
Risk Tolerance and Retirement Planning among Employees of Selected Public Universities in Kenya: The Moderating Role of Financial Self-Efficacy

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Abstract:

Purpose: The purpose of this study was to examine the relationship between risk tolerance attitude and retirement financial planning and to determine the moderating role of financial self-efficacy among academic staff in selected public universities in Nairobi County, Kenya.

Methodology: The study was anchored on Social Cognitive Theory. The target population comprised 3,390 academic staff drawn from four selected public universities in Kenya. A planned sample of 149 respondents was obtained using stratified random sampling. Structured questionnaires were used to collect data, which were analysed using hierarchical regression.

Findings: Hierarchical moderated regression results showed that risk tolerance attitude had a positive and significant effect on retirement financial planning. The findings further showed that financial self-efficacy significantly strengthens the positive relationship between risk tolerance attitude and retirement financial planning.

Conclusion: The study concludes that risk tolerance attitude is an important predictor of retirement financial planning and that its influence is enhanced when employees possess greater confidence in their financial decision-making abilities.

Value: The study recommends that university management, pension administrators, and financial educators strengthen retirement planning programmes by incorporating financial self-efficacy development, financial goal setting, investment evaluation, and informed risk-management skills.

Keywords: Risk tolerance; retirement planning; financial self-efficacy; public universities; Kenya; moderation.

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1. Introduction

Retirement planning concerns the decisions and actions through which employees organise resources to meet their financial needs after leaving paid employment (Ghadwan et al., 2023). It involves assessing present and expected financial circumstances, setting

¹ Agri-food enterprises face several types of supply chain disruption, yet research typically examines single shocks and operational outcomes. This study examined the moderating role of institutional support experience in the relationship between the breadth of food supply chain disruptions and the ability of agri-food enterprises to contribute to social sustainability. Cross-sectional survey data of 79 agri-food enterprise owner-managers in Kenya were analysed using hierarchical ordinary least squares regression with robust standard errors. Disruption breadth was negatively associated with social sustainability contributions after adjusting for enterprise size, export exposure, and operational breadth. This association weakened as scores on the institutional support experience index increased. Agricultural agencies and county governments could track the number of disruption types enterprises face when targeting assistance. Therefore, the study contributes to business and development research by identifying institutional support experience as a condition relevant to enterprises' development contributions under exposure to multiple disruption types.

retirement goals, and maintaining saving and investment arrangements (Ghadwan et al., 2023). Pension membership alone does not establish that anticipated retirement income will cover household needs, as Kenyan pensioners have reported inadequate benefits despite participating in pension schemes (Retirement Benefits Authority [RBA], 2025). Recent research examines psychological factors associated with retirement planning, including financial self-efficacy and willingness to accept financial risk (Ahamed & Limbu, 2024; Athumani Mwaifyusi et al., 2026). The present study focuses on risk tolerance and financial self-efficacy as distinct aspects of retirement planning.

Risk tolerance refers to the level of financial uncertainty an individual is willing to accept when making financial decisions (Omanovic & Zaimovic, 2024). It is relevant to investment choices and the allocation of resources across assets with different risk characteristics (Omanovic & Zaimovic, 2024). A study of 122 millennials in Denpasar, Indonesia, found a significant association between risk tolerance and retirement financial planning, with financial behaviour partially mediating this relationship (Kepramareni et al., 2025). Ahamed and Limbu (2024) identified a negative indirect association between risk tolerance and retirement planning intentions through retirement planning attitudes among adults in Bangladesh. These findings suggest that the relationship should be examined within its particular population and model specification (Ahamed & Limbu, 2024; Kepramareni et al., 2025). The present study therefore examines the association among employees of selected public universities in Kenya.

Financial self-efficacy concerns a person's confidence in their ability to perform financial tasks and achieve financial goals (Ghadwan et al., 2023). Perceived financial capability is distinguishable from objective financial knowledge, and confidence does not necessarily imply competence in financial management (Ghadwan et al., 2023). Recent African evidence connects this confidence with retirement preparation: a study of 387 manufacturing SME owners in Tanzania found that financial self-efficacy was positively associated with retirement financial planning both directly and indirectly through perceived financial literacy (Athumani Mwaifyusi et al., 2026). These findings motivate the present study's examination of whether confidence in performing financial tasks conditions the relationship between risk tolerance and retirement planning.

