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Health of the Elderly in India: A Multivariate Analysis

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Abstract

Of the various dimensions of ageing, physical vulnerability compounded by economic vulnerability resulting in emotional vulnerability is of great concern for developing societies like India where ageing occurs rapidly due to the phase of demographic transition characterised by rapid fertility decline and increase in life expectancy. This study looks at the determinants of health status of elderly in India using multivariate analysis. The results show that the elderly are better able to report their physical discomforts that may not require diagnosis and may not often prompt treatment-seeking behaviour. Socio-economic variables, especially the economic conditions and living arrangements of the elderly, influence the reporting of physical vulnerability. The study points to the urgent need of extending assistance to the elderly, especially the older individuals among them. The targeting will have to be done on the basis of two important variables – economic conditions and living arrangements.

Key words: Elderly, vulnerability, physical disability, chronic illness, developing countries, India

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I. Introduction

One of the major features of demographic transition in the world has been the considerable increase in the absolute and relative numbers of elderly people. This has been especially true in the case of developing countries like India, where aging is occurring more rapidly due to the decline in fertility rates combined by increase in life expectancy of people achieved through medical interventions. About 60 percent of the elderly live in the developing world, and this will rise to 70 percent by 2010. Further, the older population itself is aging, with the oldest old being more than 10 percent of the world's elderly (BOLD, 2001).

While there have been many discussions around vulnerable groups like women, the schedule castes and tribes, the landless etc, the elderly comprise one very important vulnerable group which needs urgent attention. There is no statistics to indicate the extent and depth of poverty among the elderly in India, but the few studies that are available indicate that potentially, the elderly may be one of the most vulnerable groups in the economy. Economic vulnerability is compounded by physical and to some extent mental vulnerability, making this group easily one of the most important targets for welfare programs.

There have been some excellent studies of the various dimensions of the elderly phenomenon in India (see for example Irudaya Rajan *et al* (1999) for an excellent review of the elderly situation, Irudayarajan (2001) for a review of the effectiveness of social assistance for poor elderly, Reddy (1996) for a review of the social security for elderly in India and Kumar (1999) for the health situation of elderly women), however, there have been fewer multivariate analyses of the determinants of health status. The most recent one (Gupta *et al.,* 2001) used the Human Development Indicator Survey of 1994-95 to analyze the health-seeking behavior of the elderly, and concluded that income and education played key roles in determining who sought care. However, there is no other recent study that looks at key determinants of health status of the elderly. This study fills this gap by using data from the 52nd round of the National Sample Survey (NSS) of India. A brief description of the data used is given in Section II. Section III gives a brief overview of the demographic and economic characteristics of the elderly in India based on the 52nd round of NSS as well as from a few other sources. Section IV discusses health and related characteristics and in Section V results of probit analyses on the determinants of health status are presented. Conclusions and recommendations are discussed in Section VI.

II. Data

The 52nd round of the NSS provides data on the *morbidity patterns, use of medical facility, hospitalization* and related details for the general population for 1995-96. This part of the survey has been used to extract data for the elderly. In addition, there is a special module on the elderly, which provides data on the various aspects of the elderly: these pertain to whether economically active, state of economic independence (whether dependent on others, partially or fully dependent on others), person supporting the person (whether spouse, own children, grand-children or others), amount of loans, living arrangements (living alone in old age home, living alone, living with spouse, living with spouse and other members, living without spouse but with children/other relations/non-relations) etc. In addition, there is also information on physical mobility, disability, current state of health, relative state of health, details regarding the withdrawal from economic activity, management of financial assets belonging to the aged etc. Both these modules have been used extensively in this analysis.

