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Factors Determining Financial Retirement Planning of Government Employees: Experience from Tanzania

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Abstract

Purpose: The study examined the factors affecting financial retirement planning of government employees in Tanzania.

Methodology: The study employed a positivist paradigm, deductive approach, and cross-sectional survey design. The study collected quantitative data through questionnaire from government employees in Tanzania. Data from 408 employees across 24 ministries were analyzed descriptively using IBM SPSS 25, and inferentially using PLS-SEM (SmartPLS 3), which is chosen for its suitability with complex models. The hypothesized model of the study examined whether computation capability, financial knowledge, financial education, risk altitude towards financial products and financial decision behavior determines government employee's retirement planning.

Findings: Findings revealed that computation capability, risk attitude, and financial decision behavior had statistically significant positive effects on retirement planning, while financial knowledge and financial education were insignificant.

Unique Contribution to Theory, Policy and Practice: Theoretically, it was established that variables of computation capability, risk attitude towards financial products and financial decision behavior collectively determine employees' financial retirement planning preparedness which is grounded in the ideas of anticipated benefit and planned behavior. The practical implications emphasize the study's contribution to improving financial planning readiness among government employees in Tanzania. The policy consequence of this study is that governmental regulators such as SSRA, and pension scheme providers like NSSF and PSSSF, should include the identified criteria from this study in their policy evaluations to ensure reliable and efficient retirement planning.

Keywords: *Retirement Planning, Financial Literacy, Financial Decision Behavior, Tanzania*

1. Introduction

Financial literacy is the individual skills, knowledge and attitudes that enable a person to spend money wisely (Metto, 2020). Financial literacy gives individuals the skills to manage personal finances and to be able to make appropriate decisions about finance, investment, insurance, real estate, budget, retirement, among others (Mu~noz-Murillo et al. 2019; Oteng, 2019; Yahaya et al. 2019). On the other hand, retirement is the period where the labor force exits the working life due to old age, given the reason that old individuals are characterized by a reduced ability to perform the work assigned to them. After working for years, workers shift to the retirement period, which is a critical stage of life that most of the workers will go through (Zhan, et al. 2019).

Globally, there is a concern that people are not adequately planning for retirement (Niu, et al. 2020). Studies conducted in developed countries like Germany, the Netherlands, Canada and Switzerland echo the same: Niu et al. (2020) indicates that financial literacy was associated with positive retirement planning behavior. Lusardi (2019) suggests also that financial literacy all around the world are generally low.

Studies conducted in Africa including that of Kulondwa et al. (2021), Zeka (2017), Agunga (2016), Fatoki (2014) proves that components of financial literacy have a positive effect on retirement planning. The literature has evidenced low levels of financial literacy in African countries where only 32% of people in sub-Saharan Africa are reported to be financially literate compared to 52% in high-income OECD economies (Fanta et al. 2021). In East Africa, the financial literacy level is even lower. For instance, only 30% of Kenyans, 25% of Ugandans and Tanzanians are financially literate (Klapper et al. 2020).

Financial literacy on retirement planning, however has not much done in Tanzania, leaving it an under explored region in the financial literacy literature. This paper is structured as follows. The next section describes a theoretical review and develops hypothesis guiding the study. It follows with methodology of the study in section three. Empirical data analysis and findings are presented in section four. Section five discusses the findings. Ultimately, conclusion, recommendations, study limitations and suggestion for future studies are found in section six.

2. Theoretical Literature Review and Hypothesis Development

2.1 Expected Utility Theory

Pierre de Fermat, Blaise Pascal and Christian Huygens developed the principle of probabilities in the seventeenth century. This resulted in the formulation of the first mathematical theory about deciding with risky alternatives (Thorsten, et al. 2010). Expected utility theory of Lewin (1943) cited in Kafari (2019) was introduced with the aim of giving an insight definition to rational behavior when individuals are taking decisions on for an uncertain future. This theory shows that individuals should act in a particular manner when they are faced with decision-making under uncertainty (Kulondwa et al. 2021). In this point of view, the theory is “normative,” which means

that it shows how people should rationally behave. This is in opposition to a "positive" theory, which demonstrates how people actually behave (Lucy, et al. 2010).

This theory applies to this study because when individuals decide for their retirement, they are faced with uncertainties on the exact period and the income of retirement. When individuals decide on their retirement planning, they have to take into consideration expected future losses and profits. They always behave in such a way that the plan adopted for their retirement will deliver the outcomes it was designed for. The aim is to offer a comfortable income to retirees during their retirement. The plan needs to include strategies to reduce future losses and maximize future profits such as diversification and this involves financial knowledge, computation capability, financial education and, risk attitudes toward financial products (Kulondwa et al. 2021).

2.2 The theory of Planned Behavior

The Theory of Planned Behavior was proposed by Icek Ajzen (1991), as a process to understand what is behind the behavior intention and actual behavior towards a financial decision or product. The theory detailed that attitude, social impact, superficial behavioral regulation, subject norms and ease or cumbersome form the basis for the intent of given action (Kulondwa, et al. 2021). Those are the main factors that determine a behavior towards a financial product or decision (Ajzen, 1991). The theory asserts that intentions to perform behaviors of different kinds can be predicted with high accuracy from the attitudes towards the behavior, behavioral norms, subjective norms, and perceived behavioral control. One of the strengths of this theory is that the theory of planned behavior and financial literacy are proved to be positively linked. Behavioral intention in financial literacy has a significant positive impact on the intention to adopt a financial product or a financial decision (Kennedy, 2013).

