

The Moderating Effect of Self-Control on the Relationship Between Financial Knowledge and Retirement Planning Among Commercial Bank Employees in Eldoret Town, Kenya

ABSTRACT

Retirement planning is a goal-oriented behavior where individuals devote effort to prepare for their retirement life effectively, thus reducing retirement worry, keeping stress under wraps, and enhancing retirement preparedness and confidence. However, there is little literature about retirement planning among employees working in Kenyan commercial banks. To fill this gap, this study aimed to establish the moderating effect of self-control on financial knowledge and retirement planning among commercial bank employees in Kenya. This study was guided by goal setting, social cognitive, and behavioral life cycle theories. The study adopted an explanatory research design, with data being collected from a target population of 1058 employees of 33 commercial banks in Eldoret town using a closed-ended questionnaire. A sample size of 290 respondents was obtained using Yamane's formula. The study used simple random sampling techniques to sample the commercial banks, and thereafter the researcher used systematic sampling techniques to select employees as respondents. The study hypotheses were tested using a hierarchical regression model. Results reveal that financial knowledge had a significant positive impact on retirement planning ($\beta = .626$, $P = .000$), confirming that employees with better financial knowledge are more likely to plan effectively for retirement. Similarly, self-control not only directly influences retirement planning ($\beta = 0.258$, $P = .000$) but also moderates the relationship between financial knowledge and retirement planning ($\beta = .137$, $P = .000$). Results further indicate that the moderation model is a superior model than the direct effect model as it accounts for more variance (60.5%) in retirement planning as shown by $R^2 = .605$ compared to 44.9% ($R^2 = .449$). This moderation process contributes to new knowledge in literature and theory. These study findings will be helpful to organizations and governments in developing policies and strategies related to retirement systems in the workplace. Limitations and recommendations have also been discussed.

Keywords: Retirement Planning, Financial Knowledge, Self-control, and Moderation

1. INTRODUCTION

The rapidly aging labor force in countries in the late and advanced stages of demographic transition is already shifting the composition of the workforce from relatively young to relatively old workers (1). An aging workforce can affect national savings, as saving rates typically differ by age: individuals borrow when they are young, save during their working years, and deplete their savings once they reach retirement. Aging can also affect labor force participation, as the elderly tend to participate in the labor force at much lower rates. The resulting decline in aggregate labor force participation would weigh on the sustainability of social planning systems by lowering the ratio of contributors (workers) to beneficiaries (pensioners), a trend that is exacerbated where the working age population is expected to shrink (1).

Retirement planning such as social security systems in developed countries like the USA and Europe are more comprehensive compared to those in developing countries (2). Developed countries typically have a combination of social assistance to relieve poverty, social insurance for risks like sickness or disability, and measures to redistribute resources over a lifetime or within families. The structural characteristics of developing economies, such as lack of adequate

financial and labor markets, high probability of tax evasion, and exposure to political pressure, make it challenging to implement comprehensive social security systems like those in developed nations (3). However, even limited social security expenditures in developing countries have been shown to have important positive effects, contributing to poverty reduction and creating conditions for economic growth

(4), state that retirement planning becomes more crucial for developing economy such as, India, because of lack of proper social planning system. With the improvement in medical facilities in the past few years, retirement planning has become more critical with the increase in life expectancy. Many recent changes in the field of finance, economy, capital market restructuring and inflation rate and increased cost of medical services has increased the immediate need of retirement planning for everyone. An important paradigm being experienced in acceptance of retirement planning worldwide is the selection of the most suitable method to collect sufficient fund for retirement. Retirement planning is a one-time strategic investment decision and determines the quality of life (4).

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 triggered people to survive for a long time, causing long-term reliance by individuals without pension plans (5).

(6) stated that those with better financial skills can plan their career path and retirement savings more effectively whereas those with poor financial skills and knowledge may have to borrow more. (7) have findings confirming that individuals' level of self-control is related to a positive financial attitude. Thus, a high level of self-control increases the probability of setting long-term financial goals and expenditure planning, along with the individual's financial satisfaction. Regarding financial behaviors or decisions, those individuals with a high level of self-control are more likely to save and invest in stock markets, while they are less likely to hold personal loans. On the other hand, mentioned studies have not been extensive and financial decisions involving long-term horizons (i.e., retirement saving and mortgages) seem not to be influenced by the individual's self-control. In other words, self-control does not matter for financial decisions whose consequences are significantly deferred. These results confirm that "the relationship between self-control and financial behavior is still inconclusive", as (8) remarked. Individuals who struggle with self-control accumulate fewer resources due to a lack of planning, supervision, or dedication (9).