III. Demographic and socio-economic status of the elderly

According to the 1991 census, India had 60 million elderly (60 years plus old). This is about 6.7 percent of the total population, which is up from the 5.97 percent in 1971 and 6.32 percent in 1981 respectively. The percentage of elderly is much higher in rural (20.3 percent) than in urban areas (1.97

percent). The number of elderly is likely to reach around 80 million by 2001 and 120 million by 2031 (EPW Research Foundation, 1994). The decadal rates of growth of the elderly population in India indicate that the elderly population has exploded in the 80 plus age range; this group has experienced a growth rate of above 50 percent in 1981-91 compared to 32 percent in 1971-81.

The percentage of elderly population as percent of working population is less than one percent (see Reddy 1996 for details). According to the NSS 52nd round, while 82 percent of the male elderly are treated as the head of the household, only 15 percent of the females have such a status. Around 63 percent of the elderly in India are illiterates, more so among females – around 79 percent compared to half in the elderly men. Around 44 percent of the elderly men and 24 percent of the elderly women are currently economically active, while the majority are not economically active. Whereas old women outnumber men in most countries of the world, the reverse is true for India. There were only 969 women for 1000 men in the 60 plus age group in 1991. Among the various states of the country, the number of old females vis-à-vis the males were found to be particularly low.

Among the first problems faced by the elderly are the high levels of economic dependence on others, especially for women. Based on the 1994-95 Human Development Indicator Survey (HDIS) data about 76 percent of the women and 42 percent of the males were supported by family in 1994-95 (Gupta et al., 2001). Of the dependent elderly, support comes mostly from the family, mainly from the children and spouse. The NSS data indicate that their children support more than 70 percent of the elderly.

In terms of living arrangements, around 3.45 percent of the elderly live alone either as an inmate of an old age home or otherwise. While 75 percent of the elderly men live with their spouses, only around 39 percent of the elderly women live with their spouse. The rest live with their children.

While economic dependency may be prompted by lack of current earnings, it does not necessarily mean that the elderly own no assets. The NSS data shows that around 71 percent of the elderly men and 40 percent of the elderly women own some financial assets, and in addition, around 80 percent men and 46 percent women among elderly own some property. However, it is obvious that mere ownership of assets does not guarantee economic self-reliance.

The gender dimensions in aging and its relative aspects also are very different. Because the life expectancy of females is higher than that of males, the incidence of widowhood adds to the vulnerability of elderly women in a gender-segregated society like India. According to the 1991 census, half of the elderly females in India were either widowed, divorced or separated compared to men (their percentage was only 16). This together with greater economic dependency of the elderly women makes them relatively more vulnerable than men.

IV. Health and disability among elderly in India

The rapidly growing absolute and relative numbers of older people in both developed and developing countries mean that more and more people will be entering the age when the risk of developing certain chronic and debilitating diseases is significantly higher. The obvious implications in terms of social security, pensions and health infrastructure for economies, especially developing ones, are not discussed in this analysis. Instead, we focus on the health status of the elderly, based on both objective as well as subjective information.

Aging is a time of multiple illness and general disability. Along with changes in biological compositions, life style factors are also important for disorders and diseases in old age. Old age diseases are not always curable, implying a strain on financial as well as physical health infrastructure resources, both at the macro and micro levels. However, the feeling of well-being can still override actual physical discomforts if the surrounding environment is nurturing.

The 52nd round asked the individuals three sets of questions regarding their health: the individuals were asked to report their current status of health, whether they are physically immobile and also whether or not they have had any specific chronic illnesses. The first two are clearly subjective statements of their

feeling of physical well being, whereas it can be assumed that the last one is more or less an objective assessment of their state of health.

Table 1 indicates the self-reported current health status of the individuals, by gender and age category. Table 2 presents self-reported (im)mobility status. Table 1 shows that as age increases, the perception of self- health among elderly becomes poorer. Also, women in general reported worse health status than men.

Presumably, those who are completely physically immobile must be also in poor health or at least not in excellent or good health. It is clear from a comparison of Tables 1 and 2 that that is not necessarily the case. There is substantial difference in the percentages in each of the two groups[1]. While the correlation between age and mobility remain in the right direction, a large percentage – almost the entire sample – in the lower age category state that they are completely mobile. However, those who stated fair or poor health were a much larger percentage. These comparisons only confirm that subjective questions about health are often misleading indicators of actual health status.

