Analyzing Socio-Economic Determinants of Household Savings in Semi-Urban Tanzania: A Microeconomic Modeling Approach

Romanus Lucian Dimoso
Department of Economics, Mzumbe University
P.O Box 5, Morogoro, Tanzania
Email: rdimoso@mzumbe.ac.tz

Abstract

This study investigates the determinants of household saving behavior among semi-urban households in Tanzania, employing a cross-sectional research design. Data were collected through structured questionnaires from a sample of 200 respondents selected from semi-urban communities. To comprehensively analyze saving behavior, the study applied both the Double Hurdle Model and the Zero-Inflated Poisson (ZIP) model, which separately examine the decision to save, and the amount saved. The findings reveal that employment status, awareness of saving practices, and access to financial institutions significantly and positively influence both the decision to save and the amount saved. Conversely, household size, years of education, and household expenditure negatively affect the decision to save but positively influence the amount saved among those who choose to save. Age and risk aversion also showed varying effects across both stages of saving behavior. These results highlight the complex interplay of socio-economic and demographic factors in shaping household financial decisions. Based on the findings, the study recommends enhancing financial literacy, expanding access to financial institutions, and promoting stable employment as key strategies to improve household saving behavior. The results provide critical insights for policymakers and development practitioners aiming to foster inclusive financial systems and promote economic resilience in semi-urban Tanzanian communities.

Journal of Policy and Development Studies (JPDS)

Vol. 18 Issue 2 (2025)
ISSN(p) 1597-9385
ISSN (e) 2814-1091
Home page:
https://www.ajol.info/index.php/jpds

ARTICLE INFO:
Keyword: *Saving behavior, financial Inclusion, Development*

Received: *26th December 2024*
Revised: *29th March 2025*
Accepted: *28th April 2025*

DOI
https://dx.doi.org/10.4314/jpds.v18i2.14

1. Introduction

Household saving is a critical aspect of economic stability and growth globally, particularly in developing regions such as Africa and Tanzania. Globally, saving serves as a buffer against financial uncertainties and is essential for future investments and consumption. High domestic savings rates are linked to financial independence, sustained economic growth, and the achievement of Sustainable Development Goals (SDGs) (Loayza et al,, 2000). However, many developing countries struggle with low savings rates due to various factors, including inadequate financial infrastructure and socio-economic constraints. Scholars have noted that the lack of efficient credit and insurance markets in these regions exacerbates the challenges faced by households in accumulating savings, which are necessary for smoothing consumption during income fluctuations (Collins et al., 2009).

In Africa, particularly sub-Saharan Africa, the situation is even more pronounced. Despite financial liberalization efforts, domestic savings rates remain low, hindering economic growth and development (Ndikumana, 2014). Research indicates that households in this region often face significant barriers to saving, including high inflation rates, rising costs of living, and limited access to financial education (Demirgüç-Kunt et al., 2017). These challenges lead to irregular and seasonal saving behaviors, making it difficult for households to build a reliable financial cushion. Besides lack of financial management knowledge, the rise in inflation rate and the cost of living have become a significant burden on households, making it difficult to allocate even a small portion of income toward savings. According to Kamaluddin (2018), households in Malaysia spend a significant portion of their income on housing, utilities (24%), food and non-alcoholic beverages (18%), and transportation (13.7%), which are also common expenditure patterns in many African contexts. These costs, therefore, act as a deterrent to consistent saving behavior.

Furthermore, households in developing economies also face savings-related challenges from income fluctuation and climate change. They often lack adequate social coverage and access to well-functioning credit and insurance markets. These challenges hinder the effective allocation of savings and complicate decisions regarding productive investments (Beck et al., 2007). According to Schmidt-Hebbel et al. (1996), and Bisat, El-Erian, and Helbling (1997), domestic or household savings remain one of the most reliable sources of capital investment in developing economies and are essential for catalyzing economic growth. In emerging economies like East African countries, the economic life of households is often jeopardized by uncertainty due to climate variability and income instability.

The importance of understanding household saving behavior in this context cannot be overstated. It is essential for formulating policies that enhance financial inclusion and promote sustainable economic growth. Specifically in Tanzania, the determinants of household saving behavior reveal a complex interplay of factors such as income stability, social security coverage, and cultural attitudes towards saving. Studies indicate that many Tanzanian households save primarily out of fear of future income loss or to meet anticipated financial obligations (Matchaya, 2011). Furthermore, empirical evidence suggests that household savings are influenced more by long-term income expectations than by current income levels (Carroll & Weil, 1994), highlighting the necessity of studying saving behavior in Tanzania to identify effective strategies for mobilizing savings that can contribute to capital accumulation and economic development. Understanding these dynamics is crucial for policymakers aiming to strengthen the financial well-being of households and enhance overall economic resilience in the region.

2. Empirical Reviews

A study by Piyarat (2019) on household saving behavior and determinants of saving and investment forms in Thailand found that the average saving rate was 29.17% of income. Respondents were familiar with various saving and investment vehicles, with the main goal being post-retirement financial security. Most respondents relied on personal decision-making, often influenced by information from bank staff, when selecting savings options. The study found a preference for conventional saving forms—such as bank deposits, insurance, gold, and real estate—over financial assets like mutual funds, bonds, and stocks. As income increased, households showed more interest in capital market investments, although many remained cautious due to perceived risks, complexity, and high entry costs. Real estate was considered a favorable investment due to its perceived lower risk and higher returns compared to financial assets (Piyarat, 2019).

Iqbal and Nawaz (2021) examined macroeconomic and demographic factors influencing gross domestic savings in youth-dense Asian countries, including Pakistan, India, China, Indonesia, and Bangladesh, using data from 1990 to 2019. Using the Fully Modified Ordinary Least Squares (FMOLS) method, the study revealed that GDP per capita and interest rates positively impacted savings, whereas inflation and dependency ratios had negative effects. Notably, urbanization and reduced infant mortality were associated with higher saving rates, emphasizing the role of structural and demographic transitions in enhancing domestic savings (Iqbal & Nawaz, 2021).