2. THEORETICAL AND EMPIRICAL REVIEW

This study is being guided by the Goal setting, Social Cognitive and Behavioral life cycle hypothesis theories.

Goal-Setting Theory and Retirement Planning

Goal-Setting Theory, introduced by (10), suggests that individuals are motivated to achieve clear, challenging, and attainable goals. In retirement planning, setting financial goals can lead to consistent savings behaviors and financial security. However, achieving goals requires sustained effort, influenced by external factors and internal factors like self-control and financial literacy. Goal-setting theory's strength lies in its ability to foster long-term commitment and enhance retirement planning outcomes.

Social Cognitive Theory and Retirement Planning

Social Cognitive Theory, developed by (11), emphasizes the importance of self-efficacy and self-regulation in guiding human behavior. In retirement planning, self-efficacy refers to an individual's belief in their ability to manage finances and achieve retirement goals. Employees who believe in their financial management skills are more likely to engage in proactive retirement planning behaviors. Self-regulation involves setting personal standards and monitoring progress but requires high self-control.

Behavioral Life-Cycle Hypothesis and Retirement Planning

The Behavioral Life-Cycle Hypothesis (BLCH) was developed by (12). suggests that individuals often make suboptimal savings decisions due to biases and short-term preferences, such as mental accounting. This theory highlights the conflict between long-term goals and immediate gratification. Behavioral interventions like automated savings, financial counseling, and nudges can help address these psychological barriers, especially in countries with limited financial literacy.

The Influence of Financial Knowledge on Retirement Planning

Several prior studies have established the key role that is played by financial knowledge in influencing retirement planning. For example, in the United States of America (US), a study by (13) found that financially literate employees of the Federal Reserve in the US were more likely to contribute to a supplementary defined contribution pension plan, contribute a higher percentage of their salaries, and have higher equity in their plans, than less financially literate employees. Data from the NFCS suggest that subjective financial knowledge, confidence, and owning a savings account are significant predictors of having an emergency fund (14).

This is further echoed by (15), whose study found that financial literacy is positively associated with retirement planning, suggesting a causal relationship where better financial knowledge leads to more planning for retirement needs. This is further supported by research demonstrating that individuals with higher financial literacy are more likely to invest in the stock market, avoid borrowing against retirement accounts, and engage in other behaviors that can improve retirement resources.

The connection between financial literacy and retirement planning appears to be two-way. Not only does greater financial knowledge facilitate better planning, but the process of planning itself can also enhance financial literacy. (16) argued that those who have done more retirement planning display higher levels of financial literacy, indicating a feedback loop between the two. This suggests that initiatives to improve financial education may have downstream benefits for retirement preparedness.

However, the link between financial literacy and actual retirement savings behavior is more complex. While financial knowledge seems to translate into greater retirement planning, the relationship with realized savings outcomes is weaker (17). Behavioral factors like procrastination and inertia can prevent people from following through on their intentions, even when they possess the requisite financial skills.

Financial knowledge about financial concepts, budgeting, and investment plays an important role in facilitating retirement planning (15). However, translating this knowledge into actual savings behavior remains a challenge that requires addressing both cognitive and behavioral factors. To truly improve retirement security, it may not be enough to simply focus on enhancing financial literacy. Policymakers and industry participants should also consider ways to simplify pension choices, provide better default options, and leverage behavioral nudges that make it easier for individuals to convert their financial knowledge into effective savings decisions. A multifaceted approach addressing both financial education and choice architecture is likely needed to help people achieve their retirement goals. Based on the above discussion, we propose our first hypothesis.

H1: *Financial knowledge positively and significantly influences retirement planning.*

The influence of Self-Control on Retirement Planning

Self-control, a fundamental aspect of individual behavior and decision-making, plays a crucial role in retirement planning, as explored by various researchers across disciplines. (18) highlight the significance of self-control in shaping retirement preparedness and financial well-being. The study by (19) underscored the positive correlation between self-control and retirement savings behavior, noting that individuals with higher levels of self-control are more likely to engage in proactive retirement planning activities, such as consistent saving and adherence to long-term financial goals. (20) found that individuals with lower self-control tend to exhibit impulsive spending behaviors and inadequate retirement savings, leading to greater financial insecurity in later life.

