

# India's Spatial Inequality: Trends and Patterns

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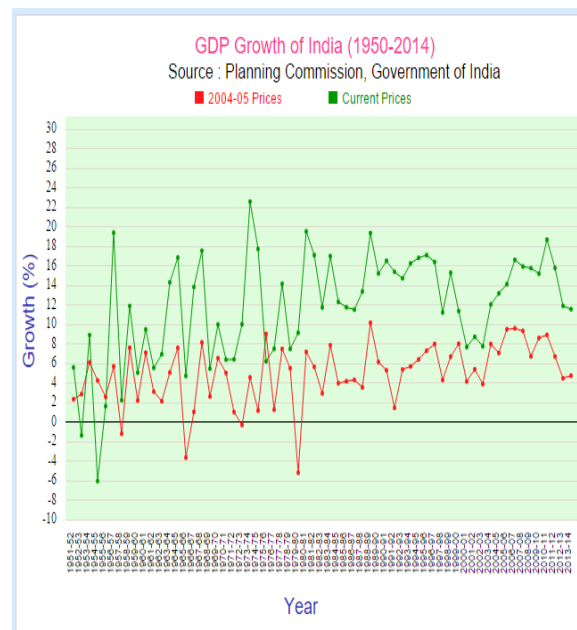
## Abstract

Indian's two decades of economic reforms have always been a matter of great interest among the development professionals, policy makers, and political leaders. To address that several studies have been conducted, however this study uses a uniquely available longitudinal data to assess how inclusive the benefits have been accrued at state level. The studies shows between 1993 and 2005 the real per capita income in villages which are far away from the center of economic activities (in case of this study its town)declined, however the villages which are closer to the center of economic activities their real per capita income increased. These trends persist not only for economic variables, besides that is true for health outcome, education attainment, and social networks also. The debilitating effects of "distance from the center of economic activities" need to be countered through connecting outlying villages with more and better physical and social infrastructures.

## I. INTRODUCTION

During the 60s and 70s it was a common perception that India could be a basket case of economic failure. Country was able to achieve 3.5% economic growth rate, which was widely taunted as Hindu Growth Rate (Kohli 1990). However, thanks to the balance of payment crisis India started its economic reforms in 1991 (Ahluwalia 1995; Krueger 2002; Panagariya2005). Sincethen the country maintained more than 6% GDP growth (see Graph 1). The policy makers who outlined the economic reforms process anticipated that as the country would achieve and maintain high GDP growth, the benefits would be reached and delivered to the lowest strata of the society (Myrdal & Bhagwati 1981).

Graph 1: Indian's Economic Growth (1950-2014)



However after two decades of economic reforms it is contentious that whether trickle-town theory really worked in case of India (Gupta 1999; Basu&Mallick 2007). Or the reforms process which generated the high economic growth in the post-liberalization period has been accompanied by rising inequality.<sup>1</sup>

### Significance of the Study:

There are two specific rationales to conduct this study. The first is as the present phenomenon of country's economic growth which is not inclusive, and with the result of that raising inequality is more glaring. This study captures the geographical aspect of inequality and will quantitatively measure how deeply the benefits from growth have penetrated at the countryside. Though the patterns and the measurement of inequality across the states of India and between rural and urban areas have been examined by the

analyst, however this study examines the distance factors in the magnitude of deprivation.<sup>2</sup>

The second is World Development Report 2013 shows that distance from the center of economic activities can significantly effect individuals' economic avenues. However, it has been always difficult to precisely measure and define a variable at unit level to measure distance of a village (lowest administrative unit) where a household stays to the nearest place of economic activities where it usually goes to perform basic economic activities such as buying grocery, and selling the agriculture output. Therefore, this study finds a closer proxy for the distance of surveyed village to the nearest town which is indicated by key respondents in a village for analysis, and uses it for analysis to addresses a research gap.

**Objectives of the Study:** This study has four prime objectives.

- 1) To understand the pattern of distribution it will compute per capita income and poverty ratios by village distance from the town.
- 2) To assess the role of reforms it will examine the absolute and relative change in income over the period by income quintiles.
- 3) To sketch a comprehensive picture of poverty and inequality analysis will be conducted at selected state level.
- 4) To understand the role of economic growth, education, health, and social network variables will be examined subsequently.