Finally, this perceived health status need not be always correlated to objective indicators of health, as reported in instances of specific diseases. At this point, it is sufficient to note that around 31 percent of those who perceived their health as "excellent" or "very good" were found to be suffering from physical disabilities such as visual or hearing problems. The reasons why some individuals think they are doing well, when they are not and vice versa are complex issues that have to do with a whole host of factors like individual proclivities, emotional fulfillment, access to treatment and medicines, etc. Without going into explanations on these, we use instead responses to specific questions on illness to construct a variable on health status.

Table 1: Self-reported current health status

	Age 60-69			Age 70-79			80 years & above		
	Male	Female	All	Male	Female	All	Male	Female	All
Excellent	2.17	1.16	1.66	1.02	0.83	0.93	0.81	0.63	0.72
Very good	11.57	8.31	9.33	7.45	5.17	6.37	4.79	4.07	4.43
Fair	73.93	74.80	74.37	69.81	64.53	67.31	56.72	51.69	54.21
Poor	12.32	15.73	14.03	21.71	29.47	25.39	37.67	43.62	40.64

Table 2: Self-reported status of mobility

	Age 60-69			Age 70-79			80 years & above		
	Male	Female	All	Male	Female	All	Male	Female	All
Confined to the bed	1.13	0.90	1.02	2.50	2.53	2.52	5.54	8.01	6.77
Confined to the house	4.99	6.03	5.51	9.50	13.05	11.18	20.05	24.59	22.32
Completely mobile	93.88	93.07	93.47	88.00	84.41	86.30	74.41	67.40	70.91

The individuals were asked whether or not they were suffering from any of the following problems or disabilities related to old age: visual, hearing, speech, locomotion, senility, and joint pain. In addition, they were asked if they were suffering from any of the following chronic illnesses: cough, piles, blood pressure, heart ailments, urinary problems, diabetes or cancer. Based on these questions we framed two simple indicators of ill health. The first one is a binary variable that took on a value of 1 if the

[1] Table A1 in the annex gives a detailed break-up by age category and gender, of the prevalence of disability and chronic illnesses.

response is "yes" to any of the first set of questions. There were 55.8 percent individuals who were in this category. The second index took on a value of 1 of the response was "yes" to any of the chronic illness questions. There were 53.64 percent in this category. In other words, an attempt was made to isolate diseases more specific to old age (first set) and then to include other diseases as well.

The next section presents results from a probit analysis of these two variables of health status.

V. Determinants of ill health: a probit analysis

What are the determinants of ill health among elderly? In the absence of any supply side variables on access and availability of health infrastructure, we had to depend entirely on demand side variables that may explain differences in probability of ill health. Clearly age and gender are two important variables as discussed in the preceding sections. In addition, education, social status (whether belongs to scheduled tribes or castes), residence (rural/urban) are important factors that may affect the ability to control illness. Economic status of the household in which the individual lives (even though the person may live alone) will again affect health directly as well as indirectly via the ability to seek care and treatment. In addition, the individual's own command over resources (even if these are not currently liquid) may determine to what extent he/she will be looked after. Thus, whether or not the person owns a property has also been included as an independent variable.

A variable that seemed a key to many of the subsequent results is the living arrangements of the individual. The questionnaire asked whether the person was living alone, with spouse and children, or without spouse, with children only. However, we used a dummy for living with spouse if the person was living with spouse and/or children. In addition, widowhood was included as a separate variable in a different version of the model to avoid potential multicollinearity with the living arrangement variable.