Building upon psychological theories of self-control, researchers have elucidated the mechanisms through which self-control influences retirement planning decisions. For instance, (21) applied the dual-process model of self-control to examine how automatic and reflective processes shape retirement savings behavior. Their findings suggest that individuals rely on both impulsive urges and deliberate planning when making financial decisions, highlighting the complex interplay between self-control and cognitive processes in retirement planning (22).

From a behavioral economics perspective, scholars have explored the role of time inconsistency in retirement savings behavior. (23) conducted experiments demonstrating how individuals' preferences for immediate gratification can undermine long-term savings goals. They argue that time-inconsistent preferences, coupled with limited self-control, contribute to procrastination and suboptimal retirement planning strategies. In response, behavioral economists have proposed interventions, such as commitment devices and default enrollment in retirement savings plans, to help individuals overcome self-control challenges and improve their retirement outcomes (24).

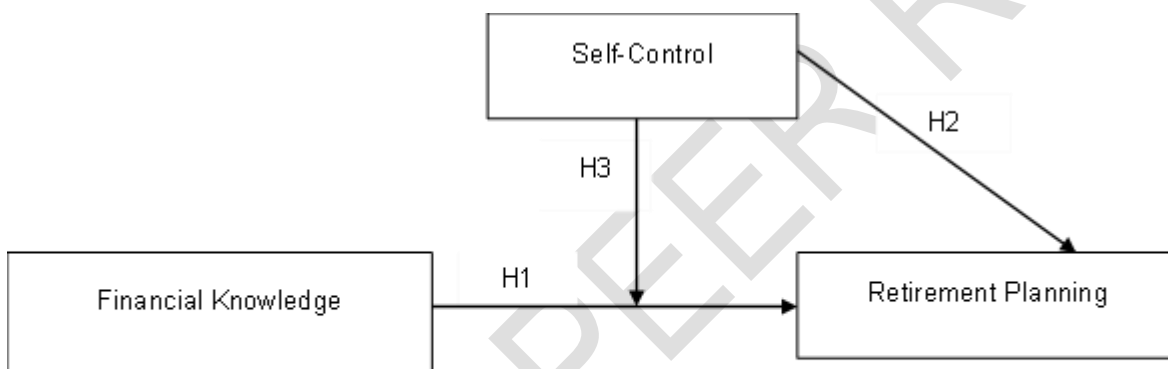
Sociological research further illuminates the social context in which self-control operates within retirement planning. (25) investigated how social norms and peer influence shape retirement saving behavior, finding that individuals' decisions are often influenced by familial expectations and social comparisons. Moreover, cultural attitudes toward aging and retirement can impact individuals' perceptions of self-control and financial planning (26). In collectivist societies, such as Japan and South Korea, where intergenerational support networks are prevalent, the role of self-control in retirement planning may be influenced by familial obligations and cultural expectations (27).

Self-control has been used in prior studies as a moderator. Self-control moderates the two-way association between personality traits and retirement planning behaviors (28). Someone high in conscientiousness is a trait associated with self-discipline and goal-directed behavior. Such traits in combination with high self-control will produce stronger retirement planning behaviors. However, the effects of dispositional traits like impulsiveness and procrastination on retirement preparations could potentially be dampened among those who have a high level of self-control (29).

Self-control is a key determinant of retirement planning behaviors, interacting with various psychological factors to shape individuals' financial decision-making processes (30). The study by (31) has shown that self-control moderates the relationship between personality traits and retirement planning behaviors. For example, individuals high in conscientiousness, characterized by traits such as self-discipline and organization, may exhibit stronger retirement planning behaviors when combined with high levels of self-control. We therefore pose that:

H2: Self-control positively and significantly influences retirement planning

H3: Self-control has a moderating influence on the relationship between financial knowledge and retirement planning



Control Variables

Gender, Age & Education

Figure 1: Conceptual Framework

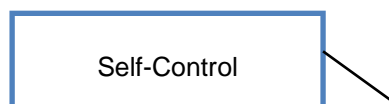
RESEARCH METHODOLOGY

The study used an explanatory research design and collected data from a target population of 1058 employees from 33 commercial banks in Eldoret town. Yamane's formula yielded a sample size of 290 respondents. The study used simple random sampling techniques to sample commercial banks, followed by systematic sampling techniques to select employees as respondents. Data were gathered using a structured, closed-ended questionnaire.

Measurements

The variables in this study were measured using measurements from previous studies with few modifications. Three control variables were held constant throughout the analysis. These included gender (measured as "1" male or "2" female), respondents' age, and education (measured in five categories). Retirement planning measurements were adopted from (32), financial knowledge from (33), and self-control measurements from (19). Respondents were asked on their level of agreement/disagreement on the items using a 5-point Likert scale, with 1 representing "strongly disagree" and 5 representing "strongly agree."

