An assessment of the effects of financial literacy on pension planning and preparedness: A case study of members under the National Pension Scheme Authority (NAPSA) in Lusaka District, Zambia

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ABSTRACT

Despite mandatory coverage by the National Pension Scheme authority (NAPSA), most Zambian formal sector workers will retire below the 80% recommended income replacement rate. This study examined how financial literacy affects pension preparedness. The study was anchored in three complementary theories: the behavioural lifecycle hypothesis, the theory of planned behaviour, and Huston's financial literacy model. The target population comprised contributors employed in the formal sector and aged 20-60 years. A sample of 138 respondents was selected using simple random sampling. In addition to this, 24 experts from Napsa were selected by expert purposive sampling. The data were collected using questionnaires (n=138) and 24 expert interviews. Quantitative data were analysed using SPSS v.29, employing descriptive statistics, Pearson correlation, hierarchical regression, and mediation analysis (PROCESS Macro Model 4 with 10,000 bootstrapped resamples). Assumptions (linearity, normality, homoscedasticity, and multicollinearity VIF < 5) were verified. Qualitative data underwent thematic analysis, with data triangulation enhancing validity. The results have shown moderate aggregate literacy (M=3.37, SD=0.68), masking strong procedural knowledge (retirement rules, M=3.74) but weak analytical skills (investment, M=2.89). Pension planning behaviour was forced, as contributors did so in order to comply with statutory requirements rather than voluntarily (mandatory M=4.21 vs voluntary M=2.67). Financial literacy had a positive correlation with retirement preparedness (r = 0.527, p = 0.002). Mediation analysis discloses that the effect of literacy is indirect. Financial planning behaviour (27.4%) and system awareness (19.7%) mediate 47.1% of the total relationship between financial literacy and retirement preparedness (indirect B=0.194, 95% CI [0.087, 0.318]). Conceptual literacy alone is insignificant (β=0.06, p=0.552) when pension planning behaviour is incorporated into the model. Additionally, pension planning behaviour is the strongest predictor (β=0.38, p<.001) of retirement preparedness. The study concludes that pension preparedness is a function of behavioural reinforcement, not cognitive knowledge alone. Experts corroborated the findings by explaining that conceptual financial literacy would have a weak effect on retirement preparedness unless individuals follow it up with corresponding pension planning behaviours. The study concludes that pension preparedness is a function of behavioural reinforcement, not cognitive knowledge alone. Recommendations include shifting policy from informational campaigns to behavioural nudges, employer-supported planning tools, and simplified pension calculators.

Keywords: Behavioural Reinforcement, Financial Literacy, Mediation Analysis, Pension Planning Behaviour, Retirement Preparedness

I. INTRODUCTION

Financial literacy is widely recognised as a cornerstone of effective retirement planning across economies. Globally, studies have consistently linked higher financial knowledge with improved saving behaviours and greater pension participation (Lusardi & Mitchell, 2014; Klapper & Lusardi, 2020). The ability to comprehend fundamental financial concepts; such as compound interest and risk diversification; enables individuals to make informed decisions about long-term security (Organization for Economic Cooperation and Development [OECD/INFE], 2020). However, empirical evidence demonstrates persistent deficiencies in these competencies, even among educated populations (Kaiser et al., 2021).

In Zambia, the National Pension Scheme Authority (NAPSA) was established in 2000 to provide compulsory pension protection. While the system is designed to provide income replacement in old age, there is a growing gap between intended retirement outcomes and the financial behaviour of members (Mutale, 2023). A landmark shift occurred in April 2023 with the enactment of the National Pension Scheme (Amendment) Act, which introduced a 20% partial withdrawal policy. As of early 2024, NAPSA reported disbursing approximately K10.1 billion to over 487,000 members. While intended to empower citizens with immediate liquidity for investment, this high uptake points out the urgent need for financial literacy to ensure that these funds are not diverted into consumption rather than long-term security.

Despite the importance of these decisions, foundational financial knowledge in Zambia remains low. According to the FinScope 2020 Survey, the national financial literacy rate stands at only 23.6%, with a significant urban-rural divide. Research on Zambian civil servants and university students further highlights that while awareness of financial products is increasing, many individuals lack the specific skills to calculate investment returns or plan systematically for retirement (Mwange, 2017). By integrating the Behavioural Life-Cycle Hypothesis (Shefrin & Thaler, 1988) and Huston's Financial Literacy Model (2010), this research aimed to provide an empirically grounded analysis of the relationship between financial literacy and pension preparedness among NAPSA contributors in Lusaka.

1.1 Statement of the Problem

Although NAPSA provides compulsory pension coverage for formal sector employees in Zambia, retirement preparedness remains a persistent challenge. The introduction of the 20% partial withdrawal policy has seen a rapid outflow of funds, with over K10 billion accessed by nearly half a million members within the first year of implementation. While government officials view this as an opportunity for economic reinvestment, scholars and financial experts have warned that without adequate financial literacy, such early access risks leaving contributors destitute in their old age (ActionAid Zambia, 2023). Existing national data indicates a widespread lack of foundational knowledge; the Bank of Zambia (2020) report confirms that only 23.6% of adults are financially literate. Furthermore, local studies on formal sector employees in Zambia reveal that many respondents rely on low-risk, low-yield strategies and lack a comprehensive understanding of how current contribution patterns affect their future income-replacement ratios (Mutale, 2023).