**Hypothesis:** Orientation of the study is more descriptive, therefore the discussion has been build around the findings from the surveys and the contemporary literatures. However to fulfill the requirement this study tests a hypothesis that: whether a decade of high economic growth has been equally beneficial in all parts of rural India?

**Structure of the Study:**

The first part of the study prepares a background that in despite of high economic growth a large proportion of the population is unable to take the benefits of economic growth. The second part deals with the significance of the study and explains the rationale for conducting the study. Followed by the significance of the study objectives of the study are listed, and further on it describes the hypothesis of the study.

In next part it explains the data sources, and describes that how the longitudinal data has been created.

Due to the nature of the study instead of putting the literature review in a separate section, study has cited the literature subsequently at the appropriate places. The sixth section starts with the data analysis at national level. Later on the similar kind of analysis is conducted by the income groups which were created within village distance to explain who is receiving the most benefits. To understand the complete picture the analysis is further performed at the selected state level.

The seventh section deals with how the lack of inclusion in education, and the network of social institution has created an inequality in accessing the most of the government benefits. To substantiate the lack of inclusion hypothesis the study highlights the household health status by village distance and income groups.

To establish a causal relation study conducts a regression analysis in the eighth section of the study. The last part is the conclusion and the policy recommendations.

**Data Sources:**

The study uses the two rounds of household survey conducted by the India's premier think tank, the National Council of Applied Economics Research (NCAER) in collaboration with United Nation Development Programme (UNDP) in 1993-94 of around 33,230 households in 16 larger states in rural India.

The same set of household revisited in 2004-05 by the researchers at the University of Maryland, USA and the NCAER in both rural and urban India of around 41,554 households (data is in public domain, and can be accessed from <https://www.icpsr.umich.edu/icpsrweb/content/DSDR/idhs-II-data-guide.html>).

The second round of survey uniquely identifies 13,459 households in rural Indian which have been used to create longitudinal data for this study (Figure 1). Both the surveys used the stratified random sampling design, and collected the data on several socio-economic variables.

The study examined the both round of surveys in order to investigate the nature of changes occurring within different villages and households.

**How Distance to Town Makes a Difference: Disaggregated Level Analysis**

There is a widening inequality in India between rural and urban areas (Shukla 2010). This inequality is more glaring as we move from mega metros to metros to semi metros to rural areas. To

capture that inequality and measure the inclusion in rural India village distance from the center of economic activity (this is town) has been used.



As it is provided in Table 1 three layers are being created using the two rounds of surveys. However for the analysis village distance from the town 2004-05 has been used, and the corresponding villages and households are followed retrospectively in 1993-94.

The villages are classified in three categories less than and equal to the 5k.m, more than 5 and less than and equal to the 10k.m, and the more than 10k.m. As the table one reflects 22% households reside less than 5k.m, while 28% in second category of villages greater than 5 and less than and equal to 10k.m, however the half of the village population lives in more than 10k.m from the place of economic activities.

Nonetheless, while closely examining the table 1, it reveals at the dawn of economic reforms in 1993-94 the per-capita income was little higher in faraway villages than the neighbor villages. However on the contrary in post reforms period all the fortunes got inverse as the per capita income grew faster in neighbor villages, while the faraway villages are standstill. The neighbor villages received the highest growth in per capita income of 15% (to compute the growth in per capita income, 1993-94 per capita income adjusted at 2004-05 prices using the inflators available from the labor office, government of India), while in villages fall in the radius of 5 to 10k.m real per capita income declined by 0.4%, to aggravate the situation further the villages which are more than 10k.m where the 50% of the

population stay real per capita income declined by 1.8%.

According the World Bank report (2012) one in every five Indians is poor. The measurement of the absolute number (in technical language it is known as head count ratio (HCR)), and change in those number reflects the pattern of inclusion in the society. While computing the HCR of 1993-94 shows that poverty was evenly distributed across the geography, however while comparing the figures with 2004-05 reflects that poverty is declined by 3.2% in neighbor villages less than 5k.m, however on the contrary the absolute poverty has increased in faraway villages more than 5 and 10k.m as the change in absolute poverty is negative. Overall the decline of absolute poverty in 1993-94 and 2004-05 is negative for rural Indian by -3.9%. This shows the entire benefits of economic reforms and their fruits are reaped by the urban population and the neighbor villages only. With the consequences that the era of neo-liberalism created a society which is less inclusive.