We used three dummy variables based on the internally generated poverty line and income levels for very poor households, poor households, and middle-income households. Finally, there had to be a way of controlling for state-specific effects, which were more obvious than just fixed effects. This was done by using a dummy for states that are below the average national poverty line in one group – the poor states. The three models estimated are reported in columns 1, 2, and 3 in Table 3. Column 1 reports the results without state effects and household income categories effect, but controlling for household monthly consumption. The second column reports the results for the model without the household consumption expenditure variable, but with the income category dummies. The third column shows the result for the dummy variable used for poor states, but without the household income categories. The coefficients refer to changes in probability, since the probit coefficients are difficult to interpret.

The results are very revealing. All the variables are statistically significant with signs in the directions expected. To take the first variant (column 1), the probability of disability is higher for older individuals, illiterates and SC/STs. Males have a 3 percent lower probability of disability than females. Those with higher household income and/or own property also have a lower probability of reporting disability. The most important result is that those living with spouses have a significantly lower probability of reporting a disability. All these results hold in all the 4 variants. The second variant indicates that the poorer households (the omitted category is the high-income states) have a higher probability of individuals reporting disability. The third variant confirms that the poorer states have a higher probability of reporting disability than the other states.

Table 4 reports similar results for the chronic illnesses.

It is very interesting to note that the results change significantly when we look at only chronic illnesses, rather than disabilities. While older individuals continue to be the relatively more disabled, the gender difference disappears. There does not seem to be any significant difference between males and females as far as chronic illnesses are concerned. The same is true for SC/STs – i.e. there is no difference between the general category and this group vis-à-vis chronic illness.

Table 3: Probit results on determinants of disabilities
Dependent variable: 1 if at least one disability, 0 otherwise

	I	II	III
Age	.04 (6.5)*	.03 (6.7)*	.04 (6.7)*
Age square	-.0002 (-4.3)*	-.00002 (-4.3)*	-.0002 (-4.3)*
Male	-.03 (-4.9)*	-.03 (-4.9)*	-.03 (-4.9)*
Illiterate	.02 (3.8)*	.02 (3.9)*	.02 (3.8)*
SC/ST	.03 (3.9)*	.03 (3.9)*	.02 (3.5)*
Rural	.03 (4.9)*	.03 (4.9)*	.03 (4.7)*
Live with spouse	-.06 (-9.4)*	-.06 (-9.4)*	-.06 (-9.4)*
Own property	-.05 (-7.6)*	-.05 (-7.5)*	-.05 (-7.8)*
HH monthly consumption	-7.4e-06 (-4.7)*	-	-7.2 e-06 (-4.5)*
Very poor hhs	-	.03 (2.7)*	-
Low-income hhs	-	.04 (4.5)*	-
Middle-income hhs	-	.02 (2.5)**	-
Poor states	-	-	.02 (4.1)*
Log likelihood	-22366	-22336	-22327

* shows 99 percent confidence level; ** 95 percent confidence level

The coefficient on illiterates, however, reverses in sign and is significant. Those who are not literate seem to have a lower probability of reporting chronic illness. Other studies have indicated a reason for this – it has to do with significantly lower reporting among illiterates as far as these types of chronic illnesses are concerned. Most of these illnesses require diagnosis and visits to doctors, and it seems clear that illiterates have a lower tendency to seek treatment (Gupta et al., 2001). The same reason will explain why the lowest income households (the other two coefficients – low and middle income – are not significant). This effect however disappears in the last variant, where the poorer states have a significantly higher probability of reporting chronic illness.

The variable that remains the same in sign and significance is the living arrangement variable; those living with spouses have a significantly lower probability of reporting chronic illnesses, as in the case of disability.

In Table A2 in the annex, we have reported variant I for each state separately, to bring out the interstate variation in the results, which will not be discussed here. Suffice to say that there are enough inter-state variation that need separate focus and explanation while formulating policy.

