

Application of Logistic Modeling in Exploring Household Financial Education Levels amongst Middle Class in South Africa

Lekunze Joseph Nembo, Matebele G and Luvhengo Usapfa*

Department of Agricultural Economics and Extension, North West University Business School, 4213, Palmer Crescent, Mmabatho, Mahikeng, South Africa

Abstract

In South Africa, financial literacy is crucial for households to make informed decisions. A total of 600 middle class households' heads were interviewed. Pearson correlation model was used to establish association and logistic regression to identify the most significant factors. The most significant factors at micro-level were employment type (0.003), position at work (0.001), wages and salaries (0.032) while savings (0.09), repo rates (0.09), unemployment (0.31) as well as wages and salaries (0.10) were the most significant variables at the macro-level. Financial literacy among middle class households was inadequate and formal education is not equal to financial education.

Keywords: Household debts; Financial literacy; Logistic regression; District level; South Africa

Introduction

The past decades in South Africa have witnessed increasing household debts which have affected macroeconomic growth and increased poverty levels. The World Bank has argued that, the existence of great competition and sophisticated market brought about by global economic reform has raised serious concern on increased household debt ratios, reduced purchasing power parity and declining disposable income [1]. In South Africa, households are left to make individual choices regarding their financial well-being and as such financial literacy is crucial to make informed decisions. In making such decisions, critical questions that need to be asked are; to what extent are the South African households aware that the financial choices made today determine their financial future and well-being? And that, their ability to save today has a positive impact on the country's economic growth? Symanowitz and Refera concur that, absence of financial literacy amongst citizens in a country often leads to spending of income on less priority items which may push their living expenses above their income level resulting in increased debts, households' sustenance and reduced household's savings [2,3].

Contextualisation of household debts in South Africa

In the past five years, household debts and the increasing levels of poverty, inequality and unemployment in South Africa is associated with micro and macro level socioeconomic variable changes. These debts are often times driven by external shocks such as inflation, higher interest rate and inadequate regulatory structures decreases the value of the debts and in the long term over burden borrower repayment schedule. Literature survey on household debts in South Africa has revealed the current financial crises affecting the country are to some extent a consequence of debt position of the majority households. This has resulted in people relying on multiple debts to finance emergency household operations Allen and Giovannetti.

The World Bank stated that, household's debt management is a process and income earners must develop strategies to minimise debts on consumables and invest in assets as a strategy to maintain household's stability. Such stabilization strategy improves liquidity levels for individual households and enables them to gain long term financial growth. In South Africa, the authorization of lending operations to institutions other than the banks provides impetus for people to acquire loans with little or no collateral securities [4].

DeBelle in a study in Australia bolstered the argument and found that, uncontrolled lending by formal and informal institutions increases household debts and repayment regime lowers the level of disposable income of the household [5]. Consequently, the future income of households is affected and without proper macro level development structures in place result in credit crunch.

Prinsloo defined household debt as an obligation or liability arising from borrowing money or taking goods or services on credit. Usually a debt contract is an essential part of the debt agreement between one person or organization and another [6]. A debt contract, normally states the terms of borrowing, the interest and redemption payments that the borrower must make and what collateral the borrower has to provide. In South Africa, reforms such as the Green Paper on Skill Development and the White paper on Education has also brought some changes on education and training approaches with regard to household's financial management [7]. However, the changes are minimal and their effects generally remain insignificant when measured against increasing levels of household debts in the country. A study by Mahlo revealed that, South African household savings rate is declining and the government and other financial institutions have been emphasizing the necessity for increasing households saving while reducing household debts nationally [8]. Meniago in a study of households affirmed that 'household's debt in South Africa is often affected by changes in income as well as the prime interest rate and are abnormally higher compared to the savings' [9]. In an economy such as that of South Africa, where volatility is a factor of ex-ante shocks, a stable and controlled macroeconomic balance is expected if and only if lower level economic parameters are to balance. The reason being that, decreasing households' savings in South Africa means an increasing dependent on foreign capital inflows for investments which normally

***Corresponding author:** Usapfa Luvhengo, Lecturer Agricultural Economics, Department of Agricultural Economics and Extension, North-West University, Mmabatho-2735, South Africa, Tel: 0183892727; 0727715376; E-mail: 27375196@nwu.ac.za

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attracts exorbitant interest rates [10]. The World Bank further found that, although there exist strong argument as to why savings benefit both the saver and national economic growth, there is clear evidence of declining savings culture and increasing debt levels amongst South African households compared to most emerging economies similar to that of South Africa.

