Financial Literacy and Retirement Planning; Based On Wewala West GN Division, Sri Lanka

P.G.T.N Perera[1]

Abstract

In present society several severe troubles which arise due to the lack of financial literacy and specially issues regarding retirement life confidence are observed. A very few out of the Sri Lankan population have retirement plans while a majority have a blank idea about it. Several factors can be identified which determine this difference of numbers. According to the previous studies in many countries, financial literacy rate is a considerable factor among other factors which decide whether an individual has a retirement plan or not. Research problem of this study is to check whether financial literacy rate is a significant factor which determines owning a retirement plan in the Sri Lankan context. In addition, specific objectives of this study are constructing indices for financial literacy and retirement life confidence, identifying the basic demographic factors affecting the financial literacy and retirement life confidence. A sample of 300 households from Wewala West GN division of Colombo District is selected for this research using simple random sampling technique. Structured questionnaire was used to gather data which contained basically 3 parts. Indices for financial literacy rate and retirement life confidence are constructed using weighted average method. With the use of these index values, people are categorized into two categories as high and low using the median value of each index. It was identified some factors including education level and age have a significant impact on the financial literacy rate but the race does not have a significantly effect. As well as there are some factors including monthly income, education level and ownership of the house which are significantly effect to retirement life confidence while gender, marital status, race, number of dependents and sector of job does not have a significant effect on retirement life confidence. Finally, it can be concluded that if someone has good financial literacy rate, such respondents tend to choose a retirement plan. Thus there is a relationship between financial literacy rate and having a retirement planning.

Key words: Financial literacy, Retirement life confidence, Retirement planning, Sri Lanka

Introduction

Financial literacy possesses the skills and knowledge on financial matters to confidently take an effective action that best fulfills an individual's personal, family and global community goals

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[1] University of Moratuwa, tharakanuwanthi@gmail.com

(Financial educators' council, 2018). Financial literacy is a combination of awareness, knowledge, skills, attitudes and behavior necessary to make sound financial decisions and ultimately achieve individual financial well-being (Akinson & Messy, 2012). According to most of researches financial literacy can be identifying as combination of financial knowledge, financial behavior and financial attitudes.

Financial knowledge is some basic knowledge of key financial functions such as division, interest rate, compound interest, time value of money, risk and return, inflation, diversification etc. of financially literate person. Is the capability how to manage the money in different usage, including the monitoring of day to day financial matters in the market and make the right choices for "financial literate" people's needs. (Akinson & Messy, 2012).

Financial behavior can be defined as any human behavior that is relevant to money management. Common financial behaviors include cash, credit and saving behavior (IGI Global, 2018a). The way in which a person behaves will have a significant impact on their financial literacy.

Individual characteristics that take the form of tendencies towards a financial practice or action is known as financial attitudes. It shows the inclination or likelihood of a person to undertake a behavior (IGI Global, 2018b). Attitudes and preferences are considered to be an important element of financial literacy.

Retirement planning is the process of determining retirement income goals and the actions and decisions necessary to achieve those goals. Retirement planning includes identifying sources of income, estimating expenses, implementing a savings program and managing assets. Future cash flows are estimated to determine if the retirement income goal will be achieved (Investopedia, 2018).

Financial decision making is an integral part of daily life of people. Most of financial decisions are made as own decision without advise of financial specialists. Ability of financial decision making and also accuracy of those decisions are depending on financial literacy (Meir, Mugerman & Sade, 2016). The lack of financial literacy may lead to making poor financial choices that can have negative consequences on the financial well-being of an individual. Retirement planning is very important part of today world because of the rapidly increasing age problem of developing countries. Normally retirement plan is the planning one does to be ready for life after paid finishing the jobs, not just financially but in all aspects of life (Clark, Lusardi & Mitchell, 2015).

There are some troubles with lack of financial literacy and also aging problem in Sri Lanka as a developing country. Certain numbers of people have retirement plans while considerable amount of people haven't. There may be some factors affecting to difference of this amounts. As the previous literature in many countries, financial literacy rate is a considerable factor among other factors which affect to the having retirement plan. So it is important to check financial literacy rate is affected to the having a retirement plan in Sri Lankan context.

