FINANCIAL LITERACY AND RETIREMENT PLANNING AMONG PENSION SCHEME MEMBERS IN KENYA

CYNTHIA STELLA WAGA

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Financial Literacy and Retirement Planning among Pension Scheme Members in Kenya

Cynthia Stella Waga

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

Signature ……. Date ……

Cynthia Stella Waga

This thesis has been submitted for examination with our approval as University Supervisor.

Signature ……. Date ……

Prof. Florence Sigara Memba, PhD

JKUAT, Kenya

Signature ……. Date ……

Dr. Jane Gathiga Muriithi, PhD

Africa International University, Kenya

DEDICATION

This study is dedicated to my loving mum, Beldina Omoro, who has always pushed me to achieve the highest in academics. It is also dedicated to my supportive husband, Dr. Jacob Obuong Oduor and my lovely children, Ryan and Sasha**.**

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

AARP	American Association of Retired Persons
ATS	Attitude towards Saving
BLCT	Behavioural Life-cycle Theory
CAS:	Consumer Attitude to Savings
CBK:	Central Bank of Kenya
COVID-19	Corona Virus Disease of 2019
Df	Degree of Freedom
DRC	Democratic Republic of Congo
FA	Financial Awareness
FB	Financial Behaviour
FK	Financial Knowledge
FinAccess	Financial Access
FL	Financial Literacy
FPRS	Financial Preparedness for Retirement Scale
FSD	Financial Sector Deepening
G20	Group of Twenty
GDP	Gross Domestic Product
GOK	Government of Kenya

GSEM	Generalised Structural Equation Model
H-L	Hosmer Lemeshow Test
i-HPRP	Islamic Health Protection Retirement Plan Model
INC	Income
INFE	International Network of Financial Education
IOPS	Institute for Pension Supervisors
KMO	Kaiser-Meyer-Olkin
KNBS	Kenya National Bureau of Statistics
KPA	Kenya Ports Authority
LCT	Life-Cycle Theory
MFI	Microfinance Institution
MPESA	Mobile Money
NACOSTI	National Commission for Science Technology and Innovation
NFCS	National Financial Capability Study
NHIF	National Hospital and Insurance Fund
NSNP	National Safety Net Programme
NSSF	National Social Security Fund
OECD	The Organisation for Economic Co-operation and Development
P-Fin Index	Personal Finance Index

RBA	Retirement Benefit Authority
ROSCA	Rotating Savings and Credit Association
SACCO	Savings and Credit Cooperative Society
SE	Standard Error
SEM	Structural Equation Model
SPSS	Statistical Packages for Social Science
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
USA	United States of America
UK	United Kingdom
VIF	Variance Inflation Factor

DEFINITION OF KEY TERMS

Attitude towards saving: Attitude is the degree to which a person evaluates a behaviour or thing either favourably or unfavorably. In this study, it could be said that, attitude is a positive or negative evaluation or feelings that people have towards savings for the long term (Ajzen & Cote, 2008).

Financial Awareness: This is an understanding of the others' activities, which provides a setting for your activity. In this study, financial awareness denotes the knowledge of existence of financial products and financial institutions (Dourish & Belloti, 1992).

Financial Behaviour: This is an individual's ability to understand the general bearing of economic judgements on one's situations and the correct decision-making related to money management. In this study, financial behaviour entails how one conducts themselves in the day-to-day management of money (Tezel, 2015).

Financial Knowledge: This is the understanding of elementary financial terms and economic concepts an individual requires in their day-to-day management of finances (Faulcon, 2002).

Financial Literacy: It has been defined by OECD as a combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial well-being (Atkinson & Messy, 2012).

Retirement Planning: This involves forecasting the amount of income anticipated at retirement, sources of income**,** and the appropriateness of the income to meet the pensioner's monetary needs, such as rent, daily sustenance and health care (Kepha, 2017).

Retirement: The permanent departure of a worker from paid engagement following a company's guidelines regarding the period of service, age, or incapacity (van Solinge, 2012).

ABSTRACT

The rising cost of living, increasing life expectancy, and high levels of old-age poverty in Kenya imply that many older adults cannot afford necessities upon retirement. The need for individuals to plan for their future financial needs through preparation for their retirement has become important occasioned by the shift toward defined contribution schemes. Unfortunately, the majority of the people who save for retirement in Kenya contribute to the National Social Security Fund (NSSF), which has a low replacement rate (the amount of income in retirement needed to maintain pre-retirement living standards) of 20% of basic income compared to the recommended level of 70% to 85%. Financial literacy plays a critical role in influencing savings behaviour and member participation in pension schemes, reducing debt loads and accumulating wealth. The purpose of this study was to establish the influence of financial literacy on retirement planning, more specifically focusing on the influence of financial awareness, financial knowledge, attitude towards saving and financial behaviour on retirement planning. The study was anchored on life-cycle theory, behavioural life-cycle theory, Theory of planned behaviour and family resource management theory. The study adopted a positivist research philosophy with a descriptive research design while targeting 2,828,713 pension scheme members from contributory pension schemes. Stratified sampling was used to derive the 332 pension scheme members in Kenya and primary data collected through a questionnaire.The study used binary logistic regression and found a positive significant influence on retirement planning of financial awareness, financial knowledge, and financial behaviour. However, attitude towards savings had a negative insignificant influence on retirement planning. Generally, financial literacy was also found to have a significant association with retirement planning. The results further indicate that a pension scheme member who was financially aware of financial products and financial institutions was 1.769 times more likely to be a comprehensive planner than one who was not aware of financial products and financial institutions. Additionally, a pension scheme member who is financially disciplined is 1.416 times more likely to be a comprehensive retirement planner. Pension scheme members who are financially knowledgeable are 1.296 times more likely to plan comprehensively for their retirement. Age and income had no moderating effect on the influence of financial literacy on retirement planning but were found to be key elements of retirement planning. The study therefore concludes that financial awareness, financial knowledge, financial behaviour, age and income significantly influence retirement planning among pensions scheme members in Kenya. However, this finding can only be attributed to pension scheme members of contributory schemes as non-contributory scheme members were not incorporated in the study. The study recommends formulating training and educational programs on critical financial concepts and products linked to retirement planning to spur pension schemes to actively participate in retirement saving while utilizing behavioural change interventions in the financial education programs. The study further recommends integrating financial education in the formal education programs at the foundational levels to enhance financial capabilities of Kenyans from the formative years.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Savings are an essential means of consumption smoothing during irregular income like the retirement phase of life as they help individuals maintain the same pre-retirement living standards (Deaton, 2019). The responsibility of securing future financial well-being has shifted more to the individuals as new policies are increasingly turning the responsibility of saving for retirement to individuals. Lusardi (2019) affirms that due to the rising life expectancy and strain on pension and social welfare schemes, there has been a shift by most governments and employers from the defined benefit pension scheme to the defined contribution pension scheme. The biggest financial challenge facing the world today is to provide retirement income. Although an individual can easily borrow money when they are young and working, it is unfortunately not easy to access such borrowings in one's old age, especially when one is retired. This limitation can result in the individual suffering humiliation and becoming a burden on the children and family. Furthermore, the quality of life compounds the problem because recent scientific and medical improvements have caused people to survive for a long time, causing long-term reliance by individuals without pension plans (Githui & Ngare, 2014).

Lusardi and Mitchell (2014) posit that several financial market developments and exponential growth in financial technology have also led to new financial products and services. For instance, in Kenya, financial innovations have resulted in products easily accessible by consumers using their mobile phones. The increasingly new entrants in the financial market offering alternative financial services that the banks traditionally offered, like mobile loans, necessitate that consumer be aware of the products and the terms of the services and new upcoming developments in the market. As a result, individuals face a daunting variety of financial decisions and an extensive variety of financial products, so gaining and handling economic know-how is becoming increasingly important (Obamuyi, 2013). Lusardi and Mitchell (2014) define financial literacy as the ability of an individual to process financial

information and make well-versed choices concerning financial planning, wealth buildup, debt and pension.

Despite the growing attention by many economies towards financial literacy, there is no single agreed-upon definition of financial literacy. Idris et al. (2018) refer to financial literacy as an individual's capability to comprehend how money works, how to earn, manage, invest and donates it to the needy. At the same time, Rai et al. (2019) define financial literacy as an individual's ability to make decisions that effectively and efficiently manage their use of money. Hung et al. (2009) emphasise that financial literacy should incorporate the following aspects; knowledge, the skills to apply that knowledge, good financial behaviour, and financial practices. This study utilised the definition by the Organisation for Economic Co-operation and Development (OECD) and the International Network of Financial Education (INFE). The two institutions defined financial literacy as "a combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial well-being (Atkinson & Messy, 2012).

Individuals saving, spending behaviour and member participation in pension schemes are greatly influenced by financial literacy. Evidence has shown that financial literacy plays a critical role in the economic behaviour of consumers. Financial literacy plays a crucial function in accumulating wealth through savings and prudent investment, better portfolio diversification, reducing and effectively managing an individual's debt burdens, and proper planning for retirement. (Lusardi et al., 2010, Robb, 2011, Mouna & Jarboui, 2015). It has been argued that financially literate individuals make sound financial choices and take suitable actions that guarantee their financial wealth and well-being. Patrisia and Fauziah, (2019) established a linkage between financial literacy and everyday personal financial management behaviour. Economically knowledgeable individuals are more probable to wisely use their money, use prudently products from the financial markets, save for emergency, invest, plan for their retirement and accumulate more wealth. Consequently, financial literacy has been found to be beneficial for personal financial decisions, as Kimani (2014) highlights the following benefits; greater financial fulfilment, wiser handling of personal finances, better returns from

investments, regular budgeting and record keeping, comprehensive retirement planning and proper management of debt.

The cost of financial ignorance is high as it has been associated with and linked to poor economic outcomes. The financially illiterate are more inclined to source from informal financial services providers, incur excessive debt loads, have costly mortgages, have substantial borrowing, have problems with debt and accumulate less wealth (Disney & Gathergood, 2013, Idris et al., 2018, Lusardi et al., 2017). The financially illiterate populace is also more easily hoodwinked in financial matters. For instance, they are more inclined to use easily accessible mobile loans which are repaid within a short period of time and charge high fees (Wamalwa et al., 2019) and also more likely to borrow against their pensions account (Lu et al., 2015).

In the long-term, the public should be enabled at an early age to make economic judgements during their tender age, in order to decrease poverty levels among the elderly, as the population will be more informed to make rational economic choices. (Horioka & Niimi, 2019). On the contrary, the growing development of financial products and services in Kenya opens up enormous prospects to the public. At the same time, a threat for the public to make misguided financial decisions, hence the need to improve financial literacy initiatives.

1.1.1 Global Perspective on Financial Literacy.

The 2020 Organisation for Economic Co-operation and Development (OECD) and the International Network of Financial Education (INFE), an international assessment of financial literacy levels among adults, reported a generally low level of financial literacy across twenty-six sampled countries from Asia, Europe and Latin America. According to the global financial literacy survey, Australia, Canada, Denmark, Finland, Israel, Germany and the United Kingdom reported higher financial literacy levels at approximately 65 percent or more of financially literate adults. In contrast, South Asia reported lower financial literacy scores, with about 25 percent of adults or fewer being financially literate. As anticipated, financial literacy levels differ considerably between the foremost advanced and major emerging economies globally, with the major advanced economies reporting higher levels of

financial literacy than the major emerging economies. On average, 55 per cent of grownups in the most developed countries, with the emerging economies reporting an average of 28 per cent of adults being financially literate (OECD, 2020).

According to the OECD/INFE study of adult financial literacy among the G20 countries of 2017, governments needed to do more work to improve financial literacy for their citizenry. The survey utilized financial knowledge, financial behaviour and financial attitudes as measures of financial literacy, reported an average score of 2.7 out of a possible score of 21 among adults in the group of twenty countries. This average level is considered low as the threshold score for financially literate adult is 14. The findings emphasized the need for governments to institute national strategies to advance financial literacy among their populace even among the G20 countries. The United Kingdom, Indonesia, Netherlands, Germany, Korea, China, Canada and Norway reported more than average financial literacy scores, with France having the highest score of 14.9 out of the 21 scores. (OECD, 2017).

Russia, a country characterised by a somewhat old and aging citizenry and sizeable regional disparity, reported low financial literacy levels among the retired, self-employed individuals and individuals with low academic levels. Likewise, the country also reported higher financial literacy levels among the young population and those of high academic level, while lower financial literacy levels were posted for populants of rural areas and those residing outside the major cities (Klapper & Panos, 2011). While Finland, a country with a strong social security and commonly referred to as a welfare state reported high levels of financial literacy coupled with high academic levels (Kalmi & Ruuskanen, 2018)

Contreras and Bendix (2021) posit a scary status of financial literacy in United States of America from an analysis of earlier studies done in the USA. The duo concluded that Americans lack the financial know-how and skills that would assist them in making informed financial decisions. The fact that American are more exposed to complex financial products and services, necessitates that they be more financially literate to prevent ill-informed decisions that would predispose them to long-term consequences on their financial well-being. The 2014 Standard and Poor (S & P)

International Financial literacy study reported that 57 percent of American were financially well-informed of four main financial concepts namely diversification, numeracy, inflation and compound interest (Klapper et al. 2015). The TIAA Institute-GFLEC Personal Finance Index (P-Fin Index) annual survey of 2020 reported similar findings indicating 52% of US adults being financially literate. The P-Fin Index analyses American's financial literacy levels on eight real-world scenarios denoting application of financial knowledge and skill. The P-Fin index reported a sluggish progress of financial literacy levels from 49 percent in 2017 to 52 percent in 2020 (Yaboski et al. 2020).

The National Financial Capability Study (NFCS) of 2018 in the US shows a drop in the level of financial knowledge, a key component of financial literacy, from 42 percent in 2009 to 34 percent in 2018. Despite the COVID-19 pandemic, there has been a steady growth in the financial capability of Americans as reported by the NFCS of 2021. The ability to make ends meet and timely bill payment slightly increased from 50 to 54 percent from 2018 to 2021. Though this still suggest that some US grown-ups struggle to make ends meet and do not have plans for their future financial needs. Around 53 percent of Americans reported to have saved sufficient amount to cover three months living expense in case of a financial emergency, although 77 percent were not satisfied with their financial conditions. The study shows association of financial literacy with a number of financial capabilities. For instance, Americans with higher financial literacy levels were more likely to live within their means, have sufficient emergency funds, were more prudent in their borrowing, had thought about their retirement and had retirement accounts than those who reported lower financial literacy levels (Lin et al. 2022).

Financial literacy has been reported to vary according to individual characteristic such as age, gender, income and education level dramatically influence the level of financial literacy. Lusardi and Bucher-Koenen (2011) reported that female, the less educated and those staying in East Germany were less informed on basic economic concepts. While comparing East and West Germany, those with less academic qualifications and lower earnings in East Germany had miniature financial literacy scores than their conterparts in West German.

1.1.2 Regional Perspective of Financial Literacy.

The OECD and INFE first pilot survey of 2012 for assessing financial literacy globally in a comparable manner incorporated South Africa in the study of 13 countries (Atkinson & Messy, 2012). The outcome showed South Africans displaying moderate to low levels of financial literacy across four domains on several measures (awareness and understanding, money management, economic planning, and selection of financial products). Most participants had difficulty responding to queries on interest rates and diversification of risk. Regarding financial behaviour, most South Africans were found to have a control of their finances. However, they had poor knowledge and low utilisation of financial products coupled with problematic financial planning for the future because of lack of resources to be used during an economic shock (Robert & Struwig, 2011).

In contrast, the findings of the financial baseline report reinforced the South African National Treasury's apprehensions that not only did a majority of South Africans exhibit deficient levels of financial literacy, but a minority relied on professional economic guidance. The report indicated that most South Africans lack the requisite economic tools and knowledge required for making prudent judgments. Nonetheless, the longitudinal study shows strong evidence that South Africa has low levels of financial knowledge (Robert & Struwig, 2011).

Subsequent South African survey by Antoni et al., (2020) reported much higher level of economic knowledge and numeracy proficiency among public service employees in Nelson Mandela Bay. Despite these high levels of financial literacy, these public employees reported that they were not fully prepared for their retirement. Zeka and Matchaba-hove (2016) posit that public servants in South Africa who were almost retiring, lacked the confidence that the amount they had saved pre-retirement would be adequate to meet their retirement needs. This supports Willows (2019) assertion that most South Africans reach retirement age with inadequate pension to support their retirement needs.

Although African countries reported low scores in terms of financial literacy in the Standard and Poor Global financial literacy survey, the findings cannot be generalised to the continent. A country like Botswana reported an average level (51%) of the adult population being financially literate, while Somalia reporting a financial literacy level of 15% of the adult population. The general low levels across the participating African countries give a worrying trend on economic well-being in Africa. There is a clear indication that the levels of financial literacy may differ based on different country dynamics and levels of development of the financial markets (Klapper et al., 2015).

In Ghana, the level of financial literacy as reported by the Ghana Statistical Service (2016) only 35.7 percent of Ghanaian workers were financially literate. These low levels of financial literacy may possibly lead to low savings, investment, defective money management, inadequate financial plan and over indebtedness thus affecting their retirement plans. Sarpong-Kumankoma, (2021), found that a paltry 27% of the Ghanaian formal workers correctly answered questions on basic financial concepts. On the contrary while focusing on employees in the formal sector, Kafari (2019) reported high financial levels as well as adequate retirement plans by employees of the Ghana Grid Company. Achari et al. (2020) as well reported high financial literacy scores among university employees. These results from the formal employment may not be the case of all workers in Ghana as the World Bank (2017) reported that 74.5 % of Ghanaian pensioners financially struggled during retirement as majority relied on the mandatory government pension scheme which has a low replacement rate.

In the Democratic Republic of Congo, Safari et al. (2021) reported an average level of financial knowledge among public sector employees, however the study reported low computational capability and skills among these employees in Bukavu city. These financial knowledge and computational results had an effect on the retirement planning of the public sector employees as nearly half of these employees lacked a financial plan for their retirement. The worrying trend thereby implies that upon retirement even those employed in the public sector in Africa would experience financial strain upon retirement.

In the African culture, reliance on children by parents as their main support during retirement is common hence making savings for retirement largely absent. This old-age reliance has been an issue of concern to governments as there are changes in the traditional African culture where families depend on each other. The duty of maintaining the old destitute folks now lies with the government. This has led to the Kenyan government introducing a cash transfer scheme to the elderly as one of the vulnerable groups included in the National Safety Net Programme (NSNP) (World Bank, 2013).

1.1.3 Financial Literacy and Retirement Planning in Kenya

Atkinson and Kempson (2008) identified initial financial literacy indicators in Kenya by analysing Kenya's 2006 FinAccess survey. The authors focused on three main areas: daily money management, financial protection and risk planning, as well as good use of financial services to measure financial literacy. They observed that a substantial segment of the population is disadvantaged and have restricted access to financial resources, Atkinson and Kempson's effort to quantify financial literacy centred not on financial knowledge but on behaviour and attitudes. The analysis further showed that many Kenyans were experiencing difficulties in their daily money management and financial planning behaviour. However, the researchers acknowledge that the inability to make ends meet may not only be caused by behaviour-based ratings but also by poverty and scarcity.

Financial Sector Deepening (FSD) has been conducting Financial Access (FinAcess) surveys to track Kenya's financial inclusion, access, and usage landscape. The FinAcess surveys from 2006 to 2019 have indicated improvements in financial access over time. Several programs have been initiated to improve financial literacy in Kenya. Despite these initiatives, the findings of the recent FinAccess survey done by CBK, KNBS and FSD in 2019 show a worrying trend that most Kenyans seek financial advice from family and friends compared to seeking it from financial experts and institutions. The level of knowledge of the cost of borrowing was also alarming as only 42.7% who were able to respond to a question on cost of borrowing correctly. In comparison, 58.1% of the respondents could correctly read a typical

message showing the transaction costs on a mobile phone. While focusing on loan default, respondents' reasons for the cause of defaults were that they lacked proper planning, the interest rates kept on increasing and lack of understanding of the terms of the loans. Therefore, financial literacy advocacy is essential in addressing consumer protection concerns (CBK, KNBS & FSD, Kenya, 2019).

Kenya's blue print for development, the Vision 2030 records the provision of pensions as a significant cornerstone for achieving economic growth and faster financial market development. The Vision 2030 highlights pension funds as one financial area that could play a significant role in financing major capital investments in infrastructure and housing in the country. The industry is estimated to have accrued assets worth Kshs 1,166.49 billion as of December 2018, accounting for 15% of the country's Gross Domestic Product (GDP) (RBA, 2019). Therefore, the Kenyan government has initiated consultative programs that promote the advancement of retirement funds to finance long-term investment plans. In addition, the financial sector's primary policy goal is to improve access and deepen financial services and products (GOK, 2008).

There has been tremendous growth in the amount paid to pension funds following the formation of the Retirement Benefits Authority through the passing of the Retirement Benefits Act in the 1990s. There is, however, great potential for further development in this field. The Retirement Benefits system contains three main pillars, the zero pillar, first pillar and second pillar. The zero pillar, which comprises the cash transfer to the elderly citizens; the first pillar, which is the National Social Security Fund and the second pillar, which comprises the Civil Service Pension Schemes, Occupational, Individual and Umbrella Retirement Benefits Schemes. The zero and first pillar aims to avoid old-age poverty, while the second pillar aim to increase the replacement rate and allow individuals to increase their retirement income (IOPS, 2018).

The National Social Security Fund (NSSF) is a compulsory scheme where all employers and employees governed by the Employment Act 2007 make monthly contributions. It is a provident fund regulated by the NSSF Act 1978, later reviewed by the NSSF Act 2013 enactment. Employers normally institute occupational

retirement benefits schemes voluntarily to benefit their permanent employees. The schemes can either be a pension fund or provident fund funded through contributions from both the employer and employee. On the other hand, Individual retirement benefits schemes are established by corporate institutions and target the general public. They provide a retirement savings platform for those employed without a well-established occupational scheme, self-employed individuals, and those wishing to make additional voluntary contributions (IOPS, 2018). An Act of Parliament established the civil service pension scheme for all civil servants, disciplined forces, teachers and judges of the judiciary working for the government. It is a Pay as You Go non-funded, with members not contributing as it is funded from government revenue collections. With effect from January 2021, the non-contributory civil service pension scheme is being phased out to pave way for the contributory public service superannuation scheme ().

The total employment in Kenya in the formal and informal sectors in 2019 stood at 18.1 million, the informal sector taking a more significant share of the Kenyan workforce, standing at 15 million (KNBS, 2020). According to the Financial Stability Report of 2019, the current pension coverage stands at 22 per cent of the total labour force in 2019 compared to 20 per cent in 2018, showing a slight increase in coverage. Despite this increment in the coverage level, this level is still low as it implies that 88 per cent of those employed are not saving for retirement (Financial Sector Regulators, 2020). Githui and Ngare (2014) highlight poverty, unemployment, high dependency ratio and a large informal sector coupled with low financial literacy levels as social concerns affecting the savings in the Pension sector. A negative attitude towards saving for retirement also dramatically contributes to low coverage and uptake of pension funds. For instance, professionals in the private sector cited pensions as a product of the low-income earners as their main reason for lack of participation in pension schemes. They also associated the pension industry with corruption within the pension scheme industry, as evident in the National Social Security Fund's scandal (RBA, 2011).

Furthermore, the current legal framework in Kenya has a design that targets participation in retirement saving of formal workers compared to those in the informal sector (Orina, 2010). Few Kenyans are joining retirement benefits schemes partly because most of the schemes, apart from NSSF, are voluntary. Most employees are automatically enrolled into their employers' retirement schemes, making them passive savers who save without forecasting their retirement income needs. Voluntary schemes and individual retirement schemes have had low uptake. A case in hand is the Mbao pension plan established in 2009, whose membership as at the end of 2018 stood at 100,000, holding funds worth of US $1,342,000. According to Kabare (2018), the low coverage can be attributed to the voluntary nature of joining the scheme, high poverty rates in Kenya and a fast-growing informal sector; hence saving for retirement is not prioritized by most workers.

There have been several legislations geared towards improvements in the pension sector. However, some of the legislations have been self-defeating; for instance, the enactment of the legislation on early withdrawals in Kenya, employees have opted to withdraw their pension savings from schemes upon changing jobs or leaving employment before attaining their retirement age. This early access to benefits is short-sighted as it reduces retirees' pension amount upon retirement (Were, 2011).

Individuals within the formal sector are presumed to be financially literate as they are presumed to be more exposed to financial education initiatives at their workplaces. However, this is not the case, as posited by Obure et al. (2017), who focused on bankers and found that on average, 38.76% of the bankers were financially literate. This denotes that even those working within the financial sector were themselves not financially literate. Studies (Doyo, 2013, Maobe, 2017) done among the informal sector in Kenya also indicate that the levels of financial literacy are low. As reported by Doyo (2013), the trend in the informal sector indicated a low level of financial literacy with an average of 12.9 per cent of the informal sector workers being financially literate. Consequently, Maobe (2017) showed that more than 50 per cent of workers in the informal sector gave incorrect answers to basic financial knowledge questions based on different financial concepts, still reporting a low but improved level of financial literacy.

In Kenya, financial literacy has been found to have a significant positive relationship on retirement planning, for instance, Githui and Ngare (2014) found a positive relationship between these variables among the informal workers, while Gitari (2012) found the same influence among workers in the formal sector. Previous studies in the Kenyan context have focused on one segment of the society, either formal (Agunga et al., 2017, Obure et al., 2017, Aluodi et al., 2017, Kepha, 2017) or informal (Gitari, 2012, Doyo, 2013, Maobe, 2017, Oluoch, 2021). These previous studies present a research gap in the sense that the entire pension's landscape in Kenya, which comprises majorly those that save with the NSSF, the mandatory pension scheme has not been adequately covered as a focus of study.

1.2 Statement of the Problem

Increased life expectancy and expected increase in medical expenses at old age necessitates that one saves enough not only for the normal living expenses but also these increasing needs of aging. Retirement planning enables one to adequately anticipate and save for their retirement needs. Adequate preparation for retirement also reduces old age dependency ratio and old age poverty rates, as well as enhancing savings and investment in a country. Mbogo (2014) found that retirement had a negative bearing on the standard of living of retirees in Kenya. The shift from an active working life to one without much activity to occupy their lives posed many social and cultural challenges. These changes are attributable to reduced income, insufficient planning for their retirement phase and undesirable financial behaviour exhibited during the pre-retirement phase.

Pension income has been forecasted as the main source of income used by retirees to meet their retirement needs worldwide (Kipkoech, 2012). The pension coverage in Kenya is low and stands at 22 per cent of the total labour force in 2019 (Kenya Financial Sector Regulators, 2020), implying that 78 per cent of the entire labour force is not saving for retirement. The 2020 Economic Survey reports that 82.9 per cent of the total workforce employed in 2019 was from the informal workforce, where pension coverage is still meagre (IOPS, 2018). In addition, the old-age poverty rates as per the Kenya Integrated Household Budget Survey for households with

heads above 65 years stood at 50 per cent (KNBS, 2018). Furthermore, most members save for retirement with the mandatory scheme; the NSSF is characterised by a low contribution and a low replacement rate (IOPS, 2018). As Waswa (2016) calculated, the replacement rate in Kenya stands at 40 per cent as opposed to the recommended IOPS replacement rates of 70 to 85 per cent of pre-retirement income. The concern is that most Kenyans are ill-prepared for their retirement, which may be caused by low levels of financial literacy, as previous studies have proven that financial illiteracy results in poor retirement planning (Kepha, 2017)

Several studies have examined the role of financial literacy on retirement planning but three research gaps emerge from the existing body of knowledge. First, there is no consensus on the significance of financial literacy as a determinant of retirement planning. The link between financial literacy and retirement planning in Kenya was found to be significant in Maobe (2017), Githui and Ngare (2014), Kepha (2017) and Oluoch (2021). These studies acknowledged the integral role played by financial literacy in planning for retirement. However, Aluodi et al. (2017) contradicts these findings as they found an insignificant influence of financial literacy on retirement planning in Kenya. This contradictory finding, presents an evidence gap that needs further research and informed current study to add to the existing empirical evidence as to whether financial literacy had a significant influence on retirement planning.

Secondly, measures used as indicators of financial literacy in the previous studies have mostly focused on financial knowledge of different financial concepts leaving out financial awareness, attitude and behavior as advocated by the OECD/INFE. Githui and Ngare (2014) focused on the understanding of time value of money, risk, diversification, and knowledge of the stock market operations to measure financial literacy. While Agunga et al. (2017) and Oluoch (2021) utilised individuals' knowledge of financial instruments and the computational capability of their retirement benefits to measure financial literacy. In an attempt to include a comprehensive measure, Lang'at and Abudullah (2019) added two aspects of financial literacy, namely financial behaviour and financial attitude, into financial knowledge to measure financial literacy but did not focus on the retirement planning. This study bridged this methodological gap by incorporating financial knowledge,

awareness, attitude and behaviour giving a more comprehensive measure of financial literacy.

Thirdly, the previous studies have focused only on certain segments of the retirement planners' population and therefore not able to draw comparisons that apply to the general population. Gitari (2012), Kepha, (2017) and Agunga et al. (2017) focused on financial literacy and retirement planning of members in the occupational schemes within the formal sector in Kenya. While Doyo, (2013), Githui and Ngare (2014), Maobe (2017) and Oluoch, (2021) considered only the informal sector in their samples when examining the role of financial literacy on retirement planning in Kenya. Despite their contributions to the body of knowledge on retirement planning in Kenya, these studies' findings cannot be generalised for all pension scheme members. These studies did not include in their sample a majority of Kenyans who save under the mandatory NSSF scheme. This study therefore identified the population gap and took into account the pension landscape in Kenya and combined both the formal and informal sector while focusing on pension scheme members from different contributory schemes.

1.3 Research Objectives

The following general and specific objectives guided the study.

1.3.1 General objectives

The research sought to determine the influence of financial literacy on retirement planning among pension scheme members in Kenya.

1.3.2 Specific Objectives

The specific objectives of the study were:

1. To evaluate the influence of financial awareness on retirement planning among pension benefit scheme members in Kenya.
2. To examine the influence of financial knowledge on retirement planning among pension scheme members in Kenya.

3. To determine the influence of attitude towards saving on retirement planning among pension scheme members in Kenya.
4. To establish the influence of financial behavior on retirement planning among pension scheme members in Kenya.
5. To evaluate the moderating effect of age on the influence of financial literacy on retirement planning among pension scheme members in Kenya.
6. To assess the moderating effect of income on the influence of financial literacy on retirement planning among pension scheme members in Kenya.

1.4 Hypotheses

The following null hypotheses were used to realize the study objectives. The hypotheses were then tested for significance to enable the research to isolate those components of financial literacy that influence retirement planning.

H_{01}: Financial awareness does not have any significant influence on retirement planning among pension scheme members in Kenya.

H_{02}: Financial knowledge does not have any significant influence on retirement planning among pension scheme members in Kenya.

H_{03}: Attitude towards long-term saving does not have any significant influence on retirement planning among pension scheme members in Kenya.

H_{04}: Financial behavior does not have any significant influence on retirement planning among pension scheme members in Kenya.

H_{05}: Pension scheme member's age has no significant moderating effect on the influence of financial literacy on retirement planning among pension scheme members in Kenya.

H_{06}: Pension scheme member's income has no significant moderating effect on the influence of financial literacy on retirement planning among pension scheme members in Kenya.

1.5 Scope of the Study

The focus of the study is to determine the influence that financial literacy has on planning for retirement in Kenya. The study covered four main aspects of financial literacy as proposed by OECD and INFE definition of financial literacy from the conceptual viewpoint. Financial awareness of financial products and institutions; financial knowledge of 8 basic financial terms; attitude towards long-term savings and lastly, financial behavior exhibited by individuals. These aspects were easily measurable by the OECD and INFE measurement toolkit and FSD questionnaire for financial inclusion.

The study covered members of all the different contributory pension schemes available in Kenya because pension has been documented as the principal source of earning during retirement. The schemes under the RBA were the focus of study; these are occupational and individual schemes and members registered with the NSSF as at the end of December 2018. The focus ensured that workers from formal and informal sectors were incorporated in the study as compared to previous Kenya studies that focused on either one of the categories. This study, therefore, covered the pension landscape of Kenya. However, the study did not include public servants' Pension scheme as it was a non-contributory scheme during the study period.

1.6 Significance of the Study

This study is likely to benefit a variety of stakeholders in the business world. The findings show the linkage between financial literacy and planning for the retirement phase of life of the pension scheme members. Pension scheme members are likely to use the results to make decisions that will assist them in planning comprehensively for their retirement. While Pension fund companies and Insurance Companies offering pensions are likely to gain insight into the aspects of financial literacy they need to focus on as they develop appropriate strategies for their products, thereby improving their competitive edge.

The study offered informed insight to policymakers like RBA, NSSF, and the Department of Pension in Kenya on the issues that affect the implementation of pension policies that they enact, hence may inform policies and legislation to be introduced. The ongoing reforms in the financial sector may also benefit from the role played by financial literacy in retirement planning and hence act as a basis in developing strategies geared towards financial inclusion. The drive to incorporate financial education in the school syllabus may also benefit from the findings of this study as it will inform the pertinent issues to be incorporated into the curriculum.

To the academicians and other researchers, the results of the study bridges the current empirical gap in that helps show how financial literacy affects retirement planning among the pension scheme members in Kenya. Therefore, the study provide conclusions comparable to the available literature, as well as enhance the accumulating empirical proof on this academic area.

1.7 Limitations of the Study.

The study encountered several limitations in the course of the study. Firstly, it focused only on members of contributory pension schemes and therefore left out members of the non-contributory pension scheme. Consequently, it is unclear whether the findings from non-contributory plans would be similar to those of this study.

Secondly, the study focused on financial literacy as one factor that influences retirement planning and no other antecedents to retirement planning. Lastly, the study relied on pension scheme members in Kenya. It may be that the findings are attributable to the unique pension landscape in Kenya that leans mainly towards the mandatory pension scheme; the NSSF and this might be hard to replicate in different countries that have a diverse pension fund landscape.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section offers a systematic review of literature beginning, with the economic theories and models that explain the interrelationship between financial literacy, age, income, and retirement planning. The chapter also describes the independent and dependent variables using a conceptual framework and how the analysis measured the variables. Lastly, to further define variables of significance for this research, a thorough analysis of empirical studies on the relationship between financial literacy aspects and retirement planning is also discussed.

2.2 Theoretical Review

Kerlinger and Lee (2000) define a theory as a set of interconnected conceptions, rationale, and hypotheses that present a logical assessment of a phenomenon by describing relations among variables to explain and predict the phenomena. According to Sekaran and Bougie (2016), a theoretical framework is a collection of theory-based interrelated principles that indicates how certain phenomena (variables or concepts) relate to each other (a model). Therefore, it is a systematic collection of prepositions derived from empirical results of prior study in the area while incorporating the researcher's logical opinion with published research, while considering the limitations and restrictions prevailing in the situation. The theoretical framework is a foundation for mounting a systematic base for studying the research problem. It aids in identifying relevant variables on the issue at hand and afterwards explains the interconnections among these variables and, if applicable, elaborates the moderating and mediating variables.

This study is anchored on the life-cycle theory, behavoural life-cycle theory, theory of planned behaviour and family resource management theory.

2.2.1 Life-Cycle Theory

The Life-cycle Theory referred to as the Life-cycle Hypothesis, is the foundational theoretical framework for interpreting consumer behaviour in consumption and savings. The theory was advanced by Modigliani and Brumberg in 1954, then further improved by Ando and Modigliani. In a collection of papers written in the 1950s, Modigliani and Ando while analysing the savings behaviour of consumers, highlighted that income continuously varies over the lives of individuals and that investments allow customers to transfer income from high income earning period to low income earning periods. The Modigliani and Brumberg model state that an individual consumer's utility function in current and future periods is a function of one's aggregate consumption. A person is then expected to increase their utility according to the resources at ones disposal, their resources being the amount of existing and deferred future earnings over their lifetime and their present net worth. Due to maximization, an individual's current expenditure can be expressed in terms of wealth and the rate of return on assets with parameters depending on age. The individual consumption functions thus derived are then aggregated to meet the aggregate consumption function for the group. The most critical considerations in deriving the aggregate consumption function must be those relevant to the features of the utility function of the individual and the population age structure (Ando & Modigliani, 1963).

The life-cycle theory assumes first, that the utility function is uniform as regards to consumption at varying times and equally, when a person receives the asset cost of an additional dollar, they will assign it to consumption in the subsequent period in the same ratio as they allocated their total resources before the addition. Furthermore, at the end of one's life-cycle, the person does not obtain any inheritance, nor do they wish to leave any inheritance. Secondly it assumes that the user expects to use their overall wealth equally for the rest of his life at any age. Each family has the same (anticipated or actual) overall life and earning periods, believed to be 50 and 40 respectively for statistical measurement purposes. And lastly, it presumes that the capital return rate is stable and is expected to remain constant (Ando & Modigliani, 1963)

The concept of the life-cycle also assumes that savings change over the lifespan of an individual. If a person begins adulthood without money, during his working years, he will accumulate wealth and then run down his wealth during his retirement years. According to the life-cycle theory, since people want to smooth consumption across their lives, the working young people save, while the retired dissave (Mankiw, 2000). Figure 2.1 indicates the income, expenditure, and savings trend for households over their life-cycle.