RESULTS



The researcher distributed 290 questionnaires out of which only 252 were properly filled, returned and used in the final analysis. This represented a response rate of 86% which is above the accepted range (34). In terms of gender, results in Table 1 indicates that almost an equal number of genders participated in the study as 51% was represented by male while 48.8% were female. Findings further show that the predominant age bracket was those aged between 30 to 39 having a representation of 44% while 1.2% represented those aged above 50 years. On respondents' education, results show that majority of the respondents had a bachelor's degree (69%) while the least were those with master's degree (6%).

Table 1 Demographic Characteristics of Respondents

Characteristics of the respondents	Category	Frequency	Percent
Gender	Male	129	51.2
	Female	123	48.8
	Total	252	100.0
Age group	20-29	99	39.3
	30-39	111	44.0
	40-49	39	15.5
	Above 50	3	1.2
	Total	252	100.0
Highest academic qualification	Diploma	63	25.0
	Degree	174	69.0
	Masters	15	6.0
	Total	252	100.0

Descriptive, Reliability and Correlation Results

Results of the descriptive, reliability, and correlation are displayed in Table 2. Findings show that self-control had the least mean of 3.72 with a standard deviation of .948, while retirement planning and financial knowledge had the highest but similar mean of 3.86 with a standard deviation of .802 and .894, respectively. Reliability results reveal that financial knowledge had the highest Cronbach's alpha value of .915, followed by self-control with a score of .847, while retirement planning had a score of .822. Finally, the results of correlation analysis show that financial knowledge has the strongest relationship with retirement planning as shown by $r = .659$, $P < 0.01$, while self-control has the least but a significant relationship with retirement planning as indicated by $r = 0.389$, $P < 0.01$.

Table 2: Descriptive, Reliability, and Correlation Results

Variable	Mean	SD	α	Correlation		
Retirement Planning	3.86	.802	.822	1		
Financial Knowledge	3.86	.894	.915	.659**	1	
Self-Control	3.72	.948	.847	.389**	.219**	1

NOTE: ** Correlation is significant at the 0.01 level (2-tailed).

Hypothesis Results

This study used a hierarchical regression model to test all its hypotheses. In all these analyses, control variables were held constant. Findings in Table 3, Model 1 indicate that gender significantly affects retirement planning $\beta = -.590$, $P = .000$, while age and education were found to be insignificant. Results further indicate that the control variables account for 10.5% of the variance in retirement planning, as shown by $R^2 = .105$, $F = 9.733$, significant at $P = .000$.

In Model 2 of the same table, we tested our hypothesis H1 while holding constant the control variables. Results indicate that gender remained significant ($\beta = -.254$, $P = .011$) while age and education were insignificant. Most importantly, financial knowledge was found to have a positive and significant influence on retirement planning, as shown by $\beta = .626$, $P = .000$. All the variables in this model explain 44.9% of the variance in retirement planning ($R^2 = .449$, $F = 154.215$, $P = .000$). The ΔR^2 of .344 implies that when control variables are held constant, financial knowledge accounts for 34.4% of the variance in retirement planning. Based on these results, hypothesis H1 is supported by the study.

Results of Model 3 of the same table: we tested the influence of self-control on retirement planning while holding the controls and financial knowledge constant. The outcome in Model 3 indicates that gender ($\beta = -.222$, $P = .019$) and

financial knowledge ($\beta = .567, P = .000$) remained significant as age and education insignificant. Most notably, the moderator variable, self-control, was found to have a positive and significant influence on retirement planning, $\beta = .258, P = .000$. Findings of the study further reveal R^2 of $.510, P = .000, \Delta R^2 = .061, F = 30.583$, which was significant at $P = .000$. The R^2 indicates that all the variables in this model explain 51% of the variance in retirement planning, whereas the ΔR^2 of $.061$ implies that when other variables in the model are held constant, self-control accounts for 6.1% of the variance in retirement planning. Based on the above discussion and results, H2 is also supported.

Furthermore, Model 4 in Table 3 shows the outcome of H3. The results suggest that all control variables, financial knowledge, and self-control appeared to be insignificant in this model. Most notably, results show that self-control moderates the relationship between financial knowledge and retirement planning, as indicated by $\beta = .137, P = .000$. This model shows an improved R^2 of $.605, \Delta R^2 = .095, F = 58.750, P = .000$, indicating that all the variables in this model explain 60.5% of the variance in retirement planning. The change in R^2 of $.095$ means that when all the variables in the model are held constant, the moderation process explains 9.5% of the variance in retirement planning. Based on the above findings the study also supports hypothesis H3.