Objectives of the study

The main objective of this study is to identify whether there is a relationship between financial literacy and retirement plan.

Specific objectives are;

> ➢ Constructing index for financial literacy
> ➢ Identify the basic demographic factors affecting to financial literacy
> ➢ Constructing index for retirement life confidence
> ➢ Identify the basic demographic factors affecting to retirement life confidence.

Literature Review

According to the research done by Clark and his team in 2015, employees who completed an educational module were more likely to start contributing and less likely to have stopped contributing to the retirement plan (Clark, Lusardi & Mitchell, 2015). As the study of Lusardi and Mitchell in 2005, shows that financial illiteracy is widespread among older Americans. They also evaluate whether people tried to figure out how much they need to save for retirement and those calculations prove to be difficult: fewer than one-third of age50+ respondents ever tried to devise a retirement plan, and only two-thirds of those who tried actually claim to have succeeded in USA (Lusardi & Mitchell, 2005). In 2016 Mier and group done a research in Israel and that research findings indicate that the activities of searching for financial information and monitoring household expenses are positively correlated with retirement literacy, even after controlling for various demographic and behavioral variables. They conclude that no significant correlation was found between retirement literacy and financial knowledge when controlling for other variables. Financial literacy regarding retirement savings increases with an individual's tendency to meticulously check bills and periodic account statements, while financial expertise does not necessarily translate into higher levels of retirement literacy (Meir, Mugerman & Sade, 2016). Regarding to results of the Castro's study in 2014 most people seem to be unprepared to take charge of financial decisions and retirement. The results suggest a lack

of knowledge in financial and retirement planning, although respondents answered they look for information regarding financial and retirement matters (Castro-Gonzalez, 2014). In 2016 a paper done by Aubram and team analyzes the impacts of financial literacy on the investment and pension planning behavior in Austria and Switzerland. According to their study a higher financial literacy has a clear positive impact on the level of pension planning, whereas the effect of the self-assessed financial literacy is stronger than the impact of the factual one (Aubram, Simcek & Wanzenried, 2016).

Methodology

This part basically discusses the tools used to gather the relevant data and also analyzing method which used to achieve the objectives of the research.

Research Population and data collecting method

This study selected Wewala west GN division as the study area because it is one of unique GN division which represents all the demographic factors considered. There are 1442 number of households in the Wewala West GN division which is selected area for this study. Among those 1442 Number of households for this study was selected 300 people from 300 different households as the sample. Simple random sampling method is used for this study. Although, mathematically 20.8% of proportion was selected it can be justified in the sense of time and cost limitations.

Researcher only used primary data for research purposes. Primary data were collected through structured questionnaire which designed as three main parts. 300 questionnaires were distributed and 216 respondents were given back them. Questionnaire used for this research were based on OECD core questionnaire on financial literacy and also questionnaire of Aubram and team that use for their research on financial literacy and retirement planning. Questionnaire which used here comprises basically 3 parts as demographic data, financial literacy data and retirement planning data

Measuring variables

Demographic data were collected so as to get an idea about sample and also to find the relationship between financial literacy and retirement planning with respect to demographic data. All the demographic data were categorical and there hasn't been used any method as measurements for those data. In the second part of the questionnaire, this study tries to collect data about financial literacy and there may use some scores to get a weighted value for a

component named Financial literacy. For that purpose, here the researcher used 15 variables under three sub categories.

Data analysis method

This study is mainly used validity analysis, frequency analysis, factor analysis, weighted average, chi square test and also logistic regression as the tools of analysis.

Data presenting and analysis

After collecting relevant data study has used response rate and reliability analysis as a unique measurement to measure the validity of the gathered data. According to first time responses response rate which equals to 72% is more than 50%. So the study concludes that validity of questionnaire method is appropriate for further analysis. Reliability analysis refers to the fact that a scale should consistently reflect the construct it is measuring. Standardized Cronbach's α is a coefficient should be with in 1 and 0 and here these value becomes 0.729. According to Field (2009), it is acceptable for further analysis.