In Kenya, the RBA's 2024 Pensioner Survey identified inadequate pension benefits, high living costs and financial responsibility for dependants as challenges reported by retirees (RBA, 2025). Only 41% of surveyed retirees considered their retirement savings sufficient, highlighting concerns about income adequacy among pension scheme members (RBA, 2025). Waga et al. (2021) also found that financial discipline was associated with comprehensive retirement planning among Kenyan pension scheme members and that self-control bias moderated this relationship. The present study considers these household demands alongside the behavioural variables under investigation. The study focuses on employees of four selected public universities in Kenya: the University of Nairobi, Kenyatta University, Cooperative University College of Kenya and the Technical University of Kenya. The study population frame comprises 3,390 academic staff, distributed across the four institutions as shown in Table 1. This focus places lecturers and other academic employees at the centre of the investigation. Financial self-efficacy is incorporated as a proposed moderator to examine whether confidence in performing financial tasks conditions the relationship between willingness to accept financial risk and retirement planning.

Lecturers and other university employees reach retirement without sufficient resources to maintain their livelihoods. In its audit of public universities for 2021/2022, the Office of the Auditor-General (2024) reported KSh 12.85 billion in unremitted pension and provident deductions, identifying weaknesses in institutional arrangements intended to support retirement security. The Commission on Administrative Justice (2025) documented cases of severe hardship among public service retirees affected by delayed pension payments, including difficulty meeting basic needs. The RBA survey also reported that 7% of respondents without medical cover received help from family members, relatives or children to pay healthcare costs (RBA, 2025). This evidence raises concerns about retirement income insecurity, poverty and dependence on relatives in the university context, although it does not establish the prevalence of these outcomes among university retirees (Commission on Administrative Justice, 2025; Office of the Auditor-General, 2024; RBA, 2025). The studies reviewed here do not directly test whether financial self-efficacy moderates the risk tolerance–retirement planning relationship among academic staff in the selected Kenyan public universities (Ahamed & Limbu, 2024; Athumani Mwaifyusi et al., 2026; Ghadwan et al., 2023). This study addresses that gap by examining the direct association and the proposed moderating role of financial self-efficacy.

2. Theoretical Review

Social Cognitive Theory was developed by Bandura (1986) to explain behaviour through the reciprocal relationships among personal factors, actions and the social environment. Its central concepts include observational learning, self-regulation, anticipated outcomes and perceived self-efficacy. Bandura (1997) explained that efficacy beliefs affect the activities people undertake, the effort they invest and their persistence when difficulties arise. The later agentic formulation also emphasises intentionality, forethought, reflection and the social conditions within which personal agency operates (Bandura, 2001). Applied to retirement planning, this perspective suggests that accepting financial uncertainty may be insufficient unless an employee also believes that they can evaluate alternatives and implement decisions. Financial self-efficacy is therefore proposed as a condition that could alter the association between risk tolerance and planning. This is a theoretical expectation, not a result already established by the present regression. The theory also directs attention to workplace information and support, since opportunities to practise financial tasks may influence confidence. Nevertheless, efficacy beliefs do not establish actual competence, affordability or the adequacy of retirement income, and the present design does not measure all of the personal and environmental processes described by the theory.

The behavioural finance perspective provides a complementary explanation of retirement decisions by recognising that perceptions and psychological tendencies can affect financial choices. An important foundation is Prospect Theory, developed by Kahneman and Tversky (1979), which describes decisions under risk in terms of reference points, different responses to gains and losses, and the weighting of probabilities. These ideas help explain why employees facing comparable financial choices may prefer different levels of uncertainty. Applied to this study, concerns about possible investment losses may discourage engagement with retirement alternatives, while a willingness to consider uncertainty may accompany more active planning. However, the survey measures a reported risk attitude rather than prospect-theory parameters, so the findings do not directly test loss aversion or probability weighting. Evidence that confidence matters alongside financial knowledge also supports distinguishing perceived capability from the quality of the financial decision itself (Yeh & Ling, 2022). Together, the two perspectives justify

examining an association between risk tolerance and planning and considering whether financial self-efficacy changes that association. They do not justify prescribing uniformly higher investment risk to employees.

