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THE RELATIONSHIP BETWEEN FINANCIAL LITERACY AND RETIREMENT PLANNING AMONG INFORMAL SECTOR WORKERS IN RANDBURG, SOUTH AFRICA

Rudo Gutura

University of South Africa
e-mail: 44068298@mylife.unisa.ac.za

Joseph Chisasa

University of South Africa
e-mail: chisaj@unisa.ac.za
ORCHID: 0000-0002-8923-1424

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Abstract

Research background: Retirement planning is viewed as one of the cornerstones of long-term household financial security. The responsibility of retirement planning has now been shifted to the individual and is no longer the responsibility of the employer.
Purpose: This paper examines the link between financial literacy and retirement planning among informal sector traders in the Randburg area of Johannesburg, South Africa.
Research methodology: A questionnaire approach was used to collect data from 269 randomly selected informal sector respondents. The data was analysed using ordinal regression. Robustness tests were executed using the Wald test.
Results: Findings reveal that financial literacy is linked to retirement planning, and especially with reference to informal sector workers. Additionally, education, income and the informal business sector were observed to have a positive and significant influence on retirement planning.
Novelty: The paper contributes to both theoretical and practical discourses on retirement planning for informal sector entrepreneurs which has not received much attention. These results are important for policy makers in retirement planning as well as curriculum development.

Keywords: Retirement planning, financial planning, informal sector workers, income

JEL classification: G5, G50, G51, G53

Introduction

Most informal sector activities go unrecorded giving a biased total gross domestic product (ILO, 2016). According to Maluleke (2022) quarterly data from the Labour Force Survey indicates that employment in the informal sector has remained between 16% and 18% of the total employment of South Africa. The data has since increased by 2.6% as reported in the Quarterly Labour Force Survey (Maluleke, 2022). Thus, the informal sector now employs between 18.6% and 20.6 % of the total South African employment population. It can be deduced that informal trading has always played a role in South Africa's economic livelihood through creating job opportunities, alleviating poverty as well as acting as a buffer between employment and unemployment. The reported growth in the sector underscores its strategic importance for South Africa particularly with respect to retirement planning.

As the informal sector continues to grow, incomes increase, giving rise to a demand for financial planning products in preparation for retirement. In this paper, financial literacy is hypothesised to be a driver of financial planning. While studies have been conducted supporting the need for people to prepare for retirement (Sebo, Dankova, Kralik, 2020), to the knowledge of the researchers, very little is reported on the impact of financial literacy on retirement planning in South Africa, particularly in the informal sector. Antoni, Saayman and Vosloo (2020) conducted a study in Nelson Mandela Bay, South Africa where they interviewed formal government workers. In this study they concluded that there is no relationship between broad financial literacy and retirement planning. Rather, they observed a positive relationship between financial numeracy and retirement planning. As demonstrated by Niu and Zhou (2018), the hypothesis of a positive relationship between financial literacy and retirement planning in China is valid. Kalmi and Ruuskanen (2018), conducted a similar study in Finland and could not confirm the presence of a positive relationship between general financial literacy and retirement planning. The only positive relationship they established was between retirement planning and extended financial literacy.

In South Africa, people have proved to be ill prepared for retirement; two out of every three South Africans are not well prepared for retirement (Kruger, 2017). This, in turn, means that old people are forced to work beyond their retirement age blocking employment opportunities for young citizens. The government is burdened with the payment of old age grants as most retired people rely on these grants for survival (More, 2019). Over 3 million South Africans are receiving grants from the tax payer's money which could otherwise be channelled for the development of the country. The objective of this study is to determine the relationship between

financial literacy and retirement planning in the informal sector industries as well as answering the following questions:

1. What is the significance of financial literacy in relation to Retirement planning?
2. What are the critical success factors for retirement planning for informal sector workers in Randburg, South Africa?
3. What are the critical success factors for financial literacy amongst the informal sector workers of Randburg, South Africa?

The paper proceeds as follows: section 1 presents the literature review. The research methodology is discussed in section 2. The results are presented and subsequently discussed in section 3. Finally, the paper concludes with a summary and conclusions.

