Exploring the Interconnectedness of Changes in Income Level on Savings Habit : A Case of Sample Low-Income Households

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Abstract

This paper is based on a primary survey that explored if changes in income have any interconnection with regular and disciplined savings behavior. A review of the existing literature on the subject enables an understanding of the definition of low-income households and the socioeconomic characteristics that decide the savings behavior of low-income households. This research also explored the common reasons for changes in income to understand the impact on the consumption-saving base of a low-income household. For the survey and primary data collection, respondents were selected from one low-GDP per capita state and one high - GDP per capita state. During the survey, the respondents from low-income households filled out a questionnaire on their socioeconomic status and financial behavior. From amongst a variety of other questions and a range of responses, they were asked if they had been regular in their habit of monthly savings. Here, the primary goal was to gauge if the respondents had understood the importance of being regular or consistent in their savings investment behavior. Having segregated the information on income and regularity of savings, a cross-tabulation and a dummy coding regression were conducted to find the magnitude, direction of the regression coefficient, and whether the coefficients' values were significant. These tests were conducted through the SPSS software, and the findings were recorded and analyzed. Upon finding the values positive and relationship significant, it was inferred that if low-income households would observe the trends of their income falling or rising, they could be more regular in savings, even if the amount they saved was less. This research fills the gap within existing scholarship in the field that focuses on the volume or amount of savings. By highlighting the importance of consciously observing households' income and emphasizing consistency in savings behavior, this research opens up areas of further inquiry that seek to aid public policy aimed at the target group.

Keywords : **consistency in behavior, dummy variable regression, financial decision making, regularity of savings**

JEL Classification Codes : D10, D15, D19, G52

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Economic theories establish a strong and stable connection between savings and income. An elementary understanding of economics presumes savings to be a positive function of income. It explains that at a higher income level, as consumption goes up, the post-consumption surplus income also goes up without much problem, thereby justifying the definition that 'what is not consumed is saved.' The neoclassical growth models are also based on the fact that savings lead to capital formation and investment, which eventually makes way for growth (Cesaratto, 1999).

Keynesian economics places the concept of 'propensity to save' at the center of any discussion on savings (Keynes, 2018). Although Keynes emphasizes that there is a tendency to change the act of saving in a particular manner, as per the income change in the group one belongs to, it is complicated to assume that the habits will

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remain unchanged if there is a change in income. For the sake of simplicity, in each of these theories, savings are taken as a quantity or a measurable variable amenable to calculation. Here, the factors surrounding the 'willingness to save' are inadequately addressed or assumed to be automatically decided by income. In other words, the ability to save is assumed to automatically lead to the willingness to save. The financial system of a country is expected to facilitate the process of saving by providing various products or instruments of saving. It is also expected to provide the ease of managing savings on behalf of the saver and provide the convenience of doing business for the system. Here, the sole focus remains on the supply side of generating savings, assuming that if the country's financial system is doing its work, there should not be any problem in the way of saving. People belonging to various income classes are assumed to be automatically and intrinsically motivated to save as long as they can generate some surplus overconsumption. Hence, the traditional concerns about savings are about the quantitative part of savings since income is the driving factor.

Studies surrounding economic decision-making typically emphasize impact analyses of different delivery models of saving investment infrastructure in a country (Deaton, 1991). For instance, a case study of women empowerment in the northern hill region of Dehradun found that the SHG - bank linkage helps to provide an impetus to save and invest (Sonam et al., 2019). Consequently, this empowers the target group in taking decisions to direct the end-use of credit. Furthermore, an analysis of the impact of the SHG-bank-microfinance nexus on the urban milieu of Thane Municipal Corporation of Maharashtra found that despite the presence of big institutions in raising awareness for savings investment, non-affiliated SHGs proved themselves to be a highly effective channel of delivery and direction for the use of credit at the ground level (Swami, 2014). Alongside the optimism of the working of these groups and the empowerment that they entail, the gap in demand and supply of saving investment instruments and behavioral patterns indicated an under-emphasis on motivation and regularity of savings (Sreenivas & Subramanya Sarma, 2012). In other words, several existing studies have treated savings as a unilateral variable that is solely dependent on income in quantitative terms. These studies have not put sufficient light on whether a low-income household can observe the rise or fall of its income over earning cycles. Consequently, there remains a gap as to whether this observation of the rise and fall of income could help create an adequate urgency to save and provide an impetus for consistency in savings behavior.

