literacy impacts superior financial behaviour which in turn influence effective retirement planning to achieve retirement adequacy and retirement satisfaction.

2.0 Significance of Research

Retirement income objectives and the choices needed to accomplish them are the primary focus of retirement planning. Planning for retirement involves the segregation of the causes of income, diversified personal budget, and setting up a savings strategy, time, and risk. Retirement planning starts long before an individual retires and is intrinsically influenced by attitude, knowledge, and information. Individuals throughout the world have a wide range of options when it comes to pension plans. A pleasant life beyond retiring from the job depends on careful preparation and execution over multiple years. Therefore, this study examines "Pre-

Retirement Financial Behaviour and Financial Literacy" among working professionals in Indian Metro Cities, which is vital for sound retirement planning. The study further provides empirical evidence through theoretical propositions to assess age cohorts' alters in retirement planning activities.

Adequacy of retirement income differs from individual to individual subject to factors involving lifestyle and income during employment years. Individuals working in the private sector and public sector have different salary patterns, and they face a greater danger of running their lives after retirement (Joo, 2008). This highlighted the need to develop the practice of saving for retirement, requiring individuals to invest in financial plans to ensure their financial security after retirement. Therefore, a good investment plan must build a superannuation amount and fetch financial security after retiring. The current study will provide insights on the pre-retirement financial strategies to be implemented in the accumulation and preservation phases, which is the foundation of retirement adequacy. It has been determined by the effort known as "Project Financial Literacy" run by the Reserve Bank of India that the level of financial literacy in India is not very high. This demonstrates the necessity of educating people about financial matters relating to retirement.

India will benefit from a "demographic dividend" in the medium term, especially when compared to other countries around the world. Over the next thirty years, India's young population is predicted to reduce the "dependence ratio," or the proportion of the working population that is employed, resulting in a higher average savings rate. However, India is expected to face the same demographic challenges over the next several decades. The dependency ratio is expected to climb when the next generation of employees reaches retirement age. As a result, India is projected to face the challenges that come with an ageing population. As life expectancy rises, so will the retirement gap. The retirement gap is the discrepancy between the average retirement age and life expectancy. The greater the retirement gap, the greater the financial burden on both the individual and the government. Individuals must plan for retirement in order to enjoy the life they desire. Retirement planning is a lifelong undertaking that needs self-discipline. As a result, research into the retirement planning behaviour of working individuals in India is required.

3.0 Operational Definitions

Financial Behaviour

The way individuals manage their wealth and makes financial decisions in terms of savings, healthcare, investments, and budgets collectively is termed as *financial behaviour*.

Financial Literacy

The measure of individuals' capability to assess their own financial status incorporating acquired skills to create and implement financial plans for the future is termed as *financial literacy*.

Retirement Planning

Retirement Planning implies preparation to achieve post retirement objectives and ambitions to create an environment of comfort and sufficiency for the future.

Retirement Adequacy

Retirement Adequacy is the level of happiness towards self in terms of transition from employed state to as state when employment ends. It gives a feeling of stability without compromise on the basic living standard during the years of employment.

Retirement Satisfaction

The amount of enjoyment and contentment experienced by a retiree at a certain period of life due to their physical, mental and financial health is terms as *Retirement Satisfaction*.

4.0 Objectives

The study aims at providing insights to retirement planning by addressing the financial behaviors of individuals during the pre-retirement period and address the following objectives:

1. To investigate the role of Financial Behaviour on Retirement Planning
2. To explore the impact of Financial Behaviour on Retirement Adequacy
3. To assess the role of Financial Behaviour on Retirement Satisfaction

5.0 Motivation for Research

With a population of about 1.33 billion, India is the world's most populous country behind China, which has a population of nearly 1.41 billion people[11]. Over the previous two decades, India has seen significant economic, social, and demographic changes. Since opening its economy to foreign investment in the early 1990s, India's economy has been upward, despite some ups and downs. It has recently emerged as one of the world's fastest-growing major economies, alongside China. India has a substantially younger population than any of the other Asian markets. In 2015, the median age was 26.7 years, compared to 46.3 years in Japan and 37 years in the Chinese mainland. India is rapidly approaching the point at which the majority of its people will be of working age which is the stage at which the economy expands quickly, given that supportive government policies are in place. However, the transition from a younger to an older population will be rapid, and India's demographics will reflect those of other Asian economies. Furthermore, India must prepare exceptionally carefully due to the sheer number of its people to avoid difficulties such as a shrinking workforce, growing reliance on the working-age population by the elderly, and a halt in economic development, all of which would throw enormous burden on future pension and retirement systems.

As India enters a period of increased economic expansion, an increasing proportion of the youthful population is expected to migrate to cities, disrupting traditional social structures across the nation. People's retirement plans will be influenced by urbanization. As in other Asian markets, many Indians rely on family and their children to support their retirement and provide care. However, as cities become more densely populated, the average size of families will continue to decline, leaving the elderly to fend for themselves. A comprehensive, adequate, and long-term retirement and pension system is required, one that can meet the future financial needs of today's pre-retirees. This study seeks to ascertain how Indian working professionals particularly those working in the IT and ITES sectors in Indian metropolises intend to deal with current and the approaching retirement challenges.

[11] https://worldpopulationreview.com/world-cities

6.0 Thesis Overview

The following chapters comprise the study, "Pre-Retirement Financial Behaviour and Financial Literacy – A Key to Retirement Planning and Adequacy among Working Professionals of IT and ITES sectors in Indian Metro Cities":

Chapter 1: The first chapter of introduces the financial literacy, financial behaviour, and retirement planning. It also contains the research's significance, operational definitions, aims, and motivation.

Chapter 2: The second chapter is literature review in which full understanding of the chosen elements are displayed. This chapter also includes shifting research objectives, research gaps, study constructs, theoretical framework, and hypotheses.

Chapter 3: The third chapter covers level analysis, pilot study, sample population, sampling units, sample size, data characteristics, research methodology, scale variables, measures, conceptual framework, constructs and items.

Chapter 4: The fourth chapter covers data analysis, discussions of the analysis and assessment of hypothesis.

Chapter 5: The fifth chapter contains recommendations based on the results and observations. At the end of the thesis, there is also a bibliography of references utilized in drafting the thesis.

CHAPTER - 2
LITERATURE REVIEW

2.0 Introduction

This chapter describes the approach used to determine the research objectives. The literature on the effect of pre-retirement financial literacy and the five financial behaviors, namely, saving attitude, borrowing pattern, investment decisions, insurance allocation, and spending behavior, to achieve retirement adequacy and retirement satisfaction, is discussed. Research gaps pertaining to retirement planning and its mediating effect on the exogenous variables of financial behaviour and the endogenous variables, retirement adequacy and retirement satisfaction is assessed to fill in the knowledge and research gaps. The figure 2.1 provides an overview of the contents of this chapter.

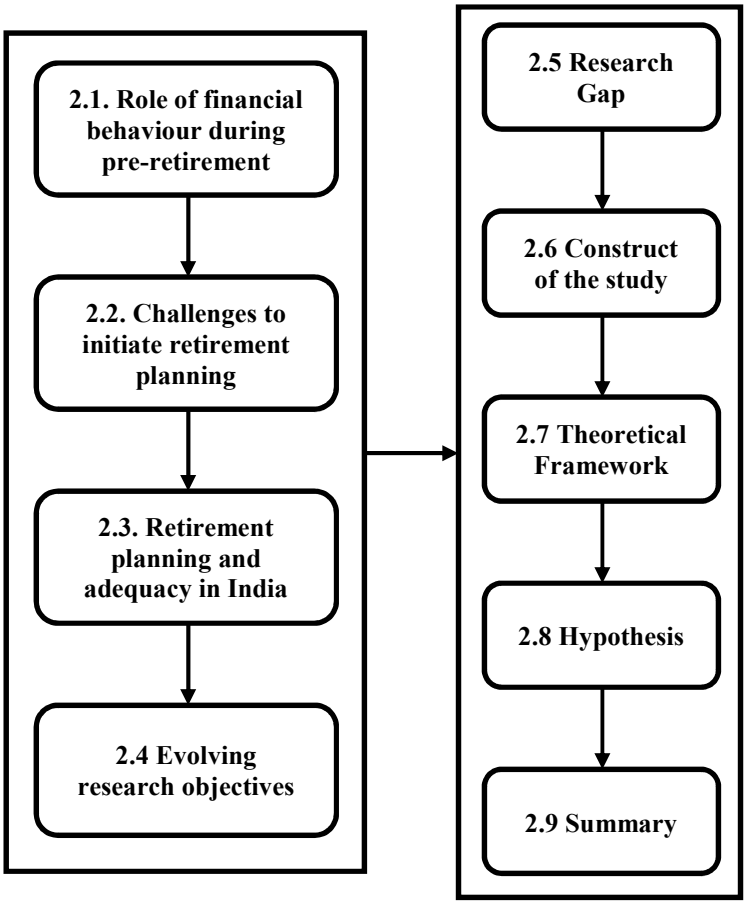

Figure 2.1: A summary of Chapter 2

2.1 Role of Financial Behaviour during Pre-Retirement

Jappelli and collegues (2021) emphasized the effectiveness of accurate financial decision-making while focusing on the abilities required to grasp, analyse, manage, and communicate on finances (Vitt et al, 2000). Studies on the issues of individuals knowledge contrast the idea of familiarity with objective knowledge (often called "knowledge of details"). This variation may be traced back to the pioneering research of Bloom et al. (1956) and the classic works of Alba and Hutchinson (1987). It is believed that knowledge is not a unified concept but a mixture of facts, objects, and opinions. Accordingly, people's observation on self-knowledge differ from their actual knowledge level. Both objective and subjective financial knowledge may affect people's financial behaviour and a realistic appraisal of knowledge is necessary to make wise financial choices and display competent management behaviour regarding one's finances (Perry and Morris, 2005). Further, familiarity as an aspect benefits in making faster and easier choices (Schaefer, 1997). Using a sample of 120 University professors from Indonesia Satria and Hutabarat (2020), examined how retirement saving plans are affected by a person's expertise in financial management. The objective is accomplished by following "a linear regression model" to analyse the connections among the variables. According to the research findings, opinions about various retirement products are essential while developing individual preparations for one's retirement. People with a favourable attitude about retirement are expected to make financial planning for their retirement.

Association between retirement preparation, preventive investments, and misperceptions about financial literacy is discussed by Anderson et al. (2017) who highlighted computing competence as a component of literacy of personal finance management and it was positively linked with retirement planning when the probit model was employed to analyse the data. A survey was conducted on the members of LinkedIn, and participants were given questions to determine their degree of computational capacity. This was determined to be the case after the results revealed that the two were found to be positively connected. Those individuals with a firm grasp of computing are more likely to prepare for retirement. On the other hand, this research is based on workers chosen via Linkedin, and it does not differentiate between various fields of employment. Bongini et al. (2019) determined whether college students are actively involved in saving for retirement. The study aims to learn what factors college students use to make decisions about retirement savings plans. The method of partial least squares stepwise multiple regression analysis is used and the concept of planned behaviour is used. In this study, we tested the hypothesis that pension knowledge and sound money management would

positively influence the likelihood that respondents would make a pension investment. Adams and Rau (2011) stated that the obligation for retirees to spend time working in the market is no longer in effect. On the other hand, they could take on additional obligations, such as caring for an ageing parent, spouse, or grandkids. According to research conducted by Ellis and Simmons (2014), in 2012, a huge number of old grandparents, around 2.7 million in the U.S., were unable to meet their post-retirement needs. These elderly people were the main caregivers for their grandkids under 18, living in the same home. This might make it more difficult for retirees to meet their financial obligations, affecting their overall financial well-being.

Risk aversion attitude is a significant factor in determining financial choices, such as alternatives for retirement saving and options for retirement investing. Meir et al. (2016) investigate how individuals are affected in Israel through financial planning and retirement. A sample of 501 Israelis were selected randomly for an online survey, and then "multiple ordinary most minor square regressions" were performed on the data. There is a low-risk aversion regarding retirement goods for people who are more inclined to make preparations for their golden years. Almenberg and Dreber (2015) concluded that differences in actual investing behaviour throughout the retirement investment period are connected to differences in the financial literacy of the investors. Individuals equipped in financial planning and skills are inclined towards putting their retirement savings into risky assets (van Rooij et al., 2011b). The measure of F-BFL that accounts for exposure to a broader range of financial products and concepts is the one that significantly affects individuals' propensity to take risks. This became evident when comparing the narrower numeracy measure to the broader F-BFL. Some subjective measures of financial literacy used in studies have also been related to actual financial actions. For instance, a survey of American investors found that individuals who considered themselves knowledgeable about services and facilities from the financial product engaged in more frequent trading and maintained a more globally diversified portfolio (Boggio et al, 2015). Participation in retirement savings Programmes and the active selection of mutual funds inside retirement savings accounts are only two examples of responsible financial behaviour associated with higher levels of personal financial literacy (Tang and Baker, 2015).

2.2 Challenges to initiate Retirement Planning

Literacy in financial matters seems to have a favourable association with planning for superannuation in terms of considering the many forms of financial support required in retirement (Fernandes et al. 2014). The issue that is more intriguing to consider is whether or

not this connection reflects an underlying connection between being literate on finances and preparing for superannuation. The research in this field has resulted in the development of several strategies for answering this issue. These strategies make use of panel data methodologies and a variety of instrumental factors for identification. Even though the identifying assumptions might always be called into question, the consistency of the findings shows that more financial literacy leads to an increased likelihood of thinking about retirement requirements. According to current research, individuals who conduct more retirement planning are likely to amass greater pension money; nevertheless, the literature on behavioral economics reveals that this relationship is far weaker than suggested by these studies. When the behaviour of a person who is preparing for their retirement is to be analysed, it should not be done on the basis of mere intentions. Intentionality do not represent the true nature of behaviour. This analysis is most relevant when it comes to understand the human financial behaviour in the United States. (Thaler and Benartzi, 2004). In addition, other sorts of actual behaviour might increase retirement resources when financial literacy is present. (Clark et al, 2013).

Crawford and Banks (2022) highlights the concerns about individuals mostly when they are nearing the age of retirement. Unfortunately, by this time, it is sometimes too late to do anything to change the situation, which is particularly troublesome if retirement is imminent. Possible causes include pensions being complicated, that understanding the relevant issues is challenging, and that pension communication is often more concerned with being thorough and meeting a legal obligation than with being beneficial for the people who make the decisions. When comparing nations, those with individual (as opposed to communal) pension systems, where people are responsible for their retirement resources, benefit more from pension education. This idea is is similar to the notion that "knowledge is endogenous", with a bias toward those who stand to earn the most from making investments in this area. According to the findings of Landerretche and Martnez (2013), for individuals to make the most informed decisions regarding a good life-style after they retire from their job, they must gain knowledge of how the government grants pension and entitlements. They must know the concerned rules and regulations related to the system under which pension is granted. They should do so if they are serious about improving their quality of life. In Chile it is mandatory for employees to invest considering the post-retirement needs and the freedom to choose their investment fund. The relationship between the awareness related to pension and the consequent savings for retirement and many studies have substantiated this claim. A favourable impact on retirement

savings can be seen in this nation, which is an excellent illustration of the impact that pension education may have (Budzinska-Wojciechowska, 2017). Numerous studies from various countries have shown how little people know about pensions. People have no idea how they can raise their level of life in retirement and have no way of planning for it. Premiums paid into a pension plan are usually far higher than any other savings a person makes throughout their lifetime, but few people take an interest in these matters. The "orange envelope" in Sweden and the "uniform pension overview" in the Netherlands are only two examples of national initiatives that provide individuals with frequent updates on their pension worth or the yearly income they might expect. These two models are used in countries that routinely provide such information to their residents.

Arrondel (2013) found that certain demographic groups had a less-than-average grasp of financial concepts. The study examined the correlation between French individuals' financial literacy and their capacity for effective financial management. Financial literacy is lower among women, the young, the elderly, and those with a moderate education level compared to the overall population. There were significant differences in how much money people knew how to handle after they retired. While the initial research was conducted in France, the current one occurred in the Democratic Republic of the Congo. As per Jappelli and Padula (2013), some helpful new insights have been supplied as a result of the development of new theories in which economic education is treated as an endogenous component. The amount of money that individuals choose to invest in increasing their level of financial literacy is a personal choice. They are required to make a trade-off between the future advantages of more sophisticated market behaviour, which come in the form of improved earnings, and the initial expenses of investment. Those who believe they have more to gain from increasing their level of financial literacy are more likely to attempt to do so. As a direct consequence of this, many pension systems provide fewer incentives for financial literacy for those with low earnings who are wholly reliant on the state pension that is required for them. This is because the state pension is their principal source of income after retirement. If receiving financial education was voluntary rather than obligatory, there would be a greater wealth gap in the world, which would lead to an increase in the overall amount of wealth inequality that exists. This is the case regardless of whether the larger wealth difference is due to the fact that education on financial concerns is a discretionary cost or not.

2.3 Retirement Planning and Adequacy in India

Financial literacy is a vital a characteristic of retirement planning. (Gallego-Losada et al., 2022, Klapper and Lusardi 2020). Individuals who are financially educated in India were likely to save more for superannuation, as they would have a better grasp of the significance of interest compounding and would be better able to do the necessary computations (Hutabarat and Wijaya, 2020; Palaci et al., 2018). This skill ensures that a person can rely on sources of income other than social security and pension if these two sources become inadequate to meet their future financial needs (Palaci et al., 2018). The terms social security and pension refer to these sort of income. Those who have acquired competencies can better understand and manage their financial assets which should be reflected in their standard of living. Sarigul (2014) showed that financially literate individuals are in a better position to manage their income and expenses by using a wide range of financial instruments and tools, leading to more wealth and incredible feeling of financial security. It becomes all the more essential to analyse the knowledge one has in matters related to managing finances. (Lusardi, 2019). Vakil (2019) discovered that family, friends, self-research, and employment significantly influenced retirement planning decisions. In addition, research showed that 50% respondents agreed that the market lacks sufficient awareness about retirement planning. The researchers deduced from their data that the market lacks sufficient information for retirement planning. The findings indicate that only 30–40% of individuals save money for retirement. According to the findings of this research, respondents' preferred retirement investing methods may be broken down into many categories. Patel and Kumar (2017), in their survey, discovered that a large number of individuals are aware of retirement planning, and according to them, the element that has the most impact on retirement planning is the predicted rate of inflation and the cost of living. It also demonstrates that individuals are aware of the risk and return and have a good understanding of the inflation rate; yet, it demonstrates that people are less aware of diversification. In addition, it brought to light that some individuals begin investing between the ages of 31 and 40.

Chachad (2018) article titled "Are you making yourself retirement ready- A study on salaried individuals" centered on the requirement and necessity for retirement planning. The report also emphasizes individuals's knowledge about retirement and their preparation habits. The results highlighted that individuals who do not invest require financial education to understand the importance of retirement and start saving for it. One study's results on how individuals see the importance of financial guidance in their retirement plans suggest that many people are

influenced by such advice (Thakur, 2017). Researchers interested in retirement planning in Chennai sought to learn more about the level of awareness among workers and the types of investments people make in preparation for their golden years (Vinmalar 2018). The data shows no correlation between the amount of money invested in various routes and a person's marital status. In comparison to their single counterparts, married people who are employed make much more significant investments in various retirement planning options. The years spent in retirement had grown directly from the rise in the average lifespan (Dikshit 2018). Improvements in health and sanitary conditions caused this rise. As a consequence of this, people are required to maintain their post-retirement savings for a longer length of time. This, in turn, raises the chance of having a deficit in their retirement corpus (Sivaraman, 2010). As a result, prudent retirement planning has become an absolute need for accumulating an adequate retirement corpus for use throughout life after retirement. The population's ageing is another factor contributing to the growing importance of retirement planning. This will cause a significant number of people to leave the labour force, which will significantly lower the dependency ratio (i.e., the number of working people to the number of retirees). As a result, it will be necessary for these folks to make preparations for the retirement phase of their lives. People's choices about retirement planning are also impacted by the Social Security System of a nation. In India, there are three different kinds of pensions: the first kind is a non-contributory pension, which guarantees a certain amount of money to retirees; the second kind is a contributory pension, which requires people to save money; and the third kind is a contributory pension, which allows people to save money if they choose to. The first pillar is absent in India, and the reach of the second pillar is likewise restricted to the organised sector. Therefore, it is necessary to rely on the third pillar, comprised of voluntary savings (Bhambure, 2013). The transition into post-retirement life raises fundamental problems, such as how to fulfil one's financial obligations and continue living the way one did before retirement without a consistent income and being dependent on others. All these things contribute to a person's various problems after retirement age.

Vinmalar and Joseph (2018) studied working individuals from both understands sectors (public and private) to examine the awareness of various investment avenues for secure retirement. This study was conducted to examine the awareness of various investment avenues for having a secure retirement life. The information was gathered in questionnaires from one hundred different respondents from around Chennai City. The sampling method utilised was a straightforward kind of random selection. The research concluded that no correlation existed

between demographic variables and investing behaviour. The quantity of money spent in diverse sectors also has nothing to do with a person's marital status. The survey results show that most respondents saved money regularly, at least once each month. Thakur and colleagues (2017) researched to study a sample population consisting of 1144 people of varying ages and professions who participated in the study to provide their responses for the research. The planning for retirement, as opposed to retirement investments, is the primary subject of this research. According to the conclusions of the research, half of the respondents have the goal of retiring within the next 20 years, and almost half of individuals invest money toward their retirement. On the other hand, the other half of the respondents either do not invest or are unsure about how much they should invest in retirement planning. According to the survey findings, the majority of people who were polled gave a favourable response to whether or not retirement planning is necessary, regardless of their age, income, or employment. Patil and Nandawar (2014) limited their research to salaried adults in India with a stable salaries. The study findings were analysed using the replies from a standardized questionnaire completed by forty paid workers. According to the survey findings, sixty per cent of respondents are aware of the many investment opportunities, while forty per cent are not. It also shows that the first consideration in making investments is safety, followed by the potential for tax savings. According to the study, investor's priorities having a stable and secure income from their investments since safety is essential when making financial decisions.

According to Cooper et al. (2014), individuals planning their financial operations should place the most significant importance on determining their tolerance for financial risk since it is simultaneously the most difficult characteristic to measure. According to recent research findings, retirement planning and financial counselling cannot be successful without considering an individual's risk tolerance (Bayar et al., 2020). Factors including age, education, marital status, occupation, culture, and economic objectives all influence a person's risk tolerance. Therefore, the ability to choose financial assets for portfolios may be gauged by assessing an individual's comfort level with financial risk. Moorthy K et al. (2012b) studied the behaviors of working adults in India related to retirement planning. This study, which is cross-sectional explanatory research, was carried out. A total of 300 people participated in the study, all of whom were aged 26 to 55. According to the research findings, various age groups of working persons have varied ways of thinking and behaving concerning planning for retirement. The study also indicates that the most optimal age to begin preparing for retirement is between 26 and 35. Therefore, making them aware of this in advance may provide them with

advantages and benefits to avoid them being unable to afford to retire since they will have ample time to prepare for it. Dvork (2010) concluded that education is the most crucial aspect in evaluating how financially literate a person is. This survey indicated that even those with solid planning practices are not very successful at preparing for retirement since they are unaware of the various investment alternatives now accessible on the market. The problem with women is that, compared to males, they have a lower income, a lower level of education, and a lower level of expertise. The individual respondent who had already taken part in the survey now provides their particular addition.

According to Lusardi (2008), everyone must have at least a base level of knowledge about money management and personal finance. Some examples of such ideas include compound interest, the time worth of Currency, price inflation, mathematical literacy, the "money illusion," and elementary arithmetic. Financial performance ratios (FPR) have been shown to have a strong positive correlation with even a basic comprehension of personal finance, according to the extant research (Ricci and Caratelli, 2017). There was consensus across three separate research. Stocks, bonds, financial institutions, mutual funds, the effect of interest rates on securities, and concerns about the risk-return link are all topics covered in the advanced financial literacy curriculum. Bowditch (2005) in his research on retirement savings among a sample of Pune residents aged 25 to 45, he hoped to learn more about the factors that influence people's decisions to save for retirement, how well aware they are of retirement planning options, and how financially literate they are. Specifically, he was interested in learning more about the variables that influence people's decisions to save for retirement and how well they are aware of retirement planning options. It has been shown that He examined retirement savings plans among a sample of Pune residents between the ages of 25 and 45 to see what variables might impact the effectiveness of such programme. The sample population was comprised of people living in Pune. According to the data, a far larger percentage of the male population is concerned with planning for retirement than is the proportion of the female population. Only 33 percent of those polled give any attention to retirement planning, while the remaining 61 percent do so occasionally and the remaining 6 percent never do so. The conclusions of the survey include an average financial literacy level of 6.11 and the significance of factors such as age and income in the preparedness for retirement. People who are currently in the process of amassing wealth often have the goal of beginning their retirement at the age of 55.6 years old. Approximately one quarter of all individuals have set their sights on reaching the age of 50 so that they may begin their retirement.

Savishinsky (2004) conducted a sociocultural study of senior citizens in the United States and India. They found that Americans consider retirement a right and value community service. When Indian retires from their career and the responsibilities of family and society, they often retreat from society and devote themselves to spiritual pursuits. In actuality, retirement is synonymous with death, the time when one is expected to give up material pursuits (Tyler, 1973). The elderly can choose between visiting religious places and letting their son take care of them. At the same time, they pursue their spirituality or stay home and practice abstract meditation. It is not only that people in these two nations have opposite views on retirement; the monetary concerns are also quite different. Indians depend on their families and society for assistance in old age as compared to old age people in America. They seem better prepared for retirement than most people since they have set goals for their golden years (Hershey et al., 2002). Experts in India have admitted that social security reform is essential and necessary, but they have not produced any concrete outcomes (Asher, 2009; Bloom et al., 2010).

2.4 Evolving Research Objectives

Financial literacy significantly influences individuals' financial behaviour by displaying positive changes in financial aspects. Inadequate financial literacy leads to limited participation in high income generating avenues causing negative impact on retirement planning. Studies shows that individuals are often not motivated after an initial investment. This leads to their financial ability to deteriorate, leading to the overall plan to have failed (Ansong and Gyensare, 2012). This is because individuals tend to have lower levels of financial education. However, there will also be subsets of the population for whom a modest start-up investment in financial literacy might pay off handsomely. This indicates that the rewards of financial education are significant owing to its benefits in the long term than a shorter duration. If increasing participants' financial literacy is a long-term aim of the programme, then the continuing exercises should be included. This will guarantee that when some time has gone, the initial investment of the participants is not lost. This is crucial to ensure the programme continues to be useful once installed. (Lusardi et al, 2015). The study performed by Wang and Hesketh (2012), the studies catering to the analysis of people's knowledge and interest in managing their finances have increased in the recent years. The studies supplement knowledge on the matter and enhance the existing knowledge of individuals who are interested in knowing more for their better future after retirement. One of these elements might comprise more dependents and costs associated with providing care for dependents (Wang and Shultz, 2010). These aspects are seen as hurting the economic security of those who have reached retirement age.

According to the findings of the second part of the research, the likelihood of a retiree's financial well-being deteriorating is proportional to the number of dependents and the total amount of money spent on those dependents. According to the findings of research conducted by Lusardi and Beeler (2006), which compared how individuals of two generations saved money, having more children is associated with having less wealth. This indicates that the number of people on whom a retiree is financially reliant may affect the retiree's overall financial well-being.

Research Objectives I: Investigate the role of financial behaviour on retirement planning. Comprehensive understanding of finance enables to make more informed decisions on finances (Willis 2011) and the best course of action is to improve their financial literacy. There has not yet been a general consensus among academics about the effectiveness of programme that are aimed to increase the participants' financial literacy. Opposition has been voiced in response to proposals to make financial education mandatory; on the grounds that doing so would necessitate reducing the amount of time spent on instruction in other classes, would be expensive, and might not result in significant changes to the students' long-term financial well-being (Wheatley, 2013). An examination of over 200 articles indicated that interventions aimed at improving people's financial literacy had only a minor impact on the quality of financial decisions made in response to their present financial circumstances.

According to Hershfield et al. (2011), knowledge of pensions, the difficulty of the information that is provided, and the choice problem are all important factors; however, even individuals who are knowledgeable about pensions will only make deliberate judgments about their pensions if the options that are presented to them are not overly complicated. On top of this, it is essential to include members of the general public. For instance, younger individuals not instigated to look into their financial matters about retirement due to the impression that there abundant of time are likely to lose a better opportunity of building substantial amount of wealth (Knapp, 1991). Nevertheless, it is possible to get a clearer picture of the person's future self by seeing them as they will be in their later years. This will help put their future selves into better focus. This is an illustration of one way to encourage the participation of people. The implementation of "know your customer" philosophy in the economic system including insurance and pension schemes could call for innovative strategies and technologies, which have barely ever been implemented in actual situations. The level of financial literacy, pension understanding, and participation in pensions is shown to be rather low, according to empirical

investigations. Even when they are required to make their own decisions and be responsible for their retirement income because of how the system is set up, the vast majority of individuals are unaware of the critical components. This is because it is difficult to picture oneself in retirement, decisions about pensions are challenging to make. It is essential for the pension business, as well as regulators and supervisors, to consider the decision-making processes associated with intuitive thinking (also known as "system 1"). This involves, for instance, relevant information about the lifestyle. The person may not want to face the risk of losing their pension, their investments, or the estimated amount of money they will have. The level of participation in pension plans and the quality of choices about retirement and pensions may be improved by financial literacy and, as a result, better judgments about pension schemes can be made.

Research Objectives II: Explore the impact of Financial Behaviour on Retirement Adequacy.

The effectiveness of financial education Programmes may vary widely depending on factors such as their subject matter, the time of their delivery, and the incentives offered to the target audience to continue or expand upon their initial commitment. Improving financial literacy and one's understanding of pensions is not, by any means, sufficient to ensure that one will make the best possible decisions about one's pension. McKenzie and Liersch (2011) noted in their research that, in tandem with the increasing significance of personal decisions in savings, consumer behaviour studies are devoting more attention to learning about the public's conservative behaviour in this area (Ooijen et al. 2015). Historically, this topic has been framed in terms of the monetary incentives for investing, like the "life cycle model", in which rational agents save and borrow to smooth out their consumption throughout their lives. For instance, the life cycle model assumptions are at odds with the reported poor saving rates that have emerged more recently. This data does not fit the model's expectations (Schooley-Pettis et al, 2013). It's possible to interpret the current uptick in behaviorally anchored explanations of retirement saving as an effort to reconcile the inconsistencies between personal saving as foreseen by the "life cycle model and facts". This is because the LCM assumes people would put away more money than they do. In his study, Remund (2010) mentioned that a school of thought proposes incorporating "objective and subjective" knowledge into financial literacy assessments. This is because the purpose of these evaluations is to gain an understanding of an individual's capacity to make decisions and manage their finances. The vast majority of research using financial literacy indicators continue to focus largely on factual information

(Nicolini et al., 2013). Based on a meta-analysis of 71 papers on the topic, Huston (2010) concludes that researchers have asked questions related to at least three domains of financial literacy. The notion of time, money, interest, compounding, borrowing, and investing are all part of this information (insurance or risk management). Depending on the issue, the amount it has been explored in the past varies.

According to Huston (2010), many definitions of financial literacy include the three knowledge aspects of familiarity: objective knowledge, subjective knowledge, and general knowledge. Both the application dimension and the objective knowledge dimension are stressed. It is important to note the connection between "objective and subjective knowledge", which is the conclusion that should be anticipated if one thinks that "objective information" may affect "subjective knowledge". Carlson and colleagues (2009) highlighted that the association between subjective and objective knowledge is variable in a meta-analysis of research that investigated the link between the two types of information. The link is often rather high in a product scenario and for search-related items specifically. (Chiou et al., 2002). Huston's (2010) research on financial literacy shows that even someone is "financially literate," that is, "someone who has the knowledge and the ability to use the knowledge, may not exhibit the behaviour or advances in financial well-being that were predicted". These factors include: These effects might be brought on by cognitive or behavioral biases, issues with one's self-control, familial, economic, communal, and institutional variables. Sabri et al. (2012) discovered that students' literacy level in financial matters had a substantial effect on their reported financial well-being. According to the findings of Taft and colleagues' (2013) study on the association between financial literacy, financial well-being, and financial anxieties, having a greater degree of financial well-being is correlated with having a higher level of financial literacy. Therefore, a solid understanding of finances is essential to maintain a healthy financial position. Before one really enters retirement, one must make difficult decisions and compromises to ensure financial security throughout retirement (Kahneman, 2011). People have to choose how much money they will spend against how much they will put away.

Research Objectives III: Assessing the role of Financial Behaviour on Retirement Satisfaction.