1. Literature review

Extant literature concurs that financial literacy is concerned with the financial knowledge and the confidence that individuals have in using financial products. In this study the level of financial literacy is determined by the education which has been acquired during learning years. Thus, in this paper, education and literacy are deemed synonymous.

Financial literacy assesses people's risk appetite when it comes to making financial decisions. It is one's ability to make knowledgeable decisions followed by taking relevant action on matters affecting an individual's financial well-being (Hung, Parker, Yoong, 2009). Further Abad-Segura and Gozalez-Zamar (2019) articulate that a financially literate person is one who possesses economical and financial knowledge to make certain decisions. In their study Compenab, De Witte and Schelfhout (2019) emphasised that financial literacy has two elements linked to it, that is, enough financial knowledge and its application. Retirement planning, on the other hand, is the action taken by individuals towards saving for them after their working age. When people plan, then their saving behaviour is more organised and they understand how to choose relevant portfolios (Rameli, Marimunthu, 2018). An individual's behaviour and action plan in setting realistic attainable expectations for life changes and what they will have to adapt to after retirement is what Yeung and Zhou (2017) believed to be retirement planning. (Shreevastava, Brahmbhatt, 2020) conceptualise the idea of retirement planning as not just a theory but a combination of mental and financial relaxation which heavily depends on the fruitfulness of one's planning.

In 2019, renowned financial literacy author Lusardi A, researched on why many residents of the United States of America (USA) are getting to retirement age ill-prepared financially.

The research concluded that many workers are unacquainted with the most basic economic concepts which are necessary for saving and long-term decisions. In the same manner and contributing to the discourse on the link between financial literacy and planning for retirement, Sarpong-Kumankoma (2021) established that just a quarter of the interviewed individuals were able to answer the basic financial literacy questions. This study also concluded that there was a positive link between financial literacy and retirement planning. A higher level of financial literacy is believed to have a positive impact on how people manage their finances as it has proved to improve the likelihood of planning for retirement (Janposri, 2021)

Consistent with peer countries with a similar Human Development Index, South Africa has its fair share of statistics relating to financial literacy and retirement planning. In their study of the financial literacy on South Africans in 2015, the Financial Services Board of South Africa discovered some interesting facts about South Africans. Those who occupy the upper layers of the economic pyramid were more likely to engage in financial planning, and full-time employees were considerably more likely than the unemployed or those outside the labour market to set such goals. The study also observed that levels of educational attainment, and economic status, cannot be understated in analysing financial literacy. Regarding the subject of retirement planning, the study noted that affluent South Africans indicated that they tend to rely on their workplace and private pension plans rather than the support of family and adult children after retirement. Consequently, poorer South Africans fund their retirement through the government pension and the social networks of friends and family.

Individuals who earn more tend to save more because they have money to spare or save up and this general rule applies across economies (Yaari, 1965). Results from the Retirement Confidence Survey (RCS) (2017), indicate that those individuals with higher incomes tend to be more aware of saving for retirement than those in low-income jobs. The survey shows that at least 86% of the current workers in Africa expect to get income from social security as they feel that they are unable to save anything from their meagre salary. As noted by Horn (2018), poverty does not allow these individuals to save significantly towards retirement as the money they make is needed immediately to fix household needs. Workers in the informal sector do not get a steady income, and this affects their saving ability towards retirement. Rather, they prioritise securing a decent property where the family can live without worrying about rentals. For most, this is a lifelong aspiration which should be achieved by the time of retirement (Ameriks *et al*., 2020). As the level of education increases, so does the income and subsequently the confidence levels in retirement planning (Joo, Pauwels, 2002). Women have less knowledge about retirement products and retirement planning due to low levels of education and income

(Lusardi, Mitchell, 2008). The completion of high school, as shown by Wise (2015) influences people to be more vigilant about their lives and hence opting for coverage to protect their wellbeing.

