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**Article**

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## GENERAL & APPLIED ECONOMICS | REVIEW ARTICLE

# Understanding sociodemographic factors influencing households' financial literacy in Tanzania

Josephat Lotto<sup>1\*</sup>

**Abstract:** This paper primarily aimed at examining the influence households' demographic characteristics on the level of their financial literacy in Tanzania. The paper employs secondary data from the FinScope survey conducted by Financial Sector Deepening Trust (FSDT). To do so, the study employed both bivariate and multivariate analytical techniques. The study, reveals that the adult population exhibits large financial literacy gap- and, therefore, adults should not be considered as a homogenous group- rather gender, age, education and income levels of the households, which are showcased in this study, to also be taken into consideration while designing financial literacy improvement public initiatives. In particular, the study concludes that men are more inclined to have higher levels of financial literacy than women something which limits their financial decisions making ability. It is also concluded that younger households and those with higher income levels are equipped with higher financial literacy levels. Likewise, more educated and employed households tend to have higher levels of financial literacy. It, therefore, follows that programs to foster financial



Josephat Lotto

### ABOUT THE AUTHOR

Josephat Lotto is a Senior Lecturer in Finance and Corporate Governance at the Institute of Finance Management in Tanzania. He graduated with a PhD in Corporate Governance and Financial Strategies from the UK in 2012. He also holds MSc in Finance, MBA and CPA (T). Josephat's research interest lies at the heart of Corporate Governance and Financial strategies where the current paper forms a part of the research agendas around the broad theme. He has published over 30 research papers in various academic journals and he is a reviewer of several academic journals published by some reputable publishing houses such as Wiley & Sons, Inc, Taylor & Francis Group which publishes quality peer-reviewed journals under the Routledge; Multidisciplinary Digital Publishing Institute (MDPI), Elsevier, IEEE Access and Springer Nature. Such Journals include; *International Journal of Finance and Economics*, *African Journal of Economics and Management Studies*, *Development Policy Review*, *The European Journal of Finance, Sustainability Journal* and *International Advances in Economics*.

### PUBLIC INTEREST STATEMENT

Financial literacy, for the sake of brevity, is an ability to understand money and how it works—including its management, investment, and expenditure. Being financially sound always works in your favor as it enables you to make choices on investments that can help you double your balance. Even when you are busy with your professional or personal life, putting your money in the right places, i.e., the stock market or the money market can help you become more profitable. Financial illiteracy is one of the greatest challenges facing many countries and has a main implication for the sustainability of the economy. The improvement of level of public financial literacy enhances the community's ability to use financial products and services to improve the people's welfare. High level of public financial literacy will have an impact on increasing level of financial inclusion that subsequently reduces the gap and low rigidity income trap to improve the people's welfare that will lead to a decrease in poverty rates.

knowledge among households should be targeted at marginalized groups like women, the elderly and those with low incomes and educational attainment. As the main contribution of the research, it is highlighted that this is a pioneer study in the Tanzanian context, by proposing a model that identifies which socio-economic and demographic factors influence the propensity for a low or high financial literacy level.

**Subjects: Corporate Finance; Investment & Securities; Business, Management and Accounting**

**Keywords: age; gender; education; financial literacy**

### 1. Introduction

Financial literacy has recently attracted the attention of researchers across the globe, and particularly Tanzania. Tanzania is currently implementing its industrialization agenda where a stable financial system is a pillar. According to Kelly Hall (2008) in his own words The existence of a stable financial system has much to do with the prudent management of risk by financial institutions, particularly credit risk—which is the risk of financial loss arising from the default of customers and counterparties. Of course, credit loss can never be eliminated completely, but good systems and controls can certainly help contain it. Nonetheless, history tells us that financial institutions are quite myopic in their lending behavior—they will tend to be quite liberal with credit when the economic times are good, only to repent of their generosity and tighten lending standards when times turn bad. This ‘procyclicality’ in lending behavior can spell danger for over-leveraged borrowers and, by extension, for the financial institutions themselves, especially if the economic downturn is sharp or prolonged. In a financially educated society, however, borrowers will be less likely to take on more debt just because credit is cheap and freely available. As a result, they will have a far better chance of riding out an economic downturn without defaulting on their debt repayments—which, in turn, will help minimize the bad debt experience of financial institutions and, by doing so, help bolster the stability of the financial system

Financial illiteracy is one of the greatest challenges facing many countries including Tanzania, and has a main implication for the sustainability of the economy, Braunstein and Welch, (2002). The improvement of level of public financial literacy enhances the community’s ability to use financial products and services to improve the people’s welfare Hogarth (2002). High level of public financial literacy will have an impact on increasing level of financial inclusion that subsequently reduces the gap and low rigidity income trap to improve the people’s welfare that will lead to a decrease in poverty rates, Ehrbeck (2014). Furthermore, high levels of financial literacy also affect the level of financial inclusion which contributes positively to sustainable local and national economic growth and support the stability of the financial system, Ehrbeck (2014). According to Christine (2014), an increasing level of financial inclusion will contribute positively to sustainable local and national economic growth and support the stability of the financial system.