The ability to secure one's retirement and the knowledge necessary to manage one's finances (Lusardi and Mitchell 2011a) are essential components of one's overall financial well-being. Because they have fewer resources, retirees must have a thorough understanding of personal

finance to make sound judgements. Because of the increased expense of living in retirement, having a basic understanding of personal finance is crucial (Yang and Devaney, 2011). The life-cycle model may be shown in a straightforward manner via the processes of maximizing the lifetime utility, smoothing consumption, and making judgments under certain circumstances. The theories are predicated on the suppositions that humans are capable of foresight and reasoning, and that they have access to knowledge on the myriad of factors that may influence their capacity to build money. Ntalianis and Wise (2011) investigated how having a solid understanding of money might affect the method of preparing for retirement savings such as superannuation. In particular, they center their attention on the ways in which having an in-depth knowledge of retirement planning might influence the procedure. The findings of the study indicate that the governments of many nations are unable to offer a sufficient income for retirees. This is highlighted by the findings. It has been shown that the availability of financial education has a positive influence on retirees' preparation, and it has also been found that having enough cash accessible for retirement is crucial. It has come to our notice that attending seminars, acquiring knowledge in the form of printed materials, and receiving access to information via the use of the internet are all efficient techniques for gaining access to information on finances.

As per Adenutsi (2009), Planning for one's retirement is more important to one's overall success, which entails making financial arrangements and saving in order to be ready for any unpredictable economic situations that may play out in the future. The employees of Ghana should come up with a thorough retirement plan in order to guarantee their financial stability in their golden years. Because the country's defined benefit pension system is so insufficient, the implementation of defined contribution pension plans has elevated the significance of this issue to the level of utmost significance. This indicates that the financial security of seniors may be impacted by their preparation for retirement. According to the findings of research conducted by Lusardi and Mitchell (2007), Many Americans of retirement age may not have put away enough money to maintain their present standard of living. The study looked into whether or not people took an effort to assess how much money they required for retirement, whether or not they developed a savings strategy, and whether or not they were successful in sticking to the savings plan. (DeVellis, 1991). Only 31 per cent of the elderly ever formulated a plan for their retirement, and of those, only 65 per cent were successful. It was discovered that calculating retirement needs is a challenging endeavour to do. Only 19% of the persons in the sample, which was comprised of a dataset of adults in the United States older than 50 and

representative of the whole nation, had retirement plans that turned out to be effective. When individuals reach the age when they can retire, this may have an impact on their overall financial well-being. In 2014, roughly half of working-age Americans polled said they were optimistic about their ability to sustain their current standard of living after they reach retirement age. The proportion was 52 per cent among people in the age range of 18 to 29 years old. On the other hand, half of those between 50 and 64 feel certain they will have a sufficient amount of money to enjoy a comfortable retirement. Surprisingly little variation is shown across age groups regarding these expectations for financial well-being in retirement, which implies that worries about financial well-being in retirement are common in all age groups.

2.5 Research Gap

The section that follows covers financial literacy and retirement planning constructs that previous research has utilised as predictors of retirement adequacy and retirement satisfaction. Previous research make it abundantly evident that favourable pre-retirement preparation contributions influence "retirement adjustment and post-retirement well-being". The research published so far reveals unequivocally that increasing financial literacy and awareness about pensions is not nearly sufficient. Studies on retirement adaptation have been conducted mainly in Western countries, including the U.S., Australia, and the U.K. India's retirement, pension, and social welfare Programmes are less generous than many other nations. In order to better comprehend the research gap, a few approaches were taken in this study. To begin, categorize all attributes into individual level constructs to see if they demonstrate the impact of financial literacy on retirement planning. (Adam, 2017). The goal of this research is to select those elements in the model that will evolve the retirement planning model. Secondly, it s attempted by this research to identify the factors which are most useful for the research. By this process the research gap can easily be highlighted and individual level variables of retirement adequacy and retirement satisfaction can be sorted.

2.6 Constructs of the Study

The following category discusses the constructs used in developing this study's theoretical framework. This research study has used the constructs such as savings attitude, borrowing pattern, investment decisions, insurance allocation, spending behaviour, retirement planning, retirement adequacy and retirement satisfaction.

2.6.1 Saving Attitude

Majority of the individuals have poor savings routines because they are under the impression that getting ready for retirement is challenging (Lusardi 2003). They do not rethink this assumption until they are placed in a position where they cannot choose retirement. According to Gedela (2012), the saving propensity is increased through right enticements and plans to improved preparation for superannuation with increased domestic savings. This may be accomplished via increased domestic savings. For one thing, retirees who have more money stashed away at home may be able to organize their preparations for the future more efficiently. In the United States, for example, a practice known as “automatic enrolment,” which is often referred to as "negative election," has significantly increased participation in defined contribution plans. This improves team member retirement savings (Benartzi and Thaler, 2007). Each worker must make their own savings choices to ensure they have enough money set up for retirement when they want to retire. In order to have financial security in retirement, workers need to know a rough amount of money that is to be saved when to start saving, and where to put their money (Clark et al., 2013). People thinking about retiring but do not know how to save or invest for it are more likely to incur financial risks without realizing it and less likely to prepare ahead. (Mbazigwe, 2013). The capability to have proper ideas to save money is variable, for it depends on certain factors such as environmental conditions, differences in individuality, and psychological processes (Joo and Grable, 2005). Parents have critical responsibilities in teaching their children acceptable conduct in several facets of life, including money management. Ward and colleagues in the year 1977, discovered that a child’s behavior towards saving money could be established by giving them prescriptive and proscriptive financial instructions. They asserted that if saving money were crucial for parents, the child too needs t to understand this, and they will be able to manifest the behavior in themselves (Adams and Rau, 2011). Saving results are undeniably influenced by self-control. No matter how important people think, saving is, if they can't resist the short-term temptations and don't discover other means to control their expenditure, they won't be able to save extra money. (van Rooij and colleagues, 2011a).

2.6.2 Borrowing Pattern

Sophisticated persons, according to Garoarsdottir and Dittmar (2012), have poorer money management skills and a greater proclivity for obsessive purchasing and spending. Indeed, the materialistic mindset is linked to a preference for saving money over being a spendthrift. Hershey and Mowen (2000) discovered an indirect association between borrowing patterns and

financial preparedness. Payne and colleagues (2014) identified a similar indirect relationship between borrowing behaviours and retirement planning. The only link between borrowing habits and retirement savings is financial stress. Circumstances and needs are always changing. A healthy financial state now does not ensure a similarly sound future (Clark, 2014). As a result, poor or no financial planning may be devastating. Even a momentary loss of income might deplete your savings or result in debt. Saving may get wiped away due to uninsured loss. Inadequate retirement funds may necessitate a reduced lifestyle. Frequent or unexpected borrowings might result in negative money, i.e., future obligations. Borrowing money for a company or asset development (such as a home) is a solid money management strategy, as is borrowing now when you can see a secure and healthy future income. It is similar to investing in your future earnings. Such a loan is regarded as good debt. When everything else fails in an emergency, debt might help to stabilize your finances. Individuals, however, haphazardly handle borrowing, primarily to deal with an emergency or cover costs that may be needless just to build a poor debt. Sufficient consideration is not given to how the interest rate will affect the amount borrowed or how you will return the loan plus the interest. In that case, one may be left "managing" every day, attempting to repay causing tremendous stress on retirement planning.

2.6.3 Investment Decision

It is a common assumption among many people that having a retirement plan is most significant when you are approaching retirement age. Their mistake lies in thinking they are too young to plan their future retirement years. With this misunderstanding, even if they start to save for a better life after retiring, the savings will be inadequate (Martin et al, 2016). Self-control concerns include preferring to behave in one manner but ultimately acting differently (O'Donoghue and Rabin, 2001). Reasonably because people are subjected to choose short-term satisfaction while ignoring its long-term implications, long-term investment choices are significantly affected by self-regulation. To increase their long-term economic security, people must exercise restraint and avoid the impulse to spend money in the near term." (Howlett et al, 2008). It is difficult to prepare someone for their future; fewer people believe they are doing it well. (Fernandes eta al, 2014). A retirement plan requires a great deal of information to be put together. Financial literacy and retirement planning seem to be linked (Sekita, 2011). According to research, several personality traits have been linked to a person's ability to make savings and be prepared for the future (Bearden and Haws, 2012; Friedman and Scholnick, 2014; Yang and Devaney, 2011). 40% of effective managers use formal procedures, but most simple strategists rely on less formal methods (e.g., retirement calculators, retirement seminars,

or financial professionals) (e.g., conversing with family or friends). In terms of retirement planning, there is a considerable measuring gap (Earl et al, 2015). However, there is increasing evidence that retirement planning is feasible, and broad and problematic evaluation scales drive the study.

2.6.4 Insurance Allocation

According to the research, financial literacy and retirement planning seem to be linked (Sekita, 2011). People who think about the future and like to plan, according to personality research, are more likely to save and plan. (Bearden and Haws, 2012; Friedman and Scholnick, 2014; Yang and Devaney, 2011). 40% of effective planners use formal procedures. In contrast, most simple planners rely on less formal methods (e.g., retirement calculators, retirement seminars, or financial experts) (e.g., conversing with family or friends). There is a huge discrepancy in how pension preparation is measured (Earl et al, 2015). Despite rising evidence that retirement planning is feasible, the study is driven by broad and flawed evaluation scales with respect to insurance distribution (Lusardi and Mitchell, 2011b). Several recent findings, however, contradict previous studies on the influence of insurance distribution (Adams and Rau, 2011; Xiao and O'Neill, 2016; Xiao and Porto, 2017). Insurance is a risk management tool. As a result, it prepares to handle any unanticipated financial loss, such as death or sickness. Insurance plans give financial stability by paying for losses incurred during an emergency. If an emergency occurs, the insurance coverage will cover the damage, allowing to arrange a budget and save for retirement. It also assures that the intended corpus is safe and will not be utilized in an emergency (Ajzen, 1991). Life insurance premiums purchased by a person will be deducted under Section 80C, and when one purchases a health insurance premium, it will be deducted under Section 80D. Both of these deductions give peace of mind by making them save a significant amount of money. For instance, we can understand with the help of the existing scheme of the Indian government. These will reduce the taxable income by 2.5 lakhs which is 1.5 lakhs under Section 80C and 1 lakh under Section 80D. So, if a person falls in the 30% tax rate slab category, this will help them save at least INR 75,000 in taxes. These policies are extremely supportive of the citizens and are completely legal. The govt. also promotes these investment plans, ultimately indirectly proving financial support to people.

2.6.5 Spending Behaviour

Monetary pleasure may be achieved by adopting the best possible spending patterns. As a result, monetary contentment is dependent on people's capacity to better effectively manage

their finances and hence their capacity to make good investment decisions (David, 2017). Spending behaviour of individuals elucidates the level of an individual's financial literacy by way of their thought process as to the extent of their present spending rather than plan for the future (Howlett et al., 2008). Individuals with perspective towards their future, plans tend to save and invest more than engaging in activities than delete their income. Individuals who manage their expenses are likely to be meticulous with respective t their income by setting up goals that would benefit their future and thereby create a better future with a solid retirement plan. However, there are opposing opinions on the impact of spending behavior and planning. Petkoska and Earl (2009) demonstrated that spending behavior did not predict planning across all domains which is vital for adequacy and satisfaction during retirement.

2.6.6 Retirement Planning

Retirement planning requires individuals to make choices and concessions years before retirement age to guarantee that they will be financially secure in their old life (Boddy et al. 2015). On the other side, financial well-being is described as the condition of having enough money to satisfy all of one's present and future financial commitments without worrying about one's ability to meet other life's demands. Someone reached this point might be regarded as financially secure (OECD, 2015). Feeling in control of one's financial circumstances, having the resources to weather a financial storm; being confident that one is on the right path for attaining one's finance aims, and has the freedom of deciding on what makes them enjoy life (Katsikopoulos, 2011). Some people have the discretionary income to pursue activities that enrich their lives because they have access to higher financial resources. This independence allows for the satisfaction of wants in addition to needs, such as taking occasional trips and buying luxuries (CFPB, 2015). Clark et al, (2014) discovered a substantial connection between being happy in one's employment and preparing for retirement. In addition, they discussed the retirement choice of those presently participating in the private labour market and the work satisfaction upon retirement, which, although substantial for men and women, is somewhat higher for females (Atia, 2012). It was discovered that one of the variables that inspire people to prepare for retirement is having a job that they like. There is a possibility that this sort of interaction will improve an individual's views towards their profession on occasion (Dendinger et al, 2005). This is substantiated by DeVaney and Chen's (2003) study. In the study, the authors describe how an individual's approach toward their job relates to their relationships with superiors, top management, and co-workers. These relationships are considered to be

essential component of job satisfaction as they allow individuals to have over their retirement planning.

2.6.7 Retirement Adequacy

The adequacy of retirement income necessitates the simultaneous consideration of all components of retirement income. A comprehensive estimate of retirement wealth can then be compared against a measure of retirement need to determine retirement sufficiency. (Devlin , 2011). Individuals with positive attitudes and excellent financial planning would be able to earn adequate retirement income. Adequacy also focuses on a variety of other issues in economics, psychology, and health policy. Bharati (2015) examined the function of government assistance concerning individuals' economic security in their later years. He argued that older adults needed to live for a more extended period because of their relevance in their families and the invaluable experience they possess, as well as because they should continue to be healthy. As a result, individuals need to be given the means to achieve financial independence and dignity, which may be accomplished via a pension. Moreover, the requisite institutional infrastructure to back them up. When it comes to meeting the requirements of senior citizens for social security, India's experience has, on the whole, been less than satisfying. There has not been a consistent or comprehensive policy approach of any consequence; instead, there have been reluctant and limited occasional initiatives. The adequacy of retirement income varies from person to person, depending on characteristics such as lifestyle and salary during employment years. As a result, a strong investing strategy is essential for building a retirement corpus and providing financial security throughout retirement. Zabri et al. (2016) researched the "private retirement scheme (PRS)" factors that influence retirement planning practises for retirement adequacy. This research takes a quantitative approach, and the primary tool for data gathering is the completion of questionnaires included inside survey formats. Employees from the private sector working for five different private firms in Malacca were chosen to participate in this research. The descriptive method was used in the analysis of the data that was obtained. The outcomes of this survey indicate, in general, that the "degree of knowledge of PRS is still quite low which is necessary for retirement adequacy.

2.6.8 Retirement Satisfaction

Goswami (2001) performed research on the retirement system in India. It is possible that the experiences of India may influence the decisions made about policy in other emerging

countries, especially those nations that depend on a system of national provident funds in the same way that India does. The paper provides an overview of the difficulties that are currently being faced by the system, including Aging of the population: The age distribution of the population is severely impacted by a number of variables, including an increase in the average life expectancy and a decrease in the birth rate. It is evident that a higher number of elderly individuals will emerge as a result of such a demographic change, and this should be expected. MacKellar (2009) investigates the practices of several Asian nations concerning extending the coverage of the pension system to employees in the informal sector of the economy. He contends that in light of increasing rates of informality and population ageing, governments in the area need to act swiftly and with an eye toward the future to offer enough safeguards against the possibility of old age poverty. This risk is greater for employees in the informal sector, as is the issue of reaching them through more traditional ways of pension planning in the official sector. The research concludes that extending coverage to employees in the informal sector via required methods is unlikely to be successful based on many case studies. However, since employees in the informal sector often have a lesser capacity for savings and higher discount rates, tailored subsidies may be necessary to stimulate enrolment to meet the demand. Some of the problems concerning the creation of these schemes, like those relating to the administration and the selection of contributions, are discussed, and the significance of attempting "It is emphasized that challenging trade-offs need to be resolved between payments to avoid old-age poverty and spending on other social programme".

2.7 Theoretical Framework

To provide a better understand of behavioral finance, Razek (2011) aimed to explain its foundational concepts and how they relate to conventional finance theory. In addition to this, it reexamined that the behavioral life cycle model, which had its foundations in the classic life cycle model. The purpose of presenting this model was to demonstrate that behavioral finance should not always be considered to be in a contrast state. It was suggested that they might genuinely complement other aspects of one's life, such as retirement or savings, and eventually provide improved models with increased capacity for prediction. Lytle et al., (2015) investigated various theories on career development and theories that were explicitly about retirement. According to a report, career construction theory seems to have a more insights to discuss about how financial retirement decisions should be thought about and how to counsel older workers. The idea views career development as a flexible, lifelong process rather than one that comes to an end once a first career selection has been made, also it explicitly addressed

retirement in the context of career development. According to the study's findings, the constructs of adaptability and career construction theory are sufficiently inclusive to be directly applicable to the financial retirement stage of life.

According to the findings of a study conducted by Larson et al., (2016), the millennial generation has been subjected to an unusual environment, which may have a long-term effect on the financial investment decisions made by adults who are planning for retirement in the future. A collection of studies using a variety of research approaches studied how knowledge and risk combine to influence the retirement investment decisions of millennials. According to the findings of the study, individuals who had a low level of confidence in their financial understanding took fewer risks. In addition, it was shown that a lack of financial literacy increases a person's vulnerability to the influence of "feelings as information" when it comes to making decisions on retirement. It was understood using the qualitative data to think about the connection between the financial decision making of millennials and the climate of risk that was imposed on by the Economic Crisis.

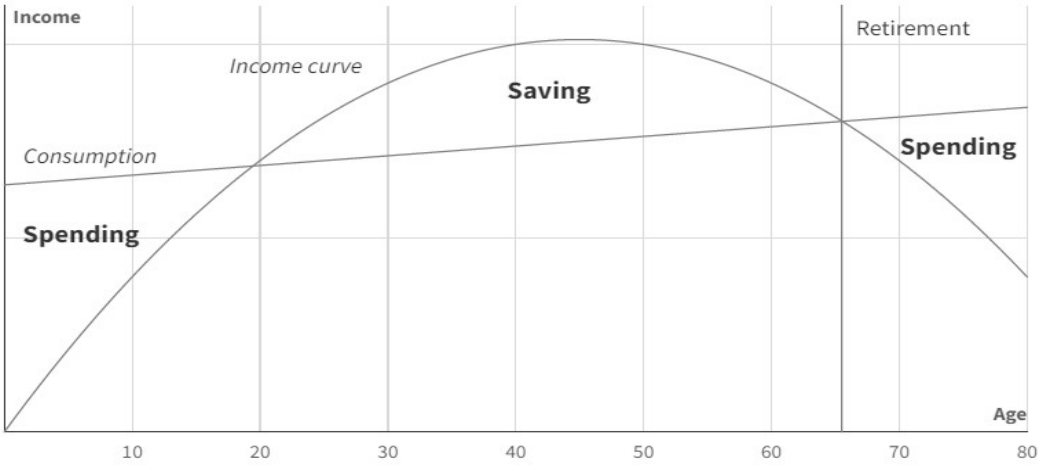

Figure 2.2: Life cycle theory relating to other financial variables[12]

French and Jones (2017) conducted research and analysis for the purpose of a survey on the relationship between health and retirement as well as insurance in developed nations. The research outlined the processes through which health had an impact on labour supply and analysed the ways in which those processes interacted with public pensions and public health insurance planning. According to the findings of the study, the historical evidence revealed that health was not the primary source of diversity in retirement across countries and over time. In

[12] https://www.investopedia.com/terms/l/life-cycle-hypothesis.asp

addition, a deteriorating state of health with age can only account for a minor portion of the reduction in employment that occurs around the age of retirement. Rameli and Maimuthu (2018) emphasized that attitudes towards retirement can contribute to the formation of saving intentions, which can subsequently lead to the action of retirement planning. It was noticed that the urge for individuals to increase their retirement savings had been overstated. Despite this, there is still a lack of understanding of individual incentive to save at higher rates. Workers who are thinking about retiring should make sure they have enough savings to support themselves during their retirement years. The study's findings were eventually conceptualized using behaviour theory, with the sole focus recommending the function of savings intention as a mediator between attitudes towards retirement and behaviour planning.

According to Hannatu Ibrahim (2018) various theories relating to life, retirement, financial planning such as the theories of Financial Planning, The Theory of Planned Behavior, and Retirement Adjustment covering Continuity theory, Stage Theory, Role Theory, Life Course Perspective, The Resource-based Dynamic Perspective, Structural-Functionalism, and Expectancy theory should be deliberated consistently with the employees by the employers thereby providing them with knowledge, insight, and information. These theories were established and published with the goal of promoting joyful retirement based on previous trustworthy choices made while in service. As a result, the study suggested, among other things, that employees be aware of the ideas they may utilise to make their retirement more joyful and fulfilling. Lusardi et al. (2019) conducted research on Americans approaching retirement age's debt and debt management practices. The goal of this study was to show that elderly persons have various financial responsibilities, which can lead to financial difficulties. The findings of the study revealed a lack of financial literacy, a lack of information, and behavioral biases, all of which contribute to the prevalence of debt and borrowing later in life. Furthermore, the study found that carrying debt into old age can have a negative impact on one's ability to enjoy retirement. It was assumed that the newly developing discipline of behavioral economics extended the conventional knowledge of the process of making financial decisions by providing new insights that are important to debt comprehension and debt administration.

Using a descriptive and analytical approach, Beleulmi (2021) sought to understand how human behaviour affects financial and investing decisions according to behavioral theory. The investigation came to the conclusion that the conventional financing model does not adequately capture financial behaviour. Behavioral finance's central tenet, in contrast, was mentioned:

investment behaviour does exist and is distinct from what the conventional financing model presumes. Additionally, it was said to have an impact on financial savings and have increased comprehension of financial decisions and how they affect savings. This demonstrated that behavioral finance was frequently more accurate in predicting the behaviour of financial markets. According to the findings of a study on retirement, planning and borrowing patterns conducted by Fan et al., (2022), respondents who were struggling to make ends meet were more likely to have calculated their retirement needs and to have their own retirement plan that was not sponsored by their employer. According to the study's findings, the difficulty of making ends meet and the sense of having too much debt changed with people's approaches to retirement planning across three generations. In contrast, there was a clear and unfavorable link between a fragile financial situation and the retirement planning behaviour of people of all generations. It was brought to everyone's attention that the life cycle hypothesis stated consumers should borrow money to balance out their consumption, and there were optimal debt ratios.

2.8 Hypotheses Development

The hypotheses in the following category is about the influence of financial literacy on the five behaviours of finance namely, saving attitude, borrowing pattern, investment decision, and insurance allocation and spending behaviour in achieving retirement adequacy and retirement satisfaction. It also presents retirement planning as a mediating variable and the impact of retirement planning on the financial behaviours in order to achieve adequacy and satisfaction.

2.8.1 Direct effect of Saving Attitude, Borrowing Pattern, Investment Decision, Insurance Allocation and Spending Behaviour on Retirement Planning.

2.8.1.1 Direct effect of Saving Attitude on Retirement Planning

For an individual to have adequate retirement saving it is essential to have an insight into savings. These kinds of mind-sets yield excellent results in the post retirement life. A healthy attitude towards saving comes through increase in the levels of education catering to people’s ability to perceive the need to save money. Avoiding reckless spending and mindless behaviour can potentially pave way for a better outcome in the retired life. Once an attitude of savings begins, it only helps to further strengthen the benefits. The ability to understand and comprehend the different types of financial information greatly benefits in providing help

towards financial needs and possibilities. When people are aware of the needs to save there is constrained expenditure and more saving creating a well-planned retirement.

H_1: *There is a significant relationship between Saving Attitude and Retirement Planning*

2.8.1.2 Direct effect of Borrowing Pattern on Retirement Planning

Financial behaviours early in life greatly influence the outcome of planning for retirement. Unmindful spending can be the beginning of unwarranted financial stress that may last an entire lifetime, leading to difficult situations (Tang et al, 2015). Spending money in an unplanned manner may end up in an extreme financial crisis that ultimately unfolds into a pattern of borrowing money. Debts can seem to be an easy fix to tide over a difficult financial situation however; can lead to a vicious cycle of spending and borrowing money. These debts have not only a financial impact but also an extreme psychological impact on the well-being of an individual. Over-time these debts become a habit. Some of these debts continue into retirement along with further borrowing of money (Jappelli et al, 2021). Such behaviour is harmful and translates into poor planning for retirement. Better planning of finances is key to fruitful planning for retirement.

H_2: *There is a significant relationship between Borrowing Pattern and Retirement Planning*

2.8.1.3 Direct effect of Investment Decision on Retirement Planning

Organised and thoughtful planning of finances should start early in life when there is a good steady income source. These decisions greatly influence the future and create a mould for a comfortable retired life (Rabinovich et al, 2010). In India, individuals have to bear many costs throughout life as the basic family structure holds high moral grounds. Providing a comfortable home, good education and nutritious food is one of the prime responsibilities among families. For all these necessities to be fulfilled an individual must have a strong financial foundation. Investing in the correct form of opportunities will reap benefits multiple manifolds and create stability (Payne et al, 2014). Many government schemes, acts, and organisations are available for this purpose. These are extremely beneficial for providing security for a better financial future. Most of these investments provide their benefits later in life, which may be closer to the time of retirement and hence help to create a more secure retirement (Palací et al, 2018).

H_3: *There is a significant relationship between Investment Decision and Retirement Planning*

2.8.1.4 Direct effect of Insurance Allocation on Retirement Planning

It is needless to emphasise that life can be unpredictable and being prepared for an unprecedented future is the best form of planning. Adequate planning for the future and financial security involves a great deal of far-sightedness for being able to handle any sort of deviation from a planned life (Razek et al, 2011). Thefts, unexpected deaths, natural calamities, sicknesses, and any type of misfortune may have long-term impacts on the finances of an individual. Therefore, the wisest and the most secure way to deal with such unexpected turnoff events is to be prepared for such events. Insurance of such valued assets is a game-changer and it ensures security when none would be available (Rudzinska-Wojciechowska, 2017). It is only wise to insure assets during the early years of life thus securing.

H_4: *There is a significant relationship between Insurance Allocation and Retirement Planning*

2.8.1.5 Direct effect of Spending Behaviour on Retirement Planning

During the early years of employment, the steady inflow of income can lead to reckless spending behaviour which needs to be checked and curtailed. In countries like India, employment not only provides a source of money and a great deal of financial stability but it also marks independence, self-assurance, and more importantly freedom to take decisions (Garoarsdottir et al, 2012). This can be can sometimes lead to frivolous unmindful unnecessary spending. This kind of spending can cause a deep void and financial stress in the future. Most individuals do have an insight into the consequences of overspending and end up with poor finances when paid employment ends (Vinmalar et al, 2018). In such instances of spending peer pressure holds a significant role and most young people succumb to it. This kind of unthoughtful spending is detrimental to a financially secure future.

H_5: *There is a significant relationship between Spending Behaviour and Retirement Planning*

2.8.2 Direct effect of Saving Attitude, Borrowing Pattern, Investment Decision, Insurance Allocation and Spending Behaviour on Retirement Adequacy.

2.8.2.1 Direct effect of Saving Attitude on Retirement Adequacy

During the early years of employment, it is of extreme importance to have an insight into the financial situation and have a thoughtful plan in terms of expenditure and saving (Ooijen et al, 2015). Saving can be deemed, as a habit that needs to be cultivated over time and starting young is key. Understanding that frivolous spending will have long-term effects on adequacy after retirement. Once an individual has acquired enough wealth during their years of employment

there is a sense of stability, which provide adequacy in the retired years. These directly translate to independence and self-sufficiency.

H_6: *There is a significant relationship between Saving Attitude and Retirement Adequacy*

2.8.2.2 Direct effect of Borrowing Pattern on Retirement Adequacy

During the early years of employment, even though there is a steady income, individuals may indulge in unnecessary spending causing an extreme financial crisis. This causes a shortage in the financial reserve of necessities with the obvious solution as borrowing of money and being trapped in a web of debts. These debts have long-term impacts and negatively impact post-retirement time (Schooley-Pettis et al, 2013). These overdue debts end up in extreme disharmony among families and lead to an extremely poor sense of adequacy in the later years. Borrowing money is a cause of unnecessary trouble during the latter years when the individual is entering into potentially relaxed years (Wand and Shultz, 2010). Individuals may be forced to make difficult financial choices bringing down stability that retirement must provide.

H_7: *There is a significant relationship between Borrowing Pattern and Retirement Adequacy*

2.8.2.3 Direct effect of Investment Decision on Retirement Adequacy

Financial markets across the world provide unlimited possibilities for diversification and means of better financial offerings (Howlett et al, 2008). However, consumers and individuals are unable to use these policies as the number of countries participating in these avenues drastically increases the number of available financial products (Crawford et al, 2022). Investments in the right directions at the right time can greatly influence the outcome of these investments. The yield of these investments done early in life can be gained as an adequate life style without compromise in the post-retirement life.

H_8: *There is a significant relationship between Investment Decision and Retirement Adequacy*

2.8.2.4 Direct effect of Insurance Allocation on Retirement Adequacy

Several unforeseen events may occur in life and these can particularly lead to pushing an individual into difficult financial situations. These events can be extremely stressful when occurring in time nearing retirement or post-retirement (O'Donoghue et al, 2001). They impact financial security negatively and have a detrimental effect on the adequacy of life post-retirement. Better planning for retirement involves seeing these unprecedented events and anticipating them much in advance by being prepared for them. Insurance of assets helps to tide over these situations smoothly (Baron-Donovan et al, 2005). It ensures that there is

adequate financial security even when a certain unexpected turn of events may happen. This causes a feeling of fulfilment in life in the post-retirement years.

H_9: *There is a significant relationship between Insurance Allocation and Retirement Adequacy*

2.8.2.5 Direct effect of Spending Behaviour on Retirement Adequacy

Spending during the early years of employment should be in a planned manner. With a steady inflow of income, the younger years can lead to unmindful spending which has an impact on financial stability during the latter years of life (Lusardi et al, 2003). Excessive spending can be a direct consequence of the newly found financial independence along with peer pressure. This kind of behaviour may continue well into years and ultimately drain the finances which are allocated for post-retirement life (Boddy et al, 2015). There will be a considerable impact on the post-retirement era leading to unhappiness and a feeling of shortage. This will cause a compromise on the quality of life due to inadequacies in financial stability.

H_{10}: *There is a significant relationship between Spending Behaviour and Retirement Adequacy*

2.8.3 Direct effect of Saving Attitude, Borrowing Pattern, Investment Decision, Insurance Allocation and Spending Behaviour on Retirement Satisfaction.

2.8.3.1 Direct effect of Saving Attitude on Retirement Satisfaction

Attitude towards finances plays a significant role in defining the quality of life after retirement. Savings must start early in life and should be maintained throughout the years of employment. This kind of behaviour greatly benefits the satisfaction of life post-retirement (Vakil and Modi, 2019). When these practices of saving are carried out diligently throughout the years of employment reaping benefits in the older age when a steady source of income has ended. A good attitude towards saving is acquired over time and ultimately becomes a part of the lifestyle. Unnecessary spending and expenditures on short-lasting commodities can only result in loss of wealth which can eventually result in a shortage of finances in the post-retirement era (Wand and Shultz, 2010). All these habits put together can greatly compromise the satisfaction of retirement bringing unnecessary shortage of money, which could potentially have been handled better with the correct attitude toward saving.

H_{11}: *There is a significant relationship between Saving Attitude and Retirement Satisfaction*

2.8.3.2 Direct effect of Borrowing Pattern on Retirement Satisfaction

Financial behaviours of an individual greatly influence the outcome after retirement. Poor financial behaviours are responsible for poor retirement planning. Unplanned spending without much thought to the outcome creates a big void in the financial situation (Sane et al, 2014). It leads to inadequate finances, which may impact the satisfaction of life after retirement. Unnecessary spending due to peer pressure among young people is the major cause of loss of finances which eventually has a long-term effect and irreversible financial damage (Topa et al, 2018). During younger years this kind of unmindful spending leads to a pattern of borrowing money, ending up in huge debts siphoning finances. Some of these loans end up in great financial stress on the individual (Thaler and Sunstein, 2008). As retirement approaches, these debts may not be cleared and can enter the post-retirement life making unnecessary compromises on the quality and satisfaction of life in the post-retirement era.

H_{12}: *There is a significant relationship between Borrowing Pattern and Retirement Satisfaction*

2.8.3.3 Direct effect of Investment Decision on Retirement Satisfaction

Investments done in the correct sources are a beneficial tool for acquiring wealth for a long-term return. These investments must be started during the early years of earning. When correct investments are made, the returns provide a satisfied life post-retirement life (Vlahos et al, 2011). Adequate knowledge of finances and sources of investments is essential to know the importance of the impact they have on post-retirement life. It cannot be over-emphasised that being prepared for the future is key to a satisfied post-retirement life where individuals need not compromise on their hobbies and lifestyle choices due to a shortage of finances (Weber et al, 2004). Early investments provide the best benefits during the latter years of life.

H_{13}: *There is a significant relationship between Investment Decision and Retirement Satisfaction*

2.8.3.4 Direct effect of Insurance Allocation on Retirement Satisfaction

Insurances for the unforeseeable future are one of the prime sources of retirement planning for a satisfied life. Numerous unwarranted and unprecedented happenings may take place and one can never be over-prepared for them (Rabinovich et al, 2010). These insurances secure a future ensuring the best outcomes in life, especially post-retirement. There are several government schemes and plans available which can greatly benefit the individual. Having a secure future provides control over the present and helps in a smooth transition from work life to retired life.

