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Article

Demographic Factors and Saving Behaviour: Its Relevance in Financial Planning for Retirement

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Abstract

Life expectancy, in India, was 41 years in 1960, which stands at 69.4 years in the year 2018, as per World Bank (2020). This improvement in life expectancy is due to enhanced standard of living and improved healthcare system in India. Generally, the age for retirement is 60 years, which means individuals would lead life after retirement with no regular income unless individual has appropriate investments to ensure adequate income. Hence it is important for individuals meticulously make financial plan for retirement. Most of the government and all of private sector do not provide for regular income, in the form of pension after retirement. Hence, is the responsibility of the individual to make appropriate investments during the period of employment. Financial security can ensure and enable individuals to enjoy the life after retirement. The financial stress reduces to a large extent if individual starts investing at an early age. Primarily, demographic factors and saving behavior has relevance in understanding the individual's financial planning for retirement. The present study has considered predictor variables, namely age, gender, education, profession, size of the family, total earning members in the family, frequency of saving and advice for saving. The study is conducted in the Quilon City, Kerala. For the study primary data is collected using structured questionnaire. Google form was the medium to collect the data. Binary logistic regression is used to analyse influence of afore mentioned variables on individual's act to take decision to make financial plan for retirement. The study revealed that age, profession, number of earning members in the family, frequency of saving and advice for saving has significant impact on individual's initiative to plan for retirement.

Key words: *Financial Plan, Demography, Retirement, Logistic Regression*

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INTRODUCTION

Economic wellbeing of any economy depends to a large extent on the demography of the country. India's median age in the year 2021 is expected to be 28.34 years. Hence we can say that India is a young nation with 64.2 percent of the population is in the age group of 15 to 59 years (Population Projections for India and States , 2020). This young population will gradually grow old and reach retirement age. Retirement is defined as the time when one ceases to perform his or her main job and begins to receive pension income from public or private sources (O'Rand & Henretta, 1999). Hence in retirement an individual does not have regular income and depends on the pension income. To have adequate pension income, people should have made adequate savings during their work life.

If we look at general pension structure, most popularly it is made up of three pillars. First pillar is funded by government or unions; it is aimed at keeping poverty at bay. Second pillar is forced or occupational savings towards pension and third pillar is voluntary contribution pension account. (Willmore, 2000). In India, first pillar is nonexistent and second pillar is for organized sector and this forced saving may not be adequate to lead comfortable life after retirement. Hence, for financial independence after retirement, an individual must voluntarily contribute to pension funds. As per report titled 'Population Projections for India and States 2011 2016', only eight percent of total employment is in formal sector, it means almost ninety percent of employment is in the informal sector (Ministry of Health and Family Welfare, 2020). Therefore, it is essential that individuals make their personal financial plan for retirement. As per RBI's report on household finance, 77 percent of the individuals to not do financial planning for retirement (Indian Household Finance, 2017). If this young population, during their employment years, fail to make adequate financial plan for retirement, it would be worrisome situation to the government of the nation and to the individual personally. This paper is focused on understanding the influence of demographic factors financial plan for retirement.

Retirement planning is a choice an individual need to make voluntarily. There is no law which makes it mandatory for an individual to make investments in the financial assets for financing the retired life (Ng et al., 2011). It is important that financial plan is made for availability of financial resources after retirement, otherwise, it might lead to hardship and emotional stress in the old age. In many cases individual may need to continue to work after retirement. If individual makes financial plan for retirement early in life, he/she would have the advantage of saving small amount for adequate corpse at the time of retirement, due to compounding effect on the savings.

DEMOGRAPHIC FACTORS

Demographic factors are associated to saving habits and making financial plan for retirement. Individuals, at young age do not focus on saving as they feel it is the beginning of their professional life and there will be enough opportunity in the future to save for retirement. And retirement seems to at very distant time in future to think about when they have other big ticket expenditure on their mind, such as purchasing car or a house. But as they grow old and their financial commitments start increasing. Around the age of forty, they start thinking about saving for retirement and financial security after retirement (Anbarasu et.al., 2011: Petkoska & Earl, 2009). At this stage they would like to save for retirement but could find it a challenge to do so due to increased financial commitment. With age individual's risk tolerance with respect to investment also changes (Mishra et.al., 2019) It is found that age is positively associated with financial planning for retirement as age increases, there is higher probability that individual takes to saving for retirement. (Mansor et.al., 2015: Ng et.al., 2011: Rickwood). Compared to earlier generations, today's generation initiate early the financial planning for retirement (Hoe Kock, 2012).