The moderation results are further supported by Fig. 2, which reveals that at low levels of financial knowledge, retirement planning is at the same level as self-control. However, as financial knowledge increases, retirement planning also increases with individuals having high self-control but remains constant with individuals with low levels of self-control. Hence, self-control acts as a remedy for low levels of financial knowledge.

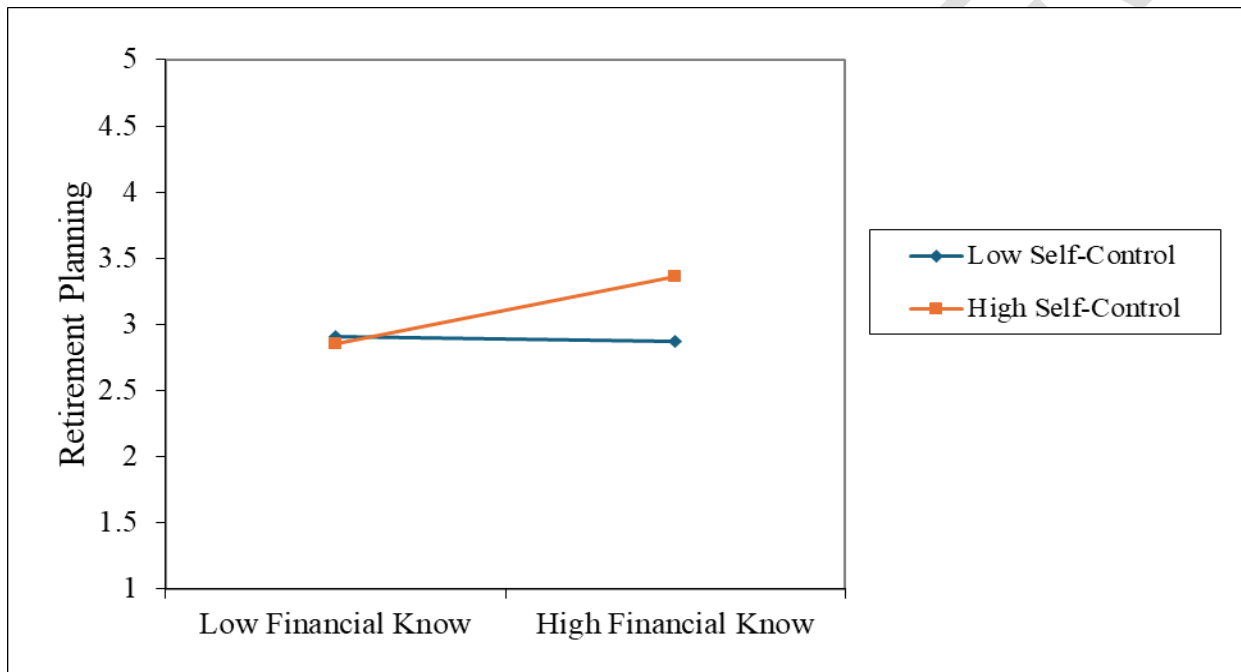


Fig. 2. Moderating Influence of Self-Control on Financial Knowledge and Retirement Planning

Table 3: Results of the Hypotheses Testing

Variables	Model 1		Model 2		Model 3		Model 4	
	β	<i>p</i> - <i>v</i>	β	<i>p</i> - <i>v</i>	β	<i>p</i> - <i>v</i>	β	<i>p</i> - <i>v</i>
Gender	-.590***	.000	-.254*	.011	-.222	.019	-.161	.059
Age	.128	.120	-.027	.679	.008	.904	-.020	.719
Education	-.066	.569	.010	.909	-.069	.431	-.031	.695
Financial Knowledge			.626***	.000	.567***	.000	-.017	.848
Self-Control					.258***	.000	.078	.108
Financial Know * Self-control							.137***	.000
R ²	.105		.449		.510		.605	
Δ R ²	.105		.344		.061		.095	
F	9.733***		154.215***		30.583***		58.750***	

NOTE: Dependent Variable: Retirement Planning, **P* < .05, *** *P* < .001.

