# The Effects of Financial Literacy on Financial Preparedness for Retirement among Academic Staff in Higher Learning Institutions in the Kingdom of Eswatini

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Abstract: The purpose of the study was to analyse the effects of financial literacy on financial preparedness for retirement among academic staff of higher learning institutions in the Kingdom of Eswatini. Literature on personal finance suggests that employees reach retirement period with very little financial resources to support them in old age when they can no longer work. Life expectancy across the globe has increased recently and is still increasing due to advancements in science and discoveries of new drugs yet employees are still doing little to prepare for retirement. Little is known as to why employees are failing to plan for retirement when indicators show that they are likely to live longer than the previous generations. An investigation is therefore necessary to identify factors that influence financial preparedness for retirement. The study applied a quantitative methodology and a descriptive research design was adopted and used 144 respondents proportionately sampled from a population of 612 employees from higher learning institutions in Eswatini. The study found that only knowledge of financial instruments significantly influences financial retirement preparedness for retirement. These findings suggest that awareness campaigns on financial products would increase financial preparedness for retirement. This study contributes to the personal financial management literature by offering evidence on the relationship between financial literacy and financial preparedness for the retirement of the academic staff of institutions of higher learning in Eswatini

Keywords: financial literacy; retirement; preparedness plan; academic

JEL Classification: G32

## 1. Introduction

According to the Organisation for Economic Cooperation and Development (OECD, 2018), the need for financial literacy is now universally recognised and is a core component of financial empowerment for individuals and the stability of the financial system. The OECD (2018) also highlights the importance of developing national strategies on financial literacy, particularly for young people and

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vulnerable groups such as retirees, as the digitalisation of finance brings new opportunities and challenges to consumers.

The World Economic Forum released a report in 2019 where they found that retirement systems worldwide are currently under strain. The good news around the world is that people are now living longer, as global life expectancy increased to 74 years in 2018 (Statista, 2019). In the Kingdom of Eswatini, life expectancy is also growing due to a reduction in poverty, advancement and accessibility of medical and health care facilities. However, this has created a new challenge. The longer lifetimes are ultimately increasing the cost of retirement, and hence the savings gap is projected to increase significantly (World Economic Forum, 2019). Consequently, the retirement savings gap has become a global challenge. The study by World Economic Forum (2019) revealed that the shortfall in pension savings in eight leading economically developed countries (Australia, Canada, China, India, Japan, Netherlands, United Kingdom and the United States of America) was USD 70 trillion in 2015, and this figure is expected to rise to USD 400 trillion in 2050 for the eight countries. The same report further suggested that retirees around the globe will outlive their savings by 10 years, leaving many facing an uncertain future. Retirement systems worldwide are currently under strain.

Life expectancy has improved and continues to improve in the Kingdom of Eswatini due to the reduction of poverty, advancement in medicine, access to better health care facilities, active living and healthy lifestyles. Greater longevity requires higher levels of savings to sustain longer lifetimes and aging populations Ironically, little has been done to prepare employees for retirement in terms of wealth accumulation. The greater longevity of retirees demand higher levels of retirement savings required to sustain longer lifetimes and aging populations, which puts a strain on the sustainability of the current pension systems supporting retired academic employees in the kingdom of Eswatini (World Economic Forum, 2019). Studies have indicated that those who are least literate about financial retirement products and concepts are least likely to plan and save for retirement (Lusardi & Mitchell, 2006, 2007, 2008).

There are limited financial literacy programmes in Eswatini and this may impact financial literacy levels. Poor financial literacy in an environment where responsibility to manage retirement benefits is shifting to individuals is likely to increase the retirement savings gap further. Financial illiteracy results in poor financial decisions being made by the academic employees of the Kingdom of Eswatini.

The above challenges indicate that financial literacy and planning for retirement have become the leading concern for both mid-aged and senior employees who retire with insufficient retirement savings for comfortable lifestyles at old age. Planning for retirement is becoming crucial in post-retirees welfare. An

overwhelming majority of retirees often live miserable lives due to reduced income upon retirement resulting from lack of forward planning. Governments across the world, including the Kingdom of Eswatini are faced with a huge burden of taking care of the retirees who are stressed and sickly due to financial constraints. According to Lusardi and Mitchell (2007), one simple and direct way to examine whether individuals look ahead and make plans for the future is to study the extent of their retirement planning. Research has revealed inadequacies in retirement preparedness globally making it become a global social crisis in a context where life expectancy is increasing; the consequence is the inability of the aging population to support itself upon retirement (Aluodi, Njuguna & Omboi, 2017).