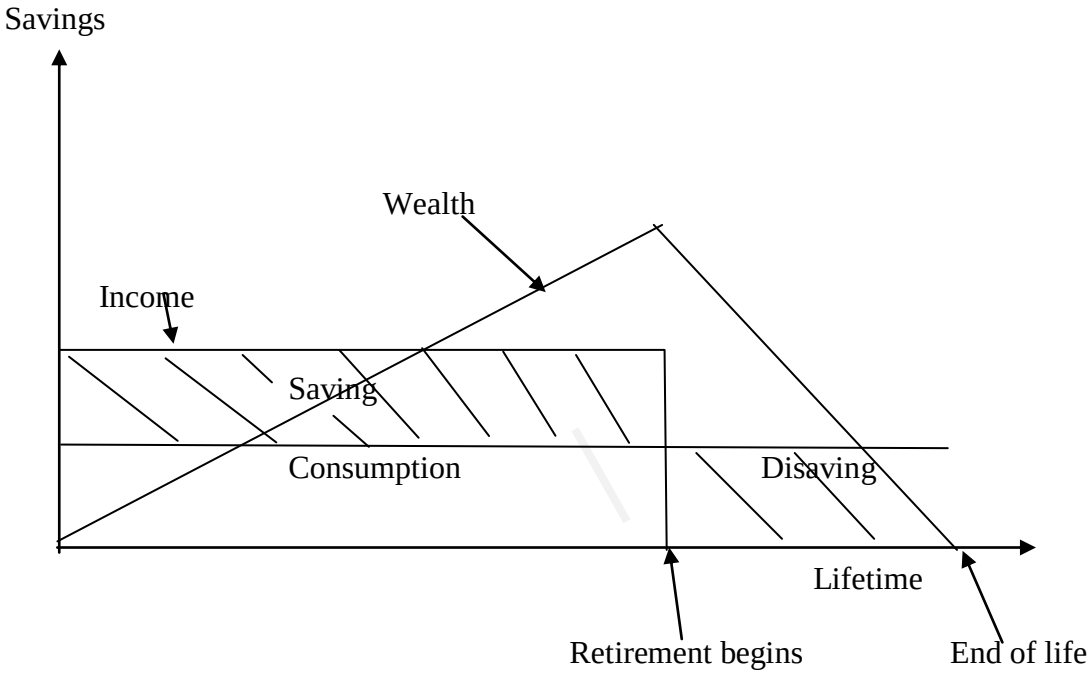

Figure 2.1: Life-cycle Hypothesis

Source: Ziemek, (2003)

According to the life-cycle theory, individual consumption depends on the individual's interests, desires, and profits. Ando and Modigliani (1963) also suggest a greater tendency to consume among the elderly and the youth. Since the elderly maintain their needs through their life savings while the youth presumably borrow more. On the contrary, middle-aged individuals tend to consume less as they have higher incomes, coupled with more increased investment. In examining people's natural spending tendency, one must first understand their economic goals. For instance, individuals spend as they enjoy living a life with a better standard of living and most people often try to maintain a more or less stable standard of living during

their lifespan. This human nature explains the reasoning behind the life-cycle hypothesis.

Empirical life-cycle theory experiments have provided a broad literature on the concept of the life-cycle. Browning and Lusardi (1996) have shown that the life-cycle curve can be molded by consumer preferences, economic environment, and social security net benefits. Jappelli and Padulla (2013) while analyzing the engagement in financial literacy and saving choices, estimated that financial literacy and income are associated throughout the life-cycle, mutually increasing before retirement and declining subsequently. King (1985) disagrees with the life-cycle theory, stating that older people still save in retirement. He argues that saving in retirement is not inherently incompatible with the theory of the life-cycle, because a retired person would still want to take into account future uncertainties, e.g., how long they will live and potential inflation, and thus want to save. The expected deteriorating health by the elderly can increase individuals' expenses to be higher than their retirement income. Additionally, the retirement assets accumulated by retired people are sometimes tangible and cannot be diminished quicker than the annuity checks they earn. While preparing for retirement, the stability of investments eliminates the need to accumulate pre-retirement or withdraw while in retirement. Therefore, life-cycle investment trends tend to be compatible with this theory in some European countries with good pension schemes, such as France, Germany and Italy (Crown, 2001).

The model assumes that people can devise and implement investment and spending strategies that allow them to embark on complicated economic analyses and experience dealing with financial markets that are not feasible in most situations. Few people have this knowledge, and it is possible that gaining it will be costly, creating a gap between the template and the truth (Lusardi & Mitchell, 2014). This lack of knowledge is worth exploring to see where to expand the concept and better target policy initiatives. The relevance of the life-cycle theory underpins the preparation that an individual does when planning for the retirement phase of their life as they age and as their income level varies at the different stages in life. It,

therefore, underpins the financial awareness and knowledge that one seeks in order to save and prepare adequately for retirement over their life-cycle.

2.2.2 Behavioural Life-cycle Theory

The Behavioural life-cycle theory was developed as a critic of the traditional life-cycle theory of Modigliani and Brumberg of 1954. Shefrin and Thaler developed the behavioural life-cycle theory (BLCT) of savings in 1988, which advocates that contrary to the standard life-cycle theory, individuals' behaviour follows a new behavioural life-cycle. Behavioural life-cycle theory (BLCT) posits that individuals are not always rational and sometimes will deviate from standard economic model, since they will find it difficult to avoid cognitive and emotional errors and balance the need for saving for tomorrow with the need for spending now (Statman, 2017). Baker and Ricciardi (2014) construe that individuals make mistakes while making critical financial decisions hence contradicting the traditional theories of rationality; denoting that behavioural biases exist

Deaton (2005) projects that although the Modigliani and Brumberg theory leads to essential and non-obvious predictions on the economy, it does not focus on individuals' behaviour. The proponents of BLCT, posit that individuals find it challenging to guesstimate their life-cycle wealth, their lifetime and prospect cash requirements. Furthermore, there is a struggle to reconcile the desire to save when income is high and the urge to spend, exposing them to the danger inadequate money during retirement. Shefrin (2002) further suggested that individuals lack the willpower to make long-term retirement savings plans because they have limited mental skills to solve multi-period retirement saving problems. Since they will find it challenging to avoid cognitive and emotional errors and balance the need for saving for tomorrow with the need for spending now (Statman, 2017).

Furthermore, the theory acknowledges that individuals continuously face enticement in their daily choices to meet their immediate pleasure or delay their gratification and select long-term welfare. BLCT postulates that the life-cycle model inadequately accounts for this model and hence the behavioural life-cycle theory takes into account the self-control as it is designed to take into account the two sets of

preferences. While contrasting the standard life-cycle theory and behavioural life-cycle theory, Statman (2017) argues that people want more than smoothening their consumption during their lifespan. In addition, they are also interested in a full range of practical, expressive and emotional benefits of owning wealth without spending it. Therefore, individuals utilise framing, mental accounting and self-controls assisting them in planning for their savings and spending but also as tools to resolve the conflict between wanting to spend and saving for the future.

The behavioural life-cycle theory incorporates self-control, mental accounting, and framing to enrich the life-cycle theory and make it more behaviourally realistic. (Shefrin & Thaler, 1988). Self-control bias has been advocated as one bias that affects planning for retirement. Pompian (2006) defines self-control bias as a human behavioural weakness that makes individuals consume now at the expense of saving for tomorrow. There is a struggle between one's overarching goals and failure to act towards these goals caused by insufficient self-discipline. Pompian (2006) further posits that money spending is one of the areas in which individuals exhibit a lack of self-control. The fact that self-control bias can cause a person to concentrate on today at the expense of tomorrow can be dangerous to one's wealth, especially when one retires. This bias may also cause individuals not to plan appropriately for their retirement (in the long term) even if one has the requisite financial discipline.

Whereas life-cycle theory predicts that life-cycle wealth is a function of current income, the current capital and future income, behavioural life-cycle theory predicts that individuals regard these three as distinct. Individuals, therefore, categorise current income, the current capital and future income into separate mental accounts that utilise self-control and a means of restricting the use of the wealth from these accounts for unintended purposes. For instance, dipping into one's college fees mental account for today's lunch, or dipping into the retirement mental account for a set of seats (Statman, 2017). The BLCT theorises due to impatience, individuals view different wealth constituents as no fungible hence group them into mental accounts (Shefrin & Thaler, 1988)

Framing is the third bias advanced in the BLCT, the theory states that individuals make their investment and savings decisions based on how the information is framed. The theory suggests that the savings proportion is dependent on how the income is framed. For instance, an individual who receives a 20 per cent bonus on their income is likely to save it. However, suppose the same 20 per cent is included in the monthly income. In that case, the individual is more likely to use it the daily expenses, (Shefrin & Thaler, 1988) implying that income from different sources will be treated differently. The behavioural life-cycle theory underpins the choice of attitude that pensions scheme members have over the concept of saving focusing on the long-term saving vis-à-vis spending their current income. At the same time, the choice of different behavioural tendencies affects retirement savings and therefore planning.

Although the behavioural life-cycle theory enriched the life-cycle theory by incorporating, three main biases; namely self-control, mental accounts and framing, making it limited in its use. Other behavioural biases have been found to influence financial decisions. Empirical evidence from Madaan and Singh (2019) pinpoints overconfidence, anchoring, disposition effect and herding behaviour as four such biases that influence investments decisions. While Horák et al. (2022) identified present bias, status quo bias, limited attention and loss aversion as other biases that adversely affect retirement planning.

2.2.3 Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) originated from the Theory of Reasoned Action (TRA), earlier advanced by Fishbein and Ajzen in 1975. TRA proposes that an individual's behaviour is a function of their intention to do that action, which is, in turn, a function of the attitude one has towards that behaviour and subjective norms or other people's belief towards the intended behaviour. The theory provided intervening variables on the relationship between intentions and behaviour (Fishbein & Ajzen, 1975).

The TRA assumed that only two aspects shaped behaviour, which was limiting; therefore, others were identified in the TPB. For instance, one's ethical responsibilities (Schwartz & Tessler, 1972), self-worth (Granberg & Holrnberg,

1990), routine (Triandis, 1980), emotional and mental responses to attitude objects (Ajzen and Driver, 1992) were identified as other factors of one's behaviour. TRA also failed to envisage behaviour that integrates peripheral aspects of an individual such as resources, opportunities, actions and inputs from others (Liska, 1983). Liska (1983) critiqued the TRA, asserting that connecting direction was unidirectional. Based on these critics, Ajzen (1991) built the TPB to update the TRA to include non-volition behaviour.

Ajzen (1991) argued a person's behaviour is considered a goal or an outcome. According to the TPB one's behaviour lies on a band of behaviours stretching from the easier ones to the complex behaviours. The most difficult behaviours require skills, resources, opportunities and cooperation of others (Ajzen, 1991). The TPB offers a model of how human behaviour is driven and provides a framework for analysing the underlying beliefs that influence financial habits of the person.

Ajzen (2002) posit that any behaviour prerequisite is the development of intent towards that behaviour. According to the TPB, the intention to perform the behaviour is the most important predictor of an individual's behaviour. Azjen identified three causes of behavioural intention: first, the attitude or opinions of oneself about the behaviour; second, the subjective norm or opinions of others about the behaviour; thirdly, the perceived behavioural control or one's self-efficacy towards the behaviour. Each of these behavioural goal determinants is a feature of one's excellent values.

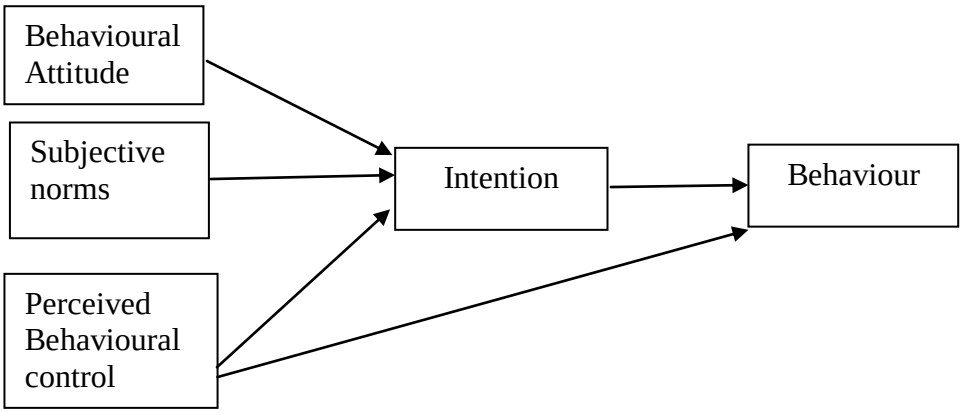

Figure 2.2: Theory of Planned Behaviour

Source: Ajzen (1991)

Satsios and Hadjidakis (2018) states that the TPB has been applied in explaining the deeper philosophies that affect an individual's financial behaviour. The TPB thereby assists in identifying the pertinent issues underpinning financial behaviour and assists in the development of approaches to help people develop healthy financial habits. In an experiment to forecast credit card debt among college students by using Ajzen's theory to advance financial literacy, Kennedy (2013) notes that previous empirical results have shown that several different factors affect expectations and attitudes towards credit card debt. These include naive optimism, financial knowledge, debt sensitivity, and behaviour related to cash behaviour and action called financial conduct will be more specific. Therefore, this research anchores its two variables attitude towards saving and financial behaviour as components of financial literacy from the Theory of Planned Behaviour.

Eagly and Chaiken (1993) critiqued the TPB, they based their arguments on several grounds. Firstly, the fact that a person's perceived control over their behaviour or situation can be biased. Second, the chain effect from perceived behaviour control to intention and to action has been questioned, as this may not stand in the case of negative behaviour. The third criticism is that TPB merely introduced perceived behavioural control to the TRA; and therefore, still left out other factors that explain behaviour. Lastly, the TPB fails to describe process through which one formulates and implement their plans.

2.2.4 Family Resource Management Theory

According to Deacon and Firebaugh (1988), resources are the means for satisfying and meeting ones's needs and goals, while management is the expending of resources to attain objectives (Goldsmith, 2005). The family resource management theory shows how these resources are managed within a family set-up. Deacon and Firebaugh (1988) describe family resource management as scheduling for and employing the usage of resources to meet demands. Money is one such resource used to improve the well-being of families. The system philosophy is the primary theoretical framework used to study financial decisions and resource management methods (Goldsmith, 2005).

Deacon and Firebaugh (1988) advanced the family resource management theory as a management theory based on the system theory. The concept is self-reflective and is a model of feedback input-throughput-output. The family resource management model's four steps describe how individuals make financial decisions and develop financial habits. The phases are inputs (demands and resources), throughputs (family resource management), outputs (met needs and achieved goals) and chain of feedback.

Deacon and Firebaugh (1988) hypothesise that the inputs explain how resources are allocated, which resources to be allocated and whether resources allocated stimulate managerial response. Inputs such as expectations, beliefs, behaviours, information and personal characteristics affect financial decisions. The proper management of family resources and other input factors facilitate the accomplishment of goals. The throughput phase, which is the family resource management, involves planning and implementation at the diverse levels in a family. Planning entails setting the standards, understanding the needs, assessment of available resources and planning the actions to be taken, while implementation involves action and control activities.

Figure 2.3 indicates the four processes and features in each phase.

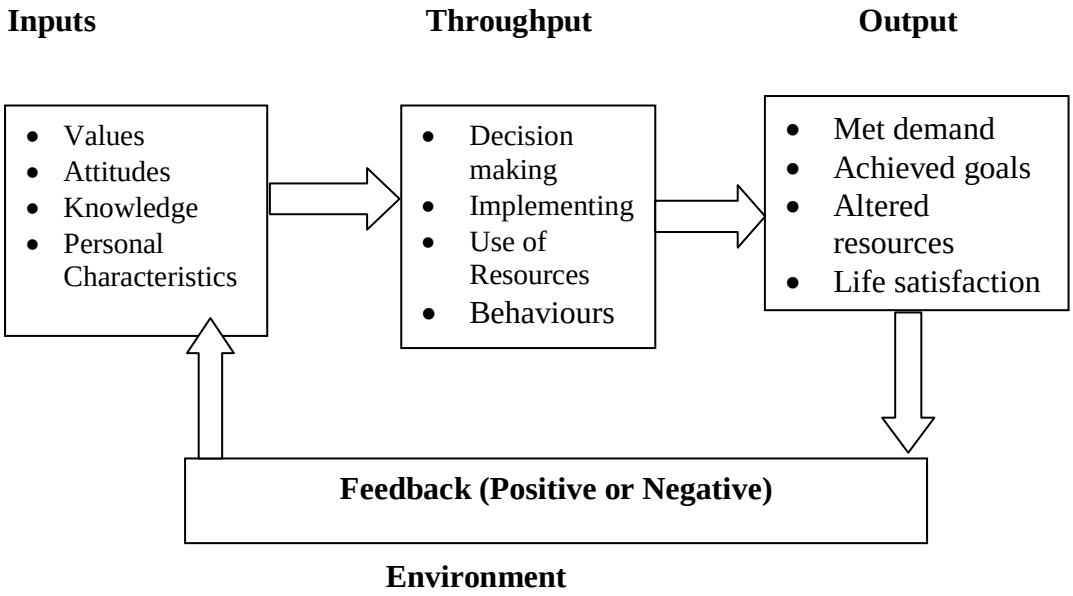

Figure 2.3: Family Resource Management Model

Source: Goldsmith (2005)

The model has been used to study one or more aspects of financial behaviours. Danes and Morris (1989) researched on changes in financial situations, while McKenna and Nickols (1988) considered retirement planning and Ethridge (1982) looked at methods of credit card payment. Barrow (1993) incorporated comprehensive resource management measures while focusing on money management skills. Fitzsimmons et al. (1993) used 23 different family resource management variables that represented two main resource, time and money.

Therefore, resources such as financial knowledge, financial attitude and personal attributes are inputs entering into a throughput system to yield desired outputs, in our case, comprehensively planning for retirement. This model's attitudes, awareness, and knowledge will focus on the inputs that influence retirement planning. At the same time, personal characteristics like age and income level will be the moderating variables in appraising the relationship between financial literacy and retirement planning.

2.3 Conceptual Framework

This segment describes the study's independent and dependent variables. Retirement planning is the dependent variable, while financial literacy is the independent variable. This study will use four major variables for measuring financial literacy: financial awareness, financial knowledge, financial attitude, and financial behaviour. Such factors primarily derive from the concept of financial literacy as advocated by the OECD and International Financial Education Network (INFE).

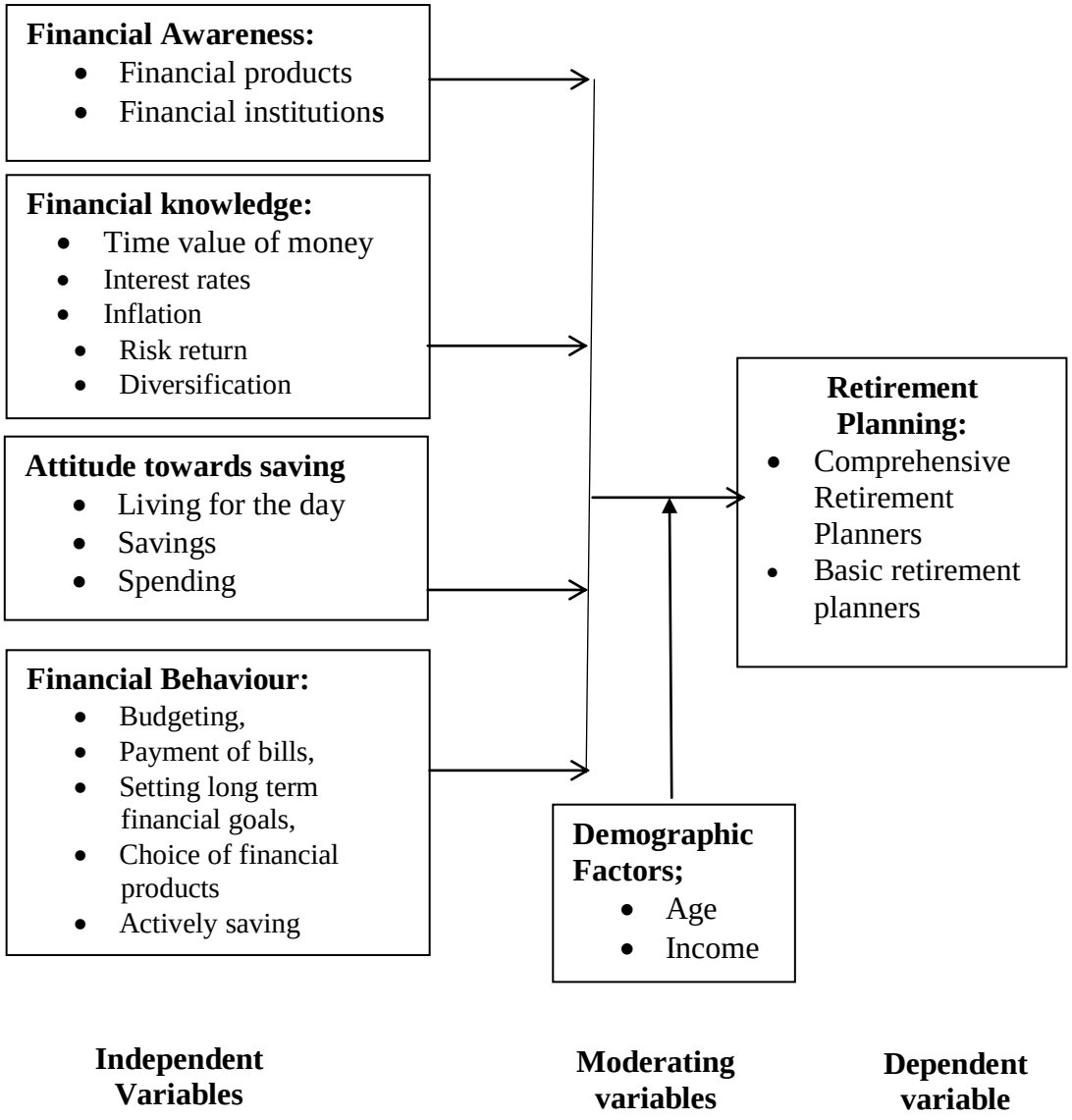

Figure 2.4: Conceptual framework

2.3.1 Retirement Planning

Retirement refers to the phase of life when a person formally quits working and subsequently, the employment income from the employer ceases. Nonetheless, their costs will continue and will be based entirely on their accrued income and they will have to continue their lives (Russell & Stramoski, 2011). Retirement planning has been explained by the American Association of Retired Persons (AARP) as the exercise of identifying one's needs during the retirement phase, coming up with plans to meet those needs, working on those plans, and evaluating and revising them according to new knowledge and experience. This definition implies that one can identify their retirement needs and ensure that they have enough funds to achieve and maintain it (Magera, 1999). These needs will incorporate the financial and social lifestyle aspects during retirement like what to do during retirement, where to stay, and what time to stop working entirely. An all-inclusive approach to retirement planning deliberates all these areas. The prominence one has while planning for retirement depends on the stage of life one is in. Retirement planning may involve putting aside sufficient funds at the early stage of one's working life. While at mid-career, it could involve setting specific financial goals and targets for income or assets and working towards achieving those targets. A few years toward retirement, the emphasis moves from the non-financial aspects to financial assets (Investopedia, nd).

Earlier studies by Lusardi based on how much an individual had thought about retirement as the retirement planning measure. Lusardi (2002) first advocated for this approach and subsequent studies used it as a baseline for developing a measure of retirement planning. However, this measure is limiting, as a mere act of thinking does not necessarily translate into the action of planning for retirement. Lusardi and Mitchell (2006) classified retirement planners as simple planners, serious planners and successfully planners depending on the action taken by individuals in planning for their retirement. On the other hand, Lusardi and Bucher-Koenen (2011) measured retirement planning by the fact that the individual and their partner had established how much they needed to save currently to attain a definite standard of living at retirement. Those who answered to the affirmative were classified as planners and

those with a no response were classified as non-planners.

Lusardi and Mitchell (2011a) used the actual amount of money saved by an individual for retirement rather than a measure of whether respondents have thought about their financial needs after retirement. Other studies (van Rooij et al., 2011; Fornero & Chiara, 2011; Brown & Graf, 2013) focused on individuals who had taken an intentional role in saving for their retirement as a measure of retirement planning. In such a case, an individual is then deemed a planner if they have a voluntary retirement savings account. This indicates the extra effort put by the individual in saving for retirement and ensuring the adequacy of the pension amounts.

Klapper and Panos (2011), in their study examining the association between financial literacy and retirement planning, measured retirement planning from a query on the fund that respondents will live on upon attaining retirement age. Nine answers were enlisted, allowing the authors to categorise as planners and non-planners. Individuals expected to live on the privately owned retirement fund, proceeds from real estate, income from additional pension, income from a business, income from an individual's savings and income from pension derived from the publicly owned retirement fund were classified as planners. While individuals who responded that they expected to continue working after retirement and getting sustenance from children, kinsfolks, acquaintances, churches and charitable organisations or answered that they did not know what source of income they would depend on during retirement were classified as non-planners.

In their Household Financial planning behaviour survey, the Certified Financial Planners Board of Standards and Consumer Federation of America (2013) classified households financial planning profiles into four main distinct categories that represent the different levels of financial planning. The groups are comprehensive planners, basic planners, limited planners and non-planners. In the first category, the comprehensive planners have a detailed financial plan beyond the household budget, which covers retirement savings and insurance. The study found that two-thirds of these comprehensive planners use Certified Financial planners or registered investment advisers to draft their financial plan. The second category is the basic

planners, they have a plan for more than one savings goal like retirement or a child's college education but have not put everything into one comprehensive financial plan. They, therefore, have gaps that are evident in their planning behaviours. The third category is the limited planners. They are a notch lower than the basic planners, and they either have a family budget that directs their spending or have a design to handle their individual savings goals but not both. Few have any other savings goals besides retirement. The fourth category is the non-planners who virtually have no financial plan in place; they have no specific savings goal and have difficulty managing their credit card debts.

This study utilized the certified financial planners' board of standards classification approach. However, this study used only use two main categories; basic planners and comprehensive planners. The classification used the type of pension scheme a member as advocated by Klapper and Panos (2011). Although Klapper and Panos (2011) categorized individuals as planners and non-planners, this study classified pension scheme members as basic planners and comprehensive planners as the study's scope are pension scheme members who are already enrolled in a savings plan.

2.3.2 Financial Awareness

The study used multiple response questions to capture the financial awareness of scheme members. The pension scheme members were asked whether they had heard of various products and institutions. The indicator identified those aware of at least half of the financial products and institutions listed. The score was calculated as the proportion of combined products and institutions known by the respondents to the total possible score of 19. Those aware of at least half of the products are presumed to be financially literate. A percentage score was then calculated for each respondent to represent the total score in financial awareness and the score utilised in the logistic regression.

2.3.3 Financial Knowledge

The pension scheme member's level of financial knowledge test focused on eight main areas, covering a variety of financial concepts. These questions vary in complexity, though none was overly difficult and required expert knowledge. The areas covered were: a simple arithmetic operation in a financial context, time value of money, interest rates, risk-return, inflation and diversification. A financial knowledge score was then developed by counting the number of correct responses given by each respondent in proportion to the total possible score of 7, then converted into a percentage score used in the logistic regression.

2.3.4 Attitude towards Saving

In this study, the focus was on attitudes towards savings, particularly toward planning for the future, short-term versus long-term planning. This is as per the pilot study conducted by the International Network of Financial Education (INFE). Likert (1932) developed the principle of assessing attitudes by probing people to answer to several statements about a subject by indicating the extent to which they agree with the statements, capturing both the rational and emotional constituents of attitudes. Therefore, five statements of attitude gauged respondents' attitudes towards money and saving for the future. The attitude questions asked individuals whether they agreed or disagreed with specific views to capture their outlook or inclinations. Those who strongly disagreed were assigned a score of 5, as the statement exhibits a negative attitude towards saving. In contrast, a score of 1 was given to those that strongly agree with these statements. A financial attitude score was then be created by adding the total score with the maximum possible score being twenty-five and a percentage score calculated to be used in the logistic regression model.

2.3.5 Financial Behaviour

Lastly, financial behaviour was captured through a range of questions on financial behavioural tendencies such as thinking before making a purchase, prompt payment of bills, budgeting, routinely saving and borrowing to make ends meet. The response will then be assigned a score of 5 for those who strongly agreed, as the statements

represent positive financial behaviour and a score of 1 for those who strongly disagree. A financial behaviour score was then developed by the total positive behaviour demonstrated; it took a maximum value of forty, this score was then converted into percentages to be used in the logistic equation.

2.4 **Empirical Literature Review**

Empirical studies are researches that derive their data through direct observation or experiment to answer a question or hypothesis (Sekaran & Bougie, 2016). The study has to put forward different perspectives and views of previous studies showing the connection between financial literacy and retirement planning. The empirical review was conducted to compare or argue the empirical findings and provide sufficient background information to understand and evaluate the present study results.

2.4.1 Financial Awareness and Retirement Planning

According to Dourish and Belloti (1992) awareness is the understanding of the activities of others that influences the outlook to one's action. An individual's belief that something exists, or present-day comprehension of a situation or subject matter based on information or experience. Therefore, financial awareness signifies the knowledge of financial products and financial institutions' existence. This does not necessarily mean that the person has the skill or comprehension necessary to make a sound financial judgment, but only that he/she is aware of the term or institution's existence. It is the prelude to curiosity and knowledge seeking of a phenomenon, situation or thing.

The primary essence of financial education programs is to create awareness of the different aspects of finance and improve consumers' understanding of the operations within the financial markets to make informed decisions. According to Bloom (1956), the objectives of any educational program are to develop different cognitive abilities; knowledge, understanding, application, analysis, synthesis and appraisal. The elementary level of the taxonomy relates to a situation where an individual can recall and remember the concept, fact or detail at hand without necessarily understanding the concept behind it. In this study, financial awareness relates to this

basic level of recall and remembrance, devoid of comprehension of financial products' operation and providers.

Financial institutions can achieve financial inclusivity by supplying financial services and products and ensuring that the demand side, the consumers are aware of what the market offers and turn the awareness into the usage of the financial services (OECD, 2018a). Financial institutions should be interested in knowing how well their product and services are known in the market and put into actions strategies that ensure penetration into the target market. The first stage of penetrating this market is raising the level of awareness and curiosity of the products or services through advertising and promotional activities.

One reason advanced as a hindrance to acquiring and utilisation of financial product and services is lack of awareness of the various types of financial services and whether they satisfy consumers' financial goals. Illiteracy on the functionality of financial products and the cost implications has also been proposed to be the leading cause of financial exclusion. The same issues may also prevent individuals' full use of existing products. Lack of awareness of critical measures outlined to safeguard consumers, such as deposit insurance and consumer protection laws, may also lower the demand for suitable products (Atkinson & Messy, 2012).

The OECD (2018b) reported remarkable levels of awareness of financial products in the 2018 survey of the financial literacy levels in Eurasia. The study covered seven countries; Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyz Republic and Tajikistan and reported that 78% of respondents across the participating Eurasia countries were cognizant of at least five types of products but also showed the active participation of the respondents in making financial choices, with an average of over two-thirds doing so.

According to the FinAccess study by FSD, the level of cognisance of financial terms in Kenya has generally increased from 2009 to 2013 (FSD, 2013). The 2013 FinAccess survey found that respondents were most familiar with the term budget (86%), insurance (81%), cheque (81%), while the least familiar terms are collateral, mortgage and inflation. The subsequent survey in 2016 reported a slight increase in

the level of awareness of four financial institutions. The most famous institution was the National Hospital Insurance Fund (NHIF) with 85.2 per cent being aware of it, followed by the National Social Security Fund (NSSF), reporting 84.4 per cent being aware of it, while the credit reference bureau was reporting a 25.4 per cent awareness level, implying that it was the least known institution. However, even with this high level of awareness of financial concepts like budgeting and savings, Kenyans still appear to have difficulty converting this awareness of financial services and providers into utilisation of financial products and services and participation in these financial institutions (CBK, KNBS & FSD Kenya, 2016). These levels of awareness in financial services and products in the market, the expectation is that the uptake and use of these services and institutions will be high for all services, but unfortunately, that is not the case for most of the services. The 2019 FinAccess survey reported that the financial service with the highest uptake level was mobile banking services, while pension, which indicates the level of planning for retirement, recorded a 12.2 per cent usage level. (CBK, KNBS & FSD Kenya, 2019)

Mbarire and Ali (2014) investigated the determinants of financial literacy among employees in the Kenya Ports Authority (KPA) and report low level of awareness in finance-related issues in Kenya. The study focused on four main determinants: demographics, socioeconomic and in sources of information and financial advice. They further advance that the source of information and financial advice was also significant to the level of financial literacy. Individuals who used informal means like friends and relatives as a source of information for their financial advice scored lower in the financial literacy quiz than their counterparts who utilised formal sources of information. Moreover, Thuku and Ireri (2013) posits that the access to retirement information contributed to the disparity in retirement preparation between employees in the public and private sector, as those in the private sector stood informed and more equipped for retirement than their counterparts from the public sector.

Doyo (2013) examined awareness of pension products and their uptake among informal sector workers, simultaneously evaluating the effect of financial literacy on pension preparedness. The study sampled 150 informal workers in the Jua Kali sector

in Nairobi and reported a high level of awareness of pension products, with a low uptake of the same products. Using a multiple regression model, the author also found a noteworthy affiliation between financial literacy and the retirement preparedness of workers within the informal sector. The study utilised the knowledge of financial instruments and investment vehicles used to secure ones retirement as measures of financial literacy, implying that the knowledge and uptake of these financial products influences retirement preparedness.

Empirical evidence by Agunga et al. (2017) in Kenya has shown that there have been improvements in the level of awareness of financial products and institutions. However, this is dependent on the product or institution at hand. The authors surveyed the influence of financial literacy on retirement preparedness of 384 employees drawn from 29 state-owned corporations in Kenya. They used the knowledge level of financial instruments and computational skills as the metrics for financial literacy. The researchers established that these employees had a slightly higher than average level of awareness of the financial instruments and similar results in purchasing stocks and shares. Nevertheless, this awareness level was not significant in explaining the employee's preparedness for retirement.

Mndzebele and Kwenda (2020) researched on the financial preparedness for retirement among academic staff of Institutions of higher learning in the kingdom of Eswatini. While examining the consequence of financial literacy on financial preparedness for retirement planning, the authors sampled 144 academic staff and focused on the knowledge of financial instruments, computational capabilities, and demographic characteristics. Having modified the earlier questions used by Agunga et al. (2017) to measure knowledge of financial instruments, they found that the knowledge of financial instruments was the only statistically significant variable in determining financial preparedness for retirement among academic staff of an institution of higher learning. This finding contradicts those of Agunga et al. (2017) and hence raise the question of whether being aware of the financial products and services on offer affects retirement planning.

2.4.2 Financial Knowledge and Retirement planning

Financial knowledge is essential to a person's financial behaviour and a key financial literacy component. It is predicted that a financially literate person will comprehend fundamental financial terms such as simple interest rate, compound interest rate, inflation rate, and risk (Huston, 2010). Understanding of financial concepts and facts is the main metrics of financial literacy and is mostly used interchangeably with financial literacy. Lusardi and Mitchell (2011b) argue that exploring how people process economic information and make informed decisions about household finances is difficult. The duo designed financial literacy measures from the US HRS, keeping in mind four key principles: Simplicity, relevance, brevity and capacity to differentiate.

Over the years, Lusardi and other authors have developed financial literacy measures using an indicator that reviewed the knowledge levels of individuals on financial concepts. The focus of the knowledge areas can be categorized into fundamental financial concepts and advanced or sophisticated financial knowledge; the latter referred to as advanced financial literacy. The fundamental knowledge is the most commonly used to the general populace, while the advanced measures primarily used in research targeting individuals who are more exposed to the context and operations of the financial markets. The four measures used to measure fundamental financial knowledge are numeracy, knowledge of compound interest, understanding of inflation, and risk diversification (Lusardi, 2015).

Alvarez and Gonzalez (2017) highlight three main areas of financial knowledge: conceptual knowledge, procedural knowledge, and applied knowledge. Conceptual knowledge encompasses understanding and recalling specific financial concepts, identifying Procedural knowledge is the knowledge of financial procedures and correctly performing financial calculations and arithmetic processes. While applied financial knowledge is the capability to use financial knowledge to solve financial problems, make proper judgments and make constructive financial decisions.