Although these statistics document a correlation between low literacy and weak pension outcomes, their explanatory value is limited. They provide little insight into the behavioural mechanisms that translate knowledge into action. No empirical study has yet rigorously examined the mediating role of pension system awareness and planning behaviour specifically within the context of the recent NAPSA reforms. The central problem addressed by this study is the existing empirical gap regarding the mechanisms through which financial literacy influences pension-planning behaviour and preparedness among NAPSA members in the wake of the 2023 legislative amendments.

This study addresses this critical gap by investigating not merely whether financial literacy matters, but how it matters, examining the mediating roles of financial planning behaviour and pension system awareness. By integrating the Behavioural Life-Cycle Hypothesis (BLCH) (Shefrin & Thaler, 1988), the Theory of Planned Behaviour (TPB) (Ajzen, 1991), and Huston's Financial Literacy Model (2010), this research provides an empirically grounded analysis of the literacy-preparedness nexus among NAPSA members in Lusaka, Zambia.

1.2 Research Objectives

i. To describe the levels of financial literacy among NAPSA members regarding pension planning;
ii. To examine the financial planning behaviours among NAPSA contributors; and
iii. To determine the relationship between financial literacy and pension preparedness, with specific focus on mechanisms mediating.

II. LITERATURE REVIEW

2.1 Theoretical Review

This study is anchored in three complementary theories that explain how financial knowledge is translated into retirement action. The Behavioural Life-Cycle Hypothesis explains self-control and present bias, the Theory of Planned Behaviour explains the formation of intentions to prepare for retirement, and the Financial Literacy Model explains how financial knowledge is measured and applied in decision-making.

2.1.1 Behavioural Life-Cycle Hypothesis

The Behavioural Life-Cycle Hypothesis, advanced by Shefrin and Thaler (1988), extends the traditional life-cycle model by recognising that individuals do not always behave as perfectly rational savers. The theory argues that people face self-control problems, separate money into mental accounts, and often give greater weight to current consumption than to future welfare. As a result, saving for retirement may be delayed even when individuals understand its importance. In this study, the theory helps explain why NAPSA members may comply with mandatory contributions yet still fail to make voluntary savings or engage in deliberate pension planning. It also supports the argument that knowledge alone is insufficient unless it is reinforced by behavioural discipline, commitment, and long-term financial habits.

2.1.2 Theory of Planned Behaviour

The Theory of Planned Behaviour, developed by Ajzen (1991), explains behaviour as the outcome of intention, and intention as the product of attitudes, subjective norms, and perceived behavioural control. When individuals believe that a behaviour is useful, socially supported, and within their capability, they are more likely to perform it. In relation to this study, the theory explains why members who value retirement planning, perceive encouragement from employers or peers, and feel capable of managing pension decisions are more likely to review statements, make additional contributions, and project future retirement needs. The theory is therefore useful in explaining the mediating role of financial planning behaviour and pension system awareness, because financial literacy must first shape intention before it can influence action.

2.1.3 Financial Literacy Model

Huston's Financial Literacy Model conceptualises financial literacy as more than the possession of financial information. It postulates that it is important to understand financial concepts and to apply that understanding in practical decision-making (Huston, 2010). The model is useful because it distinguishes between knowing financial rules and actually using that knowledge to plan, save, and invest. In this study, the model guides the measurement of financial literacy by capturing both conceptual understanding and applied competence. It also explains why some contributors may know the rules of NAPSA yet still struggle to calculate future benefits, estimate replacement rates, or make voluntary pension decisions. The model therefore provides a direct link between financial knowledge, financial planning behaviour, and pension preparedness. Together, these theories position financial literacy as the independent variable, financial planning behaviour as the mediating pathway, and pension preparedness as the outcome. They also justify the study's focus on the behavioural mechanisms through which knowledge is converted into retirement action.

2.2 Empirical Review

2.2.1 Levels of Financial Literacy

Global evidence discloses substantial deficiencies in financial literacy, particularly regarding pension planning. The OECD/INFE (2020) international survey across 26 countries revealed that only about 26.3% of adults possess a high level of financial knowledge. Foundational research by Lusardi and Mitchell (2014) identifies persistent gaps in understanding compound interest, inflation, and risk diversification. Klapper and Lusardi (2020) further argue that even educated, formally employed individuals often lack the specific financial resilience needed for retirement. Huston (2010) notes that financial literacy must be measured not just as knowledge but as its application to personal finance. Complementing this, cross-national evidence by van Rooij et al. (2011) shows that individuals with higher financial literacy are significantly more likely to engage in sophisticated financial decision-making, including retirement investments. Similarly, Fernandes et al. (2014) demonstrate that while financial literacy is important, its direct effect on financial behaviour is often modest without behavioural reinforcement mechanisms.

