DETERMINANTS OF
PUBLIC EXPENDITURE ON HEALTH IN INDIA:
The Panel Data Estimates

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DETERMINANTS OF
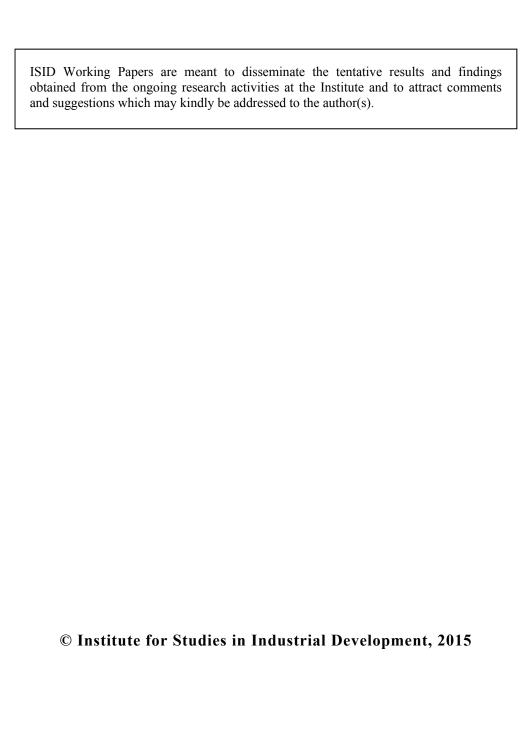# PUBLIC EXPENDITURE ON HEALTH IN INDIA:
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OF PUBLIC EXPENDITURE ON HEALTH IN INDIA:
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*Shailender K Hooda**

[**Abstract**: *There is high inter-state variation in public expenditure on health across states of India. This paper examines the degree to which this discrepancy in health expenditure is explained by income and other socio-economic-demographic factors. Findings show that the responsiveness of health spending is sensitive (with elasticity less than one) to change in per capita income of the state. The fiscal capacity and participation of people in politics of a particular state and health policy reforms initiated in 2005 play a significant role in positively influencing the government health expenditure. The demographic factors, however, are less likely to influence the spending on health.*]

1. Introduction

The global literature on health has recognized that public spending on health is essential for fighting with major diseases and meeting Millennium Development Goals (MDGs) targets. This further helps in reducing poverty deepening effect of high health (out-of-pocket) payments and overall economic development of a country (UN, 2008[1]). Most of the developed countries, as a welfare state, realized this fact in advance and spent a sizable amount of public funds in health sector as compared to the developing countries. The per capita government expenditure on health in high income countries was around USD 3026 (8% of GDP), while in low income countries it was only USD 10 (2% of GDP) in 2010 (WHS, 2013)[2], reflecting high variation in health expenditure across countries. A considerable literature[3], followed by Newhouse (1977) work, examined the degree to which this discrepancy in health expenditure is explained by income of a country. The focused remained

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[1] http://www.internationalhealthpartnership.net/pdf/IHP%20Update%2013/Taskforce/ TF%20REVISED%20Press%20statement%20(2008%2011%2030)%20v%206.pdf

[2] http://www.who.int/gho/publications/world_health_statistics/EN_WHS2013_Full.pdf

[3] The studies like Gerdtham and Jonsson (1999), Baltagi and Moscone (2010) and Xu and Sakesena (2011) provide a detailed literature on the issue.

to examine the magnitude of income elasticity of health expenditure[4]. Health is described a *luxury good* if the responsiveness is sensitive to income change (i.e., if elasticity >1) and as a *necessary good* if the responsiveness is insensitive to income change (i.e. if elasticity <1) (Newhouse, 1977)[5].

The focus of most of the literature hovered around econometrics measurement and examined whether health expenditure varies with the level of economic development of a country. The examination of other important factors that influence the government expenditure on health of a country and theoretical underpinning on the subject remained low. It is highly likely that health expenditure varies in countries with same level of economic development (Xu and Sakesena, 2011). Secondly, factors that influence the variation in government health expenditure across countries may be different within a country across its states/regions. Given this background, the present study tries to fill the gap in literature and analyzes the determinants of health expenditure with existing theoretical background by considering the case of India and its states.