Dare et al. (2020) agreed that financial knowledge is an essential element for the effective participation of consumers in today's economic life. Lusardi, Michaud & Mitchell (2017) also concurred that financial knowledge is a key factor in wealth inequality. In a world of uncertainty and imperfect insurance, this knowledge will enable individuals to allocate their lifetime resources better. A well-versed individual in financial concepts and systems is presumed to have a better command of their financial future, use financial products and services more effectively and be less vulnerable to fraudulent retailers and schemes (Wachira & Kihui, 2012).

Additionally, Greenspan (2002) argues that financial literacy instils in one the financial understanding needed in coming up with monthly budgets, savings plans and long-term investment plans. On the other hand, Mwangi and Kihiu (2012) suggest that the proper application of this financial information allows households to satisfy their financial obligations by wise planning and resource allocation to obtain full utility. Among the younger generation, financial knowledge has also been reported to contribute to better savings behaviour and fewer financial problems (Sabri & MacDonald, 2010). Onyango (2014) observed that having a grasp of issues in retirement breeds a positive attitude toward retirement, thereby leading to better planning for the retirement phase. The study also found that individuals who reported understanding financial planning were more prepared to retire.

In their research on financial literacy and financial planning done in the US, Lusardi and Mitchell (2011a) found that people who score higher on the financial literacy questions are much more likely to plan for retirement, leaving them better positioned for old age. They note that individuals are progressively being compelled to take charge of securing their economic welfare in retirement in the United States of America and worldwide. They found that financial literacy is definitely associated with retirement planning involving private pension funds. Thus, besides boosting the accessibility of private retirement plans, attempts to enhance financial literacy will be crucial in escalating the usage of such pension schemes.

In their paper "*Financial literacy and retirement planning in the United States,"* Lusardi and Mitchell (2011a) explored how Americans were armed to make decisions in this new pension and financial landscape and, in particular, whether they were sufficiently knowledgeable about economics and finance to plan for their retirement. Their goal was to focus on financial literacy, which was measured by knowledge of fundamental financial concepts and the ability to do simple financial calculations. Lusardi and Mitchell (2011a) further posit that individually managed accounts will increasingly become the mainstay of retirement. For this reason, individuals will increasingly be called to 'roll their own' retirement saving and decumulation plans, and their retirement security will depend evermore on their own decisions and behaviour.

Klapper and Panos (2011) examined Russia, a nation characterized by a moderately old and aging population and found noteworthy regional disparity and evolving financial markets. The authors posit a paltry 36 per cent Russians understood compound interest and only half answered a simple question about inflation. Russia is characterized by widespread public pension provisions; the researchers reported that financial literacy is significantly and positively related to private pension funds retirement planning. Thus, they suggested that along with encouraging the availability of private retirement plans, efforts to improve financial literacy can be pivotal to expanding the use of such funds.

Nolan & Doorley (2019) used data from the Irish longitudinal study on Aging (TILDA) to analyse the role of financial literacy in preparation for retirement among the pre-retirement populace in Ireland. The study used a cross-sectional model that controlled for age, gender plus income level and found that financial literacy had a statistically significant association with higher income expected on retirement. The authors further argue that there was a possibility of reverse causality between financial literacy and higher wealth levels. They posit that higher levels of wealth could also lead to higher levels of financial literacy. Such individuals might be more pre-disposed to searching for knowledge on better investment ideas and hence report higher scores on financial concepts. A further finding by the authors is that financial

knowledge did not play a role in an individual taking up supplementary pension cover.

Ghadwan et al. (2022) examined the mediating role of culture on financial planning for retirement and focused on the effect of financial literacy on planning for retirement in Saudi Arabia. The study used the structural equation model to analyse primary data from 525 participant collected during the COVID-19 pandemic period. The researchers used simple calculation, the consequence of inflation, compound interest, money illusion and time value of money as the metrics for basic financial literacy. They established a positive and significant impact of basic financial literacy on financial planning for retirement.

Mata (2021) examined the effect of financial literacy on retirement planning of youths in Mexico, with gender as a moderator. Using generalised structural equation models (GSEM) with logistic regression and data from the 2018 National Survey on Financial Inclusion. The research used the Theory of planned behavior to determine how individuals' economic inclusivity, attitudes, awareness, behaviour, livelihood and personal characteristic influence retirement planning goals. The researcher posits that financially knowledgeable individuals have lesser intention to pursue passive strategies, while financial behaviour and inclusion influences actively planning.

According to Safari et al. (2021), computational skills and financial knowledge are important elements in determining individuals planning for retirement. The Democratic Republic of Congo (DRC) study focused on civil servants in Bukavu city, intending to examine the relationship between financial literacy and personal retirement planning. The authors used financial computational skills, financial knowledge, financial education and attitude towards financial products as constructs of financial literacy. The study found that computational skills and financial knowledge are significant in explaining the retirement planning of civil servants in DRC. It is imperative to underscore that numeracy and computational capability are essential in influencing financial behaviour, as an individual who can easily visualize and quantify the benefits of the behaviour will be inclined to the behaviour.

Skagerlund et al. (2018) advance that numeracy plays an important role in financial literacy and therefore needs to be incorporated as a measure of financial literacy. However, they underscore the drive behind this capability as the cognitive ability and emotional attitude towards numbers.

Borden et al. (2008) reported contrary results on the relationship between financial knowledge and different financial behaviour. Borden et al. (2008), when examining the connection between knowledge and financial behaviour among college students, reported that financial knowledge was neither a significant indicator of risky financial behaviour nor effective financial behaviour, implying that being financially knowledgeable may not necessarily translate into responsible financial behaviours. Likewise, Jones (2005) and Robb (2011) conducted two studies among college students on credit card use gave the same contradictory results. Jones (2005) basing financial knowledge on a 6-item measure, found no link between debt behaviour on credit card and financial knowledge, while Robb (2011) found a positive association between financial knowledge and the use of credit cards. Nonetheless, Dwiastanti (2017) focused on university students to establish the influence of financial knowledge on locus of control and financial management practices. The author reports that financial knowledge did not have any statistically significant effect on financial knowledge on locus of control as well as on financial management practices. This negative outcome is also replicated among the youth and adult populace. Idris et al. (2018), who interviewed youth workers aged 30 to 37 years in Malaysia, construed that financial knowledge had no impact on over-indebtedness. They found that the financially knowledgeable youth workers were as likely to be over-indebted as those who were not financially knowledgeable.

A Kenyan study conducted by Aluodi et al. (2017) employed both basic and complex knowledge of financial concepts as indicators of financial literacy, with data from 270 staff from the 51 listed insurance firms. The study examined the effect of financial literacy on retirement planning. The authors utilised both multiple regression and multinomial logistic regression to analyse the existing relationship. They reported that financial literacy as measured by knowledge levels of basic and complex financial concepts and facts did not influence workers' retirement plans

within the Insurance industry, a significant player in the pension industry. These finding, contrary to expectation, raises the need to confirm the findings jointly from both the informal and formal sector in Kenya.

2.4.3 Attitude towards Saving and Retirement Planning

Another element of financial literacy is attitudes and preferences towards saving and spending. When people have a rather negative attitude towards saving for their future, they are less likely to save for retirement. Similarly, if they prefer to prioritize short-term satisfaction and longer-term security, they are unlikely to make emergency savings and longer-term financial plans like saving for retirement (Atkinson & Messy, 2012). Financial attitude has been posited to be one of the critical components of financial literacy by Rai et al. (2019), in their study to determine the association between financial knowledge, financial attitude and financial behaviour as financial literacy found that financial attitude and behaviour had the strongest association to financial literacy. Consequently, Nolan and Doorley (2019) suggest that the relationship between financial literacy and financial well-being could be due to factors like attitude and preferences that are not easily observed in an individual.

Kwena, head corporate communications in RBA, in her address on the attitude and behaviour associated with long-term saving, highlights several challenging attitudes and perceptions towards retirement. Many believe retirement involves saving for assets like a house, farm, domestic animals, and others but not necessarily a pension scheme. Long-term fear and scepticism by individuals that pension funds may go down with members' savings or that they may not access their savings. The impression that the pension agenda should be the employer's responsibility and not the employees. Some even perceive retirement as a faraway thing for one to worry about now. In Africa, the traditional social fabric is that children take care of parents and the elderly and lastly stigma accompanying retirement as many dreads it and consider retirement, not a topic for the young but for the elderly (Kwena, nd).

Collard and Breuer (2009) used 14 focus groups in the UK to record the general attitudes towards retirement savings in their research entitled: "Attitudes toward

investment selection and risk within the private accounts scheme: the result of a longitudinal survey." The researchers stated that preparing for retirement was generally considered a medium or high personal priority by the respondents who already had a private pension. They clarified that the main reason provided by the participants for this goal was the need to provide financial security and a decent living condition in old age. On the other hand, participants no private pension or property, generally regarded saving for retirement as a low personal priority, at least at this time. It did not necessarily mean that they found it unimportant to save for retirement. Nonetheless, for some respondents, the focus group analysis revealed their frustration that there was no allowance for retirement questions that had primarily been hidden or ignored until then.

Consequently, in the face of conflicting demands on their earnings, the affordability of pension contributions was a recurring issue among the private pension members who considered saving for retirement a low priority, especially low earners and those under 50 years of age. The report argues that the current priorities continued to be determined by spending on children and the home of respondents with families. Although younger participants (and especially those without children) generally prioritized living today over saving for tomorrow. Having a foot on the property ladder was also a problem for some of the younger members, which replaced some retirement savings plans in tandem with current spending requirements (Collard & Breuer, 2009).

Ekore and Omisore (2013) analysed how the attitude toward saving, cooperative loans, and other factors predictors psychological well-being among university employees in Nigeria. They found the attitude of employees towards savings and cooperative loans to be significant predictors of psychological well-being. It meant that workers' attitude towards financial security improved their mental well-being. Therefore, workplace sensitization needs to be increased to build a positive attitude towards savings. The authors suggest that this would enable them to be more diligent and dedicated to saving in the bank or with a cooperative union that can guarantee financial security, healthy living and better mental well-being during and after service.

Dwiastanti (2017), while investigating the effect of financial knowledge and financial attitude on locus of control and financial management practices among business students, reports a significant influence of financial attitude on financial management behaviour. Likewise, Amanah et al. (2016) posit that financial attitude is a prerequisite to an individual's financial actions as an individual's thoughts, opinions, and judgments concerning his financial situation will direct their actions. For instance, in savings for the long-term, if one's thoughts and opinion are that saving is not a priority now, it follows that he will not save. If this reasoning and feeling continue, it develops into a habit and after that behaviour that will be hard to change.

Onyango (2014) studied the attitudes of informal sector workers towards saving for retirement pensions in Kenya. Six focus group discussions were conducted among informal workers operating in the Jua Kali market. The researcher documents that it is agreeable that saving was important and those individuals need to make future financial arrangements both in the immediate as well as the long standing. Notwithstanding, the study found negative stereotypes labelled on savers based on the perception of the type of lifestyle they led, where many were viewed as 'misers' who lived a life devoid of fun. A majority of the informal workers cited the lack of funds to fund retirement accounts and the urgency of the immediate daily financial needs as the major impediments of giving thought to the future beyond a few years.

Apart from short-termism, the 2008 Consumer Attitude to Savings (CAS) based in 25 countries in Europe, Asia Pacific and North America, identified several other attitudes individuals hold towards savings for retirement. The feeling of being financially exposed and vulnerable as only a quarter had enough savings put aside for an emergency, there was also low confidence level in handling financial matters as many felt they did not have sufficient understanding to make decisions coupled with widespread anxiety about the future. The survey also reported a high level of risk aversion in personal saving. There was a perception of a likelihood of funds being lost in financial markets, limiting the amount saved for retirement. There was more preference for easy access to their savings, making saving for retirement unattractive

to many. (Aviva, 2008). Kimiyagahlam et al. (2019) identify savings attitude as an influential behavioural factor that influence retirement planning behaviour.

2.4.4 Financial Behaviour and Retirement planning

Financial behaviour is one essential element and arguably the most crucial element in financial literacy. Atkinson and Messy (2012) advance that the positive outcome of being financially literate manifests in behaviours such as forethought of expenditure and establishing a financial safety net. Baker and Nofsinger (2010) defined financial behaviour as how human beings behave or act in a financial setting. Mudzingiri et al. (2018) posit that financial behaviour plays an essential part in influencing the welfare of individuals at household levels and at a national level. Responsible financial behaviour is beneficial to both an individual and society; it will improve the personal financial well-being of the individual and contribute to the community by reducing the instances of problematic debt and other financial problems that may take a toll on the mental health of individuals further leading to lower productivity at work (Gathergood, 2012, van Raaij, 2016).

Akben-Selcuk (2015) identified some attributes of financial behaviour among students to include timely payment of bills, creating personal budgets, and saving for the future. Likewise, van Raaij (2016) identifies ten responsible and sustainable financial behaviour. These are spending based on income, avoiding impulsive purchases by making deliberate decisions, carefully choosing financial products, seeking help from competitive financial advisers or planners and keeping financial buffer for unforeseen expenditures. Additionally, having enough discretionary earnings for day-to-day expenses; paying bills in time; taking insurance for income decline; taking risks that one can easily manage with credits and investments, and finally taking into account the possible future outcomes.

Russell and Stramoski (2011) conducted a descriptive study on the financial management practices and attitudes of 388 registered dental hygienists in the USA. The researchers found that a greater majority of dental hygienists reported being financially independent and satisfied with their financial position. The hygienists exuded confidence in their capability to afford a secure financial future. Those who

practiced sound financial behaviour like sticking to their monthly budgets, writing their wills, were paying off their debt and saving regularly, were reported to be more financially secure than those who did not. The study found that financial attitudes and practices were significant in explaining the dental hygienist level of satisfaction with their financial circumstances. Additionally, the savings done by the hygienist are to be the main source of income during retirement, as opposed to Social Security benefits.

Hastings and Mitchell (2011) in their quest to understand why individuals fail to optimize their financial decision used experimental evidence from Chile in Southern American. They analysed two main reasons: one is that individuals are financially illiterate and secondly, that individuals are impatient or biased towards the present, implying that they choose gratification now over future, higher payoffs. The study measured impatience, a game intended to provoke inclinations towards current enjoyment as opposed to impending gain and to be able to follow through with it. The researchers found impatience to be a strong predictor of retirement saving while financial literacy to be associated with accumulated retirement saving though it appeared to be a weaker predictor in framing investment decision. They therefore posit that policymakers interested in enhancing retirement well-being should address behavioural shortcomings that may impede long-term financial planning and decision-making.

One behavioural tendency that inhibits saving for the future is a lack of self-control. Previous research has linked self-control to desirable financial behaviour. For instance, Sahi (2017) explored different psychological biases by investors to see whether they are related to financial satisfaction. The study results reported a positive and significant relationship between self- control bias and financial satisfaction, implying that investors who tended to forgo their present consumption for the sake of saving for the future and exercised some degree of self-control were more disposed towards being financially satisfied.

Sundindra and Naidu (2018) sought to find out whether the common man exhibited fiscal prudence and had secured their future with sustainable livelihood. Using a structural equation modeling and a study sample of 378 women employees in the Information Technology sector in Bengaluru, they studied the influence of financial behaviour on decision-making. The study emphasised four financial behaviour namely saving, spending, borrowing and investment behaviours and found that they all had a significantly positive outcome on financial decision-making.

Murendo and Mutsonziwa (2016) agree to the fact that responsible financial behaviour affects savings behaviour. The authors examined the relationship between financial literacy and savings behaviour in Zimbabwe. The 2014 FinScope survey of 4000 respondents reported a positive and significant relationship between financial literacy and savings behaviour. The study utilised individual's perception of finances and their financial matters as aspects of financial literacy. The metrics used focused on responsible behavioural tendencies like being in control of their finances and money and keeping track of one's monthly income and expenditure while being able to change their expenses based on the current situational changes. Perceptions on financial matters constituted an individual's outlook towards the future by them planning through financial plans and budgets, ensuring that one adheres to these plans and budgets. These two measures are used in this current study as measures of financial behaviour.

Adam et al. (2017) scrutinized whether financial literacy, financial behaviour, family backing, dependent relative, and retirement planning affect the financial welfare of retirees in Ghana. The study surveyed 400 participants and used a partial least square to analyse their data. The researcher focused on planning expenditure, comparing alternative interest rates of different savings products before saving, and seeking advice before making financial decisions as measures of financial behaviour. Despite separating financial literacy and financial behaviour as two distinct variables, the study found that both variables are important and positively influence the financial well-being of retirees.

Schützeichel (2019) used the 2016 household survey from FinAccess to examine the financial literacy and retirement savings in Kenya. The study used probit model to determine the effect of financial literacy on regular savings and retirement saving. The study also developed a financial literacy index that incorporated a measure of knowledge of financial terms and concepts, individuals' financial attitude and their saving tendencies. The financial discipline of savings regularly is incorporated in this current study as one aspect of financial behaviour. The author found a positive and statistically significant causal link between financial literacy with the financial discipline of regularly savings and savings for retirement. Thereby implying that the individuals with higher numerical scores in financial knowledge were more likely to develop a habit of saving regularly and subsequently save for retirement.

Kimiyagahlam et al. (2019) explored the behavioural factors influencing retirement planning behaviour. Using 900 grown-ups in Kelang Valley, Malaysia and a structural equation model, the research applied the Theory of Planned Behaviour and Time perspective theory in their analysis. The authors found that financial literacy, predisposition to plan, and future orientation was directly associated with retirement planning behaviour. However, they found no direct association between family education, materialism and retirement planning.

2.4.5 Demographic Factors and Retirement Planning

Demographic variables have a significant effect on the behavioural, psychological, and financial aspects of an individual. Demographics such as age, gender, and income interact with retirement planning and influential factors (Afthanorhan et al., 2020). According to Chowdhury et al. (2022), demographics play a moderating role in savings and retirement planning. Di Vito and Pospiech (2012) tested whether age, academic level, income, number of dependents, expected retirement age and years remaining to retirement affected Canadians' financial preparedness for retirement. They found that age and gender had no statistically significant relationship with financial preparedness for retirement scale (FPRS) compared to education, income and number of dependents. The findings reported significant differences in the extent of readiness for retirement between men and women in the same salary scale. The

years remaining to retirement and education were the most significant contributor to retirement preparedness.

Herawatia et al. (2020) identified gender differences in financial literacy among Small and Medium Enterprises agents in India. Owners. Fapohunda (2015) also fronts gender as a significant variable affecting retirement plans. The gender differences has been attributed to economic matters and the diverse socialization in matters finance during their up-bring. It has also been presumed that women were more cautious in taking risks than men, were less confident when making financial decisions, and were less knowledgeable about finance. Hsu (2011) argues that men are more proactive in acquiring financial knowledge, while women intensify their search for financial knowledge when it necessary, like in the event of the death of a spouse. In Kenya, Kamaiyo (2021) reports low levels of household savings among women. Njuguna Mutanu, Otsola and Thuku (2011) also a higher score for men than women in their analysis of pension literacy levels in Kenya, confirming earlier studies in other countries.

Interestingly, a study by Bucher-Koenen and Lusardi (2011) found no gender disparity in financial knowledge in East Germany. Iqbal and Ahmad (2014) examined university students' gender disparities in financial literacy. They found that female students had more extraordinary ability in saving, keeping financial records, time value of money, proper utilization of student loans and managing day-to-day expenses than male students. While male students had more excellent skills in estimating their future financial needs, setting financial goals, choosing investment options and general knowledge of personal finance than female students. Their findings concluded that male students were generally more knowledgeable about finance than female students. Although there are notable differences in gender financial behaviour, Mansor et al. (2015) posits that these differences are not significant with retirement planning.

Another demographic factor correlated to financial literacy is the academic level. Bucher-Koenen and Lusardi (2011) conducted a study in Germany to determine the relationship between financial literacy with retirement planning. They reported that

individuals with higher academic qualifications are significantly more likely to have given three precise responses than individuals with lower academic levels. Njuguna et al. (2011) also observed a significant difference in pension finance literacy levels between individuals with basic education and those with higher education in Kenya impacted retirement plans of individuals. Empirical evidence has reported low levels of financial literacy in the United States among people with lower education as (Lusardi & Mitchell, 2014).

Lusardi, Mitchell, and Curto (2012) compared financial knowledge levels among college and high school students. They report that college students are more knowledgeable than high school students. There is contradictory evidence by Lusardi and Mitchell (2014) that academic level is not sufficient in making informed financial decisions as the well-educated are also not financially savvy. The two reported low levels of financial literacy among the less educated and reported a correlation between financial literacy and education levels, Lusardi (2019) further advocates for the incorporation of financial education into the educational program in schools as this, coupled with the various academic expertise being impacted to individuals will spur more financially savvy individuals.

Age is another significant demography that influences planning for retirement. According to Arnone (2004), the elderly are well-versed in pension finance matters. They mainly participate in retirement planning programs employers offer as they approach their retirement phase to assist them to identify their fundamental retirement decisions and prepare for retirement. On the other hand, Bucher-Konen and Lusardi (2011) found a hump-shaped pattern of financial literacy overage; the 36-50 years age group performed best in almost all the questions asked, followed by those younger than 35years, while individuals above 65 years knew the least. This decline in financial literacy could be explained by the findings of Atkinson and Messy (2012), who suggested two explanations. The first reason is the likely cohort effect that impacts older consumers, whereby the elderly have a different experience in the financial market and may find it challenging to keep abreast with the dynamism in the financial marketplace, as well as the complexities of recently

developed technologies. The second reason is cognitive deterioration, which may reduce how the elderly preserve and apply financial knowledge.

Xiao et al. (2014) observed age differences in the financial capability of American adults using data from the 2012 National financial capability study in the US. The results confirmed the expectations that the elderly would demonstrate higher knowledge levels objectively and subjectively, as young consumers reported much lower scores than the older ones on objective financial literacy, subjective financial literacy, perceived financial competency and the financial competence index. Mansor et al. (2015), posit that individuals' age group influences the process of preparing a retirement plan. However, in Kenya, Onduko et al. (2015) did not find a significant influence of age on retirement planning, giving contradictory evidence among pension scheme members.

Afthanorhan et al. (2020) examined the moderating effect demographic on the relationship between financial literacy, saving attitudes, social influence, and goal clarity on the retirement planning construct. The study utilised a structural equation model on data from 323 workers in the private companies in Malaysia. The study focused on workers below the age of 40 and found that those in the range of 20–30 years were more financialy literate, with better saving attitudes and goal clarity than workers in the age range of 31–40. The authors reported that age, gender, marital status, income and education all had a moderating effect on this relationship.

Chowdhury et al. (2022) examined the moderating effect of gender, income and age on the Islamic Health Protection Retirement Plan Model (i-HPRP) in Malaysia. Using data from 498 respondents across different states in Malaysia, the research adopted a Structural Equation Modelling (SEM) to measure the moderating effect of the demographic variables. The authors found that demographic variables play a role as a moderator in the relationship between saving and the retirement plan. Their results revealed that gender, age, and income level were important in determining individual saving behavior and preparation for retirement. They report that individual's age had no moderating effect on the relationship between spending behaviour and perceived Islamic retirement plan, but enhanced the relationship

between saving behaviour and perceived Islamic retirement plan. While Agabalinda and Isoh (2020) also reported that age had an insignificant moderating effect on the relationship between financial literacy and retirement preparedness among small and medium sized workers in Uganda.

Income is another Lee et al., 2018). demographic characteristic that significantly affect retirement preparation (Empirical evidence by Shariff and Isah (2019) posits that income significantly influences savings for retirement. The findings suggest that high income households are prone to save more relative to low income household. The results are relevant as these days people assign their salary to daily expenditure and repayment of personal loans and only save when they have the opportunity. Njuguna and Otsola (2011) sought to determine pension literacy predictors among occupational scheme members. They found income level as one of the predictors of pension literacy. Additionally, Onduko et al. (2015) found income as the strongest predictor of retirement planning among all the other demographic factors.

Two studies (Chowdhury et al., 2022, Afthanorhan et al., 2020) reviewed the moderating effect of income on the relationship between financial literacy among other variables and retirement planning. Chowdhury et al. (2022) found that that income partially moderated the association between saving and retirement plan, while it had a full moderating effect on the influence of spending on retirement plan. Likewise, Afthanorhan et al. (2020) found the same improving effect of income on the relationship between financial literacy and retirement planning. Generally implying that income is both an explanatory variable and moderating variable on retirement planning.

Savings theories (Keynesian absolute Income hypothesis, Fredman's permanent income hypothesis)(Keynes, 1930)., have linked individual's level of income to their savings pattern. It is presumed that one's income level affects the amount of savings over time with the presumption that a higher level of income results to more savings (Aidoo-Mensah, 2018). The life-cycle hypothesis also assumes that individuals' savings and consumption plan their consumption taking into account their age and

thereby, smoothen their income in such a way that current income will be used to fund future consumption (Modigliani & Brumberg, 1954).

There is a controversy as to whether demographic variables affect the retirement preparedness of individuals as two studies by Yuh et al. (1998) and Yao et al. (2003) observed that the likelihood that a household is adequately prepared for retirement is more dependent on financial variables as the driving forces and not as much the demographic variables. Mokhtar et al. (2015) also revealed the inconsequential influence of demographics on the financial well-being of government employees' financial well-being, which incorporated the inclination towards retirement savings. Likewise, in Kenya, Agunga et al. (2017) found no moderating effect of the demography variables on the connection between financial literacy and retirement preparedness. The mixed outcomes from the preceding studies form the foundation for the choice of age and income as moderating variables in this study.

2.5 Critique of the Existing Literature

Financial literacy has been used interchangeably with financial knowledge in several studies. For instance, surveys done by Lusardi and Mitchell in the US in 2004, 2006 and 2011, all focused on numeracy and understanding of financial concepts like interest rates, inflation, risk-return trade-off and diversification. These metrics have acted as the basis for further research done in the area of financial literacy in other countries.

Although financial knowledge and computational skills in a financial set-up had earlier been predominately used as the measure of financial literacy, it has been suggested that measuring financial literacy should be more holistic as it encompasses other aspects like skills, attitude and behaviours that emanate from knowledge. In particular, the OECD and INFE developed the Financial Literacy Core Questionnaire: a survey instrument that can capture critical information about financial behaviours, knowledge, and attitudes in a wide range of countries with different income levels and allows for international comparisons (OECD, 2013b).

Previous studies conducted in Kenya (Gitari, 2012, Githui & Ngare, 2014, Aluodi et al., 2017, Agunga et al., 2017, Maobe, 2017, Oluoch, 2021) based their measure of financial literacy on Lusardi's work. Githui and Ngare (2014) utilised a 5-point Likert scale on understanding key financial concepts, namely, time value of money, risk, diversification, and knowledge of the stock market operations to measure financial literacy. In addition, Aluodi et al. (2017) measured financial literacy using two sets of literacy questions; the first set focused on basic levels of financial knowledge, including understanding inflation, interest rates, interest compounding and the time value of money. The second set focused on more complex levels of financial literacy; relating to complex financial instruments, risk diversification and the trade-off between risk and return. On the other hand, Agunga et al. (2017) utilised individuals' knowledge of financial instruments and the computational capability of their retirement benefits to measure financial literacy. At the same time, Maobe (2017) focused only on a simple calculation in a financial set-up, understanding the compounding of interest rate and time value of money. These studies failed to capture the wider view of financial literacy, which incorporates an individual's awareness, attitude, and behaviour as financial literacy components advocated by the international network of financial education.

Several studies (Lang'at & Abudullah, 2019; Murendo & Mutsonziwa, 2016); Safari et al., (2021); Schützeichel, 2019, Kamaiyo, 2021) endeavored to include comprehensive measures of financial literacy. Lan'gat and Abudullah (2019) added two facets of financial literacy, namely behaviour and attitude, into knowledge to measure financial literacy. Nevertheless, the research focused on financial literacy and personal financial management and did not focus to retirement planning as the current study. Murendo and Mutsonziwa (2016) included perception on finances, financial matters, savings and awareness of financial products and institutions as measures of financial literacy. However, the study reported the linkage between financial literacy with savings decisions in Zimbabwe, and not retirement savings specifically. Therefore, the findings of this study may not be applicable in Kenya and retirement planning as well.

Schützeichel (2019) used awareness, knowledge of financial concepts and households perception towards their finances capturing attitude in constructing a financial literacy index in their quest to study financial literacy and savings for retirement in Kenya. The study used the 2016 FinAccces survey data, which might be outdated as subsequent household surveys were conducted in 2019 and 2021. Subsequently, a study by Kamaiyo (2021), used the 2019 FinAcess data to analyse the effect of financial literacy on household savings in Kenya. The study focused on only two measures of financial literacy; financial knowledge and financial behaviour. Furthermore, this later study did not focus the linkage of financial literacy and retirement planning as is the focus of this study.

Although several studies (Lusardi & Mitchell, 2011a; van Rooij et al., 2011; Githui & Ngare, 2014, Maobe; 2017, Dhlembu & Kekana, 2018) have reported a significant relationship between financial literacy and retirement planning, other studies have contradicted these findings. For instance, Crossan et al. (2011) found no significant association between financial literacy and retirement planning. Sabri et al. (2015), also support this finding, noting that there is an ancillary relationship between financial literacy and confidence of retirement planners. Likewise, Adam et al. (2017) focusing on the financial well-being of retirees in Ghana, found that financial literacy does not directly influence retirement planning. In Kenya, Aluodi et al. (2017) likewise did not find a significant relationship between the level of financial literacy and retirement planning. Therefore, there is an increasing lack of consensus on whether financial literacy influences retirement planning that may need to be addressed.

Njuguna et al. (2011) conducted a nationwide survey to assess finance and pension literacy levels, determine the financial literacy needs, and establish the challenges to participation in finance and pension education. The authors also sought to recommend the strategies be put in place to enhance financial and pension literacy amongst members of pension schemes in Kenya. This study did not establish the link between financial literacy levels and retirement planning but only focused on assessing financial and pension literacy levels. The survey sample was drawn from the members of the 1308 pension schemes across Kenya in the RBA register on 31

May 2010. Furthermore, the study only focused on members in occupational retirement schemes and excluded those with the NSSF, the Civil Service Pension Scheme and Individual Retirement Pensions.

Another study conducted in Kenya by Gitari in 2012 explored the relationship between financial literacy and retirement planning in Kenya. However, the focus of the study were members of registered occupational schemes. Githui and Ngare (2014) attempted to fill this gap and examined the relationship between financial literacy and retirement planning in the informal sector in Kenya since these two studies primarily focused on members of occupational retirement schemes, which cover employees from the formal sector and hence left out those in the informal sector. However, the scope of the study was limited as it only focused on individuals carrying out business activities either as individuals or those in the small and medium enterprises (SME) in Nairobi, specifically in Langata, Ongata Rongai and Kibera.

Agunga et al. (2017) focused on the relationship between financial literacy and retirement planning of members in the occupational schemes within the formal sector, while Doyo (2013) and Maobe (2017) considered the informal sector adding to the growing knowledge on financial literacy and retirement preparedness. Despite the contribution of these studies to the body of knowledge on retirement planning in Kenya, these findings cannot be generalized to all pension scheme members as the targeted different segments of the pension schemes had varying characteristics. This is because most of the pension scheme members emanate from the compulsory scheme; NSSF, which is characterized by low contribution and low replacement rate compared to occupational schemes with a much higher replacement rate.

2.6 Research Gap

From the preceding literature review, it is clear that financial literacy and its influence on retirement planning in Kenya have not been comprehensively researched. Just as is the case with Lusardi and Mitchell (2011a) mentioned earlier, studies conducted in Kenya used only one element of financial literacy; that is financial knowledge as a measure of financial literacy. This is limiting as financial literacy entails financial knowledge and financial awareness, financial attitude, and

financial behaviour. To bridge this methodological gap, the current study incorporated the other metrics in the measurement of financial literacy, giving a holistic approach to understanding financial literacy.

Furthermore, the review of relevant literature reveals that previous studies examining the relationship between financial literacy and retirement planning in Kenya have focused on only certain segments of retirement planners, either the informal or occupational schemes in the formal sector. No previous study incorporated the broader pension landscape in Kenya that save with the NSSF, hence identifying a population gap. The current study, therefore, adds to the knowledge gap by taking into consideration this population that has not been the focus of previous studies and hence gives a more expansive view of all pension scheme members in Kenya.

In addition, the reviewed literature shows lack of consensus on the general direction of association between financial literacy and retirement planning. The contradictory evidence gap earlier identified from studies (Crossan *et al.*, 2011, Sabri *et al.* 2015, and Aluodi *et al*., 2017) that gave an insignificant relationship between financial literacy and retirement planning also motivated this study to establish the direction of the context of pension scheme members in Kenya.

2.7 Summary

This chapter has provided an analysis of the theoretical groundwork for the research study. The study is anchored on the life-cycle theory, which assumes that individuals save during their productive years and utilize them during their retirement. Further to this assumption, there are some deviations from the rational assumption and hence the incorporation of behavioural life-cycle theory that advances that individuals do not necessarily behave rationally. Other theories of interest that underpin the independent variables discussed in the chapter include the theory of planned behaviour and family resource management theory. The chapter also presented a conceptual framework that demonstrated the influence of financial literacy and retirement planning with the conceptualization of the variables. A critical review of empirical research relating to financial literacy and retirement planning and critiqued the same to obtain research gaps that have been discussed and presented. The

empirical review identified three main study gaps, the contradictory evidence gap, a methodological gap and population gap.

Figure 2.5 presents the summary of the theories and the respective variables derived from them.

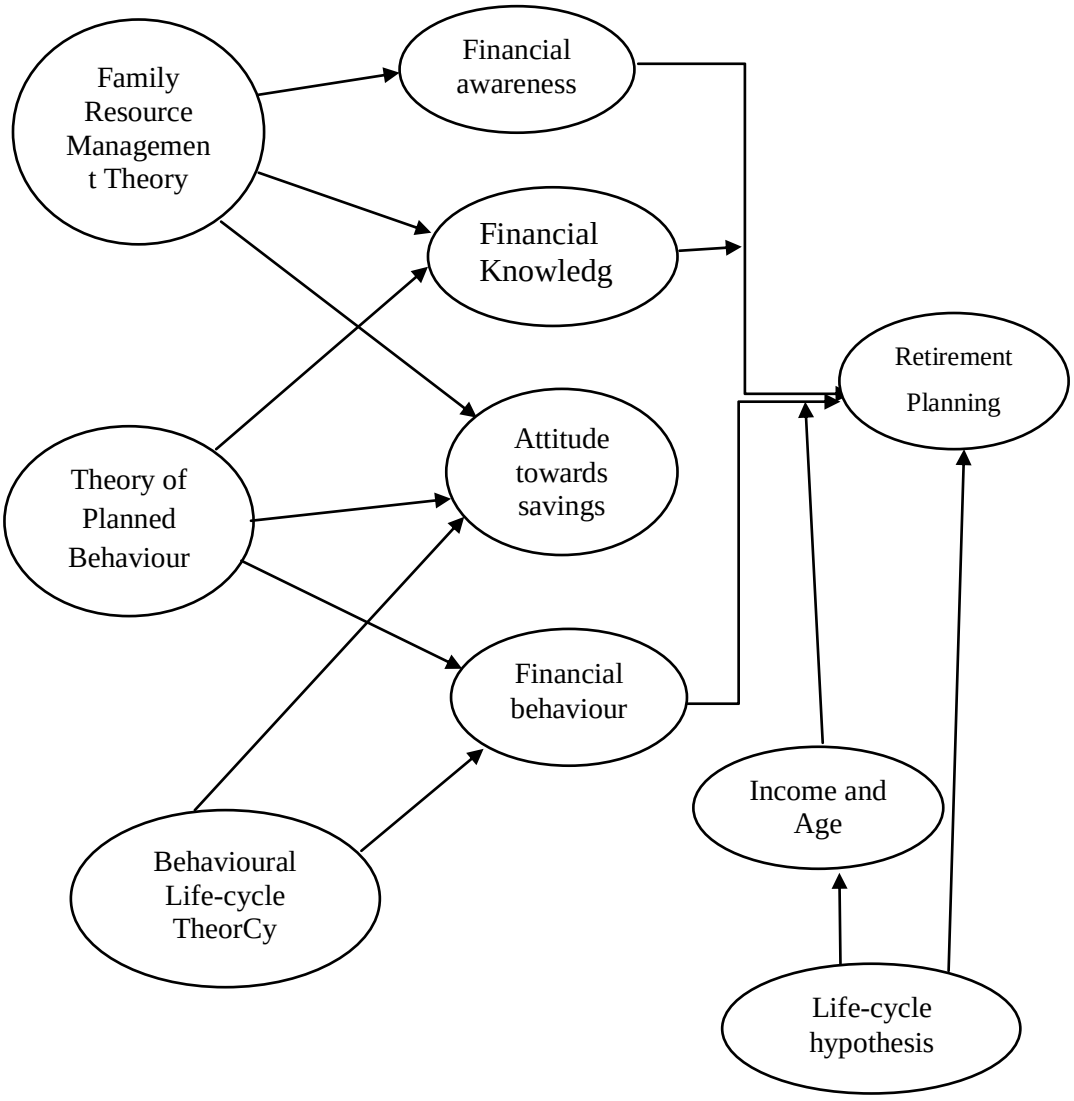

Figure 2.5: Theoretical framework

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was used for the study. It includes research design, study population, sample selection, sampling techniques, data collection techniques and data analysis and presentation.