The objectives of this study were to examine how the knowledge of financial instruments, computation capability of retirement benefits and other demographic factors, affect or influence the financial preparedness for retirement of the academic staff of institutions of higher learning in Eswatini.

This study contributes to the personal financial management literature by offering evidence on the relationship between financial literacy and financial preparedness for the retirement of the academic staff of institutions of higher learning in Eswatini. To the best of our knowledge, no existing studies provide any evidence of the relationship between these two in particular in Eswatini, a developing country that is battling to sustain its growing retirees' population which is straining the pension funds. Most research studies undertaken focused on the head of the household as the unit of analysis and have focused mainly on the most developed countries. This is the first study in the Kingdom of Eswatini that seeks to analyse the effect of financial literacy on financial preparedness for retirement among the academic employees in higher learning institutions in Eswatini.

The rest of the paper is structured as follows: Section 2 reviews the literature on financial literacy and financial preparedness for retirement. The data and methodology are discussed in Section 3. Section 4 presents and discusses the estimation results. Section 5 provides the limitations of the study and concludes the paper.

#### 2. Literature Review

Financial literacy has been identified as an integral component that helps individuals to make sound and informed decisions about their finances and other behavioural decisions. These may include investments, savings, and other wealth accumulation decisions. According to Shim et al. (2010), financial literacy is the most important component in achieving a successful adult life as it plays a crucial role in developing not only individuals' financial management attitude, but also an attitude about general life. The President's Advisory Council on Financial Literacy

(2008) in the USA, defines financial literacy as the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial wellbeing. Financial retirement preparedness is considered an on-going process of setting aside resources and time to provide income at old age, with the goal of not just survival, but also social inclusion and preservation of human dignity (Keizi, 2006). Research has revealed that financial preparedness for retirement is influenced by financial literacy (Van Rooij, Lusardi and Elesse, 2012; Clark, Lusardi and Mitchell et al., 2017; Lusardi and Mitchell (2007).

## 2.1. Financial Capability Framework

As part of the United Kingdom (UK) Financial Capability Strategy in 2014, a framework was developed by Bagwell, Hestback, Harries and Kail (2014). It established a more direct link between financial knowledge, basic financial skills and financially capable behaviours. Financial knowledge and understanding include an understanding of financial products and concepts. Employees who have this knowledge understand financial instruments and can apply them in a wide range of circumstances (Begwell et al., 2014). This includes investing in assets and products that would generate future cash flows during retirement age. The framework shows that financial literacy or capability leads to making informed financial decisions which are financial capability behaviours. The framework indicates that financial capacity behaviours such as saving for retirement will result in financial wellbeing; although they argue that it is not always the case though.

## 2.2. Empirical Review

# 2.2.1. Computations Capability of Retirement Benefits and Financial Preparedness for Retirement

Financial literacy includes both knowledge of financial instruments and computation capability of interest rates and retirement benefits. According to Lusardi and Mitchell (2005), one of the reasons people fail to plan for retirement or do so unsuccessfully, is their financial illiteracy, hence they may fail to appreciate the role of compound interest, inflation, and risk on their investments. When focusing on the computation capabilities, several studies indicated that those who cannot do simple and compound interest calculations are less likely to calculate their retirement needs (Lusardi & Mitchell, 2006, 2007, 2008). Different studies performed in the United States of America (Lusardi & Mitchell, 2005), Sweden (Almenberg and Save-soderberg, 2011) and Netherlands (Alessie, Van Rooij & Lusardi, 2011) found that serious planners are more likely to get a correct answer on the two questions on compound interest and inflation rates question than on the financial knowledge question on financial risk. Banks and Oldfield (2007)

investigated numerical capability, amongst other cognitive functions in a sample of older adults in England, and the extent to which these abilities are correlated with various measures of wealth and retirement saving outcomes. They found that numeracy is also associated with knowledge of pension arrangements and with perceived financial security. This is a similar conclusion to the one reached by Christelis, Jappelli, and Padula (2010) who found that the numeracy score was positively (linearly) associated with the probability of stockholding (and was significant even when controlling for education and other indicators of cognition; such as verbal fluency and memory). These result in higher wealth generated for retirement. It can therefore be concluded from the above findings that computations capability of interest positively influences financial preparedness for retirement.