The conceptual framework positions risk tolerance as the independent variable, retirement planning as the dependent variable and financial self-efficacy as the proposed moderator. The moderation hypothesis concerns whether the association between risk tolerance and retirement planning differs with financial self-efficacy. This requires an interaction model that includes both variables separately as well as their product. Figure 1 presents the proposed conceptual relationship; the framework should be distinguished from the restricted model actually represented in the supplied estimates.

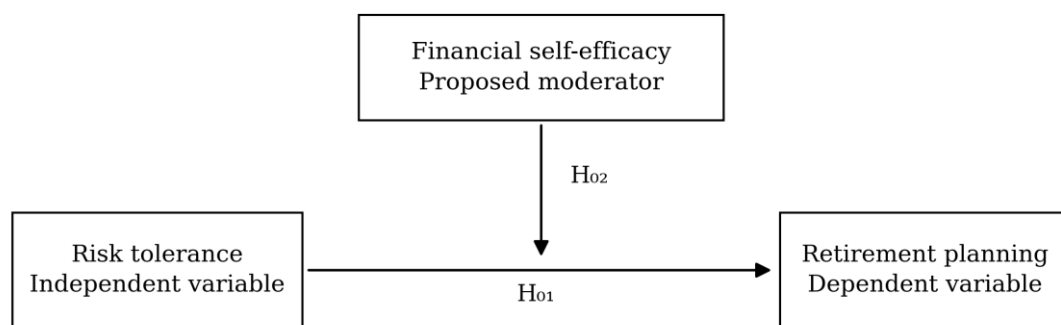


Figure 1. Conceptual Framework

3. Empirical Literature (Hypothesis Development)

Empirical retirement research distinguishes the willingness to prepare from the capacity to perform financial tasks. Ahamed and Limbu (2024) examined risk tolerance, financial self-efficacy, retirement planning attitudes and planning intentions among 301 adults in Dhaka, Bangladesh using partial least squares structural equation modelling. Their findings indicated that retirement planning attitudes mediated the relationships involving the cognitive factors, while financial resource availability moderated the relationship between attitudes and intentions. The negative indirect relationship reported for risk tolerance illustrates why the direction of a relationship needs to be examined within a specific setting. That study investigated intentions and an attitude pathway; the current study examines reported planning behaviour in an employee sample.

Ghadwan et al. (2023) investigated financial planning for retirement among 525 public university employees in Saudi Arabia. Their structural equation analysis identified a positive association between financial self-efficacy and retirement planning, alongside relationships involving retirement goal clarity and perceived government policy. Government policy moderated the relationship between retirement goal clarity and planning. This supports the relevance of perceived financial capability but does not establish that financial self-efficacy moderates the risk tolerance–planning relationship. Peter and Ambilikumar (2021) also approached retirement preparedness from a self-efficacy perspective, providing a further conceptual basis for examining perceived capability in retirement research.

African evidence supports considering psychological preparation alongside financial decisions. Ujoatuonu et al. (2024) studied 236 nurses in southeast Nigeria using a cross-sectional design and regression-based path analysis. Financial self-efficacy and retirement goal clarity were negatively associated with preretirement anxiety, and job embeddedness mediated the relationships. Their outcome was anxiety rather than retirement saving or planning, so the findings support the broader relevance of self-efficacy without providing a direct test of the present moderation hypothesis. The distinction matters because reduced anxiety, stronger confidence and greater financial preparation are related concepts whose empirical relationships should be assessed separately.

In Kenya, Waga et al. (2021) used a cross-sectional study of pension scheme members to examine financial behaviour and self-control bias in retirement planning. Their logistic regression results associated financial discipline with comprehensive planning, while self-control bias weakened this relationship. The study demonstrates the relevance of examining conditions under which financial behaviour relates to retirement preparation. However, self-control and financial self-efficacy describe different psychological processes. In the present extension, the proposed condition is employees' confidence in their capacity to make financial decisions, manage available resources and pursue long-term goals.