According to Horn (2018) people of different age groups will have different perspectives towards retirement, due to the difference in financial literacy levels. The difference in perspectives has been the case on the reviewed literature, and several studies have alluded to the fact that older people are more conscious of retirement planning compared to younger generations (Harlow, Brown, 2016). Most literature shows that women are better savers than men even though they are poorly remunerated relative to their male counterparts (Ameriks *et al*., 2020). As observed by Horn (2018) women save more money towards retirement than men. They spend their retirement funds more cautiously than men who they then tend to outlive. Putting it differently, Harlow and Brown (2016) noted that across all cultures, it is generally men who provide the basic needs for the family. As a result of this, men tend to outspend their wives in cases where both go to work; it then follows that women will tend to save more money than their husbands (Motala, 2017). Married couples, where both partners are working, regard retirement as a feasible practice, and it is something that they look forward to because it gives them more time for themselves (Szinovacz, Deviney, 2000). Husbands whose wives have been working for long tend to think of retirement more than husbands who are the sole breadwinners of the family. Findings from the Voya Financial Return on Investment (2011) retirement research indicated that couples are more financially confident. Couples display excellent saving behaviour than single or divorced people because they tend to balance out their finances as a collective much more efficiently. The work of Firli (2017) highlights that married people are more motivated to try and get wealth and hence plan for their future more fervently than single people. Couples get interested in knowing what happens in the world of money and are, therefore, also more literate than those who are single (Motala, 2017).

In addition to financial literacy, other factors that affect retirement planning are income, level of education, age, gender and marital status. These factors are included in the conceptual framework discussed in the next section.

1.1. Conceptual framework

Following from both the theoretical and empirical literature above, the model below depicted in Figure 1 was conceptualized as a guide to the study. Thus, the paper argues that retirement planning is influenced by financial literacy and the demographic characteristics of planners.

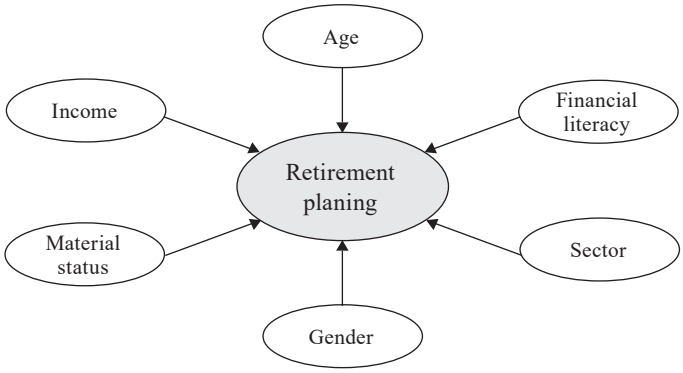


Figure 1. The conceptual framework

Source: own elaboration.

2. Methodology

This research used the quantitative method as it is concerned with testing existing theories, by trying to answer the research questions presented in the introduction part of the paper. The target population was the informal sector individuals who operate in Randburg Central Business District, a suburb situated in the City of Johannesburg in South Africa. The population includes informal employees from street traders, vegetable vendors, taxi drivers, spaza shop owners and car guards. The research does not test all informal sector workers due to the inherent limitations such as time, personnel and insufficient funds, which are necessary to conduct research inclusive of all the informal operations. There is no record of the population of informal workers, however, informal population figures in this study are based primarily on the Labour Force Surveys (LFSs). These are nationally representative surveys which are coordinated and managed by Statistics South Africa to collect detailed information on labour market activity for households in South Africa. The research used quarterly LFS data for 2018 to ascertain a rough estimate of the total population of informal sector individuals and draw a sample from there.

A non-probability convenience sampling technique was used in this study. The convenience sampling technique selects sample members based on them being readily available (Diamantopoulos, Schlegelmilch, 2006). Individuals from the informal sector were selected based on their availability. To ensure that all these individuals have a fair, equal and independent chance of being selected to represent a sample, which is close to the population, simple random sampling was further engaged (Hamed, 2016). Thus, 300 informal sector workers

were included in the sample for this study. Data was collected using a 5-point Likert scale questionnaire which was distributed physically. All ethical considerations were considered to avoid any possible prejudice of the respondents. During the trial phase, the questionnaire was tested for validity using Cronbach's alpha test. A total of 281 responses were received. After cleaning the data, only 269 questionnaires were useable. Preliminary data analysis was done using frequency tables, graphs and pie charts. The Chi-square test was used to determine the association between variables. The Chi-square test of association analyses results were from a research instrument which would have satisfied all the necessary assumptions. According to Rana and Singhal (2015) the sample should be considered adequate; the sample of this study is 269. Chi-square also assumes that the variables to be tested appear only once per category and therefore counted just once.