In Malaysia, Ismail et al. (2017) investigated the determinants of saving behavior among public sector employees. The study emphasized four key variables: financial knowledge, financial self-efficacy, financial attitude, and financial management practices. Using data from 150 government employees in Kuala Lumpur, the findings highlighted financial self-efficacy as the strongest predictor of saving behavior. Individuals with greater confidence in their ability to manage finances were more likely to save effectively. These insights support the need for policies focused on enhancing financial literacy and efficacy to promote sustainable saving habits (Ismail et al., 2017).

A similar study by Ahmad and Noor (2020) at the International Islamic University College Selangor (KUIS) examined the role of financial literacy, financial distress, and financial management practices in shaping saving behavior. Based on survey responses from 150 academic and administrative staff, the study found all three factors to be significant predictors. Financial management practices, in particular, had the strongest influence. The authors recommended implementing targeted financial education programs in the workplace to improve financial literacy, reduce financial stress, and promote better saving habits among employees (Ahmad & Noor, 2020).

Another investigation by Ismail (2019) explored determinants of attitudes toward saving behavior. The study evaluated five factors: service quality, religious beliefs, knowledge, social influences, and media advertising. Stratified random sampling was used to collect data from 150 respondents, which was analyzed through descriptive and regression methods. The results indicated that service quality, religious beliefs, knowledge, and social influences significantly influenced attitudes toward saving, with social influence emerging as the strongest determinant. Media advertising, however, had no significant impact. These findings are valuable for developing behavioral financial education strategies and understanding the sociocultural context of saving decisions (Ismail, 2019).

Fuchs-Schündeln and Spies (2014) examined the cultural determinants of household saving behavior using data from second-generation immigrants in Germany and the UK. Their analysis revealed that cultural attitudes—particularly those related to thrift and long-term wealth accumulation—play a significant role in influencing saving behavior. These cultural values were found to be passed intergenerationally and were reinforced by language and norms rather than direct economic factors. The study offers important insights into how deeply embedded cultural traits shape financial behavior over time (Fuchs-Schündeln & Spies, 2014).

3. Theoretical framework

This study is grounded in the Theory of Planned Behavior (TPB) developed by Ajzen (1991), which suggests that behavior is primarily driven by behavioral intentions. These intentions, in turn, are influenced by three components: the individual's attitude toward the behavior, subjective norms (social pressures or expectations), and perceived behavioral control (the perceived ease or difficulty of performing the behavior). In the context of savings behavior, these factors map well onto real-life influences: for example, one's positive attitude toward saving, social encouragement from peers and family, and confidence in managing finances may collectively shape saving intentions and subsequent actions. TPB has been widely applied in personal finance contexts to explain saving, spending, and financial planning behavior (Xiao & Fan, 2002; Potrich et al., 2015).

In this study, the intention to save can be predicted by several psychosocial and financial variables. Financial literacy and a positive attitude toward saving are expected to influence one's motivation to save, while saving goals represent perceived behavioral control—how much individuals feel they can guide their financial futures. Likewise, social influences, such as parental guidance or peer behavior, represent the subjective norm component of TPB. The conversion of intention into actual saving behavior may also depend on demographic factors like gender, educational background, marital status, and income, which could moderate the strength of the intention-behavior link (Shim et al., 2009; Perry & Morris, 2005). This theoretical framing provides a useful lens for interpreting the saving behavior in a culturally and economically diverse setting like Tanzania.

Beyond psychological models, economic theory offers additional insights into saving behavior through two prominent frameworks: the Permanent Income Hypothesis (PIH) and the Life Cycle Hypothesis (LCH). The PIH, introduced by Friedman (1957), argues that individuals base consumption decisions not on current income but on expected long-term (or permanent) income. According to the hypothesis, temporary income increases are more likely to be saved than spent, especially if individuals are uncertain about future income. Similarly, the LCH posits that individuals aim to smooth consumption over their lifetime by saving during high-income years and dissaving during retirement (Modigliani & Brumberg, 1954). These frameworks imply that income stability, expectations, and life-stage considerations are central to understanding saving behavior.

Empirical studies testing the PIH have yielded mixed results. For example, DeJuan, Seater, and Wirjanto (2006), using time-series data from German states, found that consumption did not always respond to income changes as predicted by PIH. Instead, negative income shocks had a larger impact than positive ones, a finding more consistent with liquidity constraints than with pure income smoothing. Similarly, Campbell (1987), using U.S. data, observed that income expectations influence saving behavior, but actual consumption patterns diverged from PIH predictions when analyzed using first-differenced data. These findings suggest that while PIH offers valuable theoretical insight, real-world consumer behavior is often influenced by access to

credit, financial literacy, and precautionary motives. These limitations further justify integrating psychological theories like TPB with economic models to form a more comprehensive framework for studying household saving behavior.