Odhiambo has indicated that, theoretically, countries with a higher savings rate display higher levels of economic growth and in South African, economic growth rate has slumped from 5.3% per capita in 2005 to 1.3% in 2015 and is currently less than 1% in the second quarter of 2017 [11]. The effect is an increase in inflation rate from 3.5 in 2005 to nearly 4.6% in 2015 and is currently slightly above 6% in 2017. The solution is economic difficulties that have resulted in increased household debts obtained from both formal and informal financial institutions as well as other micro-finance lending institutions. Thus, Meniago argues households' debt in South Africa has increased disproportionately to their earned income resulting in increased household poverty level. The statement that, savings are key to the development of private investment and reflects the level of a country economic power's is solid. Therefore, household savings drive the increase of investment in the long run [12,13]. Nevertheless, a great challenge exists in the South African setting, where domestic saving ratio is on a declining trend resulting in declining GDP growth. This statement is confirmed by Figure 1 which shows the relationship between GDP growth and savings ratio in South Africa from 2006 to 2016.

Prinsloo has argued that, to achieve an improved economic growth and evolution, the aggregate saving rate in South Africa has to improve to 20% and must constantly be above the GDP to confirm a prolonged growth in real incomes of the majority of South African citizens [14]. Hence, looking at the positive impact of the relationship between debt levels, savings and economic growth, the articles explore household debt levels among middle class families in a district in the North West province of South Africa. The South African Saving Institute have argued that, the household debt situation in South Africa is worsen by inflation and has resulted in lending institutions charging higher interest and suggests that, if individual in a household saves, productivity will increase and new jobs will be created in the economy [15].

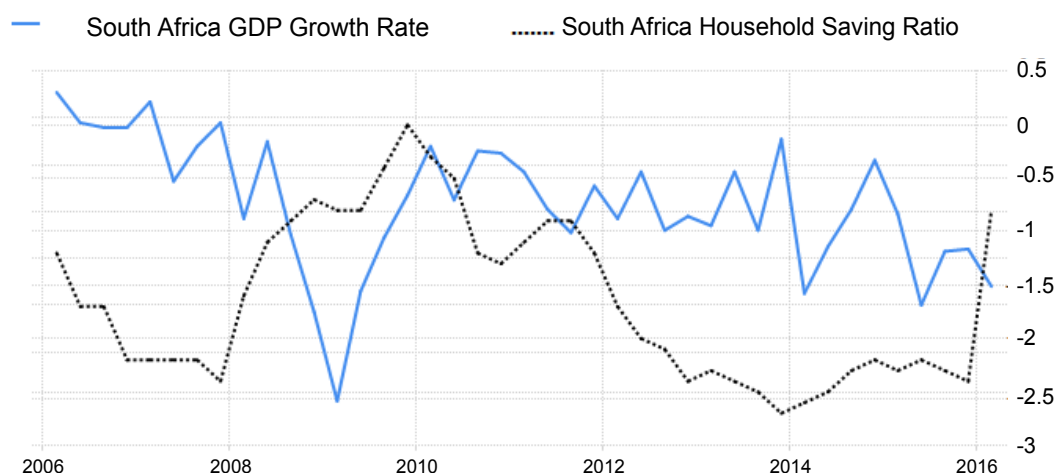
Conceptual framework adopted in the work

Theoretically, studies on household debts have been largely on a national level and in most cases took a contextual approach and argued from a neo-liberal position. Swanson and Chermack affirms that, theories are formulated to explain, predict, and understand phenomena and, likewise, to challenge an existing knowledge within the compass of a critical bounding assumptions. A theoretical framework is the construction that can maintain or confirm a theory of a research field [16]. This study is contextualised on the assumptions that, South African society comprises of households with rational and irrational judgements with regards to financial decisions and selections. Hence the article through this framework seek to tone up the linkage between household debt levels and financial literacy awareness among South African and provide some strategies for exploring the linkage between household debt levels and savings in South Africa at a district level as indicated in Figure 2.

Furthermore, literature on household debt levels in South Africa have demonstrated that, increasing debt levels in the rural area is influenced by different agents and some of these genes are linked to the environment within which the house is located, associated socioeconomic and demographic environments as well as financial data [17]. So, based on these literatures, a framework was developed illustrating the kinship between these components and household debt position. The framework provides a comprehensive structure on the factors that affects household's ability to make informed financial decisions within the district. The sensibility of this framework is to heighten the power to see what is moving on with the data; what is relevant and what is not and provide an insight as the article is locally established.