This theory relates to the present study because financial literacy is proved to have an effect on financial decision-making and when individuals are deciding on financial plans to adopt during their retirement, they adopt a specific behavior that can be determined by their perceptions of retirement plans and risk attitudes toward retirement financial plans. In case they perceive retirement plans as important for their future they will be more likely to adopt them and if they do not perceive retirement plans as a way to maintain their living conditions or to improve them during their retirement, they will not be planning.

2.3 Computation Capability and Retirement Planning

Financial knowledge reflects the individual's understanding of financial issues. It is measured by assessing various aspects of their basic financial knowledge, including compound interest, inflation, deposits, time value of money, diversification, interest rates, debt and assets (Kamakia, 2017). Farooq et al. (2021) examined the influence of financial literacy, financial attitude, and parental financial socialization on prudent financial management practices among youth in Pakistan. The conclusion from the study reveals that financial literacy, financial attitude, and

parental financial socialization give a positive impact on prudent financial management practices significantly. However, the study was conducted to among youth in Pakistan; the present study was carried out to assess the financial retirement planning of government employees in Tanzania.

Safari et al. (2021) investigated the impact of financial literacy indicated by financial knowledge and computation capability on personal retirement planning amongst public sector employees in Congo. Results from the investigation revealed that both of the financial literacy components have significant impacts on personal retirement planning, indicating the significant role financial literacy plays as a determinant of personal retirement planning. This study was conducted in Congo. The present study aimed at filling this gap by studying the financial retirement planning of government employees in Tanzania

2.4 Financial Education and Retirement Planning

In developed countries, there is a strong focus on educating individuals to learn how to manage their income, save for their children's education and retirement plan (Oteng, 2019). Financial literacy has many advantages that are well documented in the literature; however, people rarely get the chance to acquire it, especially in poor nations. Bayar et al. (2020) conducted a study on financial literacy and education level risk tolerance amongst investors within Turkish at Usak University personnel. The study results concluded that financial literacy and education level give positive impacts on financial risk tolerance amongst investors within Turkish Usak University personnel. The study finds that financial literacy and education level are proven to ease complicated financial decision making. This study was conducted in Turkish to Usak University personnel. The current study investigated the effects of financial literacy on retirement planning of government employees in Tanzania.

Epaphra and Kiwia (2021) conducted a study on financial literacy and participation in the financial markets in Arusha, Tanzania by applying logit regression model. The study found that individuals with higher financial literacy, represented by financial knowledge variable as well as male and married people residing in Arusha, Tanzania have a better chance to invest in the financial market despite their education level. Meanwhile, other variables such as income level and risk attitude play significant roles to influence one’s participation in the financial markets. The current study investigated the effects of financial literacy on retirement planning of government employees in Tanzania.

2.5 Financial Knowledge and Retirement Planning

Financial knowledge is a basic component in financial literacy, individuals to choose financial products and services and provide knowledge for good decision-making use it. Investing in financial knowledge can have important consequences for retirement well-being by affecting people's ability to save and invest (Lusardi et al. 2023). Bucher-Koenen et al. (2021) conducted a

study to fearless women financial literacy and stock market participation in Netherlands. Study results revealed that financial literacy, comprising financial knowledge and confidence gives an impact on individuals' stock market participation in the Netherlands. In the findings, women's lower level of financial literacy is found to be explained by their lower confidence level. However this study is centered in Netherlands. The present study aimed at filling this gap by studying the financial retirement planning of government employees in Tanzania by employing Partial Least Square Structuring Equation Model as a method of data analysis.

Tuffour et al. (2020) investigated to identify the significance of financial literacy comprising the aspects of knowledge, attitude, and awareness of the success of small-scale enterprises amongst managers in Ghana. The study concludes that all three aspects of financial literacy, namely knowledge, attitude, and awareness reveal significant impacts on enterprises' performance for both financial and non-financial components examined in the study. This study was conducted to small-scale enterprises amongst managers in Ghana. The present study investigated the effects financial literacy on retirement planning of government employees in Tanzania.

2.6 Risk attitudes toward financial products and retirement planning

The importance of financial literacy in spreading awareness of various financial products cannot be denied. These products are bonds, treasury bills, mutual funds, shares and just to name a few. Investment in financial products is better done when the prospective investors grasp an understanding of the level of risks attached to complex financial products. Both fundamental and complex skills in financial literacy are paramount in predicting the level of risk attached to investment and complex products (Rodrigues, Oliveira, Rodrigues & Costa, 2019). Doorley & Nolan (2019), argued that financial literacy had a positive impact on aspects of retirement plans, long term financial plans, purchasing private pension insurance and just to name a few.

Satria and Hutabarat (2020) explore the effect of financial literacy on financial planning for retirement using a sample of 120 university lecturers selected in Indonesia. To achieve the purpose of the research, a linear regression model was applied to test the relationships. The results from the study show that attitudes toward retirement products are significant in making personal plans for the retirement. This study focuses on university lecturers who are individuals with high education levels and who are more likely to be financially literate. This study was conducted in Indonesia employing linear regression model to university lecturers. The present research addresses that gap by investigating financial retirement planning of government employees in Tanzania in the preretirement period by employing Partial Least Square Structuring Equation Model as a method of data analysis.