In Africa, regional data from FinMark Trust (2022) indicates that while financial inclusion is growing, actual capability remains constrained. Additional evidence from World Bank global surveys confirms that low financial capability persists across developing economies despite increased access to financial services (Demirgüç-Kunt et al., 2018). For instance, Ndou (2023) found that young Black African adults score significantly lower on financial behaviour despite having moderate knowledge levels. In Zambia, the Bank of Zambia (2020) reports that only 23.6% of adults are deemed financially literate. Local academic studies by Mwange (2017) confirm that even among final-year students, there are widespread deficiencies in interest rate and investment knowledge. Furthermore, Siame (2020) specifically found that financial literacy levels were low among Zambian civil servants regarding their understanding of interest rates and various investment options. Similar patterns are observed in other developing contexts, where limited financial education constrains effective retirement planning (Behrman et al., 2012).

2.2.2 Financial Planning Behaviours

Cross-country evidence observes that pension-specific literacy and targeted education are stronger predictors of retirement preparedness than general financial knowledge. Kaiser et al. (2021) observe that rigorous financial education can improve downstream behaviours, though many individuals still struggle to translate knowledge into long-term savings. Supporting this, Lusardi and Mitchell (2011) find that individuals who engage in retirement planning accumulate significantly greater wealth over time. African research by Safari et al. (2021) demonstrates that financial literacy significantly impacts personal retirement planning and financial well-being. In Zambia, structural constraints and institutional factors impair progress; for example, the National Pension Scheme Authority (NAPSA, 2023) reports a massive uptake in the 20% partial withdrawal policy; exceeding K10 billion; indicating a strong preference for immediate liquidity over long-term preservation. This trend is often linked to a lack of planning competence among contributors. Siame (2020) identified a strong positive relationship between financial planning knowledge and retirement preparedness among civil servants, yet noted that the majority were not saving enough to maintain their standards of living. Furthermore, gender disparities are evident, with Zambian women showing lower literacy rates and higher obstacles to financial independence compared to men (Chibesa & Mwange, 2024). This aligns with global findings that women consistently exhibit lower financial literacy and retirement preparedness levels than men (Bucher-Koenen et al., 2017).

2.2.3 Relationship and Mediating Mechanisms

Studies have shown that the relationship between literacy and preparedness is not direct but mediated by behavioural pathways. Kaiser et al. (2024) emphasise that knowledge only translates into better economic decisions when accompanied by positive financial habits and attitudes. Deuflhard et al. (2019) show that literacy gaps delay participation in formal savings and intensify financial risks, whereas evidence from emerging economies suggests that pension-specific literacy is a critical determinant of retirement planning behaviour (Boisclair et al., 2017). The behavioural life-cycle hypothesis (Shefrin & Thaler, 1988) and the theory of planned behaviour (Ajzen, 1991) suggest that cognitive biases and intentions directly shape these outcomes. Additional behavioural research highlights that self-control mechanisms and mental accounting significantly influence long-term savings decisions (Thaler & Benartzi, 2004). In Zambia, Siame (2020) found a strong positive correlation between financial literacy and diverse investment actions, such as acquiring stocks, livestock, and insurance schemes. Furthermore, Siame (2020) suggest that poor institutional communication can weaken the link between financial knowledge and effective retirement preparation. Evidence from developing economies also shows that trust in financial institutions and access to clear information mediate the literacy–behaviour relationship (Cole et al., 2011). No prior Zambian study has yet rigorously tested the full mediation effects of both planning behaviour and system awareness within the context of the recent 2023 legislative amendments.

III. METHODOLOGY

3.1 Research Design and Philosophy

The study adopted an exploratory sequential mixed-methods design grounded in the pragmatic paradigm (Creswell & Plano Clark, 2018; Tashakkori & Teddlie, 2010). This design was most suitable because the study needed to first quantify the level of financial literacy, planning behaviour, and pension preparedness among NAPSA members, and then to explain the reasons behind the observed patterns through expert interviews. The quantitative strand therefore established the magnitude and direction of relationships, while the qualitative strand provided contextual explanations of the knowledge-behaviour gap and the institutional conditions shaping pension preparedness.

3.2 Study Site

The study was conducted in Lusaka District, Zambia. Lusaka is the country's main administrative and commercial centre and has a high concentration of formal sector employers and active NAPSA contributors. According to NAPSA administrative records (2024), Lusaka accounts for approximately 42% of all formal sector pension contributors, or about 125,000 active members.

3.3 Target Population

The target population comprised all active NAPSA members in the formal sector aged 20-60 years in Lusaka District. This group was chosen because it represents contributors at different career stages who are making or preparing to make retirement-related decisions. The accessible population consisted of 211 active contributors drawn from diverse institutions and captured in the NAPSA administrative records.