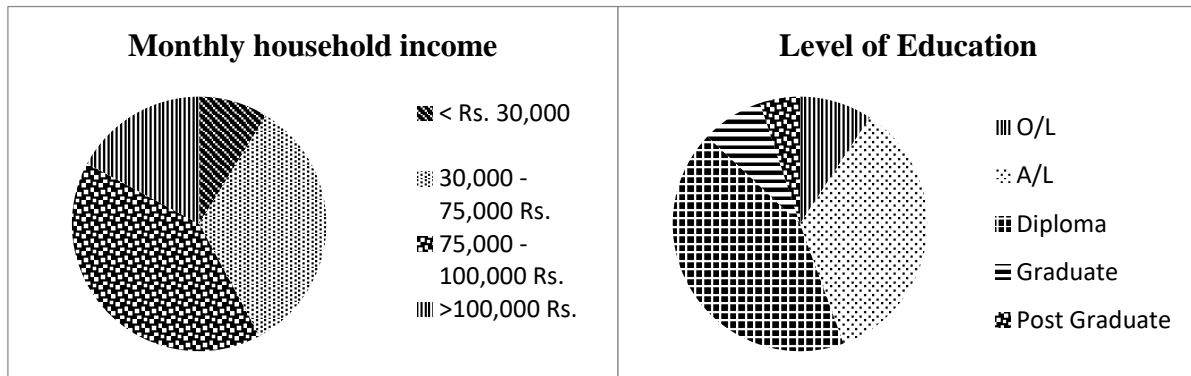## Demographic features of the sample

According to the gathered data one can identify different demographic features in the sample. They are briefly identified as in below.

Figure 1: Demographic features (I) of the sample
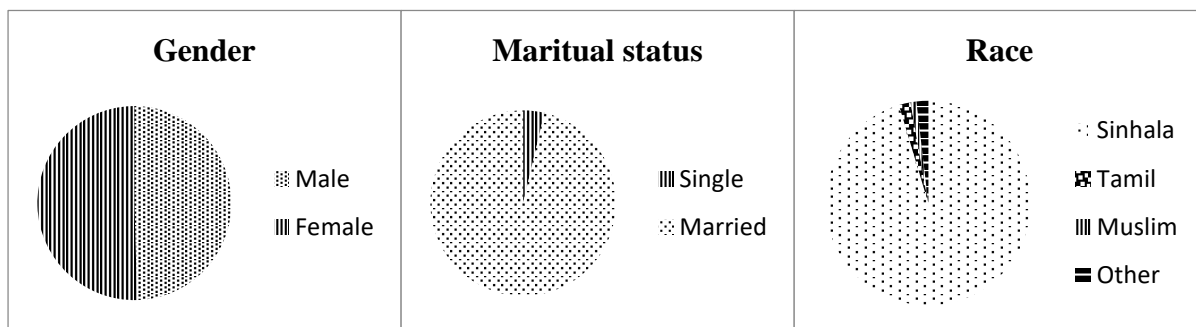
According to the figures mentioned above there are 107 male and 109 female in the sample and among them 8 were single and 208 were married respondents. In the aspect of race there were 206 number of Sinhalese, 4 Tamil people, 2 Muslims and 4 others.
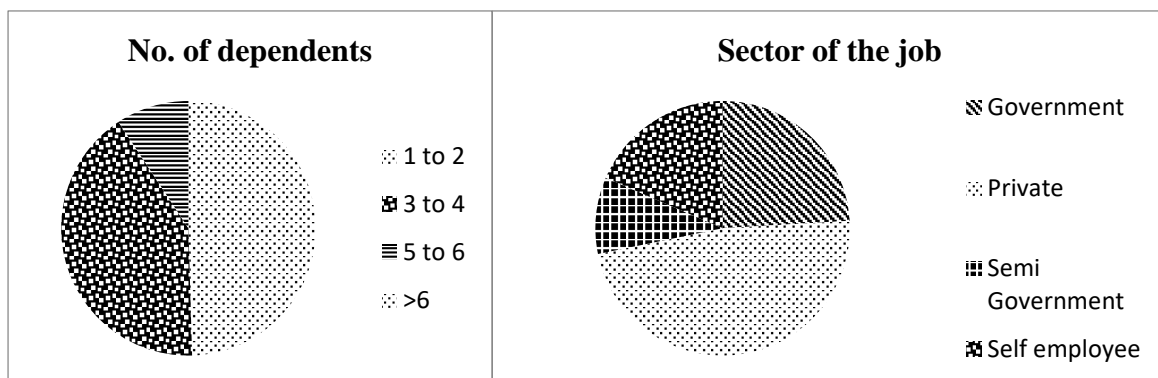
Figure 2: Demographic features of the sample

