

A STUDY OF THE SAVINGS AND INVESTMENT PATTERN OF RURAL HOUSEHOLD WITH SPECIAL REFERENCE TO NASHIK DISTRICT: A PILOT STUDY

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ABSTRACT

India has been predominantly a rural country with two-thirds of its population still dwelling in the rural territories. With a population of over 1.3 billion, it is said about India that real India lives in her villages. These villages in the rural zones of India are the home of India's 70% population. Studies show that when there was a slowdown in the general economy in India, the rural economy of India actually showed growth and helped the economy on troublesome occasions. The rural economy of India is the backbone of the Indian economy. With a consistent increase in GDP along with the rise in the per capita income over the past year, the propensity to consume and the propensity to save, both have gone-up. This study investigates the saving and investment pattern of rural households with special reference to the Nashik District. The study is based on a sample size of 400 rural households studied over a period of one fiscal, 2018-19, based on actual accounting of their cash flows by the researcher. Before the entire study was carried, a pilot study was done on a sample of 40 rural households to ascertain if the research methodology designed for testing the hypotheses works well or not. This paper presents the findings of the pilot study.

Keywords: Rural household, income, saving, expenditure, investment, pattern

Introduction

The Indian economy is reliant on its rural economy which is described by the dominance of agriculture, that is, the Indian economy is agrarian. The dominance of agriculture in the Indian economy can be understood from the way that over 60% of India's population is still occupied with agricultural activities for livelihood and survival. The commitment of agriculture in the Indian economy has been vital. Agriculture has been the foundation of the Indian economy. The Indian economy aspires to turn into a 5 trillion dollar economy by 2025. The current size of the Indian economy is 2.94 trillion dollars (Business Today, 2020) and it is the fifth-biggest economy in the world. This study looks into the economics of earnings, consumption, savings, and investments of one of the major contributors to the economy, the rural household. The research studies micro-level units from the rural segment and endeavors to postulate some macro-economic contributions for policymakers.

Objectives of the research were as under:

- To study the saving and Investment pattern of a rural household,

- To study the relationship between Income and Investment pattern of a rural household,
- To study the relationship between Income and Expenditure pattern of rural household and
- To help rural society by suggesting various ways to improve the standard of living

Objectives for the pilot study were as under:

1. To test the usage of the data collection method
2. To understand the issues encountered in data collection
3. To test the hypotheses as per the research methodology

Literature review

Based on 50 items of literature reviewed under four themes of Income, expenditure, savings, and investment pattern in the rural world, Income, expenditure, savings, and investment pattern in the rural world (in India), Income, expenditure, savings, and investment pattern in the rural world (in Maharashtra) and role of debt in rural expenditure, savings and investment pattern in the rural world (in India), following gaps were found in the research that constitutes the basis for this research:

1 There is a lack of research concerning the promotion of rural development in the long-run, other financial sources and it should be recognized to improve rural education for the betterment of human capital.

2 There are gaps in the studies specific to Maharashtra and rigorous efforts should be pitched towards collecting data that can be used for improving the income base of families. Also, efforts towards balancing savings with investment should be developed and promoted and studied for better policymaking.

3 There need to be further studies done for understanding the increase in rural income through income variation strategies and capitalizing in rural data and communication technology infrastructures can encourage rural farmers' happiness, encourage the promotion of rural consumption, and increase maintainable economic growth.

4 There is a dearth of research on the savings and investment patterns for the rural population of Maharashtra as future activities are highly relevant in reducing poverty and that upcoming effort should emphasize the expansion of banking services to the poor as well as gender-sensitive regions.

There need to be exhaustive studies done on the Government policies and how they are affecting the income and investment patterns and how the government should form a strong partnership with the rural farming families in providing more lands, credit facilities and encouraging formal education of the rural farming families for a better standard of living.

Methodology

Population and Sampling

As per the census of 2011 population of the Nashik district was 6,109,052 with 58.67% staying in the urban areas, while the balance 41.33% staying in the rural areas (Government of Maharashtra, 2020). This 41.33% of

6,109,052 works out to 25,24,871. Assuming an average household size of even six members, the population for the study comes to 4,20,812 households. As per standard sample size tables like Krejcie and Morgan (1970), for large populations in the range of 20,000, the sample size is 384. The sample size for this study was taken as 400 households from rural parts of the Nashik district identified from the district details (Nashik.gov.in.,2020). Judgmental sampling method was used to choose the sample household based on the judgment of the researcher about the likelihood of getting the desired data.