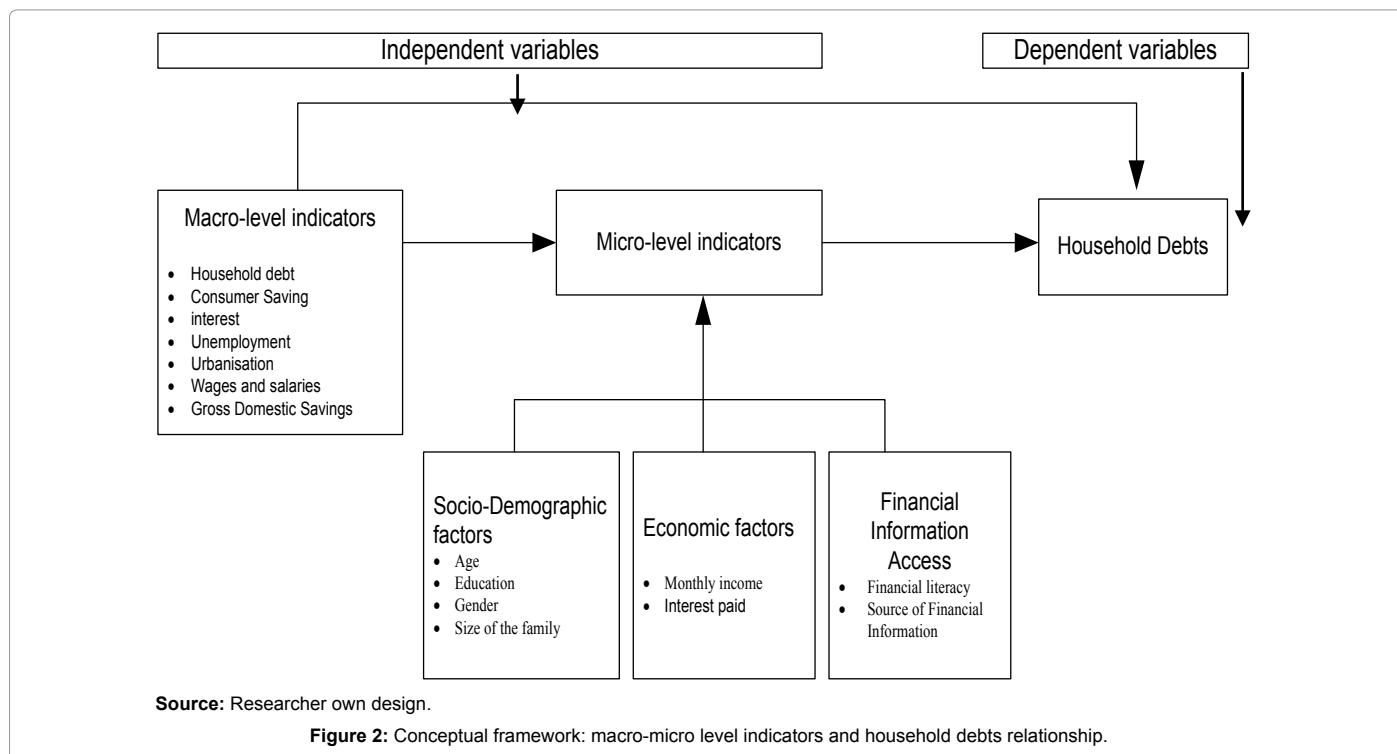
Material and Construction Method

The survey took place in the Ngaka Modiri Molema District (NMMD) in the North West Province of South Africa and the district consists of five local municipality areas with an estimated 842,699 inhabitants of which 60.9% are of the ages of 15 to 64 ages. The district unemployment rate is figured at 33.7% with that of youth at 44.10%, which is above the national average of about 26%. A family in the district



Source: Adapted from of South Africa 2016.

Figure 1: South African GDP growth rate and household saving ratio.



has an average size of 3.6 people per household with 42.5% headed by a female (Local Government Authority Report, 2016). The data type used in the study is cross-sectional and focused on middle class households that are either working or doing business and have acquired a loan from any formal or informal financial institution in the past five years. According to World Bank middle class population is a segment of the total population that are economically stable and are gaining an income through participating in either task or business activities to sustain their livelihood. In this study the middle class household refers to households whose head are working within the district as well as those in business. A total of 600 middle class households in the district (NMMD, 2016) were identified to have conformed to the criteria and the study adopted a simple random approach in which 60 middle class households' member (s) was chosen and interviewed using a semi-structured questionnaire. A total of 38 middle income employees and 22 business people were interviewed using questionnaires and the information was captured and analysis using Statistical Package for Social scientist version (23.0).