Monthly household income	Level of Education
< Rs. 30,000 30,000 - 75,000 Rs. 75,000 - 100,000 Rs. >100,000 Rs.	O/L A/L Diploma Graduate Post Graduate

Then considering the household's monthly income there are 19 respondents who have less than Rs. 30,000 incomes per month. 72 have Rs. 30,000 to 75,000 monthly income and 88 of respondents have Rs. 75,000 to 100,000 of it. Other 37 respondents give monthly household income as more than Rs. 100,000.

When we consider the level of education of the sample; 20 of them mentioned maximum level of education is O/L, 76 of respondents educated up to A/L. 92 respondents have diploma level education and 17 of respondents are graduates. Other 11 respondents have Post graduate level educational qualification.

Figure 3: Demographic features of the sample

No. of dependents	Sector of the job
1 to 2 3 to 4 5 to 6 >6	Government Private Semi Government Self employee

Then considering the number of dependents in the households, there are no any households with more than 6 dependents. There are 107 households with 1 to 2 dependents, 89 households with 3 to 4 dependents and other 20 households with 5 to 6 households. When considering the sector of job of each respondent, there are 52 government sector job owners, 103 private sector job owners, 21 number of semi government employees and 40 other respondents engaged with self-employee.

Figure 4: Demographic features of the sample
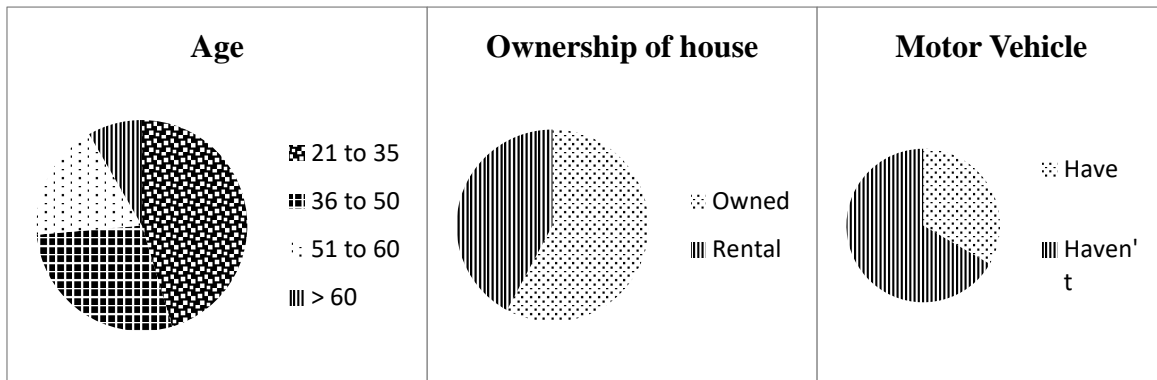
Next considering the age group of the sample there are 98 respondents who belong to 21 to 35 age group, 61 respondents who belong to 36 to 50 age group, 39 respondents belongs to 51 to 60 age group and 18 respondents belong to more than 60 age group.