In order to explore the factors that determine health expenditure, this study examines: (i) does health expenditure grow with state's income (ii) does variation in health expenditure is caused by state's income, (ii) do states with same level of income follow the same trends in health expenditure, (iii) does fiscal capacity of states influence the health expenditure, and (iv) what other factors influence the health expenditure to grow. To address these issues, the study first has analyzed the trends and variation in the quantum of government expenditure on health and examined the determinants of public expenditure on health considering major states of India between the periods from 1987-88 to 2011-12.

2. Choices of Variable, Data Sources and Methodology

2.1 Background Literature

Over the past thirty years or so, analyzing the determinants (both level and growth) of health expenditure has been very tempting among the health economists and applied econometricians. The seminal work of Newhouse (1977) in this area provided the major background to such work. Considerable literatures have examined whether income of a country, controlling for other factors, is the major determinant of health expenditure. Based

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[4] Based on the findings some studies reported that health is a luxury good (Newhouse, 1977; Gbesemete & Gerdtham 1992; Hitiris & Posnett, 1992; Wilson, 1995; Kiymaz, 2006), while other shows health is a necessary good (Gerdtham et al. 1995; Matteo & Matteo, 1998; Casanovas & Saenz, 1998; Font & Novell, 1999; Sen, 2005; Murthy & Okunade, 2009; Baltagi & Moscone, 2010; Xu & Sakesena, 2011).

[5] The consensus that emerges from the literature is that if income elasticity of health expenditure is less than one, then the public health sector does not have a high priority among the goals for social and economic development (Kyriopoulos and Souliotis, 2002).

on the findings the studies tried to show whether health is necessary or luxury goods. The major debate in most of the literature is to see whether income elasticity of health expenditure is less than or greater than one. An in-depth review reveals that consensus on how to precede, what type of data to use, which method/technique to employ and which type of explanatory variables to include is not uniform.

The pioneering research in this area focused on measuring the size of the income elasticity of health expenditure and on its policy implications for the financing and distribution of health care resources (Baltagi and Moscone, 2010). Findings of some studies reported that health is a luxury good (Newhouse, 1977; Gbesemete & Gerdtham 1992; Hitiris & Posnett, 1992; Wilson, 1995; Kiymaz, 2006), while other shows health is a necessary good (Gerdtham et al. 1995; Matteo and Matteo, 1998; Casanovas and Saenz, 1998; Font and Novell, 1999; Sen, 2005; Baltagi and Moscone, 2010; Xu and Sakesena, 2011). The income elasticity of health expenditure varies from greater than one to less than one across the studies. The income, in low and low middle income countries, however turned insignificant in influencing the public expenditure on health to grow (Lu et al., 2010). The advocates of health as a luxury argued that health is a kind of commodity that is best left to market forces. Whereas, advocates of health being a necessity often support the idea of more government intervention in health care sector (Culyer, 1988; Matteo, 2003; Baltagi and Moscone, 2010). Among the non-income factors, the population age structure, like share of under 15 years and above 60-65 years (Leu, 1986; Hitiris and Posnett, 1992), epidemiological need, like HIV prevalence, infant/maternal mortality rate and life expectancy (Lu et al, 2010; Murthy & Okunade, 2009; Dregen & Reimers, 2005), technological progress and variation in medical practices like surgical procedures and number of specific medical equipment (Baker & Wheeler, 2000 and Weil, 1995), health system characteristics like service provision (Gerdtham et al 1998), health financing (tax-based and social-insurance) sources (leu, 1986, Hitiris & Posnett, 1992; Gaag & Stimac, 2008; Wagstaff & Bank, 2009), external funds (Gaag & Stimac, 2008), provider payment mechanism (Gerdtham & Jonsson, 2000; Murthy & Okunade, 2009) factors are incorporated as a covariate in many cross country studies. These factors more or less turned important for explaining the level and growth of health expenditure.