The United Nations’ Sustainable Development Goals (SDGs) purposely recognized the importance of financial literacy by pronouncing goal number four on “ensuring inclusive and equitable quality education and promote life-long learning opportunities for all.” The purpose of this goal is to provide direction to countries towards improved financial literacy level of users and providers of financial services by inspiring these countries to integrate financial education in their local curricula by the end of year 2020. All these actions have been employed after the global financial crisis of 2008 that proved lack of investors’ awareness about financially literate. A decade later, after the global financial crisis of 2008, financial consumers still have very low skills and knowledge on personal funds management which is scary. It is categorically highlighted in Tanzania Development Vision (2025) published in 2010 that financial illiteracy hampers access to financial services, which negatively affects the country’s economic

competitiveness in the global market. Apparently, financial literacy is an issue of serious concern globally where international organizations like World Bank and International Monetary Funds (IMF) are encouraging countries worldwide to adopt policies regarding financial education, Calderone (2014). Among such countries include Tanzania which, through the Bank of Tanzania (BOT), established the national financial education framework in 2016 with the sole aim of boosting levels of financial literacy among households, Bank of Tanzania (2016).

According to Monticone (2012) evaluation of financial education programs like, “Promoting Financial Capability in Kenya and Tanzania” and “Uganda Microfinance Consumer education Program” reveal that beneficiaries of these programs are more likely to; have a bank savings account, increase their financial education awareness and subsequently improve their financial decision-making such as savings behaviors, financial planning and budgeting as compared to those who did not participate in such programs. Contrary to Monticone (2012), Willis (2008) and Fernandes et al. (2014) contend that such financial education programs may have little contribution in improving the lives of those enrolled into the programs.

A number of literatures in financial literacy are not consistent as to whether the financial education programs improve financial decision-making competence of the beneficiaries (Hassan Al-Tamimi & Bin Kalli, 2009; Gallery et al., 2011; Brown & Graf, 2012). Of more interest is Tanzania where regardless of the inauguration of National Financial Education Framework of 2016 majority of Tanzanians are still financially illiterate and relatively poor. Finscope (FinScope Tanzania, 2017) survey shows that the level of financial literacy in Tanzania is relatively low and most of the households in the country obtain financial information from radios, televisions as well as informally from friends and family members. According to the survey only 45% of Tanzanian adults can manage their personal finances and about 25% of the adults over 55 years old have their financial plans after retirement.

Meanwhile, there is lack of scholarly works in Tanzania which guide the decision makers on designing a sustainable financial literacy program. Literature suggests that adult population exhibits a large financial literacy gap- and, therefore, adults should not be considered as a homogenous group- rather gender, age, education and income levels of the individual should be considered in designing such financial educational programs.

Therefore, this study aims at examining the sociodemographic factors affecting households’ financial literacy in Tanzania using data from Fin-Scope (FinScope Tanzania, 2017). To the best of the authors’ knowledge, this study is among the first of its kind to be conducted in Tanzania. The results of this study will go a long way in aiding interested stakeholders and policy makers when designing their outreach programs to enhance and improve financial literacy among citizens.

## 2. Related literature

According to financial literatures, a new individual’s economic behavior is replicated in their personal finance management behavior and their respective economic decision-making process. Therefore, capacity building program on financial literacy is expected to impart changes in the behavior and attitude of households’ financial management which may probably have an effect, not only on the financial management of households but also the financial management of small and medium enterprises. In long term, the existence of good financial management may have an impact on business continuity, Kalantarie et al. (2013).

Many conceptual definitions of financial literacy include some relation to the ability of managing personal finances. These references are as brief as Americans having “managed their finances poorly” due to poor financial literacy (Lusardi and Mitchel, 2009) or as detailed as ability to keep track of cash resources and payment obligations, knowledge of how to open an account for saving and how to apply for a loan, basic understanding of health and life insurance, ability to compare competing offers, and planning for future financial needs (Emmons, 2005, p. 336). Extensive definitions, like the one used by Emmons (2005), have a tendency to intricate upon specific

attributes of financial literacy or even, in some cases, possible ways to operationally measure financial literacy. The noticeable point is that literacy is more than simply a measure of knowledge.