Additionally, Spearman's correlation test was performed to establish the relationship between these two variables. According to Pernet, Rousselet and Pernet (2013), correlation refers to any one of the extensive ranges of statistical relationships associated with dependence. It also attributes to the statistical measures focusing on outlining the strength of association between the given variables.

The crosstabulation of financial literacy and the retirement planning by sector was performed, paying attention to how the respondents manage their personal financial affairs, how confidently they can make big financial decisions as well as their membership to different available schemes. The crosstabulation also helped the researcher establish how much respondents know about financial products which may help them save towards their retirement.

Two types of regression, namely, ordinal regression and linear regression were used to answer the research questions. Ordinal data is data placed in order, while nominal data has no set order. In this paper, gender, marital status, age, education and income were used in the linear regression model. These are used as the critical success factors for retirement planning for informal sector workers in Randburg. Only age and education, being ordinal data, were included in the ordinal regression model. The functional equation for the ordinal regression is presented as equation 1 and transformed to equation 2 as follows:

$$RP = f(\text{age (A), gender (G), marital status (MS) income (I), financial literacy (FL) and sector (S)}) \quad (1)$$

$$RP = \beta_0 + \beta_1 A + \beta_2 G + \beta_3 MS + \beta_4 I + \beta_5 FL + \beta_6 S + \varepsilon \quad (2)$$

where: RP – retirement planning, G – gender, MS – marital status, I – income, E – education, S – sector.

3. Empirical results and discussion of results

The Collected data was analysed using the Statistical Package for the Social Sciences (SPSS), a software package used for analysing statistical data. To determine the financial literacy level of the respondents they were asked financial literacy questions. Thus, respondents from the different sectors included in the sample were asked to indicate whether they kept a close eye on their financial affairs. Of the 76 vegetable vendors who responded, approximately 90% (n = 69) agreed or strongly agreed that a person should keep a close personal watch on their personal finances. Most spaza shop owners 58% (n = 43) strongly agreed to keep a close watch on personal finance, while 28% (n = 21) agreed. Fifty-eight percent of the taxi drivers (n = 28), strongly agreed to agree, while only 35% (n = 16) street traders did the same. Lastly, out of 25 car guards who responded 56% (n = 14) strongly agreed to agreed that they must keep a personal watch on their personal financial affairs.

Respondents were asked to state how confident they were that they made the right decision the last time they made a big financial decision. Vegetable vendors (32%; n = 24) and spaza shop owners (50%; n = 37) are the two sectors with the most respondents who were very confident when they last made a big financial decision. Respondents from the street trader sector (9%; n = 4), taxi drivers (15%; n = 7) and car park guards (37%; n = 12) were very confident in making a big financial decision. Asked if they understood what high inflation means, 72.5% (n = 195) were found to be knowledgeable about inflation. Approximately 28% (n = 75) of the total respondents strongly agreed that, "net worth" represents the properties they own less all their debt, while 43% (n = 116), agreed that, "net worth" represents the properties they own less all their debt. Respondents were asked to indicate if they agreed that where there is high risk, there is a high return. The results show that a total of 28% (n = 75), strongly agreed and 23% (n = 116) agreed. The respondents were asked if they agreed to the statement which says, it is less likely that you will lose your money if you save it in more than one place. Approximately 21% (n = 56) strongly agreed while 40% (n = 108) agreed suggesting that most respondents are aware of the need to diversify investment risk.

Asked if they believed that it is usually possible to reduce the risk of investing in one stock market by buying a wide range of stocks and shares, about 32% (n = 86) strongly agreed and 42% (n = 113) disagreed. This result shows that the respondents do not fully understand how investing and stock markets work, thereby strengthening the need for the inclusion of financial subjects in the curriculum from a very early stage. To test their confidence level, respondents were asked if they were prepared to risk some of their money when saving or making an

investment. Approximately 25% (n = 67) of the respondents were very confident, while 37% (n = 100) were somewhat confident. Overall, these results suggest that the respondents have a moderate to high-risk appetite for saving and investing.

3.1. Chi-square test of association

The Chi-square test of association was performed to establish if there is a relationship between the sample demographic variables and retirement planning.