Table 1: Poverty Status, and Change in Per Capita Income by Village Distance from Nearest Town

| Village distance to nearest town | Share in Rural Population (2005) | Monthly Per Capita Income (1993-94) | Monthly Per Capita Income (1993-94 at 2004-05 prices) | Monthly Per Capita Income (2004-05) | Change in Per Capita Income (1993-2005) | Population below Poverty Line (1993) | Poverty reduction (1993-2005) |
|----------------------------------|----------------------------------|-------------------------------------|---|-------------------------------------|---|--------------------------------------|-------------------------------|
|                                  | %                                | Rs.                                 | Rs.   | Rs.                                 | %                                       | %                                    | %                             |
| <=5 km                           | 22                               | 379                                 | 662   | 762                                 | 15.1                                    | 39.4                                 | 3.2                           |
| >5 to <=10 km                    | 28                               | 395                                 | 696   | 693                                 | -0.4                                    | 35.8                                 | -5.6                          |
| >10 km                           | 50                               | 388                                 | 678   | 666                                 | -1.8                                    | 34.7                                 | -6.2                          |
| All Rural India                  | 100%                             | 388                                 | 680   | 696                                 | 2.4                                     | 36.1                                 | -3.9                          |

Source: NCAER data (1994, 2005)

To examine these trends further income quintiles have been generated independently within each village distance. These quintiles represent the 20% population in each quintile. The lowest quintile is bottom 20% of the population, while the highest quintile is top 20% of the population within each

category of villages by village distances. To make it strictly comparable these quintiles are created independently for 1993-94 and 2004-05 per capita income. They are arranged from lowest to highest income groups.

In 1993-94 the per capita income of top 20% population in villages less than 5k.m was almost equal to the top 20% population in villages more than 10k.m. In fact the lowest rung has the little higher per capita income in faraway villages than the neighbor one. Both the trends have reversed in 2004-05, the top quintile in villages more than 10k.m still enjoys the positive change in per capita income. But this change is 4 times lower than the positive change in the per capita income of top quintile of less than 5k.m of villages. The per capita income of top 20% population of less than 5k.m has increased 19.6% from 1993-94 and 2004-05, however on the contrary the top 20% of more than 10k.m has increased 5.2% only. This is still better than the other income groups where they experienced negative income growth.

The lowest rung experienced the steepest decline in per capita income of faraway villages in comparison with the neighbor one where the real per capita income has increased minimum 3.8%, however in other income segment the growth in per capita income is experienced by 6.3-15.5% from Q2-Q4 respectively. On the contrary in other distance categories such as more than 5 and 10k.m the change in per capita income has been negative. The highest decline in per capita income is experienced by the lowest 20% of households in villages within the circumference of 5 and 10k.m which is 17.8%, a slightly lower than the comparable group in village more than 10k.m where the real per capita income is declined by the 15.8%. These trends reflect the nature of economic growth which is asymmetrical, and not inclusive.

**Table 2: Income Growth and Distance From Towns (By Income Quintiles)**

| Income Quintiles                            | Monthly Per Capita Income (1993-94) | Monthly Per Capita Income (1993-94) at 2004-05 prices | Monthly Per Capita Income (2004-05) | Change in Per Capita Income (1993-2005) (%) |
|---|-------------------------------------|---|-------------------------------------|---|
| Rural India (all)                           | 388                                 | 680   | 696                                 | 2.4   |
| <i>Villages within 5 km of nearest town</i> |                                     |   |                                     |   |