DISCUSSION OF THE STUDY FINDINGS

The primary goal of this study was to examine the moderating influence of self-control on the relationship between financial knowledge and retirement planning among commercial bank employees in Eldoret Town, Kenya. The study's findings showed that financial knowledge had a positive linear effect on retirement planning among commercial bank employees. This is consistent with a study conducted by (35), which found that individuals with higher financial knowledge are more confident in managing retirement accounts, emphasizing the importance of understanding retirement investments. (36) emphasized the importance of understanding the concepts surrounding retirement investments, which necessitates a solid understanding of financial matters. This is also supported by (37) who found that understanding the tax implications of retirement savings is critical in making sound financial decisions about retirement planning.

Furthermore, (38) also agrees with our findings by stating that proactive information-seeking behavior significantly improves people's understanding and preparedness for retirement. The study is also in line with (39), who demonstrated that increased financial knowledge is associated with greater confidence in making retirement-related decisions, and people with higher financial knowledge are more likely to have a well-defined retirement savings plan. The study findings are also in line with (15), who found that financial literacy is positively associated with retirement planning, suggesting a causal relationship where better financial knowledge leads to more planning for retirement needs. The authors research demonstrates that individuals with higher financial knowledge are more likely to invest in the stock market, avoid borrowing against retirement accounts, and engage in other behaviors that can improve retirement resources. We therefore conclude that financial knowledge plays a key role in retirement planning.

The study findings also revealed that self-control has a positive and significant influence on retirement planning among commercial bank employees in Eldoret Town, Kenya. The study findings agree with (40), who found that individuals with higher levels of self-control are more likely to engage in effective financial behaviors, including retirement planning. Self-regulatory abilities are crucial for achieving favorable financial outcomes, thus supporting the idea that self-control enhances the effect of financial knowledge on retirement planning.

This is also supported by the study done by (8), which revealed that better self-control leads to improved financial decision-making, including retirement savings. Individuals who can manage their impulses are more likely to plan effectively for their financial futures, thereby supporting the notion that self-control positively influences the relationship between financial knowledge and retirement planning. In addition, (41) noted in their study that individuals with strong self-control are more adept at saving for retirement and making informed financial decisions. The study posits that self-control acts as a moderator in enhancing the effectiveness of financial knowledge on retirement planning outcomes, aligning with the original findings regarding the positive moderating effect of self-control.

Finally, the moderating role of self-control on the link between financial knowledge and retirement planning contributes to insights into the literature of financial knowledge and retirement planning. Our findings demonstrate that the higher the financial knowledge and self-control, the more an individual is inclined to save more for retirement and vice versa.

CONCLUSION

The study concluded that financial knowledge plays a crucial role in enhancing retirement planning among commercial bank employees. The significant positive effect suggests that employees with a better understanding of financial concepts are more likely to engage in effective retirement planning. This underscores the importance of financial education and training programs aimed at improving employees' financial literacy as a means to foster better retirement preparedness.

Self-control emerges as a key factor in retirement planning. Employees with more self-control are better able to manage their money and stick to their retirement plans. This finding emphasizes the importance of developing employee self-regulation strategies, which could be facilitated by self-discipline and goal-setting training programs. Finally, the study concludes that self-control moderates the relationships between financial knowledge and retirement planning. This means that the positive effects of this financial knowledge on retirement planning are enhanced when employees possess higher levels of self-control.

THE STUDY IMPLICATIONS

The findings of this study contribute significantly to the theoretical understanding of retirement planning literature by highlighting the roles of financial knowledge and self-control. In addition, the positive effects of financial knowledge on retirement planning reinforce existing theories that advocate for comprehensive financial literacy. This integration emphasizes the need for a holistic approach in financial education programs aimed at improving retirement planning. The study established that self-control moderates the relationship between financial knowledge and retirement planning. This is a contribution of new knowledge in literature and theory.

Given the importance of financial knowledge in retirement planning, policies should prioritize financial literacy initiatives. This could include policies requiring mandatory training sessions that cover key financial concepts. Policymakers should consider incorporating behavioral finance principles into retirement planning strategies.

The findings provide several actionable strategies for managers in commercial banks and other similar organizations. Implementing training programs aimed at improving financial knowledge and behaviors can help employees plan for retirement more effectively. Managers should prioritize these initiatives to increase employee satisfaction and retention. Creating an environment that encourages financial planning discussions and provides resources can help employees develop more positive financial attitudes. This could include regular seminars or access to financial advisors.