Table 1 shows that there is an association between demographic variables and retirement planning. The business sector, education level and age of the entrepreneur, exhibited a positive and statistically significant association with retirement planning ($p < 0.05$). Conversely, gender and marital status were observed to have a weak association with retirement planning.

Table 1. Relationship between demographic characteristics and retirement planning

Independent Variables	Sector	Age group	Gender	Marital status	Education level
At what age do you think you are likely to retire and stop work completely?	$\chi^2 = 61.283$ $p = 0.000$	$\chi^2 = 30.404$ $p = 0.016$	$\chi^2 = 5.630$ $p = 0.228$	$\chi^2 = 24.535$ $p = 0.078$	$\chi^2 = 37.805$ $p = 0.002$
If I have extra income, I can save it towards…	$\chi^2 = 54.639$ $p = 0.000$	$\chi^2 = 30.404$ $p = 0.016$	$\chi^2 = 2.747$ $p = 0.601$	$\chi^2 = 18.515$ $p = 0.295$	$\chi^2 = 49.364$ $p = 0.000$
In case of an emergency that needs money, I would…	$\chi^2 = 32.509$ $p = 0.009$	$\chi^2 = 17.799$ $p = 0.336$	$\chi^2 = 3.541$ $p = 0.472$	$\chi^2 = 12.935$ $p = 0.677$	$\chi^2 = 35.310$ $p = 0.004$
Over the past 3 months how have you paid for your credit card bill?	$\chi^2 = 38.348$ $p = 0.001$	$\chi^2 = 46.846$ $p = 0.000$	$\chi^2 = 1.709$ $p = 0.789$	$\chi^2 = 31.156$ $p = 0.013$	$\chi^2 = 57.648$ $p = 0.000$
How prepared are you for retirement?	$\chi^2 = 83.655$ $p = 0.000$	$\chi^2 = 19.783$ $p = 0.230$	$\chi^2 = 6.495$ $p = 0.165$	$\chi^2 = 23.811$ $p = 0.094$	$\chi^2 = 50.063$ $p = 0.000$

χ^2 = chi squared, p = significance level.

Source: own elaboration.

Respondents were asked to indicate what they would do when faced with an emergency that would require money. Figure 2 shows that spaza shop owners believe that cutting down on their expenses will help them cover for emergencies that would need money. While a considerable number of taxi drivers would consider withdrawing from their savings, only a few vegetable vendors would think of withdrawing from their savings. The most appealing option for car park guards is to ask for donations from their family and friends.

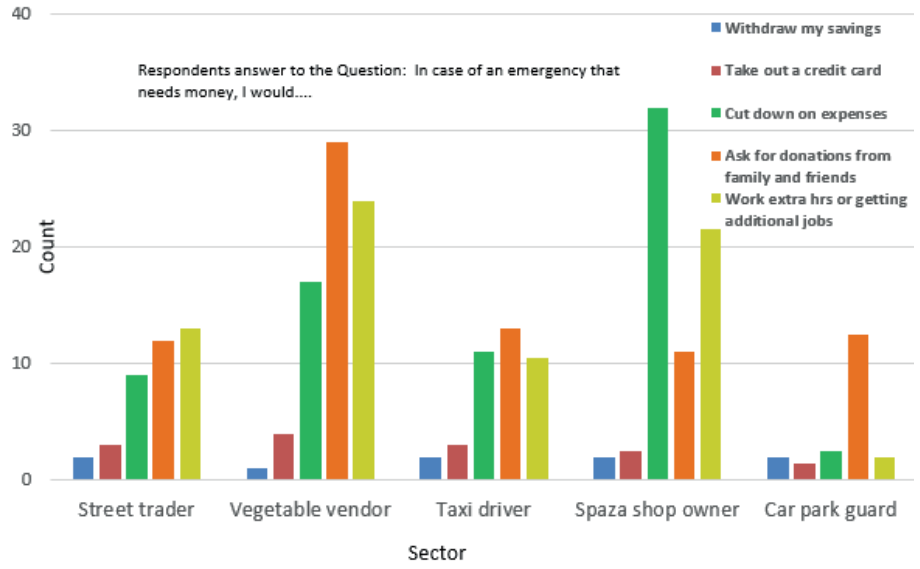


Figure 2. Distribution for sector and reaction in case of money emergency

Source: own elaboration.