2.7 Financial Decision Behavior and Retirement Planning

Financial decision behavior is a significant factor for retirement planning preparedness (Arianti, B.F., 2018, Kim, et al. 2019). To improve any individual's financial behaviour, without a doubt,

one of the most significant processes is to provide financial education and increase financial literacy (Bhandare et al. 2021). Peiris (2021) examined the influence of financial literacy on savings behavior amongst employed individuals in Sri Lanka. The study concludes that financial literacy plays a significantly positive impact on savings behavior. Hence, the finding suggests the promotion towards knowledge of the financial system in order to support increasing positive savings behavior. This study was conducted in Sri Lanka. The present research addresses that gap by investigating financial retirement planning of government employees in Tanzania.

Mpaata et al. (2021) investigated the relationship between financial literacy with saving behavior amongst the owners of Micro and Small Enterprises (MSEs) in Uganda. The study suggests that financial literacy explains the saving behaviors of business owners. Furthermore, the study also indicates that individuals with low self-control require more financial literacy training as compared to those with high self-control in order to gain a positive effect on their saving behaviors. This study was conducted in Uganda to Micro and Small Enterprises. The present research investigated financial retirement planning of government employees in Tanzania.

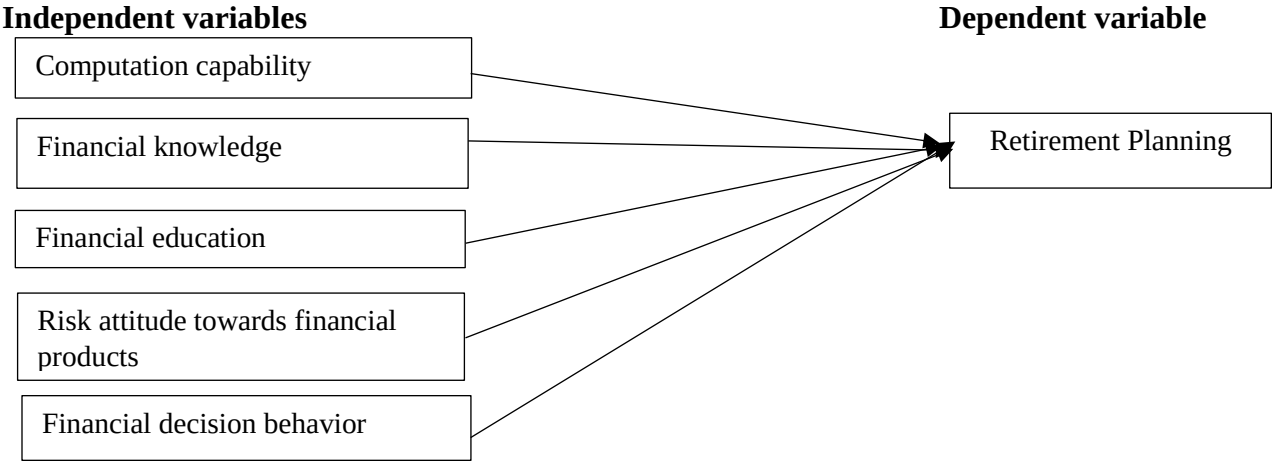

Figure 1: Conceptual Framework

Source: A literature review 2025

3. Research Methodology

The study rests on postivist philosphy and a cross sectional survey strategy. A survey questionnaires was used to collect primary quantitative data to fulfill the study objective *Saunders, Lewis & Thornhill, 2012). A cross section survey strategy was employed because of its economical advantage, its ability to approve/refute theories, its application at aspecific point in time, its ability to include manfold of variables and its ability to collect data of homorgeneous and unidimensional items (Mbelwa and Lenatus, 2019)

The study employed systematic sampling technique to draw respondents from 24 ministries of the government of United Republic of Tanzania (https://www.tanzania.go.tz). Each ministry were distributed with 24 questionnaires. The entere population had 19,387 government employees in Dodoma region (NBS, 2023). Yamane's formula (1967) was employed to determine the sample. The formula yielded a sample size of 391 participants. According to Ahmed & Halim (2017), typically, researchers augment the sample size by 40-50% to account for lost questionnaires, unwilling participants, and untraceable respondents, mainly when participation is anonymous and free. 40% of the projected sample size of 391 results in a total sample of 547 persons. Respondents were sysytematically selected at a regular interval of after every twenty two (22) employees at each ministry in oder to come up with 24 respondents. The study adopted simple random sampling which was deemed appropriate for this study where every employee from those 24 ministries had a chance of being selected to participate in responding to the questionaires. Nevertheless, only 408 participants completed and submitted the questionnaires.

Data for the research were collected from September 2023 to March 2024. 544 self administered closed ended questionaires were distributed to the respondents face to face. Respondents were asked to rate their preception on the questionaire on a 5 point Likert type scale where 1 stood for "strongly disagree" and 5 for "strongly agreed". 408 valid questionaires were returned which was equivalent to 75% response rate. SPSS version 25 was used to anlyse demographic characteristics of respondents while Smart PLS SEM version 3.2.9 software developed by Ringle, Wende & Becker, (2015) was used to model the moderating effect of financial decision behavior on the relationship between financial literacy and retirement planning of government employees working in different ministries within Dododma region in Tanzania. Partial Least Square Structural Equation Model (PLS-SEM) was chosen because it can work well with small sample size, non-normal data distribution, model complexity where latent variables were measured reflectively by indicators and explanatory of dependent variable (Hair et al. 2020). PLS -SEM was also chosen due to its sustainability for theory confirmation (Lowry & Gaskin, 2014).