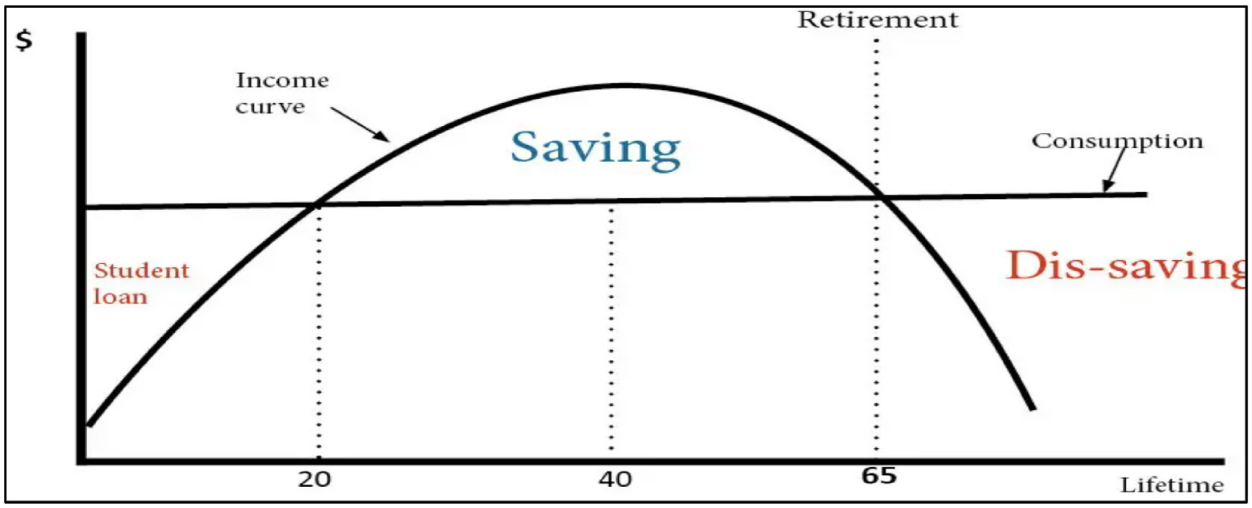

Figure 1: The LCH graph displays individual savings from the age of 20–65

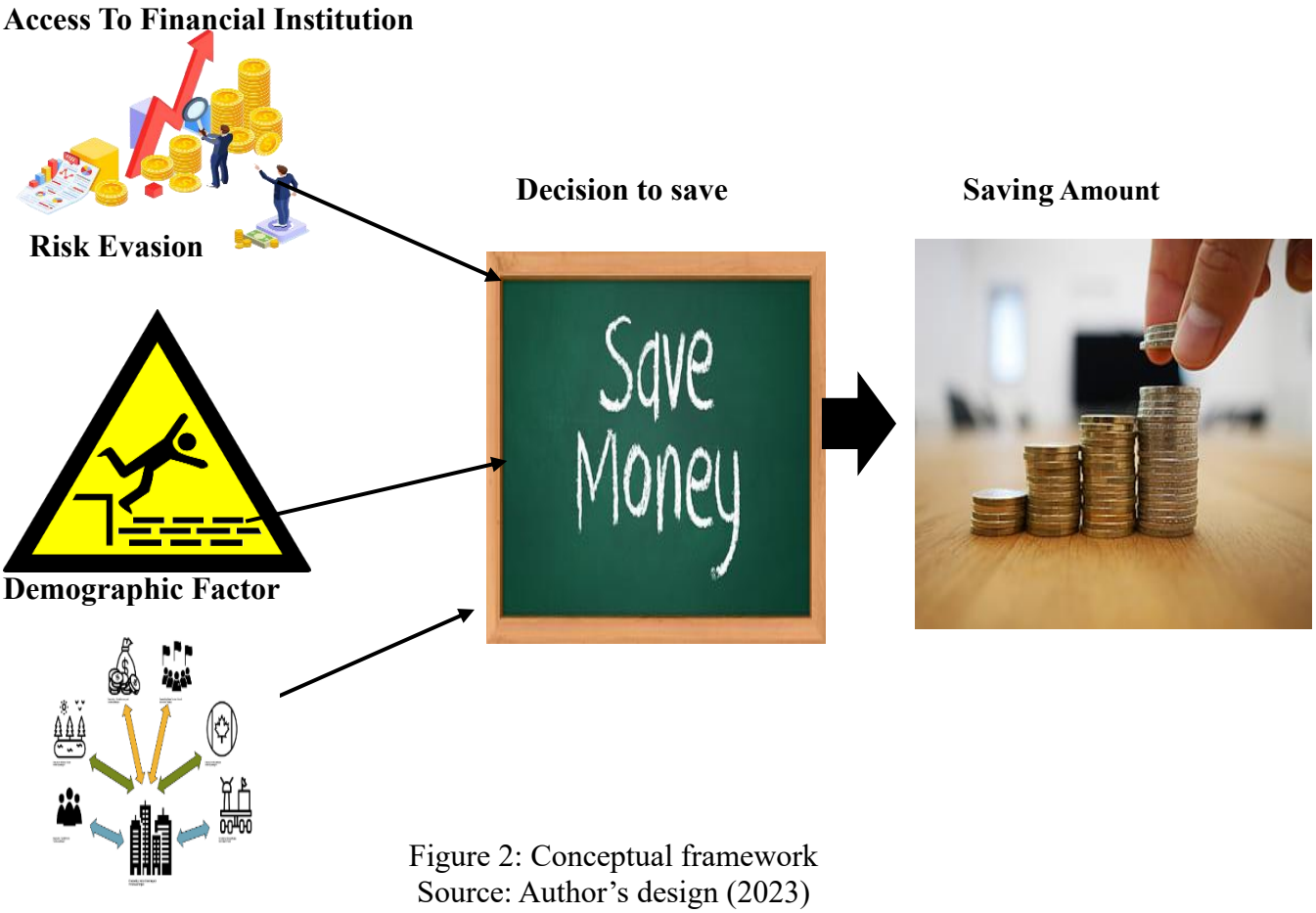

Figure 2: Conceptual framework
Source: Author's design (2023)

4. Methodology

The study uses cross-sectional data, which was collected directly from the representative subset. The cross-sectional study normally uses cross-sectional regression, which enables categorizing the existence and magnitude of the effect of one or more independent variables toward the dependent variable of concentration at a given place in time. Thus, this cross-sectional data was used because of the limit of time and financial problems as well as to be able to determine the effect of independent on dependent variables during the study in Mzumbe ward village. The study uses a quantitative research design; this design helps the researcher to come up with statistical conclusions about the relationship towards determinant of saving in Mzumbe ward village by using the numeral data that was collected on the field. The study involves measurement, classification, analysis, comparison, and interpretation of data.