Data analysis method

Three analytical techniques (univariate, bivariate and multivariate) were used to analyze and present the data. The Pearson Moment Correlation Coefficient (PMCC) measured the strength or weakness of association between variables using the formula below.

The product moment correlation coefficient models

$$\rho = \frac{n \sum xy - \sum x \sum y}{\sqrt{[n \sum x^2 - (\sum x)^2 - n \sum y^2 - (\sum y)^2]}}$$

Where ρ represents the correlation coefficient, n is the number of observation and x and y are the variables under testing. The PMCC was applied both at micro and macro level in order to infer the induction effect of the macro-level factor on micro-level position as far as the

Measure of Association	Coefficient measure
1	Perfectly Strong Positive
0.75	Strongly Positive
0.5	Moderately positive
-0.75	Strongly negative
-1	Perfectly Strong negative

Table 1: Correlation coefficient and results interpreted guide.

household debt position was concerned. The scale used to measure and interpret the association is explained in Table 1.

Logistic regression was used to analyze related factors that significantly perpetuate middle income household debts in the district either negatively or positively. The equation below illustrates the logistic regression equation.

Economic model

$$HH_{debt}(\pi) = f(\text{edu, age, HHsize, Age, Gndr, emp, inc, finlit, knwman, finsrc}),$$

Where the Household debt- $HH_{debt}(\pi)$ is a function of many factors illustrated in the function such as education, age, household size, gender, employment, income, financial literacy, knowledge management, income and knowledge of financial sources. This economic function was later transformed into the econometric function which is defined in eqn. (1) as follows:

$$\log\left(\frac{\pi}{1-\pi}\right) = \alpha + \sum \beta_i x_i + \varepsilon \quad (1)$$

Where π is the household debt burden which defines the state of and individual household debt burden and a reflection of the financial literacy level of a household which was measured as "1"? The study assumed that, if the average household debt of an individual household

was greater than and equal (\geq) to ZAR 7500 per month, then, the households' financial literacy level is poor and 0 for otherwise. Meniago using data on credit report from South supports the assumption and comment that, the majority of people obtaining credit from financial institutions with averages over R7000 are defined to be debt burden. Hence, in the eqn. (1), α denotes a constant term and β_i parameter coefficient estimators of variable x_i associated with the individual household debt level and $p < 0.05$ was applied to test the statistical difference between the estimators. The equation was specialized and conceptualized in Statistical Software (SPSS 23. 0) as follows:

$$Y_{HHdebt} = Y_1 + Y_2 + Y_3 + \dots + Y_k \quad (2)$$

Where Y_{HHdebt} is the household debt variable, Y_k are the variables that are estimating factors influencing debt as illustrated in the economic model. The study group variables into micro-level and macro-level and Table 2 depict variable name, definition, measurement and expected signs.

Macro-level indicators used in the study

Dependent variable

- Household debt from financial

Independent variables

- Consumer price index (2016=100)
- Interest Rate
- Unemployment

- Urbanization
- Wage and salaried workers, female (% of females)
- Gross domestic savings (% of GDP).

The validity of the questionnaires were pre-tested and the structured interview questions were also pre-tested using 10 middle class households randomly selected from the study population. Identified difficulties during the pre-testing process were recorded and corrective measures were implemented before the actual field data collection process commences. The reason being that, conclusions derived from the results generated using the instrument need to reflect the objective of the study. The internal consistency and reliability of the data was tested using Cronbach alpha. An alpha score that is greater than 0.70 is considered acceptable for social sciences. The results of the reliability tests are outlined in Table 3.

The mean of mean score coefficient of the Cronbach Alpha for all variables was 0.87 higher than 0.70 which is the minimum acceptable level and the implication is that, the instrument was valid and reliable.