The reviewed studies justify examining financial self-efficacy as a possible condition of the risk tolerance–retirement planning association. However, the proposed interaction remains insufficiently examined among academic employees of the selected public universities in Kenya. The present analysis investigates this relationship using the reported survey and interaction results. The following null hypotheses guide interpretation:

H₀₁: Risk tolerance has no statistically significant association with retirement planning among employees of selected public universities in Kenya.

H₀₂: Financial self-efficacy does not significantly moderate the relationship between risk tolerance and retirement planning among employees of selected public universities in Kenya.

4. Methodology

The study used a quantitative cross-sectional survey framework to examine risk tolerance and retirement planning among academic employees of selected public universities in Kenya. Financial self-efficacy was included as an additional construct to explore the proposed moderating relationship. The target institutions were the University of Nairobi, Kenyatta University, Cooperative University College of Kenya and the Technical University of Kenya. The unit of observation and analysis was the individual academic employee. Because the variables were based on survey responses within a cross-sectional design, the regression coefficients describe associations and cannot establish the temporal or causal direction of the relationships.

Sampling Procedures

The target population comprised 3,390 academic staff members drawn from four selected public universities in Nairobi County, namely the University of Nairobi with 2,072 academic staff, Kenyatta University with 1,200, the Cooperative University College of Kenya with 64, and the Technical University of Kenya with 54. Based on this population, the study adopted a planned sample size of 149 respondents, determined using Yamane's (1967) approach at an 8% margin of error. Stratified random sampling was used to ensure that academic staff from each of the four universities were represented in the study, with

the universities forming the respective strata and respondents being selected randomly within each stratum. At the end of data collection and data screening, 112 usable responses were retained for the direct regression analysis. However, the residual and total degrees of freedom reported in the hierarchical regression output indicated an effective analytical sample of 108 respondents, suggesting that four cases may have been excluded because of incomplete data on variables entered in the hierarchical model. Although the realised sample was lower than the planned sample of 149 respondents, the usable responses provided the basis for testing the study hypotheses and examining the relationships among the study variables

Data Collection and Variable Measurement

The study measures used structured questionnaire statements rated on a five-point agreement scale from 1, strongly disagree, to 5, strongly agree. Risk tolerance items covered willingness to accept financial risk, preference for safer investments, consideration of volatile assets and diversification. Retirement planning items covered having a plan, regular contributions, periodic review and perceived preparedness. Financial self-efficacy was represented by five statements concerning decision confidence, goal achievement, income and expense management, long-term saving and investment evaluation. Several statements describe financial behaviour as well as confidence, so distinct measurement of the moderator and the outcome requires particular attention. Reliability and construct validity for the additional moderator could not be established from the descriptive and regression tables. Lown's (2011) validated six-item measure is a different instrument, and its reliability cannot be transferred to the present five statements.

Data Analysis

Descriptive statistics summarized the reported construct and item scores. Pearson correlation and ordinary least squares regression examined the direct association between risk tolerance and retirement planning. The dependent variable was labelled RetirementFinancialPlanning in the statistical output; risk tolerance was labelled risktoleranceattitude. The supplementary interaction variable was labelled RTA_SE and was interpreted as the reported risk tolerance–self-efficacy product term. Its construction, centring and scoring cannot be established from the aggregate tables. Statistical significance was assessed at the 5% level; SPSS values printed as .000 are reported as $p < .001$. The direct regression was represented by:

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

A standard moderation test requires the following full specification, where X and W are entered separately before or alongside their product (Hayes, 2005, 2022):

$$Y = \beta_0 + \beta_1 X + \beta_2 W + \beta_3 XW + \varepsilon$$

Here, Y represents retirement planning, X represents risk tolerance, W represents financial self-efficacy, β_0 is the intercept, β_1 – β_3 are regression coefficients and ε is the error term. The supplied hierarchical output instead adds RTA_SE directly to a risk-tolerance-only model.