|   |            |            |            |             |
|---|------------|------------|------------|-------------|
| Lowest quintile                                   | 93         | 160        | 166        | 3.8         |
| Q2  | 174        | 301        | 320        | 6.3         |
| Q3  | 256        | 446        | 480        | 7.6         |
| Q4  | 390        | 682        | 788        | 15.5        |
| Highest quintile                                  | 983        | 1723       | 2061       | 19.6        |
| <b>&lt;=5 km</b>                                  | <b>379</b> | <b>662</b> | <b>762</b> | <b>15.1</b> |
| <i>Villages at 5 to 10 km from nearest town</i>   |            |            |            |             |
| Lowest quintile                                   | 100        | 174        | 143        | -17.8       |
| Q2  | 181        | 315        | 279        | -11.4       |
| Q3  | 270        | 471        | 431        | -8.5        |
| Q4  | 408        | 717        | 691        | -3.6        |
| Highest quintile                                  | 1017       | 1804       | 1922       | 6.5         |
| <b>Villages &gt;5 to &lt;=10 km</b>               | <b>395</b> | <b>696</b> | <b>693</b> | <b>-0.4</b> |
| <i>Villages more than 10 km from nearest town</i> |            |            |            |             |
| Lowest quintile                                   | 102        | 177        | 149        | -15.8       |
| Q2  | 188        | 325        | 283        | -12.9       |
| Q3  | 270        | 470        | 428        | -8.9        |
| Q4  | 408        | 710        | 676        | -4.8        |
| Highest quintile                                  | 971        | 1708       | 1797       | 5.2         |
| <b>Villages &gt;10 km</b>                         | <b>388</b> | <b>678</b> | <b>666</b> | <b>-1.8</b> |

Source: NCAER data (1994, 2005)

These national level trends are further analyzed at the state level. For this analysis few states have been selected from the each geographical region such as north, south, west, and central India. The prime reason for selecting states was to have a significantly large sample for each state, additionally to put the results in a more comprehensible form.

From the north Uttar Pradesh, from south Tamil Nadu, from west Gujarat, and from the central India Madhya Pradesh have been selected. Any analysis is incomplete without highlighting Maharashtra as the state is the business capital of India, therefore Maharashtra also chose to be the part of analysis.

Additionally to make the sample size sufficiently large the more than 10k.m villages have

been subsumed into the more than 5k.m villages. Therefore it became two categories the villages less than 5k.m and the villages more than 5k.m. The interesting trend which can be observed from Table 3 is the states which are considered as relatively less well-off their inequality is lower such as UP than the states which are better off such as Maharashtra. The real per capita income of villages in U.P is declined 3%, however villages in Maharashtra is declined by 17% which is the financial capital of India. This shows that as the economic opportunities will come at your shore it will be captured by the well-off, and well-connected, however the far-away places will be in despair.

**Table 3: Distance from the Town and Change in Per Capita Income by States**

| States      |                                    | Rural Average | <=5 k.m | >5 k.m |
|-------------|------------------------------------|---------------|---------|--------|
|             | Sample Size                        | 13459         | 3047    | 10412  |
| Rural India | Sample Distribution (%)            |               | 23      | 77     |
|             | MPCY 1993-94                       | 388           | 379     | 392    |
|             | MPCY 1993-94 at 2004-05 prices     | 680           | 662     | 687    |
|             | MPCY 2004-05                       | 696           | 762     | 680    |
|             | Change in PCY (1993 to 2005, in %) | 2.4           | 15      | -1.1   |
|             | Sample Size                        | 1997          | 268     | 1729   |
|             | Sample Distribution (%)            |               | 13      | 87     |
|             | MPCY 1993-94                       | 342           | 292     | 345    |
| MP          | MPCY 1993-94 at 2004-05 prices     | 581           | 497     | 587    |
|             | MPCY 2004-05                       | 468           | 434     | 471    |
|             | Change in PCY (1993 to 2005, in %) | -19           | -13     | -20    |
|             | Sample Size                        | 1403          | 210     | 1193   |
|             | Sample Distribution (%)            |               | 15      | 85     |
|             | MPCY 1993-94                       | 512           | 472     | 523    |
| Maharashtra | MPCY 1993-94 at 2004-05 prices     | 953           | 878     | 973    |
|             | MPCY 2004-05                       | 794           | 768     | 798    |
|             | Change in PCY (1993 to 2005, in %) | -17           | -13     | -17.4  |