3.2. Spearman's correlation

Table 2 depicts the Spearman Rho correlation of the demographic variables (sector, age, marital status, education and gender) with retirement planning and financial literacy. The results confirm the presence of a significant correlation ($p < 0.05$) between age, sector and education level and retirement planning. However, gender and marital status were found not to be significantly correlated with retirement planning.

Financial literacy was found to be statistically and significantly correlated to financial planning.

Table 2. Correlation analysis

Demographic variables, retirement planning and financial literacy	Retirement planning and financial literacy				
	Confident financial decision making	Household budget	Financial goals	Long term financial goals	Saving for retirement
1	2	3	4	5	6
Sector	–0.306***	–0.025	–0.092	–0.192***	–0.121**
Age	–0.183***	–0.112	–0.043	–0.092	–0.085
Gender	0.023	0.025	0.037	0.030	–0.014
Marital	–0.004	–0.018	0.027	–0.048	0.065

1	2	3	4	5	6
Education	–0.195***	0.053	0.001	0.060	–0.080
Confident financial decision making	1.000	0.128**	0.120**	0.198***	0.084
Household budget	0.128**	1.000	0.144**	0.101	0.118
Financial goals	0.120**	0.144**	1.000	0.218***	0.073
Strive to achieve long term financial goals	0.198***	0.101*	0.218***	1.000	0.097
Saving for my retirement	0.084	0.118	0.073	0.097	1.000

Note: *** significance at $p < 0.01$, ** significance at $p < 0.05$, * significance at $p < 0.1$.

Source: own elaboration.

The results of the Spearman correlation analysis paved the way for the ordinal regression results presented in the section that follows.

3.3. Ordinal regression analysis

To determine if the data fits well into the retirement planning model, a model fitness test was executed using the Chi-square test. The model exhibited a good fit, with a statistically significant Chi-square value ($\chi^2 = 90.614$; $p < 0.05$) (see Table 3). The model passed the goodness of fit test at the 1% significance level (see Table 4).

Table 3. Model fitting information

Model	–2 Log likelihood	Chi-square	df	Sig.
Intercept only	1,213.142			
Final	1,122.528	90.614	17	0.000
Link function: Logit.				

Source: own elaboration.

Table 4. Goodness of fit

	Chi-square	df	Sig.
Pearson	2,603.608	2,773	0.003
Deviance	1,017.081	2,773	0.000
Link function: Logit.			

Source: own elaboration.

To determine the contribution of the explanatory variables to the dependent variable, the pseudo-R-squared test was applied. The Nagelkerke test, which is a commonly used test,

indicates that the demographic variables used contribute 28.8% towards retirement planning. Table 5 summarises the results.

Table 5. Pseudo R-square

Cox and Snell	0.286
Nagelkerke	0.288
McFadden	0.067
Link function: Logit.	

Source: own elaboration.

3.4. Parameter estimates

The summary of the parameter estimates of the determinants of retirement planning is shown in Table 6. The parameter estimates show the variables tested individually as they appear in the questionnaire. Gender, age and marital status have no major influence on retirement planning and are therefore excluded from the model. On education, item 3, post matric certificate and item 4-degree level portrayed a statistically significant relationship with retirement planning with probability values of 0.028 and 0.004 respectively. Respondents were asked to state what they would save towards if they had extra income. It was observed that their preference was significant on item 2, an important event ($p = 0.026$) and item 4 a vacation overseas ($p = 0.000$). The sectoral analysis revealed that only the spaza shop owners had retirement plans in place. Thus, the probability value of 0.025 shows that the sector of the respondents is also significant in planning for retirement.

Table 6. Parameter estimates

		Estimate	Standard Error	Wald	df	Sig.
Threshold	RP = 1.00	–3.103	0.785	15.636	1	0.000
	RP = 1.25	–2.238	0.772	8.404	1	0.004
	RP = 1.50	–1.556	0.767	4.120	1	0.042
	RP = 3.25	1.810	0.774	5.473	1	0.019
	RP = 3.50	2.366	0.783	9.128	1	0.003
	Education = 3.00	–1.422	0.647	4.838	1	0.028
	Education = 4.00	–2.372	0.823	8.300	1	0.004
	RP26 = 2.00	0.938	0.421	4.956	1	0.026
	RP26 = 4.00	1.384	0.383	13.036	1	0.000
Location	Sector = 1.00	1.071	0.479	5.006	1	0.025

Source: own elaboration.