5. Findings and Discussions

The findings showed that employees generally reported a high level of retirement financial planning, with an overall mean of 4.32 (SD = 0.85). Among the individual practices, periodic review and adjustment of retirement goals recorded the highest mean ($M = 4.32$, $SD = 1.12$), followed by expectations of maintaining a comfortable lifestyle after retirement

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($M = 4.29$, $SD = 1.18$), regular contributions to pension or retirement savings schemes ($M = 4.28$, $SD = 1.16$), and having a clear retirement financial plan ($M = 4.27$, $SD = 1.11$). Perceived financial preparedness for retirement recorded the lowest mean ($M = 4.13$, $SD = 1.17$), suggesting that although respondents generally planned, saved and reviewed their retirement goals, some remained less confident about the adequacy of their financial resources for retirement. The relatively high mean scores therefore indicate strong engagement in retirement-planning practices, although they should not be interpreted as evidence that employees will necessarily have adequate retirement income. The negative skewness values showed that responses were concentrated toward the higher end of the scale, while the reported skewness and kurtosis values were within acceptable limits for subsequent statistical analysis (Field, 2018; Hair et al., 2019).

Table 1. Retirement Financial Planning Among Employees

	Mean	Std. Dev	Skewness	Kurtosis
I have a clear retirement financial plan in place.	4.27	1.11	-1.78	2.40
I contribute regularly to pension schemes or retirement savings accounts.	4.28	1.16	-1.78	2.18
I review and adjust my retirement goals periodically.	4.32	1.12	-1.89	2.72
I feel adequately prepared for retirement financially.	4.13	1.17	-1.65	1.93
My financial planning today will allow me to maintain a comfortable lifestyle after retirement.	4.29	1.18	-1.78	2.06
Retirement Financial Planning	4.32	0.85	-1.55	1.44

The descriptive statistics showed that respondents generally exhibited a high level of risk tolerance attitude toward retirement planning. Among the five indicators, willingness to take financial risks in anticipation of higher future retirement benefits recorded the highest mean score ($M = 4.13$, $SD = 1.28$), followed closely by diversification of savings to balance risk and enhance retirement security ($M = 4.09$, $SD = 1.43$). Preference for safer, low-risk investments despite lower expected returns also recorded a relatively high mean ($M = 4.02$, $SD = 1.58$), suggesting that respondents combined a willingness to accept financial risk with a degree of caution in their investment decisions. Respondents also generally agreed that their risk-taking behaviour influenced the amount they set aside for retirement ($M = 3.94$, $SD = 1.25$), while consideration of stock markets and other volatile investments as part of retirement planning recorded the lowest mean, although it remained above the midpoint of the scale ($M = 3.84$, $SD = 1.39$). Overall, the composite risk tolerance attitude score was high ($M = 4.10$, $SD = 0.95$), indicating that respondents were generally willing to accept financial risk in pursuit of improved retirement outcomes while simultaneously employing diversification and relatively safer investments to manage exposure to risk. The negative skewness values across the individual items indicated that responses were concentrated toward the higher end of the five-point scale, while the aggregate skewness of -1.39 and kurtosis of 0.92 remained within acceptable thresholds for normality, supporting the suitability of the data for subsequent inferential statistical analysis (Field, 2018; Hair et al., 2019).

Table 2. Descriptive Statistics for Risk Tolerance Attitude

	Mean	Std. Dev	Skewness	Kurtosis
I am willing to take financial risks if they promise higher future retirement benefits.	4.13	1.28	-1.30	0.41
I prefer safer, low-risk investments even if they give lower returns.	4.02	1.58	-1.13	-0.55
I consider stock markets or other volatile investments as part of my retirement plan.	3.84	1.39	-0.77	-0.80
I diversify my savings to balance risks for retirement security.	4.09	1.43	-1.21	-0.15
My risk-taking behavior influences how much I set aside for retirement.	3.94	1.25	-0.96	-0.16
Risk tolerance attitude	4.10	0.95	-1.39	0.92

Source: Survey data (2026).

