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Using ANOVA To Examine the Relationship Between Socio Demographic Variables and Acceptance Of Reverse Mortgage Loans

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Abstract

Reverse Mortgage is a financial instrument designed to meet the retirement financial needs of golden agers. India as a country is experiencing population aging with improved health care, better living conditions and increased life expectancy. These loans were introduced in India in 2007 but failed to get the expected response. This study uses One-Way ANOVA (Analysis of Variance) to examine the relationship between various socio demographic variables and reverse mortgage loans. Variables such as a gender, marital status, type of the family and the financial knowledge have been used see if there is a significant difference between the means of different groups. The sample consisted of 112 senior citizens from all over India. A one-way ANOVA has been conducted to examine if there is a statistically significant difference between means of level of financial knowledge and awareness about RMLs in India; statistically significant difference between means financial knowledge and preference for reverse mortgage loan to fund their retirement needs. The results indicated that there is a significant association between level of financial knowledge and awareness about Reverse Mortgage loans. Similarly, there exists significant association between level of financial knowledge and the choice of Reverse Mortgage loans.

Key words- Reverse Mortgage loans, Senior citizens, old age, one-way Anova, financial knowledge

Introduction

Reverse mortgage is a type of loan where in a mortgage holder who is 62 or more seasoned and has significant home value can get against the worth of their home and get assets as a singular amount, fixed regularly scheduled installment, or credit extension. In contrast to a forward contract—the sort used to purchase a home—a graduated home buyback doesn't need the property holder to make any advance installments.

All things considered, the whole advance equilibrium becomes due and payable when the borrower dies moves away forever, or sells the home. Government guidelines expect moneylenders to structure the exchange so the advance sum doesn't surpass the home's estimation and that the borrower or borrower's bequest will not be considered liable for paying the distinction in case the advance equilibrium increases than the home's estimation. One way that this could happen is through a drop in the home's fairly estimated worth; another is assuming the borrower lives for quite a while.

Reverse mortgages can give genuinely necessary money to seniors whose total assets is for the most part restricted in the worth of their home. Home value is just usable riches in case you sell and cut back or acquire against that value.

That is the place where Reverse mortgages become possibly the most important factor, particularly for retired people with restricted livelihoods and barely any different resources.

With a home buyback, rather than the property holder making installments to the loan specialist, the moneylender makes installments to the mortgage holder. The property holder will pick how to get these installments and just pays interest on the returns got. The interest is moved into the credit balance with the goal that the property holder pays nothing forthcoming. The mortgage holder likewise holds the title to the home. Over the advance's life, the property holder's obligation increments and home value decreases.

As with a forward contract, the house is the insurance for a graduated home buyback. At the point when the property holder moves or bites the dust, the returns from the home's deal go to the moneylender to reimburse the graduated house buyback's head, premium, contract protection, and expenses. Any deal continues past what was acquired go to the property holder (if as yet residing) or the property holder's domain (assuming the property holder has died). Now and again, the beneficiaries might decide to take care of the home loan with the goal that they can keep the home.

Invert contract continues are not available. While they may feel like pay to the mortgage holder, the Internal Revenue Service (IRS) believes the cash to be a credit advance.

Literature Review

As per the reports of NHB, till 2013, reverse mortgage loans worth Rs. 1,800 crores have been sanctioned and loans worth Rs. 800 Cr have already been disbursed after this scheme got introduced (Ghosh, 2013). Despite the expected popularity and usability of this concept, only a few research studies have been conducted. The present research looks into the findings of previous researches conducted on reverse mortgage.

Kang (2010) describes the structure and working of reverse mortgage loan, its benefits, drawbacks and the costs involved. The study claims that the reverse mortgages loans are finding acceptance among senior citizens who need cash to sustain their living.

Hurst and Stafford (2004) and Cooper (2013) studied the relationship between the credit worthiness of households and the preference for RMLs. They found evidence that “credit constrained households are more likely than unconstrained households to extract and consume equity in response to house price increases”. Similar study was conducted by Bhutta and Keys (2016) who found that price appreciation and credit worthiness of borrowers is directly related to “equity extraction”.

Srinivasan (2008) provided an overall evaluation of reverse mortgage from the economic and social viewpoint in their paper. They discussed the factors that negatively affect the demand for RMLs in India.

The study concludes that Reverse Mortgage loans can serve the needs of retired population by supplementing their income in old age.