Hypotheses

Following hypotheses were framed:

Ho1: There is no significant relationship between Savings and Investment pattern of rural household

Ha1: There is a significant relationship between Savings and Investment pattern of rural household

Ho2: There is no significant relationship between Income and Investment pattern of rural household

Ha2: There is a significant relationship between Income and Investment pattern of rural household

Ho3: There is no significant relationship between the Income and Expenditure pattern of rural household

Ha3: There is a significant relationship between the Income and Expenditure pattern of rural household

In line with the objectives and the hypotheses, a quantitative method was adopted for testing the above hypotheses based on actual income, expenditure, savings, and investments data recorded by the researcher for the 400 rural households for fiscal 2018-19 every month. A cash-flow approach was adopted and the following proforma was used for the data collection:

Household No:														
Village:														
		MONTH-WISE CASH FLOW MONITORING												
Main Head	Sub-head	April	May	June	July	August	Sept	Oct.	Nov	Dec	Jan	Feb	Mar	Total
INFLOWS														
INCOME	Sale of Agri Produce													0
	Wages earned													0
	Other income													0
LOAN	Agri.Loan													0
	Housing													0
	Education													0
	Personal													0
	TOTAL INFLOWS	0	0	0	0	0	0	0	0	0	0	0	0	0
OUTFLOWS														
EXPENDITURE	A. FOOD													
	Cereals													0
	Gram													0
	Cereal Substitutes													0
	Pulses & Products													0
	Milk&Milk products													0
	Edible Oil													0
	Meat,Egg And Fish													0
	Vegetables													0
	Fruits (Fresh)													0
	Fruits (Dry)													0
	Sugar													0
	Salt													0
	Spices													0
	Beverages etc.													0
	B. NON-FOOD													
	Pan,Tobacco&Intox													0
	Fuel And Light													0
	Mobile													0
	Clothing													0
	Footwear													0
	Cosmetics													0
	Healthcare & Medicine													0
	Misc.Goods&Service													0
	Durable Goods													0
	C.AGRICULTURE													
	D.SPECIAL													
	Marriage													0
	Touring													0
	Any other													0
	TOTAL EXPENDITURE	0	0	0	0	0	0	0	0	0	0	0	0	0
	LOAN REPAYMENT													0
	SAVINGS (INF-EXP-LOAN)	0	0	0	0	0	0	0	0	0	0	0	0	0
INVESTMENTS	Bhisi													0
	Post-Office RD													0
	Bank FD													0
	Gold/Jewelry													0
	Loan to others													0
	Livestock													0
	Land													0
	Shares													0
	Cash/Bank													0
SUMMARY														
	Income	0	0	0	0	0	0	0	0	0	0	0	0	0
	Expenditure	0	0	0	0	0	0	0	0	0	0	0	0	0
	Savings	0	0	0	0	0	0	0	0	0	0	0	0	0
	Investments	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 1: Data collection proforma

Data collection

Data collection was done by the researcher along with the support of college students hired by the researcher under the “earn and learn” scheme. All the figures were recorded every month from the 400 rural households who have distributed copies of the proforma. The amounts were rounded off to the nearest of one thousand rupees. For the sake of convenience, simplicity, and plausibility, it was decided to ignore opening and closing balances. In some months some mismatches were observed in the

cash flows leading to negative savings. These were investigated and it was confirmed that the same were actually related to the opening and closing balances. Hence such mismatches were also ignored after due scrutiny.

Method for testing the hypotheses

Regression analysis was used to test the three hypotheses.

Data analysis and findings

The monthly data for 40 rural households was collated into an annual summary with the components of – income, expenditure, savings, and investments. As the interest on loans was generally paid along with the principal, the expenditure on the same has not been

considered. To get better results, annual totals were obtained from the monthly figures and were used for the data analysis.