Moreover, financial literacy indicates an individual's ability to perform several tasks related to money, including but not limited to earning, protecting and spending that money (Remund, 2010). The available literature based on several studies indicate that well developed financial skills are required for effective money management (Carswell, 2009; Collins, 2007). Financial literacy is "exercising in real life situations the ability to make informed judgments and to take effective decisions regarding the use and management of money" (Collins, 2007).

Literature such as Hilgert et al. (2003) recognizes formal education to directly influence financial literacy. In their survey the authors argue that individuals who did not go through post-secondary education are the ones who are likely to be financial illiterate. Some studies have reported a positive relationship between households' education level and financial literacy. For example, Chen and Volpe (1998); Lusardi and Mitchell, (2009) found that individuals having greater education levels have higher access to financial knowledge and are, consequently, more financially literate. As clearly reported by Murphy (2013), the level of education is also a relevant determinant of financial literacy. The author revealed that education is not important in determining financial literacy levels. Similar conclusions were drawn from a survey by Lusardi and Mitchell (2008) who observed that some people with low levels of education scored high on questions related to financial matters implying that even those with little education can be financially literate. According to the author education and the focus of education affects the level of financial literacy.

Concerning the influence of employment on financial literacy, studies from the U.S and the Netherlands, such as Lusardi et al. (2009) and Rooij et al. (2011), report that employment is an insignificant factor influencing financial literacy and financial decisions of the households. Contrary to this finding, Worthington, (2008); Hassan Al-Tamimi and Bin Kalli (2009); Alessie et al. (2011); and ANZ surveys, (2008), (2015) show that employment, as a variable, is strongly associated with financial literacy and financial decisions.

Financial literacy is also associated with age groups. One would not expect to find many teenagers or old non-finance professionals and other senior citizens to have considerable financial literacy level. According to Lusardi et al. (2009) half of the Americans aged 50 and above are not able to answer two questions on simple interest and inflation. Same authors highlighted that the young aged (between 20 and 30 years) lack financial literacy. In an analysis made in 2008 by the National Longitudinal Survey of Youth, it has been discovered that financial literacy is lower among young adults.

The studies such as Alessie et al. (2011); ANZ surveys, (2008); Crossan et al. (2011); Lusardi & Mitchell, (2011); Rooij et al. (2011) and Brown and Graf (2012) propose an inverted "U" shape relationship between financial literacy and age, demonstrating the highest financial literacy during the households' mid-age and lowest at young and old ages. Similarly, Agarwal et al. (2009) and Atkinson and Messy (2012) also confirm that financial literacy is low among young and elderly individuals. Nevertheless, other studies such as Gallery et al. (2011) confirm that financial literacy follows a linear relationship, meaning that it is an increasing curve in which case the older households tend to have more financial education followed by younger ones. On the other hand, some studies from developing countries such as Hassan Al-Tamimi and Bin Kalli (2009), and Hawat et al. (2016) from United Arab Emirates and Malaysia, respectively, consider age as an insignificant factor of determining households' financial literacy and financial decisions. Such studies which report insignificant relationship between age and financial literacy and financial decisions are consistent with that by Dvorak and Hanley (2010) in USA. According to Dvorak and Hanley (2010) age is not a statistically significant variable in influencing financial literacy and financial decision making.



As far as the relationship between gender and financial literacy, as well with financial decisions is concerned, a lot of previous findings are inconclusive. Most of these studies especially, Lusardi and Mitchell, (2008); Dvorak and Hanley (2010), Alessie et al. (2011), and Bucher-Koenen and Lusardi (2011); and ANZ Surveys, (2008); (2015); Kumar et al. (2013) and Hawat et al. (2016) report that concerning basic financial literacy females exhibit relatively lower basic financial education compared to their male counterparts. Literature reveals that women assess their own financial literacy level more conservatively. According to Lusardi and Mitchell (2011), this finding is the same both for developed countries and the developing countries. According to Chen and Volpe (1998) women have lower financial knowledge which ultimately hinders their ability of making responsible financial decisions. The differences found in gender may be a result of the socialization of individuals. This, according to Edwards et al. (2007), may be associated with parental upbringing. Most parents maintain different expectations for sons and daughters, as they have higher expectations concerning work and savings for their sons, thus they are more likely to talk about money with their sons.

Contrary, Wagland and Taylor (2009), Alessie et al. (2011), Crossan et al. (2011), and Thapa and Nepal (2015) consider gender as a non-factor which influences the financial knowledge and financial decisions of the households.