3.4 Sampling and sample size

The quantitative sample size was determined using Slovin's formula as indicated below:

$$n=N/(1+Ne^2)$$

Where:

n=required sample size
N= total population size
E=margin of error expressed as a decimal, e.g. 0.05 for 5%)

Therefore, using the inputs N = 211 and e = 0.05, this calculation yielded 138 respondents. Simple random sampling was then used to select the survey participants from the accessible population. For the qualitative phase, 24 NAPSA experts were sampled using expert purposive sampling technique, where they were selected on the basis of their experience in pension administration, policy, and member support. The number was sufficient for thematic saturation (Hennink et al., 2017).

3.5 Data Collection tools and procedure

Quantitative data were collected using a structured questionnaire covering demographic characteristics, financial literacy, financial planning behaviour, pension system awareness, and pension preparedness. The questionnaire included six items for financial literacy (α = 0.83), six items for financial planning behaviour (α = 0.81), and five items for pension preparedness (α = 0.79). The tool was pilot tested on 10 respondents to check clarity and reliability before the main survey. Qualitative data were collected using a semi-structured interview guide administered to 24 NAPSA experts. Each interview lasted approximately 40-50 minutes and was conducted to explore literacy levels, planning behaviour, and the mechanisms linking literacy to preparedness.

3.6 Data Analysis

Quantitative data were analysed using Statistical Package for the Social Sciences (SPSS) version 29. The analysis employed descriptive statistics, Pearson correlation, hierarchical regression, and mediation analysis using the PROCESS macro-Model 4 with 10,000 bootstrapped resamples. Assumptions of linearity, normality, homoscedasticity, and multicollinearity were tested before interpretation, with variance inflation factors (VIF) kept below 5. Qualitative data were analysed thematically using Braun and Clarke's (2006) approach. The two sets of findings were then triangulated to strengthen validity and deepen interpretation.

3.7 Ethical consideration

Ethical clearance was obtained from the University of Zambia Research Ethics Committee before data collection began. In addition, permission was sought from the relevant NAPSA authorities. All participants provided informed consent, were assured of confidentiality and anonymity, and were informed that participation was voluntary. Respondents were also told that they could withdraw at any stage without penalty. Data were stored securely and used only for academic purposes.

IV. FINDINGS & DISCUSSIONS

4.1 Demographic Characteristics

The sample (N=138) exhibited a balanced gender distribution (53.6% male, 46.4% female). Age distribution showed predominance of mid-career professionals: 35.5% aged 30-39 years, 29.7% aged 40-49 years, 18.8% aged 50+ years, and 15.9% aged 18-29 years. Occupational distribution in formal employment indicated 31.2% in the public sector, public, 41.3% in the private sector and 27.5% from the NGO and other sectors, with 56.6% having over 11 years of work experience.

Table 1
Characteristics of the Sample

Characteristic	Category	n	%
Gender	Male	74	53.6
	Female	64	46.4
Age	18-29 years	22	15.9
	30-39 years	49	35.5
	40-49 years	41	29.7
	50+ years	26	18.8
Employment sector	Public sector	43	31.2
	Private sector	57	41.3
	NGO and other sectors	38	27.5

4.1.1 Levels of Financial Literacy

The findings in Table 2 indicate that the overall financial literacy level among NAPSA members was moderate, with a mean index score of 3.37 (SD = 0.68) on a five-point scale. However, a closer examination of the individual indicators reveals important disparities between procedural knowledge and analytical financial competence. Respondents demonstrated relatively strong awareness of pension system procedures, particularly regarding retirement eligibility (M = 3.74, SD = 0.81) and contribution requirements (M = 3.68, SD = 0.79). This suggests that most members possess basic operational knowledge of the pension scheme.

Despite this moderate procedural awareness, respondents exhibited weaker performance in areas requiring higher-order financial reasoning and long-term planning. Familiarity with investment principles recorded the lowest mean score (M = 2.89, SD = 1.02), while the ability to calculate future pension benefits also remained relatively low (M = 3.11, SD = 0.95).

Table 2

Descriptive Statistics for Financial Literacy Indicators (N = 138)

Financial Literacy Item	Mean	SD	Min	Max
Understanding of pension rules	3.42	0.83	1	5
Knowledge of contribution requirements	3.68	0.79	1	5
Ability to calculate future benefits	3.11	0.95	1	5
Familiarity with investment principles	2.89	1.02	1	5
Awareness of retirement eligibility	3.74	0.81	1	5
Overall financial literacy index	**3.37**	**0.68**	**1.44**	**4.89**

These findings suggest that although members understand basic pension procedures, many lack the analytical and interpretive skills necessary to make informed retirement planning decisions. The relatively larger standard deviations observed in these indicators further imply variability in financial capability across respondents.

Experts unanimously characterised member literacy as "shallow." One expert stated

> *"Most members do not understand even the basic mechanics of how their pension grows. They often treat NAPSA as a tax rather than a future entitlement."* (Expert 1, 17 November 2025).

Experts identified specific misunderstandings of compound interest and inflation, noting that even when members possess partial knowledge, they lack the depth required for long-term action.