|         |                                    |     |     |       |
|---------|------------------------------------|-----|-----|-------|
|         | (%)                                |     |     |       |
|         | Sample Size                        | 703 | 106 | 597   |
|         | Sample Distribution (%)            |     | 15  | 85    |
|         | MPCY 1993-94                       | 455 | 418 | 441   |
| Gujarat | MPCY 1993-94 at 2004-05 prices     | 796 | 732 | 771   |
|         | MPCY 2004-05                       | 686 | 690 | 671   |
|         | Change in PCY (1993 to 2005, in %) | -14 | -6  | -12.2 |
|         | Sample Size                        | 563 | 138 | 425   |
|         | Sample Distribution (%)            |     | 25  | 75    |
|         | MPCY 1993-94                       | 424 | 364 | 446   |
| TN      | MPCY 1993-94 at 2004-05 prices     | 758 | 652 | 798   |
|         | MPCY 2004-05                       | 661 | 780 | 640   |
|         | Change in PCY (1993 to 2005, in %) | -13 | 20  | -20   |
|         | Sample Size                        | 724 | 287 | 437   |
|         | Sample Distribution (%)            |     | 40  | 60    |
|         | MPCY 1993-94                       | 349 | 278 | 399   |
| UP      | MPCY 1993-94 at 2004-05 prices     | 600 | 478 | 687   |
|         | MPCY 2004-05                       | 580 | 588 | 579   |
|         | Change in PCY (1993 to 2005, in %) | -3  | 23  | -15.2 |

Source: NCAER (1994, 2005)

**Factors Responsible for Poor Inclusion: Lack of Education, Health and Social Network**

The administrative structure of the India is federal, where the states (in other countries they are similar to the province or governorate) are responsible for the human and the social development of the population reside in side the administrative geography. However, over the period in despite of pro-poor agenda the benefits of the policies have not been accrued by deprived sections.

There are several factors responsible to the circumstances, the positive one which help to come out of deprivation did not reach to the place where the

deprivation was concentrated. And the negative one which creates the obstacles that they do not allow to reach deprived section to the benefitshave created a labyrinth (Krishna &Shariff. 2011). The infrastructural constraints work both the ways.

The people those who reside far away from the place where the market activities are concentrated do not have the resources to connect to the market. And this lack of resources further aggravated by their incapability which are usually developed through the availability of quality education.

Survey had asked the questions not only about the completion of education, but it was more interested in learning achievements. In market driven growth skills matter more than the degrees.To carry on the same idea study has analyzed the learning variables for 8 to 11 years old on their rudimentary skills of reading, writing, computation abilities, and the proficiency of English. The reason of analyzing English proficiency variable is pretty straight that in the era of globalization without knowing the English a person limits his options (Table 4).

Across the multidimensional learning abilities, reading, writing and computational nearby villages perform better than the faraway villages. In case of reading abilities a child of age 8 and 11 was asked to read a complete word in their regional language rather than merely a letter. Writing ability also reflects the very much similar trends. However the proportion of children age 8 to 11 performed poorly in writing skills than the reading skills. Writing skill across the village distances 10 percent lower than the reading abilities.

The basic skills of adding and subtracting two numbers also tested. More than 50 percent children were unable to attempt the basic mathematics problem. These results are very much aligned with the findings of PISA (Program of International Students Assessment). The English language proficiency is far worse than the reading, writing and computational skills across distances. Hardly 2 to 4 percent children were able to read a word (again for this question children were asked to read a word not merely a letter). The English language proficiency puts a big question mark on the integration of the major population in the country in global economy where the nature of the economy is market driven and service oriented.

**Table 4: Learning Ability of Children between the Age 8 and11(%)**

| Distance from the town (in km.) 2004-05 | Reading Ability (if the child is able to read a word or more, not merely a just letter, in any one these of the given languages) | Writing Ability (Only two options are given whether could write (write with two or less mistakes) or not) | Computational Ability (basic addition and subtraction) | English Language Proficiency (if the child is able to read a word or more, not merely a just letter) |
|---|--|---|--|--|
| Rural India                             | 71.8   | 62.1  | 43   | 2.4  |
| <=5                                     | 74.6   | 65.9  | 46.7   | 3.5  |
| >5 to <=10                              | 72.8   | 63.4  | 44.8   | 2.7  |
| >10                                     | 70   | 59.7  | 40.4   | 1.8  |

The poor learning ability is not only limited due to the unavailability of infrastructure, in fact research shows the poor health condition causes the lower retention ability and consequences that poor learning ability (Currie 2009). Several studies have been conducted to assess the effect of the proper nutritional food consumption in early childhood on cognitive skills and in later part of the life on earning (Connell, M. 2018). Research shows significant positive relationship.