4.1 Sample Size

A sample is a smaller group of subjects drawn from the population in which a given study was conducted for a purpose of drawing conclusions about the population targeted. Kothari (2004) argued that the result from the sample can be used to make generalizations about the entire population as long as it is truly represented. The study covering 19,677 population (Tanzania census (2022) in Mzumbe ward, for each village (Vikenge, Changalawe, Sangasanga, Mnyanza and Tangeni) the formula below was used to calculate the sample size (see also Kothari, 2004).

$$n_{\text{Mzumbe ward}} = \frac{Z^2PqN}{e^2(N-1)+Z^2Pq}$$

Whereas $n_{\text{Mzumbe ward}}$ = sample size in Mzumbe ward, N is the size of population which is the number of people in both wards, p (p = 0.5) is the probability that each household in the ward has equal chance of being selected, q = 1-p, e is the margin of error considered is 10% for this study, while Z is 1.96. Therefore, the estimated sample size is 200.

$$n = \frac{1.96^2 \times 0.5 \times 0.5 \times 19677}{((0.1^2 \times (19677-1)) + (1.96^2 \times 0.5 \times 0.5)} = 200$$

4.2 Analytical modelling

This is the application of statistical methods to economic data to give empirical content to economic relationship. In statistical analysis the study uses double hurdle model and zero inflated poison regression, whereby the rationale behind choosing these modeling approach to gain a more understanding of saving behavior in rural areas, we will employ a combined modeling approach utilizing both a double hurdle model and zero-inflated Poisson regression. This is because saving decisions in rural contexts might exhibit two distinct processes: first a hurdle of deciding whether to save at all, potentially influenced by factors like income level and access to financial institutions, and second the level of savings amongst those who choose to save, which could be impacted by factors like risk aversion and financial literacy. The double hurdle model addresses this two-stage process, while the zero-inflated Poisson tackles the potential overabundance of zero saving observations, common in rural areas with limited financial resources.

Model I: Double huddle model

This study employed the Double hurdle model to explain determinants and extent of savings among households. The double hurdle model specification requires two latent variables; Y_1^{**} related with binary choice model determining decision to save (which is probit model) and Y_2^{**} referring to the extent which is a truncated regression in nature. These latent variables are

expressed as linear functions of the first and second hurdle regressors, $X_1$and X_2, respectively. Therefore, this expression can be shown as follows:

$$Y_1^{**}=\alpha_1 X_1+ \varepsilon_1$$
$$Y_2^{**}=\alpha_2 X_2+ \varepsilon_2$$

Similarly, turning to the second hurdle, provided that the first hurdle was cleared, Y_2^* can also be generated as:

$$Y_2^* = Y_2^{**} \text{ if } Y_2^* > 0$$
$$Y_2^{**}=0, \text{ if otherwise}$$

This second hurdle takes the form of truncated regression and is capable of generating zero levels of frequency of saving which is independent of the first hurdle. Finally, the observed (actual) extent of saving frequency, is determined by the interaction of both hurdles, that is $Y = Y_1^* Y_2^*$.

Model II: Zero-Inflated Poisson Regression model

The outcome variable for this model is the number of times that households save to financial intermediaries per year, and due to the excessive number of zero visits to financial intermediaries per year among household in Mzumbe ward, the study employed the Zero-Inflated Poisson Regression model. This model will help us understand the factors that influence the frequency of visits to financial intermediaries per year among household in Mzumbe ward. The predictor variables include age, education level, income, occupation, household size, and distance to the nearest financial institution, social group. By using the Zero-Inflated Poisson Regression, we can account for both structural zeros (households who do not make any visits to financial intermediaries per year) and excess zeros (household with more frequent to financial intermediaries per year visits), providing a comprehensive understanding of the determinant of saving behaviors among rural household in Mzumbe wards. Let Y_i denote the frequency of visits to financial intermediaries per year among household in Mzumbe ward i. The Zero-Inflated Poisson Regression model can be represented as follows in two steps of structural zero component and Poisson component; Structural Zero Component: $pr(y_i = 0)=\pi_i$

The structural zero component represents the probability of a household in Mzumbe ward making no visits in any financial institution for saving ($Y_1 = 0$). The parameter π_i captures the excess zeros, accounting for household in Mzumbe ward making no visits in any financial institution for saving.

Poisson Component

$$pr(y_i = y)=(1 - \pi_i) \text{ x } \frac{\sigma^{-V_i} \text{ x } V_i^y}{Y_!}$$

The Poisson component represents the probability of a households in Mzumbe ward making y number of savings(frequency) to financial institution ($Y_i = Y$), where y = 1, 2, 3, ...n. On the other hand, Vi represents the rate parameter for each household i, indicating the average number of saving visits per household. This parameter is influenced by the predictor variables, including age, education level, income, occupation, household size, and distance to the nearest financial institutions.

Table 1 Measurement of the key outcome variables under different models

Variable	Descriptions	Measurement
Household head Income	Household income is the total amount of money earned by all members of a household over a specific period (typically a year). It includes income from all sources	Continuous
Access to financial institution	Household access to financial institutions refers to the ability of individuals and families to use formal	Binary

Variable	Descriptions	Measurement
	financial services like banking, credit, savings, insurance, and payment systems.	
Awareness	Household awareness of saving issues refers to the extent to which members of a household understand the importance of saving money, have knowledge about different saving strategies, and are actively engaged in saving behaviors	Binary
Location	The residence of the household	Ordinal
Employment status	categorizes individuals based on their relationship with the labor market.	Binary
Risk evasion person	intentional act of avoiding or minimizing exposure to potential negative outcomes or losses.	Binary
Decision to save	Decision to save refers to an individual's or household's overall financial decision regarding their accumulated amount of money	Binary
Amount of saving (in Tsh)	It's the total amount of money an individual or household has saved.	Continuous
Household expenditure	Household expenditure refers to the total amount of money spent by a household on goods and services within a given period. It encompasses a wide range of spending categories	Continuous

5. Findings

Descriptive Statistics

This information on the Table 2 provides an overview of 200 households, focusing on age, size, spending patterns, income, and financial habits. The average household head is 28 years old, with the oldest head being the youngest at 24. The average household size is 5.28 people, with one person in the smallest and ten in the largest. A typical household saves $4565.87 in savings, with savings varying greatly across homes.

