# INTRA RURAL REGIONAL DIFFERENCE IN HOUSEHOLD SAVINGS: EMPIRICAL EVIDENCE FROM THREE RURAL AREAS OF DISTRICT KARAK (PAKISTAN)

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## ABSTRACT

*The present study has been conducted in the year 2010 in district Karak rural areas to assess the difference in household savings in various rural regions namely Tehsil Banda Daud Shah, Tehsil Karak and Tehsil Takhti-e-Nasrati. A sample of 300 respondents (100 from each area) was selected randomly and then household savings were analyzed through ANCOVA econometric technique combined with Gini coefficient and descriptive statistics. The results seem to be very interesting and useful. Apart from vital importance of Disposable income and support ratio as major determinants of household savings, gender of household head, ownerships of livestock and land showed surprising results. The negative coefficient of livestock ownership and land for Tehsil Takhti-e-Nasrati and Karak respectively seems to be irrelevant on priory ground but actually former shows the cost of having animals for non-productive land's owner households area and the later associated with dry hilly areas which have maintenance expenses for future value. The paper confirmed disposable income of household head and support ratio very crucial in boosting household savings. Quite interesting finding is that female household head save more than male household head expect Takhti-e-Nasrati area. The Gini coefficients suggest more equitable distribution of income in Tehsil Banda Davood Shah compared to other Tehsils.*

## INTRODUCTION

Saving is considered as residual i.e. whatever is left behind consumption is saved, in context of modern economics. Saving is money not spent; it is withdrawal from circular flow of income. The decision about how much to save and how much to spent though constitute two sides of the same coin but its very vital in applied sense. Saving is basically done by various economic agents namely government, corporation and household etc. But a logical question that why an individual save would simply follows endless chain of reasons such as to meet old age or future expenditure, or he may feel some future risk and want to guard against it, or he may desire to leave property to his children or his children's children, or he may have a fixed saving contract or he may seeks prestige and power as thrift brings it and so on (Samulson pp. 206).

Regardless the question why individual save, the adequate rate of national saving is pre-condition for realizing the investment and growth rate targets as it provides useful economic link and correlation between the past, present and future of the country. For these reasons numerous studies have devoted for analyzing socio-eco-demographic determinant of savings (Kazmi A.A 1993). Household savings are vital for supply of funds for investments because financial developments have significant implications for economic growth in developing countries (Abdelkhalek T. et al 2009).

Domestic resources mobilization is key determinant to support rapid economic growth and development. Pakistan savings rate is not very sufficient even compared to less developed countries which have created a headache for economic and policy managers. Khan H.A et al (1992) tried to find factors which keep influencing savings rate through application of econometric tools to time series data from 1959-60 and 1978-88. The key variable includes per capita income, growth rate of real income, dependency ratio, real interest rates, terms of trade, openness of economy and foreign capital inflow etc they found that per capita income, dependency ratio, real interest rate and foreign capital inflow bears strong and significant impact on national savings. So the population reduction policy was recommended to enhance PCI and depress dependency ratio. The paper confirmed the finan-

cial repression as regard to real interest rate. Their positive and significant effects suggest sensitivity of national savings rate to real interest rate. Moreover, foreign capital inflow keep depressed savings and more open economy boost savings so economic liberalization is needed on the part of government.

Husain M.A (1995) reviewed and compared trend development in the private savings behavior in Pakistan with those Southeast Asian economies using data on savings and its determinants for the period 1970-93 employing co-integration techniques. The co-integration of private savings with financial deepening confirmed financial development as an important determinant in long run. The demographic change which had increased savings in Southeast Asian economies but in case of Pakistan it appeared to no matter mainly due to static structure of overall population during the past two decades is notable here.

Nwachukwa (2007) was not comfortable with past work as he argued that regressions were often run without proper examination of characteristics of time series data, therefore he used Error Correction Model along with three other conventional models i.e Partial-Adjustment, Growth rate and Static Model in order to have a deep insight into determinants of private savings in Nigeria for the period 1970-2005. He concluded that result of the ECM-Type showed far close fit to the data. The surprising result were that savings rate increases with the level of Disposable income where as fall with rate of growth of disposable income in Nigeria which provides very strong empirical background to include both as determinant in the model.