3.5. Multiple regression analysis of financial literacy and retirement planning

For robustness, the relationship between financial literacy (FL) and retirement planning (RP) was tested using linear regression the results of which are presented in Table 7. The coefficient of determination (R-Square) shows that financial literacy contributes 8.4% towards retirement planning. The F-statistic of 24.402 (p = 0.000) shows that the model is fit to explain the relationship between the two variables. Additionally, the Durbin Watson statistic of 1.754 shows no serial correlation.

It shows the regression level, the regression square and the adjusted regression square as well as the standard error of the estimated regression. The correlation value of the regression is p = 0.000 which is <0.05, making the relationship between financial literacy and retirement planning significant.

Table 7. Model summary[a]

Model	R	R^2	Adj R^2	Std. Error of the Estimate	Change statistics					Durbin-Watson
					R^2 change	F change	df1	df2	Sig. F change	
1	0.289[a]	0.084	0.080	0.45781	0.084	24.402	1	267	0.000	1.754

[a] Predictors: (Constant), FL.

Source: own elaboration.

Table 8. Anova[a]

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	5.114	1	5.114	24.402	0.000[b]
	Residual	55.960	267	0.210		
	Total	61.074	268			

[a] Dependent variable: RP.
[b] Predictors: (Constant), FL.

Source: own elaboration.

Table 9. Coefficients[a]

Model		Unstandardised coefficients		Standardised coefficients	t	Sig.	95.0% confidence interval for B		Collinearity statistics	
		B	std. error	Beta			lower bound	upper bound	tolerance	VIF
1	Constant	1.347	0.073		18.336	0.000	1.202	1.491		
	FL	0.154	0.031	0.289	4.940	0.000	0.093	0.215	1.000	1.000

[a] Dependent Variable: RP.

Source: own elaboration.

To determine the presence of a relationship between financial literacy and retirement planning, a one-way between-subjects ANOVA test was run to establish whether the means of all the groups are the same. If there are any differences among the means, it means that the value of the dependent variable depends on the value of the explanatory variable. Table 7 shows the results of the analysis of variance. With an F-value of 24.402, the regression test as a whole was found to be statistically significant at 1% ($p < 0.01$).

The standardised coefficient ($\beta = 0.289$), with a t-value of 4.940 shows that financial literacy has a positive and statistically significant ($p = 0.000$) relationship with retirement planning. It contributes approximately 29% to the determination of retirement planning. Taken individually, the level of education is found to be a significant predictor ($p = 0.000$) of the ability to set financial long term retirement goals. There were no issues of tolerance and variance inflation factor (VIF) as they gave the acceptable value of 1. Data was normally distributed as there were no issues with skewness and kurtosis.

4. Discussion of results

There are many varied views on the relationship between financial literacy and retirement planning. For instance, Lusardi and Mitchell (2008) concluded that financial illiteracy was widespread among older Americans as well as women minorities and those who do not have a college degree. Less than a third of the respondents have tried to get a retirement plan, but only two-thirds of these have been successful. More than four-fifths of these respondents did not even engage in successful retirement planning. These results only indicated that financial literacy and planning were interrelated.

5. Financial literacy

The objective of this paper was to determine the relationship between financial literacy and retirement planning. The study was premised on motivation and goal setting theories. The results confirm that there is a positive and statistically significant relationship between the two variables. These results are similar to those of Safari, Njoka and Munkwa (2021), as well as Harahap, Armanu, Sumiati and Djazuli (2022) suggesting that those who are financially literate are more likely to invest in a retirement plan than those who are not.

On the contrary Aluodi, Njuguna and Bernard (2017) conducted a study among insurance workers and concluded that retirement preparedness had no relationship with financial literacy

whatsoever. Those who obtained high literacy scores and those who obtained low literacy scores both had the same confidence level when it came to preparedness for retirement. They concluded that retirement preparedness is rather determined by level of income since contributions towards retirement is a percentage of one's earnings. Some people would not have retirement plans in place simply because they cannot afford to have one.