3.1 Model Development.

The study aimed to analyse factors determining financial retirement preparedness of government employees in Tanzania. The model was developed on a PLS-SEM basing on the construct generated from the theories of expected utility and planned behaviaor. PLS-SEM has two parts; measurement model relates indicators for respective latent variables and structural model relates latent variables against other latent variables (Henseler et al. 2016; Tenenhaus et al. 2005). The structural model comprised of computation capability, financial education, financial knowledge, risk attitude towards financial products, financial decision behavior and retirement planning variables extracted from the theories of expected utility and planned behavior. Measurement model was based on validated instruments from prior studies but adapted to suit Tanzanian context as per Table 1 below.

Table 1: Constructs measurement model

Latent Variable	Indicators	Scale	Authors
Reirement planning	I have never developed a retirement budget I do not have a retirement plan I have no idea of my retirement income I have never tried to save for my retirement I am expecting to moving to a cheaper area up on retirement I am not able to implement my retirement plan Involvement in my retirement plan matters to me I am expecting to rely on my children to support me on retirement I struggle to prepare a retirement plan I am expecting to continue working after retirement to earn money	Interval (5 - point scale)	Lusard (2007), Anspach, (2019), Bongini et al., (2019), Batsaikhan & Demertzis, (2018), Cibangala (2019),
Computation capability	It is easy for me to calculate interest rates on my savings, credits and investments I can easily compute benefits due to me on retirement I have done calculations to know how much money I will have saved for my retirement period I know the amount of money I will need for retirement I know the amount of money that I should save every month in order to prevent financial problems during my retirement	Interval (5 - point scale)	Kamakia, (2017), Bongini et al. (2019), Farooq et al. (2021), Hamid and Loke (2020), Safari et al. (2021)
Risk atitude towards financial products	Investments options and saving options on the whole are far too complicated for me I avoid investments and saving because you can lose a lot of money with them I cannot save or invest without an investment advisor as an intermediary I prefer an investment that pays off stable interests than an investment that provide the double of interests with 50% of chance to lose the initial investment	Interval (5 - point scale)	Shimizutani *et al.*, 2020), Ogoi's research (2019), Doorley & Nolan (2019), Rodrigues, Oliveira, Rodrigues & Costa, (2019), Satria and

	I feel having life insurance to protect my family members is not important as it is costly		Hutabarat (2020), Shimizutani & Yamada, (2019).
Financial Education	I have acquired through formal education (Schools, Colleges and Universities) I have acquired formal training on financial retirement planning I have received formal training on the management of finances I have acquired through social media ie. Email_ twitter_ Facebook_ WhatsApp__Instagram Telegram I have acquired through my relatives in the family business	Interval (5 - point scale)	Canfield, (2019), Zia, Randball and Hakizimfura (2018), Epaphra and Kiwia (2021), Bayar et al. (2020),.
Financial Knowledgee	I use financial knowledge to make personal financial decision I understand the available investment options for pension schemes I usually budget my money before I receive my salary and other income I know how to calculate interest due on my investments I usually do plan for my future income and expenses	Interval (5 - point scale)	Karakorum-Ozdemir et al. (2019), Bucher-Koenen et al. (2021), Patrisia and Fauziah (2019), Tuffour et al. (2020).

Source: Literature review, (2025).

The study confirmed non response bias as a result of common method bias test as recommended by Kock, (2017). Besides, data were also checked for outliers, mising data, normality and straight lining. Similarly, the data attained sampling adequacy as per Keiser-Meyer-Olkin (KMO) and significant Barlett's test of sphericity (Pallant, 2016).

4.0 Data Analysis and Findings

4.1 Response Profile

Table 2 reported demographic profile of the respondents. At first place, male respondents were 244(59.8%) as compred to 164(40.2%) of female. Age wise 2(5%) were aged over 60 years, 42(10.3%) below 30 years old; 92(22.5%) were between 51-60 years old, 127(31.1%) were between 31 - 40 years old. While 145(35.5%) were aged between 41– 51 years old. On marital status3(0.7%) of the respondents were divorced, 4(1%) were widowed, 27(6.6%) were single,

60(14.7%) were married and 314(77%) were living with partners. Regarding education, 5(1.2%) were Primary school leavers, 37(9.1%) were secondary school leavers, 37(9.1%) had advanced levels, and 329(80.6%) had university level of education. On level of income15(3.7%) are receiving monthly salary below TZS 270,000, 19(4.7%) are receiving monthly salary of above TZS 4,000,000, 62(15.2%) are receiving a monthly salary of Between TZS 2,000,000 and TZS 3,000,000, 166(40.7%) are receiving a monthly salary of between TZS 270,000 and 1,000,000 while 146(35.8%) are receiving a monthly salary of between TZS 2,000,000 and TZS 3,000,000. Majority of respondents 389(55.7%) are receiving a monthly salary of between TZS 2,000,000 and TZS 4,000,000 who can easily save now for after retirement life support. Regarding number of dependents 1(0.2%) had dependents between 1- 2, 36(8.8%) had dependents between 2-3, 69(16.9%) had dependents over 4, and 302(74%) had dependents between 3-4. Concerning job experience 15(3.7%) had job experience of below 1 year, 68(16.7%) had job experience of between 1-4 years, 77(18.9%) had job experience of between 5-9 years, 92(22.5%) had job experience of between 10-4 years and 156(38.2%) had job experience of above 15 years. Attendances in retirement planning seminar, 57(14%) of the respondents attended retirement planning seminars and the remaining 351(86%) did not attend for retirement planning seminars. Concerning which retirement option would the respondents prefer, 16(3.9%) will prefer late retirement option, 89(21.8%) will prefer early retirement option while 303(74.3%) of the respondents will prefer normal retirement option. This indicated that the majority of employees would prefer normal retirement option.