Gender difference has impact on the financial planning retirement. There is empirical evidence that there is difference in their education level, salary level, saving habits and knowledge about financial products. Many women also have break in their career due to issues related to family. This gets reflected in low risk tolerance displayed by women in selecting their investment avenues (Fisher, 2010; Lusardi & Mitchell, 2008). Due to all these factors naturally there is difference in the approach taken

towards financial planning by men is different from women. Education has relevance on the earning capability, access to financial information and ability to understand and comprehend financial products. General education level has relevance to the financial literacy of the individual. Financial literacy is positively associated to the individual's capability to comprehend financial terms, and understanding various financial products. An individual with higher education has higher probability to have financial literacy and hence is capable to make financial plan for retirement (Mansor et.al.,2015, Kaur & Hassan, 2018, Hoe Kock, 2012). The type of occupation or sector in which individual is employed can influence his/her financial preparedness for retirement. Individual's earning stable income, is confident and has higher risk tolerance (Mishra et.al.,2019; Noone et.al.,2012). The sector in which a person is employed can also influence the financial plan. Individuals employed in financial service sector tend to have better financial literacy to make financial plan for retirement.

An individual, if married, most probably has a saving plan for various forthcoming big expenses. Hence there is higher probability that married individual would have more clarity regarding reasons for saving and would have a financial plan for retirement (Mishra et.al.,2019, Ng et.al., 2011). Number of family members can be a factor which can influence saving for retirement (Anbarasu et al.,2011). There can be contrary views regarding this factor's influence on saving for retirement. In case the family is large, then the living expenses could be high and even though the individual would like to save, but unable to save. On the other hand, because the family size is large, the earning member of the family can carefully manage and control the expenses budget to save for the foreseen and unforeseen expenditure and for retirement. The savings are directly associated with the income (Noone et.al.,2012). Importance of saving, understanding financial products or the amount saved is directly associated with the income earned by the family (Anbarasu et.al.,2011; Mansor et.al.,2015; Ng et.al., 2011; Kaur & Hassan, 2018; Rickwood). Earlier saving's association with family size was discussed assuming one earning member in the family and rest to be dependent on him/her. The situation can be different if there are more than one earning member in the family. The family can hypothetically club everyone's income and take a holistic view and systematically make financial plan various objectives, including saving for retirement. So number of earning members should be positively associated with financial planning for retirement.

LITERATURE REVIEW

Anbarasu et.al. (2011) conducted empirical study in Tiruchrapalli to study impact of demographic variables on pattern of saving. They used chi square, multiple regression and logistic regression statistic to assess the relationship. They have considered frequency of saving, amount saved per month, proportion of income saved, mode of saving and purpose of saving as their criterion variable and age, gender, education, monthly income, occupation, family composition and earning members as explanatory variables. Their findings reveal that education and income are associated with most of the variables associated to savings.

Sitlani et.al. (2011) have studied influence of demography on investment choice. For this study they have considered respondents only from financial service industry, in the city of Indore, India. In their study they did not find any association between investment choice and demographic factors age, gender, marital status, occupation and household income. But they found association between investment choice and education. So, it was observed that individuals working in financial service industry are financially literate and hence majority of the demographic factors did not associate with investment choice.

Vineet Mishra and Ajit Mittal (2019) studied the association between demographic factors and type of investors. Also association between demographic factors and risk tolerance was evaluated. The authors used risk tolerance scale developed by RBS Morgan with appropriate changes to suit the target respondents. Type of investment was divided into two categories, namely conventional and socially responsible investment. Statistical tools such as t test of independence, ANOVA and Chi Square test was used to check the significance of association between the variables considered for the study. The study revealed that there is significant association between risk tolerance and type of investor, occupation, age, and marital status. When association is between

demographic factors and risk tolerance with type of investment is evaluated, it was found that only risk tolerance was associated with type of investment, none of the demographic factors had any association.