Table 2 Summary statistics of continuous variables

Variable	Observation	Mean	Min	Max
Household head Age	200	28	24	58
Household Size	200	5.28116	1	10
Saving Amount	200	4565.866	1000	200000
Number of financial institutions	200	3.457953	1	5
Income of household head	200	30000	5000	500000
Total Expenditure in household	200	55000	40000	1000000

There are 3.46 distinct financial institutions providing services to the average home, with some households using zero or five institutions. The average household head earns $30,000. The income distribution is uneven, with the lowest earner earning $5,000 annually and the wealthiest earning $500,000. Spending patterns vary greatly, with the lowest amount being $40,000 and the highest being $1,000,000.

Furthermore, statistics provided in the Table 3 provides a detailed profile of households, revealing differences in awareness, employment status, gender distribution, marriage status, and education levels. It also highlights geographic dispersion across residential regions, emphasizing the importance of considering these factors in future analysis to understand their impact on other variables. The majority of households have only an elementary education, with a significant portion lacking formal education. Married individuals lead the majority (86%), followed by singles

(7.5%), divorced (5.5%), and widowed (1%). Males make up 77.5% of household heads, with females (22.5%).

Table 3: Socioeconomic characteristics of the sample

Variables	Attributes	Frequence	Percent
Education level of household head	No education	46	23
	Primary education	120	60
	Secondary education	33	16.5
	Higher education	1	0.5
Marital status of household head	Single	15	7.5
	Married	172	86
	Widowed	2	1
	Divorced	11	5.5
Sex of household head	Male	155	77.5
	Female	45	22.5
Employment status of household head	Employed	98	49
	Not employed	102	51
Awareness	Yes	53	26.5
	No	147	73.5
Residence of household	Sangasanga	50	25
	Oster bay	100	50
	Changalawe	38	19
	Vikenge	12	6

Employment is evenly split between employed (49%) and jobless (51%). A significant percentage (73.5%) are unaware of services or programs, while only 26.5% are aware. The data suggests that a significant portion of households lack formal education. Moreover, a certain geographic distribution, with Oster Bay having the highest concentration (50%), followed by Sangasanga (25%), Changalawe (19%), and Vikenge (6%).

Table 4: Test of double hurdle estimation

Type of Test	Computed ϕ	Critical ϕ	Decision
Model adequacy test	200.43	30.6	Adequate Model
Tobit Restriction -LR ϕ	20.7	9.12	Tobit model rejected
Covariance test ($\rho = 0$)	1.55	5.21	Interdependence of errors not rejected

It is crucial to demonstrate the many tests that were carried out in accordance with the methodology's requirements before moving on. First, the model has a substantial explanatory power because the estimated Wald chi2 statistics is significantly larger than the crucial value. Second, the Tobit model was rejected according to the likelihood ratio test for Tobit limitations (computed LR ϕ of 20.97> 9.12). As a result, several sets of factors influence the decision to save and how much to save.

Ultimately, the fact that the calculated value of the covariance test statistics (1.55) is smaller than the critical value (5.21) suggests that, for the specified degree of freedom, the hypothesis of a zero coefficient of variance cannot be rejected. Therefore, the independent double hurdle model is better than the Tobit model with a single equation. The results of the double hurdle model, in which studies of families' decisions to save and the amount they save were evaluated independently, are displayed in Table (5) below. The maximum likelihood technique of estimation is used to estimate the first hurdle (probit model) and the second hurdle (truncate regression models) based on the factors that influence saving decisions and saving amounts, respectively.

Determinants of saving decision among Semi-urban Households in Tanzania

The results from the Double Hurdle model, which separates the decision to save (Tier 1: Probit model) from the amount saved (Tier 2: Truncated regression), offer nuanced insights into saving behavior among semi-urban households in Tanzania. In the first tier, key determinants of the decision to save include household size, employment status, risk aversion, years of education, household expenditure, and awareness. Employment and awareness significantly increase the likelihood of deciding to save, with employment status showing the strongest positive effect. In contrast, larger household sizes, more years of education, and higher household expenditures significantly reduce the likelihood of saving. The negative effect of education in the decision stage may reflect higher educational attainment being linked with different financial priorities or obligations.

In the second tier, the amount saved is significantly influenced by many of the same variables but in the opposite direction for some. For example, years of education, while negatively associated with the decision to save, is positively and significantly related to the amount saved (219.43 Tsh per month), suggesting that more educated individuals save larger amounts once they choose to save. Similarly, household expenditure has a strong positive effect on the amount saved (3,450.5 Tsh per month), indicating that high-spending households may set aside more money for future expenses. Employment status also has a significant and positive impact on the amount saved (961.56 Tsh), reflecting the role of steady income in facilitating savings accumulation.