Regarding income, Atkinson and Messy (2012) report a direct relationship between individual's income and their financial literacy levels. Monticone (2012) found that wealth has a little, but positive, effect on financial literacy. In turn, Hastings and Mitchell (2011) provide experimental evidence to show that financial literacy is related to wealth. In a study on financial literacy, students from high-income families had significantly higher knowledge levels than students from low-income families (Johnson & Sherraden, 2007). In addition, low-income individuals are more likely to drop out of school, something that, in the long run, contributes to their financial illiteracy (Calamato, 2010).

### **3. Methodology**

#### **3.1. Data**

This paper employs secondary data from the FinScope survey (2017) conducted by Financial Sector Deepening Trust (FSDT) in collaboration with the BOT, National Bureau of Statistics (NBS) and Ministry of Finance and Planning (MoF). This is a national survey representative of adult individuals living in Tanzania. The survey considers an adult to be any Tanzanian who is 16 years or older at the time of conducting the survey. The survey targeted 1000 enumeration areas (EA) from five regions in Tanzania mainland namely Iringa, Singida, Mtwara, Rukwa and Mwanza. However, only 998 EA were reached and achieved to interview 9,459 respondents from the sample of 10,000 respondents. However, because the focus of this study is on the household level analysis data is collapsed to 3,812 households limiting respondents to the heads of the households.

#### **3.2. Variable description**

##### **3.2.1. Financial literacy**

The measurement of financial literacy is not an easy task. According to Lusardi and Mitchell (2011), as quoted "While it is important to assess how financially literate people are, in practice it is difficult to explore how people process economic information and make informed decisions about household finances." In this paper financial literacy is measured in terms of ability of households to manage their personal finances. This definition is adapted from Ballati, (2007) who defines financial literacy as "exercising in real life situations the ability to make informed judgments and to take effective decisions regarding the use and management of money". In other way, financial literacy reflects the households' behavior and ability to manage personal finance which is the behavior built from knowledge and skills achieved from the understanding of basic concept of finance issues. Also according to Remund (2010) a person, who understands and applies financial knowledge and skills to manage his finances is considered to be financially literate

To understand the households' financial literacy level, FinScope (FinScope Tanzania, 2017) survey tested the ability of the respondents to use the financial literacy knowledge to tackle a real life personal finance management problem. The respondents were asked the following question; "When you see that you are going to run out of money, how you ensure that your money lasts until you get money again?" This question was followed by 10 choices as indicated below, and the respondent who qualified to answer this question is the one who does not receive money from someone like relatives or one whose bills are not settled by somebody else (this question was asked before in the survey to exclude those who depend on other people financially).

The choices 1–5 were considered as the possible strategies which a financially literate individual may choose from to manage a potential shortage of cash-flows, and the remaining choices 6–10 reflect poor understanding of financial strategies to manage personal finance problems. A respondent was required to choose only one answer, and to avoid guess work "don't know" option is also provided for as a choice as previously proposed by Manton et al., (2006); Hill and Perdue, (2008); Lusardi and Mitchell, (2009); van Rooij et al. (2011)

- (1) Use savings
- (2) Borrow money
- (3) Cut down on expenses
- (4) Don't repay debt
- (5) Don't travel/cut down on social activities
- (6) Ask family/friends to assist
- (7) Cut down on meals
- (8) Take children out of school
- (9) Visit relatives/Stay with relatives
- (10) Don't know

In this paper we consider financial literacy as an ordinal variable which takes the value of 1 if the respondent chooses either of the answers from 1 to 5 and 0 otherwise. The rest of the variables are described in Table 1.

### 3.3. Model specification

The model used in this paper is a *financial literacy model* loaded with factor variables affecting financial literacy. The model is specified as follows:

$$pr(FL_i = 1) = \theta(\beta_0 + \beta_1 age_i + \beta_2 age_2_i + \beta_3 gender_i + \beta_4 edu_i + \beta_5 emp_i + \beta_6 hhincome_i + \varepsilon_i). \quad (1)$$

where

$FL_i$  = financial literacy of household head  $i$

$edu_i$  = the highest education level attained by the household head  $i$ .

$age_i$  = Age of household head  $i$

$emp_i$  = the employment status of the household head  $i$

$gender_i$  = The gender of the household head  $i$

$hhincome_i$  = household head's income



**Table 1. Variables description**

S/n	Variable	Description	Nature
1	Age ( <b>age</b> )	Number of years lived by the household head	<i>Continuous Variable</i>
2	Gender ( <b>gender</b> )	Sex of the household head	<i>Dummy variable:</i> It takes the value of 1 if the head of the household is male and 0 if female.
3	Income( <b>hhincome</b> )	Represents household annual income	<i>Continuous Variable</i>
4.	Education level( <b>edu</b> )	Represents highest level of education reached by the head of household.  (i) No Formal Education  (ii) Primary  (iii) Secondary  (iv) Tertiary	<i>Categorical variables:</i> 1 if no formal education, 0 otherwise; 1 if primary education, 0 otherwise; 1 if secondary education, 0 otherwise; 1 if tertiary education, 0 otherwise.
5.	Employment( <b>emp</b> )	Represents an employment status of head of household whether he/she is employed or not	It is a dummy variable with 1 value if household head is employed and 0 otherwise.