Masor et.al. (2015) have conducted empirical study to understand association between demographic factors and financial planning towards retirement in Malaysia. They have considered health sector and have collected data from respondents working in health sector. Chi square test was used to evaluate the association between dependent and independent variables. The study revealed that education and family income is significantly and positively associated to retirement planning. Age is also significant factor but it is negatively correlated to retirement planning and gender did not have any association to retirement planning.

Ng T H et.al. (2011) undertook study to evaluate the relationship between demographic factors and intention to save for retirement in Malaysia. They considered demographic variables such as marital status, age, income, gender and education. Intension to save was captured by collecting responses on five point likert scale for four relevant questions. To evaluate the association between these variables they used t test, ANOVA and Post Hoc (Tukey method). The statistical analysis conclusively revealed that marital status, age and income had significant relationship with intention to save, whereas gender, education and occupation were not associated to intention to save for retirement.

Kaur and Hassan (2018) considered generation Y in Malaysia to investigate the relationship between demographic factors with financial literacy and financial planning for retirement. They found that age was not significant for financial literacy and retirement planning. Education and income had significant relationship with financial literacy and retirement planning.

Rockwood et.al. conducted empirical study in Sydney, Australia, to assess impact of demographic factors on saving for retirement and use of financial planners to do so. Wide range of demographic factors were considered, namely: age, gender, individual income, family income, education, employment status, number and age of children, employment status, and residential. The study revealed that only age, individual income and residential status was correlated to use of financial planner to make financial plan for retirement.

OBJECTIVE

Financial planning for retirement assumes importance at macroeconomic level as it has influence on saving and investment, it in turn has impact on capital formation and on government welfare budget (Sinha & Sinha, 2007). This topic also has microeconomic implications as it has relevance to a family and individual financial wellbeing. The literature on the subject states that demographic factors has influence on the dimensions such as saving habits, risk tolerance, financial planning, financial planning for retirement and so on. Earlier studies have also shown that influence of all demographic factors is not uniform across all the studies carried out. There are many studies conducted in other parts of world, but there is no study conducted in state of Kerala, India. The present study is taken up in the city of Quilon, Kerala, India. The objective of the study is to find relevance of demographic factors to individual making financial plan for retirement.

RESEARCH DESIGN

Descriptive and analytical research design is adopted for the present study. The data was collected in the month of June 2020. Due to pandemic, google forms was used to collect data. 250 responses were collected. Structured questionnaire was used to collect the data. The demographic data such as age, gender, education, occupation, income, family size and total earning members in the family was collected. They also form independent variables in the study. To capture financial planning for retirement, the question regarding retirement planning was asked and respondents had to answer in terms of 'yes' or 'no'. To understand the relevance of demographic factors on financial planning, logistic (binary) regression was used. To analyse the data Gretl software was used.

HYPOTHESIS

In logistic regression, regression coefficients are estimated using maximum likelihood ratio.

$H_0: \beta_i = 0$

ANALYSIS

Demographic profile of the respondents

Table 1: Demographic Profile of the Respondents

Factor	Particulars	Number of Respondents	Percentage
Age	20-30	73	29
	31-40	89	36
	41-50	54	22
	51-60	34	13
Gender	Male	175	70
	Female	75	30
Education	PUC	52	21
	Diploma	12	05
	Graduate	130	52
	Post-Graduate	56	22
Occupation	Self Employed	84	34
	Government Sector	68	27
	Private Sector	98	39
Income	Below ₹5 Lakh	29	12
	₹5 Lakh to ₹10 Lakh	84	34
	₹10 Lakh to ₹15 Lakh	71	28
	₹15 Lakh to ₹20 lakh	36	14
	Above ₹20 Lakh	30	12
Family Size	3 & less than 3 members	27	11
	4 members	111	44
	5 members	58	23
	6 members	38	15
	More than 6 members	16	7
Earning Members in Family	One	21	8
	Two	130	52
	Three	52	21
	Four	32	13
	Five	15	6

Age of the respondents ranged from 20 to 60 years. Large proportion of respondents are from the age group of 31 to 40 years (36%). Seventy percent of the respondents are male. The options for education ranged from pre-university course to post graduation, more than 50 percent of the respondents (52%) are graduates. In case of occupation, respondents are almost equally distributed over three options namely self-employed, government sector and private sector. Thirty four percent of the respondent's income range between ₹5 lakhs to ₹10 lakhs. The modal value for family size is four and for earning members of the family is two.