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4.1.2 Financial Planning Behaviours

The findings in Table 3 indicate that the overall pension planning behaviour among respondents was moderate, with a mean index score of 3.11 (SD = 0.72). However, the distribution of responses across the individual indicators reveals a significant imbalance between mandatory pension participation and proactive retirement planning behaviours. Respondents demonstrated very high regularity in NAPSA contributions (M = 4.21, SD = 0.62), suggesting strong compliance with statutory pension requirements. This high score is expected given that contributions are compulsory for formally employed workers and are often automatically deducted through payroll systems.

In contrast, behaviours requiring personal initiative and long-term financial agency recorded substantially lower mean scores. Voluntary retirement savings outside NAPSA had the lowest score (M = 2.67, SD = 1.11), indicating limited engagement in supplementary retirement planning beyond mandatory contributions. Similarly, engagement in long-term financial planning remained low (M = 2.75, SD = 1.03), suggesting that many respondents do not consistently incorporate retirement considerations into their broader financial decisions. The ability to project retirement income needs also recorded a relatively weak mean score (M = 2.88, SD = 0.97), reflecting limited preparedness in estimating future financial requirements after retirement. The moderate score for reviewing pension statements (M = 3.02, SD = 0.94) further suggests that although some respondents periodically monitor their pension accounts, regular engagement with pension information remains inconsistent.

Table 3

Descriptive Statistics for Financial Planning Behaviour Indicators (N = 138)

Financial Planning Behaviour Variable	Mean	SD	Min	Max
Regularity of NAPSA contributions	4.21	0.62	2	5
Frequency of reviewing pension statements	3.02	0.94	1	5
Voluntary retirement savings outside NAPSA	2.67	1.11	1	5
Ability to project retirement income needs	2.88	0.97	1	5
Engagement in long-term financial planning	2.75	1.03	1	5
Pension planning behaviour index	**3.11**	**0.72**	**1.81**	**4.92**

The comparatively higher standard deviations in the discretionary behaviour indicators in Table 3 imply notable differences in planning practices among respondents, with some individuals exhibiting stronger planning behaviours than others. Experts noted that members

> "*Rarely budget with retirement in mind*" (Expert 2, 17 November, 2025) and that "*voluntary contributions are extremely rare*" (Expert 1, 17 November, 2025) because members "*see no immediate reward*." (Expert 3, 19 November, 2025)

Structural barriers included irregular incomes and institutional distrust, while enablers included employer encouragement.

4.1.3 Relationship between Literacy and Preparedness

The findings presented in Table 4 indicate that the overall level of pension preparedness among respondents was low, with a mean preparedness index score of 2.70 (SD = 0.84). This suggests that a substantial proportion of NAPSA members are inadequately prepared for retirement despite being active contributors to the pension scheme. The low preparedness levels imply that participation in a mandatory pension system does not automatically translate into retirement readiness. Among the individual indicators, replacement rate awareness recorded the lowest mean score (M = 2.41, SD = 0.89). This finding suggests that many respondents lack understanding of the proportion of their current income that will likely be replaced by pension benefits after retirement. Similarly, the existence of additional retirement savings outside the mandatory pension scheme remained low (M = 2.54, SD = 1.14), indicating limited diversification of retirement income sources among respondents. The ability to calculate expected pension benefits recorded a moderate but still relatively weak score (M = 2.96, SD = 1.02), suggesting that many respondents experience difficulty estimating their future retirement income. Confidence in retirement security also remained modest (M = 2.88, SD = 0.98), implying uncertainty among respondents regarding their future financial stability after retirement.

Table 1

Descriptive Statistics for Pension Preparedness Variables (N = 138)

Pension Preparedness Variable	Mean	SD	Min	Max
Ability to calculate expected pension	2.96	1.02	1	5
Confidence in retirement security	2.88	0.98	1	5
Existence of additional retirement savings	2.54	1.14	1	5
Replacement rate awareness	2.41	0.89	1	5
Pension preparedness index	2.70	0.84	1.33	4.78

Bivariate correlation analysis was conducted to show the relationship between financial literacy and pension preparedness. The results are presented in Table 2.

Table 3

Correlation between Financial Literacy and Pension Preparedness (N = 138)

Variables	Pearson *r*	Sig. (2-tailed)
Financial literacy & Pension preparedness	0.527	0.002

The bivariate correlation analysis disclosed a statistically significant positive relationship between financial literacy and preparedness ($r = 0.527$, $p = 0.002$), indicating a moderate association between the two variables. The coefficient of determination ($r^2 = 0.278$) further suggests that approximately 27.8% of the variation in preparedness can be explained by differences in financial literacy levels, implying a meaningful but not exclusive influence.