Planning in advances in form for secured and accumulated wealth by insurances helps to provide a satisfied life post-retirement (Hauff, 2006).

H_{14}: *There is a significant relationship between Insurance Allocation and Retirement Satisfaction*

2.8.3.5 Direct effect of Spending Behaviour on Retirement Satisfaction

Spending money in an unplanned unnecessary manner is detrimental to financial growth and satisfaction post-retirement (Petty and Cacioppo, 1986). Expenditures over impulse buying and peer pressure greatly affect financial stability which lasts over a long period of time and ultimately translates into unsatisfied post-retirement life (O'Donoghue and Rabin, 2000). As long as, there is a steady source of income individuals do not realise the consequences of excessive spending thereby creating a big void which is difficult to fill in the latter years of life. Planned spending with a clear insight into accumulated wealth is key. This kind of reckless spending definitely impacts and compromises lifestyle choices later in life. In the post-retirement time, individuals would like to lead a life without any stress including financial stress (Froidevaux et al, 2016). Any sort of mental or physical stress reduces the satisfaction, contentment and happiness of life.

H_{15}: *There is a significant relationship between Spending Behaviour and Retirement Satisfaction*

2.8.4 Direct effect of Retirement Planning on Retirement Adequacy and Retirement Satisfaction.

Retirement adequacy entails proper planning for the future. This not only incorporates a good decision making for financial security but also includes the quality of life post-retirement (Lusardi, 2003). And important aspect of the level of happiness in the post-retirement time is adequacy. The individual should feel a sense of stability in their financial investments and must be able to lead a fulfilling life without compromises.

H_{16}: *There is a significant relationship between Retirement Planning and Retirement Adequacy*

The amount of content and happiness post-retirement with one's well-being is a measure of the satisfaction that has been achieved post-retirement. A well-planned retirement profile provides adequacy of resources and gives independence and self-dependence thereby giving satisfaction (Garoarsdottir et al, 2012). A good planning and well in advance will definitely provide this benefit.

H_{17}: *There is a significant relationship between Retirement Planning and Retirement Satisfaction.*

2.8.5 Mediating effect of Retirement Planning in the relationship between of Saving Attitude, Borrowing Pattern, Investment Decision, Insurance Allocation, and Spending Behaviour with Retirement Adequacy.

Retirement planning plays a significant role in the outlook of an individual toward financial savings. Planning for retirement incorporates changes which will further help to bring about a major transition in life (Hauff et al, 2006). Prior planning ensures better preparedness by maintaining finances which are the cornerstone to adequacy in post-retired life. Most people do not want a drastic change in their lifestyle post-retirement and would prefer to continue living in a manner similar to the time before retirement (MacKellar, 2009). This kind of anticipation needs focus on finances which can be achieved with an attitude of saving money and spending mindfully. Only when good retirement plans are laid out an individual will have an overview of the accumulated wealth. This will develop into the good practice of saving thereby ensuring a life of adequacy post-retirement.

H_{18}: *Retirement Planning mediates between Saving Attitude and Retirement Adequacy.*

During years of employment even though there is a steady income, there may be poor management of finances which causes financial stress (Lusardi, 2015). This can be solely credited to poor planning on the part of individuals. During these crises borrowing money appears to be an easy fix, but unfortunately pulls into a deep financial void which is difficult to fill. With proper planning, individuals can lay out a map of their financial needs and make informed decisions towards spending (Huston et al, 2010). At the time of retirement if there are debts and loans to be fulfilled it contributes to a great degree of loss of financial adequacy in the post-retirement life and causes a feeling of unhappiness from the retired life (Lusardi, 2019). Planning for retirement during the earlier years of employment will help to limit or curtail borrowing money and eventually provide adequacy during retirement.

H_{19}: *Retirement Planning mediates between Borrowing Pattern and Retirement Adequacy.*

Planning for retirement provides good and relevant information about the financial situation of an individual (Ng et al, 2011). Only when a person plans for retirement do they check and estimate their financial situation with a more critical as well as open mindset (Joo et al, 2005). One of the key elements that planning for retirement brings about is the awareness and

importance of investments. It is of utmost importance to invest in financial policies that will provide benefits in the retired life and will bring about adequacy in life post-retirement. Early planning for retirement should be an integral part of life style (Jappelli et al, 2021). It reaps benefits when a steady source of income has ended. Good investments with sizeable interests ensure adequacy in the post-retirement time.

H_{20}: *Retirement Planning mediates between Investment Decision and Retirement Adequacy.*

It is essential to be prepared for sudden unexpected mis-happenings in life. Natural calamities, accidents and incidents, sickness, thefts, and the like can be life-changing for an individual. These misfortunes are unpredictable and can afflict anyone (Lusardi, 2017). The most important aspect of retirement is to be prepared for it. Having proper insurance plans is the best way ensure a secure future. This gives sense of stability and provides a foundation for the future. Insurance plans reap maximum benefits when they are taken early in life (Kapoor et al, 2014). At the time of the beginning of employment there is a fixed income and procuring insurance plans is easier. Retirement planning includes planning for the worse and anticipating events before they happen (Nicolini et al, 2013). Adequate funds for retirement ensure that there is no compromise on the choice of life style post-retirement. A sense of adequacy prevails among individuals (Lusardi et al, 2011b).

H_{21}: *Retirement Planning mediates between Insurance Allocation and Retirement Adequacy.*

Unnecessary pending during the earlier years of life can have disastrous outcome during the latter years. Excessive spending behaviour causes loss of finances which have a long-lasting effect on the stability of an individual (Moorthy et al, 2012b). During the younger years, finances never seem to be cause of concern and this leads to spending recklessly without thoughts of the future. However, it is extremely important to have an insight into the future. Retirement planning needs long time management of finances (Martin et al, 2016). Only when there is planning for the future, retirement is secured and there is adequacy in the post-retirement stage of life.

H_{22}: *Retirement Planning mediates between Spending Behaviour and Retirement Adequacy.*

2.8.6 Mediating effect of Retirement Planning in the relationship between of Saving Attitude, Borrowing Pattern, Investment Decision, Insurance Allocation, and Spending Behaviour with Retirement Satisfaction.

A healthy attitude towards saving cannot be over-emphasised. An individual with a good insight for retirement planning always spends mindfully and understands the importance of financial saving (Crawford et al, 2022). Proper planning for a comfortable retirement involves many aspects which culminate into financial satisfaction when paid employment ends. Savings should start early in life. It helps to accumulate wealth for post-retirement life (Earl et al, 2015). Spending on short term commodities may ultimately end up in loss of resources and will not be beneficial in long term outcome. Therefore, proper planning for retirement entails a healthy attitude towards saving. When there is enough savings for retirement individuals are happy and content with financial satisfaction even though there is no steady income.

H_{23}: *Retirement Planning mediates between Saving Attitude and Retirement Satisfaction.*

Borrowing money from friends and family many a times seems to be an easy fix to fulfil certain financial shortages. However, this kind of behaviour and habit of taking loans and debts has harmful, long-lasting effect not only on the financial state, but also psychological state of an individual (Howlett et al, 2008). Pattern of borrowing money can sometimes end up in great financial distress and it cause extreme difficulty in resolving these debts. These debts can follow well into retirement and are a source of dissatisfaction among the retired people. People with better planning for retirement have a more focussed approach to their finances (Huston et al, 2010). They have a control over their expenditures and hence a stronger hold on the outflow of their finances. Such individuals are aware that borrowing pattern can lead to disastrous outcomes.

H_{24}: *Retirement Planning mediates between Borrowing Pattern and Retirement Satisfaction.*

Investments throughout life reap great benefits in post-retirement life. These are extremely beneficial in enabling a secured financial future. Several forms of investment are available. All of them have their own advantages (Mireku, 2015). Good retirement planning entails incorporating such essential financial schemes for satisfaction in post-retirement life. Insurance ensures that there are enough resources that are kept aside for any sort of unexpected happenings that may occur during life. Retirement planning provides insight into such incidents and prepares for an unexpected future (Kalenkoski et al, 2016). This brings out satisfaction in post-retirement life.

H_{25}: *Retirement Planning mediates between Investment Decision and Retirement Satisfaction.*

Insurance of commodities is beneficial and has a good outcome in life post-retirement when a steady source of income has ended. These insurance plans are highlighted when individuals are aware of the need for retirement planning (Meir et al, 2016). With good plans for the future, finances can be secured and any sort of unexpected happenings can be dealt with. Good retirement planning makes sure individuals have better insurance and help to prepare for an unprecedented future. When individuals are aware of the need for retirement planning they understand the importance of these insurance plans (Moorthy et al, 2012a). Better insurance plans provide better outcomes in post-retirement life and ensure financial satisfaction.

H_{26}: *Retirement Planning mediates between Insurance Allocation and Retirement Satisfaction.*

Individuals who have better insight into retirement planning have a better outlook towards saving. These people do not indulge in unnecessary spending and understand the consequences of reckless spending (Jacobs-Lawson et al, 2005). The after-effects of prolonged unmindful spending can last a long time and can go well into retired life. Good retirement planning provides insight into the harmful effects of excessive spending during the earlier years of employment (Moorthy et al, 2012b). Individuals who are aware of these patterns are responsible for their behaviour and avoid spending money mindlessly (Martin et al, 2016). Planning for retirement starts early in life and people who plan adequately in advance reap good benefits.

H_{27}: *Retirement Planning mediates between Spending Behaviour and Retirement Satisfaction.*

2.9 Summary of Literature Review

This chapter reviewed studies on financial literacy and financial behaviour research discourse on retirement planning, retirement adequacy and retirement satisfaction. First, a review of the current literature identified the assumptions related with retirement model antecedents and mediators. As a result, research goals were developed to investigate the influence of financial literacy on financial behaviour, as well as the mediating effect of retirement planning between the five behaviour of finance and retirement adequacy and retirement satisfaction. This directed the study's unique research constructs, including cause rubric, cause consequence, cause span, cause purview, emotional advantages, and trust. The theoretical framework of this study was developed and established through a survey of the literature in each domain in general, with a specific emphasis on the research components. The relationship between the research

constructs was determined by a review of the necessary theories and empirical studies. As a result of this, the theoretical framework was created. Financial literacy was envisioned as the precursor to retirement adequacy and retirement satisfaction. The review of relevant ideas and evidences provided the relationship between distinct constructs and led to the hypothesis's deduction. As a result of a thorough literature analysis, twenty seven research hypotheses were developed. The study's construct discussions clarify how constructs fit within the literature fields of financial literacy, financial behaviour and retirement planning leading to achieve retirement adequacy and retirement satisfaction.

CHAPTER - 3
RESEARCH METHODOLOGY

3.0 Introduction

This chapter has discussed the research methodology applied to identify the influence of superior financial behaviours in achieving retirement adequacy and retirement satisfaction directly and the also the influence of the mediating variable retirement planning. The study has documented the need for pilot and has explained the sampling design adopted for this study. Furthermore, the chapter has reported the procedure of determining the sample size, the process of data collection, characteristics of the sample, data cleaning process, and data distribution. Moreover, it has dwelt on the method, scale of variables, and measures adopted for the study. Thereafter, this chapter has narrated the measurement models of the study. Figure 3.1 provides an overview of contents of this chapter.

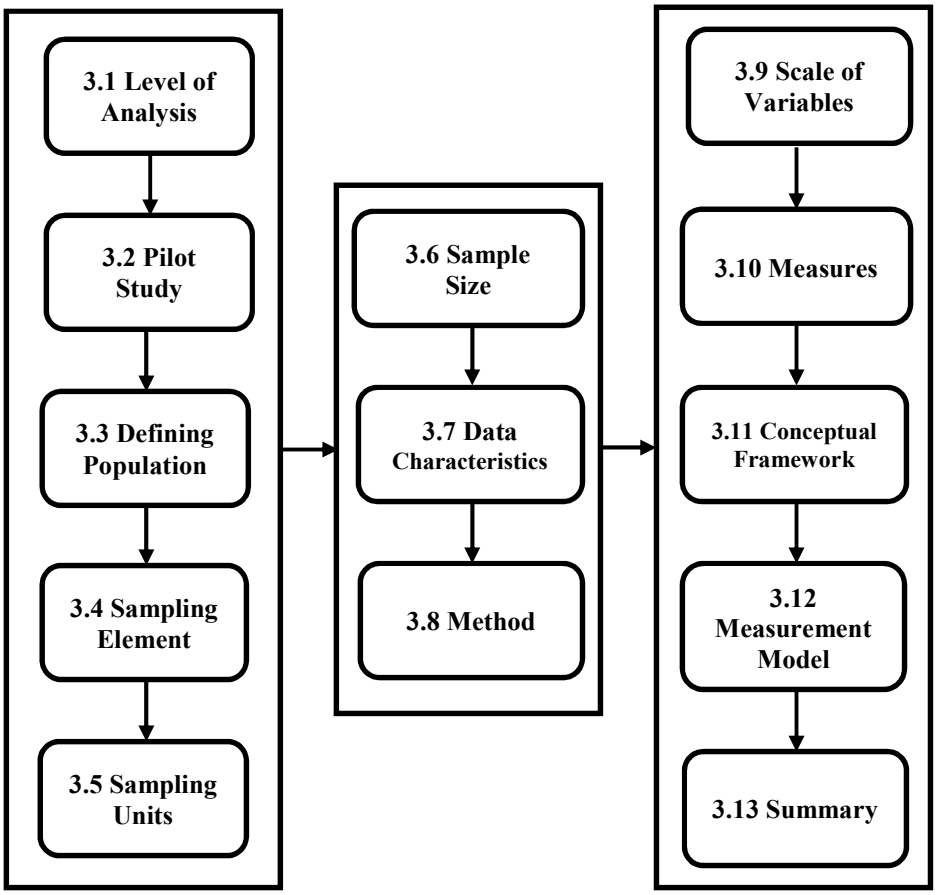

Figure 3.1: A summary of Chapter 3

3.1 Constructs of the study: Level of Analysis

The conceptual framework of this research revolves around the constructs Savings Attitude, Borrowing Pattern, Investment Decision, Insurance Allocation, and Spending Behaviour, the five behaious of finance identified in the study and considered as the exogenous latent variables, Retirement Planning, the mediator and Retirement Adequacy and Retirement Satisfaction, the endogenous latent variables of the study. These constructs are conceptualized and operationalized at the individual level. The following section deliberates on these constructs. Further, it explains the reasons for conceptualizing them at the individual level.

3.1.1. Saving Attitude

The concept of *'Savings Attitude*' postulates the attitude towards saving, which is a residual income after current spending for a specific period. The desire to invest or save money for future needs are investigated to identify the reasons contributing for increased savings. The study explored individuals savings attitude by determining (a) the attractiveness of the product and the (c) potential to save. The study further tailored the barriers to save to individuals' behaviour aiming at sufficiency and contentment post retirement. Because the concept intends to assess individuals' saving mind-set, the construct is operationalized at the person level

3.1.2 Borrowing Pattern

The concept of *'Borrowing Pattern*' is the arrangement made by individual to bridge the financial gap between income availability and needs. Borrowing among individuals vary according to the needs and behaviour. A person will borrow when their requirements exceed income (Tang et al. 2017). Studs claim that having a savings portfolio is important, and a lack of savings can raise sensitivity to debt problems. The construct assesses (a) the impact of inadequate financial planning, (b) insufficient source of income and (c) individuals life style choices to measure individual borrowing patterns and therefore the construct is operationalised at the person level.

3.1.3 Investment Decision

The concept "*Investment Decision*" represents a wide array of financial resource allocation. Individuals invest based on their investment objectives, risk tolerance and expected returns. By allocating financial resource to the relevant opportunity, investment decisions are measured in order to optimise returns. These decisions are made considering (a) investor experiences on the

portfolio and (b) the estimated returns. Since the decision to invest seeks to examine an individual's investment pattern, risk tolerance, and ability to tailor financial goods, the construct is considered at individual level.

3.1.4 Insurance Allocation

The "*Insurance Allocation*" analyses insurance policies that are useful for individuals to protect their family, assets/property, and themselves from financial risks and losses. The study conceptualises this idea to determine if insurance allocation has effect on individual retirement planning (Mason, 2000). It assesses (a) individual's awareness to the facets of insurance and (b) its application depending on individual needs. Therefore, this is a construct at an individual level.

3.1.5 Spending Behaviour

Individual "*Spending Behaviour*" analyses how individuals spend on a regular, almost automatic basis. Spending habits of individuals are never consistent. It is dynamic and change from generation to generation. Individuals play important responsibilities in supporting the country's economy and spending is a big component of overall expenditures. The goal of conceptualising this construct is to comprehend (a) if financial literacy level impacts the spending behaviour and (c) the impact of excess spending on individuals retirement planning. Based on the above, the construct is operationalized at individual level.

3.1.6 Retirement Planning

The concept of' "*Retirement Planning*" intends to examine individual's readiness for future life in order for them to continue to meet their future goals and objectives. It includes both procedural features associated with planning and specific aspects associated with the decision like setting retirement goals, calculating the amount of money required, and investing to build retirement savings. As each individual's retirement is unique, retirement planning should create (a) awareness of issues related to retirement, (b) help to assess available resources, (c) establish strategies and (d) determine the quantum of savings and assets required for each individual. Since the construct is specific to each individual's requirement, we categorise retirement planning in individual level.

3.1.7 Retirement Adequacy

The concept "*Retirement Adequacy*' in terms of finance include adequacy of retirement income by meeting the necessities and allows retired individual's to retain the standard of living prior to retirement. (Simon, 1955). The goal of retirement income adequacy is to achieve appropriate retirement income. Replacement ratios assess retirement adequacy and establish a clear relationship between the spending power that individuals wish to maintain before and after retirement. This construct assesses an individual's aptitude, kindness, and honesty in reaching sufficiency during retirement by (a) assessing the quantum of funds required to live comfortably and (b) maintaining adequate investment portfolios, thus categorising it as an individual level construct.

3.1.8 Retirement Satisfaction

The concept of' "*Retirement Satisfaction*" assesses the success of individual retirement preparation. Retirement happiness depends on the relationship between individual's behaviour and retirement planning. Quality of life and life happiness are important for individuals especially with the demographic change of longer life span, elongating the retirement periods. Studies have noted strong positive association between solid financial situations and retirement satisfaction. Individuals' perceptions of their (a) capacity to plan and (b) lead a satisfied life depends on the satisfaction with their retirement planning and retirement portfolio performance on an individual capacity and therefore this construct is categorised at individual level.

3.2 Pretesting survey instrument: Pilot Study

Carrying out the pilot test of a new instrument is imperative (DeVellis, 1991). If the resources are not available to conduct a pilot test of an instrument, an instrument development study should not be conducted (Sudman & Bradburn, 1974). However even before the pilot test is performed, it is advisable to obtain peer evaluation of the original draft of the newly formed instrument (DeVellis, 1991). Survey questions can be subjected first to the process of a pilot study with colleagues, friends, and family who assume the roles of specific and general audiences (Andres, 2012). According to Lackey and Wingate (1998), the pilot testing of the newly developed instrument should be taken up with subjects chosen from the same population from which the subjects in the proposed extensive study will be preferred. The pilot study was carried out to know whether respondents understand items of the proposed measurement instrument. The pretesting was done with 30 respondents, which number was considered based on Hertzog's (2008) assertion that for assessing the clarity of instructions or items wording,

acceptability of formatting, or ease of administration, a sample of 10 or even fewer may suffice. The responses collected were subjected to statistical analysis to measure internal consistency. Accordingly, only those items which showed p-values < .001 were included in the final survey instrument. All constructs had items whose number ranged beyond the minimum expected two items.

As a result, only items with Cronbach alpha values greater than 0.7 were included in the final survey instrument.

Table 3.1: Survey instruments used in pilot study

Si. No.	Construct Measured	Survey instruments included in the questionnaire served	No. of items in the instrument
1.	Saving Attitude (SA)	M A Hajam, (2020)	8 items
2.	Borrowing Pattern (PB)	A. Ali, et al., (2015)	3 items
3.	Investment Decision (ID)	G. R. Ibbotson, et al., (2007)	11 items
4.	Insurance Allocation (IA)	G. R. Ibbotson, et al., (2007)	3 items
5.	Spending Behaviour (SB)	A. Ali, et al., (2015)	4 items
6.	Retirement Planning (RP)	J. H. Noone et al., (2010)	4 items
7.	Retirement Adequacy (RA)	J. Petkoska and J. K. Karl (2009)	6 items
8.	Retirement Satisfaction (RS)	A. Ali, et al., (2015)	4 items

3.3 Defining Population

The phrase population is used in research to refer to "the entire group of people, events, or things of interest that the researcher wishes to investigate." The sample statistics are used to establish inferences about a collection of individuals, events, or things of interest." (Sekaran and Bougie, 2010). The probe is restricted to ***seven*** major information technology hubs viz., Delhi, Kolkata, Bhubaneshwar, Hyderabad, Chennai, Bangalore and Pune. The research population constitute highly qualified IT (Information Technology) and ITES (Information Technology Enabled Services) professionals ranging in age from 21 to 65.

3.4 Sampling Element

An element is the object about which or from which the information is desired. An element is an individual representative of the population. In the present study, the sampling element

consists of ***IT (Information Technology) and ITES (Information Technology Enabled Services)*** professionals from ***seven*** major information technology hubs in India.

3.5 Sampling Units

The sampling unit of this study are IT and ITES professionals from ***seven*** major information technology hubs in India. The number of individuals from each location constitute the sampling units are outlined in the below table 3.2

Table 3.2: Details of location and sampling units surveyed

Location	**Sampling Units**
Bengaluru	57
Bhubaneshwar	55
Chennai	56
Delhi	53
Hyderabad	53
Kolkata	56
Pune	55
Total	**385**

Source: Author's original compilation

3.6 Determining the Sample Size

There are two ways of determining the sample size in PLS-Sem (Hair et al., 2014).

(i). The first method is in the form of using the 'thumb rule' and

(ii) The second method is through using the statistical power analysis

The sample size is required to be ten times the number of structural paths in the structural model that point to a single construct. Since in this study there are no formative indicators, the recommendation requiring the sample size to be ten times the number of formative indicators becomes irrelevant. However, there are ***FIVE structural paths*** that point towards the mediating constructs of Retirement Planning and ***SIX structural paths*** that point towards Retirement Adequacy and Retirement Satisfaction, the endogenous constructs of the study. Applying the rule of thumb, the sample size is determined by taking into consideration ten times the highest number of structural paths towards a given construct, the sample size would be a minimum 60 respondents.

Sample size in the study is determined based on PLS-SEM, by considering statistical analysis (Roldan and Sanchez–Franco, 2012), effect size and number of predictors. This study expects a medium effect size regarding the conceptualized relationship among the constructs of the study. **SIX predictors** point towards Retirement Adequacy and Retirement Satisfaction, which is the endogenous construct of the study. For a medium effect size, the desired sample would be minimum 97 as the number of maximum predictors is 6. Accordingly, prior research in this regard suggest that the effect size for a Power = 0.80 and Alpha = 0.05 should be considered for a given number of predictors of the endogenous construct in order to determine the sample size. Power tables of Green (1991) and Cohen (1992) is suggested for this purpose. For the purpose of the determination of the sample size, the study has adopted the power table provided by Green (1991) as given below.

Table 3.3: Preliminary sample size requirements for a Power = 0.80 and Alpha = 0.05

	Sample sizes based on power analysis		
Number of predictors		**Effect size**	
	Small	**Medium**	**Large**
1	390	53	24
2	481	66	30
3	547	76	35
4	599	84	39
5	645	91	42
6	686	97	46
7	726	102	48
8	757	108	51
9	788	113	54
10	844	117	56
15	952	138	67
20	1066	156	77
30	1247	187	94
40	1407	213	110

Source: Adapted from Green (1991, p.503)

The sample size of the study is also governed by the required R^2 level. Therefore, the determination of the sample size for the study is dependent on the number of arrows pointing as the construct of the study, level of significance and minimum desirable R^2 level, in order to achieve a statistical power of 80%. Further, the conceptual framework has **SIX arrows** pointing at the endogenous latent variables. At 5% level of significance, the minimum acceptable R^2 level is 0.25. Given these constraints, the sample size would be 75. This sample size is determined using Cohen's (1988) table, referred below.

Table 3.4: Recommend sample size in PLS-SEM for obtaining statistical power of 80%

Maximum Number of Arrows Pointing at a Construct	Significance Level											
	1%				5%				10%			
	Minimum R^2				Minimum R^2				Minimum R^2			
	0.10	0.25	0.50	0.75	0.10	0.25	0.50	0.75	0.10	0.25	0.50	0.75
2	158	75	47	38	110	52	33	26	88	41	26	21
3	176	84	53	42	124	59	38	30	100	48	30	25
4	191	91	58	46	137	65	42	33	111	53	34	27
5	205	98	62	50	147	70	45	36	120	58	37	30
6	217	103	66	53	157	75	48	39	128	62	40	32
7	228	109	69	56	166	80	51	41	136	66	42	35
8	238	114	73	59	174	84	54	44	143	69	45	37
9	247	119	76	62	181	88	57	46	150	73	47	39
10	256	123	79	64	189	91	59	48	156	76	49	41

Source: Cohen, J.A. Power primer. Psychological Bulletin, 112, pp.155-519.

Formula used to derive sample size is as follows:

$$n = \frac{Z^2_{\alpha} \times pq}{E^2}$$

$$= \frac{(1.96)^2 \text{ X } (0.5)\ (0.5)}{\left(\frac{0.5 \text{ X } 10}{100}\right)^2}$$

$$= \mathbf{385}$$

Z_{α} = 95 percentage of confidence level with its value1.96

p = proportion

q = 1-p

E = 10 percent of error (90% power) with 10% non-response

3.6.1 Sampling

The sample design adopted to collect responses is ***Purposive Sampling***.

3.7 Data Characteristics

The following section explains the process involved in Data Collection, description of the sample, responses collected, data cleaning process, and the characteristics of data distribution.

3.7.1 Data Collection

The survey instruments of the current study sought to capture EIGHT constructs of the study. These constructs are Savings Attitude, Borrowing Pattern, Investment Decision, Insurance Allocation, Spending Behaviour, Retirement Planning, Retirement Adequacy and Retirement Satisfaction. Savings Attitude was sought to be measured by the use of 2 indicators, Borrowing Pattern by the 3 indicators and Investment Decision by the use of 4 indicators. Insurance Allocation and Spending Behaviour was sought to be measured by the use of 2 indicators each. The mediating variable Retirement Planning was sought to be measured by the use of 2 indicators. Finally, dependent variables Retirement Adequacy and Retirement Satisfaction was

sought to be measured by the use of 2 indicators and 3 indicators respectively. A copy of the final instrument used for this study is annexed in Appendix-3.

3.7.2 Description of Sample

The responses were partially collected through google forms and partially through distribution of hard copies of the survey instrument. Totally 385 responses were collected and there were no missing values among the sample observations.

Table 3.5: Demographic characteristics of individual respondents

Particulars	Frequency	Percent
Gender		
Male	177	45.97
Female	208	54.03
Marital Status		
Married	168	43.64
Un-married	213	55.32
Divorced	04	1.04
Age		
21-25 years	104	27.01
26-35 years	184	47.79
36-45 years	48	12.47
46-55 years	27	7.03
55-65 years	22	5.70
Educational Qualification		
Bachelor degree	185	48.05
Master degree	197	51.17
Doctoral	03	0.78
Sector		
IT	278	72.21
ITES	107	27.79
Annual Income		
Up to Rs.5 Lakh	121	31.43
Rs.5-10 Lakh	104	27.01

Rs.10-15 Lakh	33	8.57
Rs.15-20 Lakh	57	14.81
Rs.20 Lakh and above	70	18.18

Source: Author's original compilation

3.7.3 Data Cleaning

All responses were investigated to verify the presence of the pattern of '*straight lining*'. No sample cases contained the 'straight lining' pattern. Accordingly, there was no necessity to remove any case of sample observations. Moreover, the data set of sample observations was verified to find the presence of outliers. For this purpose, the data set was investigated to identify the outliers by using box plots in IBM SPSS statistics. Further, the data set was subjected to the process of conversion of the standardized data set. This was done to identify those observations which were above the expected values of +3 or -3. As a result, 2.88 percent outliers were identified. Accordingly, these outliers were removed. Furthermore, suitable values were substituted in place of these data points by the using mean replacement method.

3.7.4 Data Distribution

The data set is validated to get the values of Skewness and Kurtosis. Skewness and Kurtosis were both between +1 and -1. Additionally, the study used Kolmogorov-Smirnov and Shapiro-Wilk tests to determine the normality of the data. Since the significance level was less than 0.05, the data distribution was determined to be non-normal. These tests demonstrate the significance of the abnormalities. (Field, 2009).

3.8 Method

The current study has used PLS-SEM modelling for the purpose of measurement of its model (Hair et al., 2011). The current study has analyzed data without making assumptions related to distribution of data. Further, for the purpose of data analysis, we have used Reflective Measurement Model. The current study also used a mediating construct as an intermediary between the exogenous and endogenous variables. In such scenarios, PLS-SEM is selected as the most reliable and highly appropriate model to analyse the constructs and the corresponding data in order to achieve the purpose of dependent variable. Further, this study seeks to investigate if all the exogenous variables are the real driver constructs of the study. This study has used the ***five behaviours of finance*** viz., Saving Attitude, Borrowing Pattern, Investment Decision and Spending Behaviour as the exogenous variables,

Retirement Adequacy and Retirement Satisfaction as the endogenous variables and between these variables, retirement planning acts as the mediator.

3.8.1 Data Characteristics

A total of 385 responses were collected for the current study. Data is analysed without any regard for distributional assumptions. As a result, the study implemented the PLS-SEM approach, which is appropriate for the study given the data features of the current study. (Hair et al., 2014; Nijssen and Douglas, 2008; Green and Ryans, 1990; Henseler, 2012; Henseler et al., 2009).

3.8.2 Model Properties

Model complexity exists in the current investigation due to the presence of a mediating variable. Furthermore, this study seeks to determine whether the constructions linked to the five financial behaviours, namely savings attitude, borrowing pattern, investment decision, insurance allocation, and spending behaviour, are truly the driver constructs of retirement adequacy and retirement satisfaction. The above motives point towards adopting and implementing PLS-SEM approach for model specification and evaluation. (Henseler et al., 2009; Hair et al., 2017; Diamantopoulos et al., 2012). To achieve the research objectives, the current study employed a Reflective Measuring Model. In particular, model complexity necessitates the employment of the PLS-SEM as a measure in the current research attempt.

3.8.3 Algorithm properties of PLS-SEM

The current research has a mediating construct in its structural model. Therefore, PLS-SEM approach is found to be appropriate for meeting the objective of this research (Festge and Schwaiger, 2007; Graham et al., 1994).

3.8.4 Model Evaluation

The current research endeavour has independent variables, dependent variables as well as mediating variables. Therefore, the need for the parsimonious structural model has made it imperative to use PLS-SEM approach (Alpert et al., 2001). The above discussion is summed up by pointing out specific reasons necessitating the PLS-SEM approach like, model complexity, the use of mediating construct retirement planning, the need to determine driver constructs of retirement adequacy and retirement satisfaction (Hair et al., 2017).

3.9 Scale of Variables

The current study has used the five behaviours of finance viz., savings attitude, borrowing pattern, investment decision, insurance allocation, and spending behaviour as the exogenous constructs. The construct retirement planning is used as the mediator to demonstrate the relationship between the five financial behaviours and the endogenous constructs, retirement adequacy and retirement satisfaction. The nature of the responses constitutes metric data. The study used *Likert Scale* (Likert, 1932), which is an ordinal scale for the purpose of capturing responses from the target respondents. Accordingly, the responses were captured using *five-point Likert scale*. The continuum of responses ie., the two extreme responses being *'strongly agree'* and *'strongly disagree'* were captured through the numbers of 1 and 5. Due care has been taken to ensure the distance between the responses are equal. The point of response between the two extreme responses such as those of *'strongly agree'* and *'strongly disagree'* are ensured to be equidistant.

3.10 Measures

This study has used only the validated measurement instruments to capture the data relating to the five financial behaviours viz., savings attitude, borrowing pattern, investment decision, insurance allocation, spending behaviour, are indeed the driver constructs of the endogenous latent variables, retirement adequacy and retirement satisfaction.. The following table 3.6 describes the source of each of these constructs and the sample items used for the purpose of this study:

Table 3.6: Sample items used and sources of measurement instruments

Sl. No.	Title of the measurement instrument	Construct measured	Sample items used
1	M A Hajam, (2020)	Saving Attitude	1. Unattractive retirement products are the reason for not saving for retirement. 2. Medical expenses are the reason for inadequate savings for retirement.
2	A. Ali, et al., (2015)	Borrowing Pattern	1. Poor financial planning is the reason for increased borrowing.