LOGISTIC REGRESSION

Logistic regression was run with criterion variable as 'planning for retirement' and demographic variables as explanatory variables. As all the demographic variables are categorical variables, dummy variables are created. For all the explanatory variable, first dummy variable is taken to be reference variable. To build a model first step is to check existence of multicollineality between independent variables. As per O'Brien (2007), variance inflation factor (VIF) method can be used to check the multicollinearity. O'Brien states that if VIF value is less than 5, then there is no multicollinerilty among independent variables. First model was run using Gretle, with all the independent variables.

Table 2: Model 1 VIF Value

Variable	VIF	Variable	VIF
DAge_2	1.475	DIncome_3	3.448
DAge_3	1.328	DIncome_4	2.762
DGender_2	1.058	DIncome_5	2.997
DEducation_2	1.405	DFly_Sz_2	3.634
DEducation_3	2.692	DFly_Sz_3	3.352
DEducation_4	2.419	DFly_Sz_4	4.659
DOccupation_2	2.449	Earn_Mem_2	5.793
DOccupation_3	2.503	Earn_Mem_3	4.843
DIncome_2	2.811	DEarn_Mem_4	6.992

It can be observed in table 2, VIF value for 'DEarn_Mem4' is higher than 5, which means there is multicollinearity issue.

Table 3: Model 1: Logit, using observations 1-250

Dependent variable: Save_4_Ret
Standard errors based on Hessian

	Coefficient	*Std. Error*	*z*	*p-value*	
const	2.56064	1.88537	1.358	0.1744	
DAge_2	3.87801	0.752779	5.152	<0.0001	***
DAge_3	3.37847	0.755359	4.473	<0.0001	***
DGender_2	−0.381745	0.506405	−0.7538	0.4509	
DEducation_2	−5.77797	1.72795	−3.344	0.0008	***
DEducation_3	−6.96991	1.74869	−3.986	<0.0001	***
DEducation_4	−7.65133	1.91860	−3.988	<0.0001	***
DOccupation_2	3.85788	1.20827	3.193	0.0014	***
DOccupation_3	3.24552	0.946125	3.430	0.0006	***
DIncome_2	1.80442	0.801507	2.251	0.0244	**
DIncome_3	3.93779	1.07789	3.653	0.0003	***
DIncome_4	5.74121	1.52847	3.756	0.0002	***
DIncome_5	5.44473	1.76467	3.085	0.0020	***
DFly_Sz_2	0.987575	0.789558	1.251	0.2110	
DFly_Sz_3	0.965460	1.11574	0.8653	0.3869	
DFly_Sz_4	−0.870387	1.53981	−0.5653	0.5719	
DEarn_Mem_2	−2.40838	1.17841	−2.044	0.0410	**
DEarn_Mem_3	−4.92274	1.46594	−3.358	0.0008	***
DEarn_Mem_4	−2.49949	1.87030	−1.336	0.1814	

*p<0.05, **p<0.01, ***p<0.001

Logit Model 1 (table 3) shows that gender and family size is not significant. Hence binary logit model was rebuilt by omitting variables and got following output.

Table 4: Model 2 VIF Value

Variable	**VIF**	**Variable**	**VIF**
DAge_2	1.412	DOccupation_3	2.134
DAge_3	1.264	DIncome_2	2.730
DEducation_2	1.263	DIncome_3	2.883
DEducation_3	2.489	DIncome_4	2.164
DEducation_4	2.190	DIncome_5	2.360
DOccupation_2	2.104	DEarn_Mem_3	1.322

After omitting the non-significant variables, all the variables have VIF value less than 5. It indicates absence of multicollinearity. Then we proceed to build binary logit model.