They found that real interest rate and growth rate of income has negative significant effect on savings where as per capita income, terms of trade changes, public savings rate, external debt service ratio, and the inflation rate are having statistically positive impact on domestic savings.

Kazmi A.A (1993) pointed out that literature on determinants of savings has grown rapidly and quantification factor that cause differential in the saving rate is ignored. So he took this aspect with regard to India and Pakistan implying advance econometric to the time series data 1960-88. He found that about 50% differences in the savings rate of India and Pakistan is attributed to factor related to human development and demography. Public expenditure on defense and the import ratio also contribute significantly to differences in saving rates in both countries. However he suggested that these conclusion should be taken carefully because the values of co-efficient of explanatory variables changes with model specification, time period of analysis and choice of estimation techniques.

Ahmad H.M et al (2006) examined household savings behavior employing Johansen-Juselius coitegration technique and error correction model to determine long run and short run dynamics of the systems using time series data for Pakistan over the period 1972-2003. The paper concluded that demographic variables and rate of inflation negatively effect household savings where as income, growth and real interest rate established positive effect on savings. The study confirmed that substitution effect dominates income effect and public saving crowed out private savings in Pakistan.

Though more work has done on reporting and comparing households' savings determinants in rural and urban areas but little attention is paid to the question, Is there any significant difference exist in household savings behavior within different rural areas? This paper aims to fill this gap as it would provide solid empirical base to address difference in household savings in different rural regions through differentiated effective possible policy tools to pull the craft of development more effectively.

The remaining paper is organized as: section 2 contains Method and Materials, section 3 reports results and Discussion and section 4 deals summary and recommendations.

## MATERIAL AND METHOD

This study has been conducted in rural areas of three Tehsils of District Karak i.e. Banda Davood Shah, Karak Tehsil and Takhti-e-Nasrati. A Sample of 300 respondents (100 respondents from each) were selected randomly. Strenuous efforts were taken in sample selection so as to make sample as more representative as possible. The respondent were interviewed and raw data was gathered on questionnaire containing varieties of information relevant to the study. The data, for each area separately was analyzed through ANCOVA econometrics model given below:

$$S = \beta_0 + \beta_1 DIHH + \beta_2 DGHH + \beta_3 DLIV + \beta_4 DLAND + \beta_5 SUPRAT + \varepsilon_i$$

Where,

S = Annual Savings of The Household,

DIHH = Annual Disposable Income of The Household,

DGHH = Dummy Variable for Household Head,

  GDHH = 1, If Male,

  GDHH = 0, If Female

DLIV = Dummy Variable for Ownership of Livestock,

  DLIV = 1,if Yes

  DLIV = 0, if Zero.

DLAND = Dummy Variable for Ownership of Land

  DLAND = I, If Yes

  DLAND = 0, If No,

SUPRAT = Support Ratio of Household: Calculated as

  (Total Family Size- No of Unemployed)/ Total Family Size

$\varepsilon_i$ = Random Term.

The above Model was estimated through OLS Technique. In order to have more insight into the problem, descriptive statistics was used extensively used. The difference in household savings is checked by using Gini coefficients due to its numerous merits.

## RESULTS AND DISCUSSIONS

The results are very interesting and meaning full. It fully justified the need for systematic studying intra-rural differences of household savings. The intercepts of all regressions are negative and sig-

nificant at 1% level of significance except regression for Tehsil Karak, so this according to priory expectation and economic theory presented by Keynes (Table No. 1). The statistical insignificance of intercept for Regression Tehsil Karak should not be taken seriously because many studied conducted in rural areas have reported constant term not significant (e.g see Abedelkhalak.T et al. 2009). The positive sign of income coefficients for all regressions confirm direct relationship between saving and income. Again its significant at 1% shows that income variable is most important in savings decision makings in all three rural areas. The Marginal Propensity to Save (MPS) and Average Income and Savings is highest for Tehsil Banda Davood Shah and lowest for Tehsil Karak and it's supported by relevant Gini Coefficient (see Table No. 1, 2 & 4). Tehsil Karak enjoys maximum income of Rs. 543,852 per annum and minimum income of Rs. 22,680 is reported for Tehsil Banda Davood Shah (see Table No. 3).

