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Deprivation among Elderly in Major Indian States

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ABSTRACT

The main objective of this research paper is to highlight the issues related to deprivation among vulnerable age –group mainly in the old age. This paper comprises different aspects of deprivation among elderly. I focussed here on three aspects of deprivation among older people –Economic, Health and Social aspects of deprivation. In this paper I have focussed on EAG (Empowered Action Group)States, Southern and North-East States. I have used three different indices EDI, HDI and SDI as well as a composite index to measure different aspects of deprivation.

Keywords: DEPRIVATION, EDI, HDI, SDI and COMPOSITE INDEX.

INTRODUCTION

Ageing is a dynamic process which continues until death. Population ageing is referred to in terms of the growing share of older individuals in total population. Changing age structure is one of structural change that witnessed in the last century. Population ageing is one of its consequences, which emerges as a global phenomenon in the present day. It is generally expressed as older individuals forming large share of the older population. This process is considered to be an end product of demographic transition or demographic achievements with a decline in both birth and mortality rates and consequent increase in the life expectancy at birth and older ages. This is a dynamic process was first observed in post-industrial European societies in the nineteenth century. The United Nations Conference of Ageing Populations in the context of the family held in Japan in1994 observed that all developed countries at least one demographic issue in common: population aging which was the inevitable consequence of

fertility decline. But although fertility decline is usually the driving force behind changing population age structures, changes in mortality assume greater importance as countries reach lower levels of fertility. Ageing of the population is a major phenomenon in the present day world as a result of the changing demographic transition. Though the phenomenon has a universal character, it occurs in various countries at different point of time. The ageing is a phenomenon already occurred in the developed countries in the latter half of the twentieth century. The similar situation is emerging in the developing countries in the recent periods. Although the proportion of elderly in the years 60 and above is considered to be relatively low in the case of the developing countries such as India and China, they have a larger population base. Developed countries have aged with high social and economic development, the socio and economic condition of the elderly in the developing world is a cause for concern as most of them end up in living below poverty line in old age due to inefficient social security.

Deprivation is very common among the aged in the country as it does not have proper safety nets either state sponsored or socially build. The Indian aged population is currently the second largest in the world after China (100 million). The absolute number of 60 and over in India will likely to increase from 77 million in 2001 to 137 million by 2021 (United Nations, 2003).

The decadal growth rate among elderly population during 1991-2001 is about 40 percent – double than the general population growth of 21 percent.

The percentage of elderly in India has increased from 5.4 percent in 1951 to 6.4 percent in 1981 and further to 7.4 in 2001. If the percentage of elderly population is above seven percent in any country, as per the UN criterion that country is ageing. In other words, India has emerged as "aging India" in the beginning of the 21st century. Thus twenty first century is the century of old (Leibig and Rajan, 2003).

DEPRIVATION AMONG ELDERLY

Deprivation means lack of material benefits considered to be basic necessities in a society."Deprivation may be defined as a state of observable and demonstrable disadvantage relative to the local community or the wider society or nation to which an individual family or group belongs."

The lives of many older people are more frequently negatively affected by the social and economic insecurity that accompany the demographic and developmental process (World Bank, 1994). Ageing diminishes the capacity to work and earn.

Mainly there are three aspects of deprivation among elderly-

1. Economic aspect(Economic Insecurity)
2. Health Aspect(Health Insecurity)
3. Social Aspect(Social Insecurity)

ECONOMIC ASPECT OF DEPRIVATION

Economic aspect of derivation is related with economic instability because older people are dependent on their children or others. Due to this they are economically insecure. The economic insecurity and deprivation is looking up on the fact that whether elderly are in a position to maintain a minimum living standard in terms of access to economic resources which is measured in terms of poverty either as income poverty, subsistence poverty in terms of basic needs.