Table 5: Double Hurdle Model showing determinants of saving decision among Semi-urban Households in Tanzania

Variables	Tier1 (probit model of saving decision)	Tier2 Truncated regression of saving (Amount in Tsh)
Household head Age	-0.00379 (-0.00535)	263.34*** (-0.00487)
Household Residence	0.00926 (-0.0637)	-1.0939 (-0.0545)
Household Size	-0.1480*** (-0.00051)	-0.00046 (-0.00047)
Employment status	0.518*** (-0.0467)	961.56** (-0.0433)
Risk evasion	0.128** (-0.062)	-0.063 (-0.0558)
Years of Education	-0.383*** (-0.0554)	219.43*** (-0.0473)
Household Expenditure	-0.975*** (-9.1406)	3450.5*** (-8.8206)
Marital status	0.0206 (-0.0268)	-0.0023 (-0.0238)
Household Sex	-0.00608 (-0.0043)	2400.45 (-0.00384)
Awareness	0.167*** (-0.0367)	1109.67 (-0.0347)
Access to financial institution	0.0154 (-0.0164)	146.576*** (-0.0156)
Constant	1.550*** (-0.272)	350.47*** (-0.242)

Other variables with significant effects in the second tier include access to financial institutions and household head's age. Access to financial institutions significantly increases the amount saved (146.58 Tsh), which emphasizes the importance of financial infrastructure in enabling higher saving levels. Age, while not significantly affecting the decision to save, shows a strong and positive relationship with the amount saved (263.34 Tsh), implying that older individuals may save more conservatively or with specific goals in mind, such as retirement or family support.

Overall, the results demonstrate that the decision to save and the amount saved are influenced by different sets of factors, and sometimes the same variables operate in opposing directions across the two tiers. For example, education and expenditure negatively influence the decision to save but positively impact how much is saved among those who do. This underscores the usefulness of the Double Hurdle model in distinguishing between these two stages of saving behavior. The findings suggest that financial literacy, employment opportunities, and access to financial institutions should be prioritized to enhance both participation in saving and the capacity to save larger amounts among semi-urban households.

Determinants of saving amount among Semi-urban Households in Tanzania

The comparison of the Poisson (pois) and Zero-Inflated Poisson (ZIP) models based on Akaike's Information Criterion (AIC) and Bayesian Information Criterion (BIC) suggests that the ZIP model provides a better fit for the data. The ZIP model has lower AIC (2456.95) and BIC (2490.68) values compared to the Poisson model (AIC = 2594.09, BIC = 2594.39), indicating improved model performance despite having more parameters (20 degrees of freedom vs. 15). Additionally, the higher log-likelihood value for the ZIP model (-1208.5) compared to the Poisson model (-1232.1) further supports the conclusion that the ZIP model fits the data more effectively.

Table 6: Akaike's information criterion and Bayesian information criterion

Model	Observation	ll(null)	ll(model)	Degree of freedom	AIC	BIC
pois	200	-1290.7	-1232.1	15	2594.09	2594.39
zip	200	-1231.7	-1208.5	20	2456.95	2490.68

The results from the Zero-Inflated Poisson (ZIP) model in Table 7 reveal several statistically significant relationships. First, age of the household head has a negative and significant effect on the amount saved. Specifically, as age increases, the amount saved decreases, suggesting that older household heads are less likely to save large amounts. This negative relationship also extends to the inflate component, indicating that older individuals are more likely to be in the group that does not save at all. This aligns with literature suggesting that younger individuals may save more actively due to future-oriented financial planning.

Awareness of saving behavior is positively and significantly associated with the amount saved. Households where the head is aware of saving practices save significantly more than their unaware counterparts, as shown in the positive marginal effect. This finding reinforces the importance of financial literacy and targeted education campaigns in encouraging saving among low-income and semi-urban populations. Awareness also significantly reduces the likelihood of being in the non-saver group, demonstrating its dual impact on both saving decision and saving amount. Geographic location plays a critical role in saving behavior. Households in Changarawe, Oster Bay, and Vikenge villages are all significantly more likely to save higher amounts than those in the reference village. These villages may have better financial infrastructure or community-level savings practices that promote saving behavior. The magnitude of the marginal effects is especially large

for Vikenge village, indicating a particularly strong saving culture or access to resources there. This geographical variation suggests the need for location-specific financial policies or interventions.

Table 7: Zero inflated Poisson on determinants of saving amount among Semi-urban Households in Tanzania.

Variables	Amount of saving	Inflate	Marginal effects
Household head Age	-0.303***		-0.1207***
	(-0.00102)		(0.004056)
Awareness	-0.346**		0.13874**
	(-0.0174)		(0.070348)
Household Size	-0.00016		-0.00062
	(-0.00015)		(0.00608)
Changarawe village	0.569**		0.21183**
	(-0.0231)		(0.085802)
Oster bay village	0.795**		0.299376**
	(-0.0229)		(0.085902)
Vikenge village	0.163***		0.642337***
	(-0.0234)		(0.089924)
Access to financial institution	0.577**		0.235863**
	(-0.0316)		(0.132651)
Employed	0.0454***		0.180014***
	(-0.0143)		(0.056343)
Primary education	0.0181		0.07169
	(-0.0257)		(0.100747)
Secondary education	0.0374		0.149404
	(-0.0747)		(0.302455)
Tertiary education	0.0199***		0.078624***
	(-0.0333)		(0.131609)
Household head is Married	0.0592		0.227693
	(-0.0197)		(0.074611)
Household head is single	0.105		0.412701
	(-0.0229)		(0.089026)
Household head is widowed	0.264		1.125645
	(-0.0583)		(0.277069)
Distance to financial institution		0.683***	-0.22137***
		(-0.124)	(0.035276)
Number of financial institutions in Mzumbe ward		0.0672	0.02452
		(-0.0196)	(0.007156)
Sex (Male)		0.00761	-0.00279
		(-0.862)	(0.316264)
Risk evasion		-0.000443***	0.000162
		(-0.00011)	(3.85E-05)
Constant	1.393***	-2.825***	
	(-0.0439)	(-0.139)	

Access to financial institutions also has a strong, positive, and significant effect on saving amounts. Households with access to these institutions save more and are less likely to belong to the group

that does not save. This highlights the critical role of financial inclusion in enabling saving behavior, possibly through access to safer saving mechanisms, credit, or saving incentives. Interestingly, although distance to financial institutions is positively associated with the amount saved in the count model, it negatively affects the likelihood of being in the saving group (inflate model), suggesting that the burden of traveling longer distances might discourage some households from participating in formal savings, even if those who do participate save more.