S Sehgal (2020) in her study finds that borrowers are concerned about the uncertainty in payout due to fluctuations in interest rates and price fluctuations in the real estate market. The study suggests that the lending institutions must provide counseling to the senior citizens to create awareness about the loans and the working of the loans. The government can involve NGOs like Dignity Foundation, Indian Association of Retired Persons (IARP), Help Age etc., may also provide consultancy to senior citizens.
Her study claims that there will be increased acceptance for RMLs if the borrowers get Clarity in tax treatment of RM receipts, Protection against lender defaults, option to refinance in case interest rates decline substantially and legal protection against eviction from property based on fine print.
Moulton& Haurin (2019) describe the market for federally insured reverse mortgages. Their paper studies those trends and challenges in reverse mortgage markets over time and the effect of recent policy reforms. Based on their findings, they suggest a set of reforms to increase the demand for RMLs which include and the use of risk-based underwriting and preventing servicing and a streamlined product offerings targeting specific consumer segments,.

Research Questions

The goal of this study is to find out what socio demographic factors affect the demand for reverse mortgage loans in India. In an earlier study," **Reverse Mortgage –An empirical study in NCR"** several facilitators and barriers affecting the acceptance of reverse mortgage loans were identified from both lenders and borrowers perspective. The present study attempts to find out how the socio demographic factors influence the barriers and facilitators in affecting the acceptance of reverse mortgage loans from borrowers perceptive. Towards this end, the study attempts to address the following research question

1. How socio demographic variables in India influence the barriers and facilitators in affecting the acceptance of Reverse mortgage loans
2. Are their certain demographic factors that influence the awareness and choice of reverse mortgage loans?

Objectives

The study identifies following objectives based on above two research questions:
1. To study if the socio demographic variables of senior citizens influence the barriers affecting the acceptance of reverse mortgage loans
2. To study if the socio demographic variables of senior citizens influence the facilitators affecting the acceptance of reverse mortgage loans
3. To examine if there is any association between the level of financial awareness of senior citizens and the awareness about reverse mortgage loans.
4. To examine if there is any association between the level of financial awareness of senior citizens and the preference for reverse mortgage loans to fund their post retirement expenses.

Hypotheses:

Ho1: There is no significant difference means of level of financial knowledge and awareness about reverse mortgage loans

Ho2: There is no significant difference means of level of financial knowledge and preference for reverse mortgage loans to finance the post retirement expenses

Ho3: There is no significant difference between means of the socio demographic variables and the barriers to acceptance of reverse mortgage loans respectively-

Ho3a: There is no significant difference between means of Gender and the barriers to acceptance of reverse mortgage loans respectively.

Ho3b: There is no significant difference between means marital status and the barriers to acceptance of reverse mortgage loans respectively.

Ho3c: There is no significant difference between means family type and the barriers to acceptance of reverse mortgage loans respectively.

Ho3d: There is no significant difference between means status of employment and the barriers to acceptance of reverse mortgage loans respectively.

Ho3e: There is no significant difference between means level of financial knowledge of respondents and the barriers to acceptance of reverse mortgage loans respectively.

Ho4: There is no significant difference between means of the socio demographic variables and the facilitators to acceptance of reverse mortgage loans respectively-

Ho4a: There is no significant difference between means of Gender and the facilitators for acceptance of reverse mortgage loans respectively.

Ho4b: There is no significant difference between means marital status and the facilitators for acceptance of reverse mortgage loans respectively.

Ho4c: There is no significant difference between means family type and the facilitators for acceptance of reverse mortgage loans respectively.

Ho4d: There is no significant difference between means status of employment and the facilitators for acceptance of reverse mortgage loans respectively.

Ho4e: There is no significant difference between means level of financial knowledge of respondents and the facilitators for acceptance of reverse mortgage loans respectively.

Research Methodology

The study applies descriptive research where the quantitative data has been collected through primary survey.

The study uses Non-Probability convenience or purposive sampling technique (Landreneau & Creek, 2009) for selecting the sample.

The data was collected through a quantitative questionnaire from senior citizens in India using Google forms. The form was mailed to the respondents and was informed through telephone calls and whatsapp messages. The researcher himself got the questionnaire filled from the respondents who were unable to use Google forms. A total of 175 respondents were approached, out of which total 130 respondents filled the form. 18 respondents did not own a house and hence their responses were not considered for further analysis.

The quantitative data collected through the questionnaire was coded using SPSS. SPSS software tool was used for data cleaning, removing outliers and filling missing value using "nearby mean".

