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### Factors Affecting Retirement Planning Ability

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**Abstract:** This study tries to prove whether there is an influence between the level of financial literacy, gender and age of a person on his ability to do retirement planning. This study uses a survey method by distributing questionnaires online. The sample of this research is workers who have not retired or workers who are still working even though they have retired. The sampling technique was purposive sampling with judgment, where the criteria used were workers with an age range of 23-65 years. Data analysis used in this study is ordinal regression. The results of this study found that gender and age had an influence on the ability to plan for retirement, but the level of financial literacy was not found to have an influence on the ability to do retirement planning.

**Keywords:** financial literacy; retirement planning; ordinal regression

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### Introduction

Although there is no specific data regarding the number of sandwich generation in Indonesia, based on data from BPS in 2019, the number of elderly whose household financing is financed by household members is quite high (77.91%). Meanwhile, other sources of financing, such as investment, are considered very low (0.67%). This shows that there are still many elderly people who have not been able to plan their retirement properly. Research by (Prast & Soest, 2016) found that many retiring parents cannot predict their income after retirement and they also do not know how to improve their standard of living after retirement. This condition will lead the parents to depend on their children financially, creating sandwich generation. Sandwich generation is an expression given to generations who are married and have children but at the same time have to pay for their parents who no longer have income. (Aulia, Yuliati, & Muflikhati, 2019; Lusardi & Mitchell, 2005) mention that this generation is a result of the inability of parents to save part of their funds for pension funds or weak planning for retirement.

(Prast & Soest, 2016) mentions that low involvement of parents in the issue of pension and in reading information about pension funds leads them to fail in predicting their income after retirement. This inability to read information and predicting such information may be related to financial literacy of these elderly. Study by (Lusardi & Mitchell, 2005) shows that individuals who have better financial knowledge have the possibility to be successful in planning their retirement. There is still very little literature that discusses whether a person's higher financial knowledge will affect their success in managing resources during retirement (Lusardi & Mitchell, 2014). Knowledge and ability about financial concepts in making effective and efficient financial decisions can be measured by the level of financial literacy. Therefore it is important to know the effect of the level of financial literacy on the planning ability of retirement. Many studies on financial literacy discuss the determinants of financial literacy in general or by age group. Several studies have found that financial literacy is closely related to education level, gender and age (Albeerdy & Gharleghi, 2015; Grohmann & Schoofs, 2018; Lusardi, Mitchell, & Curto, 2010; Morgan & Trinh, 2017; Potrich, Vieira, & Kirch, 2015; Sekar & Gowri, 2015).

Research from (Hasler & Lusardi, 2017; Hussain et al., 2015; Morgan & Trinh, 2017; Potrich et al., 2015; Sekar & Gowri, 2015) found that gender has a significant effect on literacy levels, where men have higher literacy level. However, research from (Bongini & Trivellato, 2015) did not find a gender gap in calculating the level of financial literacy at students, therefore it is necessary to examine whether there is an influence between gender and financial planning ability in old age (retirement). Furthermore, research from (Lusardi et al., 2010; Morgan & Trinh, 2017; Potrich et al., 2015) found that age also plays an important role in a person's level of financial literacy. How a person's ability to make financial decisions changes with their age (Lusardi & Mitchell, 2014) thus the age factor also needs to be included in the research model. Therefore, this study seeks to see the influence of literacy levels, gender and age on the ability to plan for old age (retirement).

This study attempts to fill the research gap from several previous studies by analyzing the relationship between financial literacy levels and retirement planning. Furthermore, previous research on gender and literacy levels has shown inconsistencies of results. This indicates that this variable may have an influence on financial planning for retirement where women have lower literacy levels than men, so that their planning ability is predicted to be lower. Age is also a concern in this study because research related to the financial literacy level of the age group has a significant effect. We also add marital status and education as the control variable to the model as we assume that married and people with higher education do better in retirement planning. The contribution of this study includes adding to the financial literature on the determinants of financial planning for retirement. By knowing what factors affect a person's planning ability, the increase in the number of sandwich generation can be suppressed. Furthermore, financial literacy and retirement financial planning are part of the pillars of the SNKI (National Strategy for Financial Inclusion) where an increase in both can increase financial inclusion in Indonesia.