$\varepsilon_i$  =the error term

As observed in the model, all variables get into the model with a linear term, except age, which besides the linear term has a quadratic term. The inclusion of the quadratic term is due to the expectation, as reflected in the literature, that the relationship between financial literacy and age is nonlinear and of a parabolic shape i.e. middle-aged individuals have higher propensity to join the group with higher financial literacy levels, when compared to young and elderly individuals. Therefore, a positive coefficient is expected for the linear term of the variable age and a negative coefficient for its quadratic term. For all other variables positive marginal effects are expected.

#### 4. Analytical evidence

##### 4.1. Bivariate analysis

The bivariate analysis was performed to examine the association between financial literacy and demographic and social economic variables, and the results presented in Table 2 below. The table shows that majority of the households (about 69%) are predominantly headed by males with only 31% of the households headed by females. This result is not surprising because the gender gap in financial literacy is widening across the world, and women, especially older ones, are said to have low financial literacy knowledge compared to their men counterparts because of traditional societal roles, Bucher-Koenen et al. (2014). Similar results are reported by Lusardi and Mitchell (2011) for USA households depicting that female households do lack confidence on finance-related matters. It is further understood that most of older women generations are believed to be more concerned with caring their children, and more likely to stay home, hence less likely to get engaged into circumstance to learn and know issues related to financial literacy.

The location where households reside is a very important factor in determining the level of households' knowledge about financial education. Table 2 shows that about 28% of the

**Table 2. Financial literacy and factor variables**

	Observations	Financial literacy	
		Literate (%)	Illiterate (%)
Overall sample	3,812	26.97	73.03
Gender			
Male	2,643	28	72
Female	1,169	25	75
Information			
Formal	43	46	54
Informal	3,769	29	71
Location			
Rural	2,751	27	73
Urban	1,061	28	72
Risk attitude			
Risky	1,664	33	67
Otherwise	2,148	22	78
Employment status			
Formal	243	28	72
Otherwise	3,569	27	73
Education			
No formal	1,177	23	77
Primary	2,144	28	72
Secondary	104	29	71
Tertiary	387	31	69

**Source:** Author's Computation from FinScope Survey Data-2017

households participated in the survey live in urban areas while majority of the households (about 72%) live in rural areas. Moreover, those hailing from urban areas are the ones with access to financial products and educations because most of the financial institutions which offer financial products are located in urban areas.

This may imply that urban households have more access to financial products and are thus expected to participate more in investment activities as opposed to rural households.

Furthermore, Table 2 shows that most of the households, about 56% have primary school education while 31% of the households do not have any formal education. The table also shows that about 10% of the households have secondary education with only 3% of the households having tertiary education. It is commonly understood that low or lack of formal education cause illiteracy in financial issues. This may imply that education levels enable household heads to understand financial issues easily than their illiterate counterparts. Regarding employment status, only about 6% of the households are reported to be formally employed while majority of the households (about 94%) are either unemployed or employed in the informal sector.

Additionally, only 1% of the households are reported to obtain financial information from formal sources such as financial institutions while a majority of the households (about 99%) use informal channels of obtaining financial education such family members and friends. Obtaining financial information from informal sources could be misleading because individuals from whom such information is derived might lack proper orientation on financial matters. On the other hand, formal sources of information improve levels of financial literacy because this source of information is proper and reliable.

The results show that financial literacy increases with the level of education, and this may imply that education levels enable household heads to understand financial issues easily than their illiterate counterparts. This observation attests to the fact that urban areas have more financial institutions relative to rural areas, therefore, with high number of financial institutions in urban

areas, more household heads from urban areas are expected to be financially literate than rural household heads.

Concerning risk behavior or attitude of head of households, as measured by whether he or she borrowed a loan, approximately 43% of the household heads took or borrowed loans therefore; they have risky behavior while about 57% of the household heads are less risky. This observation can partly be explained by the fact that head of households who actively engage in borrowing should always gather and analyse necessary information regarding loan products before taking loans, and such risky behavior of households indicates their financial literacy level.

#### 4.2. Probit regression results

The results of the nonlinear model estimation are shown in Table 3 by means of probit estimators. Table 3 shows the coefficients for the model variable and the marginal effects calculated on the median of ordinal scale variables and ratio and observed frequency of the variables in nominal scale.