Analysis and Interpretation

To analyse the data, One-way ANOVA (Ross, Willson 2017) was used to to examine the relationship between various socio demographic variables and reverse mortgage loans.

Ho1: There is no significant difference means of level of financial knowledge and awareness about reverse mortgage loans.

One- way ANOVA was carried out to see if there is any association between the level of financial knowledge of the respondents and their awareness about reverse mortgage loans.

Interpretation:

The ANOVA table (Table 1.1) indicates that the difference between the means of two variables is insignificant. The P value of 0.000 is less than 0.05 at 95% confidence level. This allows us to reject the Hypothesis Ho1 that there is no significant difference means of level of financial knowledge and awareness about reverse mortgage loans.

Table 1

ANOVA					
Awareness					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	5.475	3	1.825	10.366	.000
Within Groups	14.084	80	.176		
Total	19.560	83			

Ho2: There is no significant difference means of level of financial knowledge and preference for reverse mortgage loans to finance the post retirement expenses.

One- way ANOVA was carried out to see if there is any association between the level of financial knowledge of the respondents and their preference for reverse mortgage loans to meet their expenses after retirement.

Interpretation:

The ANOVA table (Table 2) indicates that the difference between the means of two variables is insignificant. The P value of 0.011 is less than 0.05 at 95% confidence level. This allows us to reject the Hypothesis Ho2 that there is no significant difference means of level of financial knowledge and preference for reverse mortgage loans to finance the post retirement expenses.

Table 2

ANOVA					
Preference for RML					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	29.560	3	9.853	3.981	.011
Within Groups	197.999	80	2.475		
Total	227.560	83			

Ho3a: There is no significant difference between means of Gender and the barriers to acceptance of reverse mortgage loans respectively.

Table 3

ANOVA

AVGB

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	49.077	1	49.077	.556	.458
Within Groups	6705.795	76	88.234		
Total	6754.872	77			

Interpretation

The ANOVA Table 3 indicates that the significance level P= 0.458 which is not less that 0.05 at 95% confidence level. Thus the hypothesis that there is no statistically significant difference between means of gender and barriers affecting acceptance of reverse mortgage loans is accepted.

Ho3b: There is no significant difference between means marital status and the barriers to acceptance of reverse mortgage loans respectively.

Table 4

ANOVA

AVGB

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.003	1	.003	.000	.996
Within Groups	6754.869	76	88.880		
Total	6754.872	77			

Interpretation

The ANOVA Table 4 indicates that the significance level P= 0.996 which is more than 0.05 at 95% confidence level. Thus the hypothesis that there is no statistically significant difference between means of marital status and the barriers affecting acceptance of reverse mortgage loans is accepted.

Ho3c: There is no significant difference between means family type and the barriers to acceptance of reverse mortgage loans respectively.

Table 5

ANOVA

AVGB

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	102.265	1	102.265	1.168	.283
Within Groups	6652.607	76	87.534		
Total	6754.872	77			

Interpretation

The ANOVA Table 5 indicates that the significance level P= 0.283 which is more than 0.05 at 95% confidence level. Thus the hypothesis that there is no statistically significant difference between means of type of family and the barriers affecting acceptance of reverse mortgage loans is accepted.

Ho3d: There is no significant difference between means status of employment and the barriers to acceptance of reverse mortgage loans respectively.

Table 6

ANOVA

AVGB

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	16.794	2	8.397	.093	.911
Within Groups	6738.078	75	89.841		
Total	6754.872	77			

Interpretation

The ANOVA Table 6 indicates that the significance level P= 0.911 which is more than 0.05 at 95% confidence level. Thus the hypothesis that there is no statistically significant difference between means of status of employment and the barriers affecting acceptance of reverse mortgage loans is accepted.

Ho3e: There is no significant difference between means level of financial knowledge of respondents and the barriers to acceptance of reverse mortgage loans respectively.

Table 7

AVGB

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	40.603	3	13.534	.149	.930
Within Groups	6714.269	74	90.733		
Total	6754.872	77			

Interpretation

The ANOVA Table 7 indicates that the significance level P= 0.930 which is more than 0.05 at 95% confidence level. Thus the hypothesis that there is no statistically significant difference between means of status of employment and the barriers affecting acceptance of reverse mortgage loans is accepted.

However, the Tusky multiple comparison reveal that there is a significant difference between means of someone with little financial knowledge and someone with excellent financial knowledge (P= .001 < .o5 at 95% confidence level in a two tailed test). Similarly, there is a statistically difference between mean of group of one's with fair financial knowledge and excellent knowledge. Hence people with financial knowledge, as suggested above are more likely to be aware about and select Reverse Mortgage loans.