3.2 Research Philosophy

Mauthner (2020) advances that a research philosophy offers the theories about the subject under research (ontology) and how this subject's knowledge is developed and justified (epistemology). Therefore, research philosophy deals with the nature, foundation, and advancement of knowledge on which underlying assumptions of any study are based (Bajpai, 2011). Several theoretical philosophies are used in research, such as positivist (and post-positivist), constructivist, interpretivist, critical, and pragmatism. The research philosophy is essential in a study as it gives direction on the type of research design to be used and research strategy in conducting the research (Saunders et al., 2019).

The study used the Positivism research philosophy, an approach that uses factual knowledge gained through observations and measurements. The researcher objectively deducts findings from the data collected in the social or business phenomena, with little regard to the individual's subjective state. The researchers' role was limited to data collection and interpretation through an objective approach and reliance on the quantifiable findings, as according to the principles of positivism, the results depend on quantifiable observations that lead to statistical analysis. According to Crowther and Lancaster (2008), positivist studies usually adopt a deductive approach, which entails developing a hypothesis from an existing theory and then designing a research strategy to test the hypothesis. The study then used quantitative methods for empirical testing of the formulated hypothesis.

3.3 Research Design

A research design guides the structure and strategy of investigation conceived to obtain answers to research questions. It provides a framework that guides the determination of the data to be collected and method of analysis. Cooper and Schindler (2014) posit that a research design expresses two things; first, the structure of the research problem, which incorporates the framework, organisation, or configuration of the relationships among variables of a study and secondly, the plan of investigation used to obtain empirical evidence on those relationships.

The study utilised a descriptive research design and causal research design at the same time. The descriptive research design helps to describe the characteristics of variables; analyse their frequency, distribution, features and observable phenomena of the study population while employing questionnaires and interviews as the principal means of data collection. The main benefits of this research method are using various forms of data and incorporating human experiences. Descriptive research design helped in descriptive analysis of the data collected giving the characteristic of the pension scheme members and a cross-tabulation showing the association of the demographics with the different financial literacy variables.

According to Cooper and Schindler (2014) a causal research design seeks to find the influence that a variable on another and explains why certain outcomes are obtained. The logic of hypothesis testing underpins the concept of causality which leads to inductive conclusions. A causal research design was suitable for this study since it enabled the study to establish a causal relationship between the variables and answer the 'how' question.

3.4 Study Population

Sekaran and Bougie (2016) define the study population as the entire group of people, events, or things a researcher wants to make inferences. The population of this study was all the members of the different contributory pension schemes registered in Kenya, namely occupational retirement schemes, NSSF, public service pension scheme and individual retirement schemes in Kenya. According to the RBA (2019),

1172 occupational pension schemes were registered at the end of December 2018 with a total membership coverage of 540,487. The NSSF has the largest membership of 2,629,689 who also incorporated the occupational scheme members, while the individual pension schemes were 45 with a total membership of 199,024. This gave a total of 2,828,713 members who were the study population.

Table 3.1: Study population

Retirement Scheme	Total number of Members
NSSF excluding occupational scheme members	2,089,202
Occupational Retirement schemes	540,487
Individual Retirement schemes	199,024
Total	**2,828,713**

Source RBA, 2019.

3.5 Sample and Sampling Techniques

3.5.1 Sampling Frame

The sampling frame for this study is the source material or device from which a sample was drawn (Cooper & Schindler 2014). The sample was the three strata namely the NSSF, Occupational pension scheme and individual pension scheme. The fact that the unit of analysis was pension scheme members form all contributory pension scheme. Each strata was approached differently so as to ensure proper representation. For the NSSF stratum, the list of NSSF offices was used as the sample frame. For the occupational pension scheme the list of pension schemes from the regulator (RBA) of the retirement benefits sector in Kenya was used as the sample frame. While for the individual pension scheme the Mbao pension scheme was targeted. The sample frame excluded the civil servants pension scheme because it is a non-contributory pension scheme.

3.5.2 Sample Size and Sampling Techniques

According to Curwin et al. (2013), the choice of the sampling method to be used and the sample size is determined by the accuracy of the data required, variability of the population of study and the details needed in analysis of the data. A Stratified random sampling technique was used in this study as the population of concern already had different categories of pension schemes that could be identified as stratum before sampling began. The sample was selected from within each of these strata. Three primary strata were identified as members of the NSSF schemes, occupational schemes and individual pension schemes. The first two strata serve employees in the formal sector and the third strata serve employees in the informal sector. This technique ensured that each stratum was well represented in the sample and was more accurate in reflecting the characteristics of the population.

Since the population variance for the dependent variable is unknown and also because a large portion of the predictor and criterion variables are measured as categorical and not continuous variables, the sample size estimate follows the recommendations by Bartlett et al. (2001) and Sekaran and Bougie (2016) in the form shown below:

$$no = \frac{t^2 p(1-p)}{e^2}$$

Where;

n_0 = defined sample size, t = t- value at 0.05, t = 2.58, e = margin error (taken to be 0.05)

p = proportion of those who have planned for retirement.

q = 1 – p = proportion of those who have not planned for retirement.

According to the KNBS (2019) economic survey report, the proportion of Kenyans who have pension schemes is 20% as at 2018. This percentage was utilised as the p; therefore q is 80%.

$$no = \frac{2.58^2(0.2)(0.8)}{0.05^2} = 410$$

The sample size was then chosen proportionately, according to the total membership of the different retirement benefit schemes.

Table 3.2: Sample

Retirement Scheme	Total number of Members	Number of Sampled members
NSSF	2,089,202	303
Occupational retirement schemes	540,487	78
Individual retirement schemes	199,024	29
Total	2,828,713	410

Source RBA, 2019.

According to Mishra and Alok (2017), stratified random sampling aims to achieve desired representation from various subgroups in the population as sample are chosen from each of the three stratum. The three-stratum included; NSSF members, Occupational scheme members and individual scheme members. NSSF Members were randomly sampled at three NSSF offices around the country as they came to be served: one office in Nairobi, one in Kisumu, and one in Thika to incorporate both rural and urban areas. Two occupational schemes were purposively selected as the total number of occupational scheme members required was 78, deemed small. Each occupational pension scheme was targeted to have 39 respondents. The respondents were then randomly selected from the two organisations to complete the questionnaire. The individual retirement scheme of interest was the Mbao pension plan, targeting those in the informal sector. The study collected data from Kamukunji Jua Kali, the most prominent business center for artisans, shop owners, suppliers, and service providers.

3.6 Data Collection Instruments

Data collection refers to the scientific process of collecting raw and unprocessed information to be processed into meaningful information (Gall et al., 2007). This

study primarily used primary data, which was collected using a questionnaire. The questionnaire included a combination of both open and closed-ended questions. According to Dillman (2000), open-ended questions allow respondents to give answers in their way, while closed-ended questions or forced-choice questions provide several alternative responses from which the respondent is restricted to choose. The latter types of questions are usually quicker and easier to answer as they require minimal writing. The questionnaire consisted three main sections with short instructions at the beginning of each section. The first section gathered information on the personal data of respondents. The second section gathered information on retirement planning and the third section focused on the four aspects of financial literacy.

3.7 Data Collection Procedure

A research authorization letter obtained from Jomo Kenyatta University of Agriculture and Technology was forwarded to the National commission for science, technology and innovation (NACOSTI) to allow the data collection process. Each questionnaire was accompanied by a covering letter, which stipulated the purpose of the research to the respondents. The importance of answering all the questions was emphasized to the respondents and an assurance of confidentiality given to them.

Data collection then commenced and due to the large sample size, the researcher used two research assistants to administer the questionnaire. The researcher and the research assistants administered the questionnaires to the respondents at the three NSSF offices and at the Jua Kali stalls in Kamkunji. This was meant to increase the response rate and ensure respondents got clarity on any questions that needed to be further clarification. The research used a drop and pick approach for respondents from the occupational schemes, to avoid interference of work schedules. The questionnaires were then picked after three days from this stratum.

3.8 Pilot Study

According to Cooper and Schindler (2014), a researcher needs to conduct a pilot test to detect flaws in the research instrument and provide proxy data for selecting a probability sample. The pilot study should therefore use subjects from the intended population and imitate the procedures and protocols designated for data collection. A pilot study was conducted in this study before the primary data collection. This was meant to guide on, among others, adequacy of the sampling frame, adequacy of the questionnaire and efficiency of instructions to interviewers. Saunders *et al*. (2019) confirm that pilot testing improves the questions in the questionnaire to enable respondents to understand queries and have an easy time answering them. It also provides the researcher with at least some idea of the questionnaire content validity: whether the questionnaire appears to make sense or not and to establish whether the questionnaire would succeed.

Cooper and Schindler (2014) suggest that 25-100 subjects should constitute the pilot size for higher accuracy. This study piloted 30 employees of one organisation with both permanent and contract staff enrolled in an occupational pension scheme, NSSF and some had individual pension schemes. Those who participated in the pilot study were not included in the main study because the pilot study identified weaknesses in the questionnaire that were later rectified to be used in the sampled pension scheme members.

3.8.1 Reliability

Sushil and Verma (2010) defines reliability as the extent to which a measure is solid and produces a similar outcome when the test is repeated many times. There are usually three ways of assessing reliability. These are test-retest, split half and internal consistency. Cronbach's alpha (α) is defined as a coefficient (of between 0 and 1) that is used to rate the internal consistency (Homogeneity) or the correlation of items in a particular test (Sushil & Verma, 2010). The study used Cronbach's coefficient Alpha, the most widely used measure for determining internal consistency. Sushil and Verma (2010) assert that, for a variable to indicate a strong level of internal consistency, it should exhibit moderate correlation among the items used to measure

it (0.70 to 0.90). Lower values show unreliability and higher values indicates that some items need to be removed from the test because of redundancy.

Kothari (2019) argues that the research collection instruments are reliable if they produce consistent results; when the instrument is reliable, the researcher can be confident that other factors will not affect the research findings. Cronbach's alpha (α) was generated from the internal consistency technique to ensure that items achieve reasonably good internal consistency.

3.8.2 Validity

Validity refers to the extent to which a test or an instrument measure what actually should be measured (Gall, 2007). According to Cohen et al. (2007), several forms of validity need to be met for the collection instruments to collect the required data validly. These are; content validity, criterion validity, construct validity, and face validity. In this study face validity, content validity and construct validity were tested. Face validity concerns whether the measures reflect the concept in question (Bryman, 2015). In this study, the researcher met face validity criteria by selecting those questions which seemed relevant to the study variables and utilized questions previously used by other researchers to capture financial literacy.

According to Cooper and Schindler (2014), content validity is the extent to which the questionnaire satisfactory covers probing investigative questions that guides the study. If the questions concentrates only on some dimensions of a concept, while leaving out some other indicators then the study lacks content validity. Content validity was incorporated by adopting standardized questions from previous financial literacy studies, these questions were then scrutinized, discussed and adopted with the help of the research supervisors. The questionnaire was also subjected to two experts who evaluated whether the questionnaire's content accurately assessed all fundamental aspects of the topic.

Construct validity checks whether the measurement items actually measure the variables they are intended to measure (Saunders et al., 2019; Zikmund et al., 2013). Expert determination of content validity or factor analysis can substantiate that key

constructs underpinning the content are included. In this study factor analysis was used to pinpoint and eliminate constructs or variable items that do not meet the objectives of the study and that might not be easily detected by direct analysis. The study adopted a threshold factor loadings of 40% as advanced by Hair *et al.*, (2014)

The factor analysis outputs in section 4.8 shows that the requirements of internal construct validity for each of the variables were met.

3.9 Data Analysis and Processing

This section discusses the techniques used to analyse data and test the variables. The questionnaires were then checked for completeness and consistency. The data was then coded to classify responses into meaningful categories for analysis. The coded data were then entered into SPPS version 20 software, which was then used to generate tables, graphs and statistical parameter estimates. The collected data was then analysed using descriptive and inferential statistics. Descriptive statistics of the variables included percentages, mean, median, mode and standard deviations, while inferential statistics used were the chi-square test and logistic regression analysis. The chi-square test was used to cross-tabulate the association between retirement planning categories and financial awareness, financial knowledge and demographic factors. While the logistic regression model was used to determine the influence of the four main independent variables on retirement planning.

3.9.1 Statistical Measurement Model

A binary logistic regression analysis was preferred to analyse the data. This is because it is specifically used for a problem in which the dependent variable is binary; that is, the dependent variable takes value of 0 or 1. In this case, those who are comprehensive retirement planner, being assigned a value of 1, while those who are basic retirement planners are being assigned a value of 0. Theoretical results suggest that when the response variable is binary, either the shape of the response function is a tilted S or as a reverse tilted S.

Kim and Hanna (2015) utilised the binary logistic regression to classify households

in the US as adequately prepared for retirement and inadequately prepared for retirement based on the adequacy of the amount of savings in the pension schemes. While Han *et al.* (2019) utilised a logistic regression model while classifying consumers based on their retirement preparation planning and behaviour. Likewise, Farrar et al (2019) also used a two stage logistic regression while examining gender, financial literacy and retirement planning. Earlier studies by Klapper and Panos (2011) had also categorized retirement planners and as such based on these empirical studies, this study classified retirement planners as basic retirement planners and comprehensive retirement planners. While classifying those with only the mandatory NSSF as basic retirement planners as it aims to increase coverage and classifying those within pillar two as comprehensive retirement planners because it seeks to improve the adequacy of the retirement income.

The logistic regression analysis estimates the log odds of an event with the following mathematical expression:

$$\text{Ln (odds)} = \text{Ln}\left(\frac{p}{1-p}\right) = \text{Logit (P)} \qquad (3.1)$$

$$\text{Logit (P)} = \text{Ln}\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \qquad (3.2)$$

The multiple logistic regression enabled the study to capture the non-linear relationship between the variables. First, each variable was regressed against y, as indicated by equation 3.1. A combined logistic regression was conducted to capture the influence of all financial literacy components.

Binary Logistic Regression model for financial awareness.

The study's first objective was determining the influence of financial awareness on retirement planning. The study assumed a linear relationship between the independent variable and odds ratio, as shown in equation 3.4.

$$\text{Logit (P)} = \beta_0 + \beta_1 FA + \varepsilon \qquad (3.4)$$

Binary logistic regression model for financial knowledge

The study's second objective was to examine the influence of financial knowledge on retirement planning. The study assumed a linear relationship between the independent variable and odds ratio, as shown in equation 3.5.

$$\text{Logit}(P) = \beta_0 + \beta_2 FK + \varepsilon \qquad (3.5)$$

Binary logistic regression model for attitude towards savings

The third objective was to determine the influence of attitude towards saving on retirement planning. The study assumed a linear relationship between the independent variable and odds ratio, as indicated in equation 3.6.

$$\text{Logit}(P) = \beta_0 + \beta_3 ATS + \varepsilon \qquad (3.6)$$

Binary logistic regression model for financial behaviour

The fourth objective was to determine the influence of financial behaviour on retirement planning. The study also assumed a linear relationship between the independent variable and odds ratio, as shown in equation 3.7.

$$\text{Logit}(P) = \beta_0 + \beta_4 FB + \varepsilon \qquad (3.7)$$

Binary logistic regression model for financial literacy

The study's general objective was to evaluate the influence of financial literacy on retirement planning. Two equations were used to address the general objective. One multiple equation with all the four variables of financial literacy and one simple equation with financial literacy score derived from the four variables. The study assumed a linear relationship between the predictors' variables and the odds ratio, as indicated in equation 3.8. and 3.9

$$\text{Logit}(P) = \beta_0 + \beta_1 FA + \beta_2 FK + \beta_3 ATS + \beta_4 FB + \varepsilon \qquad (3.8)$$

$$\text{Logit}(P) = \beta_0 + \beta_4 FL + \varepsilon \qquad (3.9)$$

Where

Logit (p): Probability of being a comprehensive planner

FA: Financial awareness

FK: Financial knowledge

ATS: Attitude towards savings

FB: Financial behaviour

FL: Financial Literacy

Binary logistic regression for Age as a moderating variable

The fifth objective of the study was to determine the moderating effect of age on the influence of financial literacy on retirement planning among pension scheme members in Kenya. As Keppel and Zedeck (1989) recommended, the variable, age, was first introduced as an explanatory variable in the model, then later interacted with the other independent variable to check the moderating effect. The following two equations were therefore adopted.

Age as an explanatory variable:

$$\text{Logit}(p) = \beta_0 + \beta_1 FA + \beta_2 FK + \beta_3 ATS + \beta_4 FB + \beta_5 AGE + \varepsilon \quad (3.10)$$

Age as a Moderator variable:

$$\text{Logit}(p) = \beta_0 + \beta_1 FA + \beta_2 FK + \beta_3 ATS + \beta_4 FB + \beta_5 AGE + AGE\,(\beta_1 FA + \beta_2 FK + \beta_3 ATS + \beta_4 FB) + \varepsilon \quad (3.11)$$

$$\text{Logit}(p) = \beta_0 + \beta_1 FL + \beta_2 AGE + \beta_3 AGE{*}FL + \varepsilon \quad (3.12)$$

Where AGE represents Age

Binary logistic regression for Income as a moderating variable

The sixth objective of the study was to find out the moderating effect of income on the influence of financial literacy on retirement planning among pension scheme members in Kenya. Likewise, as Keppel and Zedeck (1989) recommended, the variable, Income, was first introduced as an explanatory variable in the model, then later interacted with the other independent variable to check the moderating effect. The following two equations were therefore adopted.

Income as an explanatory Variable:

$$\text{Logit}(p) = \beta_0 + \beta_1 FA + \beta_2 FK + \beta_3 ATS + \beta_4 FB + \beta_5 INC + \varepsilon \quad (3.13)$$

Income as a Moderator variable:

$$\text{Logit}(p) = \beta_0 + \beta_1 FA + \beta_2 FK + \beta_3 ATS + \beta_4 FB + \beta_5 I + INC\,(\beta_1 FA + \beta_2 FK + \beta_3 ATS + \beta_4 FB) + \varepsilon \quad (3.14)$$

$$\text{Logit}(p) = \beta_0 + \beta_1 FL + \beta_2 INC + \beta_3 INC*FL + \varepsilon \quad (3.15)$$

Where INC represents Income

3.9.2 Operationalization of the Variables

The study used four independent variables, including financial awareness, financial knowledge, saving attitude and financial behaviour, which are presumed to influence retirement planning. These variables were measured using the scores for each respondent per empirical recommendations from the OECD and INFE measurement tool for measuring financial literacy. Table 3.3 summarises the metrics used in operationalizing the variables and the empirical sources that utilised the same indicators.

Table 3.3: Measurement of variables

Variable	Indicators	Measurement
Retirement planning	• Basic planner • Comprehensive planner	Binary response 0 for Basic planner 1 for comprehensive planner
Financial awareness	• Financial products • Financial institutions	Percentage score
Financial Knowledge	• Time value of money • Interest rates • Inflation • Risk-return • Diversification	Percentage scores of correct answers
Attitude towards saving	• Living for today • Savings • Spending	Likert scale. Mean, Median, mode and percentages
Financial behaviour	• Budgeting • Payment of bills • Setting financial goals • Choice of financial products • Actively saving	Likert scale. Mean, Median, Mode and percentage

3.9.3 Test of Fitness of the Model

The next step was to test the overall fitness of the model; in logistic regression the Hosmer-Lemeshow test is commonly used to assess the fitness of the model as it allows for any number of explanatory variables, which may be continuous or categorical. The Hosmer and Lemeshow's (H-L) test divides subjects into deciles based on predicted probabilities, then computes a chi-square from observed and expected frequencies. Then a probability (p) value is computed from the chi-square distribution to test the fit of the logistic model. If the H-L goodness-of-fit test statistical significance level is greater than 0.05, it indicates a model that is a good fit,

while a significant test of less than 0.05 indicates that the model is not a fit model (Hosmer & Lemeshow, 2000).

Then a Pseudo R^2 that mimics the R^2 in linear regression was estimated. These measures show the percentage of dependent variables explained by the independent variable. Two Pseudo R^2 measures, Cox and Snell's and Nagelkerke's Pseudo R square measures, were used.

3.9.4 Test of Significance of Coefficients

Lastly, the coefficients were estimated using the Maximum Likelihood Method (MLM). The importance of each independent variable was assessed by carrying out the Wald χ^2 test; this tests the significance of individual coefficients in the model and is calculated as follows:

$$\text{Wald } \chi^2 = \left(\frac{coefficient}{SE\ of\ coefficient}\right)^2$$

The significance level of the Wald test statistic was used to determine whether the variable was significant or not based on a 5% significance level. While the odds ratio was used to interpret the probability or likelihood of being a comprehensive retirement planner as compared to those of being a basic retirement planner for the pension scheme members.

The summary of the tests conducted to test the hypothesis and the basis of the decision is presented in table 3.4.

Table 3.4: Summary of Univariate Analysis

Research Hypothesis	Test	Level of significance	Decision
Financial awareness has no significant influence on retirement planning	Wald-test	$\alpha = 0.05$	Reject H_{01} if P-value $\leq \alpha$
Financial knowledge has no significant influence on retirement planning	Wald-test	$\alpha = 0.05$	Reject H_{02} if P-value $\leq \alpha$
Attitude towards saving has no significant influence on retirement planning	Wald -test	$\alpha = 0.05$	Reject H_{03} if P-value $\leq \alpha$
Financial behaviour has no significant influence on retirement planning.	Wald-test	$\alpha = 0.05$	Reject H_{04} if P-value $\leq \alpha$
Age has no moderating effect on the influence of financial literacy on retirement planning	Wald-test	$\alpha = 0.05$	Reject H_{05} if P-value $\leq \alpha$
Income has no moderating effect on the influence of financial literacy on retirement planning.	Wald test	$\alpha = 0.05$	Reject H_{06} if P-value $\leq \alpha$

3.10 Diagnostic tests

There are four main assumptions about the data in a logistic regression model. The underlying assumption is that the outcome or dependent variable is a binary variable and that there is a linear relationship between the logit of the dependent variable and each predictor variable. Two assumptions are also made on the predictor variables. There is an absence of multicollinearity among them and that any predictor variable that is continuous in nature has no outlier values that will influence the outcome of the regression analysis. Therefore, the diagnostic tests were conducted to check for that these assumptions were met.

3.10.1 Linearity

Schreiber-Gregory et al. (2018) explain that Logistic regression does not require a linear relationship between the predictor variable and the outcome variable instead it assumes linearity of independent variables and log odds. This analysis is only

applicable to dependent variables that are continuous in nature. Zeng (2020) fronts that two methods are commonly used to examine this assumption of linearity. The Box-Tidwell test is the first method used and this method runs a logistic regression with interaction terms for all independent variables. While the second method estimates log odds by running logistic regression for all independent variables. This study utilised the Box-Tidwell test to check the linearity assumption.

3.10.2 Multicollinearity

According to Sekaran and Bougie (2016), multicollinearity is commonly experienced when two or more independent variables used in a regression equation are highly correlated and affect the accuracy of the estimated regression coefficient. The most widely used measures for detecting multicollinearity are the tolerance value and the Variance Inflation Factor (VIF). The study used the tolerance level and VIF to check for multicollinearity among the predictor variables. The tolerance is the percentage of the variance in a given independent variable that the other independent variables cannot explain. At the same time, VIF shows how much the variance of the coefficient estimate is being escalated by multicollinearity and is, therefore, the inverse of tolerance (Senaviratna & Cooray, 2019).

A tolerance level close to 1 indicates that there is little multicollinearity, whereas a value close to zero suggests the presence of multicollinearity. Myers (1990) proposed a cut-off tolerance value below 0.1 indicated serious collinearity issues. The most commonly used cut-off VIF values of detecting multicollinearity is values exceeding 10. However, for logistic regression, which is considered a weaker model; values above 2.5 may be a cause for concern.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the statistical results of the data collected for the study. The data collected was subjected to preliminary scrutiny before the analysis took place. In this chapter, descriptive statistics results are presented and inferential statistics used to test the hypothesis and address the objectives of the study are also presented, analysed and discussed in view of empirical literature. Therefore, the chapter contains the descriptive results, logistic regression diagnostic tests, and logistic regression results.

4.2 Pilot Study Results

The pilot study was conducted on 30 respondents from Kenyatta University. This is because the organisation has both permanent staff enrolled under an occupational pension scheme and contract staff contributing towards the mandatory scheme, NSSF, while some had their own individual pension scheme in place. The pilot sample was representative as compared with the overall target population of interest, with the two main strata of interest.

4.2.1 Reliability

The reliability of the instrument of data collection has been connoted to the fact that results from the research instrument are stable and consistent (Koonce & Kelly, 2014). Rovai et al. (2014) endorses the use of Cronbach's alpha to measure internal consistency of the research instrument and is based on the average inter-item correlation of question items in the instrument. The study questionnaire was tested for reliability using the Cronbach alpha and the results are presented in the table below.

Table 4.1: Reliability Results

Variables	Number of items	Cronbach's Alphas
Financial awareness	19	0.815
Financial knowledge	7	0.712
Attitude toward saving	5	0.802
Financial behaviour	8	0.827

According to Sekeran and Bougie (2016), the usually acknowledged level of consistency measure is 0.70. The Cronbach alpha results for financial knowledge at first, which had included 8 items in the initial questionnaire, was 0.678. Once one item was dropped, the reliability improved to 0.712. Some of the questions capturing financial knowledge required the respondent to calculate and fill a figure. Some respondents found the numerical requirement to be challenging and so the questions were rephrased and the possible answers were then incorporated in the questionnaire utilised for the data collection.

The individual Cronbach alpha for the four independent variables, financial awareness, financial knowledge, attitude towards savings and financial behaviour was established as 0.815, 0.712, 0.802 and 0.827, respectively, as indicated in table 4.1. The study thereby concludes that the constructs included in the questionnaire are therefore internally reliable.

4.3 Response Rate

Response rate is the proportion of respondents who participated in the study from the sample size intended in the research (Hamilton, 2009). It is calculated by dividing the number of usable responses returned by the total number eligible in the sample chosen (Fincham, 2008).

Table 4.2: Response rate

Response	Frequency/rate
Number of distributed questionnaires	410
Returned questionnaires	361
Returned and usable questionnaires	332
Returned and excluded questionnaires	29
Questionnaires not returned	49
Response rate	88.1%
Valid response rate	81%

Table 4.2 indicates the response rate, out of the 410 questionnaires administered, 361 were returned though after scrutiny on the completeness of the questionnaire, only 332 were considered useable for the research and further analysis. The overall response rate was thus found to be 81%. According to Fincham (2008) a response rate of 60% is considered acceptable for the survey, hence the response rate of 81% was deemed to be sufficient observations for further analysis.

4.4 Demographics of the Pension scheme members

Several background information of the pension scheme members were captured to assist in examining the moderating effect of age and income on the influence of financial literacy on retirement planning. Gender, marital status, and education level were also reported to give a wider view of the pension scheme members included in the sample. The summary results of all the demographics are presented in table 4.3**.**

Table 4.3: Demographic of Respondents

Demographics		Frequency	Percentage
Gender	Male	177	53.3
	Female	155	46.7
	Total	332	100
Marital Status	Married	156	47.3
	Single	144	43.6
	Separated/Divorced	20	6.1
	Widowed	10	3.0
	Missing	2	0.6
	Total	332	100
Age	20-30	114	34.3
	30-40	113	34.0
	40-50	66	19.9
	50-60	27	8.1
	Over 60	12	3.6
	Total	332	100
Monthly Income	Less than Kshs 10,000	24	7.2
	Kshs 10,000 – 50,000	202	60.8
	Kshs 50,000-100,000	78	23.5
	Kshs 100,000-200,000	22	6.6
	Over Kshs 200,000	6	1.8
	Total	332	100
Academic level	Primary Level	15	4.5
	High school	51	15.4
	College/university	266	80.1
	Total	332	100

Table 4.3 presents the demographic results of the pension scheme member who responded. 53.3% of the respondents were male from the results while 46.7% of the total respondents were female. The information on gender was collected to determine the association of gender and retirement planning. The findings report that Married were 47% among the respondents, Single were 43.4%, Separated/Divorced were 6%, Widowed were 3.0% and 0.6% of the respondents did not answer this question. This information will help determine the association of marital status on retirement planning and give a comparative picture of the independent variables according to marital status.

The results also indicate that for the 20-30 age category were 34.3%, 30-40 age category were 34%, 40-50 age category were 19.9%, 50-60 age category were 3.6% while those individuals over 60 years were 3.6%. The results show that majority of the respondents are aged between the ages of 20 to 40 years. The data on this variable was collected to assess whether there is a moderating effect of age on the association between financial literacy and retirement planning.

The observation of the monthly income levels from the results indicated that 7.2% of the respondents earned a monthly income of less than Kshs 10,000, majority of respondents of about 60.8% earned between Kshs 10,000 to Kshs 50000, while 23.5% made between Kshs 50,000 to Kshs 100,000, 6.6% earned between Kshs 100,000 to Kshs 200,000 and 1.8% earned over Kshs 200,000. The interpretation is that majority of the respondents that is 60.8% were in the income bracket of Kshs 10,000 to Ksh-50000. The study also shows that of the total respondents, only 1.8% earn over Kshs 200,000. The question on income was asked to evaluate the moderating effect of income on the influence of financial literacy on retirement planning.

The results in Table 4.3 also indicate the respondents' academic qualification. It shows that 4.5% of the respondents had primary school level of education, 15.4% of the respondents had a high school qualification, and 80.1% had a college/university education. The majority of the respondents had college/university education, followed by high school, then those with Primary education.

4.5 Descriptive Results

This section shows the descriptive results of the five variables; retirement planning, financial awareness, financial knowledge, attitude towards savings and financial behaviour.

4.5.1 Retirement Planning

The question used to categorise a pensions scheme member as a basic planner or comprehensive planner was based on the source of pension one was currently saving

in. It captured the pension income that would be expected as the four source of retirement income; private pension that indicated individual initiated pension plan, an occupational pension scheme that indicated employer initiated pension plan, additional voluntary pension for those on occupational schemes and the NSSF scheme. This question was a multiple question as a respondent could be saving in the mandatory NSSF, then be in the occupational scheme initiated by the employer and at the same time add some voluntary contributions to the occupational scheme.

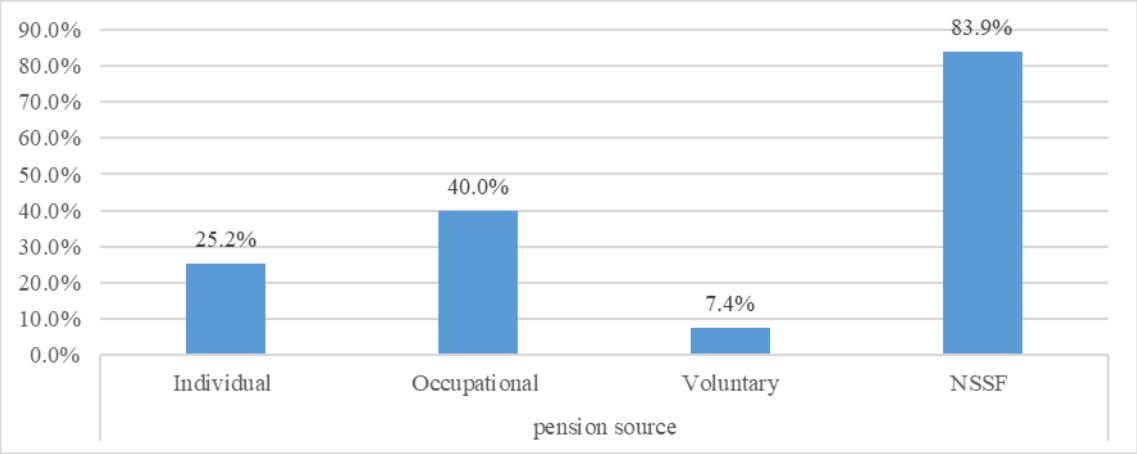

Figure 4.1: Source of pension

The results in figure 4.1 show the respondents' results when asked the funds they would live on upon retirement. The results show that most respondents said they would live on NSSF funds. This means that 83.9% out of the total 332 pension scheme members stated that they were saving with NSSF. The employer-initiated occupational pension followed this at 40% and individual pension scheme at 25.2% and lastly, only 7.4% of the respondents had voluntarily added to their pension scheme. The totals for all the four categories did not add up to 100% pension scheme members from formal employment are all required to save with the NSSF, then some of their employers initiate the occupational scheme, implying that one could have at most two or three of the pension schemes running at the same time.

The NSSF had a more significant membership because it is a mandatory scheme for all employees. Those with occupational schemes also save with the NSSF as their employers simultaneously remit contributions to the two schemes. Klapper and Panos (2011) likewise reported that the public pension funds were the main source of income expected by a majority (82.4%) of Russians. This was a multiple response questions as individuals could have at least two or three anticipated sources of pension when they retire, for instance, an employee could be saving for retirement at the NSSF, then have an employer-initiated occupational scheme, and also do additional voluntary savings through the same occupational scheme.

In this study the results indicate that 40% of the pensions scheme members will have access to both occupational pension and NSSF upon retirement, contrary to the Russian situation where on 15.2% had access to both private pension funds and public pension funds as reported by Klapper and Panos (2011). The difference in these two countries results could be due to the characteristic of the public pension between the countries as the Russian scheme is more substantial than NSSF in Kenya, hence the need by employers to initiate the occupational schemes that increase the amount of savings by the employees.

Table 4.4: Retirement Planning

		Frequency	**Percent**
Valid	Basic planner	157	47.3
	Comprehensive Planner	175	52.7
	Total	332	100.0

Table 4.4 represents the results of the binary classification of the respondents based on the pension scheme category that they currently hold. The respondents were classified into basic retirement planners and comprehensive retirement planners based on the form of retirement benefit scheme plans that an individual had for their retirement.

The results indicate that 52.7% of pension scheme members were basic planners, while 47.3% were comprehensive planners. The results is contrary to the findings of Githu & Ngare (2014), who focused on the relationship between financial literacy

and retirement planning in the informal sector, in their study the proportion of non-planners (60%) were more than planners (40%) among individuals in the informal sector. The main reason for the discrepancy could be because of the target groups. The current study focused on individuals from both formal and informal sectors, who are in retirement scheme members who are obliged to save by being primarily in the formal sector. The study by Githu & Ngare (2014) focused on the informal sector employees only who are not necessarily obliged to save for retirement; hence they voluntarily save for retirement or some are left as non-planners; without any pension scheme.

4.5.2 Financial Awareness

This section will present the findings of the level of awareness of financial products and financial institutions. The usage levels of the financial products in question is also be presented.

Table 4.5: Awareness of Financial Products Frequencies

		Responses	Percent of Cases
		N	
Aware of financial products	Pension Funds	226	68.9%
	Unit trust	112	34.1%
	Mortgage	212	64.6%
	Bank Loan	285	86.9%
	Credit card	218	66.5%
	Savings account	289	88.1%
	Micro-finance loans	176	53.7%
	Insurance	266	81.1%
	Shares and Bonds	207	63.1%
	Mobile payments	207	63.1%
	Prepaid payment card	156	47.6%

a. Dichotomy group tabulated at value 1.

The results in table 4.5 show the respondents' response when asked; whether they had ever heard of any of the types of financial products. The results show that majority of the respondents said they were aware of the financial products listed. The

financial products with a high level of awareness were savings account, bank loan, Insurance, credit card, pension funds, mortgage, mobile payments, shares and bonds and microfinance loan in order of ranking. The awareness of financial products that were below 50% was awareness of prepaid payment cards and unit trusts. Thus, the interpretation of these results was that majority of the respondents had financial awareness attribute on financial products.

This result is consistent with Agunga et al. (2017) results that indicated that a majority of employees in state corporations in Kenya had more than moderate knowledge of financial instruments that are on offer in the market. Doyo (2013), while focusing on employees in the informal sector reported that the level of awareness of pension products was high, standing at 89% while 11 % were not aware of the pension products on offer. According to Doyo (2013), although informal sectors workers exhibited a high level of awareness of the pension products on offer to them, this did not necessarily translate into actual utilization of the pension product.

Table 4.6: Use of Financial Products Frequencies

		Responses	Percent of Cases
		N	
use of financial products	Pension fund	106	33.0%
	Unit trust	26	8.1%
	Mortgage	45	14.0%
	Bank loan	119	37.1%
	Credit card	68	21.2%
	Savings account	234	72.9%
	MFI loan	38	11.8%
	insurance policy	128	39.9%
	Shares and Bonds	75	23.4%
	mobile phone savings account	135	42.1%
	Prepaid payment card	59	18.4%

a. Dichotomy group tabulated at value 1.