LIMITATIONS AND SUGGESTIONS FOR FUTURE STUDIES

This study has several limitations. First, the study focused on Commercial Bank employees in Eldoret Town, Kenya. Future studies should include a more diverse sample and scope beyond commercial bank employees to assess whether the findings hold true across different sectors and demographics. This could help generalize the results and provide a more comprehensive understanding of retirement planning behaviors.

The current study used quantitative data in testing the hypotheses. Further studies should be done by incorporating qualitative methods, such as interviews or focus groups, which could uncover deeper insights into the attitudes and behaviors surrounding retirement planning. This could help identify underlying factors that quantitative measures may not capture.

Future research should also consider exploring additional variables that may influence retirement planning, such as socio-economic status, cultural factors, or psychological traits beyond self-control. This would provide a more holistic view of the factors affecting retirement decisions.

REFERENCES

1. Amaglobeli, M. D., Chai, H., Dabla-Norris, M. E., Dybczak, M. K., Soto, M., & Tieman, A. F. (2019). The future of saving: The role of pension system design in an aging world. International Monetary Fund.
2. Gentilini, U. (2022). Social protection and jobs responses to COVID-19: A real-time review of country measures.
3. Kharazishvili, Y., Kwilinski, A., Grishnova, O., & Dzwigol, H. (2020). Social safety of society for developing countries to meet sustainable development standards: Indicators, level, strategic benchmarks (with calculations based on the case study of Ukraine). *Sustainability*, 12(21), 8953.
4. Kumar, S., Shukla, G. P., & Sharma, R. (2019). Analysis of key barriers in retirement planning: An approach based on interpretive structural modeling. *Journal of Modelling in Management*, 14(4), 972–986. <https://doi.org/10.1108/jm2-09-2018-0134>
5. Githui, T., & Ngare, P. (2014). Financial literacy and retirement planning in the informal sector in Kenya.

6. Alshebami, A. S., & Aldhyani, T. H. (2022). The Interplay of Social Influence, Financial Literacy, And Saving Behaviour Among Saudi Youth and The Moderating Effect of Self-Control. *Sustainability*, 14(14), 8780.
7. Rey-Ares, L., Fernández-López, S., Castro-González, S., & Rodeiro-Pazos, D. (2021). Does self-control constitute a driver of millennials' financial behaviors and attitudes? *Journal of Behavioral and Experimental Economics*, 93(101702), 101702. <https://doi.org/10.1016/j.socec.2021.101702>
8. Strömbäck, C., Lind, T., Skagerlund, K., Västfjäll, D., & Tinghög, G. (2017). Does self-control predict financial behavior and financial well-being? *Journal of behavioral and experimental finance*, 14, 30-38.
9. Biljanovska, N., & Palligkinis, S. (2018). Control thyself: Self-control failure and household wealth. *Journal of Banking & Finance*, 92, 280–294.
10. Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance*. Prentice-Hall, Inc.
11. Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ, 1986(23-28), 2
12. Shefrin, H. M., & Thaler, R. H. (1988). The behavioral life-cycle hypothesis. *Economic inquiry*, 26(4), 609-643.
13. Clark, R., Lusardi, A., & Mitchell, O. S. (2017). Employee financial literacy and retirement plan behavior: a case study. *Economic Inquiry*, 55(1), 248-259.
14. Despard, M. R., Friedline, T., & Martin-West, S. (2020). Why do households lack emergency savings? The role of financial capability. *Journal of Family and Economic Issues*. <https://doi.org/10.1007/s10834-020-09679-8>
15. Gaar, E. (2021). *Financial Literacy and Retirement Planning—A Capital Market Based View* (No. 129922). Darmstadt Technical University, Department of Business Administration, Economics and Law, Institute for Business Studies (BWL).
16. Siame, W. (2020). *A study on the effects of financial literacy on retirement planning: a case study of civil servants under PSPF* (Doctoral dissertation, The University of Zambia).
17. Dick, J. C. (2020). *The Relationship Between Pension Literacy, Retirement Planning and the Propensity to Seek Financial Advice in the Light of the 2015 Pension Freedoms*. University of Northumbria at Newcastle (United Kingdom).
18. Adamo, M., & Malizia, A. P. (2021). Uncertainty And Demand for Insurance: A Theoretical Model of How Self-Control Manages the Optimal Decision-Making. *Frontiers In Psychology*, 12, 700289.
19. Mpaata, E., Koske, N., & Saina, E. (2023). Does self-control moderate financial literacy and savings behavior relationship? A case of micro and small enterprise owners. *Current Psychology (New Brunswick, N.J.)*, 42(12), 10063–10076. <https://doi.org/10.1007/s12144-021-02176-7>
20. Sekścińska, K., Rudzińska-Wojciechowska, J., & Jaworska, D. (2021). Self-Control And Investment Choices. *Journal Of Behavioral Decision Making*, 34(5), 691-705.
21. Epstein, J. (2022). *Does Time Equal Money? Temporal Discounting and Self-Control: Insight into The Rationality of Personal Financial Decision-Making* (Doctoral Dissertation, University of South Florida).
22. Zenko, Z., Berman, C. J., & O'Brien, J. D. (2021). Heuristics, Biases, And Bounded Rationality: A Dual-Process and Behavioral-Science Approach to Exercise Initiation and Maintenance. *Motivation And Self-Regulation in Sport and Exercise*, 41-61.
23. Aknin, L. B., & Whillans, A. V. (2021). Helping And Happiness: A Review and Guide for Public Policy. *Social Issues and Policy Review*, 15(1), 3-34.
24. Liang, J., & Guo, L. (2021). Gratitude And Sustainable Consumer Behavior: A Moderated Mediation Model of Time Discounting and Connectedness to The Future Self. *Psychology & Marketing*, 38(8), 1238-1249.
25. Caballero, N., & Della Valle, N. (2021). Tackling Energy Poverty Through Behavioral Change: A Pilot Study on Social Comparison Interventions in Social Housing Districts. *Frontiers In Sustainable Cities*, 2, 601095.
26. Park, J. (2020). *Determinants Of Views of Aging and Its Effects on Well-Being and Preparations for Old Age: Moderating Effects of Culture, Age, And Context* (Doctoral Dissertation, North Carolina State University).
27. Bornstein, M. H., & Lansford, J. E. (2019). Culture and family functioning. In *APA handbook of contemporary family psychology: Applications and broad impact of family psychology*, Vol. 2 (pp. 417-436). American Psychological Association.
28. Li, Z., Liu, N., & Li, S. (2020). Environmental Orderliness Affects Self-Control and Creative Thinking: The Moderating Effects of Trait Self-Control. *Frontiers In Psychology*, 11, 537124.
29. Piechurska-Kuciel, E., & Piechurska-Kuciel, E. (2020). The Big Five Traits and Their Ramifications. *The Big Five In SLA*, 27-94.