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Table 2: Demographic Profile Of respondents

Respondents Demographic Information			
Category	**Item**	**No of respondents (N=408)**	**Valid Percent %**
Gender	Male	244	59.8%
	Female	164	40.2%
Age	Below 30 years	42	10.3%
	Between 31 and 40 years	127	31.1%
	Between 41 and 50 years	145	35.5%
	Between 51 and 60 years	92	22.5%
	Over 60 years	2	0.5%
Marital Status	Single	27	6.6%
	Married	60	14.7%
	Divorced	3	0.7%
	Living with partner	314	77.0%
	Widowed	4	1.0%
Level of education	Primary level	5	1.2%
	Ordinary level	37	9.1%
	Advanced level	37	9.1%
	University level	329	80.6%
	Masters level	0	0.0%
	PhD level	0	0.0%
Job position	Supporting staff	3	0.7%
	Middle level staff	403	98.8%
	Decision making level staff	1	0.2%
Level of income	Below TZS 270,000	15	3.7%
	Between TZS 270,000 and TZS 1,000,000	166	40.7%
	Between TZS 1,000,000 and TZS 2,000,000	146	35.8%
	Between TZS 2,000,000 and TZS 3,000,000	62	15.2%
	Above TZS 4,000,000	19	4.7%
Number of dependents directly depend on you financially	Less than 2 dependents	0	0.0%
	Between 1 and 2 dependents	1	0.2%
	Between 2and 3 dependents	36	8.8%
	Between 3 and 4 dependents	302	74.0%

	Over 4 dependents	69	16.9%
Job experience	Below 1 year	15	3.7%
	Between 1 and 4 years	68	16.7%
	Between 5 and 9 years	77	18.9%
	Between 10 and 14 years	92	22.5%
	Above 15 years	156	38.2%
Attendance in retirement planning seminars	Yes	57	14.0%
	No	342	83.8%
	No	351	86%
Does the public office where you work has retirement options	Early retirement	89	21.8%
	Normal retirement	303	74.3%
	Late retirement	16	3.6%

Source: Primary data analysis, (2025).

4.2 Evaluation of Outer Measurement model.

The measurement model was checked for attainment of quality criteria for reliability and validity (Hair et al. 2020). Construct reliability or internal consistency was checked through both composite reliability and Cronbach's alpha (Hair et al. 2017). While construct validity was measured by both convergent validity and discriminate validity (Pallant, 2016).

4.2.1 Construct Reliability.

Reliability or internal consistent of the measurement instrument was checked through composite reliability (CR) and Cronbach alpha coefficient with a minimum cut-off of 0.70 (Sarstedt et al. 2017b; Sarstedt et al. 2014). The study reported achievement of reliability with CR and Cronbach α minimum value of 0.844 and 0.754 respectively as indicated in Table 3 below.

4.2.2 Convergent Validity.

Convergent validity measures the extent to which indicators in unison measure the same latent variable they belong to. Convergent validity was evaluated through indicator reliability and Average Variance Extracted (EVA) (Hair et al. 2020). Indicator reliability was tested through outer loadings of the latent variables in the model (Hair et al. 2014). The study applied established variables hence factor loadings above 0.50 were confirmed appropriate as per Table 3 (Hair et al. 2014). Additionally, AVE of 0.50 or higher is considered appropriate as indicators measure more than 50% of their respective construct as compared to the error variance (Fornell & Larcker, 1981; Sarstedt et al. 2017b). Accordingly, Table 3 confirmed achievement of convergent validity as all latent variables AVE were above 0.50.

4.2.3 Discriminant validity.

Discriminant validity shows that indicators and their latent variables are unique and uncorrelated to construct in the model (Gaskin, 2016). Three criteria of Fornell-larker, Cross-loading and

Heterotrait-Monotrait (HTMT) ratio of correlation were applied in the study (Ali et al. 2018; Sarstedt et al. 2017b). Anderson & Gerbing, (1988) and Hair et al. (2020) posit that Fornell&Larcker criteria for assessment of discriminant validity require that square root of the average variance extracted (AVE) in the diagonal values of a construct to be higher than values in its column and row which is achieved by this study as per Table 4.

Cross-loading assessment checks whether an indicator is mistakenly assigned to a wrong construct (Voorhees et al. 2016). Chinn (1998) provides that to attain discriminate validity by cross-loading test, indicators should load more in its own latent variable than indicators from other constructs which the study achieved as per Table 5.

Heterotrait-Monotrat ratio of correlation (HTMT) was tested for assessment of discriminant validity with a cut-off ratio of 0.85 (HTMT) (Henseler et al. 2014). Accordingly, Table 6, confirmed establishment of discriminant validity as HTMT ratio of correlation are well below the cut-off point of 0.85. Therefore, all items of the questionnaires were confirmed as reliable and valid for the studies which pave way for structural model evaluation.