HEALTH ASPECT OF DEPRIVATION

Ageing decreases power to fight against various kinds of diseases. Older persons are more

susceptible to various chronic diseases than younger because of low immunity. Therefore Physical and health risk is very high among the aged. Morbidity risk and lack of access to health care are among the factors causing physical and health insecurity among the elderly. The elderly are likely to have more health concerns than the rest of the population.
The process of ageing is likely to be accompanied by changes in the pattern of diseases in the epidemiological tradition (Omran, 1971). In the past, nations that underwent the same demographic experience have witnessed a change in the pattern of morbidity to chronic and degenerative diseases of the kind of heart attack and strokes with high incidence of mortality in the old age (Fries, 1980.). Decline in health, though, is just one of the possible risks associated with old age apart from a prospective fall in income, dependency and loneliness, and it remains one of the dominant concerns among the aged.

SOCIAL ASPECT OF DEPRIVATION
Due to intergenerational gap older persons are deprived of various relationships. As people age, many outlive relatives and friends, and social interaction may become limited as people stay closer to home because of mobility difficulties and increased chronic illness. Older individuals may be more or less dissatisfied with the narrowing of their social network; and for those who are dissatisfied, the result is feeling lonely. Social isolation and social loneliness among older people are often related to living alone and being in poor health. Social isolation is sometimes referred to as aloneness or solitude. Those who are often alone, however, are not necessarily lonely, as solitude can be a personal choice. Social loneliness is defined as negative feelings about being alone.

REVIEW OF LITERATURE
A review of old age deprivation shows that older persons are deprived of various kinds of facilities due to lack of material benefit. The growth of individualism and desire for the independence and autonomy of the young generation (Serow, 2001) affect the status of the elderly. The studies show that the socioeconomic condition of older women is more vulnerable in the context of the demographic and sociocultural change (Tout, 1993).

Poverty is sought to be a major risk of ageing in developing countries (Sen., 1994) and study by the World Bank reveals that in the most of the developing countries, older people are vulnerable (World Bank, 1994).
The inability in initial endowment of an individual that deteriorates as they go up in the life cycle make them more vulnerable and puts them a position in which they fail in risk management and maintenance of a cope-up strategy in maintaining the level of living conditions (Zwi, 1993).

This makes the elderly more dependent on others for their needs resulting in higher levels of economic insecurity and deprivation. Studies across the globe have revealed a sudden dip in the life of the elderly after the retirement (World Bank, 1994, Steyn 2000, Bradshaw, 2006).
Physical and health risks are very high among the aged.

The precise implications of population aging for future levels of health and health care utilisation depend on whether the increase in life expectancy experienced in general are accompanied by an increase or decrease in health problems in later life (Gruenberg, 1977; Kramer, 1980; Manton, 1982).Studies in the West show that fast decline in the mortality in the old population is creating

a nightmare with high incidence of morbidity (Hainess, 1995)The changing pattern of morbidity puts the elderly in a situation of risk in old age where they are in a condition of lacking capacity to cope with the risk. The changing patterns of morbidity in late life have created challenges and burdens for the existing health care system with higher incidence of social costs for extended access to health care to avoid the risk of morbidity (Kane, 1990).Various studies shows that the health risk of the elderly is mainly confined to access to health care that result in unhealthy ageing (Robeldo, 1985; Sokolovsky, 1991). The health risk of an aged person in a household can result in a catastrophic shock in the family that can make households more exposed to poverty. The increased cost of the medical bill in a household in the old age make large chunks of the elderly in the developing world deprived of access to health and also not in a position to better health treatment (Helpage International, 2005).

NEED OF THE STUDY

Study of deprivation among elderly is needed to know about why and at what extent older persons are deprived of various facilities. Since the old age population is growing rapidly in India, the problems and issues of its old age population has not been given serious consideration and only a few studies on them have been attempted in our country.

To reap the advantage of demographic dividend, the focus is mainly on the children and the youth and fulfilment of their basic needs for proper development. Also the traditional Indian society and the age-old joint family system have been instrumental in safeguarding the social and economic security of the elderly people in the country.

OBJECTIVES OF THE STUDY

1. To study the Economic aspect of deprivation among elderly in major Indian States
2. To study the Health and Social aspect of deprivation among elderly.
3. To measure deprivation through a composite index.