Studying the savings behavior of low-income households needs to be appreciated within the context of each of its characteristic traits. Low-income households are defined as households with earnings between INR 60,000 to INR 120,000 per year (Ministry of Housing and Urban Poverty Alleviation, 2012). Individuals who make up the low-income population in Indian cities often earn a living from the unorganized sector or as contractual workers in the organized sector (National CEUS, 2007). The National Commission for Enterprises in the Unorganized Sector has highlighted the working condition of these workers in clear terms (National Commission for Enterprises in the Unorganised Sector, 2007). During the course of data collection and research for this paper, the most recent definitions are taken into the picture. In the words of the Commission:

> One of the major highlights of this report is the existence and quantification of unorganized or informal workers, defined as those who do not have employment security, work security, and social security. These workers are engaged not only in the unorganized sector but in the organized sector as well. This universe of informal workers now constitutes 92% of the total workforce. We have also highlighted, based on an empirical measurement, the high congruence between this segment of the workforce and 77% of the population with a per capita daily consumption of up to INR 20 (in 2004–05) whom we have called 'Poor and Vulnerable.' (National Commission for Enterprises in the Unorganised Sector, 2007, p. 1)

The number of persons belonging to this group increased from 811 million in 1999–00 to 836 million in 2004–05. Addressing various dimensions of challenges surrounding the working condition of these workers, the

Commission observed that “most get a wage that is too low to enable them to come out of their poverty, not to speak of overcoming their vulnerability” (National Commission for Enterprises in the Unorganised Sector, 2007, p.1). Low-income group people are a class in themselves, often having mixed disposition and characteristics of both high income and poor class groups. The households that belong to the low-income group have enough to consume at present and can manage to generate some surplus without much sacrifice. However, they are often prone to spend the saved money before or a short time after it goes to the saving account unless it is 'locked in' by some investment instrument (Kennickell & Starr-Mccluer, 1997). This particular psychology of the low-income class asks for the provision of sufficient 'saving turned investment' avenues and curtailing of ease of withdrawal (Beverly & Sherraden, 1999). Here, saving for long-term goals in life can be called an investment.

Due to self-employment or informal employment in the unorganized sectors, a low-income household's income undergoes frequent changes. Critical factors that lead to income changes are partly structural, where business cycle changes alter the patterns of demand and supply in the economy. The India Human Data Survey (IHDS I and II), conducted by the National Council of Applied Economic Research in 2004 – 2005 and 2011– 2012 and documented by the National Bureau of Economic Research, enumerated the reasons for which people go in and out of the circle of poverty.

The reasons include the changes in agricultural wages, contractual secondary and tertiary wage changes, and multiple sources of income. At times, a particular skill set can cater to several occupations, creating complementarities across available skills for the same person. Additionally, the division of wage earners of a low-income household over multiple occupations leads to migration and better earnings. It also results in the creation of a demand for newer expertise and supply of it, which results in a rise in income levels of the household. Changes to the life cycle and constraints in specific occupations often result in reduced income.

Objective

This paper explores the savings-investment habits of a cross-section of low-income group households in India. It seeks to understand if, within low-income households, individuals who are closer to the medium-income level (because of changes in income level for any reason) are more inspired to save than the households that do not experience any change in income. Defining the category of low-income households as the group positioned between poor and medium-income households, this paper aspires to shed light on regularity or consistency in savings behavior. By taking up the spread and changes in monthly income within the low-income group, this research intends to carve out a layer of understanding of the multifaceted demand-side behavior that guides the incentive to save regularly.

Methodology

This paper is based on a primary data survey conducted in selected states as a part of the author's doctoral work. The survey was positioned during the early part of the proposed 12th Five-Year Plan and was conducted around the fiscal year 2013–2014. The positioning of data collection had a strong bearing on the definitions of economic variables as per the recently concluded demographic and socioeconomic census of the country at the time. As definitions and their quantitative interpretations are connected to the census, the respondents were immediately contacted and interviewed to remove any loss of real wage due to possible inflation. As a result, conceptual and calculational disparities of any sort have been avoided.

Moreover, these years were also relatively free from political transitioning since it was just before the General Elections. These years were selected to reduce any confounding bias. They had seen a continuum of economic and political policymaking without being affected by the expected transformations after a change of government and governance. The respondents were selected carefully after ensuring their prior exposure to some form and

habit of saving under some financial institutions. They were contacted through microfinance associations under which they had organized themselves. A pilot study to interact with the respondents covered most of the survey's questions. A small follow-up exercise was conducted telephonically, with contact details officially procured strictly for research purposes from financial institutions that managed small savings. For this paper, the notion of regularity in savings pertains to the habit of putting money in the savings account at a regular interval to reap the benefits of a compounded value of savings. By keeping the regularity of savings at the center of its analysis and gathering the responses from the questionnaire, this paper divides the experience of change in income level of respondents into five different levels and explores the connection through regression analysis. It seeks to establish if the connection is significant or not. This research emphasizes the understanding of changes in financial behavior rather than the absolute values of income or the amount of savings.