On the relationship between household's gender and financial literacy level, the results show that the variable gender has a positive coefficient (0.356), which is statistically significant at 1% on the estimated model. This may imply that men are more inclined to join the group with higher levels of financial literacy, the findings which are similar to that of Chen and Volpe (1998). Keeping everything constant, men have a 13.8% higher probability of being part of group with high financial literacy levels, when compared to their women counterparts. The results are also in line with those of Lusardi and Mitchell (2011), Atkinson and Messy (2012), and Brown and Graf (2012) who insist that women usually have poor financial literacy understanding than men. Some other findings also provide reasons why women have lower financial literacy levels; for instance, there are differences in the way men and women are educated and the way they cope with financial matters/issues (Edwards et al., 2007; Calamato, 2010); women are pointed out as having greater difficulty than men in performing financial calculations, and they also do not

Table 3. Probit regression results		
Variables	Coefficients	Marginal effect
Constant	-0.524**	
	(2.302)	
Gender	+0.356***	0.138***
	(3.0254)	(3.0166)
Education	+0.105**	0.159**
	(2.0297)	(2.0146)
Employment	-0.166*	0.143
	(1.978)	(0.0754)
Age	0.159***	0.328***
	(3.0364)	(3.0435)
Age2	-0.175**	-0.328***
	(2.0364)	(3.0435)
Income	+0.296***	+0.0845**
	(3.987)	2.657
Observations	3812	3812
Wald Chi2 (6)	167.08	235.35
Significance	0.0000	0.0000
Pseudo R2	0.0739	0.1589
% correctly classified	53.69	61.89

master the primary financial concepts and have lower knowledge level, something which hinders making responsible financial decisions (Sekita, 2011).

The results, further, reveals that education is positively related to financial literacy and enters in the model with a positive coefficient of 0.105. The relationship between education and financial literacy is reported to be statistically significant at 5% significance level. The results suggest that financial literacy increases sharply along with the household's educational level. Quantitatively, a marginal increase in household's educational level increases the probability of one belonging to the group with the highest financial literacy level. This finding is in line with Chen and Volpe (1998).

Furthermore, the results show that household's income positively affect their financial literacy level and the relationship is statistically significant at 1% significance level. The estimated model shows that income is one of the most essential factors to explain the individuals' financial literacy level. The results imply that an increase in the household's income level significantly and gradually elevates their financial literacy level, and that the desire for household's wealth accumulation motivates his desire to increase their financial knowledge. The results of this paper are consistent with those reported by Johnson and Sherraden (2007), Monticone (2012), Hastings and Mitchell (2011), Lusardi and Mitchell (2011), and Atkinson and Messy (2012).

Moreover, the relationship between employment status and financial literacy level of the household is reported to be positive and statistically significant at 1% significant level. The low financial literacy results reported among the unemployed can be attributed to the fact that the unemployed are not often exposed to sophisticated financial transactions and financial education programs related to the workplace as highlighted by Worthington, (2008).

As previously predicted the variable "age" enters the model with a positive sign while the corresponding  $age^2$  enters with a negative sign. Both  $age$  and  $age^2$  have relationships which are statistically significant at 1% and 5% significant levels, respectively. This shows that age has a non-linear effect on financial literacy. This observation is in line with Van Rooji et al. (2007) who found a negatively skewed relationship between financial literacy and age. This show shows that financial literacy is found to be high among the young and declining significantly among aged households. The implication of the results found in this study is that high levels of financial literacy observed among the young respondents could be attributed to their activeness in learning and their association with businesses and employments which are the avenues for learning and getting financial literacy skills as opposed to aged households who are less active in business and most of whom are retired from employment. In the same vein, the lowest financial literacy levels observed in those households older than 55, according to Malmendier and Nagel (2011), is attributed to the declining cognitive ability that comes with old age.

### **5. A concluding remark**

This paper primarily aimed at examining the influence households' demographic features on the level of their financial literacy in Tanzania. The study reveals that the adult population exhibits large financial literacy gap- and, therefore, adults should not be considered as a homogenous group- rather gender, age, education and income levels of the households, which are showcased in this study, to also be taken into account while designing financial literacy improvement public initiatives. In particular, the study concludes that men are more inclined to have higher levels of financial literacy than women something which limits their financial decisions making ability. It is also concluded that younger households and those with higher income levels are equipped with higher financial literacy levels. Likewise, more educated and employed households tend to have higher levels of financial literacy.

The paper, therefore, recommends programs that foster financial knowledge to target marginalized groups like women, the elderly and those with low incomes and educational attainment. The findings of this paper have crucial implications for policy makers and financial education programs.