Following data-set for the 40 rural households selected for the pilot study was used (All the amounts are in Rs.'000):

Table 1: Data-set used for the pilot study

HH-No.	Income	Expenditure	Saving	Investment
1	224	142	82	72
2	329	201	128	100
3	295	118	177	135
4	88	74	14	0
5	241	141	100	50
6	388	255	133	105
7	105	59	46	50
8	118	87	31	30
9	84	82	2	0
10	498	209	289	250
11	106	59	47	30
12	100	95	5	0
13	175	123	52	50
14	368	197	171	150
15	239	120	119	100
16	130	75	55	60
17	253	123	130	30
18	171	140	31	18
19	265	129	136	120
20	364	226	138	135
21	179	140	39	18
22	348	122	226	175
23	660	395	265	185
24	180	132	48	0
25	173	148	25	12
26	329	116	213	135
27	271	231	40	30
28	83	75	8	0
29	104	75	29	30
30	266	123	143	150
31	148	129	19	15
32	351	221	130	125
33	266	133	133	100
34	210	132	78	60
35	529	234	295	135
36	108	78	30	0
37	101	63	38	30
38	176	129	47	15
39	540	257	283	200
40	546	376	170	159

Results

Hypothesis 1

Ho1: There is no significant relationship between Savings and Investment pattern of rural household

Ha1: There is a significant relationship between Savings and Investment pattern of rural household

For the 1st hypothesis, the dependent variable was taken as the investments and the independent variable was savings. Results obtained at 95% confidence level were as under:

Summary statistics:

Variable	Observations	Obs. with missing data	Obs. without missing data	Minimum	Maximum	Mean	Std. deviation
Investment	40	0	40	0.000	250.000	76.475	66.827
Saving	40	0	40	2.000	295.000	103.625	85.010

Correlation matrix:

	Saving	Investment
Saving	1	0.930
Investment	0.930	1

Regression of variable Investment:
Goodness of fit statistics (Investment):

Observations	40
Sum of weights	40
DF	38
R ²	0.864
Adjusted R ²	0.861
MSE	621.484
RMSE	24.930
MAPE	29.353
DW	1.729
Cp	2.000
AIC	259.233
SBC	262.610
PC	0.150

Analysis of variance (Investment):

Source	DF	Sum squares	Mean squares	F	Pr> F
Model	1	150553.597	150553.597	242.249	<0.0001
Error	38	23616.378	621.484		
Corrected Total	39	174169.975			

Computed against model $Y = \text{Mean}(Y)$

Model parameters (Investment):

Source	Value	Standard error	t	Pr> t	Lower bound (95%)	Upper bound (95%)
Intercept	0.738	6.262	0.118	0.907	-11.939	13.415
Saving	0.731	0.047	15.564	<0.0001	0.636	0.826

Equation of the model (Investment):

$$\text{Investment} = 0.737794355384153 + 0.730877738428139 * \text{Saving}$$

Standardized coefficients (Investment):

Source	Value	Standard error	t	Pr> t	Lower bound (95%)	Upper bound (95%)
Saving	0.930	0.060	15.564	<0.0001	0.809	1.051

Interpretation (Investment):

Given the R², 86% of the variability of the dependent variable Investment is explained by the explanatory variable. Given the p-value of the F statistic computed in the ANOVA table, and given the significance level of 5%, the information brought by the explanatory variables is significantly better than what a basic mean would bring. The null hypothesis was thus rejected in favor of the alternate.

Hypothesis 2

Ho2: There is no significant relationship between Income and Investment pattern of rural household

Ha2: There is a significant relationship between Income and Investment pattern of rural household

For the 2nd hypothesis, the dependent variable was taken as the investments and the independent variable was income. Results obtained at 95% confidence level were as under:

Summary statistics:

Variable	Observations	Obs. with missing data	Obs. without missing data	Minimum	Maximum	Mean	Std. deviation
Investment	40	0	40	0.000	250.000	76.475	66.827
Income	40	0	40	83.000	660.000	252.725	147.446

Correlation matrix:

	Income	Investment
Income	1	0.867
Investment	0.867	1

Regression of variable Investment:
Goodness of fit statistics (Investment):

Observations	40
Sum of weights	40
DF	38
R ²	0.752
Adjusted R ²	0.746
MSE	1134.646
RMSE	33.685
MAPE	58.439
DW	2.161
Cp	2.000
AIC	283.311
SBC	286.689
PC	0.274

Analysis of variance (Investment):

Source	DF	Sum of squares	Mean squares	F	Pr> F
Model	1	131053.411	131053.411	115.502	< 0.0001
Error	38	43116.564	1134.646		
Corrected Total	39	174169.975			