The most striking point is that female household head save more in all research areas expect Takhti-e-Nasrati and this variable is statistically significant at 5% and10% in Tehsil Karak which shows the validity of the results. This is not surprising in the sense that female household head tends to save more for the purpose of secure future as they have very limited excess to productive channels. The ownership of livestock in rural areas is a major source of income that is why its coefficient is positive and significant for Banda Daud Shah areas. It is also positive for Tehsil Karak but negative for Tehsil Takhti-e-Nasrati and again its not significant for both

### Table 1: Regression Results

| Coefficients/ Regression | Tehsil Banda Davood Shah (1) | Tehsil Takhti-e-Nasrati (2) | Tehsil Karak (3) |
|---|---|---|---|
| Constant | -28589.793* (7423.780) | -25830.879* (7145.453) | -6993.570 (5897.690) |
| DIHH( per annum) | O.350* (0.050) | 0.259* (0.054) | 0.229* (0.032) |
| DGHH | -7557.795 (4968.766) | 5915.834 (5582.236) | -11895.825** (4505.621) |
| DLIV | 12917.387*** (7033.385) | -6836.363 (9044.667) | 6124.709 (5888.179) |
| DLAND | 15199.123** (7033.308) | 45090.194* (9345.635) | -1954.824 (5483.035) |
| SUPRAT | 9387.938 (24010.962) | 23220.531 (24498.087) | 39797.382* (13041.512) |
| F-Ratio | 29.293* | 36.702* | 20.556* |
| $R^2$ | 0.612 | 0.661 | O.522 |
| Adjusted $R^2$ | 0.591 | 0.643 | 0.497 |

Note: *, ** and *** shows significant at 1%, 5%, 10% respectively.

### Table 2: Average and Standard Deviation of all determinants

| | Statistic/ Areas | Tehsil Banda Davood Shah (1) | Tehsil Takhti-e-Nasrati (2) | Tehsil Karak (3) |
|---|---|---|---|---|
| Averages and Standard deviations | DIHH (Rs per annum) | 132289.2 (61985.115) | 112462.76 (62116.328) | 126069.48 (76887.937) |
| | DGHH | 0.53 (0.502) | 0.70 (0.461) | 0.58 (0.496) |
| | DLIV | 0.75 (0.435) | 0.55 (0.500) | 0.65 (0.479) |
| | DLAND | 0.61 (0.490) | 0.54 (0.501) | 0.51 (0.502) |
| | SUPRAT | 0.2589 (0.12457) | 0.2312 (0.11054) | 0.2333 (0.19255) |
| | FSIZE | 8.87 (2.177) | 8.88 (2.244) | 7.60 (2.985) |
| | NUMPLYD | 6.59 (1.970) | 6.86 (2.000) | 5.97 (2.976) |
| | NEMPLYD | 2.51 (1.534) | 2.06 (1.179) | 1.58 (1.191) |
| | SAVINGS | 35501.86 (38500.087) | 34185.1 (41443.477) | 27176.96 (32117.105) |
| | DRAT | 0.7171 (0.15075) | 0.7535 (0.11577) | 0.77117 (0.16923) |

### Table 3: Maximum and Minimum of selected determinants

| | Statistic/ Areas | Tehsil Banda Davood Shah | Tehsil Takhti-e-Nasrati | Tehsil Karak |
|---|---|---|---|---|
| Minimum — Maximum | DIHH (Rs) Per Annum | 22,680-294,000 | 26,400-277,320 | 27,732-543,852 |
| | SUPRAT | 00-0.60 | 00-0.64 | 00-0.86 |
| | FSIZE | 4-12 | 3-13 | 3-13 |
| | NUMPLYD | 2-11 | 2-11 | 1-11 |
| | NEMPLYD | 0-8 | 1-7 | 0-6 |
| | SAVINGS (Rs) Per Annum | -36,000-98,320 | -40,800-162,000 | -14,400-98,000 |
| | DRAT | 0.20-1.00 | 0.36-0.92 | 0.20-1.00 |