			2. Inadequate income is the reason for increased borrowing 3. Life style choice has increased the amount of borrowing.
3	G. R. Ibbotson, et al., (2007)	Investment Decision	1. Estimated returns during retirement influence investment decision making. 2. Relying on experiences of other investors' while making investment decisions influence investment decision making 3. Monitoring the movement of the investment product which I intend to invest, influence investment decision making 4. Checking the health of portfolio on regular intervals influence investment decision making
4	G. R. Ibbotson, et al., (2007)	Insurance Allocation	1. General health of family have changed in the last 3 years. 2. Poor health condition of family has forced to invest more into health care
5	A. Ali, et al., (2015)	Spending Behaviour	1. Inadequate financial literacy is the reason for increased spending 2. Excess and frivolous spending has stalled my potential for retirement planning
6	J. H. Noone et al., (2010)	Retirement Planning	1. Retirement planning has facilitated the awareness of various issues related to retirement 2. Retirement planning has helped to assess the available resources to

			establish strategies and develop them.
7	J. Petkoska and J. K. Karl (2009)	Retirement Adequacy	1. I know how much money is necessary to live comfortably throughout retirement 2. I have adequate financial support from my investments which was made for retirement
8	A. Ali, et al., (2015)	Retirement Satisfaction	1. I am totally satisfied with my retirement plans 2. I am totally satisfied with my retirement portfolio 3. I am totally satisfied with my retirement savings

Source: Author's original compilation

3.11 Conceptual Framework

This study has used the five constructs of financial behaviours viz., savings attitude, borrowing pattern, investment decision, insurance allocation, spending behaviour as the exogenous constructs. Further, it has used the construct retirement planning as a mediating construct and the constructs retirement adequacy and retirement satisfaction as endogenous construct. The structural model of the study conceptualizes the direct effect of the five financial behaviours on retirement adequacy and retirement satisfaction. The mediating variable retirement planning is supportive in nature and is expected to improve the performance of the endogenous latent variables retirement adequacy and retirement satisfaction. The conceptual model is given in the figure 3.2.

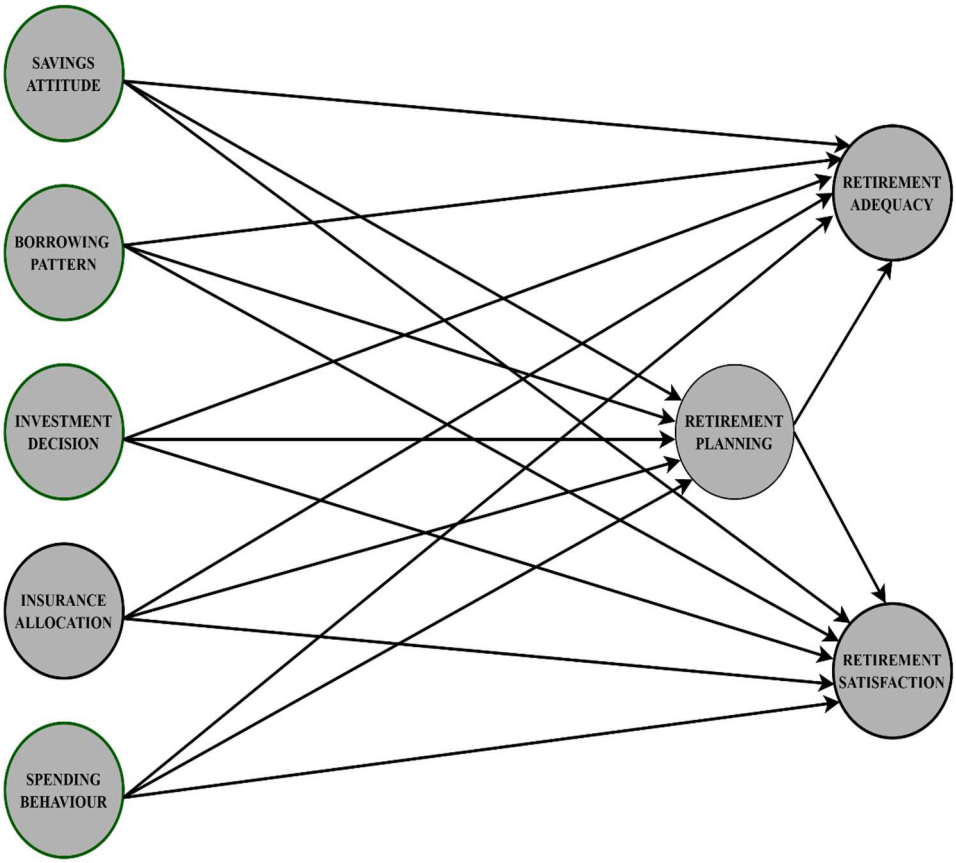

Figure 3.2: Conceptual Framework showing the mediator effect of retirement planning with the exogenous variables and endogenous variables

Source: Author's original compilation

The structural model shown in the figure 3.2 addresses the issues relating to the direct effects of the five financial behaviours on retirement adequacy and retirement satisfaction as well as

the mediating effect of retirement planning in determining the relationship between the five financial behaviours on retirement adequacy and retirement satisfaction.

3.12 Measurement Model: Constructs and Items

The measurement model of this study adopts reflective component model. Reduction of number of relationships so as to ensure a parsimonious structural model, and reduction of collinearity issues in order to establish discriminant validity are the prime reasons for using the reflective component model (Hair et al., 2017). The reflective component model choosing only those indicators whose outer loadings are significant enough to warrant their inclusion in the final measurement model. The dimensions of the above-mentioned reflective component of the model constitute the measurement model.

3.12.1 Savings Attitude: Construct and items

The construct *Savings Attitude* intends to measure the awareness and attitude of the individuals towards savings for retirement during their active employment period. This construct tracks the awareness of individuals with regards to retirement saving products and their understanding of the best products available and suitable to their individual needs. It further measures the attractiveness in terms of returns, the level of risk and the information available with respect to such savings. Analysis of the savings attitude also looks into aspects that hinder individual's intention to save and the approaches that encourage a higher level of saving towards retirement.

Table 3.7: The structure of construct and items for measuring savings attitude

Construct	Item code	Manifest indicators
Savings Attitude	SA5	Unattractive retirement products are the reason for not saving for retirement
	SA6	Medical expenses are the reason for inadequate savings for retirement

3.12.2 Borrowing Pattern: Construct and items

The construct *Borrowing Pattern* measures the nature of individual's borrowings and the reasons leading to it. This construct measures the awareness of individuals with regards to lending products and tries to identify the reasons behind the pattern of borrowing. It analyses the type of borrowings and classifies it into productive and non-productive borrowings. This help to identify if the impact of the said borrowing on individuals retirement planning. Further,

analysing the pattern of borrowings enables to capture individual's perception and helps to identify the income adequacy.

Table 3.8: The structure of construct and items for measuring borrowing pattern

Construct	Item code	Manifest indicators
Borrowing Pattern	BP1	Poor financial planning is the reason for increased borrowing. (from Banks, Non-Banking Financial Institutions, Family and Friends etc.)
	BP2	Inadequate income is the reason for increased borrowing
	BP3	Life style choice has increased the amount of borrowing

3.12.3 Investment Decisions: Construct and items

The construct *Investment Decisions* captures individual's awareness on the retirement investment products available in the market and their knowledge with regards to investing in the right products suitable to their needs. This construct attempts to explore individual's awareness concerning market information and how it influence investment decision making and emphasizes fine tuning ones market fundamentals to influence the decision making process. This constructs also emphasises the importance of monitoring the movement of the portfolio for enhanced returns.

Table 3.9: The structure of construct and items for measuring investment decisions

Construct	Item code	Manifest indicators
Investment Decisions	ID8	Estimated returns during retirement influence investment decision making
	ID9	Relying on experiences of other investors' while making investment decisions influence investment decision making
	ID10	Monitoring the movement of the investment product which I intend to invest, influence investment decision making
	ID111	Checking the health of portfolio on regular intervals influence investment decision making

3.12.4 Insurance Allocation: Construct and items

The construct *Insurance Allocation* measures the periodicity in which individuals invest in insurance products and the category of insurance available in the market. It also measure the insurance mix with regard to health insurance, accident insurance, life insurance and the factors influencing individuals decision to invest in these products. Further, it evaluates the factors influencing excess utilization or allocation to a specific type of insurance product and ways to mitigate such excess allocation in order to make the resources available for retirement.

Table 3.10: The structure of construct and items for measuring Insurance Allocation

Construct	Item code	Manifest indicators
Insurance Allocation	IA1	General health of family have changed in the last 3 years
	IA2	Poor health condition of family has forced to invest more into health care

3.12.5 Spending Behaviour: Construct and items

The construct *Spending Behaviour* seeks to measure the positive and negative aspects of spending by an individual. Among the positive aspect, this construct measures the spending on products that yield additional source of income, which in turn increases individual's wealth, thereby enabling to invest in retirement products. The negative aspect involves frivolous and extravagant spending with no returns resulting in depletion of assets. This construct further investigates the level of financial literacy and compares it with the with the individuals behaviour.

Table 3.11: The structure of construct and items for measuring spending behaviour

Construct	Item code	Manifest indicators
Spending Behaviour	SB3	Inadequate financial literacy is the reason for increased spending
	SB4	Excess and frivolous spending has stalled my potential for retirement planning

3.12.6 Retirement Planning: Construct and items

The construct *Retirement Planning* acts as a mediator with the exogenous variables, the five essential behaviours of financial literacy viz., savings attitude, borrowing pattern, investment

decision, insurance allocation, and spending behaviour and the endogenous variables, retirement adequacy and retirement satisfaction. The component of planning comprises recognizing basis of income, assessing expenses, executing a savings program, and managing assets and risk, which, when combined with superior financial literacy assists individuals in developing solid retirement plans.

Table 3.12: The structure of construct and items for measuring retirement planning

Construct	Item code	Manifest indicators
Retirement Planning	RP1	Retirement planning has facilitated the awareness of various issues related to retirement
	RP2	Retirement planning has helped to assess the available resources to establish strategies and develop them.

3.12.7 Retirement Adequacy: Construct and items

The construct *Retirement Adequacy* seeks to evaluate the retirement corpus by combining all possible sources of income, savings and investment. The construct focus on the fine-tuning the financial behaviours to encourage better savings, superior investment knowledge and cautious spending. It measures individual's awareness of their needs during retirement period and the means to live comfortably during retirement. It also focuses on individual's confidence of maintaining pre-retirement lifestyle during retirement.

Table 3.13: The structure of construct and items for measuring retirement adequacy

Construct	Item code	Manifest indicators
Retirement Adequacy	RA2	I know how much money is necessary to live comfortably throughout retirement
	RA4	I have adequate financial support from my investments which was made for retirement

3.12.8 Retirement Satisfaction: Construct and items

The construct *Retirement Satisfaction* seeks to appraise the retirement transition involving complicated factors with respect to wealth. The economic realities, combined with the social and emotional aspects of transition often makes retirement overwhelming. Being financially prepared has significant impact on the satisfaction quotient. This requires to individuals to

assess their retirement plans and analyse if they meet the expectation of maintaining the present lifestyle post retirement and their investment portfolios yield higher returns.

Table 3.14: The structure of construct and items for measuring retirement satisfaction

Construct	Item code	Manifest indicators
Retirement Satisfaction	RS2	I am totally satisfied with my retirement plans
	RS3	I am totally satisfied with my retirement portfolio

3.13 Summary of Reflective Measurement Model

This chapter has provided a wide illustration of the research design adopted in this study. First, this chapter explained the level of analysis of constructs chosen and the reasons thereof for their analysis at the individual level. Thereafter, the chapter presented the results of the pilot study. Second, this chapter deliberated on the sample design and the methodology of determination of sample size. Third, the section on data characteristics explained the process of data collection, described the sample collected, presented the process of data cleaning, and provided the details regarding data distribution. Fourth, this chapter proceeded to justify the choice of PLS-SEM approach as the appropriate research method for this study from the points of view of data characteristics, model properties, algorithm properties of PLS-SEM, and model evaluation. Fifth, this chapter explained the scale of variables. Thereafter this chapter provided the measurement models and the items used in them.

CHAPTER - 4
DATA ANALYSIS AND DISCUSSION

4.0 Introduction

This chapter enumerates the measurement models of the study and reports the assessment of the structural model. In addition, it investigates the reliability and validity of the constructs. Collinearity assessment, estimation of coefficient determination, assessment of significant relationship among constructs of the study, determination of effect sizes of relationships, determination of predictive relevance, and the estimation of effect sizes of values of predictive relevance is discussed in this chapter. Results of hypotheses testing is duly reported. Further, the theoretical implications of hypotheses testing is discussed. Thereafter, it has discussed the results of the importance-performance matrix analysis, and finite mixture of partial least square segmentation analysis. Finally, this chapter has narrated a partial least square multi-group analysis. Figure 4.1 provides an overview of the contents of this chapter.

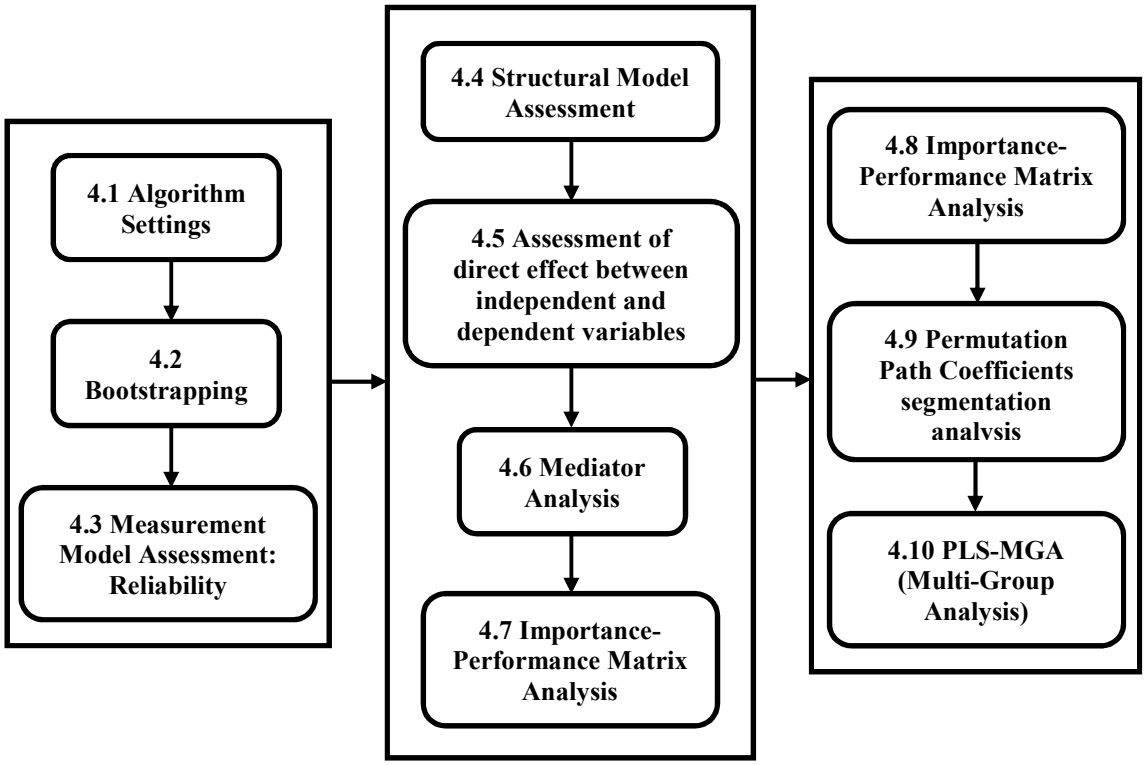

Figure: 4.1: A summary of Chapter 4

4.1 Algorithm Settings

Data analysis was carried out using "path-weighting scheme" as the structural model. Raw data transformation method is used for the purpose of facilitating the incorporation of standardized data for indicators (Hair et al., 2017). To facilitate algorithms convergence, this study has chosen the stop criterion of 1.10^{-5}, which is also the threshold value for the purpose. The maximum number of iterations chosen is 300.

4.2 Bootstrapping: The algorithm settings

The study conducted a non-parametric test, as there were no assumption of distribution. As a result, to test the significance of coefficients, a non-parametric bootstrapping approach is used. Following bootstrapping procedure was used in this investigation.

- The count of valid observations in the original sample is 385. Following the rule of thumb, 5000 bootstrap samples were invoked in the process of running PLS-SEM algorithm.
- Sufficient care is taken to ensure that the number of cases is equal to the number of valid observations in the data set i.e., 385.
- Comparison of the empirical *t* values and theoretical/critical t values used two-tailed test at 5% level of significance. The critical t value, used for comparison, is 1.96.
- For obtaining the empirical t values, the 'no sign change' option is used.
- Bootstrapping confidence intervals of the study is duly reported.

4.3 Measurement Model Assessment: Reliability

The PLS-SEM approach supports the measurement of reliability through composite reliability. When compared to Cronbach's Alpha, composite reliability more accurately reflects internal consistency reliability. Furthermore, when compared to Cronbach's Alpha, composite reliability offers two clear advantages. Primarily, the composite reliability metric does not consider all indications to be equal contributors to the construct, which is the standard process in determination of Cronbach's Alpha value. Second, composite reliability as a measure, does not undervalue internal consistency reliability by failing to account for the proclivity to increase the value of internal consistency reliability as the number of items on the scale increases, as we see in the Cronbach's Alpha measure. (Cronbach, 1951).

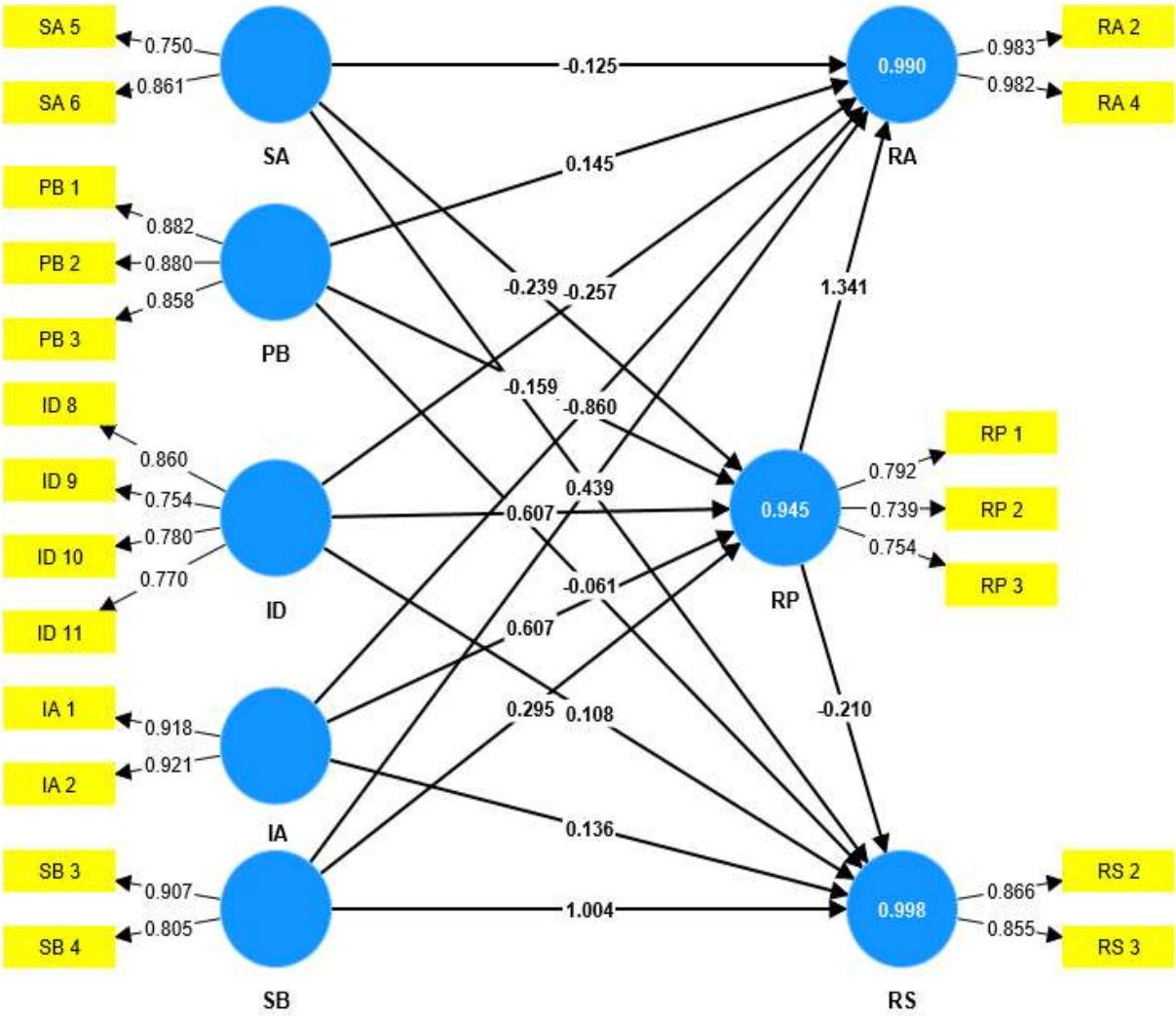

Figure 4.2: Measurement Model: Reliability

There are various thumb rules that explain and analyse if the observed R^2 values are high (Hair et al., 2017). According to prior studies, the identified threshold cut-off values for endogenous constructs are 0.2 for 'weak', 0.50 for 'moderate' and 0.75 for 'high'. Figure 4.2 depicts the loadings of all the marked indicators of the measurement model.

Table 4.1: Result summary for Reflective Measurement Models

Latent Variable	Elements that the Indicator	Survey Questions	Outer Loadings	Indicator Reliability	Composite Reliability	AVE
SA	**SA 5**	Unattractive retirement products are the reason for not saving for retirement	0.750	0.563	0.710	0.652

	SA 6	Medical expenses are the reason for inadequate savings for retirement	0.861	0.741		
PB	**PB 1**	Poor financial planning is the reason for increased borrowing.	0.882	0.778	0.880	0.763
	PB 2	Inadequate income is the reason for increased borrowing	0.880	0.774		
	PB 3	Life style choice has increased the amount of borrowing	0.858	0.736		
ID	**ID 8**	Estimated returns during retirement influence investment decision making	0.860	0.740	0.809	0.628
	ID 9	Relying on experiences of other investors' while making investment decisions influence investment decision making	0.754	0.569		
	ID 10	Monitoring the movement of the investment product which I intend to invest, influence investment decision making	0.780	0.608		
	ID 11	Checking the health of portfolio on regular intervals influence investment decision making	0.770	0.593		
IA	**IA 1**	General health of family have changed in the last 3 years?	0.918	0.843	0.902	0.846
	IA 2	Poor health condition of family has forced to invest more into health care	0.921	0.848		
SB	**SB 3**	Inadequate financial literacy is the reason for increased spending	0.907	0.823	0.804	0.736
	SB 4	Excess and frivolous spending has stalled my potential for retirement planning	0.805	0.648		

RP	**RP 1**	Retirement planning has facilitated the awareness of various issues related to retirement	0.792	0.627	0.707	0.581
	RP 2	Retirement planning has helped to assess the available resources to establish strategies and develop them.	0.739	0.546		
	RP 3	I know how to determine how much money I need to live comfortably throughout my retirement years	0.754	0.569		
RA	**RA 2**	I know how much money is necessary to live comfortably throughout retirement	0.983	0.966	0.982	0.965
	RA 4	I have adequate financial support from my investments which was made for retirement	0.982	0.964		
RS	**RS 2**	I am totally satisfied with my retirement plans	0.866	0.750	0.809	0.741
	RS 3	I am totally satisfied with my retirement portfolio	0.855	0.731		

4.3.1 Internal Consistency Reliability

Composite Reliability is also termed as 'Internal Consistency Reliability'. This is widely accepted as an alternate to Cronbach alpha to measure the internal consistency reliability of the model. This is due to the fact that in the evet of any addition of new indicator during the course of research, the values of the initial indicators are not influenced by such additions. This brings consistency and reliability to the research. The threshold value of internal consistency reliability for confirmatory research is considered equal to or greater than 0.70. (Henseler et al., 2012). However, it is usually preferable if the composite reliability value is equal to or greater than 0.80. (Daskalakis & Mantas, 2008). In the current study, the exogenous latent variables of the measurement models, ie., the five financial behaviours, viz., savings attitude, borrowing pattern, investment decisions, insurance allocation and spending behaviour

demonstrate good levels of internal consistency reliability as the values of composite reliability of exogenous latent variables are higher than 0.70 (Table 4.1). Further, the endogenous latent variables construct i.e. retirement adequacy and retirement satisfaction exhibits the composite reliability values which are higher than 0.7 (Table 4.1).

4.3.2 Indicator Reliability

The Indicator Reliability specifies an item's communality and is calculated by taking the square of the outer loading. The indicator reliability threshold value is 0.5 or above. (Hair et al., 2017). This specifies that a given construct clarifies at least 50% of its elements' variance. This demonstrates that the indicators used in the study adequately characterise the theoretical meaning embodied in a construct. In the study all the indicator with reliability values of greater than 0.5 (Table 4.1) are retained because they improve the extracted average variance and contribute to the content validity of the relevant constructs.

4.3.3 Outer Loadings of Indicators

In reflective measurement models, indicator outer loadings define the absolute contribution of indicators to the corresponding constructs. The PLS-SEM technique computes indicator outer loadings by employing simple regression models in which the latent construct is the independent variable and the related indicators are the dependent variable. As a result, while indicator outer loadings represent the absolute contributions of indicators, indicator reliability represents the communality of each indicator. The threshold value of path loadings for the reflective model used in the study should be more than 0.70. (Henseler et al., 2012). All indicators' outer loading thresholds are greater than 0.7. (Table 4.1). According to the study's findings, the indicators of all constructs exhibit appropriate amounts of outside loading. The survey instruments used for this study excluded those indicators, resulting in low outer loadings and indicator reliability.

4.3.4 Measurement Model Assessment: Convergent Validity

The Average Variance Extracted (AVE) is used to quantify the convergent validity (Naylor et al., 2012). It denotes the degree of correlation of a specific measure of reflective construct in relation to other measures of the construct and measures the communality of a specific construct. Convergent Validity is calculated by taking the average of the squared outer loadings of all indicators related to the construction. The predicted threshold value of AVE is 0.50 (Wasko & Faraj, 2005; Wixom & Watson, 2001), implying that a particular construct can

explain more than half of the variance of its indicators. The threshold value of AVE in an appropriate model should be more than 0.5 (Chin, 1998; Höck & Ringle, 2006: 15). All exogenous and endogenous latent variable constructs in the study have AVE values greater than 0.50. (Table 4.1). As a result, convergent validity exists in all exogenous and endogenous latent variable constructions of all measurement models.

4.3.5 Measurement Model Assessment: Discriminant Validity

PLS is a superior technique to ensure that a given model construct is unique from other constructs when testing Discriminant Validity. (Wasko & Faraj, 2005). To measure discriminant validity, the square of the correlations between variables were compared to the AVE. (Chin, 1998). It is critical to calculate the measurement models before examining the structural model. The directions for PLS-SEM proposed by Hair et al. (2017) is resorted to for reporting and reviewing the results.

4.3.5.1 Measurement Model Assessment: Discriminant validity among latent constructs Fornell-Larcker Criterion.

Discriminant Validity is a measure of a given construct's uniqueness. The Fornell-Lacker (1981) criterion, which compares the square root of AVE and other latent variables, is used to assess discriminant validity. Table 4.2 shows how each latent variable's square root of AVE exceeds its association with other latent variables.

Table 4.2: Discriminant Validity by Fornell-Larcker Criterion

	IA	ID	PB	RA	RP	RS	SA	SB
IA	**0.920**							
ID	0.427	**0.792**						
PB	0.427	0.866	**0.873**					
RA	0.278	0.847	0.621	**0.982**				
RP	0.812	0.797	0.659	0.776	**0.762**			
RS	0.323	0.841	0.567	0.851	0.697	**0.861**		
SA	0.336	0.765	0.581	0.605	0.577	0.842	**0.807**	
SB	0.318	0.851	0.582	0.891	0.717	0.846	0.814	**0.858**

The values in table 4.2 shows that all constructs of the measurement model have discriminant validity, as the square root of all latent constructs are greater than their correlation values. The diagonal values shown in table 4.2 is nothing more than the square root value of the construct's AVE, which is greater when compared horizontally and vertically to the values of other constructions. According to the Fornell-Larcker criterion, the aforementioned criterion is deemed conservative in determining discriminant validity (Hair et al., 2017) ie., the degree to which a certain model construct differs from others. (Chin, 1998; Hair et al., 2017; Fornell-Lacker, 1981; Wasko & Faraj. 2005).

4.3.6 Measurement Model Assessment: Discriminant Validity among latent constructs: Cross Loading Method

Cross-loadings of indicators constitute an alternate method of assessing discriminant validity. The outer loadings of indicators are expected to be higher than their cross-loadings on other constructs. The below-mentioned cross-loading table demonstrates the presence of discriminant validity in the constructs of this study.

Table 4.3: Discriminant Validity by Cross-Loading Method.

	BP	IA	ID	RA	RP	RS	SA	SB
IA1	0.427	**0.858**	0.492	0.306	0.278	0.160	0.418	0.335
IA2	0.308	**0.819**	0.755	0.269	0.226	0.184	0.321	0.285
ID8	0.308	0.819	**0.755**	0.269	0.226	0.184	0.321	0.285
ID9	0.342	0.548	**0.839**	0.301	0.293	0.207	0.352	0.325
ID10	0.377	0.579	**0.890**	0.311	0.368	0.325	0.377	0.337
ID11	0.368	0.535	**0.820**	0.285	0.290	0.215	0.386	0.290
BP1	**0.900**	0.390	0.372	0.318	0.280	0.173	0.755	0.312
BP2	**0.909**	0.393	0.383	0.310	0.297	0.196	0.712	0.314
BP3	**0.876**	0.403	0.381	0.300	0.258	0.143	0.725	0.306
RA2	0.325	0.290	0.307	**0.926**	0.715	0.260	0.345	0.734
RA4	0.315	0.347	0.345	**0.927**	0.552	0.259	0.322	0.816
RS2	0.162	0.161	0.225	0.226	0.780	**0.924**	0.156	0.218
RS3	0.163	0.195	0.279	0.257	0.448	**0.701**	0.198	0.245
SA5	0.691	0.413	0.403	0.308	0.262	0.171	**0.878**	0.304
SA6	0.758	0.377	0.371	0.332	0.296	0.187	**0.900**	0.332

SB3	0.335	0.347	0.350	**0.790**	0.554	0.260	0.340	0.953
SB4	0.326	0.360	0.364	**0.806**	0.543	0.253	0.343	0.954
RP1	0.178	0.205	0.266	0.224	**0.747**	0.658	0.163	0.223
RP2	0.162	0.161	0.225	0.226	**0.780**	0.924	0.156	0.218
RP3	0.325	0.290	0.307	0.226	**0.715**	0.260	0.345	0.701

The cross loading is examined such that outer loadings on the associated construct should be greater than all the loadings on other constructs. As shown in table 4.3 above, the loadings on the associated construct are higher than all the loadings on other constructs, which establishes discriminant validity.

4.3.7 Measurement Model Assessment: Discriminant Validity among Latent Constructs: Heterotrait-Monotrait Ratio (HTMT)

Heterotrait-Monotrait ratio of correlations (HTMT) is one among the methods of assessing the discriminant validity in PLS-SEM and calculates the correlation between the constructs (Nunnally 1978; Netemeyer et al. 2003). The HTMT method calculates and assesses discriminant validity in two ways ie., as a criterion and as a statistical test. As a criterion, it compares the maximum and the minimum threshold values that is predefined as per expert opinions and prior studies. If the value are estimated to be below the threshold value, we concur that discriminant validity is established. However scholars debate on the predefined HTMT values. To make the result more scientific and agreeable, scholars recommended the threshold value to be equal to or below 0.90 (Gold et al., 2001; Teo et al., 2008). Scholars also opine that the threshold value should be equal to or below 0.85 (Clark & Watson 1995; Kline, 2011). But in this study, notations HTMT 0.90 is taken into consideration than HTMT 0.85. Second, the HTMT can serve as the basis of a statistical discriminant validity test.

Table 4.4: Heterotrait-Monotrait Ratio (HTMT) Method measuring Discriminant Validity

	BP	**IA**	**ID**	**RA**	**RP**	**RS**	**SA**	**SB**
BP								
IA	0.615							
ID	0.490	0.478						
RA	0.404	0.492	0.419					

RP	0.400	0.482	0.481	0.850				
RS	0.282	0.384	0.438	0.432	0.563			
SA	0.765	0.674	0.551	0.459	0.435	0.336		
SB	0.391	0.511	0.428	0.874	0.698	0.399	0.439	

The discriminant validity of the HTMT ratio of correlations substantiates, with the available empirical evidence provided in the study which shows the mutual distinguishability among different constructs of the study. The discriminant validity is estimated when the value of the HTMT is equal to or below than predefined threshold value. In case, if the HTMT values are above the predefined threshold value then there is no discriminant validity. As shown in table 4.4, the HTMT values are below predefined threshold values establishing discriminant validity.