Table 5 shows the body mass index (BMI) for children less than 12 years. Overall undernutrition is high in India, and it is severely prevalent in rural India across villages. Only 11 percent children have the normal BMI, a large three-fourth of the children population is severely thin, and this percentage is relatively higher in far way villages that is in every 5 kids 4 of them are severely thin. The prevalence of undernutrition is highly concentrated in bottom 20 of population in villages more than 10k.m from the town (Table 6).

**Table 5: Body Mass Index (BMI) in kg/m2 children <12 year by Village Distance**

|             | Moderately/severely thin (BMI<17) | Mildly thin (17.0-18.4) | Normal (18.5-24.9) | Overweight (25.0-29.9) | Obese (≥30.0) |
|-------------|-----------------------------------|-------------------------|--------------------|------------------------|---------------|
| Rural India | 74.1                              | 8.7                     | 11.4               | 2.3                    | 3.6           |

|            |      |     |      |     |     |
|------------|------|-----|------|-----|-----|
| <=5        | 71   | 9.2 | 11.8 | 3.6 | 4.4 |
| >5 to <=10 | 72.5 | 9.2 | 12.5 | 2   | 3.8 |
| >10        | 76.4 | 8.1 | 10.5 | 2   | 3.1 |

**Table 6: Body Mass Index (BMI) in kg/m<sup>2</sup> children <12 year by Village Distance and Income Quantiles**

|            | Moderately/severely thin (BMI<17) | Mildly thin (17.0-18.4) | Normal (18.5-24.9) | Overweight (25.0-29.9) | Obese (≥30.0) |
|------------|-----------------------------------|-------------------------|--------------------|------------------------|---------------|
|            |                                   |                         |                    |                        |               |
| Q1         | 75                                | 9.1                     | 9.5                | 1.9                    | 4.4           |
| Q2         | 76.9                              | 6.8                     | 10.7               | 2.6                    | 2.9           |
| Q3         | 69.9                              | 11.5                    | 11.6               | 3.2                    | 3.8           |
| Q4         | 66.1                              | 8.8                     | 12.4               | 7                      | 5.8           |
| Q5         | 60.8                              | 10.8                    | 17.5               | 5                      | 5.8           |
| <=5        | 71                                | 9.2                     | 11.8               | 3.6                    | 4.4           |
|            |                                   |                         |                    |                        |               |
| Q1         | 73.2                              | 8.4                     | 13.6               | 1.3                    | 3.4           |
| Q2         | 74.9                              | 9                       | 12.1               | 1.7                    | 2.4           |
| Q3         | 73.4                              | 9.2                     | 11.8               | 1.5                    | 4.1           |
| Q4         | 69                                | 11.8                    | 11.4               | 2.2                    | 5.6           |
| Q5         | 69.5                              | 7.9                     | 13.8               | 4.4                    | 4.4           |
| >5 to <=10 | 72.5                              | 9.2                     | 12.5               | 2                      | 3.8           |
|            |                                   |                         |                    |                        |               |
| Q1         | 77.5                              | 8.1                     | 9.8                | 1.6                    | 3             |
| Q2         | 78.2                              | 7.8                     | 9.3                | 1.9                    | 2.8           |
| Q3         | 76.4                              | 7.3                     | 11.8               | 1.9                    | 2.6           |
| Q4         | 73.5                              | 9.4                     | 11.4               | 2.5                    | 3.2           |
| Q5         | 73.9                              | 7.9                     | 11.6               | 2.4                    | 4.2           |
| >10        | 76.4                              | 8.1                     | 10.5               | 2                      | 3.1           |

In rural India access to basic facilities depends on who is closer to whom, and to whom you know. That determines to accrue the benefits of globalization too. To capture this idea study used the data on social network such as relationship with the government officer and employee, relationship with the doctor and medical staff. Any such kind of connection in rural

India make a person entitled to access government facilities.

Table 6 reveals that this network is wider in nearby villages than the faraway villages per 1000 HHs. This rate is 46 in nearby villages, however in faraway villages this is approximately half. Consequences that all the government programme and facilities are less accessible in faraway villages.

