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Pension literacy and retirement planning in an emerging economy

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ABSTRACT

This paper links pension literacy to retirement planning in an emerging economy. The results show that the correct knowledge about pension basics and savings rate have a positive effect on employees' efforts to plan for their retirement. Conversely, employees' correct knowledge about pension lump sum impairs their retirement planning efforts. Enhanced retirement preparedness is associated with the correct knowledge of pension basics and lumpsum, pension savings rate and lumpsum or pension basics, savings rate and lumpsum all together.

Keywords: Pension Literacy; Retirement Planning; Pension Savings; Lumpsum; Ghana

1. Introduction

This paper links pension literacy to efforts employees make to plan for retirement in an emerging economy. While numerous studies have attempted to explain the retirement planning or preparedness behavior of workers across the world, these are skewed toward the developed economies¹ and less so to emerging economies in Sub-Saharan Africa (SSA) especially Ghana, where retirement planning was solely under the purview of central government until recent pension reforms brought into the core of pension administration, private pension fund managers. The aforementioned reform in the pension landscape is indicative that individual employees have to take over the responsibility of retirement planning. Therefore, apart from being financially literate, employees' knowledge of the pension environment (pension literacy) could affect their retirement preparedness or the likelihood of an employee to plan his or her retirement. However, how pension literacy affects retirement planning is largely ignored in the literature.

A few studies have found that pension literacy is related to retirement preparedness. Landerretche and Martínez (2013) and Ayi-Bonte (2013) appear the most notable papers in extant literature. However, it is difficult to tell from these studies, what key pension knowledge requirements are needed for enhanced retirement preparedness because the blanket pension knowledge incentive may be (1) problematic given the age and gender differences, (2) costly to implement, and (3) not be efficient and effective due to the lack of specifics concerning the pension knowledge requirements for enhanced retirement preparedness.

¹ For example, the US (Lusardi & Mitchell, 2011), Netherland (Alessie, Van Rooij & Lusardi, 2011), Canada (Boisclair, Lusardi & Michaud, 2017), Germany (Bucher-Koenen & Lusardi, 2011), France (Arrondel, Debbich & Savignac, 2013), Sweden (Almenberg & Säve-Söderbergh, 2011), Japan (Sekita, 2011), Italy (Fornero & Monticone, 2011), Australia (Agnew, Bateman & Thorp, 2012), etc.

Further, the measurement of financial literacy has largely excluded knowledge of the pension environment within which workers make their financial decisions about retirements. Although retirement planning studies have extended into pension knowledge or incentives, much of it still refers financial literacy as a key determinant of financial decision such as saving for retirement (Lusardi & Mitchell, 2017; Lusardi & Mitchell, 2008; Lusardi & Mitchell, 2007), and pension plan participation (Agnew, Szykman, Utkus and Young, 2007; Fornero and Monticone, 2011).

This study fills these voids in the literature by making the following contributions. First, we complement and extend the literature on the role of pension literacy in retirement planning within an emerging market economy. Unlike prior studies, we have examined the relationship between pension literacy and retirement planning in an institutional setting where the employee's responsibility for retirement planning is exclusively a new phenomenon. Second, we offer insights into the pension knowledge specifics for employees to be better prepared for retirement instead of the blanket pension knowledge requirement suggested in prior studies (see Ayi-Bonte, 2013). Therefore, we present results that provide key pension knowledge requirements that are needed for enhanced retirement preparedness in emerging markets.

The remainder of the paper is as follows. Section 2 describes the data and methods. Section 3 presents the empirical results and discussions. Finally, section 4 concludes.

2. Data and Methods

2.1. Data

A survey was designed to document the knowledge of the pension environment in Ghana among formal sector employees. The following processes were observed in the data collection.

First, we created the survey questionnaires on google forms. Then, we shared the web link to the survey using several mediums such as emails, social media (i.e. LinkedIn, Whatsapp) and hand delivery of the survey to participants. A total of 554 respondents were emailed directly with the web link to the survey. A total of 50 respondents were sent a message through “LinkedIn” with the survey link. Two “Whatapp” groups comprising of 68 and 57 participants each were also sent the survey link. A total of 300 printed copies of the survey were hand-delivered to random employees within the Kanda, Ridge, and the Ministries environs in Accra. As such, the sample based on the distributed survey was 1029. Out of the total of 1029 respondents, we received responses from 526 respondents, representing 51 percent. Data collection took place between February 25, 2019, and May 20, 2019.