The results in table 4.6 show the respondents' response when asked, 'which of the financial products they held at the time (personally or jointly)?' The results show that most of the respondents held the saving account product the most. The value was the highest at 72.9% for savings account. The results also showed that most respondents did not use all the other products, as the percentage utilization was less than 50% for all the other products. The indication was that even though the respondents knew the products exist they still held one of them more than the others. Therefore, this implies that the most commonly used financial product was the savings account. Insurance policy and mobile phone savings accounts were also more considerable used than the other products. The study also revealed that up to 37.1% of the respondents also had a bank loan. The products that the respondents least held were Unit trust (8.1%), Micro finance loan 11.8%), mortgage (14%), prepaid payment card (18.4%), credit card (21.2%) and shares and bonds (23.4%)

One finding that stands out is that of the level of awareness of pension funds, it is striking that the respondents are all retirement scheme members, nonetheless, 34% stated that they are not aware of pension funds, and 72% stated that they do not hold a pension fund, yet they were members of pension schemes. This finding supports the findings of Njuguna and Otsola (2011) in their study on predictors of pension literacy among members of occupational schemes in Kenya, they concluded that the levels of pension literacy are low given that the respondents in their study were also drawn from the formal sector. Likewise, in the informal sector, Doyo (2013) found out that the level of pension participation among individuals was at 55%, which was low compared to the level of awareness amongst them, which stood at 89%. These findings imply that the awareness levels have not necessarily translated into more use of the financial products both in the informal and formal sector.

Thuku and Ireri (2013) posit that limited access to retirement planning information has led to the low uptake of pension products. Their study on the influence of retirement preparation on happiness in retirement found that less than half of the respondents (47%) had access to retirement planning information, with the employees from the public sector being adversely affected by the lack of retirement

planning information, (67%) reporting not having had access to retirement information.

Table 4.7: Awareness of Financial Institutions Frequencies

		Responses	Percent of Cases
		N	
Aware of financial Institutions	Postbank	222	67.3%
	M-Pesa	306	92.7%
	SACCO	283	85.8%
	ROSCA	191	57.9%
	NSSF	288	87.3%
	NHIF	302	91.5%
	NSE	129	39.1%
	RBA	126	38.2%

a. Dichotomy group tabulated at value 1.

The results in table 4.7 show the respondents' response when asked, 'which of the following financial institutions had they ever heard of?' The results show that most respondents said they are aware of Postbank, MPESA, SACCO, ROSCA, NSSF and NHIF. The values of these financial institutions were all above 50%. At the same time, the results reveal further that the two institutions that had the lowest levels of awareness are the Nairobi Security Exchange and the Retirement Benefits Authority. Strangely, RBA the body that regulates the pension industry, has a low level of awareness by individuals who are currently pension scheme members, showing that the level of pension literacy is still lacking in Kenya as most scheme members are automatically enrolled into the schemes without actively deciding to save for retirement. However, these results indicate that most pension scheme members were aware of most financial institutions and services providers within the financial sector.

A percentage score for the aggregate awareness level for both the financial product and financial institution was calculated to address the study's first objective. Figure 4.2 represents the percentage of those considered financially literate according to the awareness level of financial products and financial institutions based on criteria of at least half of the financial products, institutions and the aggregate.

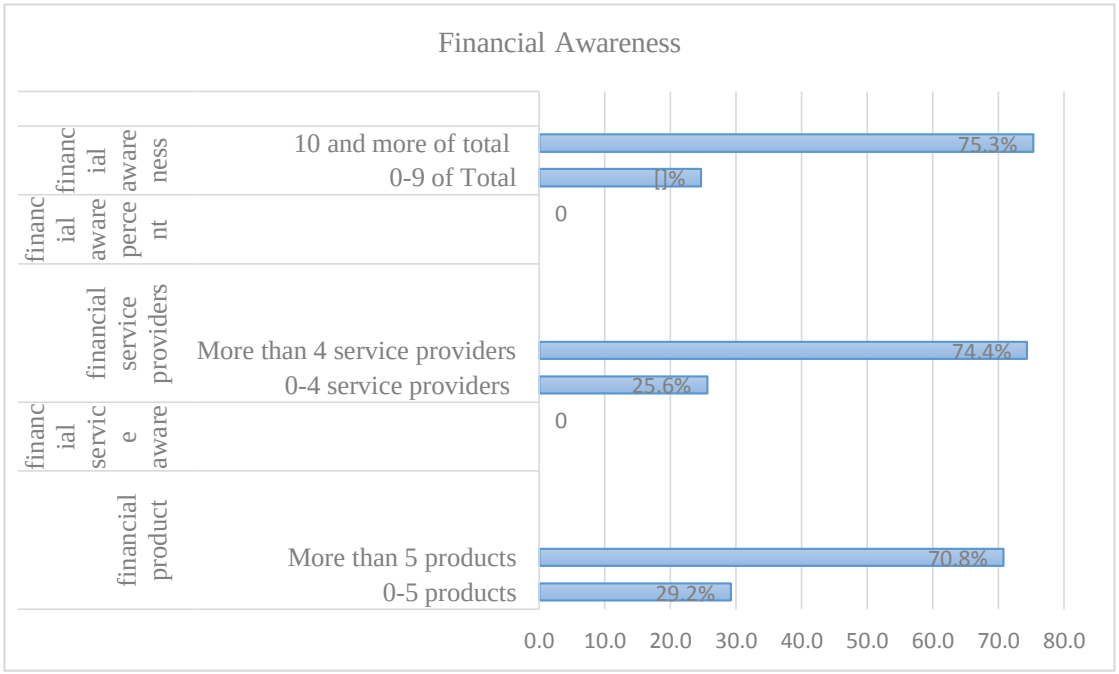

Figure 4.2: Percentage Awareness Levels of Financial Products and Institutions.

Figure 4.2 reports a high awareness level of the financial products and financial institutions among pension scheme members. 70.8 percent of the pension scheme members know of more than five financial products, leaving 29.2% reporting the knowledge of less than half of the financial products indicated. This is slightly lower than the levels reported by OECD (2020) of 86% of all participating countries members being aware of at least five products out of eleven products listed in an international survey on adult financial literacy.

Regarding the service providers of these products and financial services, slightly more pension scheme members (74.4%) were aware of them. On average, the level of awareness of at least half of the financial products and service providers stood at 75.3% of the pension scheme members, while 24.7 reported knowing less than half of them

4.5.3 Cross-tabulation of Financial Awareness and Retirement Planning

A cross-tabulation of financial product awareness and retirement planning is conducted to establish the association between financial product awareness and retirement planning.

Table 4.8: Cross-tabulation of Product Awareness and Retirement Planning

		Retirement Planner		Total
		Basic	Comprehensive	
Pension Funds	Count	79	147	226
	% within aware product	35.0%	65.0%	
	% of Total	24.1%	44.8%	68.9%
Unit trust	Count	30	82	112
	% within aware product	26.8%	73.2%	
	% of Total	9.1%	25.0%	34.1%
Mortgage	Count	86	126	212
	% within aware product	40.6%	59.4%	
	% of Total	26.2%	38.4%	64.6%
Bank Loan	Count	135	150	285
	% within aware product	47.4%	52.6%	
	% of Total	41.2%	45.7%	86.9%
Credit card	Count	99	119	218
	% within aware product	45.4%	54.6%	
	% of Total	30.2%	36.3%	66.5%
Savings account	Count	134	155	289
	% within aware product	46.4%	53.6%	
	% of Total	40.9%	47.3%	88.1%
Microfinance loans	Count	59	117	176
	% within aware product	33.5%	66.5%	
	% of Total	18.0%	35.7%	53.7%
Insurance	Count	117	149	266
	% within aware product	44.0%	56.0%	
	% of Total	35.7%	45.4%	81.1%
Shares and bonds	Count	76	131	207
	% within aware product	36.7%	63.3%	
	% of Total	23.2%	39.9%	63.1%
Mobile payments	Count	94	113	207
	% within aware product	45.4%	54.6%	
	% of Total	28.7%	34.5%	63.1%
Prepaid payment card	Count	66	90	156
	% within aware product	42.3%	57.7%	
	% of Total	20.1%	27.4%	47.6%
Total	Count	155	173	328
	% of Total	47.3%	52.7%	100.0%

Percentages and totals are based on respondents.
a. Dichotomy group tabulated at value 1.

Table 4.8 shows a cross-tabulation of financial product awareness with retirement planning. The results indicate a difference in the percentage of pension scheme members aware of the financial products among basic retirement planners and comprehensive retirement planners. Comprehensive retirement planners had a higher level of awareness across the eleven financial products. Out of the 68.9% who were aware of pension scheme funds on offer, 44.8% were comprehensive planners and 24.1% were basic planners. This could be since most of the comprehensive planners took an active role in increasing their pension funds through additional voluntary retirement savings or actively searching for an individual pensions scheme to save privately, especially for those in the informal sector. During this search, an individual was likely to get more information about the pension schemes on offer and hence increase awareness.

The trend of comprehensive planners having a higher level of awareness of the different products has been repeated even on the product prepaid payment card, which had the lowest general level of awareness of 47.6%. Out of these, 20.1% were basic planners while 27.4% were comprehensive.

4.5.4 Financial Knowledge

The financial knowledge section in the questionnaire focused on seven aspects of financial concepts: simple arithmetic division, inflation, simple interest rate, compound interest rate, risk-return trade-off, cost of living, and diversification. Table 4.9 presents the percentage of the pension scheme members who had the correct responses on the seven concepts.

Table 4.9: Financial Knowledge Frequencies

	Responses	Percent of Cases
	N	
Knowledge of division	308	93.9%
Knowledge of Inflation	216	65.9%
Knowledge of simple interest	281	85.7%
Knowledge of compound Interest	117	35.7%
knowledge of risk return	259	79.0%
Inflation cost of living	281	85.7%
Knowledge of diversification	182	55.5%

a. Dichotomy group tabulated at value 1.

Table 4.9 shows that most respondents could undertake basic mental arithmetic in an economic context through division, with 93.9% of the respondents indicating the correct response. Most respondents understood the concept of simple interest as 85.7% of respondents answered correctly. However, most respondents performed poorly in the idea of compound interest, with a paltry 35.7% of respondents indicating the correct answer. The results for compound interest are in tandem with that of the study by OECD (2016), where three in ten, on average, gave a correct response to the question on compounding across all participating countries and economies and only 37% across OECD countries.

Consequently, most respondents understood the concept of inflation and its effect on the purchasing power of consumers. 65.9% of pension scheme members indicated that they know how inflation impacts individuals' purchasing, whereas 85.7% had an understanding of the meaning of the term inflation. These findings concur with the results of the OECD survey of 2016. The survey reported that the majority of people, 63% across all participating countries and economies, knew what would happen to the purchasing power of money if inflation stayed at the same rate for one year. While the definition of inflation was also relatively well known in most countries, with 78% across all countries and 81% within OECD countries.

The conceptualization of the tradeoff between risk and return was also well articulated by most respondents as 79% of them had a basic knowledge of the same.

While these results are slightly lower than the results from the OECD survey among different economies, the difference is very marginal. Most people understand the basic relationship between risk and return in their study, with 81% of respondents across all countries and 83% of those in participating OECD countries.

The last concept under this study was the concept of diversification which had a slightly more than average performance of 55.5% of the pension scheme members understanding it. This concept appears to be more challenging, as indicated by the OECD survey. However, their results were of much higher scores than this current study, with only 64% of respondents giving a correct response across all participating countries and 65% in OECD countries.

Overall, the concepts that had a high level of understanding among the pension scheme members in Kenya were simple interest, inflation, risk-return relationship and simple arithmetic division, whereas diversification was a bit challenging. Compound interest was the most difficult of the financial terms in the study.

Table 4.10: Financial Knowledge Correct Response

		Frequency	Percent
Valid	Less than 4 correct	51	15.4
	4 and more correct	281	84.6
	Total	332	100.0

On average, out of the seven financial concepts, 84.6 % of pension scheme members gave the correct responses in four or more responses. According to the OECD (2018a) financial literacy measurement criteria, an individual is presumed to be financially literate when they are in a position to respond to at least half of the questions provided correctly. The findings of table 4.10 indicate that a more significant majority of pension scheme members are financially knowledgeable and therefore financially literate. A paltry 15.4 % of the pension scheme members were not able to give the correct response to the financial concepts hence deemed as financially illiterate.

4.5.5 Cross-tabulation of Financial Knowledge and Retirement planning

A cross-tabulation of financial knowledge and retirement planning was conducted to determine the association between financial knowledge and retirement planning.

Table 4.11: Cross-tabulation of Financial Knowledge and Retirement Planning

		Retirement planner		Total
		Basic	Comprehensive	
Knowledge of division	Count	154	154	308
	% within Retirement	98.7%	89.5%	
	% of Total	47.0%	47.0%	93.9%
Knowledge of Inflation and	Count	91	125	216
	% within Retirement	58.3%	72.7%	
	% of Total	27.7%	38.1%	65.9%
Knowledge of simple interest	Count	134	147	281
	% within Retirement	85.9%	85.5%	
	% of Total	40.9%	44.8%	85.7%
Knowledge of compound Interest	Count	50	67	117
	% within Retirement	32.1%	39.0%	
	% of Total	15.2%	20.4%	35.7%
Knowledge of risk return	Count	116	143	259
	% within Retirement	74.4%	83.1%	
	% of Total	35.4%	43.6%	79.0%
Knowledge of Inflation	Count	131	150	281
	% within Retirement	84.0%	87.2%	
	% of Total	39.9%	45.7%	85.7%
Knowledge of diversification	Count	73	109	182
	% within Retirement	46.8%	63.4%	
	% of Total	22.3%	33.2%	55.5%
Total	Count	156	172	328
	% of Total	47.6%	52.4%	100.0%

Percentages and totals are based on respondents.
a. Dichotomy group tabulated at value 1.

Table 4.11 shows the level of knowledge of the different financial concepts distributed among retirement planners' two categories: basic planners and comprehensive planners. The simple mental arithmetic in a financial context was equally spread between basic and comprehensive planners. The total who had the correct responses was 93.9%, out of this 47% were basic planners, with an equal percentage of 47 being comprehensive planners. On the contrary, within retirement planning, all the other sets of financial concepts; simple interest, compound interest,

inflation, risk-return relationship, and diversification. The comprehensive planners had a slightly higher percentage of individuals who gave the correct response than the basic planners, indicating that the comprehensive planners had slightly higher knowledge levels than the basic planners. For instance, the lowest overall performed financial concept was compound interest, with 35.7% of respondents giving the correct response; out of this, 20.4% are comprehensive planners. In comparison, 15.2% are basic planners, a difference of 5.2%. In contrast, on the conceptualization of the link between risk and return, the overall percentage was 79%, with 43.6% being comprehensive planners and 35.4% being basic planners.

These observations are similar to Githu and Ngare (2014). After grouping workers in the informal sector as planners and non-planners, they observed an increase in percentage scores for the planners in four categories of knowledge concepts; time value of money, risk, diversification and stock. The non-planners, on the other hand, had lower percentage scores which is also the trend observed by Klapper and Panos (2011) and Lusardi and Mitchell (2011b).

Table 4:12: Chi-Square tests of Financial Knowledge and Retirement Planning

		Retirement
Knowledge of division	Chi-square	12.561
	Df	1
	Sig.	.000*
Knowledge of Inflation	Chi-square	6.602
	Df	1
	Sig.	.010*
Knowledge of simple interest	Chi-square	.116
	Df	1
	Sig.	.733
Knowledge of compound Interest	Chi-square	1.503
	Df	1
	Sig.	.220
Knowledge of risk return	Chi-square	2.957
	Df	1
	Sig.	.086
Inflation cost of living	Chi-square	.329
	Df	1
	Sig.	.566
Knowledge of diversification	Chi-square	8.329
	Df	1
	Sig.	.004*

Results are based on nonempty rows and columns in each innermost subtable.
*. The Chi-square statistic is significant at the .05 level.

The chi-square results of the different financial concepts indicated a statistically significant association of simple arithmetic knowledge, knowledge on the effect of inflation on purchasing power and expertise on diversification with retirement planning at a 5% significant level. In comparison, the understanding of diversification had a statistically significant association with retirement planning at 10%. On the other hand, the knowledge of simple interest, compound interest, and knowledge of the effect of inflation on the cost of living was found to have no statistically significant association with retirement planning.

4.5.6 Attitude towards Saving

This section shows the descriptive results of attitude towards savings by the pension scheme members.

Table 4.13: Attitude towards Saving Descriptive

		I find it more satisfying to spend money than to save it for long term	I tend to live for today and let tomorrow take care of itself	Money is there to be spent	Who has time to save when there's so much to buy	I'm not in charge of my savings.
N	Valid	332	332	332	332	332
	Missing	0	0	0	0	0
Mean		3.1928	3.4699	3.1506	3.5542	3.8946
Median		4.0000	4.0000	4.0000	4.0000	4.0000
Mode		4.00	4.00	4.00	4.00	4.00
Std. Deviation		1.41812	1.30847	1.29427	1.12379	1.12283

The study sought to examine the respondent's level of agreement or disagreement on the various measures of attitude towards savings. Table 4.13 presents the relevant results, which show that on a scale of 1 to 5 (where 1= strongly agree and strongly disagree=5). The means, median, mode and standard deviations were as indicated in the above table. The mode of the four statements, 'I find it more satisfying to spend money than to save it for long term,' 'I tend to live for today and let tomorrow take care of itself,' 'Money is there to be spent,' 'Who has time to save when there's so much to buy' and 'I am not in charge of my savings' were all 4 which meant the respondents, generally disagreed with the statements.

The five questions were all framed to the negative to depict a preference towards the short-term through living for today and spending money now vis-a-vis long-term savings. According to OECD (2016), these kinds of preferences tend to hinder individuals from financial behaviour, leading to improved financial resilience and long-term financial well-being. Therefore, an individual who strongly agrees tends mostly towards short-termism in spending money and is not inclined to save for the long term. The results of the five statements had a mean of 3.1928, 3.4699, 3.1506, 3.5542 and 3.8946, with a median and mode of 4 for all the statements respectively. For a Likert scale, modes and medians give a much more reflective view of the respondents' perceptions. In our case, the respondents' mean and mode was 4 (Disagree), with an interpretation that most of the respondents tend towards a positive attitude towards long-term savings.

The OECD (2016) financial literacy country survey incorporated three questions to gauge respondents' attitudes towards money and planning for the future. The questions were also based on a Likert scale, with statements on the respondents' preference for short-term through living for today and spending money. The survey findings showed that economies such as Hong Kong, Jordan, China and Poland had fewer than three in ten people, indicating a tendency towards longer-term planning. In contrast, in Hungary, Albania, Portugal, Norway, Canada, and New Zealand, more than six in ten people had a positive attitude towards longer-term planning. Notably, South Africa, the only African country incorporated in the survey, had at least 48% of the respondents scoring more than 3. Their respondents had, on average, a tendency towards a positive attitude towards money and planning for the future.

Table 4.14: Attitude towards Saving Percentages

	I find it more satisfying to spend money than to save it for long term	I tend to live for today and let tomorrow take care of itself	Money is there to be spent	Who has time to save when there's so much to buy	I'm not in charge of my savings.
Strongly agree	20.2%	11.4%	11.1%	5.4%	4.8%
Agree	15.4%	16.9%	28.6%	16.3%	9.6%
Undecided	6.0%	6.6%	9.3%	13.9%	10.8%
Disagree	41.9%	43.4%	35.8%	46.4%	40.7%
Strongly disagree	16.6%	21.7%	15.1%	18.1%	34.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table 4.14 presents the percentage of respondents as reported on the five statements measuring attitude towards savings. It can be noted that the respondents had a higher-than-average score of three, which represented the undecided score. The statement "I find it more satisfying to spend money than to save it for long term" had a total percentage of 58.5% reporting that they disagreed and strongly disagree with this statement. Whereas the statements "I tend to live for today and let tomorrow take care of itself," "Money is there to be spent", "Who has time to save when there's so much to buy" and "I'm not in charge of my savings" had a total percentage of 65.1%, 50.9%, 64.5% and 74.7% respectively reporting as disagree and strongly disagree.

This is in tandem with the OECD (2016) findings that the proportion of the population in the participating countries had an attitude score of more than average, consistent with higher levels of financial literacy.

4.5.7 Cross-tabulation of Attitude towards Savings and Retirement Planning.

A cross-tabulation of attitude towards long-term saving and retirement planning was conducted to examine the association between retirement planning and attitude towards savings.

Table 4.15: Cross-tabulation of Attitude towards Saving and Retirement Planning

		Retirement planning					
		Basic planner			Comprehensive Planner		
		Count	Row N %	Column N %	Count	Row N %	Column N %
I find it more satisfying to spend money than to save it for long term	Strongly agree	32	47.8%	20.4%	35	52.2%	20.0%
	Agree	18	35.3%	11.5%	33	64.7%	18.9%
	Undecided	12	60.0%	7.6%	8	40.0%	4.6%
	Disagree	79	56.8%	50.3%	60	43.2%	34.3%
	strongly disagree	16	29.1%	10.2%	39	70.9%	22.3%
I tend to live for today and let tomorrow take care of itself	strongly agree	17	44.7%	10.8%	21	55.3%	12.0%
	Agree	25	44.6%	15.9%	31	55.4%	17.7%
	undecided	13	59.1%	8.3%	9	40.9%	5.1%
	Disagree	76	52.8%	48.4%	68	47.2%	38.9%
	strongly disagree	26	36.1%	16.6%	46	63.9%	26.3%
Money is there to be spent	strongly agree	22	59.5%	14.0%	15	40.5%	8.6%
	Agree	48	50.5%	30.6%	47	49.5%	26.9%
	undecided	15	48.4%	9.6%	16	51.6%	9.1%
	Disagree	57	47.9%	36.3%	62	52.1%	35.4%
	strongly disagree	15	30.0%	9.6%	35	70.0%	20.0%
Who has time to save when there's so much to buy	Strongly agree	12	66.7%	7.6%	6	33.3%	3.4%
	Agree	25	46.3%	15.9%	29	53.7%	16.6%
	Undecided	21	45.7%	13.4%	25	54.3%	14.3%
	Disagree	75	48.7%	47.8%	79	51.3%	45.1%
	strongly disagree	24	40.0%	15.3%	36	60.0%	20.6%
I'm not in charge of my savings.	Strongly Agree	7	43.8%	4.5%	9	56.2%	5.1%
	Agree	19	59.4%	12.1%	13	40.6%	7.4%
	Undecided	14	38.9%	8.9%	22	61.1%	12.6%
	Disagree	61	45.2%	38.9%	74	54.8%	42.3%
	Strongly disagree	56	49.6%	35.7%	57	50.4%	32.6%

Table 4.15 presents the results of a cross-tabulation between attitude towards savings and retirement planning profiles. Focusing on the percentages within the column (retirement planning) gives the differences in attitude between the basic planners and comprehensive planners. The results do not show any considerable difference between the basic and comprehensive planners in the two attitude statements; I tend

to live for today and let tomorrow take care of itself and I'm not in charge of my savings. Both categories of retirement planners tend to disagree with these statements. In the first statement a total of 65% of both basic planners and comprehensive planners disagreed and strongly disagreed with the statement showing that both groups of pension members think about their future as they spent their money today. Consequently, basic planners and comprehensive planners felt like they were in charge of their savings as a total of 74.6% and 74.9% of basic and comprehensive planners respectively responded that they are in control of their savings.

55.4% of comprehensive planners responded against the statement 'money is there to be spent compared to 45.9% of basic planners, representing an almost 10% difference between these two categories of retirement planners. This statement captures the impulsive nature of spending, indicating that basic planners are more likely to have impulsive spending tendencies than comprehensive planners. On the contrary basic planners reported higher levels of positive attitude to the statement that they find it more satisfying to spend money than saving, with 60.5% of basic planners disagreeing with the statement. In comparison, 56.5% of comprehensive planners disagreed with the statement.

Table 4.16: Chi-Square Tests of Attitude towards Saving and Retirement Planning

		Retirement planning
I find it more satisfying to spend money than to save it for long term	Chi-square	16.634
	Df	4
	Sig.	.002*
I tend to live for today and let tomorrow take care of itself	Chi-square	6.835
	Df	4
	Sig.	.145
Money is there to be spent	Chi-square	8.627
	Df	4
	Sig.	.071
Who has time to save when there's so much to buy	Chi-square	4.184
	Df	4
	Sig.	.382
I'm not in charge of my savings.	Chi-square	3.448
	Df	4
	Sig.	.486

Results are based on nonempty rows and columns in each innermost subtable.
*. The Chi-square statistic is significant at the .05 level.

Table 4.16 shows the association between the saving attitude statements and retirement planning. The results indicate that the only statement with a statistically significant association with retirement planning at 5% is; 'I find it more satisfying to spend money than to save it for long term.' While the statement 'money is there to be spent is has an association with retirement planning at 10% significant level.

4.5.8 Financial Behaviour

This study sought to examine the pension scheme members' behaviour as cited by OECD (2018a) that they may need to repeat to make them financially resilient and be in a position to counter financial shocks. These measures include; making considered purchases, paying bills on time, closely monitoring personal financial affairs, setting long-term goals, setting monthly budgets, actively saving and investing, gathering information before purchasing financial products, and not borrowing to make ends meet.

Table 4.17: Financial Behaviour Descriptives

		Carefully consider purchase	Pay bills on time	close watch of financial affairs	set long term goals	set monthly budget	Actively saves and invests	Gather information before purchasing financial products	Don't borrow to make ends meet
N	Valid	332	332	332	332	332	332	331	330
	Missi	0	0	0	0	0	0	1	2
Mean		1.9066	2.2259	2.1566	2.2801	2.5120	2.6867	2.2296	2.7182
Median		2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
Mode		1.00[a]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Std.		1.02846	1.0254	1.04846	1.0238	1.1383	1.2135	1.13425	1.38905

a. Multiple modes exist. The smallest value is shown

The results as indicated in table 4.17 show the level of agreement of pension scheme members on a scale of 1 to 5 (where 1= strongly disagree and strongly agree=5) to different financial behavioural tendencies. The results' means, mode, median, and standard deviations are as recorded. The statements before I buy something I carefully consider whether I can afford it had a mean of 1.9066, median of 2, mode of 1, and standard deviation of 1.02856. The following statements all had a median of 2 (Agree) an Mode of 2 (agree); I pay my bills on time, I keep a close personal watch on my financial affairs, I set long term financial goals and strive to achieve them, I prepare a monthly household budget and adhere to it, I have been actively saving or buying investments in the past 12 months, I seek for relevant information before purchasing a financial product and I do not have to borrow to make ends meet.

The interpretation was that, on average, pension scheme members tend towards responsible financial behaviour. Behavioural processes have been reported to precede action and, therefore retirement savings. The stronger the behaviour before taking final steps to save for retirement, the greater the likelihood that the chosen financial action would be adequate for a comfortable retirement (Di Vito & Pospiech, 2012).

Table 4.18: Financial Behaviour Frequencies

		Responses	Percent of
		N	Cases
Financial behaviour[a]	Carefully consider purchase	272	85.5%
	Pays bills on time	236	74.2%
	Watch financial affairs	239	75.2%
	Sets Long Term goals	229	72.0%
	Budgeting	199	62.6%
	Actively saves	182	57.2%
	Gathers information before	241	75.8%
	Don't borrow to make ends meet	174	54.7%

a. Dichotomy group tabulated at value 1.

The short term and long term financial situations of individuals is shaped by their actions and behaviour. Therefore, it is imperative to evaluate the behavioural tendencies of individuals both in the short term and long term. Table 4.18 reports the percentage of pension scheme members who exhibited responsible financial behaviour under the different categories. A majority of the pension scheme members, 75.8% said that they shop around and gather information before purchasing a financial product, while 85.5% carefully considered whether they can afford an item before making a purchase. This is a good indication of a thorough decision-making process by the scheme members. 74.2% of members also reported promptly paying their bills while closely watching their financial affairs. 62.6% of pension scheme members have a monthly budget in place and adhere to it, while 72% report that they set long-term financial goals and strive to achieve them. Goal setting and written budgets are vital tools for money management and are key components in financial literacy, as identified in the G20/OECD INFE core competencies framework on financial literacy. In the 2017 OECD study measuring financial literacy of adults a 60% of respondents from all participating countries also reported having budgets (OECD, 2017).

Notably, 57.2% of pension scheme members have actively saved and bought investment tools in the last 12 months. Active saving is an essential competence as individuals who exhibit this behaviour easily smoothen their income and expenditure

flows and are more likely to be resilient to financial shocks and better able to meet financial goals. (OECD, 2016)

4.5.9 Cross-tabulation of Retirement Planning and Financial Behaviour

A cross-tabulation between retirement planning and financial behaviour was conducted to establish the association between the two variables.

Table 4.19: Cross-Tabulation of Retirement Planning and Financial Behaviour

		Retirement planning					
		Basic planner			Comprehensive Planner		
		Count	Row N %	Column N %	Count	Row N %	Column N %
Carefully consider purchase	Strongly Agree	60	44.1%	38.2%	76	55.9%	43.4%
	Agree	69	50.7%	43.9%	67	49.3%	38.3%
	Undecided	13	50.0%	8.3%	13	50.0%	7.4%
	Disagree	11	47.8%	7.0%	12	52.2%	6.9%
	Strongly Disagree	4	36.4%	2.5%	7	63.6%	4.0%
Pay bills on time	Strongly agree	37	46.2%	23.6%	43	53.8%	24.6%
	Agree	61	39.1%	38.9%	95	60.9%	54.3%
	undecided	31	72.1%	19.7%	12	27.9%	6.9%
	Disagree	23	48.9%	14.6%	24	51.1%	13.7%
	Strongly Disagree	5	83.3%	3.2%	1	16.7%	0.6%
close watch of financial	strongly agree	42	43.3%	26.8%	55	56.7%	31.4%
	Agree	60	42.3%	38.2%	82	57.7%	46.9%
	undecided	29	65.9%	18.5%	15	34.1%	8.6%
	Disagree	25	59.5%	15.9%	17	40.5%	9.7%
	strongly disagree	1	14.3%	0.6%	6	85.7%	3.4%
set long term goals	Strongly agree	33	46.5%	21.0%	38	53.5%	21.7%
	Agree	68	43.0%	43.3%	90	57.0%	51.4%
	undecided	27	54.0%	17.2%	23	46.0%	13.1%
	Disagree	25	55.6%	15.9%	20	44.4%	11.4%
	Strongly disagree	4	50.0%	2.5%	4	50.0%	2.3%
set monthly budget	Strongly agree	24	39.3%	15.3%	37	60.7%	21.1%
	Agree	57	41.3%	36.3%	81	58.7%	46.3%
	Undecided	30	61.2%	19.1%	19	38.8%	10.9%
	Disagree	37	52.9%	23.6%	33	47.1%	18.9%
	Strongly Disagree	9	64.3%	5.7%	5	35.7%	2.9%
Actively saves and invests	Strongly agree	21	41.2%	13.4%	30	58.8%	17.1%
	Agree	50	38.2%	31.8%	81	61.8%	46.3%
	Undecided	27	55.1%	17.2%	22	44.9%	12.6%
	Disagree	41	56.2%	26.1%	32	43.8%	18.3%
	Strongly Disagree	18	64.3%	11.5%	10	35.7%	5.7%
Gather information before purchasing financial products	Strongly agree	31	34.4%	19.7%	59	65.6%	33.7%
	Agree	81	53.6%	51.6%	70	46.4%	40.0%
	Undecided	18	58.1%	11.5%	13	41.9%	7.4%
	Disagree	22	51.2%	14.0%	21	48.8%	12.0%
	Strongly disagree	5	29.4%	3.2%	12	70.6%	6.9%
Do not borrow to make ends meet	Strongly agree	37	45.1%	23.6%	45	54.9%	25.7%
	Agree	36	38.7%	22.9%	57	61.3%	32.6%
	Undecided	12	36.4%	7.6%	21	63.6%	12.0%
	Disagree	50	58.8%	31.8%	35	41.2%	20.0%
	Strongly disagree	22	56.4%	14.0%	17	43.6%	9.7%

The table 4.19 reports the cross-tabulation results of the eight questions used to capture different financial behavioural aspects with the two categories of retirement planners; basic planners and comprehensive planners. It can be noted that there is a considerable difference between basic planners and comprehensive planners in several behavioural tendencies while focusing on the number of pension scheme members who reported as strongly agree and agree being considered to exhibit the desirable financial behaviour. Comprehensive planners had a notably higher percentage of individuals who paid their bills in time (78.8%), who closely watched their financial affairs (78.2%), who set long-term financial goals (73.1%) and who set and adhere to their monthly budget (63.4%). In comparison to those categorized as basic planners who stood at 62%, 64.9%, 64.3%, and 51.6%, respectively.

A comparison between the two retirement planning categories showed no big difference between basic and comprehensive planners in behavioural tendencies to seek information before purchase. Before making a purchase, those that carefully considered stood at 82% for basic planners and 81.9% for comprehensive planners. At the same time, those gathered information before purchasing financial products were 71% for basic planners and 73.7% for comprehensive planners.

Comprehensive planners had 63.4% of them who actively saved and invested in the past year, while basic planners had 45% actively saving and investing. These percentages are notably low among the basic planners as it seems that this category of pension scheme members is not preparing adequately for financial shocks and the future. Some might have been automatically enrolled in the schemes and are therefore not actively setting aside finances for other future income needs. The findings also note that 6 out of 10 basic planners borrow to make ends meet, while 58.3% of comprehensive planners borrow to make ends meet. This is a worrying trend as it implies that individuals sink more into debt for consumption purposes, which might lead to financial distress in the future.

Table 4.20: Chi-Square Tests for Financial Behaviour and Retirement Planning

		Retirement planning
Carefully consider purchase	Chi-square	1.803
	Df	4
	Sig.	0.772
Pay bills on time	Chi-square	18.021
	Df	4
	Sig.	0.001*,b
Closely watch of financial	Chi-square	13.765
	Df	4
	Sig.	0.008*,b
Set long term goals	Chi-square	3.325
	Df	4
	Sig.	0.505b
Set monthly budget	Chi-square	9.838
	Df	4
	Sig.	0.043*
Actively saves and invests	Chi-square	11.889
	Df	4
	Sig.	0.018*
Gather information before purchasing financial products	Chi-square	12.151
	Df	4
	Sig.	.016*
Don't borrow to make ends meet	Chi-square	9.663
	Df	4
	Sig.	0.046*

Results are based on nonempty rows and columns in each innermost subtable.
*. The Chi-square statistic is significant at the .05 level.

Table 4.20 gives Chi-square results of the association of the different financial behaviuor with retirement planning. The financial behaviours that have a significant association with retirement planning are; paying bills in time, closely watching ones financial affairs, setting and adhering to monthly budgets, actively saving and investing. Gathering information before purchasing financial products and refraining from borrowing to make ends meet were also statistically significant as the reported p-values were all less than 0.05. These findings concurs with Hira et al. (2009), who posit that individuals who were more likely to have an individual retirement account, were those who utilised more financial information sources, for instance, engage financial advisors, conduct internet research etc.), those who started investing early in life and those who had been active investors in the past 12 months. The study also

found that individuals who engage in ex-ante research (researching information before speaking with an individual) are more likely to maximize their retirement contributions.

Gathering information on financial products and actively saving and investing was also found to have a significant association with retirement planning. This indicates a level of interest and seeking of information on the best alternatives in the financial markets before one purchases, saves or invests in a financial product. This is a desirable habit as one is able save and invest from a knowledgeable point of view, and make the most from the investments. Seeking of information will also be beneficial for retirement planning as the decisions made will be well informed making retirees live a much better life.

However, careful consideration on whether one can afford an item before purchasing and setting long-term financial goals was reported not to have a statistically significant association with retirement planning.

4.6 Cross-tabulation between Demographic Factors and Retirement Planning

This section will present the relationship between the demographic results of the study with dependent variable retirement planning. The demographic variables of interest were gender, age, income level, marital status and level of education.

4.6.1 Gender and Retirement Planning

The purpose of the cross-tabulation is to show the relationship between gender and retirement planning.

Table 4.21: Cross-Tabulation of Gender and Retirement Planning

			Retirement planner		Total
			Basic	Comprehensive	
Gender	Male	Count	83	94	177
		% within Gender	46.9%	53.1%	100.0%
		% within	52.9%	53.7%	53.3%
	Female	Count	74	81	155
		% within Gender	47.7%	52.3%	100.0%
		% within	47.1%	46.3%	46.7%
Total		Count	157	175	332
		% within Gender	47.3%	52.7%	100.0%
		% within	100.0%	100.0%	100.0%

Table 4.21 presents the result on the cross-tabulation between the gender of the respondent and retirement planning. Out of the total 177 males 46.9% of the male respondents were basic planners and 53.1% were comprehensive planners. Likewise, with the female respondents from the results, 47.1 % of the female respondents were basic planners, while 52.3% were comprehensive planners. The two genders show that males have the most significant proportion of the within retirement group of the individuals who are comprehensive planners with a 53.7%. In contrast, out of the comprehensive planners, 46.3% were female. The results is also replicated in the basic planner category with male being 52.9% while female being 47.1% being basic planners. This shows that the male gender dominated both basic and comprehensive planners.