The limitations of these studies are the selection of important explanatory variables and data aggregation problem—a methodological problem or limited period of data. The data aggregation specially means inclusion of both developed and least developed countries in a single estimation. This avoids the simple econometric assumption that data should be drawn from the same population to have the robust and reliable estimates. Data from same population is important to compare the sample unit. To avoid such methodological problem, the present study analyzes data from a single (same) population set by considering a case of India which constitute many states. The Indian states have several factors in common with some diversity. They are broadly governed under same legal system and Constitution obligations. However, health is a state subject in India, though some of the health policy reforms which are initiated by central government are applicable for all states. Beside the common factors, the social-cultural, economic and political differences exist across states.

Thus, to study the factors, by considering the states as a sample unit, that determine the health expenditure can provide the valid interpretation of our discussion. This also allows the assumption (i.e., data should be drawn from the same population) of regression analysis to be maintained.

A preliminary exercise on the variations in health expenditure reveals that there exists high variation in government expenditure on health across Indian states. The variations in health expenditure themselves is not a matter for concern if it is due to the exercising of preferences by individual states on the basis of prevailing disease or mortality rate in the state. But, it became problematic when states with high prevalence of disease and/or mortality rates and states with high level of income allocate little/low funds in health sector. This may mean that either these states are shying away from fulfilling its constitutional commitment of 'Right to Health' for its citizens or consider health as low priorities sector. That is, the differences in health expenditure across states thus can arise either because of preference or income of the state. The differences may also arise because of fiscal disabilities of the states arising from unequal capacities in raising revenues or due to varying cost of providing health services. The regional diversity, socio-economic conditions and other demographic characteristics of a particular state however can also be the cause of inter-state variation in health expenditure. In order to fully understand the differences in health expenditure, one needs to identify the degree to which the discrepancy in health expenditure is explained by the differences in state's income, fiscal capacity, priority of state governments or by other demographic factors. The choice of variable in this study therefore not only depends on the discussion provided in the literature but also consider characteristics of the Indian states.

2.2 Choice of Variables

Health Expenditure: The per capita (at 1993-94 prices) public expenditure on health of the state governments is taken as dependent variable. This includes the expenditure on medical, public health, family welfare, water supply and sanitation. The data is considered for the period of 1987-88 to 2011-12 across the 16 major states of India. The log value of real per capita expenditure on health *(lnHE)* is used.

Income: The income (per capita GDP at 1993-94 prices) has been studied in many studies as a covariate to influence the health expenditure. The present study considers State's income as a measure to influence the health expenditure of the state government. In case of state income, one would envisage that as per capita income increases, the pressure on the state machinery to provide better and varied health services will increase. This may be due to increase in incidence of the so called 'lifestyle' diseases such as diabetes, cancer and cardiovascular diseases, or as a 'welfare state' the government may spend more on health sector to provide health care facilities in a comprehensive way. The government also need, in face of its increased ability, to spend more on health to meet the increased demand of population. Such types of examples are emerged from international experiences, particularly from developed world. To examine how far this phenomenon is reflected in the Indian scenario is tested empirically. In case of Indian states, the preliminary exercises (Hooda, 2013) shows that in

most of the Indian states (including low as well as high income states, except Himachal Pradesh) the level of health expenditure is lower than the minimum amount necessary to provide the basic health services. Similarly, we have expected that as income of the state increase, in face of increase in ability to spend, the spending in health would increase. The log value of real per capita GSDP *(lnGSDP)* at 1993-94 prices is used as a measure of state's income in the study. The coefficient value of this variable shows the income elasticity of health expenditure. A positive and significant value of the coefficient indicates that the publicly provided health care services are considered as 'necessities' by the respective state governments.