### Table 4: Gini coefficient

| Areas | Sample Gini Coefficient | Estimate of pop-value |
|---|---|---|
| Tehsil Banda Davood Shah | 0.265284 | 0.267963 |
| Tehsil Takhti-e-Nasrati | 0.30573 | 0.308818 |
| Tehsil Karak | 0.317223 | 0.320427 |

the said areas. As Takhti-e-Nasrati Tehsil areas mostly composed of deserts and dry mountains so they are not suited for livestock ownership as it increases expenditure in terms of purchasing Green-Grass for animals.

The ownership of land was expected to have positive sign as availability of land can have several positive effects on household savings in terms of agriculture and rent free housings. But the turned out against priory expectation and insignificant for Tehsil Karak areas. This result shouldn't be taken as much seriously as the nature and quality of available land in Tehsil Karak areas is far different than other said areas. Its is not suited for cultivation due to its hilly nature, again the maintenance expenditure for the expected future value is adding to expenditures and reducing household savings. But overall importance of land ownerships can be view from the empirical results which clearly points out towards appropriate land distribution policies.

- The Parenthesis includes Standard error of estimates.

- The number of employed is key determinant of household savings as more no of member

employed would lead to more income and thus more savings. So the support ratio, as opposite to Dependency Ratio, was also expected to bear positive influence on household savings. The results of the studies are very satisfactory in this regards. This means that's the proper man power policy would be very meaningful for boosting household savings. The overall validity of regression is indicated by highly significance of F-Statistic combined with fairly good fit shown by Coefficient of regression adds more value to econometrics techniques used in this paper.

The high Average Family Size and dependency ratio which is reported by many empirical studies is also a big concern and influence House-hold decision to save. The average family size reported is also not very different from Pakistan population census report in 1990 which is 8 persons for rural NWFP (Population Census Organization 2010)[8]. The average family size range between 7 to 9 with mass average unemployment of 5 to 7 per family caused explosive Dependency Ratio from 0.71 to 0.77 call for much ever paid attention. (see Table No. 2) The appropriate Family Planning coupled pro-employment generation policies will be crucial.

The maximum family size is 12 member for Tehsil Banda Davood Shah and minimum 3 member for Tehsil Takhti-e-Nasrati and Karak is much important to note. The study reports that maximum unemployment is 11 member and same for all three regions (see Table No. 3). One of most important conclusion is the highest family size, severe unemployment and dependency ratio in rural areas adding more to consumption and hence reduces household ability to save. So the main thing is reframe proper manpower policy.

The Gini coefficient is one of powerful test of income distribution. Its range of value is between zero (perfect equality) and one (perfect inequality). The more the value is close to zero is reported is a more equitable the distribution of income is and vice versa. This Paper showed that Tehsil Banda Davood Shah has minimum Gini coefficient and thus highest MPS (see Table No. 4).

The evidence of Low Gini coefficient and High MPS though has Theoretical justification. However more empirical work on this issue may bring more insight into the matter and will be helpful from policy perspective.

## CONCLUSION AND RECOMMENDATIONS

Income variable is very important determinant in household savings which call for income raising policies. The negative effects of gender of house-hold head for all research areas expects Takhti-e-Nasrati means that female household head save more than male household head. The positive co-efficient of ownership of livestock expects for Takhti-e-Nasrati, points towards sound agriculture development policy as it helps in promoting household savings. As the land's distribution has vital role in livelihood of masses so it led us to the inclusions of land ownerships in analysis. The empirical results are accordance to priory expectation. The confirmed that high support ratio boost household savings so appropriate policy would be to focus on man power development and utilization. Difference Gini coefficient also call for much attention to rural income distribution policies. The paper clearly point differences in household saving even in intra-rural areas that is why the one policy for all rural areas have not produced satisfactory results. Actually the need is for multiple polices for different regions so as to boost savings.

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