DATA SOURCE

This study is based on the secondary data of the NSSO, conducted a survey on the elderly (persons of age 60 and above), in 60^{th} round (January-June, 2004).Information on the socio – economic condition of the aged data on some chronic diseases and physical disabilities were also collected during this round of the NSS survey.

The variables used in this study are the background characteristics of the respondents like age, sex, place of residence etc. The dependant variables are state of economic dependency, support aged, own perception about the current state of the health of the respondents, own perception about the relative state of health, physical morbidity, living arrangement.

METHODOLOGY

Bivariate analysis has been used for the percentage distribution, PCA has been used to construct composite index, and Correlation has been used to show the relationship between different indices.

ORGANISATION OF THE STUDY

Chapter-1 Introduction

1.1 Review of literature

1.2 Need of the study,

1.3 Data source

1.4 Methodology

Chapter-2 Economic aspect (Economic Insecurity) of deprivation among elderly

2.1 Economic Dependency of elderly (60+) in major Indian states
2.2 Average number of dependents per elderly (60+) in major Indian states
2.3 Elderly without financial support
2.4 Financial debt in terms of loan among elderly (60+) in major Indian states
Chapter-3 Health aspect (Health Insecurity) of deprivation among elderly
3.1 Elderly in terms of their physical mobility in major Indian States
3.2 Elderly with self-perception of bad health in major Indian States

Chapter-4 Social aspect (Social Insecurity) of deprivation among elderly.
4.1 Elderly living with spouse and children or alone (Living arrangement).
4.2 Elderly without familial support (living without son or daughter)
Chapter-5 Summary and Conclusion.

Results

Table-1 Shows that status of economic dependency in rural area is high in Kerala (74.15%) while lowest in Assam (60.77%).In EAG states, economic dependency is high among elderly living in the rural area of Uttaranchal (72.22).In urban area dependency is high among males living in the rural area of Bihar (69.79%).In North-Eastern states, economic dependency is high among elderly living in Urban area of Meghalaya (73.68%).In southern states, dependency is high among elderly living in rural area of Kerala.

Table 2: This table illustrates that the average number of those dependent on the elderly. It is clear from the table that on average there is more dependency on men rather than females.EAG states show higher average no. of dependents per elderly. Among EAG states Rajasthan and Orissa show relatively high average no. of dependents per elderly. Average number of dependents per elderly among males living in rural area of Rajasthan (7.0). In North –Eastern state, average no. of dependents per elderly is relatively lower than Southern states. Average number of dependents per elderly among females is high in the southern states.

Table 3: Gives the percentage distribution of those elderly who are getting no financial support from family members or others. It is clear from the table that in EAG states, elderly living in rural area of Uttaranchal (33.96%), are more deprived of financial support while in case of urban area, more deprived elderly are in Uttar Pradesh.

In North-Eastern states, elderly living in rural area of Meghalaya (23.61%) are deprived of financial support while in case of urban area more deprived elderly are in Arunachal Pradesh (32.2%).In Southern states; elderly living in Kerala are more deprived of financial support in both rural and urban areas.

Table 4: Gives the percentage of the sixty plus population which reports its perceptive health status as bad. In EAG states, 32.11 per cent elderly living in rural area of Jharkhand perceive bad health status which is relatively high than other EAG states while in urban area perception about bad health is high in Uttar Pradesh (23.69%).

In North-Eastern State, 29.91 per cent elderly living in rural area of Tripura have bad perception about their health. In Southern states, 29.26 per cent elderly living in rural area of Kerala perceive bad health status which is relatively high than other Southern states. It is clear from the table that elderly living in rural area have more bad perception than urban area.

Table 5: Gives thepercentage distribution of elderly (60+) living alone. In EAG state, 44.1 per cent elderly are living alone in rural area of Jharkhand which is relatively high than other EAG

states while in urban area 44.94 per cent elderly are living alone in Orissa. In North-Eastern State, 51.11 per cent elderly living are living alone in rural area of Nagaland which is higher than other states. In Southern states, 43.86 per cent elderly are living alone in rural area of Kerala which is relatively high than other Southern states.