The primary data survey comprised of 373 low-income households in India. The survey covered those states which differed in terms of per capita GDP. The survey included questions ranging from social characteristics to information about the respondents' amount of savings per month, the frequency of savings, the objectives behind savings, and income level. It included questions that ranged from demographic, sociological, psychological, financial, institutional, and behavioral variables that defined the consistency of savings behavior. The data were collected through direct interactions with the respondents. The respondents were asked if they had experienced changes in income levels, and their responses were put into varied categories.

For the data analysis, SPSS software was used as it was considered suitable to handle a mixed set of numerical and categorical data. A cross-tabulation between the experience of change in income level and the regularity in savings behavior across respondent households was the first step in analyzing the dataset for this research. This was to examine the nature and direction of the relationship, which was underlying, and not very apparent or evident at the first look. It was a two-way study of the data to identify the dominant trait. With no awareness about the changes in income level as the baseline of comparison, category variables are dummy coded. A dummy regression technique with the same statistical software was used to estimate the coefficients and evaluate their significance. Here, out of six categories of responses, five dummy variables were created to prepare the data for dummy variable regression. Unawareness of changes in income was treated as the control group, and the regression yielded the following results.

Analysis and Results

The statistical findings are arranged as per the tables and figures included in this section.

At the first look at the model summary, we get the predictors as constant, Income 1, Income 2, Income 3, Income 4, and Income 5. The categories are labeled this way to mean that dummy variable Income 1 refers to the comparison of no awareness of about change in income to the experience of a fall in income in the last three years and so on. The output summarizes standardized and unstandardized beta values, significant values, and standard errors. The value of the constant is also derived to enable us to form a model in full. Table 1 shows the descriptive statistics, and Table 2 refers to the correlation between various income levels and the consistency of savings (Table 2). Figure 1 is a representative histogram exhibiting the modal frequency of various income levels and consistency in savings.

Adjusted *R* squared 0.239, which suggests that by entering five dummy variables, the predictive power of the model has gone up by 23.9%. Here, we can explain 23.9% of the variance in the regularity of consistency in savings. In other words, 23.9% variance in regularity in savings behavior can be explained by the affiliated model. The ANOVA table emphasizes the significance of building up a model in contrast to not constructing the model. It suggests that the 23.9% variance that can be explained is a significant amount in the context (Table 1). *F* - value at 24.330 is also found to be significant (Table 1). It is about the predictability of regression. The coefficient table summates the coefficients under standardized and unstandardized setups (Table 3). The row-

Table 1. ***Descriptive Statistics***

	Mean	Std. Deviation	*N*
Consistency of Savings Behaviour	3.01	1.617	373
Income1	.3298	.47076	373
Income2	.0724	.25947	373
Income3	.1555	.36286	373
Income4	.2145	.41101	373
Income5	.1609	.36789	373

ANOVA[a]

Model		Sum of Squares	*df*	Mean Square	*F*	Sig.
1	Regression	242.216	5	48.443	24.330	.000[b]
	Residual	730.717	367	1.991		
	Total	972.933	372			

Note. [a.] Dependent Variable : Consistency of Saving Behaviour.

[b.] Predictors : (Constant), Income 5, Income 2, Income 3, Income 4, Income 1.