Regarding education and employment, being employed and having tertiary education are both positively and significantly associated with higher saving amounts, emphasizing the role of income and human capital in financial behaviors. However, primary and secondary education levels do not show significant effects, suggesting that higher education may uniquely improve financial planning capabilities. Additionally, tertiary education shows a positive marginal effect, indicating its broader influence on promoting a saving mindset.

Lastly, risk aversion and sex do not show a strong or consistent impact on saving amounts. Risk aversion is statistically significant but with a very small negative coefficient, indicating minimal practical influence. Similarly, being male does not significantly affect saving behavior, which may imply that gender-based differences in saving are not pronounced in this context. The model's constant term is significant and positive in the count model but negative in the inflate model, reaffirming that the baseline likelihood of saving and the amount saved is shaped by a combination of observed and unobserved factors.

Discussion

The findings from this study underscore the complexity of household saving behavior in semi-urban areas of Tanzania, highlighting that both the decision to save and the amount saved are shaped by diverse socio-economic and demographic factors. In line with existing literature, employment status emerged as a critical determinant of both saving participation and the amount saved. Employed individuals are more likely to save and save significantly more, consistent with the idea that regular income reduces liquidity constraints and enhances the capacity to set aside funds (Loayza et al., 2000; Beck & Demirgüç-Kunt, 2008). These results affirm the importance of promoting stable employment opportunities to improve household financial resilience.

Awareness of saving practices also significantly influenced both the decision to save and the amount saved, confirming the pivotal role of financial literacy in fostering positive financial behaviors. This is in agreement with findings by Lusardi and Mitchell (2014), who emphasized that financial knowledge increases confidence in managing money, encourages long-term planning, and boosts saving behavior. In the context of semi-urban Tanzanian households, awareness may serve not only as a cognitive resource but also as a motivational trigger, especially in areas where formal financial systems are less prevalent. Efforts to expand financial education and inclusion, therefore, hold considerable potential to enhance household-level savings and long-term investment.

Interestingly, the results revealed that years of education had a negative impact on the decision to save but a positive effect on the amount saved. This dual effect might reflect a shift in financial priorities or perceptions among more educated individuals, who may delay saving until reaching a higher income threshold. This aligns with the Permanent Income Hypothesis (Friedman, 1957), which suggests that individuals base consumption and saving on long-term income expectations rather than current income. Once the decision to save is made, higher education likely equips individuals with better planning and investment skills, leading to larger saving amounts, as

supported by studies such as Potrich et al. (2015). This dual influence points to the need for targeted interventions that not only promote saving among the less educated but also encourage early saving habits among more educated populations.

Another notable finding is the strong and positive impact of household expenditure on the amount saved, despite its negative effect on the decision to save. This pattern suggests that high-expenditure households, once they choose to save, may do so more substantially to meet large or frequent financial needs. This supports the view of saving as both precautionary and goal-oriented, especially in households with high financial demands (Carroll & Weil, 1994). Moreover, access to financial institutions also had a significant positive effect on saving amounts, aligning with global evidence that financial inclusion facilitates greater financial participation and saving capacity (Demirgüç-Kunt et al., 2015). These results advocate for broader access to banking services in semi-urban areas to enable households to better manage their resources and future uncertainties.

Conclusion

Using both the Double Hurdle and Zero-Inflated Poisson models, this study investigates the motivation for semi-urban Tanzanian households to put away money. Household saving behavior is determined by a variety of socioeconomic and demographic variables. In large part these are the same factors that decide what the benefits will be when a household saves money: how much it can save, or under what conditions savings are likely to be used. And when such decisions are made Key determinants include status of employment, awareness of saving practices, access to credit sources for capital acquisition finances needed in an advanced time period as well as money in the form of food or fuel today. Household outlays on consumer goods and services, as well as level of education, each have individual effects on saving patterns. But most important are factors which vary by whichever criterion is currently satisfied. While education and household outlays oppose the initial yield on savings--in other words they have a negative effect on returns from each dollar saved--once that decision has been made both will favor subsequent reduction factors multiplying any given sum put away. Saving is not only about money but also a matter of experience, direction and context.

Age, household size and risk aversion also had a significant effect, though their impact is more nuanced. For example, older head-of-household tended to save larger amounts but were less likely to decide to save in the first place, perhaps because of retirement or reduced predictability for income. Awareness of saving methods and access to financial institutions constituted an ever-reliable source of help at both stages, however, which stresses the value that financial literacy and participation can add. This finding underscores the importance of distinguishing between the reasons people save and how much they save, seeing that these may not always be influenced by identical factors.

In light of these findings, several recommendations can be made. First, financially-oriented educational seminars ought to be more widespread and adapted for the semi-urban population in order to ensure people are informed about saving as well as what savings options are available. Aiding such as this from community workshops, digital financial education and schools can eliminate many of the misconceptions and fears that have long plagued financial planning. Second, greater access to financial institutions—especially if focused on financially ‘untouched’ or geographically isolated areas—can significantly raise levels of household savings. The arrival of mobile banking or village savings and loan associations offer practical solutions where there is no formal banking infrastructure.

Lastly, policies to enhance employment and income stability—especially for youths and women—ought to be given priority. Steady employment not only increases the probability of saving, but also amounts saved, offering a roadmap out of poverty and into financial security. In addition, special attention must be paid to the management of household outlays through budgeting and credit guidance services. Given that this aspect is instrumental in the scale of household savings, measures which help households control and plan their expenses indirectly raise their savings capacity. In summary, promoting saving behavior involves a multi-pronged strategy combining access to funds, education in finance, creating employment, and supportive policy settings. `

References

Ahmad, N. A., & Noor, N. A. M. (2020). Determinants of saving behaviour among staff in International Islamic University College Selangor (KUIS). International Journal of Accounting, Finance and Business, 5(28), 135–144.

Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Beck, T., & Demirgüç-Kunt, A. (2008). Access to finance: An unfinished agenda. The World Bank Economic Review, 22(3), 383–396. https://doi.org/10.1093/wber/lhn021

Beck, T., Demirgüç-Kunt, A., & Levine, R. (2007). Finance, inequality and the poor. Journal of Economic Growth, 12(1), 27–49. https://doi.org/10.1007/s10887-007-9010-6

Bisat, A., El-Erian, M. A., & Helbling, T. (1997). Growth, savings, and investment in the Arab economies. IMF Working Paper WP/97/85.

Campbell, J. Y. (1987). Does saving anticipate declining labor income? An alternative test of the permanent income hypothesis. Econometrica, 55(6), 1249–1273. https://doi.org/10.2307/1913560

Carroll, C. D., & Weil, D. N. (1994). Saving and growth: A reinterpretation. Carnegie-Rochester Conference Series on Public Policy, 40, 133–192. https://doi.org/10.1016/0167-2231(94)90007-8

Collins, D., Morduch, J., Rutherford, S., & Ruthven, O. (2009). Portfolios of the poor: How the world's poor live on $2 a day. Princeton University Press.

DeJuan, J., Seater, J. J., & Wirjanto, T. S. (2006). Testing the permanent income hypothesis: New evidence from West-German states. Empirical Economics, 31(3), 613–636. https://doi.org/10.1007/s00181-005-0027-6

Demirgüç-Kunt, A., Klapper, L., & Singer, D. (2017). Financial inclusion and inclusive growth: A review of recent empirical evidence. World Bank Policy Research Working Paper No. 8040. https://doi.org/10.1596/1813-9450-8040

Demirgüç-Kunt, A., Klapper, L., Singer, D., & Oudheusden, P. V. (2015). The Global Findex Database 2014: Measuring financial inclusion around the world. World Bank Policy Research Working Paper No. 7255. https://doi.org/10.1596/1813-9450-7255

Friedman, M. (1957). A theory of the consumption function. Princeton University Press.

Fuchs-Schündeln, N., & Spies, J. (2014). Culture and household saving behavior. The Economic Journal, 124(576), 516–538. https://doi.org/10.1111/ecoj.12089

Iqbal, M., & Nawaz, M. A. (2021). Macroeconomic and demographic determinants of gross domestic savings: Evidence from youth-dominated Asian economies. Asian Economic and Financial Review, 11(1), 27–41. https://doi.org/10.18488/journal.aefr.2021.111.27.41

Ismail, S. (2019). Determinants of attitude towards saving behavior: An empirical investigation. Journal of Accounting and Finance in Emerging Economies, 5(3), 321–331.

Ismail, S., Serguieva, A., & Singh, S. (2017). Determinants of saving behaviour among Malaysians. International Journal of Academic Research in Business and Social Sciences, 7(11), 791–803. https://doi.org/10.6007/IJARBSS/v7-i11/3526

Kamaluddin, F. (2018). Household expenditure patterns and financial savings: A Malaysian perspective. Employees Provident Fund (KWSP).

Loayza, N., Schmidt-Hebbel, K., & Servén, L. (2000). What drives private saving across the world? The Review of Economics and Statistics, 82(2), 165–181. https://doi.org/10.1162/003465300558674

Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. Journal of Economic Literature, 52(1), 5–44. https://doi.org/10.1257/jel.52.1.5

Matchaya, G. C. (2011). Savings mobilization for growth and poverty reduction in Malawi. African Journal of Business Management, 5(17), 7474–7486.

Modigliani, F., & Brumberg, R. (1954). Utility analysis and the consumption function: An interpretation of cross-section data. In K. K. Kurihara (Ed.), Post-Keynesian Economics (pp. 388–436). Rutgers University Press.

Ndikumana, L. (2014). Savings, capital flight, and African development. In Monga, C., & Lin, J. Y. (Eds.), The Oxford Handbook of Africa and Economics: Volume 2: Policies and Practices (pp. 449–470). Oxford University Press.

Perry, V. G., & Morris, M. D. (2005). Who is in control? The role of self-perception, knowledge, and income in explaining consumer financial behavior. Journal of Consumer Affairs, 39(2), 299–313. https://doi.org/10.1111/j.1745-6606.2005.00016.x

Piyarat, R. (2019). Household saving behavior and determinants of saving and investment forms in Thailand. Journal of Business and Economic Development, 4(3), 131–138. https://doi.org/10.11648/j.jbed.20190403.13

Potrich, A. C. G., Vieira, K. M., & Kirch, G. (2015). Determinants of financial literacy: Analysis of the influence of socioeconomic and demographic variables. Revista Contabilidade & Finanças, 26(69), 362–377. https://doi.org/10.1590/1808-057x201501040

Schmidt-Hebbel, K., Webb, S. B., & Corsetti, G. (1996). Household saving in the developing world: Concepts, findings, and lessons. The World Bank Economic Review, 10(3), 529–556. https://doi.org/10.1093/wber/10.3.529

Shim, S., Barber, B. L., Card, N. A., Xiao, J. J., & Serido, J. (2009). Financial socialization of first-year college students: The roles of parents, work, and education. Journal of Youth and Adolescence, 39(12), 1457–1470. https://doi.org/10.1007/s10964-009-9432-x

Xiao, J. J., & Fan, J. X. (2002). A comparison of saving motives of urban Chinese and American workers. The Family and Consumer Sciences Research Journal, 30(4), 463–495. https://doi.org/10.1177/1077727X02030004007