Table 5: Model 2: Logit, using observations 1-250

Dependent variable: Save_4_Ret
Standard errors based on Hessian

	Coefficient	*Std. Error*	*z*	*p-value*	
const	1.19557	1.41419	0.8454	0.3979	
DAge_2	3.82743	0.699738	5.470	<0.0001	***
DAge_3	3.16712	0.678635	4.667	<0.0001	***
DEducation_2	−5.80356	1.43144	−4.054	<0.0001	***
DEducation_3	−6.21212	1.35998	−4.568	<0.0001	***
DEducation_4	−7.16170	1.54620	−4.632	<0.0001	***
DOccupation_2	3.09497	0.910325	3.400	0.0007	***
DOccupation_3	2.53339	0.719289	3.522	0.0004	***
DIncome_2	1.87505	0.741134	2.530	0.0114	**
DIncome_3	3.19772	0.899749	3.554	0.0004	***
DIncome_4	4.00057	1.08862	3.675	0.0002	***
DIncome_5	3.50959	1.16273	3.018	0.0025	***
DEarn_Mem_3	−2.25327	0.651092	−3.461	0.0005	***

Mean dependent var	0.684000		S.D. dependent var	0.465846
McFadden R-squared	0.542232		Adjusted R-squared	0.458874
Log-likelihood	−71.39093		Akaike criterion	168.7819
Schwarz criterion	214.5608		Hannan-Quinn	187.2066

Number of cases 'correctly predicted' = 226 (90.4%)
f(beta'x) at mean of independent vars = 0.466
Likelihood ratio test: Chi-square(12) = 169.127 [0.0000]

*p<0.05, **p<0.01, ***p<0.001

In logit model 2 (table 5), we can see that all the variables are significant. McFadden R-squared value is 0.5422, it means 54.22% variance in criterion variable is explained by explanatory variables. Chi Square is used for testing adequacy of the model for fitting the data. Chi Square value is 169.13, which is significant at five percent. It indicates model is adequate. At 5 per cent significance level null hypothesis is rejected and therefore alternate hypothesis is accepted. All regression coefficients are greater than zero. In other words explanatory variables are able to explain 54.22 per cent variance in the criterion variable.

RESULTS AND DISCUSSION

Binary logit regression (table 5) indicates that age (Anbarasu et.al., 2011: Petkoska & Earl, 2009), occupation (Mishra et.al.,2019; Noone et.al.,2012) and income (Anbarasu et.al.,2011; Mansor et.al.,2015; Ng et.al., 2011; Kaur & Hassan, 2018; Rickwood) are positively associated with individual's action with regards to financial plan for retirement. This finding matches with earlier studies. But it is found that, education is negatively associated with financial planning for retirement. It means that

if individual is more educated, the possibility of planning for retirement reduces. It could be because, education result in person having more confidence in his/her capability to earn and making financial plan for retirement may not be of much interest. On the other hand, lower education could make a person less assured regarding future income, inducing him/her to save for retirement. As per literature, number of earning members is associated with financial planning for retirement, but the present study shows that it has negative influence. Once again the answer for this behavior could be overconfidence. More earning members could create a sense of financial security and make individual drift away from the thought that he/she need to make independent financial plan for retirement.

The present study also reveals that gender and family size is not significantly associated with retirement planning. This finding is in agreement with many earlier studies (Rickwood; Petkoska & Earl, 2009; Ng et.al., 2011; Noone et.al.,2012; Mansor et.al.,2015; Mishra et.al.,2019). It indicates, irrespective of gender difference, the outlook towards financial planning for retirement remains the same. Another factor, family size is not significant in case of financial planning for retirement. These two factors can further be probed for better understanding.

CONCLUSION

Financial planning for retirement is important topic, given that it has macro-economic and micro economic impact on the economy. There is consensus among many researchers on the topic regarding the influence of demographic factors in financial planning for retirement. But the studies do not have consensus on the definite set of demographic factors and their exact direction of influence on financial planning for retirement. There could be some other factors which has influence these demographic factors, and those factors could hold key to understand how these demographic factors have impact on financial planning for retirement. The present study indicates that age, occupation and income had significant impact on financial planning for retirement at the same time, gender and family size did not have any influence.

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