Fiscal Capacity: The fiscal capacity of the state can be judged by taking the share of states' own revenue for meeting the total expenditure requirement of the state. A high share of own revenue in total expenditure of the states leads to greater autonomy with the state government to meet the expenditure requirement of different services including health. However, the fiscal capacity can also be understood as per capita state's own revenue resources. This shows the per capita resource availability with the states government to meet their expenditure obligations. The fiscal capacity generally reflects the state's autonomy. The high fiscal capacity with the state governments expected to spend more on various services including health. We presumed that, being health a state subject, increased in fiscal capacity of states leads the health expenditure to grow. This presumption based on the notion that more spending in health requires more fiscal space[6]. State's total own (tax and non-tax) source of revenue is considered as in indicator of fiscal capacity in the study and the log of per capita state own revenue *(FCS)* is used for analysis.

Demographic Characteristics (DC): The inherited health care system from colonial rule was grossly biased towards urban area in India. The rural area seems to be neglected even in the current discourse of inclusive development (Hooda, 2013). With the growth of urbanization, the demand for basic amenities (including health) expected to increase. How far Indian states have maintained such trends need to be tested empirically. Therefore, the share of urban population in total population of the state is taken as one of the independent variable reflecting the demographic characteristics as well as demand for health care (in terms of more expenditure in health) in a particular state. Specifically, we are interested to examine whether high growth of urbanization leads to high health expenditure in a state to meet the increased demand for health care.

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[6] The variable 'fiscal capacity' however considered as an explanatory variable to influence the government health expenditure in Xu and Seksena (2011) study. This study has taken total government expenditure as a share of GDP which reflect fiscal space for a given GDP level. We believe that total expenditure is not the true measure of fiscal capacity. It reveals from the public finance literature that fiscal capacity, in general, is measured by taking into account the capacity to generate the revenue resource of a country/state. Therefore rather than considering the total expenditure, total revenue is used to measure the fiscal capacity of a Indian state.

State's Priority to Health (SPH): There is no hard and fast rule to arrive how far state governments have given priority to health sector. This can only be reflected how state governments have given priority to health sector under different macro-economic conditions. Some of the macro-economic changes have not only affected the overall public finance but also affect the overall public spending in general and health sectors in particular. Securing high spending in health under adverse conditions reflects the high priority accorded to health sector by the respective state government. This priority can only be measured in diatomaceous (dummy variable) form. That is, the value is assigned 1 for those states who have sustained positive trend/growth in health expenditure under adverse or fiscal stringency period and 0 otherwise. Specifically, the value is assigned one for states whose expenditure trends/growth are positive under fiscal stringency period induced by the structural adjustment measures initiated after 1991 and affected central as well as state finances in a big way. The value is also one for a state who is able to maintain positive growth in health expenditure during the period of FRBM Act (2003-04) and its consecutive years. The FRBM initiated to check the deteriorating fiscal position of the states either through revenue generation or expenditure restructuring. This not only shows states' high priority to health sector under adverse conditions but also reflects the strong political will/priority of state government to spend in health. The information on how have health expenditure pattern affected during the period is taken from study Hooda, 2013.

Political Participation (PP): The other side literature argued that high participation of people in regional and local politics always induced by high level of development. They, through participation, influence the political party to spend more on to provide the basic services (including health) and to meet the increased demand of the people (Beskey, 2005). The literature argued that political participation brings the decision making closer to the people and thereby increase democratization. This helps in deciding the preferences of local residents. A more active political participation of the population is expected to persuade the decision of local authorities to their interests and priorities (Hooda, 2012). The high political participation, particularly the women, leads to higher demand of basic services, like the health, in their locality according to needs, better utilization of resources and better health outcome. This study therefore used political participation as an explanatory variable. For the purpose an Index of Political Participation[7], reflecting higher weight to women participation in local and regional politics, is constructed. This index is used to examine whether high political participation leads to high spending, via influencing the political parties, in health in a particular state.

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[7] The indicators like, share of women and reserved class panchayats representatives, percentage of total voters' turnout in assembly election, women voted as percent of men voted in assembly election, percentage of women contesting in assembly election and percentage of women elected in assembly election are used . This index is constructed using data information from State Election Report (various years).