2.1.1. Measuring Pension Literacy

We measured respondents' pension knowledge using three questions which are modified version of Landerretche and Martinez (2013) survey questions. The exact questions we sought answers to are as follows (correct answers are in bold).

A. Basic Knowledge of Pension

Which of the following is true about pension in Ghana? (i) Tier One Pension; (ii) Tier Two Pension; (iii) Tier Three Pension; (iv) **All of the above**; (v) Do not know.

B. Pension Savings Knowledge

How much of your basic salary does the pension laws in Ghana allow you to save towards retirement? (i) 5 percent; (ii) 13.5 percent; (iii) 18.5 percent; (iv) **35 percent**; (v) Do not know.

C. Pension Lumpsum

After retirement, which of the following will you receive as a lump sum? (i) Tier One Pension; (ii) **Tier Two Pension**; (iii) Tier Three Pension; (iv) Both Tier One and Two Pensions; (v) Both Tier One and Three Pensions; (vi) Both Tier Two and Three Pensions; (vii) Do not know.

2.1.2. Measuring Retirement Preparedness

Retirement planning is assessed by asking respondents the question: “how much have you thought about retirement?” the answers included (i) a lot, (ii) some, (ii) a little, and (iv) hardly at all. This question has been the standard question used in prior studies examining the determinants of retirement planning (Lusardi & Mitchell (2017); Lusardi & Mitchell (2008); Lusardi & Mitchell (2007). It is measured on a four Likert-scale and ranges between 1 which signifies low retirement preparedness and 4 which signifies high retirement preparedness.

2.2. Empirical Methods

Following prior literature (e.g. Agnew, Szykman, Utkus and Young (2007); Fornero and Monticone (2011); Landerretche and Martinez, 2013) the baseline Ordinary Least Squares (OLS) specification with heterogeneity robust standard errors used to investigate the role of pension literacy on retirement preparedness is presented as below:

$$Y_i = \alpha + \beta_j \text{PensionLit}_{j,i} + \gamma_1 \text{Age}_i + \gamma_2 \text{Gender}_i + \varepsilon_i \quad \text{Eq. 1}$$

where Y_i is the dependent variable *Retirement Preparedness* in natural logarithm. It is measured on a four Likert-scale and ranges between 1 which signifies low retirement preparedness and 4 which signifies high retirement preparedness. α is an intercept. β_j is a vector of parameter estimate for pension literacy covariates j . γ is a vector of parameters on age and gender. $\text{PensionLit}_{j,i}$ is a

vector of pension literacy covariates, including pension basics, pension savings rate and pension lump sum upon retirement. *PensionLit* is measured as a dummy that takes the value of one when a respondent can answer the *Basic*, *Savings* and *Lumpsum* questions correctly and zero otherwise. *Age* is measured as a dummy that takes the value of one when a respondent is young (i.e. age under 40 years) and zero when the respondent is old (i.e. age over 40 years). Also, *gender* is measured as a dummy that takes the value of one when a respondent is male and zero when the respondent is female. ε_i is the error term.

Recent literature suggests that no single knowledge or information is enough for decision making, especially financial decisions (Fornero and Monticone, 2011). Thus, we examine the related question: what are the key pension knowledge requirements for enhanced retirement preparedness? To investigate the key pension knowledge requirements for enhanced retirement preparedness, the OLS specifications below are estimated.

$$Y_i = \alpha + \beta_1 Basics * Savings_i + \beta_j PensionLit_{j,i} + \gamma_1 Age_i + \gamma_2 Gender_i + \varepsilon_i \quad \text{Eq. 2}$$

$$Y_i = \alpha + \beta_1 Basics * Lumpsum_i + \beta_j PensionLit_{j,i} + \gamma_1 Age_i + \gamma_2 Gender_i + \varepsilon_i \quad \text{Eq. 3}$$

$$Y_i = \alpha + \beta_1 Savings * Lumpsum_i + \beta_j PensionLit_{j,i} + \gamma_1 Age_i + \gamma_2 Gender_i + \varepsilon_i \quad \text{Eq. 4}$$

$$\begin{aligned} Y_i = & \alpha + \beta_1 Basics * Savings * Lumpsum_i + \beta_j PensionLit_{j,i} + \gamma_1 Age_i \\ & + \gamma_2 Gender_i + \varepsilon_i \end{aligned} \quad \text{Eq. 5}$$