# 2.2.2. Knowledge of Financial Instruments for Retirement Savings and Financial Preparedness for Retirement

Literature reveals that lack of knowledge of financial instruments or products affects retirement investment decisions. Kimball and Shumway (2007) and Van Rooij et al., (2007) in their different studies provided evidence that financially unsophisticated households tend to avoid the stock market and that they are less likely to choose mutual funds with lower fees (Hastings and Tejeda-Ashton, 2008). In the US, a study by Clark et al. (2017) found that financially literate employees of the Federal Reserve in the US were more likely to contribute to a supplementary defined contribution pension plan, contribute a higher percentage of their salaries, and have higher equity in their plans, than less financially literate employees. In the US, Lusardi and Mitchell (2007) used the Rand American Life panel data to study the relationship between the two variables and found that financial literacy is a key determinant for retirement planning. The findings of Lusardi and Mitchell (2006; 2007; 2008; 2010; 2011) were consistent with the conclusions of Hilgert et al. (2003), Sang et al. (2014), who found that individuals that were financially illiterate report worse outcomes on their financial, investment and retirement planning decisions. Other studies in Canada by Mullock and Turcotte (2012) and in Kenya by Aluodi (2017) contradicted those findings. They concluded that financial literacy did not make any unique contribution to retirement planning.

In summary, empirical literature indicates that financial literacy which consists of knowledge of financial instruments and computation capability of interests and retirement benefits has a positive effect on financial preparedness for retirement and other financial capability behaviours.

# 2.2.3. Demographic Characteristics and Financial Preparedness for Retirement

Financial literacy alone does not influence financial capability behaviours most of the time. It has been found from prior studies that other factors such as demographic and financial factors affect financial preparedness for retirement among individuals. Demographic factors like age, race, gender, economic status, level of education, income level and employment, among others influence outcomes among the different populations. Therefore, it is important to analyse their influence on financial preparedness for retirement. According to Monsor, Chor, Abu and Shaari (2015), the most important factors are age, education level, gender, and household income. In the US, Joo and Pauwels (2002) found that working men compared to women; who were younger; had higher levels of education; higher levels of income; positive financial attitudes and behaviours; lower level of risk aversion; received employer financial education; and were savers and had higher levels of retirement confidence. Their findings were also supported by Githui and Ngare (2014) whose study on the impact of financial literacy on retirement planning in the informal sector in Kenya found that factors such as income levels, age, marital status and level of education were strongly related to retirement planning. Many studies have revealed that women were less financially prepared for retirement compared to men (VanDerhei and Olsen, 2000; Baker, Kumar, Goyal and Guar 2018) but some contradicted these findings (Lubegu, 2012).

# 3. Methodology

The study adopted a quantitative research approach guided by a positivist research paradigm. A survey research method was used to collect data. The study adopted a descriptive study design to explain the relationship between financial literacy, demographic characteristics and financial preparedness for retirement.

# 3.1. Population, Sample, Data Collection Instrument and Procedure

The population of the study comprised 612 academic employees from five state-supported institutions of higher learning under the Ministry of Education and Training. A sample size of 242 employees was calculated using a formula provided by Yamane (1976). Proportionate sampling technique was applied to select the sample of 242 employees from each of the five institutions at which the questionnaire would be administered. Data were collected using self-administered, closed-ended questionnaires from the respondents. The study adopted a questionnaire from Agunga et al. (2017). Modifications to Agunga et al (2017) questionnaire were done to include questions based on the indicators from the

Financial Capability framework and questions on computation capability adopted from Lusardi and Mitchell (2008). A total of 242 questionnaires were distributed as per the sample size, 144 were correctly filled and returned, representing a response rate of 60% which was considered adequate.