The descriptive results indicated that respondents generally exhibited a relatively high level of financial self-efficacy, with an overall composite mean of 3.966 (SD = 0.964). Among the individual indicators, the ability to consistently set aside part of income for long-term financial needs recorded the highest mean score (M = 4.589, SD = 0.494), followed closely by confidence in making sound financial decisions concerning the future (M = 4.554, SD = 0.627), suggesting that respondents generally perceived themselves as capable of planning ahead and making important financial decisions. The ability to set financial goals and take appropriate steps to achieve them recorded a moderate mean score (M = 3.473, SD = 1.786), while confidence in managing income and expenses effectively was somewhat lower (M = 3.107, SD = 1.747). The lowest-rated item concerned confidence in evaluating different saving and investment options before making a decision (M = 3.063, SD = 1.496), indicating comparatively weaker confidence in assessing alternative financial products and investment choices. Overall, the findings suggest that respondents were more confident in saving consistently and making general financial decisions than in evaluating investment alternatives and managing day-to-day income and expenditure. The skewness values ranged from -1.098 to 0.089, while kurtosis values ranged from -1.899 to 0.146, and the aggregate financial self-efficacy score recorded skewness of -0.861 and kurtosis of 0.173. These values fall within commonly accepted thresholds for approximate normality, indicating that the distribution of financial self-efficacy scores was suitable for subsequent inferential statistical analysis.

Table 3. Descriptive Statistics for Financial Self-Efficacy

	Mean	Std. Deviation	Skewness	Kurtosis
I am confident in my ability to make sound financial decisions concerning my future.	4.554	0.627	-1.098	0.146
I am able to set financial goals and take appropriate steps to achieve them.	3.473	1.786	-0.598	-1.522
I am confident in my ability to manage my income and expenses effectively.	3.107	1.747	-0.064	-1.812
I can consistently set aside part of my income for long-term financial needs.	4.589	0.494	-0.368	-1.899
I am confident in my ability to evaluate different saving and investment options before making a decision.	3.063	1.496	0.089	-1.499
Financial self-efficacy	3.966	0.964	-0.861	0.173

Correlation analysis

The correlation analysis revealed positive and statistically significant relationships among all the study variables. Risk tolerance attitude had a strong positive relationship with retirement financial planning ($r = .702, p < .001$), indicating that respondents with higher levels of risk tolerance were generally more likely to report stronger retirement financial planning. Financial self-efficacy was also positively and significantly related to retirement financial planning ($r = .638, p < .001$), suggesting that greater confidence in one's ability to manage financial matters was associated with better retirement planning. In addition, risk tolerance attitude had a strong positive relationship with financial self-efficacy ($r = .777, p < .001$), indicating that respondents who were more willing to accept financial risk also tended to report higher confidence in their financial decision-making abilities. Overall, the findings demonstrate that both risk tolerance attitude and financial self-efficacy are positively associated with retirement financial planning among the respondents. However, the correlation results indicate association rather than causation, and the moderating role of financial self-efficacy can only be established through the subsequent regression or moderation analysis

Table 4. Correlation Analysis

	Retirement Financial Planning	Risk tolerance attitude	Financial Self efficacy
Retirement Financial Planning	1		
Risk tolerance attitude	.702**	1	
Financial Self efficacy	.638**	.777**	1
** Correlation is significant at the 0.01 level (2-tailed).			

Hypothesis Testing

The study tested the direct effect of risk tolerance attitude on retirement financial planning and the moderating effect of financial self-efficacy using hierarchical regression analysis. In Model 1, risk tolerance attitude significantly predicted retirement financial planning, with the model recording $R = .702, R^2 = .492$ and adjusted $R^2 = .488$. The model was statistically significant, $F(1, 106) = 102.862, p < .001$, indicating that risk tolerance attitude alone explained 49.2% of the variation in retirement financial planning. Risk tolerance attitude had a positive and statistically significant coefficient ($B = .627, SE = .062, \beta = .702, p < .001$), implying that higher levels of risk tolerance attitude were associated with higher levels of retirement financial planning. Consequently, the first null hypothesis (H_{01}), which stated that risk tolerance attitude has no significant effect on retirement financial planning, was rejected.

In Model 2, financial self-efficacy was introduced alongside risk tolerance attitude. The model produced $R = .715, R^2 = .511$ and adjusted $R^2 = .502$ and remained statistically significant, $F(2, 105) = 54.822, p < .001$. The inclusion of financial self-efficacy increased the explained variance in retirement financial planning by 1.8 percentage points ($\Delta R^2 = .018$), with the change reaching the conventional threshold of statistical significance, $\Delta F(1, 105) = 3.935, p = .050$. Risk tolerance attitude remained a positive and significant predictor ($B = .478, SE = .097, \beta = .535, p < .001$), while financial self-efficacy also had a positive coefficient ($B = .190, SE = .096, \beta = .215, p = .050$). This indicated that, after accounting for risk tolerance attitude, financial self-efficacy contributed additional explanatory power to retirement financial planning.