Table 6: Shows the percentage of elderly according to generalized deprivation Index score (GDI).In EAG states, Uttar Pradesh is relatively better than other EAG states in both rural and urban areas while. In North-Eastern state, Nagaland is better than other states in almost all aspects of Derivation among elderly. In Southern states, Tamilnadu is relatively better than otherSouthern states in all aspects of Deprivation.

Table 7: Gives the pairwise correlation between EDI, HDI and SDI.It is clear from the above table that EDI (Economic Deprivation Index) and HDI (Health Deprivation Index) are closely related. Similarly EDI and SDI are also closely related while HDI and SDI (Social Deprivation Index) are not very closely related. The relationship is much higher in Kerala and Tamilnadu.

Conclusion- Deprivation is a much broader term that includes all kinds of denial or being excluded from a minimum standard of living. It is a position in which the people are denied of the basic needs, i.e., both economic, health and social necessities that enhance the capability and thus the wellbeing of individuals. It is clear that deprivation is associated with changing age structure.

At the older age deprivation is considered to be high in higher age groups (70-79 and 80+).Elderly are deprived of various material resources due to economic insecurity because they are economically dependent on others. Economic insecurity leads to other insecurities like health insecurities and social insecurities. Females are more deprived than males. Elderly living in rural area are in better condition and less deprived than urban areas.

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APPENDIX

Principal component analysis (PCA) - PCA is a data reduction technique that involves a mathematical procedure that transforms a number of possibly correlated variables into a smaller number of uncorrelated variables called principal components. Each principal component is a weighted linear combination of the original variable. The first principal component accounts for as much of the variability in the data as possible, and each succeeding component accounts for as much of the remaining variability as possible.
If we have 'n' correlated variables X1, X2… Xn. Then
PCi = a1. X1+ a2. X2+...+ an. Xn

Where **PCi=** i^{th} principal component

It is mostly used as a tool in exploratory data analysis and for making predictive models. PCA involves the calculation of the eigenvalue decomposition of a data covariance matrix or singular value decomposition of a data matrix, usually after mean centering the data for each attribute.The results of PCA are usually discussed in terms of component scores and loadings.PCA is the simplest of the true eigenvector-based multivariate analyses. Often, its operation can be thought of as revealing the internal structure of the data in a way which best explains the variance in the data. If a multivariate dataset is visualised as a set of coordinates in a high-dimensional data space, PCA supplies the user with a lower-dimensional picture, a "shadow" of this object when

viewed from it's (in some sense) most informative viewpoint. Here I used PCA to create GDI that captures both economic, health and social aspects of deprivation. Since my objective was to create a composite index that contains all these aspects of deprivation, I did PCA for all these aspects separately. I obtained the Dependency status of the aged, having financial debt, having dependence on the elderly as principal components; from the health insecurity, I took physical mobility, having disease. From the social insecurity, I took the living arrangements and the source of familial support.

Economic aspect of Deprivation

Variables used for PCA:Dependency status of the aged (Status of Economic dependency),having financial debt.

Health aspect of Deprivation

Variables used for PCA:

Physical mobility, having disease.Access to health care being sick.

Social aspect of Deprivation

Variables Taken for PCA: living arrangements, source of familial support, whether child/ Grandchild/sibling staying nearby, person helping in the old age.

Eigenvalue of the variables-

Variables	Eigenvalue	Difference	Proportion	Cumulative
Status of economic dependency	1.87452	0.482023	0.2678	0.2678
older support	1.3925	0.312295	0.1989	0.4667
Physical mobility	1.0802	0.152332	0.1543	0.621
Own perception about health	0.927868	0.159181	0.1326	0.7536
living arrangement	0.768687	0.183346	0.1098	0.8634
Health care during illness	0.585341	0.214451	0.0836	0.947
Person helping in the old age	0.37089	.	0.053	1

Composite index of old age deprivation

After applying PCA, I identified 5 variables for the creation of composite index, dependency status of the aged (not dependent as minimum), having financial debt (no as 1), being dependent on the elderly (no as 1). From health insecurity, I took physical mobility, having disease (no as 1). From social insecurity, I took the living arrangements and the source of familial support. In all the cases, I took the variables recoded as 1 for the best and it gets worse as the degree worsens. I created a Composite index with the above given 5 components. By taking the coefficient of variance as the weight, higher the score of the index, higher is the multiple deprivations. Then I normalized it to get its score between zero and one and divided it into 3 equal parts with different levels of deprivation (Good, bad and worse).