4.4 Structural Model Assessment

Hair et al. (2017) has laid down a definite procedure to assess the Structural Model when PLS-SEM is adopted for data analysis. Accordingly, this study has resorted to collinearity assessment before obtaining path coefficients of the structural model of the study. After obtaining the path coefficient, an assessment of the coefficient of determination is carried out. Thereafter, the effect sizes of R^2 value of the endogenous constructs are found out and duly analyzed.

4.4.1 Assessment of Collinearity

The study measured the collinearity levels between the constructs of the study by following the Variance Inflation Factor (VIF) procedures. VIF requires all the predictors to be at VIF levels i.e., below 5.00 to satisfy nonexistence of collinearity among the structural model of the study. In our study, we have tested the collinearity between the exogenous variables in comparison to the endogenous variables, retirement adequacy and retirement satisfaction as detailed in table 4.5. The function of data analysis started with finding the objective and the probability to which the collinearity between exogenous constructs are present. The study resulted to have negative collinearity among the exogenous constructs of this study.

Table 4.5: Evaluating collinearity for exogenous constructs through VIF inner model

Latent Variables	RA	RP	RS
BP	3.088	3.082	3.088

IA	2.306	2.302	2.306
ID	2.321	2.274	2.321
RP	1.568	NA	1.568
SA	3.122	3.120	3.122
SB	1.636	1.250	1.636

Table 4.6: Evaluating collinearity for indicators through VIF outer model.

Indicators	VIF	Indicators	VIF	Indicators	VIF	Indicators	VIF
IA1	1.201	**ID11**	1.903	**RA4**	2.047	**SB3**	3.024
IA2	1.201	**BP1**	2.438	**RS2**	1.163	**SB4**	3.024
ID8	1.610	**BP2**	2.548	**RS3**	1.163	**RP1**	1.060
ID9	2.008	**BP3**	2.199	**SA5**	1.514	**RP2**	1.646
ID10	2.336	**RA2**	2.047	**SA6**	1.514	**RP3**	1.646

The above table validates the nonexistence of collinearity in the structural model of this research endeavour.

4.4.2 Structural Model Assessment and Hypotheses Testing

The Structural Model Assessment was performed in a stepwise procedure. First, the relationship between exogenous latent variables and the endogenous latent variables were investigated so as to test the hypotheses 1 to 17. Further, the mediator, retirement planning was included separately and investigated to test hypotheses 18 to 27. The full path model was, thereafter, tested to assess the empirical validity of the entire structural model. Accordingly, the following effects and relationships were tested.

1. Direct effect of saving attitude on retirement planning (Hypothesis 1)
2. Direct effect of borrowing pattern on retirement planning (Hypothesis 2)
3. Direct effect of investment decision on retirement planning (Hypothesis 3)
4. Direct effect of insurance allocation on retirement planning (Hypothesis 4)
5. Direct effect of spending behaviour on retirement planning (Hypothesis 5)
6. Direct effect of saving attitude on retirement adequacy (Hypothesis 6)
7. Direct effect of borrowing pattern on retirement adequacy (Hypothesis 7)
8. Direct effect of investment decision on retirement adequacy (Hypothesis 8)
9. Direct effect of insurance allocation on retirement adequacy (Hypothesis 9)

10. Direct effect of spending behaviour on retirement adequacy (Hypothesis 10)
11. Direct effect of saving attitude on retirement satisfaction (Hypothesis 11)
12. Direct effect of borrowing pattern on retirement satisfaction (Hypothesis 12)
13. Direct effect of investment decision on retirement satisfaction (Hypothesis 13)
14. Direct effect of insurance allocation on retirement satisfaction (Hypothesis 14)
15. Direct effect of spending behaviour on retirement satisfaction (Hypothesis 15)
16. Direct effect of retirement planning on retirement adequacy (Hypothesis 16)
17. Direct effect of retirement planning on retirement satisfaction (Hypothesis 17)
18. The mediating effect of retirement planning in the relationship between saving attitude and retirement adequacy (Hypothesis 18)
19. The mediating effect of retirement planning in the relationship between borrowing pattern and retirement adequacy (Hypothesis 19)
20. The mediating effect of retirement planning in the relationship between investment decisions and retirement adequacy (Hypothesis 20)
21. The mediating effect of retirement planning in the relationship between insurance allocation and retirement adequacy (Hypothesis 21)
22. The mediating effect of retirement planning in the relationship between spending behaviour and retirement adequacy (Hypothesis 22)
23. The mediating effect of retirement planning in the relationship between saving attitude and retirement satisfaction (Hypothesis 23)
24. The mediating effect of retirement planning in the relationship between borrowing pattern and retirement satisfaction (Hypothesis 24)
25. The mediating effect of retirement planning in the relationship between investment decisions and retirement satisfaction (Hypothesis 25)
26. The mediating effect of retirement planning in the relationship between insurance allocation and retirement satisfaction (Hypothesis 26)
27. The mediating effect of retirement planning in the relationship between spending behaviour and retirement satisfaction (Hypothesis 27)

4.5 Assessment of direct effect in relationships between independent variables and dependent variables

Path coefficients of structural model are the indicators for the direction of relationships among the relevant constructs of the structural model. Those path coefficients, whose values are above ***zero***, suggest the presence of strong relationships among constructs and those path coefficients

that are ***near zero*** indicate weak relationships among constructs. Coefficient of determination gives us an idea regarding the strength of the relationships that exist in the structural model. The R^2 value i.e. coefficient of determination is for the target endogenous constructs of the study i.e. Retirement Adequacy and Retirement Satisfaction. Coefficient of determination is the criterion through which we assess the structural model (Henseler et al., 2012). This means that there is predictive validity in the structural model. This result is reinforced by the empirical t value which is substantially above 1.96 at 5% level of significance. The bias-corrected confidence intervals return more definite values (Efron & Tibshirani, 1998). The bias correction formula is propounded by Sarstedt et al., 2011. The results of PLS path-model that describes the direct relationship between exogenous latent variables with endogenous latent variables is obtained by assessing the structural model, portrayed in table 4.7.

Table 4.7: Path coefficient and p-values after the incorporation of mediators

	Original sample (O)	**Sample mean (M)**	**Standard deviation (STDEV)**	**T statistics (|O/STDEV|)**	**P values**
SA -> RP	0.239	0.242	0.035	6.790	0.000
PB -> RP	0.159	0.141	0.067	2.377	0.018
ID -> RP	0.607	0.570	0.144	4.224	0.000
IA -> RP	0.607	0.600	0.032	19.099	0.000
SB -> RP	0.295	0.326	0.107	2.753	0.006
SA -> RA	0.125	0.118	0.028	4.534	0.000
PB -> RA	0.145	0.137	0.035	4.084	0.000
ID -> RA	0.257	0.244	0.072	3.565	0.000
IA -> RA	0.860	0.861	0.104	8.240	0.000
SB -> RA	0.439	0.416	0.089	4.936	0.000
RP -> RA	1.341	1.354	0.119	11.306	0.000
SA -> RS	0.053	0.051	0.014	3.749	0.000
PB -> RS	0.061	0.059	0.016	3.907	0.000
ID -> RS	0.108	0.103	0.030	3.667	0.000
IA -> RS	0.136	0.143	0.037	3.652	0.000
SB -> RS	1.004	1.017	0.042	24.093	0.000
RP -> RS	0.210	0.223	0.058	3.626	0.000

Note: It should be mentioned that the algorithm parameters of 385 cases, 5000 samples, and the option of 'no sign changes' were used in this study to determine the importance of the path coefficients. (Hair et al., 2017). The p-value is calculated by performing a bootstrapping technique on 385 instances and 5000 samples. The bias-corrected 5% (two-tailed) confidence interval is calculated using a double bootstrap routine. (Chin, 1998).

4.5.1 Direct effect of Saving Attitude on Retirement Planning

The direct effect of *Saving Attitude* on *Retirement Planning* produced the path coefficient of 0.239. The significance ($p<0.05$) of the path coefficient that demonstrates the relationship between Saving Attitude on Retirement Planning is shown by the empirical t value of 6.790. Therefore, it reveals that Saving Attitude exercise direct effect on retirement planning. As a result, these findings support Hypothesis 1, which claims that Saving Attitude has a beneficial direct effect on Retirement Planning.

4.5.2 Direct effect of Borrowing Pattern and Retirement Planning

The path coefficient for the direct influence of *Borrowing Pattern* on *Retirement Planning* was 0.159. The empirical t value of 2.377 is more than the cut-off value of 1.96. As a result, at the 5% level of significance, there is significance in the association between Borrowing Pattern and Retirement Planning. As a result, these findings support Hypothesis 2, which claims that Borrowing Patterns have a beneficial direct effect on Retirement Planning.

4.5.3 Direct effect of Investment Decision and Retirement Planning

The study looked at the direct impact of *Investment Decisions on Retirement Planning*. The findings indicate that Investment Decisions have a direct impact on Retirement Planning. The path coefficient is 0.607 and the empirical t value of 4.224 is greater than the threshold value of 1.96 at the 5% level of significance. As a result, the association between Investment Decisions and Retirement Planning is significant at the 5% level of significance. These findings support hypothesis 3, which indicates that Investing Decisions have a beneficial direct effect on Retirement Planning.

4.5.4 Direct effect of Insurance Allocation and Retirement Planning

The direct effect of I*nsurance Allocation on Retirement Planning* produced the path coefficient of 0.607. The significance ($p<0.05$) of the path coefficient demonstrates the relationship between Insurance Allocation on Retirement Planning which is shown by the empirical t value

of 19.099. Therefore, it reveals that Insurance Allocation exercises direct effect on Retirement Planning. Thus, these values substantiate the hypothesis 4 that states the positive direct effect of Insurance Allocation on Retirement Planning.

4.5.5 Direct effect of Spending Behaviour on Retirement Planning

The direct influence of *Spending Behaviour on Retirement Planning* had a path coefficient of 0.295. The empirical t value is 2.753, which exceeds the cut-off value of 1.96. As a result, the connection between Spending Behaviour and Retirement Planning is significant at the 5% level of significance. These findings confirm hypothesis 5, which states that Spending Behaviours have a direct positive impact on Retirement Planning.

4.5.6 Direct effect of Saving Attitude on Retirement Adequacy.

The direct effect of *Saving Attitude on Retirement Adequacy* was investigated with a path coefficient of 0.125. Further, the relationship between Saving Attitude on Retirement Adequacy is found to be important at 5% level of significance. The empirical t value of 4.534 is above the threshold value of 1.96. Thus, it identifies that Saving Attitude exercise direct effect on Retirement Adequacy substantiating hypothesis 6 that states the positive direct effect of Saving Attitude on Retirement Adequacy.

4.5.7 Direct effect of Borrowing Pattern and Retirement Adequacy

With a route coefficient and empirical t-value of 0.145 and 4.084, respectively, the direct effect of *Borrowing Pattern on Retirement Adequacy* was explored. As a result, at the 5% level of significance, the association between Borrowing Pattern and Retirement Adequacy is significant. Thus, it demonstrates that Borrowing Patterns have a direct effect on Retirement Adequacy and substantiates Hypothesis 7.

4.5.8 Direct effect of Investment Decision and Retirement Adequacy

The evaluation of direct effect of *Investment Decision on Retirement Adequacy*, shows the direct effect of Investment Decision on Retirement Adequacy which is significant ($p<0.05$) at the path-coefficient value of 0.257 and an empirical t-value of 3.565. This is above the threshold value of 1.96. Thus, these values substantiate the hypothesis 8, which states a positive direct effect of Investment Decision on Retirement Adequacy.

4.5.9 Direct effect of Insurance Allocation and Retirement Adequacy

The direct effect of *Insurance Allocation on Retirement Adequacy* was investigated with a path coefficient of 0.860, which is above the threshold value of 0.20. Further, the relationship between Insurance Allocations on Retirement Adequacy was found to be important at 5% significance. The empirical t-value of 8.240 was above the threshold value of 1.96. Thus, it identifies that Insurance Allocation exercise direct effect on Retirement Adequacy, substantiating hypothesis 9.

4.5.10 Direct effect of Spending Behaviour on Retirement Adequacy

It was investigated the direct impact of *Spending Patterns on Retirement Adequacy*. The route coefficient and empirical t value are both greater than the threshold values, at 0.439 and 4.936, respectively. As a result, the connection between Spending Behaviour and Retirement Adequacy is significant at the 5% level of significance. As a result, it demonstrates that Spending Behaviour has a direct impact on Retirement Adequacy and supports hypothesis 10.

4.5.11 Direct effect of Saving Attitude on Retirement Satisfaction

With a path coefficient and empirical t value of 0.053 and 3.747, respectively, the direct effect of *Saving Attitude on Retirement Satisfaction* was explored. As a result, at the 5% level of significance, there is significance in the association between Saving Attitude and Retirement Satisfaction and therefore the findings support hypothesis 12.

4.5.12 Direct effect of Borrowing Pattern on Retirement Satisfaction

The direct effect of *Borrowing Pattern on Retirement Satisfaction* was investigated which is significant ($p<0.05$) at the path-coefficient value of 0.061 and the empirical t value is 3.907, above the threshold value of 1.96. Thus, these values substantiate hypothesis 13 that states the positive direct effect of Borrowing Pattern on Retirement Satisfaction.

4.5.13 Direct effect of Investment Decision and Retirement Satisfaction

The study looked at the direct impact of *Investment Decision on Retirement Satisfaction*. The empirical t value is 3.667 and the path coefficient is 0.108. As a result, at 5% level of significance, there is a significant association between Investment decision and Retirement Satisfaction and as a result, these findings support hypothesis 14.

4.5.14 Direct effect of Insurance Allocation and Retirement Satisfaction

With a path coefficient and empirical t-value of 0.136 and 3.652, respectively, the direct effect of *Insurance Allocation on Retirement Satisfaction* was explored. At 5% level of significance, the association between Insurance Allocation and Retirement Satisfaction is significant. These findings support hypothesis 15, which argues that Insurance Allocation has significant direct influence on Retirement Satisfaction.

4.5.15 Direct effect of Spending Behaviour on Retirement Satisfaction

The direct effect of *Spending Behaviour on Retirement Satisfaction* is significant ($p<0.05$) at the path-coefficient value of 1.004 and the empirical t-value of 24.093, above the threshold value of 1.96. Thus, these values substantiate hypothesis 16 that states the positive direct effect of Spending Behaviour on Retirement Satisfaction.

4.5.16 Direct effect of Retirement Planning on Retirement Adequacy

The direct effect of *Retirement Planning on Retirement Adequacy* was investigated. The results have shown that Retirement Planning exercise direct effect on Retirement Adequacy. The path coefficient of 1.341 is above the threshold value of 0.20, which is further measured by the empirical t value of 11.306, above the threshold value of 1.96 at 5% level of significance. Accordingly, there is significance in the relationship of Retirement Planning on Retirement Adequacy, thus substantiate hypothesis 11 that states a positive direct effect of Retirement Planning on Retirement Adequacy.

4.5.17 Direct effect of Retirement Planning on Retirement Satisfaction

The evaluation of direct effect of *Retirement Planning on Retirement Satisfaction* shows a significant ($p<0.05$) direct effect at the path-coefficient value of 0.210 and empirical t-value is 3.626. Thus, these values substantiate the hypothesis 17 that states the positive direct effect of Retirement Planning on Retirement Satisfaction.

4.6 Mediator Analysis

The mediating effects of *Retirement Planning* was assessed, to explore the consequences of its intervention in the liaison between exogenous latent variables, Saving Attitude, Borrowing Pattern, Investment Decision, Insurance Allocation, and Spending Behaviour with endogenous latent variables, Retirement Adequacy and Retirement Satisfaction. These assessments pertain to hypotheses 18 to 27 that state the mediating effect of Retirement Planning in the relationship

with all exogenous latent variables with endogenous latent variables. The theoretical and structural model of the present study conceptualizes the direct effect of all exogenous latent variables on endogenous latent variables and it was found to be significant (Table 4.7). Further, the study tested whether the direct effect of all exogenous latent variables on endogenous latent variables would be significant after the inclusion of the mediator in the model (Hair et al., 2017).

4.6.1.1 The mediating effect of Retirement Planning between Saving Attitude and Retirement Adequacy

The mediating construct of the structural model of this research is Retirement Planning. For the indirect effect to be significant, the paths between Saving Attitude and Retirement Planning, and between Retirement Planning and Retirement Adequacy should be significant. Therefore, the construct of retirement planning was included to evaluate whether it mediates the relationship between Saving Attitude and Retirement Adequacy.

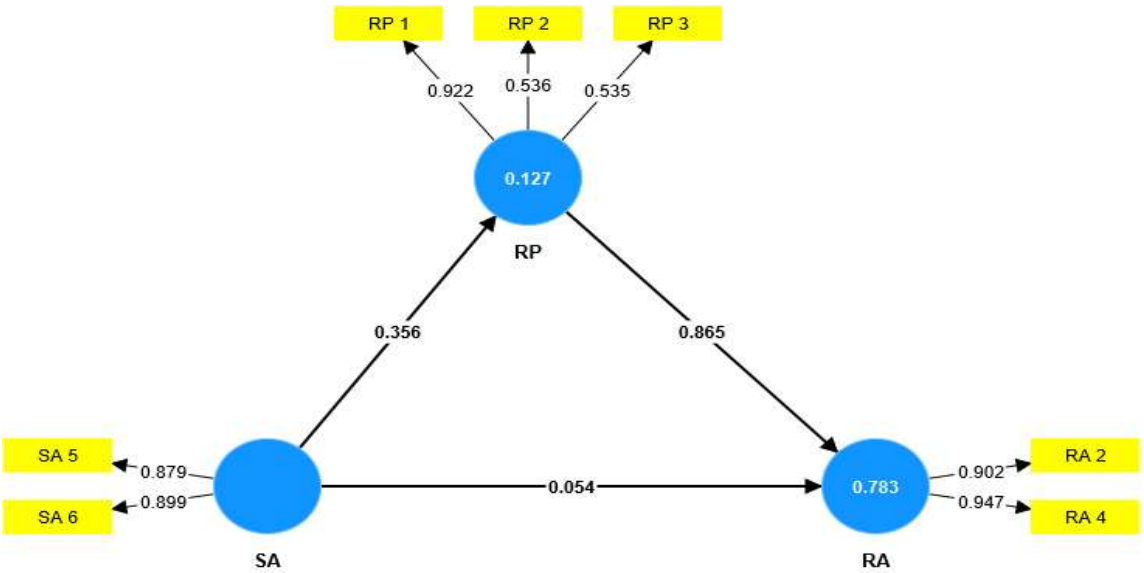

Figure 4.3: The path diagram showing the mediator Retirement Planning between Saving Attitude and Retirement Adequacy.

Figure 4.3 illustrates the mediating effect of the construct Retirement Planning in the relationship between Saving Attitude and Retirement Adequacy. The indirect effect is calculated by measuring the effect of Saving Attitude on Retirement Planning and the effect of Retirement Planning on Retirement Adequacy. The mediating effect is calculated through VAF:

$$\text{VAF} = \frac{IndirectEffect}{Indirect\ Effect + Direct\ Effect}$$

$$= \frac{0.356\ x\ 0.865}{(0.356\ x\ 0.865) + 0.054} = \frac{0.3079}{0.3619} = 0.851$$

In the above computation, VAF is above 0.80, therefore it can be interpreted to conclude that the construct of Retirement Planning exercises full mediating effect in the relationship between Saving Attitude and Retirement Adequacy. The structural model of this mediating effect measured to assess the significance of the relationship among the above-mentioned constructs, the results of which is shown in table 4.8:

Table 4.8: The structural model showing mediating effect: Retirement Planning mediates between Saving Attitude and Retirement Adequacy.

Relationship	Original sample	Standard Deviation	t-statistics	p-value
SA->RA	0.054	0.020	2.626	0.009
SA->RP	0.356	0.032	11.091	0.000
RP->RA	0.865	0.013	64.882	0.000

The empirical t-value of 2.626 validates the mediating effect of Retirement Planning in the relationship between Saving Attitude and Retirement Adequacy. Therefore, it can be concluded that Retirement Planning mediates the relationship between Saving Attitude and Retirement Adequacy at 5% level of significance. Similarly, Saving Attitude shows significance in its relationship with Retirement Planning (t-value, 11.091; 5% level of significance). Retirement Planning as a mediator construct, in turn, shows significance in its relationship with Retirement Adequacy (t-value, 64.882; 5% level of significance). Therefore, the above findings substantiate hypothesis 18, which states the mediating effect of Retirement Planning in the relationship between Saving Attitude and Retirement Adequacy.

4.6.1.2 The mediating effect of Retirement Planning between Borrowing Pattern and Retirement Adequacy

For the indirect effect to be significant, the paths between Borrowing Pattern and Retirement Planning, and between Retirement Planning and Retirement Adequacy should be significant.

Therefore, the construct of Retirement Planning was included to evaluate whether it mediates the relationship between Borrowing Pattern and Retirement Adequacy.

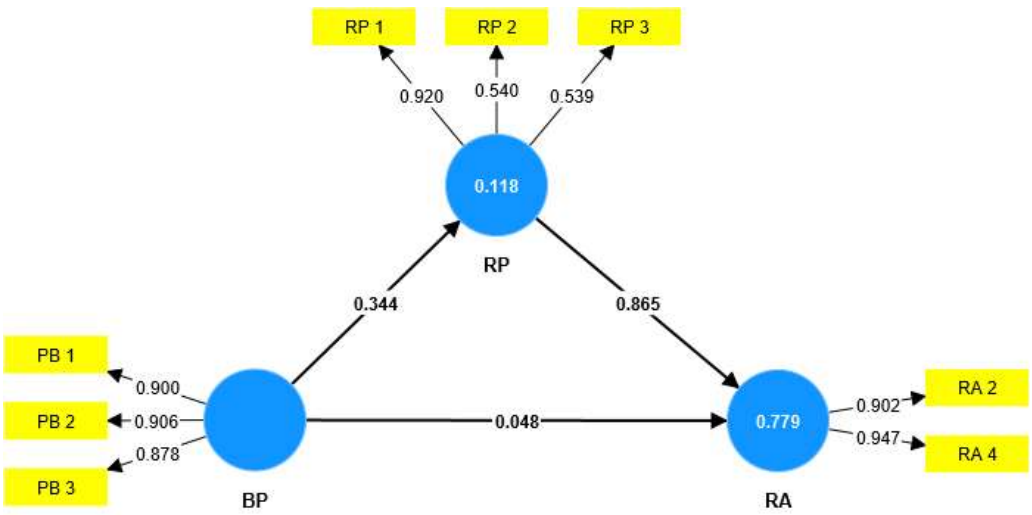

Figure 4.4: The path diagram that shows Retirement Planning between Borrowing Pattern and Retirement Adequacy.

Figure 4.4 illustrates the mediating effect of the construct Retirement Planning in the relationship between Borrowing Pattern and Retirement Adequacy. The indirect effect is calculated by measuring the effect of Borrowing Pattern on Retirement Planning and the effect of Retirement Planning on Retirement Adequacy. The mediating effect is calculated through VAF:

$$\text{VAF} = \frac{IndirectEffect}{Indirect\ Effect + Direct\ Effect}$$

$$= \frac{0.344\ x\ 0.865}{(0.344\ x\ 0.865) + 0.048} = \frac{0.2975}{0.3455} = 0.8610$$

In the above computation, VAF is above 0.80, therefore the same can be interpreted to conclude that the construct of Retirement Planning exercises full mediating effect in the relationship between Borrowing Pattern and Retirement Adequacy. The structural model of this mediating effect measured to assess the significance of relationships among the above-mentioned constructs, the results of which is shown in table 4.9:

Table 4.9: The structural model showing mediating effect: Retirement Planning mediates between Borrowing Patterns and Retirement Adequacy.

Relationship	Original sample	Standard Deviation	t-statistics	p-value
BP->RA	0.048	0.020	2.400	0.016
BP->RP	0.344	0.032	10.907	0.000
RP->RA	0.865	0.013	65.417	0.000

The empirical t value of 2.400 validates the mediating effect of Retirement Planning in the relationship between Borrowing Pattern and Retirement Adequacy. Therefore, it is concluded that Retirement Planning mediates the relationship between Borrowing Pattern and Retirement Adequacy at 5% level of significance. Similarly, Borrowing Pattern shows significance in its relationship with Retirement Planning (t-value, 10.907; 5% level of significance). Retirement Planning as a mediator construct, in its turn, also shows significance in its relationship with Retirement Adequacy (t-value, 65.417; 5% level of significance). Therefore, the above findings substantiate hypothesis 19, which states the mediating effect of Retirement Planning in the relationship between Borrowing Pattern and Retirement Adequacy.

4.6.1.3 The mediating effect of Retirement Planning between Investment Decision and Retirement Adequacy

For the indirect effect to be significant, the paths between Investment Decision and Retirement Planning and between Retirement Planning and Retirement Adequacy should be significant. Therefore, the construct of Retirement Planning was included to evaluate whether it mediates the relationship between Investment Decision and Retirement Adequacy.

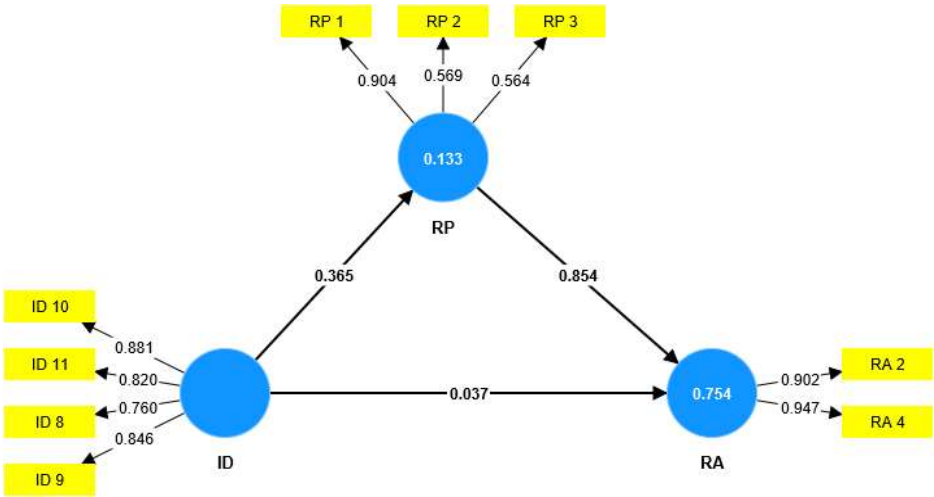

Figure 4.5: The path diagram that shows Retirement Planning between Investment Decisions and Retirement Adequacy.

Figure 4.5 illustrates the mediating effect of the construct Retirement Planning in the relationship between Investment Decision and Retirement Adequacy. The indirect effect is calculated by measuring the effect of Investment Decision on Retirement Planning and the effect of Retirement Planning on Retirement Adequacy. The mediating effect is calculated through VAF:

$$\text{VAF} = \frac{IndirectEffect}{Indirect\ Effect + Direct\ Effect}$$

$$= \frac{0.365\ x\ 0.854}{(0.365\ x\ 0.854) + 0.037} = \frac{0.311}{0.348} = 0.893$$

In the above computation, VAF is above 0.80, therefore it can be interpreted to conclude that the construct of Retirement Planning exercises full mediating effect in the relationship between Investment Decision and Retirement Adequacy. The structural model of this mediating effect measured to assess the significance of relationships among the above-mentioned constructs, the results of which is shown in table 4.10:

Table 4.10: The structural model showing mediating effect: Retirement Planning mediates between Investment Decisions and Retirement Adequacy.

Relationship	Original sample	Standard Deviation	t-statistics	p-value
ID->RA	0.037	0.020	1.983	0.002

ID->RP	0.365	0.033	11.198	0.000
RP->RA	0.854	0.014	61.618	0.000

The empirical t-value of 1.983 validates the mediating effect of Retirement Planning in the relationship between Investment Decision and Retirement Adequacy. Therefore, it is concluded that Retirement Planning mediates the relationship between Investment Decision and Retirement Adequacy at 5% level of significance. Similarly, Investment Decisions show significance in its relationship with Retirement Planning (t-value, 11.198; 5% level of significance). Retirement Planning as a mediator construct, in its turn, also shows significance in its relationship with Retirement Adequacy (t-value, 61.618; 5% level of significance). Therefore, the above findings substantiate hypothesis 20, which states the mediating effect of Retirement Planning in the relationship between Investment Decision and Retirement Adequacy.

4.6.1.4 The mediating effect of Retirement Planning between Insurance Allocation and Retirement Adequacy

For the indirect effect to be significant, the paths between Insurance Allocation and Retirement Planning and between Retirement Planning and Retirement Adequacy should be significant. Therefore, the construct of Retirement Planning was included to evaluate whether it mediates the relationship between Insurance Allocation and Retirement Adequacy.

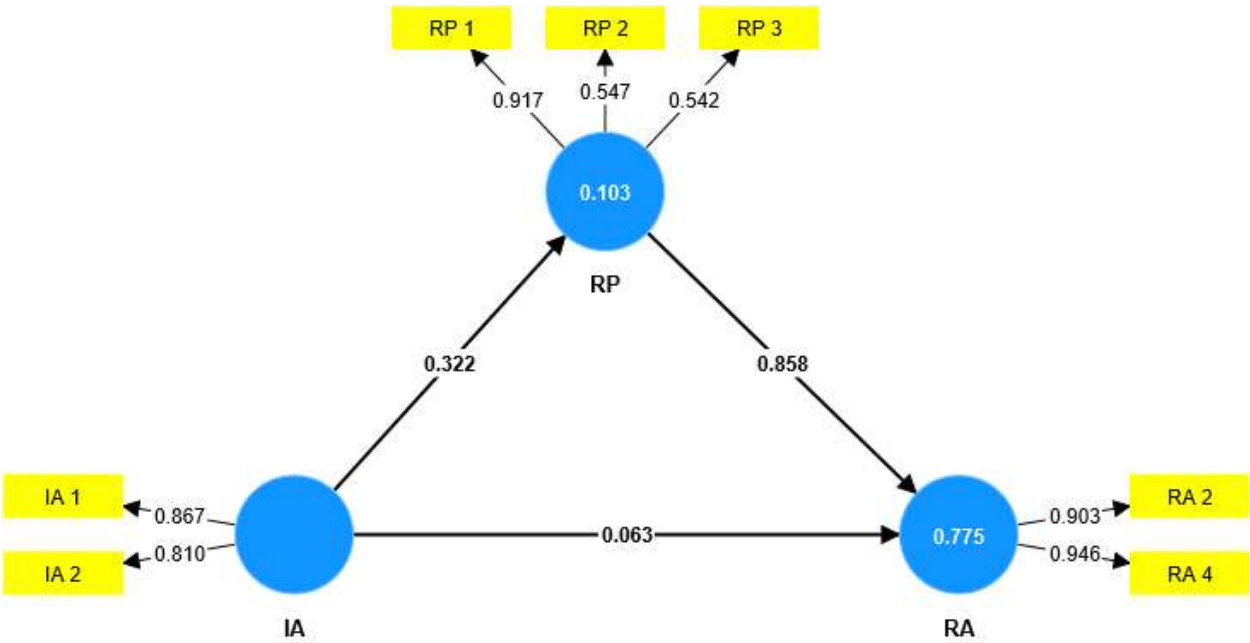

Figure 4.6: The path diagram that shows Retirement Planning between Insurance Allocation and Retirement Adequacy.

Figure 4.6 illustrates the mediating effect of the construct Retirement Planning in the relationship between Insurance Allocation and Retirement Adequacy. The indirect effect is calculated by measuring the effect of Investment Decision on Retirement Planning and the effect of Retirement Planning on Retirement Adequacy. The mediating effect is calculated through VAF:

$$\text{VAF} = \frac{IndirectEffect}{Indirect\ Effect + Direct\ Effect}$$

$$= \frac{0.322\ x\ 0.858}{(0.322\ x\ 0.858) + 0.063} = \frac{0.276}{0.339} = 0.814$$

In the above computation, VAF is above 0.80, therefore the same can be interpreted to conclude that the construct of Retirement Planning exercises full mediating effect in the relationship between Insurance Allocation and Retirement Adequacy. The structural model of this mediating effect measured to assess the significance of relationships among the above-mentioned constructs, the results of which is shown in table 4.11:

Table 4.11: The structural model showing mediating effect: Retirement Planning mediates between Insurance Allocation and Retirement Adequacy.