Results Presentation and Findings

The study found youth of ages between 20-29 years with household debts constitute 32.5%, followed by adults of age between 40-49 years (28.75%). A relatively small percentage of the household debtors were aged 50 years or above. Hence, the current school curriculum do not adequately addresses financial literacy and management early in schools. As such, most newly employed professionals are not equipped with relevant financial skills to make proper investment decisions

Variables	Description of Variable	Method of measurement	Expected Sign
Age	Age of the respondents	1=<30; 2=31-45; 3=46+	+/-
Education status	Education of the respondents	0=no education; 2=primary; 3=secondary or higher	+
Gender	Sex of the respondents	1=Male; 2=Female	-/+
Size of the family	Number of people within the household	1=<3; 2=3+	+
Employment status	Employment position of the respondents	0=business; 1=business and employment; 3=employed only	-
Micro-Economics			
Monthly income	The income that the respondent earn in a month	1=<5000; 2=5001-7500; 3=7501-10,000; 4=10,000 or higher	-/+
Debt acquired	Amount of debt collected from the firms	1=<7,500; 2=7501or greater	+
Interest rates paid favorable	Interest rates paid favorable to stabilize the household income	1=Too much; 2=Moderate; 3=Too little.	-
Micro financial management			
Financial literacy	Knowledge of the advantages and disadvantages of borrowing from the lending financial institutions other than the banks.	1=Yes; 2=No	+/-
Knowledge of Financial management	Knowledge of financial information management	1=Yes; 2=No	+/-
Source of Financial Information	Source the respondent acquire financial information	1=peer; 2=radio; 3=television; 3=print media	+/-

Table 2: Socio-economic micro level indicators; description and measurement.

S/N	Variables	No of items	Cronbach's alpha	Mean Value
1	Household debt	12	0.92	0.95
2	Age of the respondents	13	0.77	0.79
3	Interest rate	10	0.7	0.73
4	Household Size	12	0.94	0.94
5	Salary and wages	14	0.94	0.91
6	Education	20	0.93	0.92
Mean of mean coefficient				0.87

Table 3: Reliability measures using Cronbach Alpha.

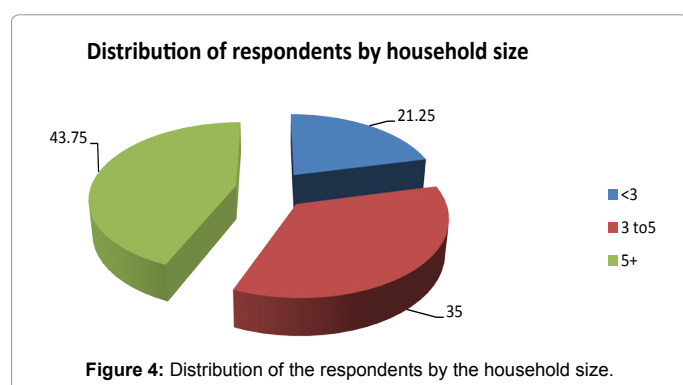
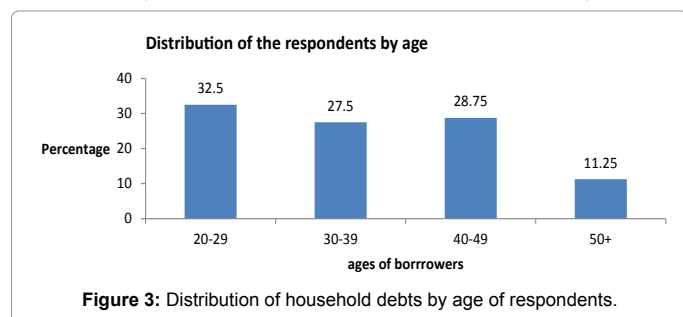
as earnings are mostly spent on consumption rather than savings as shown in Figure 3.

Alternately, as middle income earners in the district grow older, they turn to acquire financial management knowledge by experience resulting in lower household debts. The result concurs with that of Lewis and Messy who found that, financial literacy is a combination of the awareness, knowledge, skills, attitude and behavior necessary to make sound financial decisions and achieve individual financial well-being [18]. As a result, individuals who did not receive any level of financial education at an early age can only acquire that once they have experienced it as they grow older.

In exploring the educational status and loan acquisition of the middle class households in the district, 42.5% of the middle class family had metric qualification and about 33.75% had a national higher diploma while 23.75% had bachelor degrees or higher as shown in Figure 4. The article argues that, although one cannot equate formal education to financial education, the chances of citizens with little or lower level of formal education to acquire excess credit is higher compared to those with degrees and above. It may be argued that, those with higher levels of formal education may understand how interest rate works and the risk of using credit to service consumptions, those with inadequate formal education may not possess the same level of financial acumen. Furthermore, 45.75% of middle class in the district had household sizes of at least 5 members while 35% had household's sizes of 3 to 4 and those with 2 or less members stood at 21.25% as shown in Figure 4.