Table1: Percentage distribution of status of Economic dependence of elderly (60+) by sex and place of residence across major Indian states

State	Total	Rural	Urban	Male	Female
Uttaranchal	66.3	72.2	65.9	60	65.2
Rajasthan	59.9	68.5	63.5	39.9	67.3
Uttar Pradesh	56.5	63.4	67	36.1	67.7
Bihar	56.9	66.1	64.4	30.2	59.4
Jharkhand	56.7	65.9	67.4	33.3	67
Orissa	62.3	68.2	68.8	41.1	60
Chhattisgarh	59.7	67.6	67.5	37	71.1
Madhya Pradesh	59.2	69	66.5	35.5	66.9
Arunachal Pradesh	62.2	68.2	71.6	42.4	65.6
Nagaland	55.8	64.3	69	27.3	66.7
Manipur	57.6	65.9	64.2	39.2	62.7
Mizoram	55.4	63.6	69.6	36.7	61.1
Tripura	64	69.9	73.3	39.2	51.7
Meghalaya	56	72.4	60	34.4	73.7
Assam	56.4	60.8	66.5	41.2	57.3
Andhra Pradesh	57.7	62.6	66.4	37.7	57.1
Karnataka	58.4	67.7	65.2	35.8	64.2
Kerala	58.8	74.2	63.8	35.4	64.9
Tamil Nadu	42.2	64.2	65.3	39.2	61.7

Source: NSSO 60th round

Table2: Average number of dependents per elderly (Reverse Dependency) by sex and place of residence across major Indian states.

State	Total	Rural	Urban	Male	Female
Uttaranchal	1.6	2.7	1.0	1.6	0.9
Rajasthan	4.2	7.0	1.3	5.5	2.9
Uttar Pradesh	2.2	3.6	1.2	2.6	1.5
Bihar	2.6	3.3	1.1	4.7	1.2
Jharkhand	3.1	4.3	2.3	3.5	2.2
Orissa	3.8	5.3	2.3	5.2	2.6
Chhattisgarh	2.9	3.3	2.8	2.9	2.6
Madhya Pradesh	3.5	5.0	1.3	6.4	1.5
Arunachal Pradesh	1.9	1.9	1.7	1.5	2.5
Nagaland	0.5	0.7	0.7	0.3	0.4
Manipur	3.0	2.9	3.2	3.1	2.9
Mizoram	1.0	1.1	1.0	1.2	0.8
Tripura	2.4	2.2	2.3	2.2	3.0

Meghalaya	1.2	1.1	1.5	1.2	1.2
Assam	3.2	3.1	2.6	4.8	2.5
Andhra Pradesh	2.1	2.6	2.4	1.7	1.7
Karnataka	3.1	4.5	1.8	3.2	2.8
Kerala	2.0	1.7	3.2	1.9	1.4
Tamil Nadu	2.5	3.0	2.4	2.6	2.1

Source: NSSO 60th round

Table3: Percentage distribution of financial support to elderly (60+) provided by family member (spouse, son, and daughter) or others by place of residence and sex in major Indian states.