The interpretation is that men are more inclined to save for the future than female actively. This is in line with the findings of Noone et al. (2010) who posit that although women had the same perception on retirement as men, they were less prepared financially to retire than their male counterparts. Women tend to have accumulated less retirement nest egg as a result of lower wages than men during their

working years, thereby leading to less savings for retirement than men. The authors also reported lower living standards among women, this might be occasioned by the likelihood of women interrupting their employment to accommodate their role as caregivers. In some instances, they quit their jobs altogether, hence spending fewer years in the workforce and having smaller pension and savings to rely on upon retirement. Farrar et al. (2019) reports lower level of retirement planning among women. This lack of preparedness among women has been linked to their marital status and social roles. Men are socialised to take a dominant role in planning for retirement (Griffin et al., 2012). While women without spouses are prone to lower living standards as compared to their married counterparts and are therefore less prepared for retirement (Noone et al., 2010).

Table 4.22: Chi-Square Tests of Gender and Retirement Planning

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.024[a]	1	.877		
Continuity	.002	1	.965		
Likelihood Ratio	.024	1	.877		
Fisher's Exact Test				.912	.482
Linear-by-Linear	.024	1	.877		
N of Valid Cases	332				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is
b. Computed only for a 2x2 table

The chi-square test results between gender and retirement planning give different association results between the two variables. Table 4.22 indicates a person chi-square of 0.24 with a corresponding p-value of 0.877 greater than 0.005, indicating that the association between gender and retirement planning is not significant. The findings concur with the findings of Mansor *et al.* (2015) and van Rooij et al. (2011), who also found an insignificant influence of gender on retirement planning. However, Mata (2021) found that gender has a significant role in retirement planning.

4.6.2 Marital Status and Retirement planning

The purpose of the cross-tabulation is to show the relationship between marital status and retirement planning.

Table 4.23: Cross tabulation of Marital Status and Retirement planning

			Retirement planning		Total
			Basic planner	Comprehensive Planner	
Marital Status	Married	Count	60	96	156
		% within Marital	38.5%	61.5%	100.0%
		% within Retirement	38.5%	55.2%	47.3%
	Single	Count	86	58	144
		% within Marital	59.7%	40.3%	100.0%
		% within Retirement	55.1%	33.3%	43.6%
	Separated/ Divorced	Count	7	13	20
		% within Marital	35.0%	65.0%	100.0%
		% within Retirement	4.5%	7.5%	6.1%
	Widowed	Count	3	7	10
		% within Marital	30.0%	70.0%	100.0%
		% within Retirement	1.9%	4.0%	3.0%
Total		Count	156	174	330
		% within Marital	47.3%	52.7%	100.0%
		% within Retirement	100.0%	100.0%	100.0%

Table 4.23 above shows preliminary relationships between retirement planning and marital status variables. The different marital status groups showed that the married, separated and widowed had a higher proportion within the groups being classified as comprehensive retirement planners with 61.5%, 65% and 70%, respectively. In contrast, among the singles, 59.7% of were basic planners and 40.3% being comprehensive planners. These results are in tandem with Githu and Ngare (2014), who also observed that the level of planning among the singles was lower than in other categories.

In the case within the retirement planning categories, the number of comprehensive planners' respondents seems to decrease with a change in marital status from married towards the widowed option. This indicates that married people are more likely to be comprehensive planners than those outside the marriage. Among the respondents, married who were comprehensive planners stood at 55.2%, followed by a single at 33.3%, then separated/divorced at 7.5%, while those widowed stood at 4%.

The findings concur with those of Namate (2020) who reported that married individuals saved more than those who were not married in Malawi. The difference

between marrieds and singles is expected as couples may have double incomes, better medical, and pension benefits. They are also more probable to deliberate on their financial plans and seek necessary information to build a combined retirement plan.

Table 4.24: Chi-square Test for Marital Status and Retirement planning

	Value	Df	Asymp. Sig. (2-
Pearson Chi-Square	16.219[a]	3	.001
Likelihood Ratio	16.354	3	.001
Linear-by-Linear Association	1.402	1	.236
N of Valid Cases	330		

a. 1 cells (12.5%) have expected count less than 5. The minimum expected count is

A Pearson Chi-Square of 16.219 was found, as shown in table 4.24, with a p-value of 0.001. In this case, the significance values of the Person Chi-square are lower than a p-value of 0.005, which means that there is a significant association between marital status and retirement planning. This outcome contradicts those of Githua et al. (2015), who while using the chi-square found that marital status did not significantly associated with retirement planning. Although their study was limited to female teachers in Nyeri.

4.6.3 Age and Retirement Planning

The purpose of the cross-tabulation is to show the relationship between age and retirement planning.

Table 4.25: Cross-tabulation of Age and Retirement Planning

			Retirement planner		Total
			Basic	Comprehensive	
Age	20-30	Count	69	45	114
		% within Age	60.5%	39.5%	100.0%
		% within Retirement	43.9%	25.7%	34.3%
	30-40	Count	52	61	113
		% within Age	46.0%	54.0%	100.0%
		% within Retirement	33.1%	34.9%	34.0%
	40-50	Count	23	43	66
		% within Age	34.8%	65.2%	100.0%
		% within Retirement	14.6%	24.6%	19.9%
	50-60	Count	9	18	27
		% within Age	33.3%	66.7%	100.0%
		% within Retirement	5.7%	10.3%	8.1%
	over 60	Count	4	8	12
		% within Age	33.3%	66.7%	100.0%
		% within Retirement	2.5%	4.6%	3.6%
Total		Count	157	175	332
		% within Age	47.3%	52.7%	100.0%
		% within Retirement	100.0%	100.0%	100.0%

From table 4.25, there appears to be some relationship between age and retirement planning. In particular, the number of basic planners respondents decreased with the increase in age, from 43.9% to 33.1% to 14.6% to 5.7% and lastly 2.5% among the over 60 years. The interpretation was that younger people are more likely to be basic planners. On the other hand, the number of comprehensive planners shows a tendency to increase with the increase in age. Notably, the older respondent had more comprehensive planners within the age groups than the younger respondents. Within the 50-60 years category and over 60 years, age group, the comprehensive planners were 66.7%. Notably, with the 40-50 age group having 65.2% comprehensive planners and the 30-40 years age group having 54% comprehensive planners. In

contrast, the 20-30 age group had 39.5% comprehensive planners and 60.5% basic planners.

This finding confirms the notion that as one ages, they tend to be more responsible with their finances and from experience and exposure they make better financial decisions. The finding further confirms the claim of Arnone (2004) and Edmiston & Gillet-Fisher (2006), who posit that older employees are likely to have more exposure, higher pension literacy and therefore better retirement planning. At an early working life, an individual rarely begins saving and planning for retirement, although Jiménez et al., (2018) posit that younger generation who are educated start planning for their retirement much earlier. As one ages then one is self-motivated towards financial security tendency and hence a drive towards saving for retirement behaviour.

Table 4.26: Chi-Square Test for Age and Retirement planning

	Value	df	Asymp. Sig. (2-
Pearson Chi-Square	15.232[a]	4	.004
Likelihood Ratio	15.406	4	.004
Linear-by-Linear Association	13.166	1	.000
N of Valid Cases	332		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is

A chi-square test was conducted to determine if the relationship between two cross-tabulated variables was significant. Table 4.26 shows the chi-square test results, indicating a Pearson chi-square of 15.232 with a corresponding p-value of 0.004. In this case, the significance values are all lower than 0.05, which means a statistically significant association between age and retirement planning. The findings confirms the results of Githua et al. (2015) who established a significant association between age and retirement planning.

4.6.4 Monthly Income and Retirement Planning

The purpose of the cross-tabulation is to show the relationship between monthly income and retirement planning.

Table 4.27: Cross-tabulation of Monthly Income and Retirement Planning

			Retirement planner		Total
			Basic	Comprehensive	
Monthly Income	less than Kshs10,000	Count	19	5	24
		% within Monthly	79.2%	20.8%	100.0%
		% within	12.1%	2.9%	7.2%
	Kshs 10,000-50000	Count	114	88	202
		% within Monthly	56.4%	43.6%	100.0%
		% within	72.6%	50.3%	60.8%
	Kshs 50,000-100,000	Count	19	59	78
		% within Monthly	24.4%	75.6%	100.0%
		% within	12.1%	33.7%	23.5%
	Kshs 100,000-200,000	Count	5	17	22
		% within Monthly	22.7%	77.3%	100.0%
		% within	3.2%	9.7%	6.6%
	over Kshs 200,000	Count	0	6	6
		% within Monthly	0.0%	100.0%	100.0%
		% within	0.0%	3.4%	1.8%
Total		Count	157	175	332
		% within Monthly	47.3%	52.7%	100.0%
		% within	100.0%	100.0%	100.0%

The results from table 4.27 show the relationship between retirement planning and income level. In particular, the number of respondents who are basic planners seems to decrease with increase with income levels. As income earners of less than Kshs 10,000 reported 79.2% as basic planners, 56.4% for monthly income earners of Kshs 10,000- Kshs 50,000 to 24.4% for Kshs 50,000-Kshs 100,000, 22.7% for Kshs 100,000 - Kshs 200,000 and 0% for those earning more than Kshs 200,000. This implies that the higher the monthly income, the more likely is the tendency to be comprehensive planners. The results within the Income groups also showed an increase in comprehensive planners from 20.8% for the under Ksh 10,000 to 43.6% for the Kshs 10,000-50,000 income band. The trend increases to 75.6% for the Kshs 50000-100000 income group, then to 77.3% for the Kshs 100,000 – 200,000 and 100% for over Kshs 200,000 income band.

This increase demonstrates that the high-earning pension scheme members are mostly comprehensive planners. There is also a decline of basic planners as the level of income increases. This could be due to the fact that employers who earn more are more likely to take up individual pension schemes and be enrolled in occupational pension schemes by their employers. Kerosi (2014) also support this assertion in their research findings that household income is positively related to financial preparedness concluding that levels of earnings of employees influence their savings and investment patterns.

Table 4.28: Chi-square Test for Income and Retirement Planning

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	52.374[a]	4	.000
Likelihood Ratio	57.838	4	.000
Linear-by-Linear Association	47.509	1	.000
N of Valid Cases	332		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is

The chi-square result for the relationship between income level and retirement planning resulted in a Pearson Chi-Square of 52.374 and the p-value was found to be 0.000 as per table 4.28. In this case, the significance values are all so low that they are displayed as 0.000, which means that the association between the level of income and retirement planning is significant. The findings resonates with those of Githua et al. (2015) and, Shariff and Isah (2019) who posit a significant association between income and retirement saving.

4.6.5 Level of Education and Retirement Planning

The purpose of the cross-tabulation is to show the relationship between the level of education and retirement planning.

Table 4.29: Cross-tabulation of Education level and Retirement planning

				Retirement planner		Total
				Basic	Comprehensive	
Education level	Primary level	Count		9	6	15
		%	within	60.0%	40.0%	100.0%
		%	within	5.7%	3.4%	4.5%
	High school	Count		32	19	51
		%	within	62.7%	37.3%	100.0%
		%within		20.4%	10.9%	15.4%
	College/university	Count		116	150	266
		%	within	43.6%	56.4%	100.0%
		%within		73.9%	85.7%	80.1%
Total		Count		157	175	332
		%	within	47.3%	52.7%	100.0%
		%	within	100.0%	100.0%	100.0%

A cross tabulation aims to show the relationship between education and retirement planning. From table 4.29 above, there appears to be a relationship between the two variables. In particular, the number of respondents who are comprehensive planners seems to increase with education level from 3.4% for respondents with primary level education to 10.9% for those with high school education level and 85.5%% for respondents with college/university level education. Within the three groups, it is notable that those with college-level education had the higher percentage of comprehensive planners as compared to the basic planner with 56.4% comprehensive planners and 43.7% basic planners. In contrast, for the other categories of level of education, the basic planners to comprehensive planners were lower with 60% to 40% for primary level of education and 62% and 37.3% for those with high school level of education. The findings are similar with Klapper et al. (2015) and Murendo and Mutsonziwa (2016) who reported an increased household savings with advancement of education level.

Table 4.30: Chi-square Test for Level of Education and Retirement Planning

	Value	Df	Asymp. Sig. (2-
Pearson Chi-Square	7.305[a]	2	.026
Likelihood Ratio	7.336	2	.026
Linear-by-Linear Association	5.997	1	.014
N of Valid Cases	332		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is

Table 4.30 results indicate a Pearson chi-square of 7.305 with a p-value of 0.026, showing that the association between level of education and retirement planning is significant at 5% significance level. This is in tandem with Onduko et al. (2015) findings in their study on determinants of retirement planning in Kenya. The study found education to be strongly and positively related to retirement planning and that it is a significant determinant of retirement planning. However, this outcome is contrary to Githua et al. (2015), who found an insignificant relationship between education level and retirement savings among female teachers in Nyeri County.

4.7 Diagnostic Tests

Test of the assumptions of the logistic regression model to be used in the analysis was conducted before further analysis was done. The logistic regression has four main assumptions. First, it assumes that the outcome variable is binary. Secondly, there is a linear relationship between the logit of the dependent variable and each predictor variable. Thirdly, there are no outliers or extreme values in the continuous predictor variables that will significantly influence the logistic regression results. Lastly that there is no multicollinearity between the predictor variables. The last three assumptions were tested before the logistic regression was conducted.

4.7.1 Linearity Assumption

Logistic regression assumes a linear relationship between the logit, the log-odds of the dependent variable and each continuous independent variable. The logit is basically the logarithm of the odds ratio, where p = probability of being a comprehensive retirement planner.

$$\text{Logit (P)} = \text{Ln}\left(\frac{p}{1-p}\right)$$

To check for linearity between log odds of retirement planning and the continuous variables; financial awareness, financial knowledge, attitude towards savings and financial behaviour, the Box-Tidwell test was used. This was done by adding log-transformed interaction terms between the continuous independent variables and their corresponding natural log into the model. An insignificant p-value of the interaction term indicates the absence of a non-linear relationship, showing a linear relationship between the continuous variable and the log-odds of retirement planning.

Table 4.31: Logistic Regression Results for Linearity Test

	B	S.E.	Wald	Df	Sig.	Exp(B)
Financial awareness	.097	.108	.804	1	.370	1.102
Financial knowledge	-.185	.101	3.338	1	.068	.831
Savings Attitude	-.860	1.514	.323	1	.570	.423
Financial behaviour	1.919	2.328	.680	1	.410	6.816
Log financial awareness*financial awareness	-.014	.021	.438	1	.508	.986
Log Saving attitude*saving attitude	.359	.720	.249	1	.618	1.432
Log Financial Knowledge*financial knowledge	.039	.020	3.748	1	.059	1.039
Log financial behaviour*financial behaviour	-.677	1.054	.412	1	.521	.508
Constant	-3.509	4.122	.725	1	.395	.030

a. Variable(s) entered on step 1: Financial awareness, Financial knowledge, savings attitude, financial behaviour, logfinancial awareness, logSaving attitude, logfinancial Knowledge, logfinancial behaviour.

Table 4.31 indicates the logistic regression results that incorporated the interaction between the log of each continuous variable and the variable. The p-value reported for the interaction between the log of financial awareness and financial awareness is 0.508, greater than 0.05, indicating that there is a relationship between the log-odds of financial awareness and retirement planning is not non-linear, hence the assumption linearity is therefore met.

The interaction of the log of financial knowledge and financial knowledge also reported a p-value of 0.059, which is also greater than 0.05. This also indicates that the assumption of linearity between the log-odds of financial knowledge and retirement planning are met and hence the logistic regression estimates will be more reliable. Likewise, the p-value of the interaction of the log of attitude towards savings and attitude towards saving is 0.618. While the interaction between the log of financial behaviour and financial behaviour 0.521. These two reported p-values are greater than 0.05, which clearly indicates that the assumption of linearity of the log-odds of the continuous dependent variable with the predictor variable; retirement planning has not been violated.

4.7.2 Assumption of Outliers

According to Byrne (2010), outliers are cases or observations of a substantially high or low variable that differ significantly from other cases or observations. These outliers are not representative of the population and can distort the statistical results of the test statistics used in the research. They can distort statistical tests and thus work counter to the objectives of a research study. The logistic regression model assumes no outlier values in the continuous variables that would distort the regression estimates. Outliers and influential observations in logistic regression occur when there is a misclassification between the binary response between basic and comprehensive planners in this research. It may also happen by meaningful deviation in the explanatory variables (Nurunnabi et al., 2010)

The analysis presentation will incorporate the examination of outliers for the dependent variable by reporting the classification tables for all the logistic regression results. While for the explanatory variables, outlier examination may be from a univariate, bivariate and multivariate viewpoint. This study performed a multivariate check for outliers, because the study used a multivariate investigation for multivariate outliers that have extreme scores on two or more variables (Kline 2010; Hair et al. (2010) fronts the Mahalanobis distance (D2) as the common approach to detecting multivariate outliers, which measures the distance in standard deviation

units between a set of scores for one case and the mean of the sample for all variables.

Table 4.32: Multivariate Outliers Test Residuals Statistics Results

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.0349	.8940	.5271	.16035	332
Std. Predicted Value	-3.069	2.288	.000	1.000	332
Standard Error of Predicted	.027	.113	.056	.016	332
Adjusted Predicted Value	.0362	.9285	.5270	.16071	332
Residual	-.89403	.82755	.00000	.47361	332
Std. Residual	-1.876	1.737	.000	.994	332
Stud. Residual	-1.912	1.759	.000	1.001	332
Deleted Residual	-.92852	.84908	.00015	.48078	332
Stud. Deleted Residual	-1.920	1.765	.000	1.002	332
Mahal. Distance	.079	17.776	3.988	3.015	332
Cook's Distance	.000	.028	.003	.003	332
Centered Leverage Value	.000	.054	.012	.009	332

a. Dependent Variable: Retirement planning

Table 4.32 presents the results of multivariate outliers' tests statistics. From the table the standard residual values for the variables ranged from -1.876 to 1.737 indicating lack of outliers as no value of the variables were more than 2.5 as proposed by Pallant (2010). The critical value for the Mahalanobis distance for four variables is 18.47, the results from table 4.31 report a maximum Mahalanobis distance of 17.776, which is less than 18.47 a value within the critical area, implying that there are no outliers in the data.

A further analysis of outliers in each predictor variable will be presented in the logistic regression analysis with the help of the classification tables.

4.7.3 Multicollinearity test of the independent variables

Multicollinearity can be detected using tolerance and its reciprocal called Variance inflation factor (VIF). VIF shows how much the variance of the coefficient estimate is being escalated by multicollinearity and is, therefore, the inverse of tolerance (Senaviratna & Cooray, 2019).

Table 4.33: Collinearity Coefficients statistics

Model		Collinearity Statistics	
		Tolerance	VIF
1	Financial awareness	.942	1.062
	Financial knowledge	.979	1.021
	Savings Attitude	.883	1.133
	Financial behaviour	.920	1.087

a. Dependent Variable: Retirement planning

Table 4.33 shows the result of the multicollinearity test between financial awareness, financial knowledge, attitude towards savings and financial behaviour. The results of the tolerance levels of the variables are 0.942, 0.979, 0.883 and 0.920, respectively. According to Senaviratna and Cooray (2019), a tolerance level closer to 1 indicates little multicollinearity. A level closer to 0 suggests multicollinearity between the independent variables. As a rule of thumb, a tolerance level of less than 0.1 should be a cause of concern. All the reported values are above the recommended threshold of 0.1, indicating the absence of multicollinearity between the independent variables.

The VIF shows how much of the coefficient estimates are inflated by multicollinearity; it's the reciprocal of the tolerance level. Values exceeding 10 are often an indication of multicollinearity for linear regression, but values above 2.5 may indicate multicollinearity for logistic regression. (Senaviratna & Cooray, 2019). The Variance inflation factor (VIF) reported were 1.062, 1.021, 1.133 and 1.087 for financial awareness, financial knowledge, attitude towards savings and financial behaviour, respectively. All the reported values are less than 2.5 indicating low levels of multicollinearity in the variables.

The interpretation was that the level of multicollinearity between the independent variable was very low, which implies orthogonality in the variables. Burns and Burns (2008) assert that multicollinearity is the presence of very high correlations between the independent variables and should be avoided. From table 4.33, the study concludes that orthogonality was achieved and was a good indicator of the explanatory power of the independent variables on the variance of the dependent variable without interference from one another.

4.8 Factor Analysis

Communality values are used to compute the unevenness of observed variable that could be explained by the extracted factors (Field, 2009). The least amount of factors indicating interrelationship among a set of variables was identified by factor extraction procedure. The principle component analysis is the most used extraction method, with a general guideline of deducing items with loadings greater than 0.32 (Pallant, 2010). Items with higher are presumed to be better measure of the factor. Loadings greater than 0.71 (50% corresponding variance) are regarded as excellent, 0.63 (40% corresponding variance) as very good, 0.55 (30% corresponding variance) as good, 0.45 (20% corresponding variance) as fair and 0.32 (10% corresponding variance) as poor (Tabachnick & Fidell, 2007). The amount of factors to be considered are decided using Kaiser's criterion/Eigen value with factors of Eigen value of 1.0 and more were engaged for further examination (Kaiser 1958; Field 2009).

4.2.3 Factor Analysis of Financial Awareness

The factor analysis results for financial awareness are presented in Table 4.34. The primary factor analysis with Varimax rotation was executed to categorise the underlying factors of financial awareness.

Table 4.34: Factor Analysis of Financial Awareness

Component	1	2	3
Aware of shares and bonds	0.637		
Aware of mortgage	0.618		
Aware of credit card	0.604		
Aware of microfinance loan	0.588		
Aware of insurance products	0.578		
Aware of mobile payments	0.562		
Aware of prepaid payment cards	0.557		
Aware of NSSF	0.531		
Aware of NHIF	0.530		
Aware of savings account	0.525		
Aware of NSE	0.522		
Aware of bank loans	0.493		
Aware of ROSCA	0.479		
Aware of Postbank	0.419		
Aware of unit trust		0.459	
Aware of Mpesa		0.540	
Aware of SACCO		0.525	
Aware of unit trusts			
Aware of pension funds			0.410
Aware of RBA			0.589
Total Variance Explained			
Total			1.176
% of Variance			56.652
Cumulative %			56.652
KMO and Bartlett's Test			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			0.831
Bartlett's Test of Sphericity, Approx. Chi-Square			1641.836
Df			171
Sig.			0.000

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

The results depicted that the good factor loading scores showed that all the items were exceeded the endorsed value of 0.40 for sample size of more than 200 (Hair et al., 2014). The factor analysis outcomes showed 1 factor with an Eigen value of 1.176, a value greater than standard value of 1 (Yong & Pearce, 2013) and cumulative extracted variance of 56.652%. Thus, the items were appropriate to financial awareness variable. Moreover, from the Table 4.34 Bartlett's Test of Sphericity produced a significant Chi-Square (χ^2) of 1641.836 (ρ<0.05) and Kaiser – Meyer - Olkin measure of sampling adequacy was 0.831 above the standard value of 0.50 (Field, 2005), indicating the appropriateness of the components for this variable of financial awareness (Watkins, 2018).

4.2.4 Factor Analysis for Financial knowledge

The factor analysis results for financial knowledge are presented in Table 4.35. The principal component analysis with Varimax rotation was performed to identify the underlying factors of financial knowledge.

Table 4.35: Factor analysis of Financial Knowledge

Component	1	2	3	4
Knowledge of simple interest	0.778			
Knowledge arithmetic calculation in a financial context	0.669			
Knowledge of inflation and cost of living		0.789		
Knowledge of risk-return relationship		0.723		
Knowledge of diversification			0.751	
Knowledge of the concept of inflation			0.720	
Knowledge of the compound interest				0.969
Total Variance Explained				
Total			1.040	
% of Variance			14.30	
Cumulative %			70.00	
KMO and Bartlett's Test				
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.769			
Approx. Chi-Square	115.810			
Bartlett's Test of Sphericity, Df	21			
Sig.	0.000			

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

The results depicted that factor loadings of all items included in financial knowledge exceeded the endorsed value of 0.40 for large samples (Hair et al., 2014). The principal components analysis was performed and four factors that had Eigen values greater than 1.0 were extracted. These factors (1, 2, 3 and 4) accounted for 23.7%, 17.4%, 14.6% and 14.3% of the variance respectively. The four factors accounted for the total variance of 70 % as shown in table 4.35. Furthermore, the Kaiser – Meyer - Olkin measure of sampling adequacy was 0.769 above the acceptable value of 0.50 (Field, 2005), indicating it was proper to subject the data for factor analysis on financial knowledge variable (Watkins, 2018). The Bartlett's Test of Sphericity

produced a chi-square (χ^2) of 115. 810 with $p< 0.05$ which is also an indication of appropriateness of data.

4.2.5 Factor Analysis for Attitude towards saving

The factor analysis results for attitude towards saving are presented in Table 4.36. The principal component analysis with Varimax rotation was performed to identify the underlying factors of attitude towards saving.

Table 4.36: Factor analysis for Attitude towards saving

Component		**1**
I find it more satisfying to spend money than to save it for long term		0.831
I tend to live for today and let tomorrow take care of itself		0.791
Money is there to be spent		0.739
Who has time to save when there's so much to buy		0.674
I'm not in charge of my savings.		0.635
Total Variance Explained		
Total	2.719	
% of Variance	54.386	
Cumulative %	54.386	
KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.756	
Approx. Chi-Square	507.038	
Bartlett's Test of Sphericity, Df	10	
Sig.	0.000	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

The results depicted that factor loadings of all items included in attitude towards savings exceeded the endorsed value of 0.40 for large samples. (Hair et al., 2014). The principal components analysis was performed and one factor with an Eigen value of 2.719 which is greater than 1.0 was extracted. This factor accounted for of the total variance of 54.39% as shown in table 4.36. Furthermore, the Kaiser – Meyer - Olkin measure of sampling adequacy was 0.756 above the suitable value of 0.50 and close to 1 (Field, 2005), indicating that it was proper to subject the data for factor analysis on the attitude towards savings variable (Watkins, 2018). The Bartlett's Test of Sphericity produced a chi-square (χ^2) of 507.038 with $p< 0.05$ which is also an indication of appropriateness of data for structure detection.

4.2.6 Factor Analysis for Financial behaviour

The factor analysis results for financial behaviour are presented in Table 4.37. The principal component analysis with Varimax rotation was performed to identify the underlying factors of financial behaviour.

Table 4.37: Factor Analysis for Financial behaviour.

	Component	
	1	**2**
	0.786	
I set long term financial goals and strive to achieve them	0.761	
I pay my bills on time	0.749	
I have been actively saving or buying investments in the past 12	0.672	
I shop around and gather information before purchasing a		0.822
I do not borrow to make ends meet		0.674
Before I buy something I carefully consider whether I can		0.556
I keep a close personal watch on my financial affairs		0.614
Total Variance Explained		
Total		
% of Variance		55.620
Cumulative %		55.620
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		
Approx. Chi-Square		668.80
Bartlett's Test of Sphericity Df		28
Sig.		0.000

Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 3 iterations.

The results indicate that factor loadings of all items included in financial behaviour exceeded the endorsed value of 0.40 for large samples (Hair *et al.*, 2014). The principal components analysis was performed and one factor with an Eigen value of 1.017 which is slightly greater than 1.0 was extracted. These factors (1 and 2) accounted for 42.91%, and 12.7% of the variance respectively. These factors accounted for the total variance of 55.620% as shown in table 4.37. Furthermore, the Kaiser – Meyer - Olkin measure of sampling adequacy was 0.841 above the standard value of 0.50 and close to 1 (Field, 2005), indicating the appropriateness to subject the data for factor analysis on financial behaviour variable (Watkins, 2018). The

Bartlett's Test of Sphericity produced a chi-square (χ^2) of 668.804 with $p< 0.05$ which is also an indication of suitability of data.

4.9 Logistic Regression Results

In this section, the study's findings will be presented for each of the four dependent variables; financial awareness, financial knowledge, attitude towards savings and financial behaviour. Each variable influences on retirement planning using the logistic regression model is presented individually and the combined influence will also be represented. The individual influence of the four variables is to test the hypothesis of the study, while the combined influence of the four variables on retirement planning is to answer both the study's specific objectives and the study's general objectives.

4.9.1 The Influence of Financial Awareness on Retirement planning

This section shows the influence of financial awareness on retirement planning by presenting the model summary, the Hosmer-Lemeshow test results, the classification table and the logistic regression coefficient results of these two variables. The binary logistic regression model utilises the pseudo R squares; Snell R square and Nagelkerke R square, to measure the predictive power of a variable.

Table 4.38: Model Summary of the Influence of Financial Awareness on Retirement Planning

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	435.130[a]	.070	.094

a. Estimation terminated at iteration number 3 because parameter estimates changed by less than .001.

Table 4.38 reports a -2 Log likelihood Cox statistic of 435.130, a Snell R Square of 0.070 and Nagelkerke R Square of 0.094, which indicates that financial awareness alone has low explanatory power of 9.4% on retirement planning as given by the Nagelkerke R-squares on retirement planning. The finding implies that a pension

scheme member is aware of financial institutions and the financial products and services on offer contributes towards 9.4% of these members planning for retirement as the knowledge of what is on offer arouses curiosity to actions.

The Hosmer-Lemeshow (H-L) test is commonly used to assess the model's fitness in logistic regression. It allows for any number of explanatory variables, which may be continuous or categorical. A significant test indicates that the model is not a good fit and a non-significant test demonstrates that the model is a good fit (Hosmer & Lemeshow, 2000).

Table 4.39: H-L Test for Financial Awareness and Retirement Planning

Step	Chi-square	Df	Sig.
1	1.452	8	.993

Table 4.39 shows H-L test results; a Chi-square value of 1.452 with a significance level (P-value) of 0.993, which is greater than 0.05, the recommended level. The finding shows a non-significant test in logistic regression, indicating that the model with retirement planning and financial awareness is a good fit and, therefore, an excellent predictive power of the model.

Table 4.40: Classification Table

	Observed		Predicted		
			Retirement planning		Percentage Correct
			Basic	Comprehensive Planner	
Step 1	Retirement planning	Basic planner	79	78	50.3
		Comprehensive	52	123	70.3
	Overall Percentage				60.8

a. The cut value is .500

Table 4.40 presents the results of cross-classifying the outcome variable, y, with a dichotomous variable whose values are derived from the estimated logistic probabilities. The results from table 4.40 shows the value of 60.8%, which is greater than the cut-point value of 50%, indicating a moderate accuracy in the classification of the respondents as basic planners and comprehensive planners in regards to

retirement. The results also indicate the absence of outliers in the dependent variable as the level of accuracy is higher than 50%.

Table 4.41: The Influence of Financial Awareness on Retirement Planning.

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 1[a]	Financial awareness	.566	.121	22.018	1	.000	1.761
	Constant	.111	.114	.940	1	.332	1.117

a. Variable(s) entered on step 1: Financial awareness.

The parameter estimates table 4.41 summarizes the influence of finance awareness on retirement planning. The ratio of the coefficient to its standard error, squared, equals the Wald statistic. If the significance level of the Wald statistic is less than 0.05, then the parameter is useful to the model. The logistic regression model from the findings is, therefore:

$$Logit\,(P) = 0.111 + 0.566FA$$

Where FA represents financial awareness, and Logit (P) represents the predicted result based on knowledge of the independent variable that the probability of planning comprehensively for retirement falls in category (1) and not category (0) which is having a basic retirement plan. The slope represents the changes of the log odds of the dependent variable. The reported constant is 0.111, which does not have a significant impact. From the equation, the β_1 co-oefficent for financial awareness shows a positive value of 0.566. This means that an increase in financial awareness leads to an increase in the odds of comprehensively planning for retirement.

The results from table 4.41 report a 1.761 Exponential (B) for finance awareness. This means that the odds of a pension scheme member who is financially aware of financial products and financial institutions in Kenya being a comprehensive planner is 1.761 times the odds of a pension scheme member who lacks financial awareness. The interpretation in this study is that a pension scheme member who is financially

aware of the financial products and financial institutions is 76.1% more likely to be a comprehensive planner than one who lacks financial awareness.

The null hypothesis (H_{01}) stated that financial awareness has no statistically significant influence on retirement planning in Kenya. The findings from Table 4.41 show that financial awareness has a significance value of 0.000, which is less than 0.05. Therefore, the null hypothesis H_{01} is rejected and the study concludes that financial awareness has a statistically significant influence on retirement planning. This result is similar to those of Doyo (2013), who measured financial literacy solely with the knowledge of financial instruments and found a significant relationship between financial literacy and retirement preparedness among workers in the informal sector. The outcome also resonates within the formal sector, as posited by Mndzebele and Kwenda (2020) who found a significant effect between knowledge of financial instruments and financial preparedness for retirement by academic staff in institutions of higher learning.

However, the findings are contrary to Agunga et al. (2017), who found that awareness of financial products was not statistically significant in determining retirement preparedness. The discrepancy may have been observed because Agunga et al. (2017) focused solely on workers in state-owned corporations who are in the formal sector in Kenya. Even though they found a high level of awareness of financial instruments, their level of awareness had no significant effect on the workers' preparedness for retirement. The current study incorporated respondents from the formal and informal sectors, hence differing results.

4.9.2 The influence of Financial Knowledge on Retirement planning

This section presents the results of the influence of financial knowledge and retirement planning. It attempts to address the second specific objective of the study. The extent to which financial knowledge explains retirement planning is analysed using a pseudo R-square in binary logistic regression.

Table 4.42: Model Summary for financial knowledge and retirement planning

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	454.070[a]	.016	.021

a. Estimation terminated at iteration number 3 because parameter estimates changed by less than 0.001.

The results in table 4.42 indicate a -2 Log likelihood Cox statistic to be 454.070, Cox and Snell R Square was .016 and Nagelkerke R Square was found to be 0.021 or 2.1%. This means that Financial Knowledge alone has a low explanatory power of 2.1% on retirement planning, given by the Nagelkerke R-squares. The findings imply that knowledge of financial concepts and terms contributes only 2.1% of retirement planning among members of Kenya's pension schemes.

Table 4.43: H-L Test for Financial Knowledge and Retirement Planning

Step	Chi-square	Df	Sig.
1	3.260	4	.515

Table 4.43 shows the Hosmer-Lemeshow test. A Chi-square value of 3.260 was found with a significance level (P-value) of 0.515, greater than 0.05. According to Hosmer & Lemeshow (2000), a significant test indicates that the model is not a good fit and a non-significant test indicates a good fit. Therefore, the results show a non-significant test indicating that the model containing retirement planning and financial knowledge is a good fit and can be relied on.

Table 4.44: Classification Table

	Observed		Predicted		
			Retirement planning		Percentage Correct
			Basic Planner	Comprehensive Planner	
Step 1	Retirement planning	Basic planner	55	102	35.0
		Comprehensive Planner	45	130	74.3
	Overall Percentage				55.7

a. The cut value is .500

Table 4.44 presents the results of cross-classifying the outcome variable y, with a dichotomous variable whose values are derived from the estimated logistic probabilities. To get the derived dichotomous variable, a cut-point must be

established. Then the probability is compared to this cutoff point value. The results from table 4.43 show a value of 55.7 %, which is greater than the cut-point value of 50%, indicating a moderate level of accuracy in the classification of the dependent variable, retirement planning.

Table 4.45: The Influence of Financial Knowledge on Retirement Planning

	B	S.E.	Wald	df	Sig.	Exp(B)
Financial knowledge	.254	.113	5.067	1	.024	1.289
Constant	.109	.111	.968	1	.325	1.115

a. Variable(s) entered on step 1: Financial knowledge.

The parameter estimates in Table 4.45 summarizes the influence of finance knowledge on retirement planning. The ratio of the coefficient to its standard error, squared, equals the Wald statistic. If the significance level of the Wald statistic is less than 0.05, then financial knowledge is useful to the model. The findings thereby give the following logistic regression model:

$$Logit\,(P) = 0.109 + 0.254FK$$

Where FK represents financial knowledge and Logit (P) represents the predicted result based on knowledge of the independent variables that the probability of planning comprehensively for retirement falls in category (1) and not category (0), which is having a basic retirement plan. The slope represents the changes in the log odds of the dependent variable. The reported constant is 0.109, which has an insignificant impact. From the equation, the β_1 co-oefficent for financial knowledge is a positive value of 0.254. This means that an increase in financial knowledge leads to an increase in the odds of comprehensively planning for retirement.