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Table 3: Construct Reliability and Validity Test

Construct	Indicators	Loadings	Cronbach's Alpha	CR	AVE
Computation capability	CC_1	0.792			
	CC_2	0.887			
	CC_3	0.873			
	CC_4	0.822			
	CC_5	0.740	0.882	0.913	0.680
Financial knowledge	FK_1	0.836			
	FK_2	0.727			
	FK_3	0.784			
	FK4	0.780	0.791	0.863	0.613
Financial education	FE_1	0.781			
	FE_2	0.915			
	FE_3	0.672			
	FE_4	0.443	0.766	0.806	0.524
Risk atitude towards financial products	RA_1	0.787			
	RA_2	0.837			
	RA_3	0.815	0.745	0.854	0.662
Financial decision behavior	FD_1	0.677			
	FD_2	0.713	0.766	0.746	0.581
	FD_3	0.666			
Retirememnt Planning	RP_1	0.728			
	RP_2	0.728			
	RP_3	0.819	0.762	0.841	0.570
	RP_4	0.743			

Source: Field Data, (2025).

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Table 4: Fornell-Larcker -Discriminant validity Criterion Test

	Discriminant Validity achieved?						
	CC	**FD**	**FE**	**FK**	**RA**	**RP**	**(Square root of AVE>LVC**
CC	**0.825**						Yes
FD	0.457	**0.852**					Yes
FE	0.771	**0**.758	**0.706**				Yes
FK	0.702	0.581	0.603	**0.724**			Yes
RA	0.642	0.677	0.687	0.038	**0.860**		Yes
RP	0.570	0.633	0.436	0.465	**0.725**	**0.837**	Yes

Source: Field Data, (2025).

Table 5: Cross-Loading - Discriminant Validity Criterion test

Indicators	**Constructs**					
	CC	**FE**	**FK**	**RA**	**FD**	**RP**
CC1	**0.792**	0.239	0.582	-0.009	-0365	-0.175
CC2	**0.887**	0.252	0.578	-0.016	-0341	-0.205
CC3	**0.873**	0.275	0.543	0.017	-0320	-0.176
CC4	**0.822**	0.330	0.560	0.058	-0374	-0.163
CC5	**0.740**	0.381	0.589	0.029	-0.068	-0.111
FE1	0.334	**0.781**	0.370	0.193	-0.402	0.043
FE2	0.279	**0.915**	0.428	0.030	-0.271	0.067
FE3	0.210	**0.672**	0.352	0.069	-0.365	0.015
FE4	0.175	**0.443**	0.292	0.122	-0.289	-0.002
FK1	0.579	0.345	**0.836**	-0.168	-0.219	-0.186
FK2	0.504	0.343	**0.727**	-0.020	-0.558	-0.115
FK3	0.587	0.424	**0.784**	0.040	-0.381	-0.142
FK4	0.465	0.384	**0.780**	-0.036	-0.267	-0.131
RA1	0.031	0.009	0.052	**0.787**	0.051	0.212
RA2	0.042	0.123	0.101	**0.837**	0.127	0.208
RA3	0.044	0.124	-0.028	**0.815**	0.053	0.238
FD1	0.338	0.318	0.464	-0.091	**-0.789**	-0.025
FD2	0.295	0.321	0.422	0.016	**-0.619**	-0.007
FD3	0.397	0.372	0.505	-0.062	**-0.874**	-0.025
FD4	0.404	0.465	0.489	-0.015	**-0.816**	-0.022
FD5	0.364	0.463	0.475	0.011	-0.625	-.0000
RP1	-0.088	0.073	-0.097	0.145	-0.132	**0.728**
RP2	-0.148	0.104	-0.065	0.092	-0.102	**0.728**
RP3	-0.138	0.060	-0.083	0.229	-0.006	**0.819**
RP4	-0.211	-0.005	-0.253	0.281	0.005	**0.743**

Source: Field Data, (2025).

Table 6: HTMT Ration of Correlation

Construct (Latent Variable)	CC	FD	FE	FK	RA
Computation capability					
Financial decision behavior	0.525				
Financial education	0.526	0.584			
Financial knowledge	0.839	0.726	0.696		
Risk attitude toward financial products	0.196	0.201	0.339	0.261	
Retirement planning	0.259	0.224	0.313	0.293	0.451

Source: Field Data, (2025).

4.3 Evaluation of the inner structural model of study.

Structural model was checked for coefficient of determination (R^2), path coefficient (Beta-Value), t-statistics, p-values and predictive relevance (Q^2) as per guidelines by Hair et al., (2017).

4.3.1 Measuring the coefficient of determination (R^2)

R^2 measure goodness of fit of how well the observed data fit the hypothesized model (Wooldridge, 2016). Accordingly, R^2 measured explanatory power of exogenous variable on endogenous variable therefore it shows effect size and predictive accuracy of the model (Sarstedt, Ringle, & Hair, 2017a). According to Figure 2, R^2 of the study is 0.137, implying that computation capability, financial knowledge, financial education and risk attitude towards financial products in unison as exogenous variables explained 13.7% variation in the retirement planning, an endogenous variable. Cohen, (1988) provides that R^2 value is considered as 0.02 (weak), 0.13 (moderate) and 0.26 (substantial). Therefore, the study R^2 value of 0.137 is considered as moderate