2.3 Estimation Procedure

It reveals from the above discussion that the differences in health expenditure across Indian states may not solely because of state's income or state's priority but it may be because of fiscal disabilities of the states arising from unequal capacities in raising revenues or due to varying cost of providing health services. It may also depend on some demand side factors like demographic characteristics or people demand identified from political participation. The degree to which this discrepancy can be explained by these factors is examined by asking the following research questions: (i) does health expenditure grow with state's income or variation is caused by state's income, (ii) do states with same level of income follow the same trends, and (iii) what other factors influence the health expenditure to grow. This is examined by considering 16 major Indian states for the period of 1987-88 to 2011-12 and a Panel Regression equation is estimated.

To examine the research question 'do states with same level of income follow the same trends', the definition of same income is used from NRHM documents. The NRHM identified that in some of the Indian state there exist high fertility and mortality rates, these state therefore termed as Empowered Action Group (EAG) states. Most of the low income states, out of 16 states, (namely, Assam, Bihar, Himachal Pradesh, Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh) come under the umbrella of EAG states. Therefore, the results are presented both for EAG and non-EAG states separately and for all state taken together. While presenting the results for all states, the dummy variable representing 1 for EAG and 0 for non-EAG states is used.

Under the NRHM in 2005, in a landmark decision, India made commitment to increase the public spending in health by about 2-3 per cent of GDP by the end of 2012. The Centre government also asked the state governments to spend more on health to achieve the Millennium Development Goals (MDGs) health targets. The scholars and policy makers have termed that the reform in health sector in real term are started with the implementation of NRHM in 2005. Therefore it is high time to examine whether NRHM has made a significant difference in health expenditure in India. This is examined by introducing the time dummy representing and 0 for pre-NRHM (the pre reform period) and 1 for post-NRHM (the post reform period in health sector).

The following Panel Regression Equation with Random Effect is estimated:

$$lnHE_{st} = \beta_0 + \beta_1 lnGSDP_{st} + \beta_2 lnFCS_{st} + \beta_3 DC_{st} + \beta_4 SPH_{st} + \beta_5 PP_{st} + \beta_6 SD_{st} + \beta_7 TD_{st} + v_s + \varepsilon_{st} \qquad ---- (1)$$

where,

lnHE is log of real per capita public expenditure on health
lnGSDP is log of real per capita GSDP representing state's income
lnFCS is log of real per capita state own revenue representing state's fiscal capacity
DC is share of urban population in total population representing demographic characteristics of the states
SPH is state priority to health used as dummy variable.
PP is political participation index reflecting people's demand for health

SD is state dummy, 1 for EAG and 0 for non-EAG states

TD is time dummy, 1 for post NRHM period and 0 for pre NRHM period

v_s = State specific residual;

ε_{st} = The standard residual with the usual assumption of zero mean, uncorrelated with v and other explanatory variables, and homoscedasticity;

s = State (16 major states of India) and

t = time from 1987-88 to 2011-12 (25 years)

The above panel regression equation can be estimated as 'between effects', 'fixed effects', and 'random effects' models, depending on the assumptions we made about the distribution of vs and ε_{st}. In the between effects specification, we consider the mean of the variables over time and the coefficients will be estimated using only the cross sectional information. In the fixed effects model, also known as 'within effect', v_s is assumed to be fixed, and the coefficients of the parameters will be estimated using the time-series information in the data. This implies that time invariant variables will not be considered. The random effects model on the other hand takes v_s as a random variable and assumes v_s not to be correlated with the other explanatory variables. Then it takes a weighted average of the between and the fixed estimates (for detail see Greene, 2008). If the model is correctly specified, there should not be a statistically significant difference between the fixed effect and the random effect coefficients. The between specification helps us to see the impact of income, capacity and priority variables when it changes across states, and the fixed effect model measures the impact of a change in any of these variables within a state. In short, within and random effect models measure the impact of these variables in determining the health expenditure across states and within state, respectively. The above equation therefore is estimated with random effect model.