#### 3.2. Data Analysis

The Cronbach Alpha coefficient was used to measure the inter-correlations of items. The alpha values for knowledge of financial instruments and financial preparedness for retirement were 0.764 and 0.819 respectively. The effect of knowledge of financial instruments on financial retirement preparedness was first analysed using descriptive statistics indicating measures of central tendency and measures of dispersion. Data from a five-point Likert scale questionnaire were analysed descriptively to get aggregate mean and standard deviation for the participant's knowledge about financial instruments. Determining the effect of computation capability on financial preparedness was also analysed by using descriptive statistics indicating measures of central tendency and measures of dispersion the same approach, such as descriptive statistics.

## 4. Findings and Discussions

The findings are presented and they are in line with the objectives of the study. Most of the respondents<sup>1</sup> in the study were males (60%) compared to females (40%). A majority of the respondents were aged between 40 and 49 years (34%), followed by those between 50 to 75 years (32%). There was only one participant aged between 18 and 27 years, which is reasonable, considering the number of years spent by academics studying before they can qualify for teaching at the tertiary level. The study found that 48% of the respondents had worked for their institutions for more than six years and 6.9% had between four to six years of service. The total number of married employees in the sample was 104 compared to 34 singles and four widows and or widowers. The most popular qualification was the Masters degree (45.1%), followed by the Doctor of Philosophy (PhD) (36.6%) and the least held qualification was the Bachelor's degrees (22%).

<sup>&</sup>lt;sup>1</sup> The table containing descriptive statistics of the five demographic characteristics, namely gender, age, marital status, length of service and level of education has been excluded for brevity.

# 4.1. Knowledge of Financial Instruments

The respondents were asked in five-point Likert questions to do a self-assessment and indicate their knowledge of financial products and services and the responses are presented in Table 1. The respondents had a moderate knowledge of investment products such as company stocks, bonds, unit trusts and mutual funds. The mean score of their knowledge was 2.93.

Table 1. Descriptive Statistics for Financial Knowledge Survey

	Minimum	Maximum	Mean	Standard Deviation
I know about investments	1.00	5.00	2,9291	0.9903
I use financial knowledge to make personal financial decisions	1.00	5.00	2.9155	1.1820
Investing in wide stocks can help reduce risks	1.00	5.00	2.8768	1.2641
Investing in shares yields high returns than treasury bills	1.00	5.00	2.6336	1.1975
I understand investment options for pension schemes	1.00	5.00	2.5704	1.1754
I have invested in shares, bonds or mutual funds	1.00	5.00	1.9296	1.1402
Aggregate			2.5717	1.1815

Source: Authors' construction based on primary data collected (2019)

To a moderate extent, most respondents used their financial knowledge to make personal financial decisions (mean of 2.9155) and understood that investing in the stock market by buying a wide range of stocks can help reduce risk (mean of 2.88). They further understood that investing in ordinary shares yields a higher long term growth as compared to investing in treasury bills (mean of 2.63) and their understanding of investment options for pension schemes fell in the middle of less extent to a moderate extent (mean of 2.57). Concerning their ability to calculate interest rates on their personal investment savings, the respondents indicated a lower moderate extent level of knowledge (mean of 2.15). Even though respondents reported that they had a moderate level of knowledge shares, bonds and mutual funds, very few actually invest in them as shown by the reported mean of 1.93.

More than three-quarters of the respondents (76%) indicated that they were aware of the existence of financial instruments that could be used to save for retirement. Even though they claimed knowledge of financial instruments for investment, only 2% participated in bonds, 4% in shares and 10% in unit trusts. Most of them participated in retirement investment policy (44%), 14% in mutual funds and 20%

did not participate in any. The low participation in the stock market might be a reflection of fear to take a risk as shares are more risky than other financial products. Overall, the findings confirmed that the participants were aware of the existence of financial instruments as 76% had participated in at least one financial instrument.

The respondents who invested in at least one financial instrument were further analysed by gender as indicated in Table 2 below. These findings supported the many findings from different studies which revealed that women were less financially prepared for retirement compared to men. Van Derhei and Olsen (2000) found that women tend to invest less of their contributions to qualified retirement plans in equity assets as compared to men. Others included Bajtelsmit, Bernasek, and Bernasek (1999) who concluded that women were risk-averse compared to men and this affects their choice of investment instruments.