While in the probit regressions above, the dependent variable is a binary one depending on whether or not a person has a disability, it is also important to control for the number of disabilities. The technique usually adopted for this purpose is event count models. In this case, the dependent variable is

the total number of disabilities that an individual reports, including zero. Table 5 gives the frequencies and percentages of the number of disabilities reported.[2]

Table 4: Probit results on determinants of chronic illness
Dependent variable: 1 if at least one chronic illness, 0 otherwise

	I	II	III
Age	.04 (6.6)*	.03 (6.6)*	.04 (6.6)*
Age square	-.0002 (-4.6)*	-.0002 (-4.6)*	-.0002 (-4.6)*
Male	.003 (0.5)	-.002 (0.2)	.01 (0.3)
Illiterate	-.01 (-1.9)***	-.04 (-1.9)***	-.01 (-1.8)***
SC/ST	-.01 (2.3)**	-.005 (2.3)**	.002 (1.9)***
Rural	.004 (0.7)	.002 (0.4)	.002 (0.4)
Live with spouse	-.054 (-9.4)*	-.05 (-9.3)*	-.05 (-9.4)*
Own property	-.038 (-6.7)*	-.04 (-6.6)*	-.03 (-6.9)***
HH monthly consumption	-2.6e-06 (1.76)***	-	2.86e-06 (1.9)***
Very poor hhs	-	-.02 (1.6)	-
Low-income hhs	-	.01 (0.2)	-
Middle-income hhs	-	.02 (1.9)	-
Poor states	-	-	.02 (4.2)*
Log likelihood	-23167	-23170	-23156

* shows 99 percent confidence level; ** 95 percent confidence level

Table 5: Percentage of Disabilities Reported

No. of disabilities	Age 60-69			Age 70-79			Age 80 +		
	Male	Female	All	Male	Female	All	Male	Female	All
0	71.48	67.89	69.67	55.39	49.38	52.54	37.11	34.29	35.71
1	19.56	21.41	20.49	26.23	26.98	26.58	29.64	26.97	28.31
2	5.78	7.19	6.49	12.04	14.25	13.09	18.74	19.65	19.19
3	1.67	1.82	1.74	3.94	5.81	4.83	9.09	11.08	10.08
4	0.71	0.89	0.80	1.48	2.07	1.76	3.55	5.51	4.53
5	0.80	0.81	0.80	0.93	1.51	1.20	1.87	2.50	2.18

[2] This exercise has not been carried out for chronic illnesses for the reasons explained above.

In table 6, we estimate three variants of the model (excluding variant III above) and present the results on the determinants of number of disabilities using zero-inflated negative binomial model. The estimated coefficients have been transformed into incidence rate ratios for easier interpretation.

As the results indicate, the signs on the variables are almost the same as in the case of the probit model with two exceptions. The first is that the gender effect disappears; i.e. there is no gender difference in the number of disability reported by an individual. In other words, while who reports disability does depend on gender, how many times a person reports a disability does not vary with gender.

Table 6: Results of negative binomial model
Dependent variable: number of disabilities

	I	II	III
Age	1.16 (10.0)*	1.16 (10.0)*	1.16 (10.0)*
Age square	-.0007 (-7.0)*	.99 (-7.0)*	.99 (-7.2)*
Male	.008 (0.42)	1.00 (0.50)	1.01 (0.53)
Illiterate	1.16 (7.3)*	1.17 (7.5)*	1.16 (7.3)*
SC/ST	1.12 (5.9)*	1.12 (6.0)*	1.11 (5.1)*
Live with spouse	.84 (-9.4)*	0.84 (-9.4)*	0.84 (-9.4)*
Own property	.84 (-9.4)*	0.84 (-9.4)*	0.83 (-10.0)*
HH monthly consumption	-.00001 (-3.8)*	-	0.99 (-3.2)*
Very poor hhs	-	1.05 (1.3)	-
Low-income hhs	-	1.06 (2.1)**	-
Middle-income hhs	-	1.01 (0.45)	-
Poor states	-	-	1.18 (9.7)*
Log likelihood	-35750	-35754	-22336

* shows 99 percent confidence level; ** 95 percent confidence level

The other difference between the two models is that the difference between very low, low, and middle-income households, vis-à-vis high-income households tend to disappear. Even in the first variant, though the household consumption expenditure continues to be a significant determinant of the number of disabilities, the incidence relative ratio is close to 1, indicating that household income may not be an important determinant of the count data. However, the poorer states are still likely to report a higher probability of multiple disabilities.