Considering that, in this article, household size is measured by the number of people under a household head who is responsible for food, clothes, shelter and all operational needs of that household. With the ever increasing rate of inflation, households with larger sizes are under tremendous financial pressure to meet these basic needs. As a result, the majority of them acquire loans from institutions, even when the interest rate is exorbitant to meet the basic needs of their households [19].

Discussing the socio-economic factors contributing towards



household debts as influenced by the participants' level of financial literacy in the district. The study found 47.5% of middle income households to have debt ranging from R5000 to R7000, 32.5% from R7001 to R7500 and 15% over R 7500. However, 52.5% of these households with debts revealed, it is not a serious burden and are quite comfortable in supporting their daily household operations while meeting monthly instalments. A further 47.5% reported debts to be a financial burden and difficult to service and constantly acquiring new loans to service old ones resulting in household debt burden. This argument is supported by Bond who commented that, the household debt situation is worsened by inflation, which resulted in lending institutions charging high interest rates and further confirmed by the South African Saving Institute assertion that, if individual saves, household's assets and productivity will increase and there wouldn't be need for credit during economic downturn.

The study explores respondents' household debts as an indication of their level of financial literacy in the district by asking questions that directly probe their knowledge on financial management. From the analysis, it was observed that, about 47.5% of the respondents never acquired loan from the financial institutions to re-invest but use it for basic household operations. On the same note, 27.5% obtain loans for re-investment in agricultural related businesses within the province. In as far as interest rate charged were concerned, the debtors were able to negotiate the interest rate depending on the debt service royalties that they were getting from the financial firms. For instance, the study found that 56.25% of all respondents were paying interest rates ranging from 25% to 29%, which is far higher than the repo rate of 10% and the rate commercial banks are to charge representing the majority cases as depicted in Table 4.

	N	%
Total	60	100
Household Debt		
<R 5000	4	5
R 5000 to R 7000	38	47.5
R 7001 to R 7500	26	32.5
> R 7500+	12	15
Household Debt burden		
No	42	52.5
Yes	38	47.5
Employer type		
Municipality		
Other services sectors	35	43.75
Private sector	11	13.75
Business of debtors		
None	38	47.5
Consumer business	5	6.25
Agriculture related	22	27.5
Transport business	5	6.25
Communication	10	12.5
Interest charged on the debt		
<20	12	15
25-29	45	56.25
30+	23	28.75
Monthly Savings		
<R 1000	42	52.5
R 1000-<R 2000	34	42.5
R 2000+	4	5
Financial Literacy		
High	26	32.5
Medium	28	35
Low	26	32.5

Table 4: Socio-economic characteristics of the debtors at household level.

The analysis further reveals 28.75% of households in the district pays over 30% interest on any amount they borrow from financial institutions. In addition, it was revealed that 52.5% had challenges in saving monthly while 42.5% were developing a saving culture. In the analysis, 5% of middle income earners were found to be saving an amount greater than R 2000. Such findings are in line with that of the South African Business Integrator and the National Development Plan (NDP, 2011) which found that, an increase in household savings nationally by 5.4% or more will create enough jobs to redress inequality and resolve the country's high rate of unemployment. Furthermore, "for South Africa to achieve this target, they need to find an investment that amounts to at least 25% of GDP from internal sources and such investment is the best fuel for sustainable economic growth and the only source of such an investment funding is household savings". The study found 32.5% of the households had in-depth knowledge of financial literacy while 35% had fair knowledge and 32.5 had little knowledge of financial literacy in the district as depicted in Table 4.

The strength of association between explanatory variables and household's debts was measured using Pearson Product Moment Correlation Coefficient as shown in Table 5. It was revealed that, education status of household heads were significant ($p < 0.05$) and positively correlated to household debt with a weak coefficient of 16%. The results affirms earlier findings that, household in the district with higher levels of education acquire less debts and avoid loans with exorbitant interest rates compared to those with inadequate level of education. Similarly, household debt levels turn to be low with increasing level of education in the district confirming the argument that, being educated does not equate to being financially literate but assist households in making informed decisions in the acquisition of loans [20]. Gender status of the respondents was positively associated with household debts with a correlation coefficient of 25% with $p < 0.05$.

That gender differentiation in the district affects the household debt position significantly does not ascertain a one to be better than

others even though the degree of association was weak.

Furthermore, a positive correlation was found between financial literacy and household debts and the level of associated were positive at 6% with $p < 0.1$. In this case, financial literacy of households in the district significantly influences its decision to acquire loans from financial institutions and the purpose of the loan.