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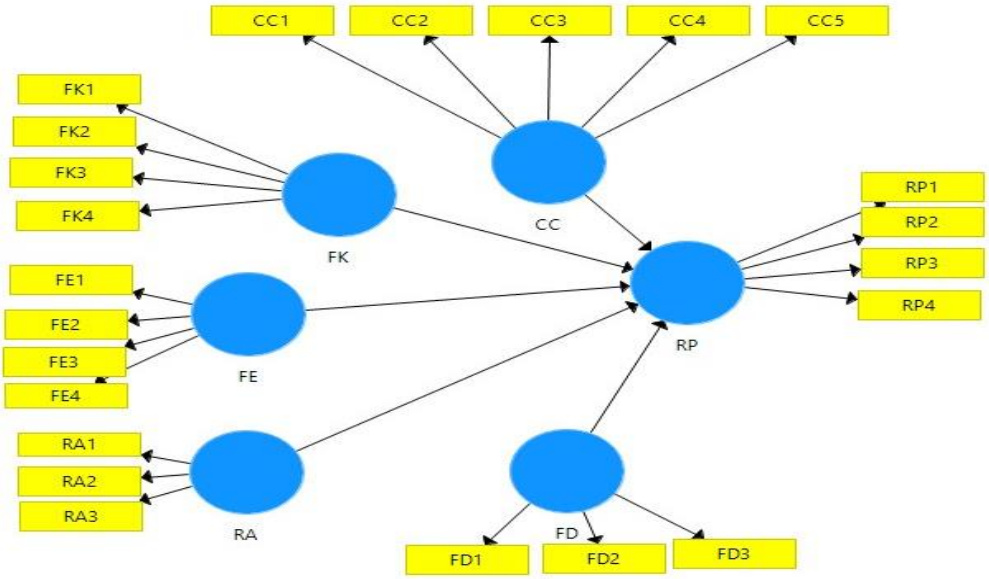

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Figure 2: Assessment of Structural Equation Model

4.3.2 Evaluation of path coefficient (βeta –Values).

The path coefficient of the structural model is equivalent to multiple regression beta values which shows a change of dependent variable as a result of a unit change of an independent variable keeping other variables constant to zero (Sarstedt et l. 2016). Therefore, the path coefficient is used in hypothesis testing of the study. The hypotheses were tested for strength, direction and level of significance of the coefficient of the latent variable in the inner model. Significance path coefficient was tested through non-parametric bootstrapping method to find the level of precision of PLS-SEM estimates (Chinn, 1998). A complete bootstrapping with minimum size of 5,000 subsamples, was done in Smart PLS-SEM, bias correlated, with standardized scores, no sign change and two tailed test at 0.05 level of significant (Hair et al. 2011; Henseler et al. 2016). The positive path coefficient with p-values equal to or less than 0.05, with a critical value higher than 1.96 support hypothesis acceptance (Hair et al. 2013).

Table 7: Structural Estimates (Hypothesis testing)

Hypothesis	Beta	T-Statistics	P-Value	Q^2	Decision
H_1: Computation Capabilty -> Retirement Planning	0.063	2.906	0.004	0.379	Supported
H_2: Financial Education -> Retirement Planning	0.111	1.407	0.134	0.379	Not supported
H_3: Financial Knowledge -> Retirement Planning	0.079	1.501	0.160	0.379	Not Supported
H_4: Risk Attitue Towards Financial Products -> Retirement Planning	0.051	4.831	0.000	0.379	Supported
H_5: Financial decision behavior -> Retirement Planning	0.147	1.992	0.047	0.379	Supported

Source:Field data, (2025).

A completed structural model with beta values, t-statistics and probability values is reported in Table 7. In regard, computation capability, risk attitude towads financial products and financial decision behavior was found significant predictor of retirement planning of government employees in Tanzania at 5% level of significance. Therefore hypothesis (H_1, H_4, H_5) are accepted.

Evaluation of predictive relevance (Q^2)

Finally, predictive relevance of the model was checked through blindfolding which revealed a value of 0.379 as per Table 7 confirming median predictive relevance of the model as it is greater than zero. Hair et al. (2019) provide a rule of a thumb that Q^2 in range of 0, 0.25 or 0.50 depicts small, median and large predictive relevance of PLS-SEM path model respectively.

5.0 Discussion of Findings

According to Table 7, hypothesis one (H_1), four (H_4) and five (H_5) has supported the study as t-statistic was 2.906, 4.831 and 1.992 respectively above set criterion of 1.96 and p-value was 0.004, 0.000 and 0.047 respectively below set criterion of 0.05.

5.1 Computation Capability and Retirement Planning

The study hypothesized that computation capability determines positively and significantly retirement planning. The result of the empirical data analysis positively supported the hypothesized model that computation capability was statistically significant (p=0.012) determinant of retirement planning. Computation capability indicators were statistically (p=0.000) significant as a measure of the construct and influenced retirement planning. Therefore, qualify for further discussion. The study findings are in line with the results of different scholars that computation capability is a significant determinant of retirement planning Kamakia, (2017), Bongini et al. (2019), Farooq et al. (2021), Hamid and Loke (2020), Safari et al. (2021).

5.2 Financial Knowledge and Retirement Planning

The study theorized that financial knowledge determines retirement planning of government employees working in different ministries within the City of Dodoma in Tanzania. However, the result of the findings showed that financial knowledge was required but was statistically insignificant (p=0.671). Surprisingly, indicators of financial knowledge were statistically significant (p=0.000) as a measure of the construct and influenced retirement planning which pave way for this discussion. The result was in agreement with Nansubuga (2018) who reported that thinking and talking about retirement only psychologically prepares an individual for retirement, but does not necessarily result in retirement preparation behaviors such as financial planning. These findings show the PLS-SEM characteristics, that may offer non-significant relationship in the structural model but satisfactory results in the measurement model (Hair et al. 2017).