From the results, Exponential (B) for financial knowledge is equal to 1.289, which means that the odds of being a pension scheme member with a high score of financial knowledge attribute is 1.289 times the odds of a person with a lower score of financial knowledge. The interpretation in this study is that a financially knowledgeable person is 28.9% more likely to be a comprehensive planner than someone who does not have the attribute of financial knowledge. The null hypothesis H_{02} stated that financial knowledge has no statistically significant influence on

retirement planning among pension scheme members in Kenya. The results from table 4.45 indicate a significance level of 0.024, which is less than 0.05. The results imply that the study rejects the null hypothesis and concludes that financial knowledge statistically influences retirement planning. The outcome confirms Githu and Ngare (2014) results, who found a statistically significant relationship between financial literacy (measured by knowledge of time value of money, risk, diversification and stock) and retirement planning among individuals working in the informal sector in Kenya.

This finding also concurs with van Rooj et al. (2011) findings, who found a solid and positive relationship between financial knowledge and retirement planning in the Netherlands, as well as Mata (2021) who reported a statistically significant link between financial knowledge and retirement planning. The researcher posits that the more knowledgeable an individual is, the more likely they are to use active strategies in retirement planning. The finding also resonates with Safari et al. (2021) in DRC who also reported a statistically significant association between financial knowledge and computational capability with retirement planning. In France, Arrondel et al. (2013) resounded that planners were most likely to give correct responses on the three financial concept questions of interest rate, inflation and risks as they reported an association between financial literacy and long-term planning for retirement.

On the contrary, Aluodi et al. (2017) dissipate this notion after investigating the effect of financial literacy on retirement planning by employees in the insurance sector in Kenya. The study utilised the financial knowledge metrics as their measures of financial literacy. While focusing on the questions based on the basic levels of financial literacy, which included the knowledge of inflation, interest rates, interest compounding and the time value of money. In addition, a set of questions focused on more advanced levels of financial literacy related to more complex financial instruments, risk diversification and balance between risk and return. The authors found that how well an individual understands basic and advanced financial concepts did not necessarily influence how they prepare for retirement. The difference in the findings between this current study and Aluodi *et al.* (2017) could be because their study focused on employees within the insurance industry who are the main players

within the pension industry, while the current study focused on employees from a greater portion of the economy that is not versed with the pension industry.

4.9.3 The Influence of Attitude towards Saving on Retirement Planning in Kenya

This section presents the results of the influence of attitude towards savings on retirement planning and attempts to address the third specific objective of the study. The extent to which attitude towards savings explains retirement planning is analysed using a pseudo-R-square in binary logistic regression.

Table 4.46: Model Summary of the Influence of Attitude towards Savings on Retirement Planning

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	457.961[a]	.004	.005

a. Estimation terminated at iteration number 2 because parameter estimates changed by less than .001.

From the results in table 4.46 above, the -2 Log likelihood Cox statistic was found to be 457.961, Snell R Square was 0.004 and Nagelkerke R Square was found to be 0.005 or 0.5%. The results mean that the variable attitude towards savings alone has a low explanatory power of 0.5 % as given by the two R-squares on retirement planning.

Table 4.47: H-L Test of Attitude towards Saving and Retirement Planning

Step	Chi-square	Df	Sig.
1	21.473	7	.003

From the results on table 4.47, a chi-square value of 21.473 was obtained and a corresponding p-value of 0.003, a value that was less than 0.05. This shows the test was significant, yet in logistic regression, a non-significant test result indicates a good model fit. The conclusion was that there seemed to be a difference between the observed and predicted values in the contingency table for Hosmer and Lemeshow Test and hence was an indication of the poor predictive power of the model that contained attitude toward savings and retirement planning.

Table 4.48: Classification Table

	Observed		Predicted		
			Retirement planning		Percentage Correct
			Basic planner	Comprehensive Planner	
Step 1	Retirement planning	Basic planner	36	121	22.9
		Comprehensive	40	135	77.1
	Overall Percentage				51.5

a. The cut value is .500

Table 4.48 presents the results of cross-classifying the outcome variable, y, with a dichotomous variable whose values are derived from the estimated logistic probabilities. The results from table 4.46 show a value of 51.5%, which is slightly higher than the cut point value of 50%. This is indicative that the accuracy of classification of respondents into the two categories of retirement planners is moderate and within the acceptable levels.

Table 4.49: The Influence of Attitude towards Saving on Retirement Planning

	B	S.E.	Wald	Df	Sig.	Exp(B)
Savings Attitude	.126	.110	1.307	1	.253	1.135
Constant	.109	.110	.977	1	.323	1.115

a. Variable(s) entered on step 1: savings Attitude.

The results from table 4.49 give rise to the following logistic regression model, which addresses the third objective of the study of examining the influence of attitude towards savings on retirement planning.

$$Logit\,(P) = 0.109 + 0.126\text{ATS}$$

Where ATS represents attitude towards savings and Logit (P) represents the predicted result based on knowledge of the independent variables that the probability of planning comprehensively for retirement falls in category (1) and not category (0), which is having a basic retirement plan. The slope represents the changes of the log odds of the dependent variable. The reported constant is 0.109 which has an insignificant impact. From the equation, the β_1 co-oefficent for attitude towards savings is a positive value of 0.126. This means that an improvement in the attitude

towards saving leads to an increase in the odds of comprehensively planning for retirement.

Table 4.49 indicates an Exponential (B) for saving attitude equal to 1.135, which means that the odds of being a comprehensive retirement planner for a person with a positive attitude towards savings is 1.135 times the odds of a person without a positive attitude towards saving. The interpretation in this study is that a person who has a positive attitude towards saving is 13.5% more likely to be a comprehensive retirement planner than a basic retirement planner.

The third null hypothesis of the study, H_{03} posits that attitude towards savings of pension scheme members has no statistically significant influence on retirement planning. The significance level from table 4.49 is reported as 0.253, which is more than 0.05; therefore, the study fails to reject the third null hypothesis and concludes that attitude towards savings is not statistically significant in determining the retirement planning of pension scheme members.

These findings among the pension scheme members are in tandem with those of Jamal et al. (2016) who also found that financial attitude was not significant in explaining the savings behaviour among students in Malaysia. The savings behaviour developed at the formative stage of life are in most cases further developed as one enters employment. Consequently, for individuals in employment, Safari et al. (2021) also established that the attitude towards financial products of public sector employees in the Democratic Republic of Congo were insignificant in explaining personal retirement planning. Additionally, Agabalinda and Isoh (2020) also reported anon-significant relationship between attitude and retirement preparedness. The attitude towards saving among the pension scheme members may have yielded insignificant results due to the nature of the target group who are mostly automatically enrolled into the pension schemes by their employers. This is mandatory and a requirement by the government. Only a small proportion of the pension scheme members decide to individually enroll themselves into these schemes through the individual pension schemes.

However, Adiputra and Patricia (2020), in their study on the effect of financial attitude, financial knowledge and income on financial management behaviour found a significant positive effect of financial attitude on financial management behaviour. The previous studies (Jamal et al., 2016 and Adiputra & Patricia, 2020) did not focus on retirement planning as is the case of this current study. However, the savings and financial management behaviour can be presumed to incorporate saving for retirement hence planning for this phase of life. Rahman et al. (2021) reported more specifically, a significant association between saving attitude and retirement planning.

4.9.4 The Influence of Financial Behaviour on Retirement Planning in Kenya

This section shows the influence of financial behaviour on retirement planning by presenting the model summary, the Hosmer-Lemeshow test results, the classification table and the logistic regression coefficient results of these two variables. The binary logistic regression model utilises the pseudo R squares; Snell R square and Nagelkerke R square to measure the predictive power of a variable.

Table 4.50: Model Summary of Influence of Financial Behaviour on Retirement Planning

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	450.216[a]	.027	.036

a. Estimation terminated at iteration number 3 because parameter estimates changed by less than .001.

The summary of the model for the logistic regression utilises pseudo R, namely Cox & Snell R square and NagelKerke R square. From the results in table 4.50, the -2 Log likelihood statistic was found to be 450.216, Cox and Snell R Square was .027 and Nagelkerke R Square was found to be .036 or 3.6 %. This means that financial behaviour alone has a low explanatory power of 3.6%, as given by the Nagelkerke R-squares on retirement planning.

Table 4.51: H-L Test of influence of Financial Behaviour on Retirement Planning

Step	Chi-square	Df	Sig.
1	8.060	8	.428

The Hosmer and Lemeshow Tests measure the goodness of fit of the model. From the results in table 4.51, the chi-square value of 8.060 was obtained and its p-value was found to be 0.428, a value that was greater than 0.05. According to the chi-square test, the interpretation is that of non-significance of the financial behaviour variable, which, according to the Hosmer-Lemeshow test, was an indication of the good predictive power of the model that contains financial behaviour and retirement planning.

Table 4.52: Classification Table

	Observed		Predicted		
			Retirement planning		Percentage Correct
			Basic planner	Comprehensive Planner	
Step 1	Retirement planning	Basic planner	65	92	41.4
		Comprehensive Planner	51	124	70.9
	Overall Percentage				56.9

a. The cut value is .500

Table 4.52 presents the results of cross-classifying the outcome variable, y, with a dichotomous variable whose values are derived from the estimated logistic probabilities. The interpretation is that there is a low chance of misclassification and hence the accuracy level of 56.9% which is greater than the cut value of 50%.

Table 4.53: The Influence of Financial Behaviour on Retirement Planning.

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 1[a]	Financial behaviour	.337	.114	8.739	1	.003	1.401
	Constant	.110	.111	.975	1	.323	1.116

a. Variable(s) entered on step 1: financial behaviour.

Table 4.53 shows the results that address the study's fourth objective that determined the influence of financial behaviour on retirement planning. The resulting logistic regression model is as follows;

$$Logit\,(P) = 0.110 + 0.337\text{FB}$$

Where FB represents financial behaviour and Logit (P) represents the predicted result based on knowledge of the four independent variables that the probability of planning comprehensively for retirement falls in category (1) and not category (0), which is having a basic retirement plan. The slope represents the changes of the log odds of the dependent variable. The reported constant is 0.110 which has an insignificant impact. From the equation, the β_1 co-oefficent for financial behaviour is a positive value of 0.337. This means an increase of financial behaviour leads to an increase in the odds of comprehensively planning for retirement.

The results from table 4.53 indicate an Exponential(B) for financial behaviour attribute equals 1.401, which means that the odds of being a comprehensive retirement planner for a person with responsible financial behaviour attributes is 1.401 times the odds of a person without financial behaviour attribute. The findings of this study indicate that a person with desirable financial behaviour attributes is 40% more likely to be a comprehensive planner than one who lacks financial discipline. Therefore, this implies that a pension scheme member who has and adheres to a budget regularly saves, seeks information, takes careful consideration before purchasing, and doesn't borrow for the monthly consumption has a 40% chance of comprehensively planning for their retirement and hence have a better retirement life.

The fourth hypothesis H_{04} of the study was that financial behaviour has no statistically significant influence on retirement planning. It can be observed from table 4.53 that the significance level is 0.003, which is less than 0.05, hence indicating that financial behaviour is a significant variable in retirement planning. Therefore, the study rejects the null hypothesis H_{04} and concludes that financial behaviour has a statistically significant influence on retirement planning. The implication is that day to day financial behaviour of an individual is a key determinant of retirement planning.

The desirable financial behaviour also included setting monthly budgets and adhering to them, which implies that an individual is forward-looking and has control of their expenditure. Budgets are a prelude to better personal financial management tools. When adhered to, give one the attribute of being in control and directing one's resources to areas that will bring better financial well-being in the future, including a well-planned retirement phase of one's life. The study's findings concur with Kimiyagahlam et al. (2019), who found that behavioural factors like propensity to plan and being future orientated has a significant relationship on retirement planning behaviour. Closely tracking one's financial affairs, prompt payments of bills and not borrowing to make ends meet implies that an individual has some level of discipline and intentionality over their daily financial affairs.

The findings also resonate with those of Sudindra and Naidu (2018), that routine saving and investment acts a behavioural factors that indeed affect prudent financial decisions in the case of this study, planning for one's retirement that secures one's future. This savings is, in some cases the main source of income even during retirement, while others use these savings to cushion during times of financial difficulties and other emergencies that come about. Russell and Stramoski (2011) reported that dental hygienists relied more on the regular savings as their retirement income as the social security amount expected during retirement would not be enough to give them a sustainable livelihood upon retirement.

4.9.5 Multivariate Results of the Influence of Financial literacy on Retirement Planning.

Two logistic regression equations were conducted to analyse the influence of financial literacy on retirement planning. A multivariate logistic regression and a univariate logistic regression. A multiple binary logistic regression was conducted for all the four variables; financial awareness, financial knowledge, attitude towards savings and financial behaviour. The model summary presented in table 4.54 shows the joint effect of all the aspects of financial literacy on retirement planning.

Table 4.54: Model Summary of Financial Literacy and Retirement Planning

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	349.401[a]	.191	.254

a. Estimation terminated at iteration number 3 because parameter estimates changed by less than .001.

The results in table 4.54, found a -2 Log likelihood Cox statistic of 349.401, a Snell R Square of .191 and Nagelkerke R Square was found to be .254 or 25.4 %. This means that all the four variables that explain financial literacy combined had a low explanatory power of 25.4 % on retirement planning as given by the Nagelkerke R square. The results imply that financial awareness, financial knowledge, attitude towards savings and financial behaviour of pension scheme members contribute only 25.4% in explaining the variation in retirement planning; other factors not captured in this model explain 74.6% variation in retirement planning. These findings indicate a much greater influence of financial literacy on retirement planning than previous studies.

For instance, in Kenya, Kepha (2017) found that financial factors, income levels, liquidity preference and financial literacy jointly, had a low explanatory power of 16.3% on retirement planning. Whereas, the findings of Lusardi and Mitchell (2011a) had earlier reported an R-squared value of 22.7% while establishing the effect of financial literacy on retirement planning. These two previous studies had incorporated in their model all the demographic variables of the respondents. Oluoch (2021) reported a 13.1% variation in retirement planning caused by financial literacy. The difference in the current study may be caused by the use of a broader view of financial literacy by focusing on financial knowledge and including financial awareness, financial behaviour and attitude towards savings. In addition, Safari et al. (2021) reports a 16.8% variation of retirement planning among the public sector workers in DRC, is attributed to financial literacy. Afthanorhan et al. (2020) found that financial literacy coupled with savings attitude, social influence and goal clarity account for 44% of retirement planning. This implies that the findings of the current study are within the range of previous studies and therefore indicate that the act of planning for retirement is a complex process that depends on many factors that need

to be incorporated for further research and no single factor contributes substantially to it.

Table 4.55: H- L Test of Financial Literacy and Retirement Planning

Step	Chi-square	Df	Sig.
1	12.212	8	.142

The Hosmer-Lemeshow test results gave a chi-square value of 12.212 with a p-value of 0.142, a value that was greater than 0.05. The results on table 4.55 show non-significant results under binary logistic regression, indicating that the model has good predictive power. Therefore, the interpretation is that the logistic regression model with retirement planning and financial awareness, financial knowledge, attitude towards savings, and financial behaviour is a fit model.

Table 4.56: Classification Table

	Observed		Predicted Retirement planning		Percentage Correct
			Basic planner	Comprehensive Planner	
Step 1	Retirement Planning	Basic planner	95	62	60.5
		Comprehensive Planner	47	128	73.1
	Overall Percentage				67.2

a. The cut value is .500

Table 4.56 presents the results of cross-classifying the outcome variable, y, with a dichotomous variable whose values are derived from the estimated logistic probabilities. The results from table 4.56 shows that value of 67.2% is greater than the cut point value of 50%. The interpretation is that the individuals' classification level was high at 60.5% for basic planners and 73.1% for comprehensive planners. The overall percentage was 67.2%, indicating a high accuracy level in classifying pension scheme members as either basic or comprehensive planner.

Table 4.57: Multivariate results of the Influence of Financial Literacy on Retirement Planning

	B	S.E.	Wald	Df	Sig.	Exp(B)
Financial awareness	.571	.125	20.683	1	.000	1.769
Financial knowledge	.260	.118	6.156	1	.044	1.296
Savings attitude	-.094	.124	.581	1	.446	.910
Financial behaviour	.348	.122	8.096	1	.004	1.416
Constant	.115	.116	.983	1	.322	1.122

a. Variable(s) entered on step 1: Financial awareness, financial knowledge, savings attitude, financial behaviour.

Table 4.57 reports the multiple binary logistic results of the four variables jointly. Based on the above results, the study derived a multiple binary logistic regression equation, as shown below

$$Logit\,(P) = 0.115 + 0.571\,FA + 0.260FK - \ 0.094\,ATS + 0.348\,FB$$

Where FA represents financial awareness, FK is financial knowledge, ATS is attitude towards savings, FB is financial behaviour and Logit (P) represents the prediction result based on knowledge of the four independent variables that the probability of planning comprehensively for retirement falls in category (1) and not category (0), which is having a basic retirement plan. The slope represents the average change in the value of Y from one unit change in X, which are equal to the changes of the log odds of the dependent variable. The reported constant is 0.115 which has an insignificant impact. The 'β ' coefficients for each of the predictor variables denote varied log odds, indicative of the slope values.

From the equation, the β_1 co-oefficent for FA, shows that financial awareness has a positive value of 0.571. This means that an increase in financial awareness leads to an increase in the odds of comprehensively planning for retirement. The β_2 ' for FK which represents financial knowledge is 0.260, likewise denoting that an increase in financial knowledge increases the odds of comprehensively planning for retirement. The β_3 ' for ATS which represents attitude towards savings has a negative of -0.094, implying that an improvement in the attitude towards savings decreases the odds of comprehensively planning for retirement. Lastly, the β_4 ' for FB which represents

financial behaviour has a positive of 0.348, indicating that an improvement in the financial behaviour of pension scheme members increases the odds of comprehensively planning for retirement. The results also imply that in terms of magnitude of influence on retirement planning, financial awareness is the greatest predictor, followed by financial behaviour, financial knowledge and lastly attitude towards retirement.

The odds of a pension scheme member who is financially aware of the financial products and financial institutions is 1.769 times more likely to be comprehensive planners than those who were not aware. They were 76.9% more likely to be comprehensive planners than basic planners. The reported p-value is 0.000, a value less than 0.05, indicating that financial awareness is a significant variable in explaining retirement planning. Therefore, the study concludes that financial awareness has a statistically significant influence on retirement planning at a 5% significance level.

The odds of a pension scheme member who possessed the attribute of financial knowledge were 1.296 times more likely to be comprehensive planners than those who were less knowledgeable. They were 29.6% more likely to be comprehensive planners than basic planners. The reported p-value is 0.044, less than 0.05, indicating that financial knowledge is a significant variable in explaining retirement planning. Therefore, the study concludes that financial knowledge has a statistically significant influence on retirement planning at a 5% significance level.

Additionally, table 4.57 reports an odds ratio of 0.910 for the variable attitude towards savings, this indicates that a pension scheme member who has a positive attitude towards long-term savings is less likely to be a comprehensive planner and more likely to be a basic planner. The reported p-value is 0.446 which is greater than 0.05, the study fails to reject the null hypothesis and concludes that attitude towards savings is not a statistically significant variable in influencing retirement planning.

Lastly, the odds ratio of financial behaviour was 1.416, meaning the odds of a pension scheme member with a favourable financial behaviour to be a comprehensive planner is 1.416 more than one who lacks the attribute. The

corresponding p-value on table 4.56 reported was 0.04, which is less than 0.05, the study, therefore, rejects the null hypothesis that financial behaviour has no statistically significant influence on retirement planning and concludes that financial behaviour has a significant influence on retirement planning.

According to the descriptive results, the scheme members are well aware of the financial products and services in the markets as well as the financial institutions that provide these products and services. As awareness is a prelude to further search of information in order to understand the financial products and services better, leading to higher levels of utilisation. A drive towards financial inclusion would benefit with higher financial awareness.

The research findings indicate a significantly positive influence of financial awareness on retirement planning among pension scheme members in Kenya. The results resonate with previous findings of Doyo (2013), Mndzebele, and Kwenda (2020) who reported a statistically significant effect of financial instruments' knowledge on retirement planning. However, contradicting the findings of Agunga et al. (2017), who found an insignificant relationship between the awareness level of financial products and retirement planning.

The results also points out that members who are financially aware of the financial products and financial institutions are 76.9% more likely to prepare comprehensively for their retirement. It therefore implies that these members would most likely not just be interested in being in a pension scheme but also interested in the adequacy of the pension to support them when they retire. Information on financial products and institutions that offer them need to be easily accessible, as advanced by Thuku and Ireri (2013) while focusing on providing the necessary retirement planning products to enhance higher uptake of these products. The findings also imply that the source of distribution of this information may need to be looked into, as Mbarire and Ali (2014) postulate that formal sources yield better results than informal sources of financial information.

The findings from Table 4.57 indicate a positive relationship between financial knowledge and retirement planning. One essential component in planning for retirement is knowledge of financial concepts. Financial knowledge enhances one's ability to choose the best financial products and services, navigate the increasingly complex financial system and ensure a comfortable life during retirement. The positive influence resounds with family resource management theory, which identifies knowledge as one input that positively affects the financial decisions of individuals.

This finding is in tandem with previous studies (Klapper & Panos, 2011, Lusardi & Mitchell, 2011a, Githu & Ngare, 2014, Nolan & Doorley, 2019, Safari et al. 2021), who all reported statistically significant positive results of financial literacy as measured with the knowledge of financial concepts with retirement planning. However, Aluodi et al. (2017) reported a contrary finding indicating that knowledge of basic and complex financial concepts had no significant effect on retirement planning. While Ghadwan et al. (2022) also report that the financial literacy of basic financial concept is significant in explaining financial planning for retirement, but advanced financial concept does not explain retirement planning.

Consequently, financially knowledgeable pension scheme members are 29.6% more likely to plan comprehensively for their retirement than their counterparts who are not financially knowledgeable. Klapper and Panos (2011) reported a similar result, indicating that individuals who were financially knowledgeable were 30% more likely to use private pension plans for their retirement than those who are not financially knowledgeable. Higher savings characterize a private pension plan for retirement which is over and above the mandatory scheme thereby ensuring the adequacy of retirement income. Pension scheme members who comprehensively plan for their retirement in Kenya mostly use the pillar II pension plans that allow for improved savings during the working life and sufficient pension at the retirement phase.

Table 4.57 indicates a negative effect of attitude towards savings of pension scheme members on retirement planning with an insignificant influence. The findings are contrary to those of Mohidin et al. (2013), who found a strong positive relationship between attitude towards money management and retirement planning. While Hassan et al. (2016) and Moorthy and Kai (2012) reported that favourable attitude toward retirement had positive influence retirement planning. Comparably, The Theory of Planned Behaviour presumes that one's personal attitude towards savings would influence the intention to save and thereby increase the likelihood of the individual saving for retirement. Therefore, this study findings contradicts both theory and the mentioned empirical evidence. However, Sharif and Isah (2019) utilised a probit model, found a similar negative direction as this study's results, though with a significant influence of attitude towards retirement-on-retirement planning.

The results also imply that pension scheme members with a positive attitude towards savings are 9% less likely to be comprehensive retirement planners, indicating a higher likelihood of being basic planners than comprehensive planners. Pension scheme members were reported to have a generally positive attitude towards savings using the descriptive statistics, however this positive attitude toward savings is reportedly an insignificant variable in explaining retirement planning. The results are contrary to Kimiyagahlam et al. (2019), who posit that savings attitude plays a significant role in retirement planning while accounting for 25% of retirement planning behaviour. The differing finding is occasioned by the fact that the pension scheme members mostly exhibit inertia. Automatic enrollment to a pension plan reduces the level of participation by the employees as they quickly take up the scheme without questioning. Majority of the employees do not take an active interest in retirement planning and unfortunately, a sizeable fraction of plan participants appears to have little or no interest in retirement planning or in plan participation.

Table 4.57 depicts a positive association between financial behaviour and retirement planning, implying that a financially disciplined scheme member who plans their financial affairs, actively seeks financial information, sets a budget and adheres to it will plan for their retirement. The study findings confirm the findings of Murendo and Mutsonziwa (2016), who also posit that financially disciplined individual is in

control of their current and future financial affairs by setting plans, budgeting and adhering to the plans are more likely to save.

The results also show a statistically significant influence of financial behaviour on retirement planning in Kenya, in tandem with Sudindra and Naidu (2018) and Kimiyagahlam et al. (2019) who also found a significant influence of financial behaviour on financial decision-making and retirement planning, respectively. However, the findings are contrary to Adam et al. (2017), who reported that contrary to expectations, financial behaviour had no significant effect of the financial well-being of retirees in Ghana. The disparity in these findings could be occasioned by the fact that the Ghanian study focused on retirees and their well-being, while the current study focused on the current workforce who are yet to retiree.

The findings from Table 4.57 also depict that in order of magnitude, financial awareness is the strongest determinants of retirement planning, followed by financial behaviour and financial knowledge. Therefore, this denotes that public awareness of the financial products and institutions offering them ignites an interest in using these products in planning for their retirement. It also implies that understanding financial concepts is superseded by the financial discipline of the pension scheme members in determining whether they plan comprehensively for their retirement.

4.9.6 Univariate Results of the Influence of Financial Literacy on Retirement Planning.

A simple logistic regression was conducted with a combined financial literacy score to show the combined influence of financial literacy on retirement planning among pension scheme members in Kenya. The financial literacy variable included a joint score for all four variables. Attitude towards savings and financial behaviour, which were Likert scale, were converted into percentages, then added the resultant percentages to the percentage scores of financial awareness and financial knowledge. To address the general objective, an average score of the four variables was used to derive financial literacy. The model explanatory power and goodness of fit reported the same values as per tables 4.54 and 4.55.

Table 4.58: The Influence of Financial Literacy on Retirement Planning

	B	S.E.	Wald	Df	Sig.	Exp(B)
Financial literacy	.576	.121	22.714	1	.000	1.779
Constant	.113	.114	.972	1	.324	1.119

a. Variable(s) entered on step 1: Financial literacy.

Table 4.58 shows the Wald test results for financial literacy and retirement planning. Based on the above results, the study derived a simple binary logistic regression equation, as shown below.

$$Logit\,(P) = 0.113 + 0.576\,FL$$

Where FL represents financial literacy, and Logit (P) represents the prediction result based on knowledge of the four independent variables that the probability of planning comprehensively for retirement falls in category (1) and not category (0), which is having a basic retirement plan. The slope represents the changes in the log odds of the dependent variable. The reported constant is 0.113 which has an insignificant impact. From the equation, the β_1 coefficient for financial literacy is a positive value of 0.576. This means that an increase in financial literacy leads to an increase in the odds of being a comprehensive planner.

The results from Table 4.58 indicate an Exponential (B) for financial literacy equals 1.779, which means that the odds of being a comprehensive retirement planner for a financially literate pension scheme member 1.779 times the odds of a financially illiterate scheme member. The findings of this study indicate that a financially literate member is 78% more likely to be a comprehensive planner than a financially illiterate member. Therefore, this implies that a pension scheme member who is aware of financial services and institutions, is knowledgeable on basic financial concepts, has a positive attitude towards savings and is financially savvy has a 78% chance of comprehensively planning for their retirement and hence have a better income during retirement. The study's general objective was to examine financial literacy's influence on retirement planning. Table 4.58 indicates a significance level of 0.000, which is less than 0.05, indicating that financial literacy is a significantly

influence retirement planning. The implication is that the financial literacy level of a pension scheme member is a key determinant of retirement planning.

The above findings are in tandem with previous studies (Onduko et al., 2015, Maobe, 2017, Oluoch, 2021 and Safari et al., 2021), that found statistically significant influence of financial literacy on retirement planning. Financially literate individuals are more likely to choose the best financial products that will enhance their future financial well-being. They will adequately plan for their retirement, considering the adequacy of their expected retirement income by increasing their savings. Gracia (2021) also posits that financially literate persons are more likely to use active strategies in planning for their retirement than use of passive strategies.

The findings contradict Farrar et al. (2019) who reported an insignificant influence of financial literacy on retirement planning in the United Kingdom. While examining the role of financial literacy on financial outcomes among Nigerian public sector employees, Egbu (2018) found a positive correlation between financial literacy and retirement planning. However, the relationship was reported to be insignificant. However, the Nigerian study only utilized the correlation results to make this conclusion and may have found a different result had the study used a regression model. Likewise, Tan and Singaravello (2020) also found an insignificant correlation between financial literacy and retirement planning among public servants in Malaysia.

4.10 Moderating effect of Age on the Influence of Financial Literacy on Retirement Planning

The fifth and sixth objectives of the study were to determine the moderating effect of demographic factors on the influence of financial literacy on retirement planning. Two demographics were examined separately, age and income levels. For each variable, two logistic regressions were conducted, one introducing the variable as an explanatory variable in the equation and another logistic regression with the interaction of the demographic variable with financial literacy variables. The moderating effect was then interpreted using the interaction p-values and the pseudo R^2 results.

4.10.1 Age as an Explanatory Variable

The first binary logistic regression results introduced age as an explanatory variable as Keppel and Zedeck (1989) recommended. Then a second logistic regression is conducted with age as a moderating variable.

Table 4.59: Model Summary of Age as an Explanatory Variable

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	305.919[a]	.301	.401

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

From the results in Table 4.59 above found a -2 Log likelihood statistic of 305.919, Snell R Square was .301 and Nagelkerke R Square was found to be .401 or 40.1 %. This means that all the financial literacy variables and age had a moderate explanatory power of between 30.1% and 40.1% as given by the two R-squares on retirement planning. The results imply that the introduction of age as an explanatory variable improves the model by 14.7%, from 25.4% as reported in Table 4.53 to 40.1% as reported in Table 4.58.

Table 4.60: H-L Test for Age as an Explanatory Variable

Step	Chi-square	Df	Sig.
1	6.477	8	.594

Table 4.60 results indicate a chi-square value of 6.477 and a p-value of 0.594, which is greater than 0.05. According to Hosmer and Lemoshow (2000), the results show no difference between the observed and predicted values, which indicates the model's good predictive power.

Table 4.61: Classification Table

Observed		Predicted		
		Retirement planning		Percentage Correct
		Basic Planner	Comprehensive	
Retirement Planning	Basic planner	111	44	72.5
	Comprehensive	46	130	73.1
Overall Percentage				72.8

a. The cut value is .500

Table 4.61 presents the results of cross-classifying the outcome variable, y, with a dichotomous variable whose values are derived from the estimated logistic probabilities. The interpretation is that if the estimated probability is more than the cut value, the derived value equals 1. The results show a value of 72.8% is greater than the cut value of 50%, indicating that the prediction of retirement planning was correct for 72.8% of the retirement planners.

Table 4.62: Logistic Regression Results for Financial Literacy variables, Age and Retirement planning

	B	S.E.	Wald	Df	Sig.	Exp(B)
Financial awareness	.623	.130	23.112	1	.000	1.865
Financial knowledge	.179	.121	2.191	1	.052	1.196
Savings Attitude	-.035	.127	.074	1	.786	.966
Financial behaviour	.257	.127	4.121	1	.042	1.294
Age	.463	.128	13.078	1	.000	1.589
Constant	.120	.119	1.016	1	.313	1.127

a. Variable(s) entered on step 1: Fin awareness, Fin knowledge, savings Attitude, fin behaviour, age.

Table 4.62 reports the multiple binary logistic results of the five variables combined. Based on the above results, the study derived a multiple binary logistic regression equation, as shown below;

$$Logit\,(P) = 0.120 + 0.623FA + 0.179\,FK - 0.035ATS + 0.257FB + 0.463A$$ G

E

Where FA represents financial awareness, FK is financial knowledge, ATS is Attitude towards savings, FB is financial behaviour and AGE is age. The 'β' coefficient for financial awareness, financial knowledge, financial behaviour and age are all positive 0.120, 0.623, 0.179, 0.257 and 0.463 respectively. The results denote that an increase in financial awareness, financial knowledge, financial behaviour and age increases the odds of comprehensively planning for retirement. While the 'β' coefficient for attitude towards saving is a negative 0.035, implying that a decline in the attitude towards saving will increase the likelihood of a pension scheme member to plan for retirement comprehensively.

From Table 4.62 results, Exponential (B) for financial awareness, financial knowledge, attitude towards savings, financial behaviour, and age were equal to 1.865, 1.196, 0.966, 1.294, and 1.589, respectively. This means that the odds of being a comprehensive retirement planner for a person who has financial awareness, financial knowledge, attitude towards savings, financial behaviour, and age were equal to1.865, 1.196, 0.966, 1.294, and 1.589 respectively, times the odds of a person without financial awareness, financial knowledge, attitude towards savings, financial behaviour and age attributes.

The introduction of age as an explanatory variable in the logistic equation indicates that age is a significant variable of retirement planning. The results report a p-value of 0.000 is less than the recommended value of 0.05. The odds of an older pension scheme member being a comprehensive planner are also reported to be 1.589 times more than a younger pension scheme member. This finding is in tandem as theorized in the life-cycle theory that individuals tend to save more and accumulate more wealth as they age and tend toward retirement because they become more conscious of the impending financial needs upon leaving employment.

4.10.2 Age as a Moderator

Table 4.63: Model Summary of Age as Moderator

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	303.025a	.310	.413

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

From the results in Table 4.63 found the -2 Log likelihood statistic to be 302.025, Snell R Square was .310 and Nagelkerke R Square was found to be .413 or 41.3 %. This means that all the financial literacy variables and age with the interaction of age as a moderator had a moderate explanatory power 41.3%, as given by the Nagelkerke R-squares on retirement planning.

Table 4.64: H-L Test for Age as a Moderator

Step	Chi-square	Df	Sig.
1	8.010	8	.433

From Table 4.64 results, a chi-square value of 8.010 was obtained and its p-value was found to be 0.433, a value greater than 0.05. The result indicate a good predictive power of the model and hence it is a good fit.

Table 4.65: Classification Table

Observed		Predicted		
		Retirement planning		Percentage Correct
		Basic Planner	Comprehensive Planner	
Retirement Planning	Basic planner	112	45	71.1
	Comprehensive	44	129	74.4
Overall Percentage				72.8

a. The cut value is .500

Table 4.65 presents the results of cross-classifying the outcome variable, y, with a dichotomous variable whose values are derived from the estimated logistic probabilities. The overall percentage is 72.8% which is greater than the cut of value of 50%, indicating a high level of accuracy in the classification of retirement planning.

Table 4.66: Logistic Regression Results of Financial Literacy, Retirement Planning and Age as a Moderator

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Financial awareness	.612	.132	21.388	1	.000	1.844
	Financial knowledge	.172	.122	2.152	1	.052	1.194
	Savings Attitude	-.018	.129	.020	1	.887	.982
	Financial behaviour	.216	.132	2.679	1	.048	1.241
	Age	.492	.132	13.840	1	.000	1.635
	Financial awareness* Age	-.160	.126	1.610	1	.205	.852
	Financial knowledge* Age	-.008	.121	.004	1	.947	.992
	Savings Attitude*Age	.170	.133	1.654	1	.064	1.186
	Financial behaviour* Age	-.233	.132	3.127	1	.077	.792
	Constant	.145	.124	1.353	1	.245	1.156

a. Variable(s) entered on step 1:Financial awareness * age, Financial knowledge * age, age * savings Attitude, age * financial behaviour.

Table 4.66 shows the logistic regression results of age as a moderating variable on the influence of financial literacy on retirement planning. The analysis gives rise to the following logistic regression model:

$$Logit\,(P) = 0.145 + 0.612FA + 0.172FK - 0.018ATS + 0.216FB + 0.492\,AGE - 0.160FA * AGE - 0.008\,FK * AGE + 0.170ATS * AGE - 0.233FB * AGE$$

The ‘β' coefficient for financial awareness, financial knowledge, attitude towards saving, financial behaviour and age are 0.145, 0.612, 0.172, -0.018, 0.261 and 0.492 respectively. While the β' coefficient for the interaction of age with financial awareness, financial knowledge, attitude towards saving, financial behaviour are -0.160, -0.008, 0.170 and -0.233 respectively.

In order to interpret the moderating effect of age on the influence of financial literacy on retirement planning a summarized table incorporating the odds ratio and the corresponding significance value of three models is presented in Table 4.67. The Table presents a summary of three models; Model 1 presents the logistic regression

results for the influence of financial literacy on retirement planning, Model 2 summarizes the logistic regression results after the introduction of age as an explanatory variable on the influence of financial literacy on retirement planning. Lastly, model 3 incorporated age as a moderating variable with the interaction terms of age and financial literacy variables in the equation.

Table 4.67: Summary of Age as a Moderating Variable on the Influence of Financial Literacy on Retirement Planning.

Variables	**Model 1**	**Model 2**	**Model 3**
	Exp (B)	**Exp (B)**	**Exp (B)**
Financial awareness	1.769*(0.000)	1.865*(0.000)	1.844* (0.063)
Financial knowledge	1.296*(0.044)	1.196(0.052)	1.194(0.056)
Attitude towards savings	0.910(0.446)	0.966 (0.786)	0.982(0.887)
Financial behaviour	1.416*(0.004)	1.294*(0.042)	1.241*(0.048)
Age		1.589*(0.000)	1.635*(0.000)
Financial awareness* Age			0.852(0.205)
Financial Knowledge* Age			0.992 (0.947)
Attitude towards saving*Age			1.186(0.064)
Financial behaviour*Age			0.792(0.077)
Constant	1.122(0.322)	1.127(0.313)	1.156(0.245)
Observations	332	332	332
Pseudo R^2	0.254	0.401	0.413
Chi-square	12.212	6.477	8.010

- *Significant at 5%.