State	Total	Rural	Urban	Male	Female
Uttaranchal	26.2	34	24	20	26.7
Rajasthan	19.6	20.2	19.3	16.4	22.3
Uttar Pradesh	27.6	23.1	29	25	33.3
Bihar	25.3	23.8	25.4	22	29.9
Jharkhand	26.7	22.9	27.7	32.8	23.3
Orissa	23	22.7	23.3	28.1	17.9
Chhattisgarh	17.6	17	18	15.2	20.4
Madhya Pradesh	20.7	20.8	20.6	19.6	21.6
Arunachal Pradesh	29.8	14.7	32.2	47.4	25
Nagaland	25.7	15.8	28.6	25	33.3
Manipur	25.8	17.1	28.7	28.9	28.6
Mizoram	15.4	23.3	13.3	15.8	9.1
Tripura	16.7	22.5	14.8	12.9	16.7
Meghalaya	23.9	23.6	24.5	19.1	28.6
Assam	26.9	22	28.4	23.3	33.7
Andhra Pradesh	21.8	19.6	22.9	25.5	19.3
Karnataka	25.7	21.5	27	33.7	20.5
Kerala	29.2	25.2	30.5	30.5	30.6
Tamil Nadu	25.8	22.3	26.8	24.2	29.7

Source: NSSO 60th round

Table 4: Percentage distribution of elderly with self-perception of bad health status by place of residence and sexin major Indian states.

Source: 60th NSSO round

Table 5:

State	Total	Rural	Urban	Male	Female
Uttaranchal	20.7	25.0	15.2	16.7	25.8
Rajasthan	23.2	25.2	20.6	24.3	22.6
Uttar Pradesh	25.2	26.2	23.7	23.7	27.1
Bihar	22.9	24.9	20.1	20.9	25.8
Jharkhand	27.4	32.1	21.2	26.6	29.7
Orissa	24.3	27.3	20.6	25.4	24.0
Chhattisgarh	26.7	25.8	28.0	27.0	26.1
Madhya Pradesh	22.3	25.6	18.2	24.2	21.3
Arunachal Pradesh	24.8	28.4	20.4	21.4	29.0
Nagaland	28.0	26.8	30.0	26.3	29.0
Manipur	22.9	24.9	20.3	22.7	23.8
Mizoram	31.2	28.9	34.1	28.8	32.8
Tripura	28.0	29.9	25.2	30.7	26.3
Meghalaya	23.7	26.4	20.3	26.7	21.2
Assam	24.8	26.1	23.2	26.6	23.2
Andhra Pradesh	21.6	24.8	17.4	20.6	23.5
Karnataka	24.0	26.0	21.4	25.5	23.1
Kerala	24.0	29.3	17.1	24.2	25.4
Tamil Nadu	24.6	25.4	23.5	24.6	24.9

Percentage Distribution of Elderly (60+) living alone by place of residence and sex in major Indian states

Source: NSSO 60th round

Table 6: Percentage distribution of elderly (60+) according to generalized deprivation index (GDI) score by place of residence and sex across major Indian States.

		Rural			Urban			Male			Female		
State	**Total**	**Good**	**Bad**	**Worse**	**Good**	**Bad**	**Worse**	**Good**	**Bad**	**Worse**	**Good**	**Bad**	**Worse**
Uttaranchal	**30.2**	**40.0**	**37.3**	**22.7**	**39.1**	**26.1**	**34.8**	**44.1**	**25.4**	**30.5**	**35.5**	**40.3**	**24.2**
Rajasthan	**28.9**	**39.5**	**33.6**	**26.9**	**45.6**	**27.9**	**26.6**	**43.7**	**31.0**	**25.4**	**39.8**	**32.0**	**28.3**
Uttar Pradesh	**27.7**	**46.2**	**28.9**	**24.9**	**42.7**	**29.2**	**28.1**	**45.9**	**26.9**	**27.3**	**43.9**	**31.3**	**24.8**
Bihar	**27.9**	**42.7**	**29.5**	**27.8**	**46.2**	**29.2**	**24.6**	**43.3**	**30.5**	**26.3**	**44.7**	**28.2**	**27.1**
Jharkhand	**25.0**	**50.6**	**28.4**	**21.0**	**49.3**	**30.1**	**20.7**	**47.8**	**31.4**	**20.8**	**52.3**	**26.7**	**21.0**
Orissa	**26.9**	**46.5**	**29.4**	**24.1**	**45.8**	**26.4**	**27.8**	**47.4**	**25.8**	**26.8**	**44.9**	**30.9**	**24.2**
Chhattisgarh	**28.3**	**44.9**	**29.7**	**25.4**	**41.3**	**35.0**	**23.8**	**42.2**	**31.8**	**26.1**	**45.2**	**31.4**	**23.4**