Mediation was evaluated using ordinary least squares (OLS) path analysis with bootstrapped confidence intervals for indirect effects, implemented via the PROCESS macro for SPSS (Model 4; Hayes, 2022). Two parallel mediators were specified: financial planning behaviour and pension system awareness. Financial literacy served as the independent variable (X), while pension preparedness served as the dependent variable (Y). Bootstrapping with 10,000 resamples was employed to generate bias-corrected 95% confidence intervals for the indirect effects, as this approach does not assume multivariate normality of the sampling distribution of the indirect effect and provides more accurate Type I error control.

Table 7

Path Coefficients for Mediation Model (N = 138)

Path	Relationship	B	SE	t	p	95% CI
a_1	Financial Literacy → Financial Planning Behaviour	0.382	0.088	4.34	< .001	[0.208, 0.556]
a_2	Financial Literacy → Pension System Awareness	0.426	0.079	5.39	< .001	[0.270, 0.582]
b_1	Financial Planning Behaviour → Pension Preparedness (controlling for X)	0.297	0.087	3.41	< .001	[0.125, 0.469]
b_2	Pension System Awareness → Pension Preparedness (controlling for X)	0.215	0.091	2.36	0.020	[0.035, 0.395]
c	Total Effect: Financial Literacy → Pension Preparedness	0.412	0.098	4.20	< .001	[0.218, 0.606]
c′	Direct Effect: Financial Literacy → Pension Preparedness (controlling for mediators)	0.218	0.101	2.16	0.033	[0.018, 0.418]

The mediation analysis revealed that the total effect of financial literacy on pension preparedness (c path) was statistically significant ($B = 0.412$, $SE = 0.098$, $p < .001$). Financial literacy was positively associated with both financial planning behaviour ($a_1 = 0.382$, $p < .001$) and pension system awareness ($a_2 = 0.426$, $p < .001$). In turn, both financial planning behaviour ($b_1 = 0.297$, $p < .001$) and pension system awareness ($b_2 = 0.215$, $p = 0.020$) were positively associated with pension preparedness after controlling for financial literacy. The direct effect of financial literacy on pension preparedness remained statistically significant after accounting for the mediators ($c' = 0.218$, $SE = 0.101$, $p = 0.033$), indicating partial mediation. These findings suggest that financial literacy influences pension preparedness both directly and indirectly through improved financial planning behaviour and increased pension system awareness.

Table 8

Bootstrapped Indirect Effects (10,000 resamples)

Indirect Path	***B***	***Boot SE***	**95% Bias-Corrected CI**	**Effect Proportion**
Financial Literacy → Financial Planning Behaviour → Pension Preparedness	0.113	0.046	[0.035, 0.217]	27.4%
Financial Literacy → Pension System Awareness → Pension Preparedness	0.081	0.042	[0.011, 0.175]	19.7%
Total Indirect Effect	0.194	0.059	[0.087, 0.318]	47.1%

Note: Confidence intervals that do not contain zero indicate statistically significant indirect effects at $\alpha = 0.05$.

The total indirect effect ($B=0.194$, $SE=0.059$, 95% CI [0.087, 0.318]) accounted for 47.1% of the total effect. Financial planning behaviour mediated 27.4% ($B=0.113$, CI [0.035, 0.217]), and pension system awareness mediated 19.7% ($B=0.081$, CI [0.011, 0.175]). Hierarchical Regression was conducted and the results are shown in Table 4 below

As shown in Table 9 below, Model 1 (demographics) was not significant ($F=1.72$, $p=.121$, $R^2=0.037$). Model 2 (adding literacy and awareness) was significant ($\Delta R^2=0.224$, F change=8.49, $p=.003$, full model $R^2=0.261$). Financial planning behaviour was the strongest predictor ($\beta=0.38$, $p<.001$). Pension system awareness was significant ($\beta=0.28$, $p<.01$). Conceptual literacy alone was not significant ($\beta=0.06$, $p=0.552$). Experts stated that

> "*Financial literacy helps, but it is not the dominant determinant*" (Expert 1, 17 November, 2025) and "*members may know the concepts, but they do not necessarily act on them.*" (Expert 2, 17 November, 2025)

They emphasised that

> "*Those who actively plan, regardless of education, are consistently better prepared*." (Expert 1, 17 November, 2025)

Table 9

Hierarchical Regression Analysis Predicting Pension Preparedness

Model and Predictors	*B*	*SE B*	β	R^2	ΔR^2	*F* Change	Sig. *F* Change
Model 1: Demographic Factors				0.037	—	1.72	.121
Age	0.18	0.07	.22*				
Gender	-0.05	0.21	-.02				
Income	0.32	0.09	.31**				
Employment Sector	0.11	0.24	.04				
Model 2: Demographic Factors + Literacy & Awareness				0.261	0.224	8.49	.003
Financial Planning Behaviour	0.45	0.11	.38***				
Pension System Awareness	0.29	0.08	.28**				
Conceptual Literacy Score	0.07	0.10	.06				

Note: N = 138. *B* = unstandardized coefficient; *SE B* = standard error of *B*; β = standardized coefficient.
p < .05, **p* < .01, ***p* < .001

4.2 Discussion

4.2.1 Financial Literacy Levels (IV)

Financial Literacy Levels Moderate on Average, but Shallow in Depth: This study found that financial literacy among NAPSA members is moderate when considering the average score (M = 3.37 out of 5). However, a deeper examination reveals that the depth of this literacy remains critically shallow. This finding is strongly consistent with global empirical evidence. For instance, the OECD/INFE (2020) survey shows that only 26.3% of adults demonstrate high financial knowledge, while Lusardi and Mitchell (2014) identify persistent deficiencies in understanding key concepts such as compound interest, inflation, and risk diversification. The current study mirrors this pattern: procedural awareness (e.g., knowledge of retirement eligibility rules) scored higher (M = 3.74), whereas analytical competence (for instance, understanding investment principles) was substantially lower (M = 2.89).