3. Variation in Health Expenditure

The analysis shows that there exist high inter-state variation in per capita public expenditure on health in India. The variation in health expenditure across states is increasing over the period. The value of coefficient of variation was recorded around 0.55 in the first sub-period and increased to 0.64 in the fourth sub-period (*Table 1*).

The expenditure requirements in some of the low income state (particularly in Empowered Action Groups states) however is very high to provide the basic health services at the Indian Public Health Standard (IPHS) level and to tackle the high prevalence of disease in the states. But expenditure amount in these states turned low. Unfortunately, similar trends are in some of the richer states like Punjab and Gujarat. This discussion and the reasoning provided in the methodological section reveals that beside state's income, other factors influence the public expenditure on health in the Indian states. Based on the discussion, the following section empirically presents the factors that determine the public expenditure on health in Indian states. This specifically examines the impact of state's income, state's fiscal capacity, state's demographic characteristic and state's priority on health expenditure. It also captures the impact of pre and post reform period of health sector, especially the impact of pre and post

NRHM period. The research question, whether states with same level of income follow the same pattern in health expenditure (discussed earlier), is examined by estimating two separate equations for both Empowered Action Group (EAG) and non-EAG states separately and for all states taken together as well. The results are presented in *Table 2*.

Table 1: Inter-State Variation in Per Capita Public Expenditure on Health (in ₹)

	1987 to 1992	*1993 to 1998*	*1999 to 2004*	*2005 to 2011*
Bihar	69	80	94	108
West Bengal	88	95	129	135
Uttar Pradesh	86	79	83	149
Orissa	102	110	128	169
Madhya Pradesh	120	149	180	175
Andhra Pradesh	113	176	198	195
Maharashtra	131	141	178	195
Karnataka	130	142	183	205
Gujarat	164	170	223	211
Kerala	146	135	164	236
Punjab	151	148	199	243
Tamil Nadu	198	204	247	243
Assam	139	106	124	250
Rajasthan	200	227	252	267
Haryana	146	184	221	336
Himachal Pradesh	427	460	602	797
Mean	150	163	200	245
STDEV	82.3	90.0	118.6	157.5
COV	0.55	0.55	0.59	0.64

Source: Finance Account of individual states and RBI-State Finance: A Study of State Budget

4. Determinants of Health Expenditure

The results show that the income of the states plays a significant role in influencing the public expenditure on health in Indian states (*Table 2*). The coefficient value of the state's income however turned less than one. This reflects that health is a necessary good in India rather than luxury. The coefficient value of state's income for EAG states turned with high coefficient value (around 0.67) than non-EAG states (around 0.41). This reflects that the income elasticity of health expenditure is comparatively high in EAG (low income) states compare to the non-EAG states. This may mean that any increment in the income of the poorer (EAG) states translate to increase in health expenditure in the states. It can also be said that the health spending is considered as high necessity in low income (EAG) states compare to the others. This argument can be supported from earlier analysis which has shown that some of the high income states have given low priority to health sector and allocate low public funds irrespective of their income. The economics parlance on the other side however argues that with the increase in income, the expenditure on the critical sector like health should increase or be high. Turning low coefficient value of state's income for non-EAG state

allows us to argue in a different way that as income increase, the peoples' willingness to access public facilities may decline, because of increase ability to pay the people in high income states may prefer private facilities. However, this parlance would not be true if one look at the expenditure pattern of the developed country. The experiences of several developed economies confirm that this statement is not un-equivocally true, as the richer countries allocate high public funds in health sector out of their total income as well as out of their total budget. That is, the allocation of public funds in health sector increases with the level of income of a country/state. This has helped even in reducing the high out-of-pocket expenditure from household in those countries/states. Thus, turning low coefficient value of state's income reflects the low priority accorded by these (non-EAG) states to health rather than necessity compare to the EAG states.