Model 3 introduced the interaction term between risk tolerance attitude and financial self-efficacy to test the moderating effect. The full model recorded $R = .749$, $R^2 = .560$ and adjusted $R^2 = .548$ and was statistically significant, $F(3, 104) = 44.185$, $p < .001$. The interaction term increased the explained variance by a further 5.0 percentage points ($\Delta R^2 = .050$), and this increase was statistically significant, $\Delta F(1, 104) = 11.719$, $p = .001$. In the final model, risk tolerance attitude remained positive and statistically significant ($B = .423$, $SE = .094$, $\beta = .473$, $p < .001$), while financial self-efficacy also remained significant ($B = .189$, $SE = .091$, $\beta = .213$, $p = .041$). More importantly, the interaction between risk tolerance attitude and financial self-efficacy was positive and statistically significant ($B = .035$, $SE = .010$, $\beta = .231$, $p = .001$).

The significant positive interaction coefficient demonstrates that financial self-efficacy moderates the relationship between risk tolerance attitude and retirement financial planning. Specifically, the positive interaction indicates that the positive association between risk tolerance attitude and retirement financial planning becomes stronger as financial self-efficacy increases. Accordingly, the second null hypothesis (H_{02}), which stated that financial self-efficacy does not significantly moderate the relationship between risk tolerance attitude and retirement financial planning, was rejected. The findings therefore suggest that employees who are both more willing to tolerate financial risk and more confident in their ability to manage financial decisions tend to exhibit stronger retirement financial planning. However, because the study was based on cross-sectional survey data, the results should be interpreted as evidence of statistical association and moderation rather than proof of causality.

Table 5. Direct and Hierarchical Regression Results

Variable/Statistic	Model 1	Model 2	Model 3
Regression Coefficients	B (SE)	B (SE)	B (SE)
Constant	1.748 (.259)***	1.607 (.265)***	1.312 (.267)***
Risk Tolerance Attitude	.627 (.062)***	.478 (.097)***	.423 (.094)***
Financial Self-Efficacy		.190 (.096)*	.189 (.091)*
Risk Tolerance $\times$ Financial Self-Efficacy			.035 (.010)**
Model Summary			
R	0.702	0.715	0.749
R ²	0.492	0.511	0.56
Adjusted R ²	0.488	0.502	0.548
Std. Error of Estimate	0.612	0.604	0.575
Overall F	102.862***	54.822***	44.185***
Change Statistics			
ΔR^2	0.492	0.018	0.05
F Change	102.862***	3.935*	11.719**
df1	1	1	1
df2	106	105	104
Sig. F Change	.000	0.05	0.001

Note: * $p \leq .05$; ** $p \leq .01$; *** $p < .001$.

6. Discussions

The positive risk tolerance–retirement planning association suggests that employees more willing to consider financial uncertainty also reported greater engagement with retirement preparation. This is consistent with a behavioural interpretation in which attitudes towards uncertainty accompany decisions about future resources. Nevertheless, the risk tolerance items themselves mention retirement investing and diversification. Their content overlaps to some extent with planning, which may contribute to the strength of the observed association. The finding therefore supports attention to employees' risk attitudes without establishing that increasing their willingness to take risks would improve retirement outcomes.

The positive product term makes financial self-efficacy a plausible subject for further investigation. Theoretically, perceived capability may help an employee evaluate alternatives and persist with a plan when decisions involve uncertainty. This interpretation is consistent with the agency and self-regulation emphasis of Social Cognitive Theory (Bandura, 2001). It is also compatible with the association between self-efficacy and retirement planning reported by Ghadwan et al. (2023). However, that compatibility is conceptual; the present model cannot distinguish the proposed moderation mechanism from a separate self-efficacy association because W was excluded.