## **Literature Review and Hypothesis Development**

Research by (Potrich et al., 2015) tries to explain financial literacy through socioeconomic and demographic variables. This study uses gender variables, marital status, number of dependents in the family, occupation, age, education level, parent's education, family

income and income as independent variables. The results of this study found that gender, education level, income and family income have a positive influence on financial literacy. Meanwhile, the number of dependents in the family has a negative effect, men who have no dependents and have a higher level of education, income and family income, tend to have a higher level of financial literacy. Similar research was carried out by (Morgan & Pontines, 2014) where they examined determinants such as education level, income, age and occupation and their effects on financial literacy in Cambodia and Vietnam. This study found that education level, income, age and occupation had a significant influence on the level of financial literacy as well as financial literacy and education was also found to have a relationship with thrifty behavior and financial inclusion.

Furthermore, (Sekar & Gowri, 2015) examined financial literacy among generation Y employees and their ability to make financial decision. This study found that financial literacy among employees is very low and the factors that influence financial literacy are gender, age, income and education level. Some literature also discusses financial literacy according to age groups. (Lusardi et al., 2010) analyzed financial literacy among young people in America. This study found that financial literacy is still very low and is closely related to demographic variables and family financial sophistication. This finding is also supported by (Albeerdy & Gharleghi, 2015; Hermawan, Gunardi, Maula, & Agustine, 2019) which states that financial literacy in students is influenced by education and their attitudes towards money. However, research from (Bongini & Trivellato, 2015) found that there is no gender gap that affects financial literacy.

(Lusardi & Mitchell, 2005) examined how workers make decisions to save, how they gather information to make decisions and whether they have the level of financial literacy needed to make these decisions. This study was conducted on the elderly age group in America and the results of the study found that many individuals in the age group of 50 years and over were still financially illiterate. This study also found that women with low financial knowledge and individuals with good financial knowledge are more likely to succeed in retirement planning.

In relation to retirement planning, there is very little research that discusses whether the higher one's financial knowledge, the more successful a person is in managing their resources at retirement (Lusardi & Mitchell, 2014). Research from (Aulia et al., 2019) analyzes the effect of financial literacy, old age financial planning and asset ownership on the financial well-being of retirement-age families. This study shows that the area of residence, education, financial literacy, planning and asset ownership positively have a positive influence on family financial health. Similar research was conducted by (Mendari & Soejono, 2019) which analyzed the determinants of financial planning and their relationship to financial literacy. The respondents of this study are lecturers, and the majority of them are aware of the importance of preparing a pension fund, but most of them do not have a retirement plan. Furthermore, the results of the study also found that there is a significant relationship between planning and literacy levels.

Therefore the hypothesis of this research is as follows:

- H<sub>1</sub>: Financial literacy has an effect on retirement planning ability
- H<sub>2</sub>: Age has an effect on retirement planning ability
- H<sub>3</sub>: Gender has an effect on retirement planning ability

## Methods

This study used a survey method with a questionnaire. The type of data used is primary data in the form of financial literacy levels and financial planning ability for retirement. The survey was conducted in through online surveys, by providing questionnaires via email or social networks. The sample of this research is workers who have not retired or workers who are still working even though they have retired. The sampling technique was carried out using purposive sampling method with criteria or judgment sampling. The criteria for the sample of this study were workers with an age range of 23-65 years.

### *Variable Measurement*

The research questionnaire consisted of 3 parts, namely, respondent profile, measurement of financial literacy level and ability to plan for retirement. Data for gender and age variables will be obtained from the respondent's profile. Furthermore, to measure the level of financial literacy and the ability to plan for retirement, this study refers to research from (Lusardi & Mitchell, 2005). Where to measure the level of literacy, there are 3 questions about interest, inflation and diversification. To measure the retirement planning ability, respondents will be assessed by the way they calculate their retirement planning. Questions regarding pension-planning calculations are also refers to the study by (Lusardi & Mitchell, 2005). The respondents will later on categorize their ability to three groups: simple planners, serious planners and succesful planners. Simple planners are those respondents who answer yes to the first question and no or rarely for the second and third question. Respondents who also answer yes to the second question but answer no or rarely to third question are carachterized as serious planners. Lastly, those who answer yes or mostly to all three questions are grouped as successful planners.

We use marital status and education as control variables in this study. We assume that people who are married have better retirement planning ability as they have children or spouse to take care of. With regards to education, many studies found that individuals with high education tend to have better financial well-being (Taft, Hosein, Mohammad, Mehrizi, & Roshan, 2013) hence we assume that they do better in retirement planning.

### *Data Analysis*

Ordinal regression is used to see the effect of the independent variables (level of financial literacy, age and gender) on the dependent variable (planning ability). This method is used because the dependent and independent variables use an ordinal scale. The data is processed using STATA 13.0.