Considering the ownership of the house, there are 125 households that they live in their own house and other 91 respondents live in rental house. As well as considering the ownership of motor vehicle 72 respondents have motor vehicle while other 144 respondents haven't motor vehicle.

4. Measurements of the variables

In the financial knowledge category, questionnaire used 8 questions to check financial knowledge about division, time value of money, interest, interest + principle, compound interest, inflation and diversification. In the category of financial behavior, questionnaire includes 4 questions to get idea about financial behavior such as considering purchase, timely bill payment, financial affairs and long term financial goals. In these two sub sections, if the respondent gives correct answer study has given value 1 and otherwise value 0. Attitudes are considered as another important part of financial literacy. If a person has rather negative attitudes towards savings and if people have only short term financial goals they haven't positive financial attitudes. In the sub section of financial attitudes, questionnaire includes 3 lickert scale questions. Then study has given value 1 for the expected answer and otherwise value 0 for measuring purposes. This study has been counted the number of correct responses given by each respondent separately for three sub sections. Then construct the index for whole financial literacy by using weighted average method. Weight for each component is defined according to the component score coefficient matrix result of confirmatory factor analysis.

Accordingly calculate the weighted average of financial literacy rate for each respondent as follows.

$$\bar{X}_w = \frac{(0.405X_{1i}+0.373X_{2i}+0.407X_{3i})}{(0.405+0.373+0.407)}$$

Where, X_{1i}: financial knowledge score of ith person.

X_{2i}: financial behavior score of ith person.

X_{3i}: financial attitude score of ith person.

Calculated financial literacy index is between 0 - 5.02 and then categorized values of index as high financial literate person and low financial literate person according to the median value of financial literacy index which is equals to 3.506. So if someone has financial knowledge index more than 3.506 that person includes to high financial literate person and otherwise low financial literate person.

Last part of the questionnaire tries to capture the data about retirement planning. Basically use the dualistic question to get idea about retirement planning. Then there include few questions to gather more data about the type of retirement planning and also data about confidence level of retirement life. Then construct the index for retirement life confidence by using weighted average method. Weight for each component is defined according to the component score coefficient matrix result of confirmatory factor analysis. Accordingly retirement life confidence index has calculated as follows;

$$\bar{X}_w = \frac{(0.185X_{1i}+0.207X_{2i}+0.195X_{3i}+0.192\,X_{4i}+0.154X_{5i}+0.208\,X_{6i})}{(0.185+0.207+0.195+0.192+0.154+0.208)}$$

Where, X_{ij}: j[th] component score of ith person.

According to weighted average calculated above, retirement life confidence index is between 0 - 1. Then categorized values of index are put into two categories as high retirement confidence person and low retirement confidence person according to the median value of retirement confidence index which is equals to 0.54.

Identifying the basic demographic factors affecting to financial literacy and retirement life confidence

This study tries to test some hypotheses to check whether there is a significant affection to financial literacy rate from considering demographic factors using Chi squared test.

Table 1: Identify factors affecting to financial literacy

Null Hypothesis		Chi square value	Sig. value	Decision
H_{01} :	There is no relationship between gender and financial literacy rate.	6.686	0.010	H_{01} is rejected.
H_{02} :	There is no relationship between race and financial literacy rate.	2.078	0.556	H_{02} is accepted.
H_{03} :	There is no relationship between household's monthly income and financial literacy rate.	36.805	0.000	H_{03} is rejected.
H_{04} :	There is no relationship between education level and financial literacy rate.	60.131	0.000	H_{04} is rejected.
H_{05} :	There is no relationship between sector of the job and financial literacy rate.	15.308	0.002	H_{05} is rejected.
H_{06} :	There is no relationship between age and financial literacy rate.	44.592	0.000	H_{06} is rejected.

According to the results shown in table 4, gender, household's monthly income, education level, sector of job and age category are significantly affecting factor for the financial literacy rate while race is not significantly affect to financial literacy rate. Education level and age are the most important factors among the affected factors.

This study tries to test some hypotheses to check whether there is a significant affection to retirement life confidence from considering demographic factors using Chi squared test.