Table 2. ***Correlations***

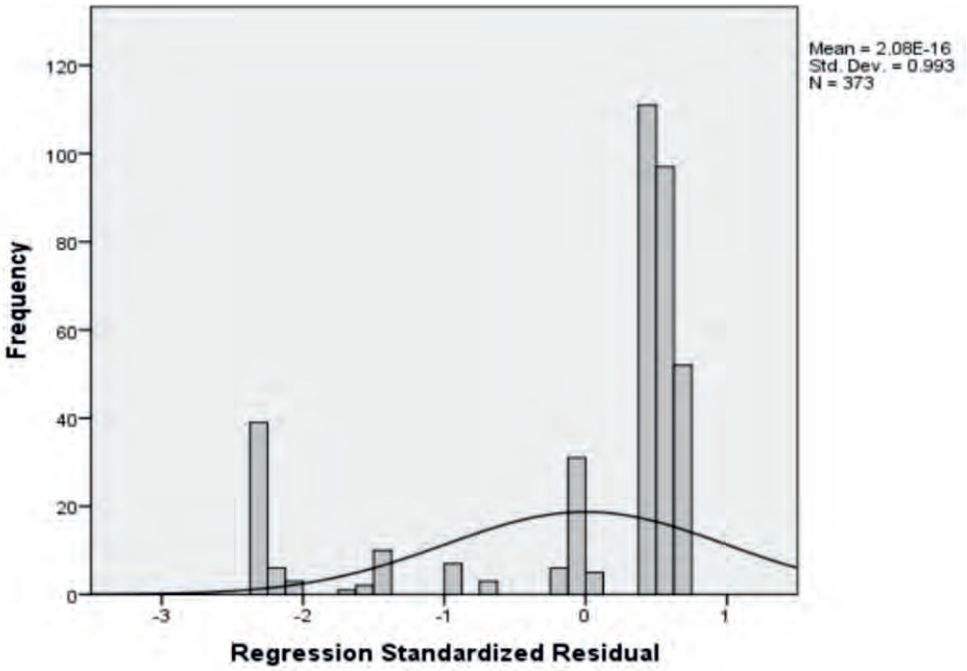
		Consistency of Savings Behaviour	Income 1	Income 2	Income 3	Income 4	Income 5
Pearson Correlation	Consistency of Savings Behaviour	1.000	.121	–.009	.006	.093	.078
	Income1	.121	1.000	–.196	–.301	–.367	–.307
	Income2	–.009	–.196	1.000	–.120	–.146	–.122
	Income3	.006	–.301	–.120	1.000	–.224	–.188
	Income4	.093	–.367	–.146	–.224	1.000	–.229
	Income5	.078	–.307	–.122	–.188	–.229	1.000
Sig. (1-tailed)	Consistency of Savings Behaviour		.010	.433	.457	.037	.067
	Income1	.010		.000	.000	.000	.000
	Income2	.433	.000		.010	.002	.009
	Income3	.457	.000	.010		.000	.000
	Income4	.037	.000	.002	.000		.000
	Income5	.067	.000	.009	.000	.000	
N	Consistency of Savings Behaviour	373	373	373	373	373	373
	Income1	373	373	373	373	373	373
	Income2	373	373	373	373	373	373
	Income3	373	373	373	373	373	373
	Income4	373	373	373	373	373	373
	Income5	373	373	373	373	373	373

Table 3. ***Coefficients*** [a]

Model	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for *B*	
	B	Std. Error	Beta	*t*	Sig.	Lower Bound	Upper Bound
1 (Constant)	.040	.282		.142	.887	–.515	.595
Income1	3.253	.310	.947	10.507	.000	2.644	3.861
Income2	2.923	.392	.469	7.463	.000	2.153	3.693
Income3	2.994	.338	.672	8.870	.000	2.331	3.658
Income4	3.260	.323	.829	10.083	.000	2.624	3.896
Income5	3.260	.336	.742	9.705	.000	2.599	3.921

Note. [a] Dependent Variable : Consistency of Saving Behaviour.

Figure 1. ***Dependent Variable: Consistency of Savings Behaviour (Histogram)***



wise findings refer to each dummy variable and its predictive power. For all dummy variables, the *t* - values are found to be significant, suggesting that the group coded with income 1 is significantly different from the baseline category. Positive values of *B* suggest that regularity in savings behavior goes up as awareness of change in income goes up.

Discussion and Policy Implications

Any primary data study that aims at understanding demand variables involves the risk of intermixing causation and correlation among the variables based on statistical findings. A reasonably large sample size reduces the risk and increases the credibility of the research. Further, in demand analysis, multiple layers of exploration are

involved. As a result, each study, however small, can significantly contribute to the realm of further research and add to the body of existing knowledge. A notable finding by Shin and Kim may find mention here (Shin & Kim, 2018). Using a 2007– 2009 survey of consumer finance and a panel data set in the United States in the backdrop of the recovery of the consumer (and the economy at large) from the financial crisis, the authors concluded that if a household sees their income as lesser than some expected average from a normal year, it is likely to save lesser than those households who see their income at a higher level than expected average (Shin & Kim, 2018). This paper intersects and deviates at patches with Shin and Kim's arguments.

Paying attention to the changes to monthly or yearly income earnings is likely to make the income-earner more disciplined in savings habits. The ability to notice the changes to real income in light of intra-year and inter-year inflation can be a necessary trait to impart a multivariate approach to savings. Changes in income for one year and over 3 years refer to the positive or negative shocks to the income flow witnessed over short and long periods. If consumption goals are defined, an observation that the income levels are falling may make the household rationally choose to save with more regularity. In the subgroup of low-income households, observing one's monthly income trends reduce the overestimation bias. This finding will be useful if it is juxtaposed with an interest in adopting a two-period model study in a similar setting or if intended to find out a cross-country comparison in financial behavior of the households. It might be useful to model government assistance programs on the supply side.