The definition of variables from Eq 2 – 5 remains the same as in Eq 1. Equation 2 measures the interaction effect of the correct knowledge of pension basics and savings rate (*Basic*Savings*) on retirement preparedness. Equation 3 measures the interaction effect of the correct knowledge of pension basics and lumpsum (*Basics*Lumpsum*) on retirement preparedness. Equation 4

measures the interaction effect of the correct knowledge of pension savings rate and lumpsum (*Savings*Lumpsum*) on retirement preparedness. Equation 5 measures the interaction effect of all three-pension knowledge (*Basic*Savings*Lumpsum*) on retirement preparedness.

3. Empirical Results and Discussions

3.1. Does Pension Literacy matter for Retirement Preparedness?

Table 1 reports the OLS estimation results. From the findings in Column (1), the correct knowledge about pension basics and pension savings rate is associated with greater retirement preparedness. Conversely, the correct knowledge of pension lump sum is related to low retirement preparedness. This is indicative of overconfidence incentives and the relegation of the duty of care that employees owe to themselves.

<<Insert Table 1 about here>>

Columns (2) – (4) show results for the role of pension literacy (i.e. pension basics, pension savings rate and pension lump sum) on retirement preparedness in young employees. The coefficient of pension *basics* is negative (Coeff. = -0.027, p=0.32) in Column (2) but the coefficient on the interaction term of pension basics and age dummy (*Basics*Age*) is, however, significantly positive (Coeff. = 0.157, p<0.01); evidence that the negative effect of pension basics on retirement preparedness for old employees is offset in young employees. Meanwhile, the coefficient of pension *savings rate* is positive (Coeff. = 0.102, p<0.01) in Column (3) but the coefficient on the interaction term of pension savings rate and age dummy (*Savings*Age*) is, however, negative (Coeff. = -0.045, p=0.17). This result signifies that the positive effect of knowledge about pension saving rate is prevalent in old employees. Concerning the role of the knowledge of pension lump

sum in old employees, the coefficient on *Lumpsum* is positive but not significant. In young employees, the coefficient on the interaction term of pension lump sum and age (*Lumpsum*Age*), is, however, significantly negative (Coeff. = -0.157, p<0.01); evidence that the positive effect of a pension lump sum on retirement preparedness for old employees is offset in young employees. Across gender, we gain further insight into how retirement preparedness and pension basics related for male employees by adding the coefficient of *Basics* (0.051) and the coefficient of the interaction term of pension basics and gender dummy (0.027) in Column (5). The sum reflects the total effect of the correct knowledge about pension basics on retirement for male employees and is significantly positive (0.078; p=0.0016). For male employees, therefore, the correct knowledge of pension basics incentivizes greater effort to plan for retirement.

3.2. What Pension Knowledge is Needed for Enhanced Retirement Preparedness?

Table 2 reports the results of the key pension knowledge requirements needed for enhanced retirement preparedness. From the two-way interactive effect perspectives, the coefficient on *Basics*Savings* is significantly negative (coeff. = -0.131, p<0.01), indicating that the correct knowledge of pension basics and savings rate undermines employees' efforts to plan for retirement. The coefficient on *Basics*Lumpsum* is significantly positive (coeff. = 0.158, p<0.05). The positive coefficient is indicative that the correct knowledge of pension basics and lumpsum may proxy as key knowledge requirements for enhanced retirement preparedness. Also, the coefficient for *Savings*Lumpsum* is significantly positive (coeff. = 0.153, p<0.01). Moreover, from the three-way, interactive effect perspective, the correct knowledge of pension basics, savings rate, and lumpsum all together, significantly and positively, affect retirement preparedness. Therefore, for enhanced retirement preparedness, key knowledge requirement includes either the

correct knowledge of pension basics and lumpsum, pension savings rate and lumpsum or pension basics, savings rate and lumpsum all together.