Table 2: Determinants of Public Expenditure on Health in Indian States: Panel Regression

Variables	EAG states	Non-EAG states	All States
Coefficient Values			
Income	0.667***	0.406***	0.484***
	(4.35)	(4.42)	(7.26)
Fiscal Capacity	0.514***	0.176**	0.133**
	(4.74)	(2.30)	(2.44)
Political Participation Index	0.026	0.008	0.037**
	(0.79)	(0.39)	(2.49)
Share of Urban Population	-0.036***	0.001	-0.007
	(-6.89)	(0.30)	(-1.53)
State's Priority Dummy	0.132***	0.045	0.031
	(2.88)	(1.52)	(1.57)
Pre and Post NRHM Dummy	0.415***	0.116**	0.093**
	(6.19)	(2.62)	(2.86)
EAG & Non-EAG Dummy	--	--	-0.223*
			(-1.90)
Constant	3.663****	0.072	0.374
	(4.33)	(0.14)	(0.49)

Source: Authors' Estimates

The fiscal capacity of a particular state turns significant in influencing the public expenditure on health in India. That is, the government health expenditure increases with the increase in the per capita fiscal capacity of a particular state. The coefficient value of fiscal capacity variable turns significant at 5 per cent level of significance with value 0.13. This shows a one per cent increase in per capita fiscal capacity of a states leads to increase in government health expenditure by 0.13 per cent. This indicates that higher the fiscal capacity of a particular state is an indication of high resource availability and autonomy with the state governments and therefore has resulted in high government expenditure in the health sector. Interestingly, the coefficient value of fiscal capacity variables turned high (around three times) for EAG states compare to the non-EAG states. This indicates that generating more revenue out of their own sources has helped them to increase in health expenditure. It can be argued that states need to focus on generating revenue from own sources, either widening the tax base or improving

the administrative and technical efficiency to collect more resources, to have the health expenditure high in the states. The increase in fiscal capacity of states not only helps in increasing the state's autonomy of resources allocation but also reduces the dependency on central transfer of funds.

The impact of the index of political participation also turned positive and significant in influencing the health expenditure for all the states. It can be argued that high participation of people in regional and local politics induced high demand for basic services like health, to meet the increased demand of the people. That is, high political participation brings the decision making closer to the people and thereby increase democratization. This further helps in persuading the decision of government to their interests and priorities and help in increasing the health expenditure.

The coefficient of demographic factor measured in term of growth of urbanization however turned negative which is opposite to our expectations. The coefficient of the variable of government priority also could not make any significant difference in health expenditure in non-EAG states and for all state taken together. The coefficient value however turned positive but insignificant. Interestedly, the coefficient value of government priority variable turned positive and significant for EAG states. This indicates that health sector has given high priority in these states. This may mean that the high income states unable to sustain increasing trends in health expenditure during the time of fiscal stringency and/or under adverse macro-economic conditions compare to the EAG (low income) states.

The health policy reform, particularly the NRHM, have made a significant difference in public expenditure on health in Indian states. The coefficient of time dummy turned positive and significant. This reflects that the health expenditure in post reform (NRHM) period is significantly higher than the pre-reform period. This is a healthy indication that, in the first time of Indian History, a health policy reform (NRHM) has made a significant difference in health expenditure and secured high public fund in health sector. Interestingly, the impact of post NRHM is high for EAG state compare to the non-EAG states, a healthy indication. However, the negative value of coefficient value of state dummy reflect that per capita health expenditure is significantly low in EAG state compare to the other stares of India.

5. Conclusions

Among the determinants of health expenditure, the per capita income and fiscal capacity of a particular state turns positive and significant in determining the per capita public expenditure on health in Indian states. The impact of both these variables turned out to be with high coefficient value for EAG states compare to the other. The health policy reform (NRHM) has made a significant difference in public expenditure in India. The expenditure on health is recorded significantly high after the implementation of NRHM compare to the pre-NRHM periods. The state's priority variable turned significant only for EAG states but not for the other states. The political participation also influences the health expenditure in India.

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