30. Waga, C. S., Memba, F., & Muriithi, J. (2021). Financial Behaviour and Retirement Planning in Kenya, Assessing the Role of Self-Control Bias. *European Scientific Journal, ESJ*, 17(23), 348.
31. Tambun, S., & Cahyati, E. (2023). Self-Control Moderation on The Influence of Financial Behavior and Spiritual Intelligence on Financial Planning. *Saudi Journal of Economics and Finance*, 7(1), 33-40.
32. Liu, C., Bai, X., & Knapp, M. (2022). Multidimensional retirement planning behaviors, retirement confidence, and post-retirement health and well-being among Chinese older adults in Hong Kong. *Applied Research in Quality of Life*, 17(2), 833–849. <https://doi.org/10.1007/s11482-020-09901-7>
33. Agunga Mourine, A. (2017). Financial Literacy and Financial Preparedness for Retirement among Permanent and Pensionable Employees in State Owned Corporations in Nairobi, Kenya. *International Journal of Business and Social Science*, 8(11).
34. Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approach*.
35. Krische, S. D. (2019). Investment experience, financial literacy, and investment-related judgments. *Contemporary Accounting Research*, 36(3), 1634-1668.
36. Angrisani, M., & Casanova, M. (2021). What you think you know can hurt you: under/over confidence in financial knowledge and preparedness for retirement. *Journal of Pension Economics & Finance*, 20(4), 516-531.
37. Sarpong-Kumankoma, E. (2023). Financial literacy and retirement planning in Ghana. *Review of Behavioral Finance*, 15(1), 103-118.
38. Jarosch, L. (2023). *Using Priming Interventions to Increase Retirement Savings Behavior For Service Members In The Military Retirement System (Master's Thesis)*.
39. Zeka, B. (2021). An Assessment of Perceived Versus Actual Retirement Literacy. *READINGS BOOK*, 213.
40. Bai, R. (2023). Impact of financial literacy, mental budgeting and self-control on financial wellbeing: Mediating impact of investment decision making. *Plos one*, 18(11), e0294466.
41. Waga, C. S., Memba, F., & Muriithi, J. (2021). Financial Behaviour and Retirement Planning in Kenya, Assessing the Role of Self-Control Bias. *European Scientific Journal, ESJ*, 17(23), 348.