## Findings

### *Respondent Profile*

Table 1. Respondent Profile

Item		Total	%
Gender	Woman	95	55%
	Man	78	45%
Age	<35 years old	61	35%
	36-45 years old	31	18%
	46-55 years old	42	24%
	>55 years old	39	23%
Education	Senior Highschool	4	2%
	Diploma	12	7%
	Undergraduate	58	34%
Marital Status	Master Degree	80	46%
	Doctoral Degree	19	11%
Marital Status	Married	151	87%
	Not Married	22	13%

Table 1 describes the profile of the respondents from this study. On the item gender (gender), the number of female respondents (55%) was slightly more than male (45%). Furthermore, in terms of age, most respondents were under 35 years old (35%) while the 36-45 year age category had the least number of respondents (18%). Nearly half of the respondents have a fairly high level of education, namely masters / masters (46%), while only 2% of respondents have a high school / vocational education. Finally, in terms of marital status, almost all respondents were married, amounting to 151 people (87%).

### *Financial Literacy Pattern*

Table 2. Financial Literacy Pattern

Panel A. Proportion of Answers Regarding Financial Literacy Questions				
	All correct	2 Correct	1 Correct	All Wrong
Proportion	5 (3%)	64 (37%)	65 (38%)	39 (23%)
Panel B. Distribution of Answers to Financial Literacy Questions				
	Correct	Wrong	Don't Know	
Time Value of Money	51 (29%)	122 (71%)		
Inflation	107 (62%)	66 (38%)		
Risks	51 (29%)	51 (29%)	71 (41%)	

Panel A of Table 2 describes the proportion of answers to financial literacy questions. It can be seen that only 5 people (3%) of the total respondents can answer the questions correctly. There is a very small difference between the number of respondents who can answer the question correctly as many as 2 questions (64 people) and 1 question (65 people). Meanwhile, there were 39 respondents who answered all the questions wrongly. This proves that the financial literacy among the respondents is still low.

Furthermore, Panel B describes the distribution of answers to financial literacy questions. The question regarding the time value of money has the highest number of respondents who answered incorrectly, namely 122 respondents (71%) while only 51 respondents answered the question correctly. On other questions regarding inflation, as many as 107 people (62%) answered correctly and 66 respondents incorrectly answered the question. The last question on risk or diversification only 51 people (29%) answer right and wrong respectively and most of them answer they did no know (41%).

**Retirement Planning**

Table 2 summarizes respondent ability to do financial planning based on the three questions explain in previous section.

Table 2. **Proportion of Planners in the Full Sample**

Question	Sample Proportion
<b>Simple Planner</b> Answer Yes to the question "Find out how much to save for retirement"	56.06%
<b>Serious Planner</b> Answer Yes to the question "Developing a plan for retirement savings"	53.2%
<b>Successful planner</b> Answering Always / Mostly to "sticking to the plan" questions	45.1%

Based on the findings, about 56.06% of the respondents attempt to find out how much they need to save for retirement, we refer this people as simple planners. Furthermore, nearly most of these planners are able to developed plan for retirement savings and we refer this group of people as serious planners. However, only around 45.1% of this category are only able to stick to the plan, hence, we call them successfull planners.

Table 3. **Links between Planning, Respondent Characteristics and Financial Literacy**

Item	Total	%	
Gender	Woman	45	57.7%
	Man	33	42.3%
Age	<35 years old	34	33.6%
	36-45 years old	12	15.4%
	46-55 years old	19	24.4%
	>55 years old	13	16.7%
Education	Senior Highschool	1	1.3%
	Diploma	6	7.7%
	Undergraduate	19	24.4%
Marital Status	Master Degree	41	52.6%
	Doctoral Degree	11	14.1%
Marital Status	Married	61	78.2%
	Not Married	17	21.79%

The data from Table 2 are then examined to see the profile of those categorized as successful planners. Table 3 summarizes the findings. It can be seen that the number of women who are categorized as successful planners is higher than men. It could be argued that most women in this research are working indicating that they may make financial decision in their household. This is supported by (Asandimitra, Aji, & Kautsar, 2019) that states working women may have high financial literacy and have more control on financial decision. Furthermore, it is surprising that the age group that has the least number of successful planners is 36-45 years old that we still consider as productive age group. Most successful planners are in fact from younger generation. Therefore, making assumption that the older the person get the more likely they will be better in planning is unlikely. This might be supported by the study of (Prast & Soest, 2016) that many people are not interested in planning for their retirement. Based on the education, we can see that most people that are grouped under successful planners have pursue higher education. It can be seen that nearly 53% of the successful planners hold master degree. This indicates that the higher the education of the person, there is a high likeliness that they will succeed in retirement planning.