**Table 6: Social Network by Village Distance**

| Distance from the town (in km.) 2004-05   | Rural India |     |            |     |
|---|-------------|-----|------------|-----|
|   |             | <=5 | >5 to <=10 | >10 |
| Relationship with Gov. Employee (Officer, Clerk, & Other Lower) per 1000 HHs        | 43          | 57  | 42         | 39  |
| Relationship with Gov. officer (only officer) per 1000 HHs                          | 19          | 28  | 17         | 16  |
| Relationship with Medical staff (Doctors, Nurses, Technician, & Other) per 1000 HHs | 16          | 19  | 18         | 14  |
| Relationship with Doctor per 1000 HHs   | 10          | 13  | 10         | 9   |

## II. RESULTS OF REGRESSION ANALYSIS

Table 7 tried to establish a causal relationship using the logit regression. The regression model has been run in three parts having the independent variable the difference of the log of monthly per capita income of 2004-05 and the monthly per capita income 193-94 at 2004-05 prices common in all three parts. In all three parts of the regression analysis rest of the variables are common except that the first part does not include monthly per capita income and asset index. However in the second part to better understand the intensity of village distance from the place of economic activity to determine the change in income a set of asset variables in form of asset index has been incorporated.

In the third part of the regression analysis while keeping the other variables same and to understand the behavior of village distance to accrue the benefits by the households, the monthly per capita

income of the household of year 1993-94 has been incorporated.

Results from regression analysis showed that, even after controlling for the effects of diverse factors, distance to town continued to make a significant and large difference, and responsible for the inclusion of the household.

Some other factors made a difference too, including household size; age of household head; education to *secondary or higher* level; social group (with Scheduled Castes and Tribes, Other Backward Castes, and Muslims faring worse than high-caste groups); remittances (received from outside rural areas); and percentage of households in a village who posses telephones. Having taken a loan in the past five years or suffering a major illness negatively affects households' economic prospects. Education below secondary level did not make a significant difference

**Table 7: Regression Analysis**

| Independent Variable                             | Difference of log income (log of 2004-05 MPCY and log of 1993-94 MPCY at 2004-05 prices)<br>(Dependent Variable) |     |        |      |       |       |
|--|--|-----|--------|------|-------|-------|
|  | Coef.  | P>t | Coef.  | P>t  | Coef. | P>t   |
| 1993-94 MPCY                                     |  |     |        |      | -0    | 0     |
| Asset Index                                      |  |     | -0.026 | 0    |       |       |
| Village distance to nearest town, <=5 (Excluded) |  |     |        |      |       |       |
| >5 to <=10                                       | -0.1   | 0   | -0.099 | 0    | -0.08 | 0.001 |
| >10  | -0.13  | 0   | -0.128 | 0    | -0.09 | 0     |
| Household Size                                   | -0.05  | 0   | -0.043 | 0    | -0.05 | 0     |
| Head Education 1993, Illiterate (Excluded)       |  |     |        |      |       |       |
| Primary  | 0.007  | 0.7 | 0.023  | 0.24 | 0.037 | 0.033 |
| Secondary  | -0.07  | 0   | -0.011 | 0.74 | 0.168 | 0     |
| Head Age 1993, < 30 (Excluded)                   |  |     |        |      |       |       |
| 30-40 years                                      | -0.08  | 0   | -0.08  | 0.05 | -0.12 | 0.002 |
| 40 + years                                       | 0.152  | 0   | 0.161  | 0    | 0.114 | 0.001 |
| Socio Religious Group, HCHs (Excluded)           |  |     |        |      |       |       |
| SCs & STs  | 0.025  | 0.3 | 0      | 0.99 | -0.14 | 0     |
| OBCs   | -0.01  | 0.7 | -0.027 | 0.28 | -0.11 | 0     |
| Muslims  | -0.04  | 0.4 | -0.055 | 0.16 | -0.16 | 0     |
| Remittances (in Rs. '000)                        | 0.006  | 0   | 0.006  | 0    | 0.007 | 0     |