Table 2: Identifying basic demographic factors affecting to retirement confidence.

Null Hypothesis		Chi square value	Sig. value	Decision
H_{07} :	There is no relationship between gender and retirement life confidence.	0.549	0.459	H_{07} is accepted.

H_{08} : There is no relationship between marital status and retirement life confidence.	0.599	0.439	H_{08} is accepted.
H_{09} : There is no relationship between race and retirement life confidence.	3.930	0.269	H_{09} is accepted.
H_{010} : There is no relationship between household's monthly income and retirement life confidence.	34.682	0.000	H_{010} is rejected.
H_{011} : There is no relationship between education level and retirement life confidence.	26.026	0.000	H_{011} is rejected.
H_{012} : There is no relationship between number of dependents and retirement life confidence.	0.156	0.925	H_{012} is accepted.
H_{013}: There is no relationship between sector of the job and retirement life confidence.	3.409	0.333	H_{013} is accepted.
H_{014} : There is no relationship between age and retirement life confidence.	13.981	0.003	H_{014} is rejected.
H_{015} : There is no relationship between ownership of house and retirement life confidence.	24.361	0.000	H_{015} is rejected.
H_{016} : There is no relationship between ownership of motor vehicle and retirement life confidence.	3.971	0.046	H_{016} is rejected.
H_{017} : There is no relationship between financial literacy rate and retirement life confidence.	17.868	0.000	H_{017} is rejected.

According to the results shown in table 2, household's monthly income, education level, age, ownership of house and ownership of motor vehicle categories are significantly affecting factor for the retirement life confidence while gender, marital status, race, number of dependents and the sector of job are not significantly affected to the retirement life confidence. Monthly income, education level and ownership of the house are the most important factors among the affected factors.

Relationship between financial literacy and retirement plan

The study can summarize the data about retirement planning and as; 101 respondents have retirement plan before get retired is a considerable event. Considering with today's aging problem, it's a positive characteristic of the sample. So as to fulfill the main objective of this study we have to check whether there is a relationship between financial literacy rate and retirement planning and also if there is a relationship, measure the size of effect too.

Table 3: Identifying relationship between financial literacy rate and retirement planning.

Null Hypothesis	Chi square value	Sig. value	Decision
H_{018} : There is no relationship between financial literacy rate and having retirement planning.	9.838	0.002	H_{018} is rejected.

According to the result shown in table 3 there is a relationship between financial literacy rate and having retirement plan. After identified there is a relationship, study has done the logistic regression analysis as follows to measure the effect of relationship. Logistic regression is the appropriate regression analysis to conduct when the dependent variable is binary. In this case, having retirement plan before they get retired consider as the dependent variable which coded "1" for having retirement plan and "0" for haven't retirement plan. Independent variable is also binary variable which coded "1" for high financial literate person and "0" low financial literate person. Accordingly estimated logistic regression function as follows;

$$P(Y) = \left(\frac{1}{1 + e^{-(-0.571 + 0.869 X_1)}} \right)$$

Here, P(Y): Probability of having or not having retirement plan.

β_0: Constant term

β_1: Slope

X_1: Financial literacy level

Also one can get the log value of this model as;

$$\log \left(\frac{P}{1-p} \right) = -0.567 + 0.869 X$$

These estimates tell about the relationship between the independent variables and the dependent variable, where the dependent variable is on the logit scale. As an example the first respondent of this sample is high financial literate person and that respondents' probability of having retirement plan is 0.57 which is greater than cut point 0.5. So there is high probability to having retirement plan. When concerning the odd ratios, log-odds units' coefficients are often difficult to interpret, so they are converted into odds ratios. By looking at the "Exp(β)" value it can understand odd ratios. Accordingly, coefficient for financial literacy = 2.385 which is interpreted as **the expected change in log odds for a one-unit increase in the financial literacy rate**. In other simple words, one respondent having retirement plan, when he belongs to higher financial literate category is 2.385 times higher than lower financial literate person.