The descriptive pattern offers a practical insight independent of the unresolved interaction. Respondents expressed high agreement with future-oriented financial confidence and long-term saving, while confidence in managing income and expenses and evaluating financial options was lower and more dispersed. Workplace education can therefore address specific tasks rather than assuming that a favourable general confidence score means employees possess the same skills. Evidence from a meta-analysis of 76 randomised experiments indicates that financial education can improve financial knowledge and subsequent financial behaviour on average (Kaiser et al., 2022). It does not establish the effectiveness of any particular university programme, which would require its own evaluation.

Several limitations qualify the findings. The study is cross-sectional and uses self-report measures, leaving temporal ordering and common method influences unresolved. The financial self-efficacy composite scoring and its distinction from planning behaviour require validation. Four fewer cases entered the hierarchical analysis, and the case-selection reason remains unspecified. Institution-specific sample allocations and selection probabilities were not available, limiting assessment of representation across the population frame. The aggregate tables also do not establish the regression assumptions for the interaction model. Diagnostics and robust inference should therefore be assessed for the correctly specified model itself. These limitations constrain the strength and generalisability of the conclusions.

The study setting comprises four selected public universities, and the population frame is limited to academic staff. The findings therefore require caution when extended to non-academic employees, other Kenyan universities or other employment sectors. Differences in employment conditions, pension arrangements and household circumstances may alter the relationships. The paper's contribution lies in identifying a strong direct association within the analytical sample and a specific moderation hypothesis whose confirmation requires improved specification and measurement.

7. Conclusion

The study concludes that risk tolerance was positively associated with reported retirement planning among academic employees in the selected public university study setting in Kenya. Employees reporting greater willingness to engage with financial uncertainty also tended to report stronger retirement planning practices. The supplementary analysis showed that the risk tolerance–financial self-efficacy product improved the fit of the restricted regression. However, financial self-efficacy's separate term was excluded, so the results do not establish its moderating role in a correctly specified model. The conclusion is therefore limited to a positive direct association and exploratory evidence warranting further moderation testing. The findings also show that broad financial confidence can coexist with lower and more variable confidence in practical financial tasks. Actual retirement income adequacy was not measured and remains an important subject for further investigation.

8. Recommendations

Management of the selected public universities and pension administrators should consider practical financial education that helps academic staff translate retirement objectives into specific financial decisions. Programmes can include exercises on interpreting pension statements, estimating future household needs, reviewing contribution choices and comparing the costs and uncertainties of financial alternatives. The lower and more dispersed item scores concerning income management and investment evaluation provide a basis for prioritising these tasks. Programme evaluation should examine changes in knowledge and planning practices rather than relying only on attendance or participants' confidence.

Employees should be supported to assess financial risk in relation to their circumstances and retirement time horizon. Clear information and appropriate professional guidance can help them consider the implications of alternative choices while maintaining realistic expectations. University management should also prioritise accurate pension records, timely contribution remittance and clear communication about retirement benefits, given the sector concerns documented by the Office of the Auditor-General (2024). These measures can support staff in assessing future income needs and potential reliance on family assistance. Before the proposed moderation relationship informs practice, the full interaction model should be fitted and the financial self-efficacy measure and case-selection process verified.

9. Further Research

Further research should first test the proposed moderation using respondent-level data and a model containing risk tolerance, financial self-efficacy and their product. A hierarchical analysis should compare a model containing both constituent variables with one adding the product, using the same cases. It should then report appropriate model diagnostics, confidence intervals and conditional associations at meaningful self-efficacy values. Validation should examine the added scale's internal consistency, dimensionality and distinction from retirement planning. Reverse scoring and the composition of each composite should be documented, and the reason for case exclusions should be established.

Further research should extend the investigation to additional public universities and include non-academic employees to examine whether these relationships hold across staff categories and institutional settings. Studies should document staff frames, sampling

methods and respondent allocations by university, and include relevant employment and household characteristics. Longitudinal data would help establish whether risk attitudes and self-efficacy precede changes in retirement planning. Objective indicators such as contribution continuity, documented planning actions and post-retirement income adequacy could complement self-reported measures. Research should also examine the extent to which retired university employees depend on relatives for financial support. Intervention studies could assess whether practical financial education changes perceived capability and planning behaviour over time.

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