Factors found to be negatively associated with household debt at the micro-level were marital status with a correlation coefficient of -0.19% and at $p < 0.1$. Hence, marital status influenced the household's propensity to acquire loan in the district, arguing that couples headed households may differ significantly in a decision to acquire a loan in terms of purpose, use and repayment risks. Similarly, it was observed that, the type of employment was negatively associated with household debt condition with a correlation coefficient of -0.29% and $p < 0.1$ confirming that, being employed does not mean reducing debt burden since the type of employment determine the monthly income of the household and ability to acquire credit.

Data on macro-economic factors influencing household debts from national level were further used to test the association between variables and household debts and establish if there exist any relationships to financial literacy. Findings as presented in Table 6 reveals savings per capita and interest rate to be inversely associated with household debt with a correlation coefficient of -76.3%, $p < 0.01$ and -12 %, $p < 0.01$ respectively. The article therefore argues that, savings of households and interest rates charge by financial institutions negatively influences the household's financial stability of the district. The strong negative, but yet significant association between interest rate and saving situation is a direct indication of how these two variables complement each other and have direct impact on household debts in South Africa. This national saving and interest positions do affect financial institutions micro level operation which may transfer these burdens to individuals at household levels while maintaining profitability.

HH debt	Age	Edu	Gder	MS	HHsize	Emp	Bus Typ	Intrst	Sav	FinLit
1										
0.05	1									
0.16**	-0.13	1								
0.25**	-0.29**	0.15	1							
-0.19*	0.1	0.06	-0.19	1						
0.11	-0.15	0.01	0.16	0.01	1					
-0.29*	0.11	-0.08	-0.21*	0.14	0.14	1				
-0.06	-0.05	-0.22*	0.18	-0.31**	-0.37***	-0.08	1			
0.15	-0.34*	0.36*	0.16	-0.14	0.11	0.03	-0.09	1		
0.17	0.06	-0.05	0.01	-0.18	-0.09	-0.08	0.09	0.1	1	
0.06*	0.21*	0.27*	-0.06	0.03	0	0.06	-0.42**	-0.07	0	1

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Table 5: Measurement of association between micro socioeconomic factors and household debts.

	HH debt	Interest rate	Save/capita	Repo rates	Unemployment	Urban	Wage and salaries
Household debt	1						
Interest Rate	-0.12	1					
Saving per capita	-0.763**	0.648**	1				
Repo rates	0.705**	0.565**	-0.162	1			
Unemployment secondary	0.537**	0.341	-0.154	0.457*	1		
Urbanization	0.973**	-0.217	-0.845**	0.579**	0.558**	1	
Wages and salaries earned	0.748**	-0.423*	-0.889**	0.215	0.390*	0.876**	1

Correlation is significant at the 0.05 level (2 tailed) and *correlation is significant at the 0.1 and *correlation is significant at 0.01.

Table 6: Measurement of association between macro-economic factors and household debts.

It was also observed that unemployment, wages and salaries earned per capita, was found to be positively correlated to household debts. The study found that unemployment and income earnings (wages and salaries earned) were strongly associated with household debts and were significant at 53.7%, $p < 0.01$ and 74.8%, $p < 0.01$ respectively. The implication may be as unemployment increases and income earning potential of citizens' decreases, the household debt position may deteriorate. The strong positive and significant correlation at the national levels is a direct reflection of how increase repo rates have increased the level of household debts citizens at the district level.

Using logistic regression to test the combined effect of micro socioeconomic factors on household debt in the district. The results reveal, age was associated with increased likelihood of increasing household debt burden (OR=1.89, 95% CI [0.98-3.65], $p < 0.1$) as a result poor financial education. This finding is a validation of earlier results using Pearson Correlation which found young, middle class adults to have less understanding on the impact of debts of households compared to middle and older adults in the district. The findings by implication confirm age as a factor that increases the likelihood of household debt in the district. Similarly, it was observed that income earned by respondents was associated with a significant and increased likelihood of household debts (OR=2.27; 95% CI [1.08-4.82], $p < 0.05$) in the district and by implication, as a household income earnings increase, so is the chance to access credit and given the inadequacy of financial skill and knowledge with majority of middle class in the district, the odds of them acquiring more loans increases as shown in Table 7.

Employment status at household level reveals a decreased in the chances of a household debt burden significantly (OR=0.21; 95% CI [0.07-0.59], $p < 0.05$) and by implication, households in the district with stable monthly income are more likely to acquire loans from financial institutions as oppose to households with variable income. The study proved that, employment status has a direct bearing in determining the odds of obtaining loans by a particular household in the district.