Then one can question about the goodness of fit of this model. Here Nagelkerke R square value is greater than 0.5 which indicates the model is good for using interpret purposes. Also it proves by the results of Omnibus test.

5. Conclusions and discussion

According to the first objective this study constructed index for financial literacy and financial literacy index is between 0 - 5.02. Then categorized values of index as high financial literate person and low financial literate person according to the median value of financial literacy index which is equals to 3.506. So the researcher can conclude that, if someone has financial knowledge index more than 3.506 that person includes into high financial literate person and otherwise low financial literate person.

According to the second objective identified the basic demographic factors affecting to financial literacy. This study finds that gender, household's monthly income, education level, sector of job and age category are significantly affecting factor for the financial literacy rate while race is not significantly affect to financial literacy rate. Education level and age are the most important factors among the affected factors.

To achieve the third objective, this study constructed index for retirement life confidence which is between 0 - 1. Then this study has categorized values of index as retirement confidence person and low retirement confidence person according to the median value of retirement confidence index which is equals to 0.54. So the researcher can conclude that, if someone has retirement confidence index more than 0.54 that person includes into retirement confidence person and otherwise low retirement confidence person.

Then for achieving fourth objective, this study identified the basic demographic factors affecting to retirement life confidence. So, household's monthly income, education level, age, ownership of house and ownership of motor vehicle categories are significantly affecting factor for the retirement life confidence while gender, marital status, race, number of dependents and sector of job are not significantly affect to retirement life confidence. Monthly income, education level and ownership of the house are the most important factors among the affected factors. And also we can identify there is a relationship between financial literacy rate and retirement life confidence.

Conclusion

As the final conclusion this study identifies that if someone has good financial literacy rate, that respondent tends to be chosen a retirement plan also. So there is a relationship between financial literacy rate and having retirement plan.

Further research can be done on this topic with the large number of respondents than this sample size and also for more than one GN division get generalized results. If it could conduct more in depth interviews with relevant responsible persons in financial literacy and retirement planning field study can identify invisible dimensions.

Reference

Akinson, A. & Messy, F. (2012). Measuring financial literacy: Results of the OECD / International network on financial education Pilot study. *OECD Working papers on Finance, Insurance and private pensions, No 15.* http://dx.doi.org/10.1787/5k9csfs90fr4-en

Castro-Gonzalez, K. C. (2014). Financial literacy and retirement planning: evidence from puerto rico. *Global journal of business research.8(1).* 87-98 Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2323594

Central Bank of Sri Lanka. (2018). Financial Intelligence Unit. Retrieved June 28, 2018 from https://www.cbsl.gov.lk/en/financial-intelligence-unit

Clark,R., Lusardi, A. & Mitchell, O. (2015). Employee financial literacy and retirement plan behavior: A case study. *Working Paper 21461.* Retrieved from http://www.nber.org/papers/w21461

Field, A. (2009). Discovering Statistic sing SPSS. New Delhi: SAGE Publishers.

Financial educators' council. (2018). Financial Literacy Definition. Retrieved June 28, 2018 from https://www.financialeducatorscouncil.org/financial-literacy-definition/

IGI Global. (2018a). *What is Financial Behavior*. Retrieved June 28, 2018 from https://www. igi-global.com/dictionary/financial-education-for-children-and-youth/47372

IGI Global. (2018b). *What is Financial Attitudes*. Retrieved June 28, 2018 from https://www. igi-global.com/dictionary/financial-literacy/58683

Investopedia. (2018). *Retirement planning*. Retrieved June 28, 2018 from https://www.investopedia.com/terms/r/retirement-planning.asp

Lusardi, A. & Mitchell, O. S. (2011). Financial Literacy Planning: Implication for retirement well-being. *NBER Working Paper 17078*. Retrieved from http://www.nber.org/papers/w17078

Meir, A., Mugerman, Y. & Sade, O. (2016). Financial Literacy and Retirement Planning: Evidence from Israel. *Journal of Israel Economic review*, 14(1), 75-95 Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2889925