Klapper and Lusardi (2020) further argue that even educated individuals often lack pension-specific financial capability. This is directly confirmed in this study, where university-educated members struggled to calculate future pension benefits (M = 3.11), reinforcing the distinction between general knowledge and applied financial competence. Similarly, Huston (2010) emphasises that financial literacy must be understood as both knowledge and its application; an insight clearly reflected in the observed gap between knowing and doing.

Qualitative Support**:** The qualitative findings provide further depth to this interpretation. The expert observation that members “treat NAPSA as a tax rather than a future entitlement” aligns with global evidence suggesting that financial literacy is often superficial and non-applied. This resonates with findings by Fernandes et al (2014), who show that knowledge alone has only a modest influence on behaviour without reinforcement mechanisms. Confirming and Extending Zambian Evidence: The findings in this study are consistent with the Bank of Zambia (2020), which reports that only 23.6% of adults are financially literate. Local studies such as Mwange (2017) and Siame (2020) similarly document weak understanding of interest rates and investment options. Yet, this study extends these findings by empirically demonstrating that even when individuals understand contribution rules (M = 3.68), they struggle to translate this into investment decisions or benefit projections. What This Study Adds**:** Unlike earlier descriptive studies, this research identifies a critical structural weakness: the gap between procedural knowledge and analytical application. This aligns with cross-national evidence by van Rooij, et.al (2011), which demonstrates that higher-order financial literacy is necessary for sophisticated financial decision-making. By isolating this gap, the study provides a more precise and actionable diagnosis of the literacy constraint affecting retirement preparedness.

4.2.2 Financial Planning Behaviours (Mediator)

The Compliance-Agency Paradox: This study identified a clear “compliance-agency paradox.” Mandatory contributions to NAPSA were high (M = 4.21), while voluntary financial planning behaviours; such as additional savings and long-term planning; remained low (M = 2.67). This pattern is strongly supported by empirical literature. Kaiser et al. (2021) establish that while financial education can improve behaviour, many individuals still fail to translate knowledge into sustained long-term savings. Similarly, Lusardi and Mitchell (2011) show that active retirement planning; not mere knowledge; is what leads to wealth accumulation. Moderate literacy levels in this study do not translate into proactive retirement planning.

Structural Barriers to Planning: The qualitative findings reinforce this interpretation. Experts noted that members “rarely budget with retirement in mind” and “see no immediate reward” for voluntary contributions. These insights are consistent with broader evidence from developing economies, where structural and behavioural barriers limit financial action despite awareness. This is further reflected in the significant uptake of the 20% partial withdrawal policy reported by the National Pension Scheme Authority (2023), which indicates a strong preference for short-term liquidity over long-term preservation.

Within Zambia, these findings are consistent with Mutale (2023), who argue that weak institutional communication undermines effective financial behaviour. The relatively low frequency of pension statement reviews (M = 3.02) supports this claim and reflects limited engagement with the pension system. Contribution of This Study: This study advances the literature by quantifying the compliance-agency gap. While previous research has acknowledged weak voluntary participation, this investigation shows that discretionary behaviours consistently fall below the mid-point of the scale (≤ 2.88), compared to near-maximum compliance (4.21). This empirical gap provides a clear target for intervention and supports the argument by Kaiser et al. (2021) that behavioural reinforcement; not just education; is essential for improving financial outcomes.

4.2.3 Relationship between Financial Literacy (IV) and Pension Preparedness (DV)

Direct Relationship: The significant positive correlation between financial literacy and pension preparedness ($r = 0.527$, $p = 0.002$) supports extensive empirical evidence. Lusardi and Mitchell (2014, 2011) consistently show that financial literacy is associated with improved retirement outcomes. However, the magnitude of the effect observed in this study aligns with Fernandes et al. (2014), who argue that the direct impact of literacy is often modest without supporting behavioural mechanisms.