Conclusion

This paper argues that the concern for the regularity of savings needs to be separated from the concern for the amount of savings for long-term asset building for low-income households. The demand side of any study of decision-making has always been an intertwined structure with intersectional significance. A further separation of the ability to save from the incentive to save is warranted. The habit of regular savings to reap the time value of savings necessitates a need for thinking on the demand side of savings. It is expected to create demand infrastructure, similar to supply-side infrastructure. While higher-income group people are self-motivated to understand the nuances of demand and can take help in case of need, low-income households are more constrained to access information. Any study explored within a constrained framework, yielding noticeable results, can be recast and experimented with within wider settings involving more respondents. Barriers to the way of the regularity of savings for the target household can be hence studied and subsequently alleviated through necessary policies for motivating the low-income households, which can be integrated into the mainstream of asset building by suitable alteration of supply-side factors. In this connection, recall that in the absence of social security, higher engagement with the idea of regular savings for the low-income group will reduce the pressure on the government to transfer benefits. Consequently, more can be spent on development expenditures than on welfare expenditures designed to uplift poor and low-income households in the economy by substantially reducing the trade-offs.

Limitations of the Research and the Way Forward

This research seeks to provide a multivariate treatment for savings investment habits of low-income households. Inevitably, the possibilities of including more and more variables are endless. For instance, a pan-India dataset that includes a higher number of respondents or a wider set of behavioral factors may throw light on new, unexplored sides of savings habits. The findings of this research may be challenged by a recast of the sample data against the upcoming, soon-to-be-released census data.

Author's Contribution

The arguments and data presented here form a part of the proposed dissertation work of Gitanjali Mohanty undertaken for the Ph.D. degree at the University of Mumbai.

Conflict of Interest

The author certifies that she has no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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References

Beverly, S. G., & Sherraden, M. (1999). Institutional determinants of saving: Implications for low-income households and public policy. *The Journal of Socio-Economics*, *28*(4), 457–473. https://doi.org/10.1016/s1053-5357(99)00046-3

Cesaratto, S. (1999). Critical survey. Savings and economic growth in neoclassical theory. *Cambridge Journal of Economics*, *23*(6), 771–793. https://doi.org/10.1093/cje/23.6.771

Deaton, A. (1991). Saving and liquidity constraints. *Econometrica*, *59*(5), 1221–1248. https://doi.org/10.2307/2938366

Kennickell, A. B., & Starr-Mccluer, M. (1997). Household saving and portfolio change : Evidence from the 1983–89 SCF panel. *The Review of Income and Wealth*, *43*(4), 381–399. https://doi.org/10.1111/j.1475-4991.1997.tb00232.x

Keynes, J. M. (2018). *The general theory of employment, interest, and money*. Springer Publishing. https://doi.org/10.1007/978-3-319-70344-2

Ministry of Housing and Urban Poverty Alleviation. (2012, September). *Report of the technical group on urban housing shortage (TG-12)(2012–2017)*. Government of India. http://nbo.nic.in/pdf/urban-housing-shortage.pdf

National Commission for Enterprises in the Unorganised Sector. (2007, August). *Report on conditions of work and promotion of livelihoods in the unorganised sector*. Government of India. https://dcmsme.gov.in/Condition_of_workers_sep_2007.pdf

Sonam, Aggarwal, S., & Bhushan, V. (2019). Impact analysis of the SHG-bank linkage model on empowerment of women in Dehradun. *Arthshastra Indian Journal of Economics & Research*, *8*(3), 20 – 31. https://doi.org/10.17010/aijer/2019/v8i3/146034

Shin, S. H., & Kim, K. T. (2018). Perceived income changes, saving motives, and household savings. *Journal of Financial Counseling and Planning*, *29*(2), 396 – 409. https://doi.org/10.1891/1052-3073.29.2.396

Sreenivas, N., & Subramanya Sarma, V. V. (2012). Microfinance: The sour grape. *Arthshastra Indian Journal of Economics & Research*, *1*(3), 38 – 48. https://doi.org/10.17010/aijer/2012/v1i3/54527

Swami, M. (2014). Impact analysis of SHGs in the urban milieu: A case study. *Arthshastra Indian Journal of Economics & Research*, *3*(1), 4 –14. https://doi.org/10.17010/aijer/2014/v3i1/55916

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