All the remaining variables play significant roles in explaining the frequency of disability, in addition to the occurrence of it.

VI. Conclusions and recommendations

The above analysis was carried out to get some more evidence on the vulnerability of the elderly to poor health. In the absence of a body of literature based on empirical analysis, the study fills an important gap.

There are several important results that emerge from the analysis. To take the least obvious result first, the elderly are better able to report their physical discomforts that may not require diagnosis and may not often prompt treatment-seeking behavior. This is based on the indirect evidence on the effect of illiteracy and income on reporting of chronic illnesses.

Secondly, the older, relatively least well-off (based on household income as well as ownership of property) and socially disadvantaged (based on gender as well as social class) individuals are more likely to report disabilities. Most importantly, those living with spouses have a better chance of warding off disability than those living without their spouses. This result is extremely important, indicating that living arrangements may have a direct as well as indirect (via emotional well-being) impact on health.

However, gender and household income are no longer important determinants of the number of disabilities reported by individuals, implying that these variables are more important in explaining the occurrence of a disability, rather than the frequency of it.

The results on chronic illnesses are slightly different due to the non-reporting of these illnesses; however the spousal support variable continues to play an important role, as do the economic variables, both at the household and the state level.

The implications are simple. The prevalence of disability will increase with age, and there will be an urgent need to extend assistance to the elderly, especially the older individuals among the elderly. Targeting will have to be done on the basis of two important variables – economic conditions and living arrangements while these results seem obvious, the key lies in translating these into action, so that we do not overlook the well-being of one of the most vulnerable groups in our societies.

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A I: Disability and chronic ailments (percentage)									
	Age category: 60-69			Age category: 70-79			Age category: 80 +		
	Male	Female	All	Male	Female	All	Male	Female	All
DISABILITY									
Visual	18.51	21.52	20.02	29.58	34.64	31.98	42.15	47.12	44.63
Hearing	9.02	10.22	9.63	16.97	21.00	18.88	30.32	32.98	31.65
Speech	2.76	2.47	2.61	3.98	5.13	4.53	7.35	8.45	7.90
Locomotion	6.97	7.67	7.32	11.98	14.52	13.18	19.61	25.59	22.60
Senility/amnesia	5.70	6.96	6.33	10.17	13.45	11.72	18.49	19.90	19.19
All disabilities	0.80	0.81	0.80	0.93	1.51	1.20	1.87	2.50	2.18
One disability	19.56	21.41	20.49	26.23	26.98	26.58	29.64	26.97	28.31
More than one disabilities-total	8.15	9.89	9.03	17.46	22.13	19.68	31.38	36.23	33.80
CHRONIC									
Cough	20.01	15.84	17.91	25.75	21.63	23.80	29.76	23.03	26.40
Piles	2.91	1.93	2.41	3.41	1.79	2.64	4.92	2.50	3.71
Joint pain	28.95	37.09	33.05	39.43	45.34	42.23	46.64	50.13	48.38
Blood pressure	10.59	11.31	10.95	11.57	12.94	12.22	11.21	11.20	11.20
Heart disease	3.91	2.53	3.21	4.69	3.38	4.07	4.67	3.32	4.00
Urinary problem	2.73	1.61	2.16	4.08	2.58	3.37	6.79	3.32	5.06
Diabetic	4.04	2.96	3.50	4.65	3.14	3.94	3.36	2.69	3.03
Cancer	0.20	0.35	0.27	0.32	0.31	0.31	0.19	0.25	0.22
Any chronic ailment	48.75	50.45	49.60	59.49	59.05	59.28	64.01	62.45	63.23
Both disability and chronic illness	18.56	20.92	19.75	31.15	34.58	32.78	44.83	44.43	44.63
No disability & no chronic illness	42.10	39.16	40.62	27.98	26.41	27.24	19.80	18.77	19.29