Mediation Findings**:** The main contribution of this study lies in demonstrating that 47.1% of the effect of financial literacy on retirement preparedness is mediated through financial planning behaviour and pension system awareness. This finding is strongly supported by the literature. Kaiser et al. (2024) emphasise that knowledge only improves economic outcomes when it is translated into positive financial habits, while Boisclair et al. (2017) highlight the importance of pension-specific literacy in shaping behaviour. The findings are also in line with established theoretical frameworks. The Behavioural Life-Cycle Hypothesis (Shefrin & Thaler, 1988) and the Theory of Planned Behaviour (Ajzen, 1991) both suggest that cognitive knowledge influences outcomes indirectly through behavioural intentions and self-regulation. The non-significance of conceptual literacy ($\beta = 0.06$, $p = 0.552$) once behaviour is included in the model provides strong empirical support for these theories.

Regression Findings: The hierarchical regression results indicate that financial planning behaviour is the strongest predictor of retirement preparedness ($\beta = 0.38$, $p < .001$). This finding is consistent with Deuflhard et al. (2019), who show that literacy gaps primarily affect outcomes through delayed participation and weak engagement in financial systems. It also reinforces the evidence from Kaiser et al. (2021) that behaviour; not knowledge; is the primary driver of financial outcomes. This confirms the existence of the “knowledge-behaviour gap,” widely documented in both global and developing contexts. While individuals may understand financial concepts, they often fail to act on them. In Zambia, similar patterns have been noted by Ndou (2023) and Mutale (2023), but this study goes further by quantifying the relative contributions of behavioural pathways: 27.4% through planning behaviour and 19.7% through system awareness.

Qualitative Convergence: The qualitative findings strongly support the quantitative results. Expert views that “financial literacy helps, but it is not the dominant determinant” align closely with the mediation analysis. This convergence reinforces the conclusion that behavioural reinforcement mechanisms are central to retirement preparedness. Comparison with Prior Models**:** Unlike traditional literacy-deficit models, which dominate policy discussions and assume that knowledge alone drives outcomes, this study provides evidence for a mediated model. Consistent with global findings (Kaiser et al., 2024), the results demonstrate that financial literacy becomes insignificant when behavioural factors are accounted for. This suggests the need for a policy shift; from information provision to behaviourally informed interventions that actively support planning, commitment, and long-term financial engagement.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

This study examined the relationship between financial literacy, financial planning behaviours, and pension preparedness among 138 NAPSA contributors in Lusaka District, triangulated with expert interviews. First, financial literacy among NAPSA members is moderate in aggregate but critically shallow in conceptual depth. Members demonstrated stronger procedural awareness but marked weaknesses in analytical domains essential for retirement planning. Second, financial planning behaviours are predominantly passive. Members exhibit high engagement with mandatory actions but limited participation in behaviours requiring personal initiative. Third, and most importantly, the relationship between financial literacy and pension preparedness is mediated by financial planning behaviour and pension system awareness, with behaviour emerging as the decisive determinant. Conceptual literacy alone is non-significant when behavioural factors are considered, confirming that literacy functions as a necessary but insufficient condition. The pathway to effective pension preparedness is dual. It requires both the acquisition of meaningful financial knowledge and the establishment of consistent, proactive behaviours that operationalise that knowledge.

5.2 Recommendations

Based on the finding that financial planning behaviour is the strongest predictor of retirement preparedness and that conceptual literacy alone is insufficient, several recommendations emerge for different stakeholders. For NAPSA, the priority should be shifting from simply providing information to using behavioural nudges. This means encouraging additional voluntary contribution schemes, sending automated reminders for members to review their pension statements, and providing personalised projections of future benefits. Second, NAPSA should develop behavioural reinforcement programmes, which include employer-supported planning workshops and recognition incentives for members who consistently make voluntary savings. Third, NAPSA must simplify its communication tools by deploying user-friendly pension calculators and producing simplified guides in local languages. These guides should specifically target the analytical gaps identified in this study, such as understanding compound interest, inflation, and replacement rates. Fourth, NAPSA should strengthen its monitoring and evaluation systems to track the uptake of voluntary contributions and how often members access their pension statements.

For the Ministry of Labour and Social Security, the first recommendation is to mandate workplace financial planning programmes. This would require employers to provide their workers with access to structured planning tools and advisory services. Second, the Ministry should establish a National Behavioural Insights Unit for Pensions. The role of this unit would be to design, test, and scale up evidence-based behavioural interventions across the country. Third, the Ministry must strengthen national pension legislation by introducing defined minimum adequacy benchmarks; clear standards for what counts as a sufficient retirement income; and by institutionalising five-year periodic policy reviews to ensure the system remains effective over time.

For further research, several priorities emerge from this study's limitations and findings. First, researchers should conduct longitudinal studies, which follow the same individuals over several years, to establish the causal relationship between behavioural interventions and long-term pension accumulation. Second, future studies should investigate the effectiveness of digital and mobile interventions, particularly for reaching rural, older, and lower-income contributors who were underrepresented in this Lusaka-based sample. Third, researchers need to examine gender and socio-economic disparities in voluntary planning behaviours, building on the gender differences noted in this study's demographic analysis. Fourth, future research should evaluate employer-driven interventions and investigate the role of institutional trust—how much members trust NAPSA and other financial institutions—as a potential factor that may strengthen or weaken the relationship between literacy and preparedness.

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