5.3 Financial Education and Retirement Planning

Financial education was also hypothesized as a critical factor in retirement planning preparedness of government employees working in different ministries within Dodoma region in Tanzania. However, the result of the findings showed that financial education was required but was statistically insignificant (p=0.0753). Unexpectedly, indicators of financial knowledge were statistically significant (p=0.000) as a measure of the construct and influenced retirement planning which pave way for this discussion. These findings suggest the PLS-SEM characteristics, that may offer non-significant relationship in the structural model but satisfactory results in the measurement model (Hair et al. 2017). The study result is however consistent with the study findings by Fanta et al. (2021) who suggested that only 32% of people in sub-Saharan Africa are reported to be financially literate compared to 52% in high-income OECD economies. The study is also consistent with a study by Klapper et al. (2020) who said that in East Africa, the financial literacy level is low, where only 30% of Kenyans, 25% of Ugandans, and 25% of Tanzanians are financially literate. Again, these findings show the PLS-SEM characteristics, that may offer non-significant relationship in the structural model but satisfactory results in the measurement model (Hair et al. 2017).

5.4 Risk Attitude Towards Financial Products and Retirement Planning

The study also hypothesized that risk attitude towards financial products determine retirement planning of government employees working in different ministries within the city of Dodoma in Tanzania. The results of the surveyed data revealed that indeed risk attitude towards financial products was positively and statistically significant (p=0.000) determinant of retirement planning of government employees working in different ministries within the city of Dodoma in Tanzania. The findings concurred with the study of other scholars that risk attitude towards financial products is a significant determinant of retirement planning (Meir et al. 2016, Shimizutani et al., 2020, Satria et al. 2020).

5.5 Financial Decision Behavior and Retirement Planning

The study also postulated that financial decision behavior has a significant positive impact as a determinant of retirement planning of government employees working in different ministries within Dodoma region in Tanzania. The findings of the study supported the hypothesis that financial decision behavior was positively and statistically significant (P=0.047) determinant of retirement planning of government employees working in different ministries within the city of Dodoma in Tanzania. This result concurred with other scholars' findings that financial decision behavior is a significant factor for retirement planning preparedness (Edirisinghe et al. 2017, Nguyen et al. 2017, Arianti 2018, Kim, et al. 2019). The findings proved the assertion that financial decision behavior is a significant agent in an organization to influence other functions in the organization to be effective (Turley & Zaman, 2007).

6.0 Conclusion and REecommendations

6.1 Conclusion

The study main objective was to examine the effects of financial literacy on retirement planning among government employees in Tanzania. It proposed whether computation capability, financial knowledge, financial education, risk attitude towards financial products and financial decision behavior have a statistically significant positive impact on retirement planning. The research study stands on the bedrock of expected utility theory supplemented by planned behavior theory as lenses to elicit the testable constructs. The results of the research based on survey questionnaires distributed to 408 respondents from government employees working in different ministries within Dodoma region in Tanzania. Descriptive statistics of the study were done in IBM-SPSS-25 and inferential statistics were run through Smart PLS-SEM path modeling version 3.2.9. The study observed that computation capability, risk attitude towards financial products and financial decision behavior influences financial retirement planning preparedness while financial knowledge and financial education has no impacts on financial retirement planning. The study findings were that computation capability, risk attitude towards financial products and financial decision behavior were key factors for retirement planning of government employees in Tanzania.

The study has statistically concluded that financial education and financial knowledge have no impact on the effectiveness of retirement planning in the Tanzanian context. The findings indicated that lack of knowledge in financial literacy education and financial planning would lead to fallacious retirement decisions among retirees and endangers retirees' wellbeing permanently. However, having the right financial knowledge and skills could help in improving one's financial wellbeing, which may help employees to invest and expand their sources of income thereby become financially secured. Therefore, this study sparks much interest for further research with the same variables to different areas in Tanzania and beyond to find out if the confirmed model can be replicated with the same results

6.2 Conclusion

The study like other studies in social science is not without limitations for generalization to employees working in the government and other sectors of the economy in Tanzania. The empirical results based on 408 respondents from 24 ministries employees working within the city of Dodoma in the United Republic of Tanzania analysed through non-parametric statistical tool of Partial least square structural equation modeling (PLS-SEM) path analysis. Hence the same study is recommended in a wider population involving employees from other sectors of the economy in Tanzania and beyond.

Empirical results by other scholars like those of: Agunga (2018), Lusadi et al. (2019), Cibangala (2019), Bongini (2019), Buchdadi, (2020), Satria and Hutabarat (2020), Kulondwa et al. (2021), revealed that financial knowledge and financial education were important aspects as determining factors of financial retirement planning but unexpectedly, this study's results contested that in the Tanzanian context. This work generates significant curiosity for subsequent research utilizing the same variables in various regions of Tanzania and abroad to ascertain whether the validated model may be repeated with analogous outcomes.

The study employed Smart PLS Structural Equation Modeling (PLS-SEM) for analysis, which may yield inconsequential association in the structural model while presenting statistically significant findings in the measurement model (Hair et al. 2017). The results of this study may have been influenced by the presence of two constructs, financial knowledge and financial education, which exhibited measurement variables that were statistically significant yet had an insignificant connection within the structural model. The present study advocates for more research utilizing the same model but employing alternative statistical analysis methods.

The study rests on theories of expected utility and planned behavior as bedrocks for financial retirement planning of government employees in Tanzania. A study is recommended to apply the same theories on effectiveness of saving enough for retirement.

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