<<Insert Table 2 about here>>

4. Conclusion

This paper links pension literacy to efforts employees make to plan for retirement in an emerging economy. Our results have shown that enhanced retirement preparedness cannot be achieved without the correct knowledge about pension basics in both young and male employees, and the correct knowledge about pension savings rate in old employees. Also, the overconfidence incentive emanating from the correct knowledge of pension lump sum needs to be checked to mitigate its adverse effect on retirement preparedness among formal sector employees of developing countries. Moreover, the results suggest that in a pension system where there is a lump sum component, knowledge about lumpsum should not be asymmetric as it can improve employees' retirement preparedness when employees know either pension basics, savings rate or both. The study also provides a rationale for public intervention to improve the level of pension literacy in the Ghanaian population.

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Table 1. OLS Regression of Pension Literacy and Retirement Planning

Variables	(1) lscore	(2) lscore	(3) lscore	(4) lscore	(5) lscore	(6) lscore	(7) Lscore
Intercept	1.257*** (0.023)	1.317*** (0.028)	1.255*** (0.023)	1.250*** (0.023)	1.265*** (0.030)	1.257*** (0.023)	1.256*** (0.023)
Basic	0.066*** (0.022)	-0.027 (0.026)	0.065*** (0.022)	0.062*** (0.022)	0.051 (0.039)	0.066*** (0.022)	0.066*** (0.021)
Saving	0.075*** (0.018)	0.086*** (0.020)	0.102*** (0.020)	0.065*** (0.018)	0.072*** (0.019)	0.075*** (0.018)	0.074*** (0.018)
Lumpsum	-0.136*** (0.030)	-0.123*** (0.030)	-0.138*** (0.031)	0.002 (0.031)	-0.134*** (0.030)	-0.136*** (0.030)	-0.131** (0.065)
Gender	-0.003 (0.023)	-0.009 (0.023)	-0.002 (0.023)	-0.017 (0.022)	-0.019 (0.036)	-0.003 (0.023)	-0.001 (0.019)
Age	-0.055*** (0.016)	-0.157*** (0.035)	-0.050*** (0.018)	-0.020 (0.016)	-0.056*** (0.016)	-0.055*** (0.016)	-0.055*** (0.016)
Basic*Age		0.157*** (0.041)					
Saving*Age			-0.045 (0.033)				
Lumpsum*Age				-0.193*** (0.049)			
Basic*Gender					0.027 (0.045)		
Saving*Gender						0.000 (0.000)	
Lumpsum*Gender							-0.008 (0.071)
R-squared	0.137	0.164	0.138	0.161	0.138	0.137	0.137
Adj. R-squared	0.129	0.154	0.128	0.152	0.128	0.129	0.127
Observations	526	526	526	526	526	526	526

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 2. OLS Regression of Pension Knowledge needed for enhanced Retirement Preparedness

Variables	(1) lscore	(2) lscore	(3) lscore	(4) lscore
Intercept	1.255*** (0.023)	1.276*** (0.023)	1.257*** (0.023)	1.257*** (0.023)
Basic*Saving	-0.131*** (0.030)			
Basics*Lumpsum		0.158** (0.061)		
Saving*Lumpsum			0.153*** (0.036)	
Basic*Saving*Lumpsum				0.153*** (0.036)
Basic	0.072*** (0.023)	0.025 (0.019)	0.064*** (0.022)	0.064*** (0.022)
Saving	0.192*** (0.023)	0.075*** (0.017)	0.059*** (0.019)	0.059*** (0.019)
Lumpsum	-0.134*** (0.030)	-0.226*** (0.047)	-0.145*** (0.032)	-0.145*** (0.032)
Gender	-0.004 (0.023)	0.004 (0.022)	-0.002 (0.023)	-0.002 (0.023)
Age	-0.057*** (0.016)	-0.047*** (0.017)	-0.050*** (0.016)	-0.050*** (0.016)
R-squared	0.140	0.158	0.141	0.141
Adj. R-squared	0.130	0.148	0.131	0.131
Observations	526	526	526	526

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1