	Odds ratio	P>z	[95% Confidence Interval]	
Age	1.89*	0.057	0.980372	3.655874
Education	1.24	0.606	0.540018	2.874892
Gender	2.38	0.205	0.621157	9.167427
Marital status	1.02	0.979	0.252272	4.11722
Household size	1.43	0.389	0.631046	3.260024
Employment type	0.21**	0.003	0.074789	0.593713
Position	0.17**	0.001	0.065366	0.473917
Business type	0.53**	0.031	0.302133	0.944442
Salary	2.27**	0.032	1.075078	4.821236
Interest	0.87	0.808	0.303787	2.530482
Savings	2.03	0.226	0.643427	6.443481
Financial information	1.06	0.896	0.399064	2.858428

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Table 7: Logistic regression estimating household debt burden.

Household debt	Coefficient	Standard errors
Interest rate	1.67	0.035
Savings	-0.55***	0.09
Repo rates	0.48***	0.09
Unemployment	1.03**	0.31
Urbanisation	26.24	1.17
Wage and salaries	0.62**	0.1

*** $p < 0.001$; ** $p < 0.05$; * $p < 0.1$.

Table 8: Macro-level association of the factors affecting household debt.

The study found that, the odds of people in the district who are not working accessing loans are very slim and the odds of them accessing credit from informal financial sources other than formal financial firms may be higher.

Alternatively, position held at work and business type were found to be significant in reducing household debt burden (OR=0.17; 95% CI [0.06-0.47], $p < 0.05$) and (OR=0.53; 95% CI [0.30-0.95], $p < 0.05$), respectively. The study proves that, employees' position determines their income and the higher the income, the less the appetite for loans since the income may be sufficient to pay for the household's day to day operations. However, as an employee moves to a higher position within an organisation, so the odd for income to increase and the likelihood of a decrease in household debts. Likewise, it was found that the type of businesses a household does influences positively or negatively the odds of household debt and by implication, households with businesses that brings in more return and have good cash flow throughout the year are less likely to acquire loans compared to businesses with poor cash flow or seasonal in nature.

Exploring the macro-level factors at the national level in order to establish the effect of these factors at district as shown in Table 8, the study found GDP, savings to have a negative effect on the national debt with a coefficient of -0.55, $p < 0.001$. The implication is that, as the odds for GDP, savings reduced, so is the chances of household debts increasing. Variables such as unemployment, urbanisation, wages and salaries were significant predictors of household debts levels at national level and by implication; the increase in these variables also increases the odds of household debts at the district. The reason being that, why unemployment and urbanisation put strain on household incomes as a result of increasing costs to service, increase wages and salaries put pressure on household to upgrade their living standard and hence forces them to obtain credit in cases where income cannot keep pace with households day to day operational costs.

While, the odds of repo rate increase was found not to have had a very significant effect on household debt the result shows a slight chance of household debt increase by 0.48 at $p < 0.001$. On the same note, it was observed that a unit change in unemployment was associated with a positive effect on household debt by a coefficient of 1.03 at $p < 0.05$ while for every unit change in urbanisation, the household debt changed significantly by 26.24 at $p < 0.001$. Also, a unit change in wages and salaries resulted in a slight increase of household debt as reflected by a coefficient of 0.62, significant at $p < 0.05$.

Conclusion

The article made some inferences based on the analysis and presentation of results. The study has revealed, most middle class households with high debt levels in the district are of ages 20-29 years (32.5%) and lack sufficient level of financial skills (individuals with matric qualification, 42.5%; national diploma, 33.75%) manage debts. The study found the existence of gender and marital status difference with a debt burden at the district level and reveals household sizes to have direct bearing on household debts. The article has explored the association between socioeconomic, micro and macro variables and their effects on household debt at a district level in South Africa. The study has revealed the existence of the odds of these factors increasing or decreasing the chances of household debts significantly in the district.

Credit acquisition is a necessary tool in the modern economic dispensation and is viewed as one of the best mechanism to grow

economies as well as induce development if it is used for investment rather than consumption. It is therefore imperative to improve household's knowledge on the use of credit at district level if the country is to improve household financial positions and increase their savings. The article recommends that, strategies to reduce household debt need to be robust and effective at the local level. The article has shown that, as household debt increases in the district level so is the case at the provincial and national level. Introducing financial literacy sooner than later to citizen at a local level has the advantage of increasing savings and reducing financial burden once they start working. As such, it is imperative to have different household interventions in order to discourage inappropriate utilization of credit, which increases the odds of household financial burden.

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