The work is limited to only one round of the Tanzania's FinScope-2017 survey. There are other rounds of the household survey data. A similar study that uses panel data which includes more than one wave of the survey data is highly recommended. Also as it is based on a survey research design and cross-section data, the methodology used sets limits for addressing the endogeneity issue. As the main contribution of the research, we highlight that this study is a pioneer in the Tanzanian context, by proposing a model that identifies which socioeconomic and demographic variables influence the propensity for a low or high financial literacy level.

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#### References

- Agarwal, S., Driscoll, J. C., Gabaix, X., & Laibson, D. (2009). The age of reason: financial decisions over the life cycle and implications for regulation. *Brookings Papers on Economic Activity*, 2009(2), 51–117. <https://doi.org/10.1353/eca.0.0067>
- Alessie, R., Rooij, V. M., & Lusardi, A. (2011). Financial literacy and retirement preparation in the Netherlands. *Journal of Pension Economics & Finance*, 10(4), 527–545. <https://doi.org/10.1017/S1474747211000461>
- ANZ survey of adult financial literacy in Australia. (2008). Australia: The Social Research Center, ANZ Bank.
- Atkinson, A., & Messy, F.-A. (2012). Measuring financial literacy: Results of the OECD/International Network on Financial Education (INFE) pilot study. *OECD Publishing [Working Paper n. 15]*.
- Bank of Tanzania. (2016). *Financial sector deepening report*. BoT.
- Bcher-Koenen, T., & Bettina, L. (2014). The long shadow of socialism: On East-West Germany difference in Financial Literacy. *MEA discussion paper 2082-14*, Munich doi:10.2139/ssrn.2497391.
- Braunstein, S. F., & C. Welch, (2002). Financial Literacy. An overview of Practice, Research, and Policy. *RePEC Research*, 88(11), 445–457.
- Brown, M., & Graf, R., (2012). Financial literacy, household investment and household debt: Evidence from Switzerland. *Swiss Institute of Banking and Finance (S/BF-HSG) Working papers on Finance No. 13/1*.
- Bucher-Koenen, T., & Lusardi, A. (2011). Financial literacy and retirement planning in Germany. *Journal of Pension Economics & Finance*, 10(4), 565–584. <https://doi.org/10.1017/S1474747211000485>
- Calamato, M. P. (2010). Learning Financial Literacy in the Family. *Unpublished Masters Thesis*. The Faculty of Sociology, Sao Jose State University.
- Calderone, M. (2014). The role of financial literacy and of financial education interventions in developing countries. *DIW Roundup, Deutsches Institute für Wirtschaftsforschung*, Politik im Fokus 34.
- Carswell, A. T. (2009). Does housing counseling change consumer financial behaviors? Evidence from Philadelphia. *Journal of Family and Economic Issues*, 30(4), 339–356. <https://doi.org/10.1007/s10834-009-9170-y>
- Chen, H., & Volpe, R. P. (1998). An analysis of personal financial literacy among college students. *Financial Services Review*, 7(2:), 107–128. [https://doi.org/10.1016/S1057-0810\(99\)80006-7](https://doi.org/10.1016/S1057-0810(99)80006-7)
- Christine, L. 2014. Empowerment Through Financial Inclusion. *US Fed News Service Including US State News*.
- Collins, J. M. (2007). Exploring the design of financial counseling for mortgage borrowers in default. *Journal of Family and Economic Issues*, 28(2), 207–226. <https://doi.org/10.1007/s10834-007-9061-z>
- Crossan, D., Feslier, D., & Hurnard, R. (2011). Financial literacy and retirement planning in New Zealand. *Journal of Pension Economics & Finance*, 10(4), 619–635. <https://doi.org/10.1017/S1474747211000515>
- Dvorak, T., & Hanley, H. (2010). Financial literacy and the design of retirement plans. *The Journal of Socio-economics*, 39(6), 645–652. <https://doi.org/10.1016/j.socec.2010.06.013>
- Edwards, R., Allen, M. W., & Hayhoe, C. R. (2007). Financial attitudes and family communication about students' finances: The role of sex differences. *Communication Reports*, 20(2), 90–100. <https://doi.org/10.1080/08934210701643719>
- Ehrbeck, T. (2014). *Financial inclusion and development: Recent impact evidence*. CGAP Publications.
- Emmons, W. (2005). Consumer-finance myths and other obstacles to financial literacy. *St. Louis University Public Law Review*, 24(1), 335–362.
- Fernandes, D., Lynch, J. G., & Netemeyer, R. G. (2014). Financial literacy, financial education and downstream financial behaviours. *Management Science*, 60(8), 1861–1883. <https://doi.org/10.1287/mnsc.2013.1849>
- FinScope Tanzania. (2017). *Insights that drive innovation*. Financial Sector Deepening Trust (FSDT).
- Gallery, N., Cameron, N., & Chrisann, P. (2011). Framework for assessing financial literacy and superannuation investment choice decisions. *Australasian Accounting Business and Finance Journal*, 5(2), Article 12.
- Hall, K. (2008). Banking and Payments. *Conference on deepening financial capacity in the pacific region, Sydney, Australia*
- Hassan Al-Tamimi, H. A., & Bin Kalli, A. (2009). Financial literacy and investment decisions of UAE investors. *The Journal of Risk Finance*, 10(5), 500–516. <https://doi.org/10.1108/15265940911001402>
- Hastings, J., & Mitchell, O. S. (2011). How financial literacy and impatience shape retirement wealth and investment behaviours. *National Bureau of Economic Research Working Paper*