There is an increase in the explanatory power of financial literacy with the introduction of age as a co-variant in model 2, from 25.4% to 40.1%, an increase of 14.7%. A further increase in the pseudo R^2 is also reported with the interaction of age with the financial literacy variables to 41.3%. The increase in the pseudo R^2 is greater when age is introduced as an explanatory variable than when introduced as a moderator. This implies that age is a stronger explanatory variable in retirement planning than a moderator variable. It can be observed that all the models have good predictive power as indicated by the p-value (0.142, 0.594 and 0.433) of the Chi-square reported in the Hosmer-Lemeshow test.

The results from Table 4.67 indicate that the odds ratio of pension scheme members aware of financial products and institutions increase from 1.769 (Model 1) to 1.865 (model 2) when age is introduced as an explanatory variable. The p-value in both cases is 0.000, implying that financial awareness significantly determine the probability of retirement planning. However, with the introduction of age as a moderator, age is no longer significant at 5% significance level as the p-value is now 0.063. Furthermore, Table 4.67 shows the odds ratio of the interaction between financial awareness and age is 0.852. The implication is that older pension scheme members who are aware of financial products and institutions are less likely to comprehensively plan for their retirement. The p-value of the interaction term is 0.205, indicating that the interaction between age and financial awareness is not statistically significant. The outcome, therefore, indicates that age has no moderating effect on the influence of financial awareness and retirement planning.

A pension scheme member who is financially knowledgeable is 1.296 times more likely to be a comprehensive planner as per model 1. The corresponding with a p-value of 0.044 indicates that financial knowledge is a key variable in explaining retirement planning. The introduction of age as a co-variant, changes this relationship marginally by resulting into a p-value of 0.052 in both model 2 and 3. When age is interacted with financial knowledge in model 3, the interaction of age and financial knowledge give an odds ratio of 0.992 with a corresponding p-value of 0.947. The outcome shows that the interaction is statistically insignificant. Therefore, the findings show that age has no moderating effect on the influence of financial knowledge on retirement planning.

Model 1 indicates that the odds of a pension scheme member with a favourable attitude towards savings are 0.910, implying that one is less likely to be a comprehensive planner; however, this variable was non-significant as the p-value was 0.446. Model 2 and 3, give similar result for the variable. However, when there is an interaction between attitude towards savings and age, the direction of the Wald test changes from a negative to a positive, hence the odds ratio increased from 0.910 to 1.186. The results imply that pension scheme members who are older and have a positive attitude towards savings are more 18% more likely to plan for their

retirement comprehensively. However, the interaction between age and attitude towards savings in Table 4.67 is significant at 10% as the p-value is 0.064, which is more than 0.05 but less than 0.10 implying that age has no moderating effect on the influence of attitude towards saving on retirement planning at a 5% significance level.

Financial behaviour is reported to significantly influence on retirement planning as per the first model. The introduction of age as an explanatory variable and a moderating variable, financial behaviour was still found to be significant at a 5% significance level, with reported p-values of 0.042 and 0.048, respectively. The interaction of financial behaviour and age resulted in an odd ratio of 0.792, implying that a financially disciplined scheme member who is older is less likely to be a comprehensive planner than a younger scheme member who is financially disciplined. However, the interaction of age and financial behaviour is not statistically significant at 5% level of significance with a p-value of 0.077. Therefore, the results imply that age has no moderating effect on the relationship between financial behaviour and retirement planning.

In summary, age has no moderating effect on the influence of financial awareness, and financial knowledge, attitude towards savings and financial behaviour on retirement planning. It can therefore be reported that age is a key determinant of retirement planning and not a moderator of the influence of financial literacy on retirement planning among pension scheme members.

Table 4.68: Moderating effect of Age on the Influence of Financial Literacy and Retirement Planning

	B	S.E.	Wald	Df	Sig.	Exp(B)
Financial literacy	.879	.276	10.170	1	.001	2.408
Age	.408	.112	13.185	1	.000	1.504
Age*Financial	-.132	.115	1.314	1	.252	.877
Constant	-.761	.263	8.332	1	.004	.467

a. Variable(s) entered on step 1: Financial literacy, Age, Age * Financial literacy.

Table 4.68 presents the results of the moderating effect of age on the influence of financial literacy and retirement planning. Based on the above results, the study derived a simple binary logistic regression equation, as shown below;

$$Logit\,(P) = -0.761 + 0.879\,FL + 0.408AGE\ - 0.132AGE * FL$$

Where FL represents financial literacy and AGE is age. The 'β' coefficient for financial literacy, age and interaction between age and financial literacy are 0.879, 0.408 and – 0.132. The results denote that an increase in financial literacy and age increases the odds of comprehensively planning for retirement. The outcome of the interaction term of age and financial literacy is used to address the fifth hypothesis H_{05} which states Pension scheme member's age has no significant moderating effect on the influence of financial literacy on retirement planning in Kenya. Table 4.68 shows an odds ratio of 0.877, with a corresponding p-value of 0.252 for the interaction of age and financial literacy. The p-value is greater than 0.05, hence the study fails to reject the fifth hypothesis and concludes that age does not moderate the relationship between financial literacy and retirement planning. The results show that age is a significant influencer of retirement planning.

The findings concur with Agabalinda and Isoh (2020) who also reported that age had an insignificant moderating effect on the relationship between financial literacy and retirement preparedness among small and medium sized workers in Uganda. However, the findings are contradicting Afthanorhan et al. (2020), who identified a significant moderation of age on the link between financial literacy and retirement. Jimenez et al. (2018) examined the moderating role of age on the association between psychological preparation for retirement, retirement goals clarity and financial planning for retirement. Even though their study did not include financial literacy, they did not find a significant moderating effect of age on these variables on retirement planning.

4.11 Moderating effect of Income on the Influence of Financial Literacy on Retirement Planning

The first binary logistic regression results introduced income as an explanatory variable as recommended by Keppel and Zedeck (1989). Then a second logistic regression is conducted with income as a moderating variable.

4.11.1 Income as an Explanatory variable

Table 4.69: Model Summary of Income as an Explanatory Variable

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	295.636[a]	.324	.433

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

From the results in Table 4.69, the -2 Log likelihood was found to be 295.636, Cox and Snell R Square was 0.324 and Nagelkerke R Square was found to be 0.433 or 43.3 %. This means that all the financial literacy variables and income had a moderate explanatory power of 43.3 %. The introduction of income has improved the model from the explanatory power of 25.4% to 43.3% an increase of 17.9%.

Table 4.70: H-L Test for Income as an Explanatory Variable

Step	Chi-square	Df	Sig.
1	4.845	8	.774

From Table 4.70, the results the chi-square value of 4.845 was obtained and it p-value was found to be 0.774 a value that was greater than 0.05. This outcome indicated the good predictive power of the model that contains the financial literacy variables and income.

Table 4.71: Classification Table

Observed		Predicted		
		Retirement planning		Percentage Correct
		Basic	Comprehensive	
Retirement planning	Basic planner	118	42	72.5
	Comprehensive Planner	37	133	79.5
Overall Percentage				76.2

a. The cut value is .500

Table 4.71 presents the results of cross-classifying the retirement planning variable, a dichotomous variable whose values are derived from the estimated logistic probabilities. To get the derived dichotomous variable, a cut value must be established. Then each of the probabilities was compared to this cut value point value. The commonly used value is 0.5. The results from Table 4.71 show that the value of 76.2% is greater than the cut value of 50%, hence a low probability of misclassification.

Table 4.72: Logistic Regression Results of Financial Literacy, Retirement Planning and Income as an explanatory variable

	B	S.E.	Wald	df	Sig.	Exp(B)
Financial awareness	.466	.130	12.805	1	.000	1.593
Financial knowledge	.184	.123	2.240	1	.055	1.202
Savings Attitude	-.107	.130	.684	1	.408	.898
Financial behaviour	.210	.132	2.511	1	.053	1.233
Income	.742	.145	26.253	1	.000	2.099
Constant	.156	.123	1.605	1	.115	1.169

a. Variable(s) entered on step 1: Financial awareness, financial knowledge, savings Attitude, financial behaviour, Income.

Table 4.72 reports the logistic regression coefficients of the introduction of income as an explanatory variable. Based on the above results, the study derived a multiple binary logistic regression equation, as shown below;

$$Logit\,(P) = 0.156 + 0.466\,FA + 0.184FK\ - 0.107ATS + 0.210FB\ + 0.742INC$$

Where FA represents financial awareness, FK is financial knowledge, ATS is Attitude towards savings, FB is financial behaviour and INC is Income. The ‘β' coefficient for financial awareness, financial knowledge, financial behaviour and Income are all positive 0.156, 0.466, 0.184, 0.210 and 0.742 respectively. The results denote that an increase in financial awareness, financial knowledge, financial behaviour and income increases the odds of comprehensively planning for retirement. While the ‘β' coefficient for attitude towards saving is a negative 0.107, implying that a decline in the attitude towards saving will increase the likelihood of a pension scheme member to plan for retirement comprehensively.

From the results, Exponential (B) for financial awareness, financial knowledge, attitude towards savings, financial behaviour and income were equal to 1.593, 1.202, 0.898, 1.233 and 2.099, respectively. The outcome means that the odds of being a comprehensive retirement planner for a person who has financial awareness, financial knowledge, attitude towards savings, financial behaviour and income were 1.593, 1.202, 0.898, 1.233 and 2.099 times respectively.

The introduction of income as an explanatory variable reports an odds ratio of 2.099 with a p-value of 0.000. A pension scheme member with a higher income level is 2.099 more likely to be a comprehensive planner than one with a lower income level. The reported p-value of 0.000 signifies that income is a statistically significant variable in explaining retirement planning. The findings concur with Onduko et al. (2015), who identified income as a significant determinant of retirement planning. Likewise, Adam et al. (2017) posit that income levels are the key determinant as to whether one plan for retirement or not, as a worker who earns a low income will focus more on covering their daily expenses and may not have enough set aside for retirement. However, the outcome is contrary to Kepha (2017), who found that income level does not affect retirement planning.

4.11.2 Income as a Moderating Variable

This section gives the results of income as a moderating variable. The results show the logistic regression results with the interaction of income with the four variables;

financial awareness, financial knowledge, attitude towards savings and financial behaviour in the model.

Table 4.73: Model Summary of Income as a Moderator

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	293.124[a]	.330	.440

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Table 4.73 shows the results explanatory power of independent variables. From the results a -2 Log likelihood statistic was found to be 293.124, Cox and Snell R Square was 0.330 and Nagelkerke R Square was found to be 44.0 or 44.0 %. This means that all the financial literacy variables, income and the interaction of income with financial literacy variables had a moderate explanatory power of 44.0 % as given by the Nagelkerke R-squares on retirement planning.

Table 4.74: H-L Test for Income as a Moderator

Step	Chi-square	Df	Sig.
1	3.952	8	.861

Table 4.74 reports a chi-square value of 3.952 with a p-value of 0.861, a value greater than 0.05, which indicates the good predictive power of the model that contains financial literacy, income and the interaction terms of income with financial literacy variables.

Table 4.75: Classification Table

Observed		Predicted		
		Retirement planning		Percentage Correct
		Basic	Comprehensive	
Retirement planning	Basic planner	120	42	71.8
	Comprehensive Planner	37	133	80.1
Overall Percentage				76.2

a. The cut value is .500

Table 4.75 presents the results of cross-classifying the outcome variable, retirement planning, with a dichotomous variable whose values are derived from the estimated

logistic probabilities. The results shows a value of 76.2%, which is greater that the cut value 50%, implying that the chances of misclassification of the dependent variable are low.

Table 4.76: Logistic Regression Results of Financial Literacy, Retirement planning and Income as a Moderator.

	B	S.E.	Wald	Df	Sig.	Exp(B)
Financial awareness	.467	.131	12.718	1	.000	1.595
Financial knowledge	.178	.126	2.000	1	.057	1.195
Savings Attitude	-.026	.135	.036	1	.849	.974
Financial behavior	.086	.149	.329	1	.056	1.089
Income	.803	.155	26.883	1	.000	2.233
Financial awareness*Income	-.186	.159	1.369	1	.242	.830
Financial knowledge*Income	-.156	.151	1.058	1	.304	.856
Savings attitude*Income	.196	.157	1.561	1	.069	1.216
Financial behaviour*Income	-.421	.163	6.646	1	.010	.657
Constant	.237	.130	3.324	1	.068	1.268

a. Variable(s) entered on step 1: Financial awareness * Income, Financial knowledge *Income , Income * savings Attitude , Income * financial behaviour.

Table 4.76 shows the logistic regression results of income as a moderating variable on the influence of financial literacy on retirement planning. The analysis gives rise to the following logistic regression model:

$$Logit\,(P) = 0.237 + 0.467FA + 0.178FK - 0.026ATS + 0.086FB + 0.803INC - 0.186FA * INC - 0.156FK * INC + 0.196ATS * INC - 0.421FB * INC$$

Where FA represents financial awareness, FK is financial knowledge, ATS is Attitude towards savings, FB is financial behaviour and INC is income. The 'β' coefficient for financial awareness, financial knowledge, attitude towards saving, financial behaviour and Income are 0.467, 0.178, -0.026, 0.086 and 0.803 respectively. While the β' coefficient for the interaction of Income with financial

awareness, financial knowledge, attitude towards saving, financial behaviour are -0.186, -0.156, 0.196 and -0.421 respectively.

In order to interpret the moderating effect of income on the influence of financial literacy on retirement planning a summarized Table incorporating the odds ratio and the corresponding significance value of three models is presented in Table 4.77. The table presents a summary of three models; Model 1 presents the logistic regression results for the influence of financial literacy on retirement planning, Model 2 summarises the logistic regression results after the introduction of income as an explanatory variable on the influence of financial literacy on retirement planning. Lastly, model 3 incorporated income as a moderating variable with the interaction terms of income and financial literacy variables in the equation.

Table 4.77: Summary of Income as a Moderating Variable on the Influence of Financial Literacy on Retirement Planning

Variables	Model 1 Exp (B)	Model 2 Exp (B)	Model 3 Exp (B)
Financial awareness	1.769*(0.000)	1.593*(0.000)	1.595* (0.000)
Financial knowledge	1.296*(0.044)	1.202 (0.055)	1.195 (0.057)
Attitude towards savings	0.910 (0.446)	0.898 (0.408)	0.974 (0.849)
Financial behaviour	1.416*(0.004)	1.233(0.053)	1.089 (0.056)
Income		2.099*(0.000)	2.233* (0.000)
Financial awareness*Income			0.830(0.242)
Financial Knowledge* Income			0.856(0.304)
Attitude towards savings*Income			1.216(0.069)
Financial behaviour*Income			0.657*(0.010)
Constant	1.122(0.322)	1.169(0.115)	1.268 (0.068)
Observations	332	332	332
Pseudo R2	0.254	0.433	0.440
Chi-square	12.212	4.845	3.952

- *Significant at 5%.

There is an increase in the explanatory power of financial literacy with the introduction of income as a co-variant in model 2, from 25.4% to 43.3%, an increase of 17.9%. A further increase in the pseudo R^2 is also reported with the interaction of

income with the financial literacy variables to 44.0%. The increase in the pseudo R^2 is greater when income is introduced as an explanatory variable than when introduced as a moderator, implying that income is a stronger predictor variable than it is a moderator. It can also be observed that all the models have good predictive power as indicated by the p-value (0.142, 0.774, and 0.861) of the Chi-square reported in the Hosmer-Lemeshow test.

The moderation effect of income on the influence of financial literacy on retirement planning was assessed using the p-value of the interactions of income and the respective financial literacy variables. The odds ratio of pension scheme members aware of financial products and institutions as per Table 4.77 changes from 1.769 in model 1 to 1.593 with the introduction of income as an explanatory variable and 1.595 with the interaction terms. In all the models, the p-value is reported as 0.000, implying that financial awareness was significant in determining the probability of retirement planning. However, Table 4.77 shows that the odds ratio of the interaction between financial awareness and income is 0.830, implying that a financially aware pension scheme member with a high income is less likely to plan comprehensively for their retirement. The reported p-value was 0.242, indicating that the interaction between income and financial awareness is not statistically significant. The outcome suggests that income has no moderating effect on the influence of financial awareness on retirement planning.

A pension scheme member who is financially knowledgeable is 1.296 times more likely to be a comprehensive planner as per Table 4.77, at a significant value of 0.044. the odds ratio reduces to 1.202 with the incorporation of income as an explanatory variable and 1.195 with the interaction terms in the model. The odds ratio of the interaction between income and financial knowledge interaction results are 0.856 with a p-value of 0.304. This outcome implies that financially knowledgeable scheme members who earn a high income are less likely to be comprehensive retirement planners. it can also be observed from the p-value that the interaction is not statistically significant. Therefore, indicates that income has no moderating effect on the influence of financial knowledge on retirement planning.

The odds of a pension scheme member with a positive attitude towards savings is 0.910 in model 1, changing to 0.898 in model 2 and 0.974 in model 3. All the corresponding p-values (0.446, 0.408. 0.849) indicate that attitude towards savings of scheme members is not a significant variable in explaining retirement planning. The interaction between income and attitude towards savings in Table 4.77 shows an odds ratio of 1.216 with a p-value of 0.068. An implication that a pension scheme member with a positive attitude and a higher income is 21.6% more likely to be a comprehensive retirement planner. The odds ratio of the interaction changed from 0.893 to 1.216, implying that income enhances the relationship between attitude toward saving on retirement planning. The results are, however not significant at 5% as the p-value is 0.064, greater than 0.05, impying that income has no moderating effect on the influence of attitude towards savings on retirement planning.

The odds ratio of financial behaviour is reported as 1.416, 1.233 and 1.089 in model 1, 2 and 3 respectively. Model 2 which incorporates income as an explanatory variable, yielded an odds ratio of 1.233 for financial behaviour, which was found to be significant at a 5% significance level, as per Table 4.77. The interaction of income and financial behaviour yields an odds ratio of 0.657 with a corresponding p-value of 0.010. The results indicate that a pension scheme member who is financially disciplined and earns a high income is less likely to be a comprehensive planner. The results further indicate that income has a moderating effect on the influence of financial behaviour on retirement planning.

Table 4.78: Moderating effect of Income on the Influence of Financial Literacy on Retirement Planning.

	B	S.E.	Wald	Df	Sig.	Exp(B)
Financial literacy	.598	.487	1.506	1	.220	1.819
Income	.951	.191	24.685	1	.000	2.589
Income*Financial literacy	-.073	.204	.129	1	.720	.929
Constant	-2.066	.447	21.337	1	.000	.127

a. Variable(s) entered on step 1: Financial literacy, Income, Income * Financial literacy.

Table 4.78 presents the results of the moderating effect of income on the influence of financial literacy and retirement planning. Based on the above results, the study derived a binary logistic regression equation, as shown below;

$$Logit\,(P) = -2.066 + 0.598\,FL + 0.951INC\ - 0.073INC * FL$$

Where FL represents financial literacy and INC is income. The 'β' coefficient for financial literacy, income and interaction between income and financial literacy are 0.598, 0.951 and – 0.073. The results denote that an increase in financial literacy and income increases the odds of comprehensively planning for retirement. The outcome of the interaction term of age and financial literacy is used to address the sixth hypothesis $H_{06,}$ which states Pension scheme member's income has no significant moderating effect on the influence of financial literacy on retirement planning in Kenya.

Table 4.78 shows an odds ratio of 0.929, with a corresponding p-value of 0.720 for the interaction of income and financial literacy. The p-value is greater than 0.05; hence the study fails to reject the sixth hypothesis and conclude that income does not moderate the relationship between financial literacy and retirement planning. The results show that income is a significant variable in retirement planning with a significant Wald test. This finding is contrary to Afthanorhan et al. (2020), who found a significant moderating effect of income on the relationship between financial literacy, savings attitude and retirement planning. The findings further imply that income level is a key determinant of retirement planning among pension scheme members but not a moderator.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of major findings of the study, relevant discussions, conclusions and the necessary recommendations. The summary is done in line with the objectives of the study based on the output of statistical analyses guided to test the research hypothesis of the study. The chapter also suggests areas for further research.

5.2 Summary of Findings

Evidence from previous studies has shown different results on the influence of financial literacy on retirement planning. The findings of this study indicate that the other components of financial literacy have a differing influence on retirement planning. The findings also depict that financial literacy only contributes around a quarter of retirement planning, with other factors not accounted for.

5.2.1 Influence of Financial Awareness on Retirement Planning among Pension Scheme Members in Kenya.

The study's first objective was to establish whether financial awareness influenced retirement planning among pension scheme members in Kenya. The findings revealed that awareness of financial products and financial institutions significantly influences retirement planning among pension scheme members in Kenya. It also revealed that pension scheme members who were aware of the financial products in the market and the different financial institutions offering them were more likely to be comprehensive planners than those who were unaware. This implies that an increase in the levels of awareness of what the financial markets and institutions have on offer will lead to better planning for the retirement phase of an employee.

5.2.2 Influence of Financial Knowledge on Retirement Planning among Pension Scheme Members in Kenya.

The second objective of the study was to establish whether financial knowledge influenced retirement planning among pension scheme members in Kenya. The findings are that financial knowledge had a positive and significant influence on the retirement planning of pension scheme members in Kenya. The results imply that pension scheme members who possess knowledge of basic financial concepts were more likely to be comprehensive planners than those not knowledgeable about basic financial concepts.

5.2.3 Influence of Attitude towards Saving on Retirement Planning among Pension Scheme Members in Kenya.

The third objective of the study was to establish whether a pension scheme members' attitude towards savings influenced retirement planning. This study shows that attitude towards savings negatively affected retirement planning. Pension scheme members' attitude towards long-term savings ratio does not significantly influence retirement planning, implying that a pension scheme member in Kenya with a positive attitude towards savings is less likely to plan for retirement comprehensively.

5.2.4 Influence of Financial Behaviour on Retirement Planning among Pension Scheme Members in Kenya.

The fourth objective sought to determine the influence of financial behaviour of pension scheme members in Kenya on retirement planning. The study found that financial behaviour had a positive and significant influence on retirement planning of pension scheme members in Kenya. Pension scheme members who are financially disciplined and exhibit financially responsible behaviour are more likely to be comprehensive retirement planners.

5.2.5 Moderating effect of Age on the Influence of Financial Literacy on Retirement Planning among Pension Scheme Members in Kenya.

The fifth objective sought to establish the moderating effect of age on the influence of financial literacy on retirement planning among pension scheme members in Kenya. The analysis found that age had no moderating effect on the influence of financial literacy on retirement planning among pension scheme members in Kenya. More specifically, age does not enhance the influence of financial awareness, financial knowledge, attitude towards savings and financial behaviour on retirement planning among pension scheme members in Kenya.On the contrary, age was found to be a key determinant of retirement planning among pension scheme members.

5.2.6 Moderating effect of Income on the Influence of Financial Literacy on Retirement Planning among Pension Scheme Members in Kenya

The sixth objective sought to establish the moderating effect of income on the influence of financial literacy on retirement planning among pension scheme members in Kenya. The analysis found that income had no moderating effect on the influence of financial literacy on retirement planning among pension scheme members in Kenya. More specifically, income does not enhance the influence of financial awareness, financial knowledge, attitude towards savings and financial behaviour on retirement planning among pension scheme members in Kenya. On the contrary, income was found to be a key determinant of retirement planning among pension scheme members.

5.3 Conclusions

Based on the above findings the study concludes that financial literacy is a key determinant of retirement planning. The research also concludes that the key aspects to be included in the measurement if financial literacy should be financial awareness, financial behaviour and financial knowledge. This is because the factors jointly reported

a much greater influence of financial literacy on retirement planning than previuos studies.

5.3.1 Financial Awareness and Retirement Planning

The study evaluated the influence of financial awareness on retirement planning among pension scheme members, considering the level of awareness of financial products and financial institutions in Kenya. The odds ratio of financial awareness of financial products and institutions in the logistic regression model indicates a positive likelihood on retirement planning. This suggests that the likelihood of comprehensively planning for retirement is determined by one's level of awareness of financial products in the market and the institution offering them. Thus, it is possible to conclude that pension scheme members who are financially aware are more probable to be comprehensive retirement planners than others. In addition, the variable is significant in explaining retirement planning among pension scheme members.

5.3.2 Financial Knowledge and Retirement Planning

The study also investigated the influence of financial knowledge on retirement planning among pension scheme members in Kenya, considering simple arithmetic knowledge in a financial set-up, the knowledge of simple interest and compound interest, the knowledge of effect of inflation on purchasing power and cost of living, knowledge of the relationship between risk and return and lastly the knowledge of diversification. The analysis of financial knowledge on these basic financial concepts showed an association of retirement planning with the simple financial arithmetic, knowledge of the effect of inflation on purchasing power and knowledge of diversification. On the contrary, the knowledge of simple and compound interest, knowledge of the effect of inflation on cost of living, knowledge on the relationship between risk and return had no significant association with retirement planning. From the findings, the odds ratio and Wald test results of financial knowledge indicated a positive and significant influence on retirement planning. Given these findings, the study concludes that adequate financial

knowledge of basic financial concepts is needed for one to comprehensively plan for retirement.

5.3.3 Attitude towards Saving and Retirement Planning.

The study also examined the influence of pension scheme members' attitudes towards savings on retirement planning in Kenya by evaluating the different attitudes towards long-term savings. From the findings, the odds ratio and the Wald test results indicated that attitude towards long-term savings had a negative and insignificant effect on retirement planning. The study concludes that pension scheme members' attitude towards saving for the long term did not have a statistically significant effect on the likelihood of one being a comprehensive retirement planner.

5.3.4 Financial Behaviour and Retirement planning.

The study also sought to evaluate whether financial behaviour of pension scheme members influenced their retirement planning in Kenya by considering some day-to-day routine financial management practices. Pension scheme members generally exhibited responsible financial behavioural tendencies. It was also evident that day-to-day financial behaviour influences retirement planning, and therefore should be considered when addressing pertinent retirement planning issues.

The study findings from the logistic regression results indicated a higher likelihood of a pension scheme member who is financially disciplined to plan for their retirement comprehensively. Given these findings, the study concludes that the financial behavioural tendency of pension scheme members influences how they plan for their retirement.

5.3.5 Age and Retirement Planning

The study also investigated the moderating role of age on the influence of financial literacy on retirement planning. From the analysis, the moderating role of age on the

influence of financial all financial literacy variables on retirement planning was insignificant. The introduction of age into the model enhanced the model substantially although as a predictor variable but not as a moderator. The study therefore concludes that age is a key determinant of retirement planning and not a moderator.

5.3.6 Income and Retirement Planning

The study also examined the moderating role of income on the influence of financial literacy on retirement planning among pension scheme members in Kenya. The moderating role of income on the influence of financial behaviour on retirement planning was found to be significant. Income was as well found to have no moderating role on the influence financial awareness, financial knowledge and attitude towards savings on retirement planning. Therefore, the study concludes that the association between financial behaviour and retirement planning is moderated by income level of the pension scheme member. The introduction of income into the model enhanced the model substantially although as a predictor variable but not as a moderator. The study therefore concludes that income is a key determinant of retirement planning and not a moderator.

5.4 Recommendations

Based on the study's objectives, the study recommends expanding of the scope of financial literacy to incorporate financial knowledge as well as financial awareness, attitude towards savings and financial behaviour. The study also recommends a greater diversity of financial education programs and specialized training to the different segments of society. The financial initiatives should be cognizant of the contribution of age and income levels as key influencers of the individual's retirement planning and tailor these programs accordingly. The study further recommends the following as per each objective:

5.4.1 Financial Awareness and Retirement Planning

From the findings, it is recommended that financial institutions in Kenya should enhance their consumers' level of understanding of the products on offer. The products' features and benefits need to be clearly stated to customers to increase the level of uptake of the products and services. The level of awareness of the different pension schemes available in the market should also be emphasized by the pension fund providers. The introduction of the pension-backed mortgage, a new product available to pension scheme members need to be widely advertised to increase its uptake by members as they plan for their housing needs, as this will ease their rental burdens upon retirement.

Employers who only offer the mandatory pension; NSSF and have not initiated occupational schemes for their employees need to create some awareness of individual pension schemes, where their employees save voluntarily for their retirement. Those with occupational schemes should also create an awareness of the opportunity for their employees to add to their contribution to increase their retirement savings. This will increase the level of intentional planning for retirement and at the same time, improve pension amounts received by their employees upon retirement.

5.4.2 Financial Knowledge and Retirement Planning

The study also recommends that to enhance the financial knowledge of pensions scheme members, regular financial education drives need to be incorporated by employers. Pension fund providers can also explore avenues of conducting financial education campaigns for the general public, both in the formal and informal sectors. The concept of inflation and its effect on the purchasing power of consumers, the risk-return trade-off, and diversification needs to be incorporated in the general financial literacy educational campaigns. These financial educational drives will enhance the scheme members' capacities and those who have not taken up any pension scheme in making informed decisions on their retirement savings, increasing the uptake and amount of pension saved. The government and regulators of the pension industry also need to

disseminate the different legislation affecting the pension to the general public and allow for public participation in formulating of these legislations.

Additionally, through the ministry of education, the government should incorporate financial knowledge education into the formal educational curriculum at the basic education and higher educational institutions. This will equip the next generational workforce with personal financial management skills needed to make informed financial decisions like retirement planning. This recommendation is backed by the critical idea that the likelihood of an individual who is financially knowledgeable being a comprehensive planner is high and that such individuals would more actively participate in their retirement planning. Such knowledgeable individuals are more likely to participate in scheme activities and add up their pension amount through additional voluntary pension or take up individual pension plans to meet their retirement savings goals.

5.4.3 Attitude towards Saving and Retirement planning

The study also recommends that it is vital for the pension fund industry players to consider the different attitudes that pension scheme members have while conducting their educational campaigns. The industry players need to devise ways within the educational drives that will lead to changes in the attitude of pension scheme members towards long-term savings. More practical learning opportunities also need to be incorporated into the financial educational drives.

5.4.4 Financial Behaviour and Retirement planning

In view of the findings that pension scheme members' financial behaviour has a significant influence on retirement planning, the recommendation is that policymakers and pension scheme companies need to incorporate behavioural change initiatives within their financial educational programs, making them practical in nature to ensure members shift towards responsible financial behaviour that would, in turn, enhance members

participation within the schemes and encourage members to plan for their retirement comprehensively. As Policymakers advocate for automatic enrollment into the tier one pension scheme (NSSF). They should also put in place modalities of increasing the amount of contribution in the NSSF to improve the replacement rate of scheme members upon retirement and thereby the adequacy of the pension.

Furthermore, the enacting laws and policies governing the collection and administration of pensions needs to take into account behavioural tendencies of individuals that might be self-defeating. For instance, the policy on early access of pension upon change of employment will affect the adequacy of the pension upon retirement. Such policies and initiatives should take into account behavioural biases like self-control bias, mental accounting and framing that might inhibit their implementations.

5.5 Suggestions for Further Research

This study helped to analyse the influence of financial literacy on retirement planning among pension scheme members in Kenya. The study only included members from contributory pension schemes in Kenya. It did not include the civil service pension scheme, which at the time of the study was a non-contributory scheme. With the introduction of the public service superannuation scheme which is a contributory scheme, there is therefore, need to analyse influence financial literacy on retirement planning among the civil servants.

The study also focused on financial literacy as one of the variable influencing retirement planning. It did not investigate the influence of other factors like financial resilience, financial capability, liquidity preference, financial strain and other financial factors that may influence retirement planning. Further research can incorporate other financial factors and their influence on retirement planning.

The data was a cross-sectional data collected from pension scheme members across different schemes who might have been subjected to different financial education programs. The effectiveness of these educational initiatives on the financial literacy levels by the industry players may have to be examined over time and its subsequent changes in the retirement planning by workers exposed to these programs.

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APPENDICES

Appendix I: Letter of Introduction

Dear respondent,

REF: CONSENT FOR PROVISION OF ACADEMIC DATA

My name is Cynthia Waga, a student of Jomo Kenyatta University of Agriculture and Technology undertaking a course leading to the award of the Degree of Doctor of Philosophy in Business Administration.

I would like to request for your consent to provide data meant for purely academic purposes. My topic of research is the effect of financial literacy on retirement planning in Kenya.

Information provided will be treated as confidential and purely for academic purposes

Yours sincerely

Cynthia Waga

Appendix II: Questionnaire

THE EFFECT OF FINANCIAL LITERACY ON RETIREMENT PLANNING IN KENYA:

QUESTIONNAIRE

Section 1:

BACKGROUND INFORMATION

Gender

Male ( ) Female ( )

Marital status

Married ( ) Single ( )

Separated/divorced ( ) Widowed ( )

Age

20-30 ( ) 30-40 ( )

40-50 ( ) 50-60 ( )

Over 60 ( )

Monthly income level

Less than Kshs10,000 ( ) Kshs10,000-50,000 ( )

Kshs 50,000-100,000 ( ) Kshs 100,000-200,000( )

Over Kshs 200,000 ( )

Section B: Retirement planning

1. What funds will you live on after you reach retirement age?
   Pension from a privately owned retirement fund ( )
   Income from leasing and selling property ( )
   Additional pension from a voluntary pension scheme ( )
   Your own savings ( )
   Pension from a publicly owned retirement fund ( )
   Your own earnings (I will continue to work after retirement ( )
   Support from children, relatives, acquaintance ( )
   Support from church and charitable organisations ( )
   Don‘t know‘. ( )
2. Will your retirement income be satisfactory with only your employer sponsored retirement savings plan?
   Yes ( )

   No ( )

   Don’t know ( )

3. If No to 2, do you have any other plans of increasing your retirement income
   Yes ( )

   No ( )

4. If Yes to 3, please explain the other source you have put in place to complement your retirement income
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SECTION 2: FINANCIAL LITERACY

A. Financial Awareness

i. Please can you tell me whether you have heard of any of these types of financial products.

A pension fund	( )
Unit trust	( )
Mortgage	( )
Bank loan	( )
Credit card	( )
Savings account	( )
Microfinance loan	( )
Insurance	( )
Shares and Bonds	( )
Mobile phone payment account	( )
Prepaid payment card	( )

ii. Which of these financial products do you currently hold (personally or jointly)?

A pension fund	( )
Unit trust	( )
Mortgage	( )
Bank loan	( )
Credit card	( )
Savings account	( )
Microfinance loan	( )
Insurance	( )
Shares and Bonds	( )
Mobile phone payment account	( )
Prepaid payment card	( )

iii. Which of the following financial institution have you ever heard of?

Post Bank	( )

M-PESA	(	)
SACCO	(	)
Chama or ROSCA	(	)
NSSF	(	)
NHIF	(	)
Nairobi Securities Exchange.	(	)

B: Financial knowledge

1. Imagine that five brothers are given a gift of $1000. If the brothers have to share the money equally how much does each one get?
    a) Less than 200 ( )
    b) Exactly 200 ( )
    c) More than 200 ( )
2. Now imagine that the brothers have to wait for one year to get their share of the X. In one year's time will they be able to buy:
    a) More ( )
    b) The same amount ( )
    c) less than they could buy today. ( )
3. Suppose you put $100 into a savings account with a guaranteed interest rate of 2% per year. You don't make any further payments into this account and you don't withdraw any money. How much would be in the account at the end of the first year, once the interest payment is made?
    a) Less than $ 102 ( )
    b) Exactly $ 102 ( )
    c) More than $ 102 ( )
4. How much would be in the account at the end of five years? Would it be:
    a) More than $110 ( )
    b) Exactly $110 ( )

c) Less than $110 ( )

5. An investment with a high return is likely to be high risk

   a) True ( )
   b) False ( )
   c) Do not Know ( )

6. High inflation means that the cost of living is increasing rapidly

   a. True ( )
   b. False ( )
   c. Do not know ( )

7. It is less likely that you will lose all of your money if you save it in more than one place

   a. True ( )
   b. False ( )
   c. Do not know ( )

C. Financial Attitude

Please tick appropriately to the statements below.

	Strongly agree	**Agree**	**undecided**	**Disagree**	**Strongly disagree**
I find it more satisfying to spend money than to save it for long term					
I tend to live for today and let tomorrow take care of itself					
Money is there to be spent					
Who has time to save when there's so much to buy					
I'm not in charge of my savings.					

D. Financial behaviour

Please tick appropriately to the statements below

	Strongly agree	Agree	Indifferent	Disagree	Strongly disagree
Before I buy something I carefully consider whether I can afford it					
I pay my bills on time					
I keep a close personal watch on my financial affairs					
I set long term financial goals and strive to achieve them					
I prepare a monthly household budget and adhere to it.					
I have been actively saving or buying investments in the past 12 months					
I shop around and gather information before purchasing a financial product					
I borrow to make ends meet					

THANK YOU FOR PARTICIPATING