Ho4a: There is no significant difference between means of Gender and the facilitators for acceptance of reverse mortgage loans respectively.

Table 8

ANOVA

AVGF

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	303.824	1	303.824	5.765	.019
Within Groups	4005.214	76	52.700		
Total	4309.038	77			

Interpretation

The ANOVA Table 8 indicates that the significance level P= 0.019 which is less that 0.05 at 95% confidence level. Thus the hypothesis that there is no statistically significant difference between means of gender and barriers affecting acceptance of reverse mortgage loans is rejected.

Ho4b: There is no significant difference between means marital status and the facilitators for acceptance of reverse mortgage loans respectively.

Table 9

ANOVA

AVGF

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	90.109	1	90.109	1.623	.207
Within Groups	4218.930	76	55.512		
Total	4309.038	77			

Interpretation

The ANOVA Table 9 indicates that the significance level P= 0.207 which is more than 0.05 at 95% confidence level. Thus the hypothesis that there is no statistically significant difference between means of marital status and facilitators affecting acceptance of reverse mortgage loans is accepted. .

Ho4c: There is no significant difference between means family type and the facilitators for acceptance of reverse mortgage loans respectively.

Table 10

ANOVA

AVGF

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	126.818	1	126.818	2.305	.133

Within Groups	4182.221	76	55.029		
Total	4309.038	77			

Interpretation

The ANOVA Table 10 indicates that the significance level P= 0.133 which is more than 0.05 at 95% confidence level. Thus the hypothesis that there is no statistically significant difference between means of type of family and facilitators affecting acceptance of reverse mortgage loans is accepted.

Ho4d: There is no significant difference between means status of employment and the facilitators for acceptance of reverse mortgage loans respectively.

Table 11

ANOVA

AVGF

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	12.931	2	6.466	.113	.893
Within Groups	4296.107	75	57.281		
Total	4309.038	77			

Interpretation

The ANOVA Table 11 indicates that the significance level P= 0.893 which is more than 0.05 at 95% confidence level. Thus the hypothesis that there is no statistically significant difference between means of status of employment and facilitators affecting acceptance of reverse mortgage loans is accepted.

Ho4e: There is no significant difference between means level of financial knowledge of respondents and the facilitators for acceptance of reverse mortgage loans respectively.

Table 12

ANOVA

AVGF

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	81.000	3	27.000	.473	.702
Within Groups	4228.038	74	57.136		
Total	4309.038	77			

Interpretation

The ANOVA Table 12 indicates that the significance level P= 0.702 which is more than 0.05 at 95% confidence level. Thus the hypothesis that there is no statistically significant difference between means of level of financial knowledge and facilitators affecting acceptance of reverse mortgage loans is accepted.

Conclusion

Reverse mortgage loans had been introduced in India after they received success in the western country. Need for such a solution for the golden agers was identified in India which has been experiencing an aging of population on one hand and dissolution of joint family and large scale migration of work force on the other hand. Increase in literacy, better health care and living conditions have led to creation of a segment of non earning population with the needs and desired of middle age population i,e a desire to maintain same standard of living and comfort as in their early years. The scheme however received a lukewarm response from bankers and elderly alike (Sehgal, Dhingra 2020; Davidoff, Welke 2004). Various reasons have been attributed by researchers to the slow growth of RMLs min India. Lack of awareness, social and psychological reasons, inadequacy of valuation, complexity of product, inadequate counseling, mistrust etc are some of the reasons RMLs are not among top preferences for generating funds for post retirement expenses. This study clearly shows a statistically significant positive association between level financial knowledge and awareness and preference for reverse mortgage loans. The low demand can be attributed to lack of financial knowledge as the respondents who were aware about the RMLs had also displayed incomplete and wrong information about the product. The gender, type of family and status of employment however have not been found to influence the choice by this study. . The lending institutions need to focus on spreading awareness, creating financial literacy, open more counseling centers to generate the demand for RMLs. A model similar to insurance selling can be initiated, where the agents hold group meetings, sessions, tea parties with the elderly to acquaint them about the reverse mortgage loans.

I suggest an experimental study can be conducted where a controlled group of golden agers are educated about RMLs with informational pamphlets, group counseling sessions, individual sessions to address their queries whereas other group is not exposed to any additional information about the RMLs.

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