Computed against model $Y=Mean(Y)$

Model parameters (Investment):

Source	Value	Standard error	t	Pr> t	Lower bound (95%)	Upper bound (95%)
Intercept	-22.884	10.670	-2.145	0.038	-44.483	-1.284
Income	0.393	0.037	10.747	< 0.0001	0.319	0.467

Equation of the model (Investment):

$$\text{Investment} = -22.8837697930997 + 0.393149746930853 * \text{Income}$$

Standardized coefficients (Investment):

Source	Value	Standard error	t	Pr> t	Lower bound (95%)	Upper bound (95%)
Income	0.867	0.081	10.747	< 0.0001	0.704	1.031

Interpretation (Investment):

Given the R^2 , 75% of the variability of the dependent variable Investment is explained by the explanatory variable. Given the p-value of the F statistic computed in the ANOVA table, and given the significance level of 5%, the information brought by the explanatory variables is significantly better than what a basic mean would bring. The null hypothesis was thus rejected in favor of the alternate.

Hypothesis 3

Ho3: There is no significant relationship between the Income and Expenditure pattern of rural household

Ha3: There is a significant relationship between the Income and Expenditure pattern of rural household

For the 3rd hypothesis, the dependent variable was taken as the expenditure and the independent variable was income. Results obtained at 95% confidence level were as under:

Summary statistics:

Variable	Observations	Obs. with missing data	Obs. without missing data	Minimum	Maximum	Mean	Std. deviation
Expenditure	40	0	40	59.000	395.000	149.100	78.203
Income	40	0	40	83.000	660.000	252.725	147.446

Correlation matrix:

	Income	Expenditure
Income	1	0.895
Expenditure	0.895	1

Regression of variable Expenditure:
Goodness of fit statistics (Expenditure):

Observations	40
Sum of weights	40
DF	38
R ²	0.800
Adjusted R ²	0.795
MSE	1254.025
RMSE	35.412
MAPE	18.561
DW	2.571
Cp	2.000
AIC	287.313
SBC	290.691
PC	0.221

Analysis of variance (Expenditure):

Source	DF	Sum of squares	Mean squares	F	Pr> F
Model	1	190858.635	190858.635	152.197	<0.0001
Error	38	47652.965	1254.025		
Corrected Total	39	238511.600			

Computed against model $Y=Mean(Y)$

Model parameters (Expenditure):

Source	Value	Standard error	t	Pr> t	Lower bound (95%)	Upper bound (95%)
Intercept	29.195	11.217	2.603	0.013	6.488	51.902
Income	0.474	0.038	12.337	<0.0001	0.397	0.552

Equation of the model (Expenditure):

$$\text{Expenditure} = 29.1948193838138 + 0.474449225902409 * \text{Income}$$

Standardized coefficients (Expenditure):

Source	Value	Standard error	t	Pr> t	Lower bound (95%)	Upper bound (95%)
Income	0.895	0.073	12.337	<0.0001	0.748	1.041

Interpretation (Expenditure):

Given the R², 80% of the variability of the dependent variable expenditure is explained by the explanatory variable. Given the p-value of the F statistic computed in the ANOVA table, and given the significance level of 5%, the information brought by the explanatory variables is significantly better than what a basic mean would bring.

Conclusions

The pilot study of the 40 sampled rural households from Nashik district leads us to conclude that:

1. There is a significant relationship between the Savings and Investment pattern of the rural household,

2. There is a significant relationship between Income and Investment pattern of the rural household, and,
3. There is a significant relationship between the Income and Expenditure pattern of the rural household

Additionally, the following conclusions were drawn in line with the objectives specifically set for the pilot study:

1. The usage of the data collection method tests well, especially where the opening and closing balances are ignored.
2. An issue encountered in data collection was a monthly cash flow mismatch. This, after scrutiny, was found to be due to the

opening and closing balances. To tackle this issue a decision was taken to analyze an aggregate level by summing-up figures for the twelve months cash flows.

3. The hypotheses were comfortably tested as per the research methodology with the help of regression analysis available in the statistical tool of XLSTAT.

The pilot study gave confidence to the researcher and the guide that the data collection, analysis, and testing of the hypotheses can be done with reasonable accuracy and practical feasibility, based on the research methodology planned for the main study.

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