- Hawat, J., Rubayah, Y., Hashim, N. A., Zarina,, & Wel, C. A. C. (2016). Financial literacy and investment decisions in Malaysia and United Kingdom: A comparative analysis. *Malaysian Journal of Society and Space*, 12(2), 106–118.
- Hilgert, M. A., Hogarth, J. M., & Beverly, S. G. (2003). Household financial management: The connection between knowledge and behavior. *Fed. Reserve Bulletin*, 89(7), 309–322.
- Hill, R. R., & Perdue, G. (2008). A methodological issue in the measurement of financial literacy. *Journal of Economics and Economic education research*, 9(2), 43–57.
- Hogarth, J. M. (2002). Financial literacy and family & consumer sciences. *Journal of Family & Consumer Sciences*, 94(1), 14–28.
- Johnson, E., & M. S. Sherraden. (2007). From Financial Literacy to Financial Capability among Youth. *The Journal of Sociology and Social Welfare*, 33(4), 119–146.
- Kalantarie, T. M., Hosein, Z. Z., Tabatabaei, S. M., & Roshan, A. (2013). The relation between financial literacy, financial wellbeing and financial concerns. *International Journal of Business and Management*, 8 (11), 63–75. *Canadian Center of Science and Education, Ottawa, Canada*. DOI:10.5539/IJBM.V8N11P63.
- Kumar, S. A., Barua, S. K., & Varma, J. R. (2013). Financial literacy among working young in urban India. *Indian Institute of Management Working Paper (W.P No. 2013-10-02)*.
- Lauren, W. (2008). Against Financial Literacy Education. *Iowa Law Review*, 94(1), 197–285.
- Lusardi, A. (2009). Financial literacy: An essential tool for informed consumer choice. *NBER Working Paper 14084*.
- Lusardi, A., Mitchell, O. S., & Curto, V. (20089). Financial literacy among the young: Evidence and implications for consumer policy. In *Pension Research Council Working Paper: Pension Research Council, University of Pennsylvania*.
- Malmendier, U., & Nagel, S. (2011). Depression babies: Do macroeconomic experiences affect risk-taking? *Quarterly Journal of Economics*, 126(1), 373–416. <https://doi.org/10.1093/qje/qjq004>
- Manton, E. J., English, D. E., Avard, S., & Walker, J. (2006). What College Freshmen admit to not understanding about personal Finance. *Journal of College Teaching and Learning*, 3(3), 43–54.
- Monticone, C. (2012). The status of financial education in Africa. *OECD Working Papers on Finance, Insurance and Private Pensions, No. 25, OECD Publishing*.
- Murphy, J. L. (2013). Psychosocial Factors and Financial Literacy. *Social Security Bulletin*, 73(2), 178–205.
- Remund, D. L. (2010). Financial literacy explicated: The case for a clearer definition in an increasingly complex economy. *Journal of Consumer Affairs*, 44(2), 276–295. <https://doi.org/10.1111/j.1745-6606.2010.01169.x>
- Rooij, V. M., Lusardi, A., & Alessie, R. (2011). Financial literacy, retirement planning and household wealth. *Netspar Discussion Papers DP 08/2011-072*.
- Rooji, V. M., Lusardi, A., & Alessie, R. (2007). Financial literacy and stock market participation. *MRRRC Working Paper No. 2007-162*.
- Thapa, B. S., & Nepal, S. R. (2015). Financial literacy in Nepal: A survey analysis from college students. *NBR Economic Review, 2nd International Conference on Economics and Finance*. Nepal, Kathmandu.
- Wagland, S. P., & Taylor, S. (2009). When it comes to financial literacy, is gender really an issue? *Australasian Accounting Business and Finance Journal*, 3(1), 13–25.
- Worthington, A. C. (2008). knowledge and Perception of Superannuation in Australia. *Journal of Consumer Policy*, 3(1), 349–368.



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