Table 2. Cross-Tabulation of Participants in Financial Instruments Against Gender

Gender	Types of Financial Instruments						
	Bonds	Shares	Unit Trust	Mutual Fund	Retirement Investment Policy	Total	
Female	2	2	4	10	27	45	
Male	1	3	10	10	32	56	
Total	3	5	14	20	59	101	

Source: Authors' construction based on primary data collected (2019)

Knowledge of financial instruments was further analysed based on the attendance of retirement workshops or seminars which is very important in getting financial knowledge on retirement savings. Only 22% have attended retirement seminars over the past 10 years. It can be concluded that academics use other sources to obtain knowledge as 76% claimed that they were aware of financial instruments for retirement investment. They may possibly be using the internet as their ability to use the internet to get information was assessed to a large extent.

# 4.2. Computation Capability of Retirement Benefits

Respondents' ability to compute their retirement benefits was measured using multiple-choice questions. The questions tested their understanding of basic financial literacy questions. Understanding these basic concepts is crucial for day to day financial transactions and financial planning. Even though academic staff are highly educated, only 23% of the respondents (33 out of 144) answered all questions correctly. The computation capability skills are lower than those obtained by Lusardi and Mitchell (2009) and van Rooij, Lusardi and Alessie (2012) who found that those who got all questions right were 44% and 40.2% respectively yet

their population included even those with low education. These findings again supported the findings of other studies that education alone does not equate to high financial literacy. The current study focused on highly educated participants but only 33% got all questions correct. This finding suggests that high levels of education do not mean or translate to high levels of financial literacy.

# 4.2.1. Correlation between Financial Knowledge (FK), Computation Capability of Retirement Benefits (CRB) and Financial Preparedness for Retirement (FPR)

A correlation analysis between knowledge of financial instruments (FK) score (some of the knowledge of financial products and concepts) was correlated against financial preparedness for retirement (FPR) score (sum of the extent of the retirement planning and assets being accumulated for retirement). The correlation results estimated in Table 3 showed that there was a statistically significant effect of knowledge of financial instruments on the financial preparedness for retirement at 95% confidence. Its Pearson coefficient was 0.564 and its significance level was 0.000 indicating that these two variables have strong correlation. This finding means that a one unit increase in knowledge of financial instruments leads to a 0.564 increase in financial preparedness for retirement, clearly showing that knowledge of financial instruments has an effect on financial preparedness for retirement. The findings show that knowledge of financial products such as bonds, unit trusts, shares and retirement investments policies has a relationship with financial literacy and retirement planning among academic staff in the kingdom of Eswatini. The findings are consistent with findings of Lusardi and Mitchell (2006, 2007 and 2011) and Mustafa et al. (2017), who found that financial knowledge towards retirement was significant in their study on factors influencing retirement planning behaviour of lecturers in polytechnics. These findings contradict Mullock and Turcotte and Agunga et al. (2017), who found that knowledge of financial instruments, contributed an insignificant weight of 0.002 to the FPR model in their study on the effect of financial literacy on financial preparedness for retirement among employees from state-owned corporations in Kenya.

Table 3. Correlational between FK, CRB and FPR

	Financial Preparedness for Retirement (FPR)
KF	0.564
	0.000
CRB	0.078
	0.360

Source: Authors' construction based on primary data collected (2019)

These results denote that for academic staff at higher learning institutions in Eswatini, the ability to solve simple numerical problems, interest rates, inflation, time-value for money and knowledge of financial risk does not significantly affect the way academic staff prepare for retirement. Although the findings contradict various findings such as Lusardi and Mitchell (2007, 2008 and 2011), Van Rooij et al. (2011), Agunga et al. (2017) amongst others, the finding is congruent with Mullock and Tucotte (2012) and Aluodi et al. (2017) who found that how well an individual understands financial concepts does not necessarily influence the way they prepare for their retirement. The findings are also not consistent with the proposition of the Financial Capability Framework by Bagwell et al. (2014) who concluded that employees that can successfully apply mathematical skills to financial problems can choose better performing financial saving vehicles and are therefore more financially prepared for retirement.