This research opines that education is related to planning as most respondents who confirmed having retirement plans in place are those respondents who have gone past the tertiary level of education. This is in line with the findings of Ade (2013), where a positive and significant relationship was established between financial literacy and retirement preparedness. Financial literacy was found to be one of the factors that affect the pension participation of the respondents and thus argued that high levels of financial literacy enable participants to make vital financial decisions.

The control variables were found to offer mixed results. Those that exhibited a positive and statistically significant relationship with retirement planning are income and education level (Afthanorhan, Mamun, Zainol, Foziah, Awang, 2020). People tend to use surplus cash for retirement planning after all else has been paid for. These results are similar to those of Alessie, Andreu and Angelini (2019). Informal sector participation in pension schemes was found to be on the low side because they do not have access to expert advice on retirement planning since for most of them their level of education stops at high school level only. These results are in line with those of Guven (2019) who alludes to the fact that informal sector workers' needs are not put into consideration when it comes to pension schemes, making it difficult for them to get access to the contributory pension schemes. Further, Guven (2019) concludes that this is why informal sector workers are ill prepared for retirement.

The Chi-square test run for the association between gender and retirement planning yielded insignificant results. Although the sample selected had more women than men, male respondents were found to have a higher appetite for retirement planning than their female counterparts. This is however in contrast with the recent work of Mata (2021), who found a significant association between gender and retirement planning. In a survey, Horn (2018) also found that women save more towards retirement than men and also spend that retirement saving more carefully than men. Similarly, Frieze and Chrisler (2011) argued that women raise children single-handedly, hence the appreciation of the retirement benefits. This appreciation encourages them to save more towards retirement than what men would do, a notion which dovetails with an earlier study by O'Neil and Bilimoria (2005) who opined that women think more seriously about retirement than men and therefore are more covered than men.

Results revealed that those who are married proved to be better prepared for retirement than those who were not. This suggests that married couples are forced to save as they have children to take care of. The work of Afthanorhan *et al*., (2020) also proved that marital status is a great influential factor in retirement planning as couples believe that the decision for retirement should be supported by both partners.

Contrary to the findings of this paper, Sharpe (2021) and Sarpong-Kumankoma (2021) opine that marital status had no significant influence on retirement planning. They argue that single people are rather better prepared for retirement than those which are married. Similarly, while extant literature shows that the age of an individual has an influence on retirement planning (Harlow, Brown, 2016), the results of this study suggest otherwise. Rather, the age of the respondents was found to be negatively correlated with retirement planning albeit insignificant. Our results add to the stock of conflicting views on the relationship between age and retirement planning.

Conclusions

The primary objective of this paper was to determine the relationship between financial literacy and retirement planning among informal sector participants in the Randburg area of Johannesburg in South Africa. Drawing from both theoretical and empirical literature, a conceptual model was postulated in which retirement planning was argued to be a function of financial literacy as the explanatory variable. The age, marital status, trade sector, gender and level of income of the respondents were included in the model as control variables. Almost all these control variables proved to have no statistical significance towards retirement planning. Level of income had a weak relationship with financial literacy. The weak relationship is attributed to the fact that those who save have some extra money which they channel towards retirement planning and not necessarily because they have the knowledge. Using cross-sectional data drawn from a sample of 281 respondents, the results showed that financial literacy has a positive and statistically significant influence on retirement planning for informal sector traders in the Randburg area of Johannesburg. Level of education proved to be one of the most critical success factors for financial literacy. Respondents with post-matriculation education were found to be more knowledgeable about retirement planning. These are the same respondents who managed to answer the questions pertaining to financial literacy correctly. These results pose a suggestion that more resources should be directed towards training in aspects of retirement planning.

Recommendations for further studies

Further to this study, other studies can be carried out to include other variables which were not included in this study. Since this study was limited to the Randburg area of Johannesburg, it is recommended that it be replicated in other areas to give a more inclusive view of the drivers of retirement planning among informal sector traders in South Africa. Since the study focused on taxi operators, more informal sector jobs as well as an open-ended questionnaire or better still, interviews should be considered for further research.

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