A2: Regression results for states – t statistics and level of significance

	No of obs.	log likelihood	chi2	age	age2	male	Livspous	illiterate	Scst	Rural	ownp	hhmcexp	obs.p	pred.p
	3398													
All India	1	-22366.051	1914.67	6.65*	-4.27*	-4.94*	-9.44*	3.77*	3.87*	4.95*	-7.59*	-4.69*	0.5581	0.5618
Andhra	1954	-1206.96	139.12	3.56*	-3.03*	-1.96**	-0.96	2.76*	-0.18	5.07*	0.82	-0.10	0.6402	0.6484
Assam	961	-609.047	75.11	1.28	-0.93	-2.41**	-1.72***	0.92	3.96*	2.55*	-0.249	1.38	0.6004	0.6080
Bihar	2443	-1610.49	161.39	1.33	-0.70	0.22	-0.94	0.41	0.98	1.95**	-6.87*	1.81***	0.4789	0.4797
Gujarat	1495	-988.32	89.29	2.42*	-1.89***	-1.24	-1.37	2.95*	2.22**	-0.86	0.51	1.48	0.5332	0.5357
Haryana	629	-405.42	60.99	1.76***	-1.34	-2.05**	-2.18**	1.49	2.87*	-1.86***	1.85***	1.47	0.4928	0.4938
Himachal	861	-551.38	79.42	1.77***	-1.42	0.87	-3.49*	1.75***	0.95	-0.28	-3.91*	2.01**	0.5574	0.5644
J& K	877	-552.97	104.07	1.46	-0.95	0.23	-4.39*	1.89**	0.74	-0.02	2.58*	0.22**	0.5404	0.5473
Karnataka	1410	-927.96	81.46	0.02	0.42	1.75***	-2.16**	0.89	-0.17	-1.66***	-2.69*	-3.29*	0.4446	0.4433
Kerala	2212	-1419.69	172.74	1.13	-0.58	-3.37*	-2.09**	0.17	2.15**	3.90*	0.01	-4.31*	0.5782	0.584
MP	2222	-1446.56	178.39	0.27	0.30	0.53	-2.40**	0.91	-0.38	0.96	-6.04*	-2.99*	0.5315	0.5356
Maharashtra	3206	-2081.84	206.20	2.85*	-2.09**	-0.16	-1.50	2.93*	-1.80***	1.99**	-1.61	-2.97*	0.5761	0.5805
Orissa	1346	-823.72	112.05	1.79***	-1.22	-0.89	-0.96	1.16	-0.89	2.23**	-4.07*	-1.02	0.6396	0.651
Punjab	1315	-872.39	62.17	1.99**	-1.55	-1.28	-1.71***	1.96**	-0.65	-0.22	-0.86	0.21	0.5551	0.557
Rajasthan	1357	-895.46	86.55	0.98	-0.64	0.92	-2.33**	3.28*	0.62	-0.20	-3.56*	-0.96	0.5261	0.5279
Tamil Nadu	2190	-1454.42	111.33	-0.24	0.68	4.28*	-4.11*	1.90***	0.47	0.13	-2.99*	1.10	0.542	0.545
Uttar Pradesh	4708	-3080.97	298.91	2.01**	-0.93	-4.39*	-0.86	0.91	0.89	0.74	0.07	-2.49*	0.559	0.564
West Bengal	2120	-1246.35	228.19	3.57*	-2.95*	-4.11*	-2.60*	1.76***	1.01	2.44*	-2.03**	-0.63	0.6589	0.675

* Significance at 99 percent, ** significance at 95 percent and *** significance at 90 perce