Relationship	Original sample	Standard Deviation	t-statistics	p-value
IA->RA	0.063	0.019	3.292	0.001
IA->RP	0.322	0.032	9.930	0.000
RP->RA	0.858	0.013	63.691	0.001

The empirical t-value of 3.292 validates the mediating effect of Retirement Planning in the relationship between Insurance Allocation and Retirement Adequacy. Therefore, it is concluded that Retirement Planning mediates the relationship between Insurance Allocation and Retirement Adequacy at 5% level of significance. Similarly, Insurance Allocation show significance in its relationship with Retirement Planning (t-value, 9.930; 5% level of significance). Retirement Planning as a mediator construct, in its turn, also shows significance in its relationship with Retirement Adequacy (t-value, 63.691; 5% level of significance). Therefore, the above findings substantiate hypothesis 21, which states the mediating effect of

Retirement Planning in the relationship between Insurance Allocation and Retirement Adequacy.

4.6.1.5 The mediating effect of Retirement Planning between Spending Behaviour and Retirement Adequacy

For the indirect effect to be significant, the paths between Spending Behaviour and Retirement Planning, and between Retirement Planning and Retirement Adequacy should be significant. Therefore, the construct of Retirement Planning was included to evaluate whether it mediates the relationship between Spending Behaviour and Retirement Adequacy.

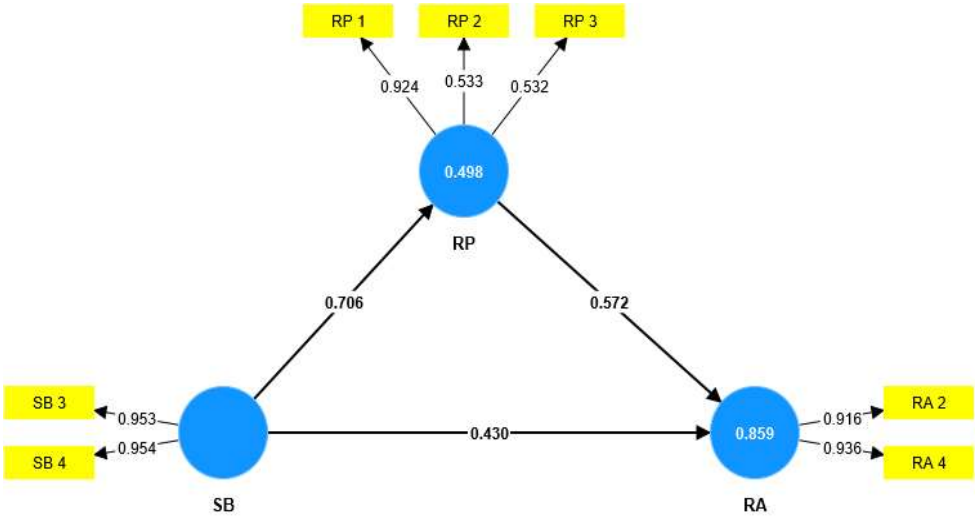

Figure 4.7: The path diagram that shows Retirement Planning between Spending Behaviour and Retirement Adequacy.

Figure 4.7 illustrates the mediating effect of the construct Retirement Planning in the relationship between Spending Behaviour and Retirement Adequacy. The indirect effect is calculated by measuring the effect of Spending Behaviour on Retirement Planning and the effect of Retirement Planning on Retirement Adequacy. The mediating effect is calculated through VAF:

$$\text{VAF} = \frac{IndirectEffect}{Indirect\ Effect + Direct\ Effect}$$

$$= \frac{0.706\ x\ 0.572}{(0.706\ x\ 0.572) + 0.430} = \frac{0.403}{0.833} = 0.483$$

In the above computation, VAF is below 0.80, therefore the same can be interpreted to conclude that the construct of Retirement Planning exercises partial mediating effect in the relationship between Insurance Allocation and Retirement Adequacy. The structural model of this mediating effect measured to assess the significance of relationships among the above-mentioned constructs, the results of which is shown in table 4.12:

Figure 4.12: The structural model showing mediating effect: Retirement Planning mediates between Spending Behaviour and Retirement Adequacy.

Relationship	Original sample	Standard Deviation	t-statistics	p-value
SB->RA	0.430	0.029	14.709	0.000
SB->RP	0.706	0.021	32.958	0.000
RP->RA	0.572	0.032	18.111	0.000

The empirical t-value of 14.709 validates the mediating effect of Retirement Planning in the relationship between Spending Behaviour and Retirement Adequacy. Therefore, it is concluded that Retirement Planning mediates the relationship between Spending Behaviour and Retirement Adequacy at 5% level of significance. Similarly, Spending Behaviour show significance in its relationship with Retirement Planning (t-value, 32.958; 5% level of significance). Retirement Planning as a mediator construct, in its turn, also shows significance in its relationship with Retirement Adequacy (t-value, 18.111; 5% level of significance). Therefore, the above findings substantiate hypothesis 22, which states the mediating effect of Retirement Planning in the relationship between Spending Behaviour and Retirement Adequacy.

4.6.2.1 The mediating effect of Retirement Planning between Saving Attitude and Retirement Satisfaction

The mediating construct of the structural model of this research is Retirement Planning. For the indirect effect to be significant, the paths between Saving Attitude and Retirement Planning and between Retirement Planning and Retirement Satisfaction should be significant. Therefore, the construct of Retirement Planning was included to evaluate whether it mediates the relationship between Saving Attitude and Retirement Satisfaction.

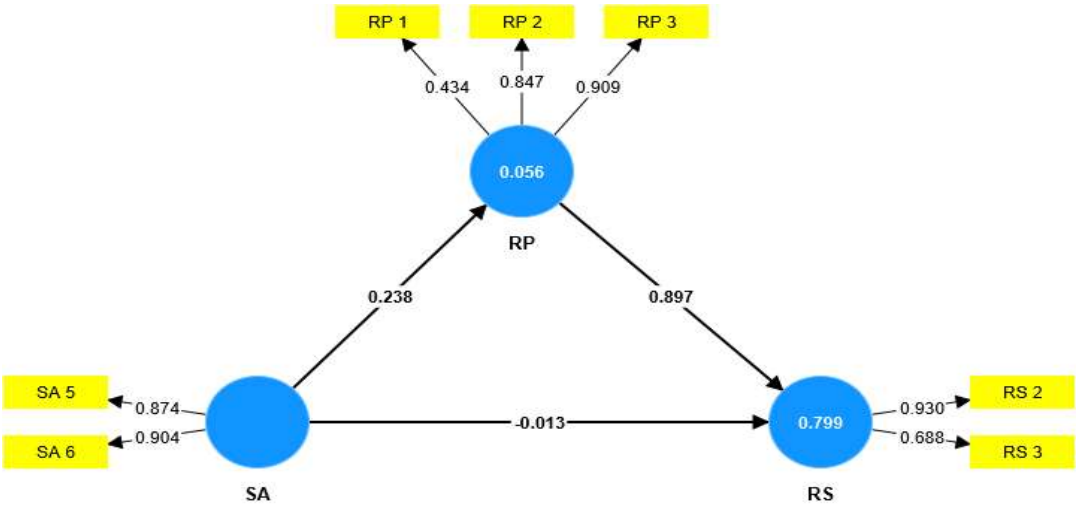

Figure 4.8: The path diagram that shows Retirement Planning between Saving Attitude and Retirement Satisfaction.

Figure 4.8 illustrates the mediating effect of the construct Retirement Planning in the relationship between Saving Attitude and Retirement Satisfaction. The indirect effect is calculated by measuring the effect of Saving Attitude on Retirement Planning and the effect of Retirement Planning on Retirement Satisfaction. The mediating effect is calculated through VAF:

$$\text{VAF} = \frac{IndirectEffect}{Indirect\ Effect + Direct\ Effect}$$

$$= \frac{0.238\ x\ 0.897}{(0.238\ x\ 0.897) + 0.013} = \frac{0.2134}{0.2264} = 0.942$$

In the above computation, VAF is above 0.80; therefore, the same can be interpreted to conclude that the construct of Retirement Planning exercises full mediating effect in the relationship between Saving Attitude and Retirement Satisfaction. The structural model of this mediating effect measured to assess the significance of relationships among the above-mentioned constructs, the results of which is shown in table 4.13:

Table 4.13: The structural model showing mediating effect: Retirement Planning mediates between Saving Attitude and Retirement Satisfaction.

Relationship	Original sample	Standard Deviation	t-statistics	p-value
SA->RS	-0.013	0.013	1.960	0.000
SA->RP	0.238	0.036	6.532	0.000

RP->RS	0.897	0.005	197.100	0.000

The empirical t-value of 1.960 validates the mediating effect of Retirement Planning in the relationship between Saving Attitude and Retirement Satisfaction. Therefore, it can be concluded that Retirement Planning mediates the relationship between Saving Attitude and Retirement Satisfaction at 5% level of significance. Similarly, Saving Attitude shows significance in its relationship with Retirement Planning (t-value, 6.532; 5% level of significance). Retirement Planning as a mediator construct, in its turn, also shows significance in its relationship with Retirement Satisfaction (t-value, 197.100; 5% level of significance). Therefore, the above findings substantiate hypothesis 23, which states the mediating effect of Retirement Planning in the relationship between Saving Attitude and Retirement Satisfaction.

4.6.2.2 The mediating effect of Retirement Planning between Borrowing Pattern and Retirement Satisfaction

For the indirect effect to be significant, the paths between Borrowing Pattern and Retirement Planning, and between Retirement Planning and Retirement Satisfaction should be significant. Therefore, the construct of Retirement Planning was included to evaluate whether it mediates the relationship between Borrowing Pattern and Retirement Satisfaction.

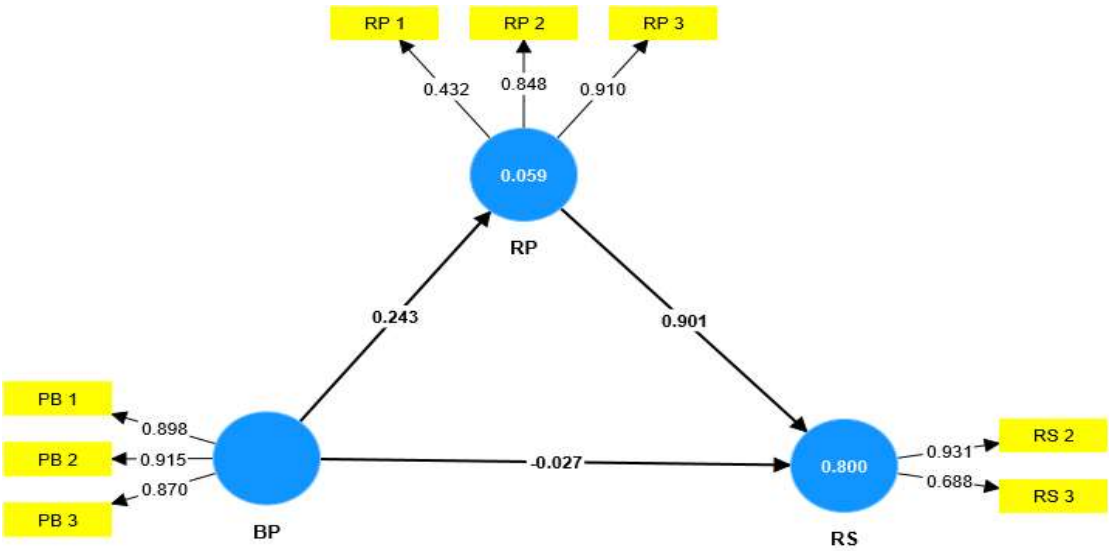

Figure 4.9: The path diagram that shows Retirement Planning between Borrowing Pattern and Retirement Satisfaction.

Figure 4.9 illustrates the mediating effect of the construct Retirement Planning in the relationship between Borrowing Pattern and Retirement Satisfaction. The indirect effect is calculated by measuring the effect of Borrowing Pattern on Retirement Planning and the effect of Retirement Planning on Retirement Satisfaction. The mediating effect is calculated through VAF:

$$\text{VAF} = \frac{IndirectEffect}{Indirect\ Effect + Direct\ Effect}$$

$$= \frac{0.243\ x\ 0.901}{(0.243\ x\ 0.901) + 0.027} = \frac{0.2189}{0.2459} = 0.8901$$

In the above computation, VAF is above 0.80, therefore the same can be interpreted to conclude that the construct of Retirement Planning exercises full mediating effect in the relationship between Borrowing Pattern and Retirement Adequacy. The structural model of this mediating effect measured to assess the significance of relationships among the above-mentioned constructs, the results of which is shown in table 4.14:

Table 4.14: The structural model showing mediating effect: Retirement Planning mediates between Borrowing Patterns and Retirement Satisfaction.

Relationship	Original sample	Standard Deviation	t-statistics	p-value
BP->RS	-0.027	0.013	2.004	0.045
BP->RP	0.243	0.034	7.101	0.000
RP->RS	0.901	0.004	213.956	0.000

The empirical t-value of 2.004 validates the mediating effect of Retirement Planning in the relationship between Borrowing Pattern and Retirement Satisfaction. Therefore, it is concluded that Retirement Planning mediates the relationship between Borrowing Pattern and Retirement Satisfaction at 5% level of significance. Similarly, Borrowing Pattern shows significance in its relationship with Retirement Planning (t-value, 7.101; 5% level of significance). Retirement Planning as a mediator construct, in its turn, shows significance in its relationship with Retirement Satisfaction (t-value, 213.956; 5% level of significance). Therefore, the above findings substantiate hypothesis 24, which states the mediating effect of Retirement Planning in the relationship between Borrowing Pattern and Retirement Satisfaction.

4.6.2.3 The mediating effect of Retirement Planning between Investment Decisions and Retirement Satisfaction

For the indirect effect to be significant, the paths between Investment Decision and Retirement Planning and between Retirement Planning and Retirement Satisfaction should be significant. Therefore, the construct of Retirement Planning was included to evaluate whether it mediates the relationship between Investment Decision and Retirement Satisfaction.

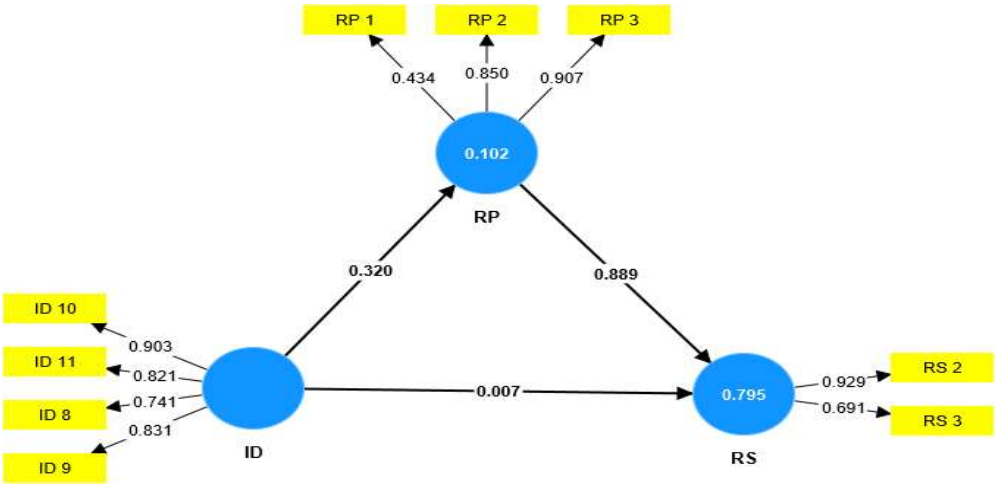

Figure 4.10: The path diagram that shows Retirement Planning between Investment Decisions and Retirement Satisfaction.

Figure 4.10 illustrates the mediating effect of the construct Retirement Planning in the relationship between Investment Decision and Retirement Satisfaction. The indirect effect is calculated by measuring the effect of Investment Decision on Retirement Planning and the effect of Retirement Planning on Retirement Satisfaction. The mediating effect is calculated through VAF:

$$\text{VAF} = \frac{IndirectEffect}{Indirect\ Effect + Direct\ Effect}$$

$$= \frac{0.320\ x\ 0.889}{(0.320\ x\ 0.889) + 0.007} = \frac{0.2844}{0.2914} = 0.9759$$

In the above computation, VAF is above 0.80, therefore the same can be interpreted to conclude that the construct of Retirement Planning exercises full mediating effect in the relationship between Investment Decision and Retirement Satisfaction. The structural

model of this mediating effect measured to assess the significance of relationships among the above-mentioned constructs, the results of which is shown in table 4.15:

Table 4.15: The structural model showing mediating effect: Retirement Planning mediates between Investment Decisions and Retirement Satisfaction.

Relationship	Original sample	Standard Deviation	t-statistics	p-value
ID->RS	0.007	0.015	2.456	0.000
ID->RP	0.320	0.031	10.329	0.000
RP->RS	0.889	0.006	151.921	0.000

The empirical t-value of 2.456 validates the mediating effect of Retirement Planning in the relationship between Investment Decision and Retirement Satisfaction. Therefore, it is concluded that Retirement Planning mediates the relationship between Investment Decision and Retirement Adequacy at 5% level of significance. Similarly, Investment Decisions show significance in its relationship with Retirement Planning (t-value, 10.329; 5% level of significance). Retirement Planning as a mediator construct, in its turn, also shows significance in its relationship with Retirement Satisfaction (t-value, 151.921; 5% level of significance). Therefore, the above findings substantiate hypothesis 25, which states the mediating effect of Retirement Planning in the relationship between Investment Decision and Retirement Satisfaction.

4.6.2.4 The mediating effect of Retirement Planning between Insurance Allocation and Retirement Satisfaction

For the indirect effect to be significant, the paths between Insurance Allocation and Retirement Planning and between Retirement Planning and Retirement Satisfaction should be significant. Therefore, the construct of Retirement Planning was included to evaluate whether it mediates the relationship between Insurance Allocation and Retirement Satisfaction.

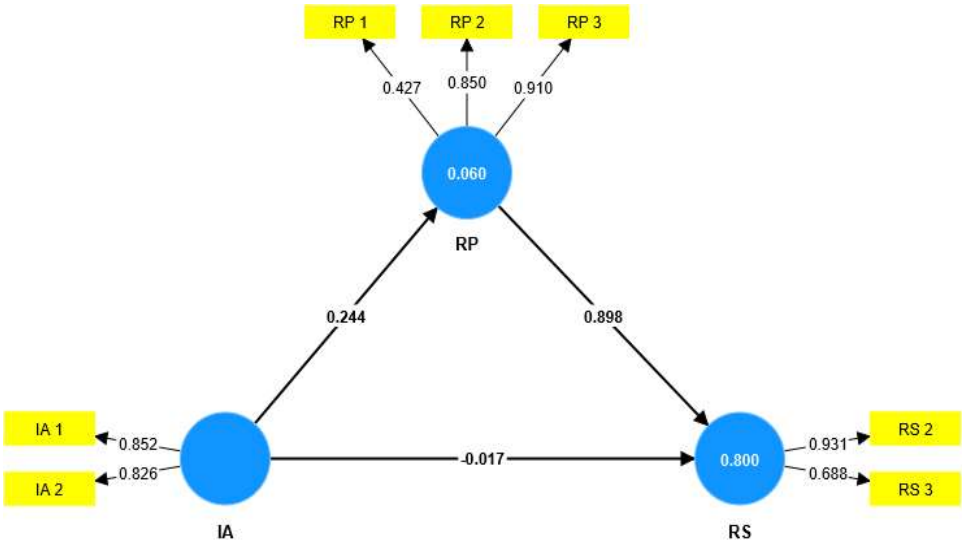

Figure 4.11: The path diagram that shows Retirement Planning between Insurance Allocation and Retirement Satisfaction.

Figure 4.11 illustrates the mediating effect of the construct Retirement Planning in the relationship between Insurance Allocation and Retirement Satisfaction. The indirect effect is calculated by measuring the effect of Investment Decision on Retirement Planning and the effect of Retirement Planning on Retirement Satisfaction. The mediating effect is calculated through VAF:

$$\text{VAF} = \frac{IndirectEffect}{Indirect\ Effect + Direct\ Effect}$$

$$= \frac{0.244\ x\ 0.898}{(0.244\ x\ 0.898) + 0.017} = \frac{0.2191}{0.2361} = 0.9279$$

In the above computation, VAF is above 0.80, therefore the same can be interpreted to conclude that the construct of Retirement Planning exercises full mediating effect in the relationship between Insurance Allocation and Retirement Satisfaction. The structural model of this mediating effect measured to assess the significance of relationships among the above-mentioned constructs, the results of which is shown in table 4.16:

Table 4.16: The structural model showing mediating effect: Retirement Planning mediates between Insurance Allocation and Retirement Satisfaction.

Relationship	Original sample	Standard Deviation	t-statistics	p-value

IA->RS	-0.017	0.014	2.158	0.247
IA->RP	0.244	0.033	7.419	0.000
RP->RS	0.898	0.005	198.360	0.000

The empirical t-value of 2.158 validates the mediating effect of Retirement Planning in the relationship between Insurance Allocation and Retirement Satisfaction. Therefore, it is concluded that Retirement Planning mediates the relationship between Insurance Allocation and Retirement Adequacy at 5% level of significance. Similarly, Insurance Allocation show significance in its relationship with Retirement Planning (t-value, 7.419; 5% level of significance). Retirement Planning as a mediator construct, in its turn, also shows significance in its relationship with Retirement Satisfaction (t-value, 198.360; 5% level of significance). Therefore, the above findings substantiate hypothesis 26, which states the mediating effect of Retirement Planning in the relationship between Insurance Allocation and Retirement Satisfaction.

4.6.2.5 The mediating effect of Retirement Planning between Spending Behaviour and Retirement Satisfaction

For the indirect effect to be significant, the paths between Spending Behaviour and Retirement Planning, and between Retirement Planning and Retirement Satisfaction should be significant. Therefore, the construct of Retirement Planning was included to evaluate whether it mediates the relationship between Spending Behaviour and Retirement Satisfaction.

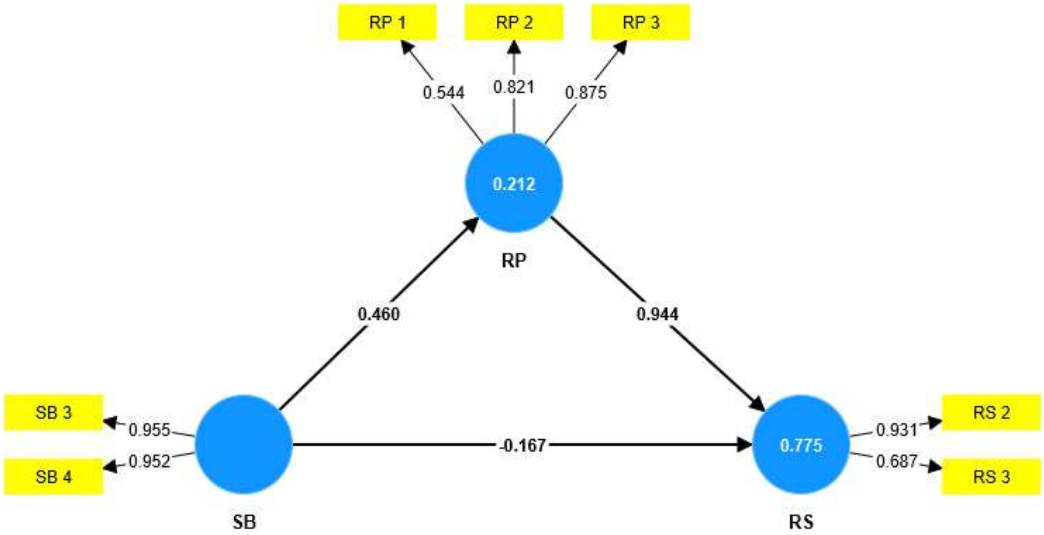

Figure 4.12: The path diagram that shows Retirement Planning between Spending Behaviour and Retirement Satisfaction.

Figure 4.12 illustrates the mediating effect of the construct Retirement Planning in the relationship between Spending Behaviour and Retirement Satisfaction. The indirect effect is calculated by measuring the effect of Spending Behaviour on Retirement Planning and the effect of Retirement Planning on Retirement Satisfaction. The mediating effect is calculated through VAF:

$$\text{VAF} = \frac{IndirectEffect}{Indirect\ Effect + Direct\ Effect}$$

$$= \frac{0.460\ x\ 0.944}{(0.460\ x\ 0.944) + 0.167} = \frac{0.4342}{0.6012} = 0.7222$$

In the above computation, VAF is below 0.80, therefore the same can be interpreted to conclude that the construct of Retirement Planning exercises partial mediating effect in the relationship between Insurance Allocation and Retirement Satisfaction. The structural model of this mediating effect measured to assess the significance of relationships among the above-mentioned constructs, the results of which is shown in table 4.17:

Table 4.17: The structural model showing mediating effect: Retirement Planning mediates between Spending Behaviour and Retirement Satisfaction.

Relationship	Original sample	Standard Deviation	t-statistics	p-value
SB->RS	-0.167	0.021	8.110	0.000
SB->RP	0.460	0.038	12.116	0.000
RP->RS	0.944	0.010	91.816	0.000

The empirical t value of 8.110 validates the mediating effect of Retirement Planning in the relationship between Spending Behaviour and Retirement Satisfaction. Therefore, it is concluded that Retirement Planning mediates the relationship between Spending Behaviour and Retirement Satisfaction at 5% level of significance. Similarly, Spending Behaviour show significance in its relationship with Retirement Planning (t-value, 12.116; 5% level of significance). Retirement Planning as a mediator construct, in its turn, also show significance in its relationship with Retirement Satisfaction (t-value, 91.816; 5% level of significance). Therefore, the above findings substantiate hypothesis 27, which states the mediating effect of

Retirement Planning in the relationship between Spending Behaviour and Retirement Satisfaction.

Table 4.18: Results of hypotheses testing

Hypotheses No.	Statement of hypothesis	Supported
H - 1	Direct effect of saving attitude on retirement planning	Yes
H - 2	Direct effect of borrowing pattern on retirement planning	Yes
H – 3	Direct effect of investment decision on retirement planning	Yes
H - 4	Direct effect of insurance allocation on retirement planning	Yes
H - 5	Direct effect of spending behaviour on retirement planning	Yes
H - 6	Direct effect of saving attitude on retirement adequacy	Yes
H - 7	Direct effect of borrowing pattern on retirement adequacy	Yes
H - 8	Direct effect of investment decision on retirement adequacy	Yes
H - 9	Direct effect of insurance allocation on retirement adequacy	Yes
H - 10	Direct effect of spending behaviour on retirement adequacy	Yes
H - 11	Direct effect of saving attitude on retirement satisfaction	Yes
H - 12	Direct effect of borrowing pattern on retirement satisfaction	Yes
H - 13	Direct effect of investment decision on retirement satisfaction	Yes
H - 14	Direct effect of insurance allocation on retirement satisfaction	Yes
H - 15	Direct effect of spending behaviour on retirement satisfaction	Yes
H - 16	Direct effect of retirement planning on retirement adequacy	Yes
H - 17	Direct effect of retirement planning on retirement satisfaction	Yes

H - 18	The mediating effect of retirement planning in the relationship between saving attitude and retirement adequacy	Yes
H - 19	The mediating effect of retirement planning in the relationship between borrowing pattern and retirement adequacy	Yes
H - 20	The mediating effect of retirement planning in the relationship between investment decisions and retirement adequacy	Yes
H - 21	The mediating effect of retirement planning in the relationship between insurance allocation and retirement adequacy	Yes
H - 22	The mediating effect of retirement planning in the relationship between spending behaviour and retirement adequacy	Yes
H - 23	The mediating effect of retirement planning in the relationship between saving attitude and retirement satisfaction	Yes
H - 24	The mediating effect of retirement planning in the relationship between borrowing pattern and retirement satisfaction	Yes
H - 25	The mediating effect of retirement planning in the relationship between investment decisions and retirement satisfaction	Yes
H - 26	The mediating effect of retirement planning in the relationship between insurance allocation and retirement satisfaction	Yes
H - 27	The mediating effect of retirement planning in the relationship between spending behaviour and retirement satisfaction	Yes

4.7 Importance- Performance Matrix Analysis (IPMA)

The Important – Performance Matrix Analysis (IPMA) also known as Important Performance Map Analysis indicates the relative *IMPORTANCE* and *PERFORMANCE* of exogenous constructs in their relationship with endogenous construct. Total effects of exogenous constructs represent their importance, while their index values represent their performance. Importance reveals the complete overall effect on the final endogenous variable in the path diagram and performance reveals the capacity of latent variable scores. The IPMA contrasts the total effects, representing the predecessor constructs' importance in shaping a certain target construct, with their average latent variable scores indicating their performance (Fornell et al., 1996; Martilla & James, 1977; Slack, 1994).

4.7.1 Importance- Performance Matrix Analysis (Constructs wise)

IPMA map for exogenous and endogenous latent variables is shown in figure 4.13 as follows:

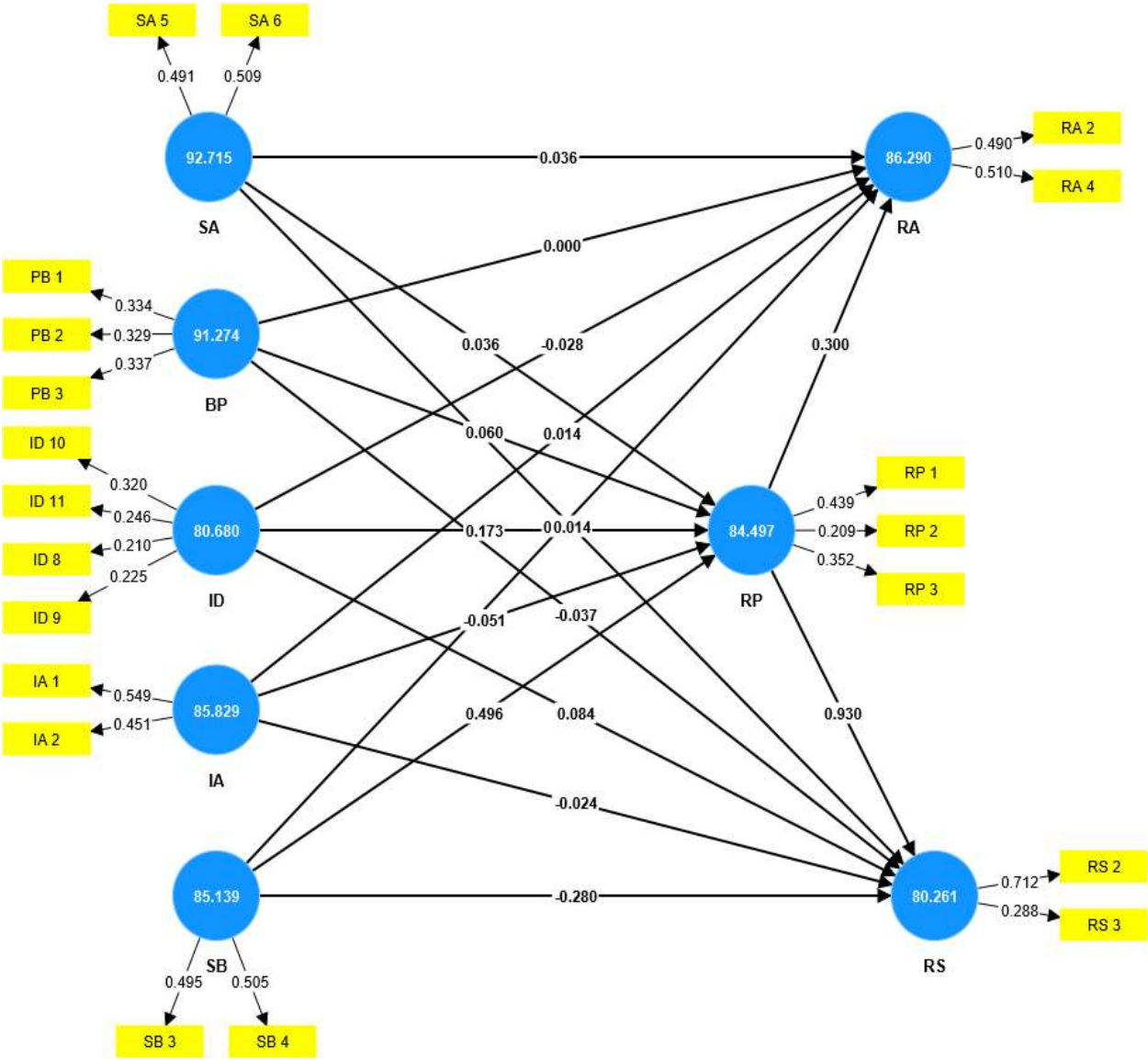

Figure 4.13: Exogenous and endogenous latent variables represented IPMA map.

"Importance" is assessed on the X axis, revealing total influence. If the total effect of one construct is greater than the total effect of another, that construct is more significant. "Performance" is measured on the Y axis, and if a construct has a higher mean value, it has higher performance, indicating good measurement paths (Hair et al, 2017; Rigdon et al, 2011; Höck et al, 2010; Völckner et al., 2010; Schloderer et al., 2014). Figure 4.14 depicts the IPMA of the exogenous constructs used in this study.