Madhya Pradesh	**26.8**	**45.8**	**30.6**	**23.7**	**47.3**	**25.7**	**27.0**	**48.5**	**27.0**	**24.5**	**44.1**	**30.5**	**25.4**
Arunachal Pradesh	**29.2**	**42.5**	**30.6**	**26.9**	**40.2**	**32.6**	**27.2**	**41.7**	**29.6**	**28.7**	**41.6**	**32.9**	**25.6**
Nagaland	**26.8**	**53.6**	**23.2**	**23.2**	**35.0**	**35.0**	**30.0**	**47.4**	**23.7**	**29.0**	**50.0**	**29.0**	**21.1**
Manipur	**29.2**	**38.8**	**31.7**	**29.6**	**45.7**	**25.4**	**29.0**	**44.3**	**28.4**	**27.3**	**38.0**	**30.4**	**31.5**
Mizoram	**25.8**	**45.6**	**27.8**	**26.7**	**52.3**	**25.0**	**22.7**	**45.2**	**30.1**	**24.7**	**50.8**	**23.0**	**26.2**
Tripura	**24.9**	**51.6**	**27.7**	**20.7**	**48.6**	**20.6**	**30.8**	**47.0**	**28.9**	**24.2**	**53.8**	**22.2**	**24.0**
Meghalaya	**28.2**	**49.5**	**26.7**	**23.8**	**36.2**	**43.5**	**20.3**	**42.2**	**32.2**	**25.6**	**46.4**	**34.5**	**19.1**
Assam	**27.9**	**46.6**	**24.8**	**28.5**	**41.2**	**29.6**	**29.2**	**44.8**	**24.8**	**30.4**	**44.3**	**28.7**	**27.0**
Andhra Pradesh	**28.6**	**43.8**	**29.9**	**26.3**	**41.6**	**27.1**	**31.4**	**43.0**	**28.9**	**28.2**	**43.0**	**28.8**	**28.2**
Karnataka	**28.4**	**43.6**	**31.3**	**25.1**	**42.9**	**31.3**	**25.9**	**43.2**	**31.2**	**25.7**	**43.5**	**31.5**	**25.0**
Kerala	**26.0**	**48.1**	**28.8**	**23.0**	**47.6**	**28.9**	**23.6**	**53.3**	**27.4**	**19.3**	**43.1**	**30.1**	**26.8**
Tamil Nadu	**28.1**	**46.4**	**26.6**	**27.0**	**40.3**	**30.1**	**29.6**	**44.3**	**27.2**	**28.5**	**43.9**	**28.7**	**27.4**

Source: NSSO 60th round

Table 7: Correlation matrix of EDI, HDI and SDI

State	EDI and HDI	EDI and SDI	HDI and SDI
EAG State			
Uttaranchal	0.7641	0.6453	0.5373
Rajasthan	0.8612	0.8365	0.5866
Uttar Pradesh	0.8593	0.7979	0.5358
Bihar	0.8599	0.8986	0.5349
Jharkhand	0.8582	0.7968	0.5355
Orissa	0.7602	0.8989	0.5373
Chhattisgarh	0.8578	0.8964	0.5741
Madhya Pradesh	0.8614	0.8463	0.5375
North-Eastern State			
Arunachal Pradesh	0.7567	0.7654	0.4553
Nagaland	0.8433	0.7443	0.5623
Manipur	0.7689	0.7663	0.5023
Mizoram	0.7988	0.7456	0.4438
Tripura	0.8123	0.7346	0.4563
Meghalaya	0.6833	0.445	0.4893
Assam	0.5421	0.5664	0.4543
Southern State			
Andhra Pradesh	0.8598	0.8985	0.4893
Karnataka	0.861	0.8998	0.5882
Kerala	0.94	0.9614	0.5943
Tamil Nadu	0.9	0.9614	0.4515

Source: Estimated from NSSO 60th round