|                                     |                         |     |                         |           |                         |           |
|-------------------------------------|-------------------------|-----|-------------------------|-----------|-------------------------|-----------|
| Government assistance (in Rs. '000) | 0.011                   | 0.1 | 0.011                   | 0.09      | 0.01                    | 0.076     |
| Loan taken in last 5 years          | -0.06                   | 0   | -0.062                  | 0         | -0.05                   | 0.001     |
| Major Morbidity 2004-5              | -0.08                   | 0   | -0.074                  | 0         | -0.07                   | 0         |
| Splited HHs                         | 0.057                   | 0   | 0.075                   | 0         | 0.012                   | 0.511     |
| Percent households with telephone   | 0.005                   | 0   | 0.006                   | 0         | 0.007                   | 0         |
| Availability of Bus stop            | -0.03                   | 0.2 | -0.021                  | 0.3       | 0.003                   | 0.862     |
| <b>Gujarat (Excluded)</b>           |                         |     |                         |           |                         |           |
| Maha                                | -0.11                   | 0   | -0.099                  | 0.04      | -0.05                   | 0.212     |
| MP                                  | -0.06                   | 0.2 | -0.037                  | 0.42      | -0.1                    | 0.014     |
| TN                                  | -0.01                   | 0.9 | 0.002                   | 0.97      | -0.03                   | 0.612     |
| UP                                  | 0.208                   | 0   | 0.213                   | 0         | 0.152                   | 0.002     |
| Constant                            | 0.068                   | 0.3 | 0.072                   | 0.27      | 0.532                   | 0         |
|                                     |                         |     |                         |           |                         |           |
|                                     | Num<br>ber<br>of<br>obs | ### | Numb<br>er<br>of<br>obs | 1345<br>9 | Num<br>ber<br>of<br>obs | 1345<br>9 |
|                                     | F( 31, 13427)           | 32  | F( 32, 13426 )          | 32.8      | F( 32, 13426 )          | 140.6     |
|                                     | Prob > F                | 0   | Prob> F                 | 0         | Prob> F                 | 0         |
|                                     | R-squar<br>ed           | 0.1 | R-squar<br>ed           | 0.07      | R-squar<br>ed           | 0.25      |
|                                     | Adj R-squar<br>ed       | 0.1 | Adj R-squar<br>ed       | 0.07      | Adj R-squar<br>ed       | 0.25      |
|                                     | Root MSE                | 1   | Root MSE                | 1.01      | Root MSE                | 0.909     |

### III. CONCLUSION

After two decades of economic reforms it has been very clear that tickle down theory is not working (Berg and et al. 2018). Absence of physical infrastructure in rural India is adversely affecting both the ways: the first due to absence of such as road, electricity, and telecommunication facilities created an obstacle that not to be the part of global economy and take the benefits. Second even if somehow this infrastructure could be available in near future. The problem lies in the absence of infrastructure which helps to build human capability such as schools, and health centers.

Last two decades of economic reforms were highly concentrated in urban economy, and the inclusion of rural economy was completely missing in government agendas which created a kind of deep fissures where urban economy has been modernized and well integrated with the global economy. However on the contrary side rural economy became more



backward. On the top of that the irony is new breed of politicians most of them belong to urban areas mostly represent the interest of urban India. Therefore the apprehension is this division will be wider which needs a special attention from the government.

The recent debate on agriculture reforms and double the agriculture income should not miss the human factor, and must recognize agriculture is in deep crisis. Between 1993 and 2005, the proportion of landless households increased from 13 percent to 15 percent; more than 60 percent of all farming households operate marginal holdings, less than one hectare in size (NCEUS 2007: 112-3).

The matter of the fact is to synergize the rural economy and to integrate with the world economy investment and reforms both are required, and in coming years it will be interesting to see how the federal and state governments integrate 60 percent of the population in world economy, and address the aspirations of youths in rural India.

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## Notes

<sup>1</sup>For evidence about rising inequality see, for example, Azam and Shariff (2011); Cain et al. (2010); Chaudhuri and Ravallion (2007); Deaton and Dreze (2002); Dev and Ravi (2007); Jayadev, et al. (2011); Sarkar and Mehta (2010); Sen and Himanshu (2004); Shukla (2010); and Sundaram and Tendulkar (2003a and 2003b).

<sup>2</sup>Barua and Chakraborty (2010) and Singh, et al. (2003) provide evidence for increasing regional inequality (looking at differences across states of India). Deaton and Dreze (2002); Dev and Ravi (2007); Jayadev, et al. (2011); and Sen and Himanshu (2004) indicate how rural-urban differences have become wider than before.