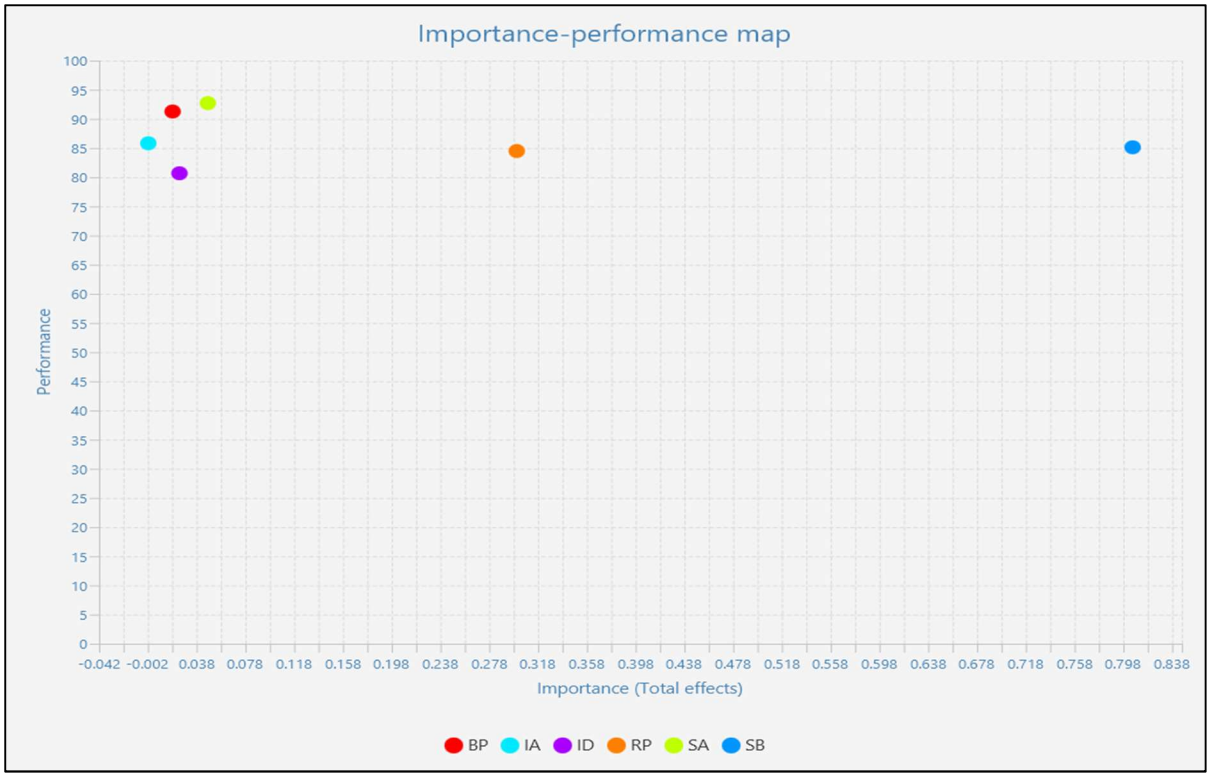

Figure 4.14: Importance Performance Matrix Analysis of Retirement Adequacy and Retirement Satisfaction on exogenous constructs wise

The above matrix shows that even though Spending Behaviour assumes the highest degree of importance in the structural model of the present study, its performance is relatively lower. The construct Saving Attitude has higher degree of performance but lower level of total effect. The values of total effects (importance) and index values (performance) is given in the Table 4.19:

Table 4.19: Total importance and performance of latent constructs

Latent Constructs	Importance (Total effects)	Performance (Index values)
BP	0.018	91.274
IA	-0.002	85.829
ID	0.024	80.680
RP	0.300	84.497
SA	0.047	92.715
SB	0.806	85.139
RA	NA	86.290
RS	NA	80.261

IPMA analysis (Figure 4.13; Table 4.19) shows that Retirement Adequacy and Retirement Satisfaction's performance is 86.290 and 80.261 respectively. One-unit increase in construct Borrowing Pattern from 91.274 to 92.274 would increase the performance of Retirement Adequacy from 86.290 to 86.308 and Retirement Satisfaction from 80.261 to 80.279. Similarly, one-unit increase in construct Investment Decision from 80.680 to 81.680 would increase the performance of Retirement Adequacy from 86.290 to 86.314 and Retirement Satisfaction from 80.261 to 80.335. At the same time, one-unit increase in construct Retirement Planning from 84.497 to 85.497 would increase the performance of Retirement Adequacy from 86.290 to 86.590 and Retirement Satisfaction from 80.261 to 80.561. IPMA analysis also shows that one-unit increase in construct Saving Attitude from 92.715 to 93.715 would increase the performance of Retirement Adequacy from 86.290 to 86.237 and Retirement Satisfaction from 80.261 to 80.308. One-unit increase in construct Spending Behaviour from 85.139 to 86.139 would increase the performance of Retirement Adequacy from 86.290 to 87.096 and Retirement Satisfaction from 80.261 to 81.067. However, one-unit increase in construct Insurance Allocation from 85.829 to 86.829 would decrease the performance of Retirement Adequacy from 86.290 to 86.288 and Retirement Satisfaction from 80.261 to 80.259.

4.8 Analysis of Finite-Mixture Partial Least Squares (FIMIX-PLS) Segmentation

Table 4.20 lists the relative segment sizes and segment retention criteria for various FIMIX-PLS implementations.

Table 4.20: Relative segment sizes and number of pre-specified segments

Relative segment sizes						**Number of pre-specified segments**		
	***S*1**	***S*2**	***S*3**	***S*4**	**Quality Criteria**	**S=2**	**S=3**	**S=4**
S=2	90%	10%			**1nL**	-721.917	-678.541	-616.287
S=3	52%	37%	11%		**AIC**	1,489.834	1,427.081	**1,373.574**
S=4	42%	24%	23%	11%	**AIC3**	1,512.834	1,462.081	**1,373.574**
					BIC	1,592.448	1,583.233	**1,536.263**
					CAIC	1,615.448	1,583.233	**1,536.263**
					EN	0.470	0.500	**0.618**

The selection of the best segmentation system is based on segment retention criteria. (Table 4.20). This is based on 20 runs per predefined number of segments in order to avoid local optimum solutions. (Becker, et al., 2011). Because varied criteria values suggest a consistent number of segments, the decision is straightforward. When the data is not identical, FIMIX-PLS is required. As part of the research, group segmentation is required. (Sarstedt et al., 2011; Ringle et al., 2010; Ringle et al, 2010; Hahn et al., 2002). When unobserved heterogeneity is expected, FIMIX must be used. If FIMIX is not used, the findings will be incorrectly analysed. The investigation of FIMIX-PLS segments is based on heterogeneity in the inner path model. FIMIX-PLS is used to evaluate cumulative models, such as those based on the confirmed standard plan, to ensure that calculated results are not influenced by unobserved variability in inner path model estimations.

The following are the relative segment sizes and segment retention criteria for alternative FIMIX-PLS solutions: The total number of participants is 385. According to Green's (1991) power chart, the minimum sample size is 75, hence 385/75= 5.133. As a result, the segmentation is 5. Using the rule of thumb of establishing sample size by taking into account 10 times the largest figure of structural routes towards a given construct, the sample size would be at least 60 respondents. (Hertzog, 2008). The relative segment size is determined by multiplying the minimum number of respondents by each segment value that must be more than or equal to 60. So 385*0.104=64, which is greater than 50 and close to 60. As a result, the relative segment size is four, and the feasible segment size is four.

The most established approach is FIMIX-PLS (Matthews et al, 2016; Hair et al, 2016; Hahn et al, 2002). (Hair et al, 2012; Hair et al, 2017). This study employs FIMIX-PLS, as indicated in numerous studies (Ringle et al, 2010; Wilden & Gudergan, 2015; Money et al, 2012; Navarro et al, 2011). FIMIX-PLS harvests micro-segments with relative segment sizes less than 5% in studies with six or more segments. As a result, FIMIX-PLS is better suited when the focus is on two to five pre-specified segments. AIC (Akaike's Information Criterion), AIC3 (Modified Information Criterion), BIC (Bayesian Information Criterion), and CAIC (Consistent Akaike's Information Criterion) all exhibit significant over-segmentation. (Sarstedt, Becker, et al., 2011). A three-segment solution is plausible because AIC, AIC3, BIC, and CAIC all point to four segments (Table 4.20). The normed entropy (EN) criteria is an exception to this rule. It produces the best results with four segments (0.618) and improves noticeably as the number of segments grows. The segments with stronger separability have larger EN criteria values, with

a maximum value of one. This feature is critical for FIMIX-PLS' ex post analysis. (Ringle et al, 2010).

In comparison to the other solutions, we find segment-specific distinct and significantly different PLS-SEM results for the four-segment solution. (Table 4.21). This four-part approach is appropriate in terms of substantiality, distinguishability, plausibility, and accessibility. (Becker et al., 2013).

Table 4.21: FIMIX-PLS findings for the four-segment solution

		Path coefficient	**Segment 1**	**Segment 2**	**Segment 3**	**Segment 4**
Relative segment size			**42.2%**	**24.3%**	**22.8%**	**10.7%**
Path relationships	BP-> RA	-0.138	0.000	0.000	0.000	-0.480
	BP -> RP	-0.017	0.000	0.039**	-0.089	-0.079
	BP -> RS	0.146	0.000	0.171*	0.047**	-0.225
	IA -> RA	-0.001	0.000	0.000	0.000	0.039**
	IA -> RP	0.017	0.000	-0.073	-0.109	0.009***
	IA -> RS	0.100	0.000	-0.097	0.312*	0.044**
	ID -> RA	-0.089	0.000	0.000	0.000	-0.151
	ID -> RP	-0.023	0.000	-0.161	-0.221	0.043**
	ID -> RS	0.076	0.000	-0.334	0.006***	0.558*
	SA-> RA	0.206	0.000	0.000	0.000	0.592*
	SA -> RP	-0.066	0.000	-0.133	-0.159	-0.089
	SA -> RS	-0.008	0.000	-0.115	0.115***	-0.051
	SB -> RA	0.363	0.000	0.000	0.000	0.697*
	SB -> RP	0.726	1.000	1.019	-0.381	0.864*
	SB -> RS	-0.005	0.000	0.526*	0.066*	-0.240
	RP -> RA	0.507	1.000	1.000	1.000	0.204**
	RP -> RS	0.091	1.000	-1.082	0.004***	0.303*
R^2	RA	0.627	1.000	1.000	1.000	0.761
	RP	0.495	1.000	0.963	0.399	0.696
	RS	0.079	1.000	0.455	0.151	0.270

Total effects	BP -> RA	-0.138	0.000	0.000	0.000	-0.480
	BP -> RP	-0.017	0.000	0.039	-0.089	-0.079
	BP -> RS	0.146	0.000	0.171	0.047	-0.225
	IA -> RA	-0.001	0.000	0.000	0.000	0.039
	IA -> RP	0.017	0.000	-0.073	-0.109	0.009
	IA -> RS	0.100	0.000	-0.097	0.312	0.044
	ID -> RA	-0.089	0.000	0.000	0.000	-0.151
	ID -> RP	-0.023	0.000	-0.161	-0.221	0.043
	ID -> RS	0.076	0.000	-0.334	0.006	0.558
	RP -> RA	0.507	1.000	1.000	1.000	0.204
	RP -> RS	0.091	1.000	-1.082	0.004	0.303
	SA -> RA	0.206	0.000	0.000	0.000	0.592
	SA -> RP	-0.066	0.000	-0.133	-0.159	-0.089
	SA -> RS	-0.008	0.000	-0.115	0.115	-0.051
	SB -> RA	0.363	0.000	0.000	0.000	0.697
	SB -> RP	0.726	1.000	1.019	-0.381	0.864
	SB -> RS	-0.005	0.000	0.526	0.066	-0.240

Note: The t-value [mga] splits the data-set using the FIMIX-PLS membership probabilities; the significance test of segment-specific PLS-SEM results using a double-bootstrap technique for PLS multi-group analysis (PLS-MGA), as reported by Becker et al. (2011).
***p < .01; **p < .05; *p < .10 (reported for path coefficients only).

The four-segment solution's FIMIX-PLS findings is shown in Table 4.21. Segment 1 shows one huge segment with a relative segment size of 0.42 and segment 2 with a relative segment size of 0.24. The third segment has a relative segment size of 0.23. Furthermore, a smaller section with a relative segment size of 0.11 appears. The FIMIX-PLS path coefficient of the four-segment solution reveals that the Borrowing Pattern on Retirement Adequacy is irrelevant in all segments. The Borrowing Pattern on Retirement Planning, on the other hand, is relevant in segment 2. (0.039). Further, Borrowing Pattern has relevance in segment 2 (0.171) and segment 3 (0.047) in relationship with Retirement Satisfaction. Insurance Allocation has significance in segment 4 (0.039) in relationship with Retirement Adequacy. It has a higher relevance in segment 4 (0.009) in relationship with Retirement Planning. Further, the path coefficient reveals that Insurance Allocation in relation with Retirement Satisfaction has

relevance in segment 3 (0.312) and segment 4 (0.044). The direct relationship of construct Investment Decision on Retirement Adequacy has no relevance in all segments but the relationship between Investment Decision and Retirement Planning is significant in segment 4 (0.043). The study al observed a direct and significant relationship between the constructs Investment Decision and Retirement Satisfaction in segment 3 (0.006) and segment 4 (0.558) respectively. Savings Attitude on Retirement Adequacy has relevance in segment 4 (0.592) but there is no relationship between Saving Attitude and Retirement Planning in all four segments Saving Attitude is highly relevant in relationship with Retirement Satisfaction in segment 3 (0.115). The direct effect of Spending Behaviour on Retirement Adequacy has significant relationship in segment 4 (0.697), but it also has relevance in segment 4 (0.864) in relationship with Retirement Planning. Spending Behaviour on Retirement Satisfaction is significant in both segment 2 (0.526) and segment 3 (0.066). Regarding the direct relationship between Retirement Planning and Retirement Adequacy only segment 4 (0.204) is relevant. However in segment 3 (0.004) and segment 4 (0.303) we see significant relationship of Retirement Planning with Retirement Satisfaction. The total effect reveals the same results of path relations.

4.9 Permutation Path Coefficients

Permutation algorithm is used to compare groups. In addition, the permutation algorithm is applied to carry out the PLS-SEM, MICOM (Measurement Invariance Composite Model) procedure (Henseler et al., 2015). Further, MICOM is applied in order to understand if significant inter-group distinctions are due to the results of inter-group differences in constructs. For strength of results, 5,000 random samples are suggested to run for the final analysis.

Table 4.22: Permutation path coefficients significance test by comparing location

Relationship	Original (Bangalore)	Original (Bhubaneshwar)	Permutation mean difference	Permutation p value
ID -> RP	0.104**	0.507**	0.003	0.013
Relationship	**Original (Bangalore)**	**Original (Chennai)**	**Permutation mean difference**	**Permutation p value**
IA -> RA	-0.016	0.233***	0.000	0.001
IA -> RP	0.012***	0.508***	-0.002	0.001

Relationship	Original (Bangalore)	Original (Delhi)	Permutation mean difference	Permutation p value
RP -> RS	0.046**	0.330**	-0.001	0.050
SA -> RS	0.295*	-0.343	-0.001	0.082
Relationship	**Original (Bangalore)**	**Original (Hyderabad)**	**Permutation mean difference**	**Permutation p value**
SA -> RS	0.295*	-0.114	-0.001	0.064
SB -> RP	0.183*	-0.048	0.005	0.071
Relationship	**Original (Bangalore)**	**Original (Kolkata)**	**Permutation mean difference**	**Permutation p value**
ID -> RS	-0.151	0.116*	-0.001	0.092
SB -> RP	0.183*	-0.035	0.000	0.100
Relationship	**Original (Bhubaneshwar)**	**Original (Chennai)**	**Permutation mean difference**	**Permutation p value**
IA -> RA	-0.073	0.233***	0.003	0.003
IA -> RP	-0.093	0.508***	-0.004	0.000
ID -> RP	0.507***	-0.094	0.003	0.002
Relationship	**Original (Bhubaneshwar)**	**Original (Delhi)**	**Permutation mean difference**	**Permutation p value**
IA -> RP	-0.093	0.194*	0.000	0.059
ID -> RP	0.507**	0.081**	0.004	0.014
Relationship	**Original (Bhubaneshwar)**	**Original (Hyderabad)**	**Permutation mean difference**	**Permutation p value**
ID -> RP	0.507***	0.116***	0.001	0.008
Relationship	**Original (Bhubaneshwar)**	**Original (Kolkata)**	**Permutation mean difference**	**Permutation p value**
ID -> RP	0.507**	0.149**	-0.008	0.044
PB -> RP	-0.052	0.310*	0.002	0.070
Relationship	**Original (Bhubaneshwar)**	**Original (Pune)**	**Permutation mean difference**	**Permutation p value**
ID -> RS	-0.046	0.394**	-0.012	0.049
Relationship	**Original (Chennai)**	**Original (Delhi)**	**Permutation mean difference**	**Permutation p value**

IA -> RA	0.233*	0.048*	-0.003	0.077
IA -> RP	0.508**	0.194**	0.003	0.049
RP -> RA	0.757*	0.876*	-0.003	0.100
SA -> RS	0.222*	-0.343	0.010	0.081
Relationship	**Original (Chennai)**	**Original (Hyderabad)**	**Permutation mean difference**	**Permutation p value**
IA -> RA	0.233***	-0.083	0.003	0.000
IA -> RP	0.508**	0.123**	-0.009	0.018
Relationship	**Original (Chennai)**	**Original (Kolkata)**	**Permutation mean difference**	**Permutation p value**
IA -> RA	0.233***	0.021***	0.000	0.010
IA -> RP	0.508**	0.142**	-0.002	0.045
PB -> RP	-0.135	0.310**	0.011	0.049
RP -> RA	0.757*	0.877*	-0.002	0.098
SA -> RP	0.364**	-0.118	-0.008	0.027
Relationship	**Original (Chennai)**	**Original (Pune)**	**Permutation mean difference**	**Permutation p value**
IA -> RA	0.233**	-0.004	0.003	0.017
IA -> RP	0.508***	-0.046	-0.010	0.002
ID -> RP	-0.094	0.311**	0.019	0.030
SA -> RP	0.364***	-0.033	0.004	0.061
SB -> RA	-0.032	0.116**	-0.002	0.018
Relationship	**Original (Delhi)**	**Original (Kolkata)**	**Permutation mean difference**	**Permutation p value**
SA -> RP	0.355*	-0.118	-0.020	0.082
Relationship	**Original (Delhi)**	**Original (Pune)**	**Permutation mean difference**	**Permutation p value**
ID -> RS	-0.005	0.394**	-0.002	0.042
PB -> RA	0.089*	-0.090	0.001	0.064
SB -> RA	-0.044	0.116*	-0.001	0.073
Relationship	**Original (Hyderabad)**	**Original (Kolkata)**	**Permutation mean difference**	**Permutation p value**

SA -> RP	0.214**	-0.118	-0.004	0.037
Relationship	**Original (Hyderabad)**	**Original (Pune)**	**Permutation mean difference**	**Permutation p value**
ID -> RS	0.054**	0.394**	0.008	0.050
SB -> RA	-0.028	0.116**	0.000	0.042

***$p < .01$; **$p < .05$; *$p < .10$ (reported for path coefficients only).

The permutation test results substantiate there is significant difference between locations for the structural (inner) model, as all Permutation p-values are below the threshold value of 0.05. **Note:** Permutation p-values above the threshold value of 0.05 is not shown in this table.

4.10 PLS-MGA (Multi-Group Analysis)

Parametric Multi-Group Analysis, is an applied independent sample t-tests in order to correlate paths between groups (Keil et al. 2000).

Table 4.23: PLS results of Multi-Group Analysis based on Location

Location	Path	Differences	p-value
Bangalore - Bhubaneshwar	**SB -> RP**	0.253**	0.026
Bhubaneshwar - Chennai	**ID -> RP**	0.601***	0.002
Bhubaneshwar - Delhi	**ID -> RP**	0.426***	0.009
Bhubaneshwar - Hyderabad	**ID -> RP**	0.392**	0.016
Bhubaneshwar - Kolkata	**ID -> RP**	0.358**	0.040
Chennai-Hyderabad	**IA -> RA**	0.316***	0.000
	IA -> RP	0.385**	0.029
Chennai-Kolkata	**IA -> RA**	0.213***	0.008
	IA -> RP	0.366**	0.041
	SA -> RP	0.482**	0.027
Chennai-Pune	**IA -> RA**	0.238***	0.010
	IA -> RP	0.555***	0.006
Delhi-Kolkata	**PB -> RA**	0.472*	0.073
Hyderabad-Kolkata	**SA -> RP**	0.333*	0.068
Kolkata-Pune	**SA -> RP**	0.086*	0.086

***$p < .01$; **$p < .05$; *$p < .10$.

Table 4.23 shows the group-specific PLS-SEM results and their differences. A double bootstrap routine determines the significance of the differences by running a PLS Multi-Group Analysis (Sarstedt et al., 2011). In a final step, descriptions of the two segments are derived based on assigning each of the observations on the maximum membership probability, to one of the two groups. Thereafter, cross-table analysis regarding the demographic and individual characteristics serves to identify applicable descriptors (Ringle et al, 2010). Of all the characteristics, only gender shows a suitable and good fit with the FIMIX-PLS segmentation results. Consequently, the data set is split into seven groups. Group 1 represents Bangalore, Group 2 represents Bhubaneshwar, Group 3 represent Chennai, Group 4 represent Delhi, Group 5 represent Hyderabad, Group 6 represent Kolkata and Group 7 represent Pune.

The results show that the seven segments are distinct. The direct effect of Spending Behaviour on Retirement Planning is significant and we have observed a higher significance in Bangalore when compared with Bhubaneshwar (0.253). At the same time with regard to direct effect of Investment Decision on Retirement Planning, it is more significant in Bhubaneshwar as compared to Chennai (0.601), Bhubaneshwar with Delhi (0.426), Bhubaneshwar with Hyderabad (0.392), and Bhubaneshwar with Kolkata (0.358). Conversely, Insurance Allocation plays significant role in the Chennai-Hyderabad segment. However, it is more significant regarding its direct effect of Insurance Allocation with Retirement Adequacy (0.316) followed by Investment Allocation with Retirement Planning (0.385). Insurance Allocation also play a vital role in the Chennai and Kolkata segment. Insurance Allocation is highly significant with Retirement Adequacy (0.213) than Retirement Planning (0.366). Regarding Saving Attitude on Retirement Planning (0.482) it is significant in Chennai and Kolkata segment. In Chennai-Pune, the direct effect of Insurance Allocation on Retirement planning (0.238) and Insurance Allocation on Retirement Planning (0.555) is very significant. In general, with regard to direct effect of Spending Behaviour on Retirement Adequacy (0.472), it is significant in Delhi-Kolkata segment. Similarly, the direct effect of Saving Attitude on Retirement Planning in Hyderabad-Kolkata as well as Kolkata and Pune are significant.

CHAPTER - 5
FINDING, CONCLUSION AND RECOMMENDATION

5.0 Introduction

This chapter presents the summary of research insights provided by this research endeavour. It has discussed the contributions of the study to the research discourse on retirement planning leading to retirement adequacy and retirement satisfaction. The discussion on theoretical inferences of the results has concentrated on pointing out the specific contributions to retirement planning literature in particular, and the research literature on financial behaviour and financial literacy in general. Managerial implications are drawn based on the results derived and the societal impacts have been derived. Further, limitations of this research is pointed out. Lastly, directions for future research is discussed. Figure 5.1 presents an overview of contents of this chapter:

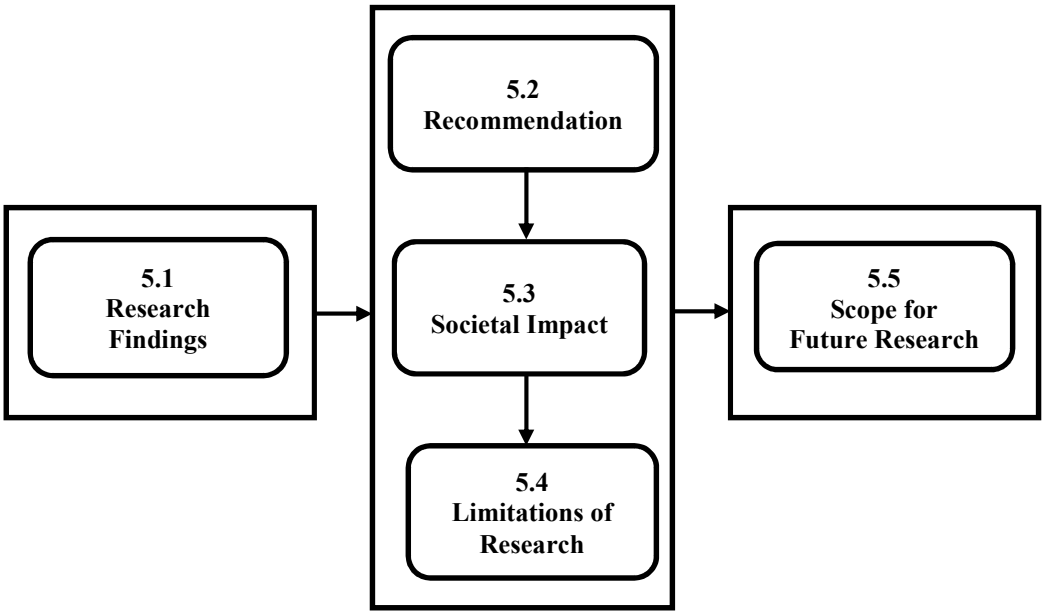

Figure 5: A summary of Chapter 5

5.1 Research Findings

5.1.1 Research Objective 1: To investigate the role of Financial Behaviour on Retirement Planning.

The first research objective is to investigate the role of Financial Behaviour on Retirement Planning. The idea that led to the emergence of this research objective was that there existed a need to look at retirement planning research discourse from the viewpoint of superior

financial behaviours in addition to the viewpoint of financial literacy. Accordingly, the constructs of financial behaviours viz., savings attitude, borrowing pattern, investment decision, insurance allocation and spending behaviour was used to investigate their effect on individuals retirement planning. This study demonstrated that the association between the five behaviours of finance on retirement planning is significant through hypothesis H_1 to H_5.

H_1: Direct effect of Saving Attitude on Retirement Planning
H_2: Direct effect of Borrowing Pattern on Retirement Planning
H_3: Direct effect of Investment Decision on Retirement Planning
H_4: Direct effect of Insurance Allocation on Retirement Planning
H_5: Direct effect of Spending Behaviour on Retirement Planning

Table 5.1: Findings on the role of Financial Behaviours on Retirement Planning

Hypotheses	Relationship	Original sample (O)	T statistics (|O/STDEV|)	P values	Result
H_1	SA -> RP	0.239	6.790	0.000	Accepted
H_2	PB -> RP	0.159	2.377	0.018	Accepted
H_3	ID -> RP	0.607	4.224	0.000	Accepted
H_4	IA -> RP	0.607	19.099	0.000	Accepted
H_5	SB -> RP	0.295	2.753	0.006	Accepted

1. It is observed that there is a direct relationship between savings attitude on retirement planning as the path coefficient value is 0.239 and the empirical t value of the relationship is 6.790. The p value is also below the threshold of significance ($p < 0.05$). Therefore, savings attitude significantly influences the retirement planning of individuals (Table 5.1).

2. The relationship between borrowing pattern and retirement planning is found to be significant at the 5% level of significance because the empirical t value of 2.377 is greater than the threshold value of 1.96 and therefore, there exists significant influences the retirement planning of individuals borrowing patterns (Table 5.1).

3. The path coefficient and empirical t value are 0.607 and 4.224, respectively, are both greater than the 5% level of significance. As a result, these findings support Hypothesis 3, which asserts that investing decisions have a beneficial direct effect on retirement planning (Table 5.1).

4. The direct influence of insurance allocation on retirement planning yielded a path coefficient of 0.607 and an empirical t value of 19.099, both of which are greater than the threshold value of 1.96 at the 5% level of significance. As a result, these findings support hypothesis 4, which indicates that insurance allocation has a beneficial direct influence on retirement planning (Table 5.1).

5. The relationship between spending behaviour and the construct retirement planning is found to be significant at the 5% level of significance because the empirical t value of 2.753 is greater than the threshold value of 1.96, substantiating hypothesis 5 that states that spending behaviour has a positive direct effect on retirement planning (Table 5.1).

5.1.2 Research Objective 2: To explore the impact of Financial Behaviour on Retirement Adequacy.

Adequacy is the state of being sufficient for the purpose concerned and retirement adequacy states the sufficiency of an individual's investments to meet the needs during retirement. The study through its second objective investigates the impact of the construct financial behaviour viz., savings attitude, borrowing pattern, investment decision, insurance allocation and spending behaviour on retirement adequacy through hypothesis H_6 to H_{10}.

H_6: Direct effect of Saving Attitude on Retirement Adequacy

H_7: Direct effect of Borrowing Pattern on Retirement Adequacy

H_8: Direct effect of Investment Decision on Retirement Adequacy

H_9: Direct effect of Insurance Allocation on Retirement Adequacy

H_{10}: Direct effect of Spending Behaviour on Retirement Adequacy

Table 5.2: Findings on the role of Financial Behaviours on Retirement Adequacy

Hypotheses	Relationship	Original sample (O)	T statistics (|O/STDEV|)	P values	Result
H_6	SA -> RA	0.125	4.534	0.000	Accepted
H_7	PB -> RA	0.145	4.084	0.000	Accepted
H_8	ID -> RA	0.257	3.565	0.000	Accepted
H_9	IA -> RA	0.860	8.240	0.000	Accepted
H_{10}	SB -> RA	0.439	4.936	0.000	Accepted

1. The direct influence of savings attitude on retirement adequacy provided a path coefficient value of 0.125 and an empirical t value of 4.534, substantiating hypothesis 6 that indicates that savings attitude has a positive direct effect on retirement adequacy (Table 5.2).

2. The relationship between borrowing pattern and retirement adequacy is found to be significant at the 5% level of significance because the empirical t value of 4.084 is greater than the threshold value of 1.96, supporting hypothesis 7 that states that borrowing pattern has a positive direct effect on retirement adequacy (Table 5.2).

3. The route coefficient and empirical t value are 0.257 and 3.565, respectively, are both greater than the 5% level of significance. As a result, these findings support Hypothesis 8, which argues that investing decisions have a favourable direct effect on retirement adequacy (Table 5.2).

4. The direct effect of insurance allocation on retirement adequacy yielded a path coefficient of 0.860 and an empirical t value of 8.240, both of which are greater than the threshold value of 1.96 at the 5% level of significance. As a result, these findings support hypothesis 9, which indicates that insurance allocation has a favourable direct influence on retirement adequacy (Table 5.2).

5. The relationship between spending behaviour and the construct retirement adequacy is found to be significant at the 5% level of significance because the empirical t value of 4.936 is greater than the threshold value of 1.96, substantiating hypothesis 10 that

states spending behaviour to have a positive direct effect on retirement adequacy (Table 5.2).

5.1.3 Research Objective 3: To determine the impact of financial behaviour on retirement satisfaction.

Individuals are satisfied if they can control things, which are important to them during retirement. The availability of the retirement portfolio may provide them with sufficient income after they retire. The third research goal of this study was to determine the impact of the construct financial behaviour viz., savings attitude, borrowing pattern, investment decision, insurance allocation and spending behaviour on retirement satisfaction. The study established a superior association through hypothesis H_{11} to H_{15}.

H_{12}: Direct effect of Saving Attitude on Retirement Satisfaction
H_{13}: Direct effect of Borrowing Pattern on Retirement Satisfaction
H_{14}: Direct effect of Investment Decision on Retirement Satisfaction
H_{15}: Direct effect of Insurance Allocation on Retirement Satisfaction
H_{16}: Direct effect of Spending Behaviour on Retirement Satisfaction

Table 5.3: Findings on the role of Financial Behaviours on Retirement Satisfaction

Hypotheses	Relationship	Original sample (O)	T statistics (|O/STDEV|)	P values	Result
H_{11}	SA -> RS	0.053	3.749	0.000	Accepted
H_{12}	PB -> RS	0.061	3.907	0.000	Accepted
H_{13}	ID -> RS	0.108	3.667	0.000	Accepted
H_{14}	IA -> RS	0.136	3.652	0.000	Accepted
H_{15}	SB -> RS	1.004	24.093	0.000	Accepted

1. The direct influence of savings attitude on retirement satisfaction gave a path coefficient value of 0.053 and an empirical t value of 3.747, substantiating hypothesis 12 that indicates that savings attitude has a positive direct effect on retirement satisfaction (Table 5.3).