## 4.4.2. The Use of Multiple Linear Regression - Stepwise Regressions Approach

Multiple linear regression was another tool adopted to formulate the relationship between all the predictor variables with the outcome variable (FPR). The aim was to formulate a linear regression model representing these relationships. Table 4 shows an outcome when all the predictor variables (FK and CRB and all the demographics) were regressed against the dependent variable (FPR). It indicated that a 29.7% change in FPR can be explained by financial literacy and demographic variables. Other changes can be explained by other factors that were not investigated in this study. They include an individual's attitude to life, financial factors such as income and level of debts, amongst others.

A stepwise regressions approach was adopted as suggested by Field (2009) to check if the demographic variables individually, made a significant contribution to the predictive power of the model. Stepwise linear regression is a method of regressing multiple variables while simultaneously removing those that are not important. It can be in the form of a forward or backward approach. A forward method was chosen whereby all the predictor variables (FK, CRB and all demographic variables) were entered into SPSS and regressed simultaneously against the outcome variable (FPR).

Table 4. Model Summary Table of All Predictor Variables and Dependent Variable

R	$\mathbb{R}^2$	Adjusted R <sup>2</sup>	SE	Change Statistics					
				R Square	F	df1	df2	Sig.	F
				Change	Change			Change	
.54 5ª	.297	.292	5.63	.297	59.14	1	140	.000	

Source: Author's construction based on primary data collected (2019)

In the forward method, an initial model is defined that contains only the constant ( $\beta_0$ ). The SPSS then searches for the predictor (out of the ones available) that best predicts the outcome variable by selecting the predictor that has the highest simple correlation with the outcome. If this predictor significantly improves the ability of the model to predict the outcome, then this predictor variable is retained in the model, and SPSS searches for a second predictor variable (Field, 2009).

Table 5. Relationship between Significant Predictor Variables and Outcome Variable

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	В	Std.	Beta			
		Error				
(Constant)	17.584	1.580		11.131	.000	
FK	.659	.086	.545	7.690	.000	

Source: Author's construction based on primary data collected (2019)

Tables 5 and 6 were used to construct a predictive regression model of the form  $FPR = a + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$  which can be used to establish the strength and direction of the relationships between knowledge of financial instruments, computation capability of retirement benefits, demographic factors and financial preparedness for retirement. From the table below, the predictive model is presented as, FPR = 17.638 + 0.659KF + /-1.58. It was concluded that as the length of service is at the borderline in terms of significance (0.055), it will not be ignored as when using self-assessment measure, it was significant. Adding length of service therefore resulted in the following predictive linear regression model, FPR = 17.638 + 0.659KF + 0.136LS + / -1.58. It is evident that only financial literacy and not computation capability of retirement benefits had a statistically significant relationship with financial preparedness for retirement. The results of the multiple linear regression are further shown in Table 6 below. The results mean that policy makers should concentrate on designing programs to increase awareness of financial concepts and products available in the market. Those who have worked more years are likely to be more financially prepared for retirement than those with fewer years. Other demographic characteristics have very little impact on financial preparedness according to the results of this study.

Table 6. Results of Excluded Variables

Model	Beta In	t	Sig.	Partial Correlation	Collinear ity Statistics
					Tolerance
Gender	033b	457	.649	039	.958
Age in years	.074b	1.033	.304	.087	.986
Length of service	.136b	1.937	.055	.162	.999
Marital Status	002b	021	.983	002	.997
Education level	.053b	.748	.456	.063	1.000
Computation capability of retirement benefits	093b	-1.248	.214	105	.910

a. Dependent Variable: FPR Score

Source: Author's construction based on primary data collected (2019)

## 5. Conclusion

The overall conclusion drawn from the study is that being prepared for retirement financially, or retirement planning behaviour is a function of knowledge of financial instruments. The ability to compute what you get when you retire is not significant for academic staff employees in Eswatini. Preparedness for retirement among academic staff has nothing to do with one's demographic characteristics. The findings of the study indicate that financial literacy is necessary even among the highly educated because being skilled in one's profession does not translate to one being skilled in money / financial matters. The findings of the study cannot be generalized to the whole labour force of the Kingdom of Eswatini, but only academic staff of higher learning institutions. Further studies in the same topic can be extended to the whole population in the Kingdom of Eswatini to understand the current national level knowledge of financial literacy. There is a need for a national survey on financial retirement preparedness and also for the state of financial preparedness for the retirement of the Eswatini labour force.

b. Predictors in the Model: (Constant), Knowledge of Financial Instruments

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