### *Results of Ordinal Regression*

Table 3. **Results of Ordinal Regression**

<b>Model Fitting Information</b>				
<b>Model</b>	<b>-2 Log Likelihood</b>	<b>Chi-Square</b>	<b>df</b>	<b>Sig</b>
Intercept Only	268.382			
Final	243.801	24.581	10	0.006
<b>Goodness of Fit</b>				
Pearson		283.805	215	0.001
Deviance		191.198	215	0.877
<b>Pseudo R-Square</b>				
Cox and Snell	0.132			
Nagerlkerke	0.152			
McFadden	0.069			
<b>Parameter Estimates</b>				
	<b>Estimate</b>	<b>Wald</b>	<b>Df</b>	<b>Sig</b>
Financial Literacy	0.657	1.223	1	0.269
Gender	0.663	3.687	1	0.055**
Education	-1.326	1.443	1	0.230
Age	0.968	3.800	1	0.051**
Marital Status	1.432	5.890	1	0.015*

Note: \* significant at 5%, \*\* significant at 10%

Table 3 shows the results of the ordinal regression on the ability to plan for retirement. The -2 log likelihood value is used to measure the suitability of the model. The model is said to be appropriate if the decrease is significant ( $p < 0.05$ ). In Table 2, it can be seen that the significance of the decrease in the -2 log likelihood value is 0.006 ( $p < 0.05$ ). Therefore it can be concluded that the model in this ordinal regression is appropriate.

Furthermore, Pearson and Deviance tests were also used to measure the goodness of fit of this ordinal regression model. The requirement of the model to be said to be suitable is when the significance level is greater than 0.05, which rejects  $H_1$  which states that the model is not suitable for use. In Table 2, the significance value of the Pearson test is 0.001 and less than 0.05, but the result of the Deviance test is 0.877 and greater than 0.05, so this model is also suitable or appropriate.

The value of the Pseudo R-square is used to see how much variation in retirement planning ability can be explained by variations in the independent variable. This amount can be seen from the McFadden value, which in this regression shows the number 0.069 or 6.9% of the variation in the dependent variable, which can be explained by the independent variable (financial literacy, gender, education, age and marital status) while the rest is influenced by other factors outside the model. The effect of the independent variable on the dependent variable is illustrated in the results of parameter estimates. It can be seen that the variables that have a significant influence on retirement planning ability are gender, age and marital status. Meanwhile, financial literacy and education was not found to have an influence on retirement planning ability.

Gender has a positive and significant influence on planning ability, meaning that women have a higher ability than men to plan for retirement. When viewed descriptively, the number of women who are categorized as successful planners (Table 3) is indeed more than men, which indicates that there is a possibility that women's ability to plan financial retirement is higher than men. It can be said that most of the women in this study were employed which indicates that they may be making financial decisions in their household. This is supported by (Asandimitra, Aji, & Kautsar, 2019) which states that working women may have high financial literacy and have more control over financial decisions.

Furthermore age is also found to have a significant effect on retirement planning ability indicating that older respondents do planning better than the younger ones. This finding is inconsistent with those found by (Kaur & Hassan, 2018). We believe that older respondents tend to do better in retirement planning as they probably have enough to accommodate their current lifestyle and younger respondents may have other commitments. The same as assumed previously, married individuals tend to do better at retirement planning. This may be due to the fact that the household financial decision is made based two people as mentioned by (Gutierrez, 2015). However, different to the previous study financial literacy and education are found to have no influence on retirement planning ability. This finding is different than (Kaur & Hassan, 2018; Lusardi & Mitchell, 2011) that find individuals with high financial literacy and education tend to do better in retirement planning. The argument for our findings is that other factors such as income or other financial commitments may interfere the retirement planning ability of the respondents. The questions that used to measure the planning ability, especially the one that categorized them as successful planners, ask whether the respondents are able to stick to the plan. Therefore, the respondents may try to find out how much they need to save (Question 1) and develop a retirement saving (Question 2) but they fail to stick to the plan (Question 3) because they have limited income, have other financial commitments or others.

## Conclusion

This study aims to determine the effect of the level of financial literacy, gender and age on the ability to plan for retirement. The results of ordinal regression found that gender and age had an influence on the ability to plan for retirement while financial literacy are found to have no influence. Collecting data from this study only used a questionnaire distributed online therefore the results may not be able to draw a generalization on the factors that affect the retirement planning ability. To minimize bias that will affect the results of the study, for further research it is recommended to conduct interviews with a sample of respondents to confirm the results of the data findings and also add more control variable such as income.

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