2. The relationship between borrowing pattern and retirement satisfaction is found to be significant at the 5% level of significance because the empirical t value of 3.907 is greater than the threshold value of 1.96, supporting hypothesis 13 that states that borrowing pattern has a positive direct effect on retirement satisfaction (Table 5.3).

3. The path coefficient and empirical t value are 0.108 and 3.667, respectively, are both greater than the 5% level of significance. As a result, these findings support Hypothesis 14, which claims that investment decisions have a favourable direct effect on retirement satisfaction (Table 5.2).

4. The direct effect of insurance allocation on retirement satisfaction yielded a path coefficient of 0.136 and an empirical t value of 3.652, both of which are greater than the threshold value of 1.96 at the 5% level of significance. As a result, these findings support hypothesis 15, which argues that insurance allocation has a favourable direct influence on retirement satisfaction. (Table 5.2).

5. The relationship between spending behaviour and the construct retirement satisfaction is found to be significant at the 5% level of significance because the empirical t value of 24.093 is greater than the threshold value of 1.96, substantiating hypothesis 16 that states that spending behaviour has a positive direct effect on retirement satisfaction. (Table 4.7).

5.1.4 Findings on the effect of mediating construct Retirement Planning on endogenous constructs Retirement Adequacy and Retirement Satisfaction.

Table 5.4: Findings on the role of Retirement Planning on Retirement Adequacy and Retirement Satisfaction

Hypotheses	Relationship	Original sample (O)	T statistics (|O/STDEV|)	P values	Result
H_{16}	RP -> RA	1.341	11.306	0.000	Accepted
H_{17}	RP -> RS	0.210	3.626	0.000	Accepted

1. The direct influence of retirement planning on retirement adequacy yielded a path coefficient of 1.341 and an empirical t value of 11.306, both of which are greater

than the threshold value of 1.96 at the 5% level of significance. As a result, our findings support hypothesis 11, which argues that retirement planning, has a favourable direct effect on retirement adequacy (Table 5.4).

2. The path coefficient for the direct influence of retirement planning on retirement satisfaction was 0.210, with an empirical t value of 3.626, is greater than the threshold value of 1.96 at the 5% level of significance. As a result, these findings support hypothesis 17, which claims that retirement planning has a favourable direct effect on retirement satisfaction (Table 5.4).

5.1.5 Findings on the mediator effect of Retirement Planning between Financial Behaviours and Retirement Adequacy.

Investigation of the effect of the five behaviours of finance on retirement planning was examined as the construct retirement planning was conceptualized as the mediating mechanism between savings attitude, borrowing pattern, investment decision, insurance allocation, spending behaviour and retirement adequacy. These assessments pertain to hypotheses 18 to 22.

Table 5.5: Findings on the mediating role of Retirement Planning between Financial Behaviours and Retirement Adequacy

Hypotheses	Relationship	VAF	Result
H_{18}	SA -> RP-> RA	0.851	Accepted
H_{19}	PB -> RP-> RA	0.861	Accepted
H_{20}	ID -> RP-> RA	0.893	Accepted
H_{21}	IA -> RP-> RA	0.814	Accepted
H_{22}	SB -> RP-> RA	0.483	Accepted

1. The Variance Accounted For (VAF) showed a very significant mediating effect (0.851; Table 5.5) with respect to the indirect effect of saving attitude on retirement planning and the effect of retirement planning on retirement adequacy. Further, the mediating relationship of retirement planning in the relationship between saving attitude and retirement adequacy is found to be significant at 5% level of significance as the empirical t value of 64.882 is above the threshold value of 1.96. Similarly, the saving

attitude shows significance in its relationship with retirement planning (t-value, 2.626). Retirement planning as a mediator construct, also shows significance in its relationship with retirement adequacy (t-value, 11.091). This substantiates hypothesis 18 that states the mediating effect of retirement planning in the relationship between saving attitude and retirement adequacy (Table 4.8, Figure 4.3).

2. The Variance Accounted For (VAF) with respect to the indirect effect of borrowing pattern on retirement planning and the effect of retirement planning on retirement adequacy was significant at 0.861 (Table 5.5). Further, the mediating relationship of retirement planning in the relationship between borrowing pattern and retirement adequacy (t-value, 2.400), and the relationship between borrowing pattern with retirement planning (t-value, 2.626) and the mediator effect of retirement planning with retirement adequacy (t-value, 11.091) are all found to be significant at 5% level of significance and above the threshold value of 1.96. This substantiates hypothesis 19 that states the mediating effect of retirement planning in the relationship between borrowing pattern and retirement adequacy (Table 4.9, Figure 4.4).

3. The Variance Accounted For (VAF) with respect to the indirect effect of investment decision on retirement planning and the effect of retirement planning on retirement adequacy was significant at 0.893 (Table 5.5). Further, the mediating relationship of retirement planning in the relationship between investment decision and retirement adequacy (t-value, 1.983), the relationship between Investment decision with retirement planning (t-value, 11.198) and the mediator effect of retirement planning with retirement adequacy (t-value, 61.698) are all found to be significant at 5% level of significance and above the threshold value of 1.96. This substantiates hypothesis 20 that states the mediating effect of retirement planning in the relationship between investment decision and retirement adequacy (Table 4.10, Figure 4.5).

4. The Variance Accounted For (VAF) with respect to the indirect effect of insurance allocation on retirement planning and the effect of retirement planning on retirement adequacy was significant at 0.814 (Table 5.5). Further, the mediating relationship of retirement planning in the relationship between insurance allocation and retirement adequacy (t-value, 3.292), the relationship between insurance allocation with retirement planning (t-value, 9.930) and the mediator effect of retirement planning with retirement

adequacy (t-value, 63.691) are all found to be significant at 5% level of significance and above the threshold value of 1.96. This substantiates hypothesis 21 that states the mediating effect of retirement planning in the relationship between insurance allocation and retirement adequacy (Table 4.11, Figure 4.6).

5. The Variance Accounted For (VAF) with respect to the indirect effect of spending behaviour on retirement planning and the effect of retirement planning on retirement adequacy was partial at 0.483 (Table 5.5). Further, the mediating relationship of retirement planning in the relationship between spending behaviour and retirement adequacy (t-value, 14.709), the relationship between spending behaviour with retirement planning (t-value, 32.958) and the mediator effect of retirement planning with retirement adequacy (t-value, 18.111) are all found to be significant at 5% level of significance and above the threshold value of 1.96. This substantiates hypothesis 22 that states the mediating effect of retirement planning in the relationship between spending behaviour and retirement adequacy (Table 4.12, Figure 4.7).

5.1.6 Findings on the mediator effect of Retirement Planning between Financial Behaviours and Retirement Satisfaction.

This research identified retirement planning as the mediator and measured its intervention in relationship between the five behaviours of finance viz., saving attitude, borrowing pattern, investment decision, insurance allocation and spending behaviour with retirement satisfaction through the mediating variable retirement planning through hypotheses 23 to 27.

Table 5.6: Findings on the mediating role of Retirement Planning between Financial Behaviours and Retirement Satisfaction

Hypotheses	Relationship	VAF	Result
H_{23}	SA -> RP-> RS	0.942	Accepted
H_{24}	PB -> RP-> RS	0.890	Accepted
H_{25}	ID -> RP-> RS	0.976	Accepted
H_{26}	IA -> RP-> RS	0.928	Accepted
H_{27}	SB -> RP-> RS	0.722	Accepted

1. Exploring the influence of savings attitude, borrowing pattern, investment decision, insurance allocation, spending behaviour on retirement satisfaction The Variance Accounted For (VAF) showed a significant mediating effect (0.942; Table 5.6) with respect to the indirect effect of saving attitude on retirement planning and the effect of retirement planning on retirement satisfaction. Further, the mediating relationship of retirement planning in the relationship between saving attitude and retirement satisfaction is found to be significant at 5% level of significance as the empirical t value of 1.96 is above the threshold value of 1.96. Similarly, the saving attitude shows significance in its relationship with retirement planning (t-value, 6.532). Retirement planning as a mediator construct, also shows significance in its relationship with retirement satisfaction (t-value, 197.100). This substantiates hypothesis 23 that states the mediating effect of retirement planning in the relationship between saving attitude and retirement satisfaction (Table 4.13, Figure 4.8).

2. The Variance Accounted For (VAF) with respect to the indirect effect of borrowing pattern on retirement planning and the effect of retirement planning on retirement satisfaction was significant at 0.8901(Table 5.6). Further, the mediating relationship of retirement planning in the relationship between borrowing pattern and retirement satisfaction (t-value, 2.004), the relationship between borrowing pattern with retirement planning (t-value, 7.101) and the mediator effect of retirement planning with retirement satisfaction (t-value, 213.956) are all found to be significant at 5% level of significance and above the threshold value of 1.96. This substantiates hypothesis 24 that states the mediating effect of retirement planning in the relationship between borrowing pattern and retirement satisfaction (Table 4.14, Figure 4.9).

3. The Variance Accounted For (VAF) with respect to the indirect effect of investment decision on retirement planning and the effect of retirement planning on retirement satisfaction was significant at 0.9759 (Table 5.6). Further, the mediating relationship of retirement planning in the relationship between investment decision and retirement satisfaction (t-value, 2.456), the relationship between Investment decision with retirement planning (t-value, 10.329) and the mediator effect of retirement planning with retirement satisfaction (t-value, 151.921) are all found to be significant at 5% level of significance and above the threshold value of 1.96. This substantiates hypothesis 25

that states the mediating effect of retirement planning in the relationship between investment decision and retirement satisfaction (Table 4.15, Figure 4.10).

4. The Variance Accounted For (VAF) with respect to the indirect effect of insurance allocation on retirement planning and the effect of retirement planning on retirement satisfaction was significant at 0.9279 (Table 5.6). Further, the mediating relationship of retirement planning in the relationship between insurance allocation and retirement satisfaction (t-value, 2.158), the relationship between insurance allocation with retirement planning (t-value, 7.419) and the mediator effect of retirement planning with retirement satisfaction (t-value, 198.360) are all found to be significant at 5% level of significance and above the threshold value of 1.96. This substantiates hypothesis 26 that states the mediating effect of retirement planning in the relationship between insurance allocation and retirement satisfaction (Table 4.16, Figure 4.11).

5. The Variance Accounted For (VAF) with respect to the indirect effect of spending behaviour on retirement planning and the effect of retirement planning on retirement satisfaction was partial at 0.7222 (Table 5.6). Further, the mediating relationship of retirement planning in the relationship between spending behaviour and retirement satisfaction (t-value, 8.110), the relationship between spending behaviour with retirement planning (t-value, 12.116) and the mediator effect of retirement planning with retirement satisfaction (t-value, 91.816) are all found to be significant at 5% level of significance and above the threshold value of 1.96. This substantiates hypothesis 27 that states the mediating effect of retirement planning in the relationship between spending behaviour and retirement satisfaction (Table 4.17, Figure 4.12).

5.1.7 Findings based on Importance-Performance Matrix Analysis

The Importance-Performance Matrix Analysis (Constructs wise) results suggests that cause purview are the determining factors of trust performance wise, though the importance of cause span is higher than that of cause purview (Table 4.18; Figure 4.13; Figure 4.14). IPMA analysis shows that spending behaviour has a relatively low performance of 85.139 in comparison with the other exogenous latent variables. On the other hand, with a total effect of 0.806, the total effects on importance is particularly high. Therefore, a one-unit increase in the performance of spending behaviour from 85.139 to 86.139 would increase the performance of retirement adequacy by 0.806 points from 86.290 to 87.096 and the performance of retirement satisfaction

from 80.261 to 81.067. Other construct saving attitude (92.715), borrowing pattern (91.274), insurance allocation (85.829) and investment decision (80.680). (Table 4.18; Figure 4.13).

The results of normed entropy (EN) criterion, which clearly shows the best outcome with four segments (Table 4.20). The FIMIX-PLS segment 1 reveals one large segment with a relative segment size of 0.42 followed by segment 2 with a relative segment size of 0.24. Next comes segment 3 with a relative segment size of 0.22. Finally, a smaller segment emerges with a relative segment size of 0.10 (Table 4.20). The FIMIX-PLS results reveals that the relationship between Insurance Allocation on Retirement Planning in segment 4 is highly significant. The relation between investment Decision and Retirement Satisfaction is highly significant in segment 3. Further, superior level of significance is seen in the relationship Savings Attitude and Retirement Satisfaction in segment 3. The relationship between Retirement Planning and Retirement Satisfaction is highly significant in segment 4. The total effect reveals the same results of path relations for all the four segments. Permutation path coefficients (Table 4.21) resulted to carry out the PLS-SEM, MICOM in order to understand if there exist significant inter-group distinctions due to the results of inter-group differences in constructs. The permutation test results substantiate significant difference between locations for the structural (inner) model. Further, multi-group analysis (Table 4.22), is applied and independent samples t-tests are conducted in order to correlate paths between groups. The direct effect of spending behaviour on retirement planning is significant and we have observed a higher significance in Bangalore when compared with Bhubaneshwar. With regards to direct effect of investment decision on retirement planning, it is more significant in Bhubaneshwar as compared to Chennai. Direct effect of insurance allocation with retirement adequacy is more significant in the Chennai-Hyderabad segment.

5.2 Recommendations

This research endeavour has contributed to the role of financial literacy on individual's financial behaviours for effective retirement planning to achieve retirement adequacy and retirement satisfaction in several ways. Retirement being the culminating stage of organizational socialization and assimilation processes, the proposed recommendations will immensely contribute to the society to make desirable changes in the existing practises. Following recommendations are proposed based on the analysis of the research data and its findings:

5.2.1 Recommendation to Policy Makers

Retirement without financial stability is dreadful for an individual. Majority of individuals depend on pension as the main source of income to sustain their livelihood post retirement. This necessitates transformation in terms of sustainability where policy makers play a vital role towards transformation of the existing system.

1. **Eliminate early withdrawal of retirement savings:** Retirement saving plans allow individuals to withdraw retirement funds partially at early ages. Retirement is inevitable and it brings new changes and the most important of all, reduced or no income and increase in medical expenses. Eliminating early withdrawal of retirement savings will increases the potential for a substantial return and a steady source of income during retirement.

2. **Boost the benefit multiplier scheme:** Individuals who work after retirement often receive no retirement benefits or receive benefits that can hardly compensate for the fewer payments received. Policy makers should devise strategies and introduce schemes that encourage financial sectors to bring in benefit multiplier retirement products thus encouraging retired individuals to invest and secure themselves during retirement.

3. **Promote cost-efficient retirement initiatives:** Initiatives should be taken by policy makers to improve disclosure, comparability, and transparency of retirement products by appropriately designed pricing regulations, strong institutional and governance frameworks to protect members' interests. This will improve cost-efficiency and balance the benefits of fair competition.

4. **Exclusive tax deduction under section 80 on investment towards retirement:** Tax exemption allows individuals to reduce taxable income by making tax-saving investments. The elongated retirement period requires sizable retirement portfolio. This can be promoted if policy makers introduces a separate and exclusive tax deduction section, which gives individuals a head start for the future.

5.2.2 Recommendation to Corporates

Finance plays a pivotal role in the well-being of individuals, families and society. Building and securing wealth during the formative years reap bountiful and fruitful benefits during retirement in the form of contentment and fulfilment of life goals. Corporates should help employees identify the pathways to build a self-sufficient efficacious life post-retirement. The study recommends corporates on the important aspects towards retirement.

1. **Access to suitable investment products:** Corporates should ensure that all individuals have access to appropriate and sustainable investment strategies. Default investment strategy should be established for individuals who are unable to choose suitable retirement products. They should also offer multiple investment horizons and risk profiles to assess and monitor the appropriateness of diverse investment strategies.

2. **Promote awareness and integrate financial education about retirement products:** Financial education techniques should be implemented, with a focus on developing awareness and information about the significance of saving enough for retirement, the various options available, and longevity risk which can be achieved through marketing campaigns. Corporations should aim to improve individuals' understanding of how retirement products work and explain reforms, as well as their economic reason.

5.2.3 Recommendation to Financial Institutions

A financially literate individual's lifestyle choices provide due consideration to wealth accumulation by regularly saving the earned income, and systematically investing in avenues that generate superior returns. Creating a more gratifying and rewarding life after retirement helps to build confidence for a dignified life when sources of income from paid employment end.

1. **Periodic monitoring of longevity risk**. Financial institutions should employ appropriate and periodically updated mortality estimates that take into account future increases in life expectancy. Standardised and easily accessible data can help to encourage efficient risk management and the development of standardised longevity indices that can be used to price the transfer of longevity risk to a third party.

2. **Unprejudiced communication to members:** Communication should be simple and straightforward. Personalised information sent via online platforms should ideally incorporate all sources and include projections to encourage individuals to take action to improve their retirement readiness. Projections should concentrate on future retirement income levels in real terms, taking into consideration the likelihoods of various outcomes, and communicate risks to plan members.

5.3 Societal contributions of the study

This research endeavour has contributed to the role of financial literacy on individual's financial behaviours for effective retirement planning to achieve retirement adequacy and retirement satisfaction in several ways.

1. First, the research framed its objective of finding the direct effect of the five financial behaviours by taking into consideration the independent variables namely, saving attitude, borrowing pattern, investment decision, insurance allocation and spending behaviour.

2. The study has explored how superior financial literacy influences the mediator, retirement planning and the dependent variables, retirement adequacy and satisfaction. The observed outer loadings (Table 4.1) of the indicators substantiates the prominence of each of these financial behaviours and its absolute contribution in enhancing the significance of retirement planning.

3. Savings attitude as an independent variable explored the need for attractive retirement products (Figure 4.2; Table 4.1). The outer loading (0.907) points us towards the direction to structure of financial products that cater to the needs of retirement focusing on the safety of individuals investment with optimal returns. Studies in this direction suggests to individuals to invest the early stage of their profession instead of postponing it towards the end of their career.

4. The study explored the increase in the medical expenses as a hindrance towards savings (0.805). Literatures substantiate the empirical evidence and point towards allocating funds towards medical insurance to counter the cascading effect (0.921). The study also

explores the effect of family's general health condition (0.918) in decelerating individual's ability to save towards retirement.

5. The variable borrowing pattern (Figure 4.2; Table 4.1) indicates the need for superior financial literacy for planned and scientific borrowing (0.882). Inadequate financial literacy results in erratic lifestyle leading to frivolous spending (0.858; 0.809). This most often leads to unplanned spending, leading to an imbalance in the income and expense (0.880; 0.807), leaving a very thin margin to save and in most case no margin to save towards retirement.

6. Optimum benefits from the investments can be obtained through detailed market analysis of various financial products (0.860) before investing and adding it into individuals' investment portfolio. Monitoring the movement of the investment product (0.754) over a period of time most often influences investment decision making. This leads to acknowledged and calculated investments (0.780) with a foundation for higher returns.

7. The study has pointed out a very important aspect which is most often overlooked by the investors which is, checking the health of portfolio on regular intervals (0.770). Due to market volatility, economic and political instability, the earning potential of the products tend to vary. This leads to inadequate returns and in some cases negative returns with may deplete the returns completely, leading to insufficient investment not only for the future, but also the present financial needs of the individuals.

8. Retirement planning as the mediator has facilitated the awareness of various financial aspects related to retirement (0.792). It has aided in assessing the available resources to establish strategies and develop them (0.739). Retirement planning further evaluates the adequacy quotient by analysing whether the available retirement inventory satisfies basic needs or if it's able to maintain the standard that an individual had before retirement.

9. Retirement planning improves individuals financial efficacy and enables them to identify if they have adequate retirement financial support (0.982) through their

investments. Literatures further stressed on resilience, resourcefulness and renaissance sprit to be the driving force for successful retirement with satisfaction (0.866).

5.4 Limitations of research

First, the research study is confined to seven IT and ITES hubs in India. Purposive sampling method was used for data collection as the study focused on specific sector of the business. Generalizing the findings to the Indian context may not be appropriate as these hubs are typically in Indian metro cities, comparatively well developed as compared to many other cities leading to regional disparities and a possibility of missing appropriate intention. Second, the threat to validity has emerged from the omission to consider those control variables which may be important for the study. Third, the common source bias (Podsakoff et al., 2012) is another limitation of this study. This is due to the fact that the data for the dependent and independent variables are sources from the same location and therefore there might be greater degree of influence between in the relationship between the exogenous and the endogenous variables. This has naturally exercised an adverse impact on endogeneity.

5.5 Scope for future research

The structural model was developed bearing in mind the inputs available from Indian population, narrowing down to IT and ITES employees from the metro cities. Future research would incorporate global variables and build on a hierarchy model using PLS-SEM. In hierarchical component model, constructs are used in two layers, typically using the second order (Lohmoller, 1989). This results in the researcher using both the higher and lower order of constructs in the study. Here the research will initiate with the lower order constructs and then build on it to with the higher order constructs. Further, lower order constructs will be part of the measurement model and the higher order constructs are used for structural model. The research should ensure to use the same number of constructs in the lower order using the repeat indicator approach (Hair et al., 2014, p.230), to build the constructs. Second, the research concentrated on the influence of financial literacy on the financial behaviours of the individuals. Though financial behaviours are the important indicators of individual's financial literacy, diverse behaviours can be identified if the scope is increased to multiple sectors. A comparative analysis of different sectors of the economy may give higher clarity for governmental decisions and policymaking. This, may provide better understanding on the impact of superior financial behaviours on retirement planning. Third, future research may take into consideration psychosocial aspects of retirement planning. Research can develop a

retirement inventory consisting of financial portfolio, social requirement and psychological necessities for sound retirement planning. As important, as it sounds, financial aspects are vital for an individual's wellbeing, social and psychological inferences need to be considered as the same platform. In addition, a note on physical health need to be touched at for all round development of the individuals post retirement.

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APPENDIX – 1

Survey instruments used in pilot study

Sl. No.	Survey instruments included in the questionnaire served	Construct Measured	Number of items in the instrument
1	SA Scale ()	SA	8 items
2	BP Scale ()	BP	3 items
3	ID Scale ()	ID	11 items
4	IA Scale ()	IA	3 items
5	SB Scale ()	SB	4 items
6	RP Scale ()	RP	4 items
7	RA Scale ()	RA	6 items
8	RS Scale ()	RS	4 items
9	FL Scale ()	FL	5 items

APPENDIX – 2

Survey instruments retained after pilot study

Factor Loadings							
Factor	**Indicator**	**Estimate**	**SE**	**95% Confidence Interval**		**Z**	**p**
				Lower	**Upper**		
SA	SA5	0.763	0.142	0.485	1.041	5.38	< .001
	SA6	1.028	0.175	0.686	1.37	5.89	< .001
BP	BP1	1.022	0.147	0.733	1.311	6.94	< .001
	BP2	0.507	0.15	0.213	0.801	3.38	< .001
	BP3	0.898	0.14	0.623	1.174	6.4	< .001
ID	ID8	0.609	0.122	0.37	0.847	4.99	< .001
	ID9	0.468	0.127	0.218	0.717	3.67	< .001
	ID10	0.716	0.121	0.478	0.954	5.9	< .001
	ID11	0.636	0.117	0.408	0.865	5.45	< .001
IA	IA1	0.739	0.152	0.441	1.038	4.85	< .001
	IA2	0.644	0.181	0.289	0.998	3.56	< .001
SB	SB3	0.848	0.186	0.485	1.212	4.57	< .001
	SB4	0.909	0.171	0.574	1.244	5.32	< .001
RP	RP1	0.759	0.11	0.543	0.975	6.89	< .001
	RP2	0.631	0.122	0.392	0.87	5.17	< .001
	RP3	0.794	0.128	0.543	1.044	6.2	< .001
RA	RA2	0.91	0.18	0.556	1.264	5.04	< .001
	RA4	0.766	0.128	0.515	1.018	5.98	< .001
RS	RS2	0.984	0.134	0.721	1.246	7.33	< .001
	RS3	0.758	0.133	0.496	1.019	5.68	< .001

APPENDIX – 3

Final Survey Instrument

Dear Respondent,
My name is Daniel Frank, pursuing PhD from Lovely Professional University, Phagwara, Punjab. The objective of the study is to investigate the role of financial behaviour on retirement planning, explore the impact of financial behaviour on retirement adequacy and assess the role of financial behaviour on retirement satisfaction. Data Collected will be used for academic purposes and will be kept strictly confidential.
Thank You.
Daniel Frank
danielfrankin@gmail.com

1. Personal Details	
1.1 Gender : ☐ Male ☐ Female ☐ Other	1.2 Marital Status: ☐ Single ☐ Married ☐ Divorced ☐ Separated
1.3 Company Name :	
1.4 Company Location : ☐ Bangalore ☐ Bhubaneshwar ☐ Chennai ☐ Delhi ☐ Hyderabad ☐ Kolkata ☐ Pune	
1.5 Sector : ☐ IT ☐ ITES	
1.6 Age Group : ☐ 21-25 years ☐ 26-35 years ☐ 36-45 years ☐ 46-55 years ☐ 55-65 years	
1.7 Education: ☐ Graduate ☐ Post Graduate ☐ Doctorate	
1.8 Number of Years in Service: ☐ 0-5 years ☐ 6-10 years ☐ 11-15 years ☐ 15-20 years ☐ 21-25 years ☐ 26-30 years ☐ 31 years and above	
1.9 Spouse Employment Status ☐ Employed ☐ Self-employed ☐ Un-employed	
1.10 Number of Dependents ☐ None ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 or more	
1.11 Assets Owned ☐ Land ☐ Self-Occupied House ☐ Additional House ☐ Vehicle ☐ Commercial Building ☐ Jewellery ☐ Financial Instruments ☐ Others	
1.12 Liabilities ☐ Educational Loan ☐ Home Loan ☐ Vehicle Loan ☐ Personal Loan	
1.13 Income Details ☐ Up to Rs.5 Lakh ☐ Rs.5-10 Lakh ☐ Rs.10-15 Lakh ☐ Rs.15-20 Lakh ☐ Rs.20 Lakh and above	
2. Savings Attitude	
Evaluate the following aspects of your life, scoring from 1 to 5, according to the satisfaction in each item, being 1 = Strongly Disagree and 5 = Strongly Agree	

2.5. Unattractive retirement products is the reason for not saving for retirement.

1	2	3	4	5
☐ Strongly disagree	☐ Disagree	☐ Neutral	☐ Agree	☐ Strongly Agree

2.6. Medical expenses are the reason for inadequate savings for retirement.

1	2	3	4	5
☐ Strongly disagree	☐ Disagree	☐ Neutral	☐ Agree	☐ Strongly Agree

3. Borrowing Pattern

Evaluate the following aspects of your life, scoring from 1 to 5, according to the satisfaction in each item, being 1 = Strongly Disagree and 5 = Strongly Agree

3.1 Poor financial planning is the reason for increased borrowing. (*from Banks, Non-Banking Financial Institutions, Family and Friends etc.,.*)

1	2	3	4	5
☐ Strongly disagree	☐ Disagree	☐ Neutral	☐ Agree	☐ Strongly Agree

3.2 Inadequate income is the reason for increased borrowing.

1	2	3	4	5
☐ Strongly disagree	☐ Disagree	☐ Neutral	☐ Agree	☐ Strongly Agree

3.3 Lifestyle choice has increased the amount of borrowing.

1	2	3	4	5
☐ Strongly disagree	☐ Disagree	☐ Neutral	☐ Agree	☐ Strongly Agree

4. Investment Decision

4.6 In my opinion, below mentioned factors below influence investment decision making.

	1 Strongly Disagree	**2 Disagree**	**3 Neutral**	**4 Agree**	**5 Strongly Agree**
Estimated returns during retirement influence investment decision making	☐	☐	☐	☐	☐
Relying on experiences of other investors' while making investment decisions influence investment decision making	☐	☐	☐	☐	☐
Monitoring the movement of the investment product which I intend to invest, influence investment decision making	☐	☐	☐	☐	☐
Checking the health of portfolio on regular intervals influence investment decision making	☐	☐	☐	☐	☐

5. Insurance Allocation

Evaluate the following aspects of your life, scoring from 1 to 5, according to the satisfaction in each item, being 1 = Strongly Disagree and 5 = Strongly Agree

5.1 General health of family have changed in the last 3 years.				
1	2	3	4	5
☐ Strongly disagree	☐ Disagree	☐ Neutral	☐ Agree	☐ Strongly Agree
5.2 Poor health condition of family has forced to invest more into health care.				
1	2	3	4	5
☐ Strongly disagree	☐ Disagree	☐ Neutral	☐ Agree	☐ Strongly Agree
6. Spending Behaviour				
Evaluate the following aspects of your life, scoring from 1 to 5, according to the satisfaction in each item, being 1 = Strongly Disagree and 5 = Strongly Agree				
6.3 Inadequate financial literacy is the reason for increased spending				
1	2	3	4	5
☐ Strongly disagree	☐ Disagree	☐ Neutral	☐ Agree	☐ Strongly Agree
6.4 Excess and frivolous spending has stalled my potential for retirement planning.				
1	2	3	4	5
☐ Strongly disagree	☐ Disagree	☐ Neutral	☐ Agree	☐ Strongly Agree
7. Retirement Planning				
Evaluate the following aspects of your life, scoring from 1 to 5, according to the satisfaction in each item, being 1 = Strongly Disagree and 5 = Strongly Agree				
7.1 Retirement planning has facilitated the awareness of various issues related to retirement.				
1	2	3	4	5
☐ Strongly disagree	☐ Disagree	☐ Neutral	☐ Agree	☐ Strongly Agree
7.2 Retirement planning has helped to assess the available resources to establish strategies and develop them.				
1	2	3	4	5
☐ Strongly disagree	☐ Disagree	☐ Neutral	☐ Agree	☐ Strongly Agree
7.3 I know how to determine how much money I need to live comfortably throughout my retirement years.				
1	2	3	4	5
☐ Strongly disagree	☐ Disagree	☐ Neutral	☐ Agree	☐ Strongly Agree
8. Retirement Adequacy				
Evaluate the following aspects of your life, scoring from 1 to 5, according to the satisfaction in each item, being 1 = Strongly Disagree and 5 = Strongly Agree				
8.2 I know how much money is necessary to live comfortably throughout retirement.				
1	2	3	4	5
☐ Strongly disagree	☐ Disagree	☐ Neutral	☐ Agree	☐ Strongly Agree
8.3 I have adequate financial support from my investments which was made for retirement				
1	2	3	4	5
☐ Strongly disagree	☐ Disagree	☐ Neutral	☐ Agree	☐ Strongly Agree
9. Retirement Satisfaction				
Evaluate the following aspects of your life, scoring from 1 to 5, according to the satisfaction in each item, being 1 = Strongly Disagree and 5 = Strongly Agree				

9.2 I am very satisfied with my retirement plans.				
1	2	3	4	5
☐ Strongly disagree	☐ Disagree	☐ Neutral	☐ Agree	☐ Strongly Agree
9.3 I am very satisfied with my retirement portfolio.				
1	2	3	4	5
☐ Strongly disagree	☐ Disagree	☐ Neutral	☐ Agree	☐ Strongly Agree

APPENDIX – 4

LIST OF PUBLICATION

1. Daniel Frank, Rupesh Roshan Singh, Aradhana Harrison, Vidya Bai G, Cristi Spulbar, Ramona Birau. 2023. 'Worker Saving Attitude towards Retirement Planning: A study on Indian textile sector', *Industria Textila Journal*, ISSN: 1222-5347.

2. Daniel Frank, Rupesh Roshan Singh, Vidya Bai G. 2023. 'Relevance of employee saving attitude towards retirement planning and Satisfaction', *International Journal of Professional Business Review*, ISSN: 2525-3654.

3. Daniel Frank, Vidya Bai G, Rupesh Roshan Singh. 2021. 'Impact of COVID-19 on deferred retirement planning and adjournment of retirement', *Journal of Fundamental & Comparative Research.* Vol. VII, No. 10(I): 2021, ISSN: 2277-7067.

LIST OF CONFERENCES

1. Paper Titled 'Retirement Planning: Antecedent to Retirement Adequacy & Retirement Satisfaction' has been presented at the International Conference on "Enhancing Economic Competitiveness in the Digital Era: Innovative Models and Strategies" held on March 15-16, 2023, at College of Banking and Financial Studies, Muscat, Oman.

2. Paper Titled 'Retirement Savings: Mediating role of Financial Literacy on Retirement Planning' has been presented at the virtual international conference organized by the Department of Commerce, Manipal Academy of Higher Education (MAHE) along with Deakin Business School, Australia and H U University of Applied Science, Utrech on September 16 and 17, 2021.

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1. Copyright received from the copyright office of The Government of India, vide registration no. L-114547/2022 for IPR on the conceptual framework 'Financial Literacy and its influence on effective Retirement Planning, Adequacy and Satisfaction'.

2. Copyright filed on the Retirement Satisfaction Model 'Impact of Financial Literacy on Retirement Satisfaction' vide reference no. 6332.