

## DETERMINANTS OF SOCIAL SECTOR EXPENDITURE IN HIMACHAL PRADESH AND KERALA

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### ABSTRACT

The present research study focuses on the “Determinants of Social Sector Expenditure in Himachal Pradesh and Kerala” social sector expenditure is an important instrument for realizing the objectives of government policy. The government formulates programmes and schemes, and undertakes various social and economic activities, which aims at socio-economic development of the community. Therefore, social sector expenditure largely determines the realization of the objective of growth with equity of the government. Both, Himachal Pradesh and Kerala despite various economic limitations have exhibited very high performance with respect to social sector development. Kerala’s achievement in the field of education i.e. near total literacy, free and universal primary education, low dropout rate at school level, easy access to educational institutions, gender equality etc., definitely owes to its social sector expenditure only. As far as Himachal Pradesh is concerned, it is also among the highest literate states in the country and ranks fifth with respect to literacy rate. Female literacy is also encouraging, and state has been awarded at national level for its best performance in the field of education. In the present study, the determinants of the social sector expenditure in Himachal Pradesh and Kerala during the period 1971 to 2016 are taken into consideration. Forty six, years period is sufficient enough to reveal the major trends and changes taking place in social sector expenditure in Himachal Pradesh and Kerala. In this context, it is quite meaningful to study the determinants of social sector expenditure in both states respectively.

**KEYWORDS:** Social Sector Expenditure, Socio Economic Development, Dropout rate, gender equality, Female literacy.

### INTRODUCTION

The expenditure on social services and rural development is defined as social sector expenditure as given in central and state budgets. The head social services include education, health & family welfare, water supply and sanitation. The expenditure under the head rural development relates mostly to anti-poverty programmes. Aside from wage and self-employment programmes, there are specific health and nutritional programmes for women and children for the poorer segments of the population of the rural and urban area. The components of social sector such as education, health, labour welfare, nutrition, relief on account of natural calamities, expenditure on education and health appears to be more relevant.

The human capital uprising of the post 1960’s focus on human development in lieu of income growth; have brought into a sharp focus on the crucial role played by the component of social sector in economic development. Therefore, providing quality education, provisions of basic health and social safety nets the participation of population into

the process of economic development can be alarmed at a rapid rate. Social services, either directly or indirectly emerged as important public sector activity in developing economies of the world. Appropriate expenditure on social and community services is desirable as an instrument to achieve the objective of reducing inequalities in the economy. There is a need to form expenditure policy in such a way that the benefits are passed on to economically poor section of the society.

The state of Kerala along with the west coast falls in the south-western part of the country. It has a coastline of 590 km that does not exceed 100 km at its widest point. It came into existence on November 1, 1956 having total area of 38,863 sq. km., contributes 1.25 per cent of total geographical area and population of 33.3 million people accounts for 2.76 per cent of India as per the census of 2011. Population density is 859 persons per sq. km in Kerala that is third highest in country. Kerala essentially is an agricultural state, and high population density results increased necessity for food and have enhanced the cultivation in the state, to nearly 64 per cent of the total geographical area. Agriculture provides the raw material for a number of agro-processing industries that occupy an important role, in employment generation especially. The growth of the service sector remains striking feature of Kerala's economy right from the beginning, is a largest source of employment generation in the state.

Himachal Pradesh, with an area of 55,673 sq. km is one of the smaller but most important states of India. It consists of international border with Tibet that makes the state strategically also very important. It ranks 17<sup>th</sup> among the states and union territories in terms of geographical area and 21<sup>st</sup> in term of population with 68.5 lakhs population. The state reckons 1.7 per cent of the total area of the country and 0.57 per cent of the total population as per the census of 2011. The density of population stood at 123 persons per sq. km. and ranks 28th among the states and union territories that is much below the all-India average of 324 persons per sq. km. The urban population constitutes 9.79 per cent of the total population of the state, the lowest among all states and union territories. Almost eight out of every ten persons in the state are literate, and it ranks 11th in terms of literacy at all India level.

Himachal Pradesh needed a different kind of approach for its economic development, because of its peripheral location that have been mistreated in the past Disadvantage of a weak economic and institutional base, and a low level of catalytic skills of the people to provide services such as roads and transport, banking, medical and health, which can create conditions for modern development was not in well condition. Presently, the economy of Himachal Pradesh is growing at alarming rate in term of literacy, health, rural development, sanitation, natural calamities. Per capita income, net state domestic product is also becoming better with the passage of time. Horticulture and tourism has become the key indicators of the economy of Pradesh, and government initiatives are also remarkable in this regard.

## **REVIEW OF LITERATURE**

In order to complete the study, various studies and researches are reviewed regarding public expenditure in general and social sector in particular. Some of the studies stated as mentioned below:

Lull (1969) studied the relationship between per capita income and the size and pattern of government expenditure for 46 developing countries, divided into three income groups. The cross sectional data was collected and multiple regression technique revealed that in case of 13 countries; correlation between per capita income and government expenditure turned out to be significant at 10 per cent level. However, the social services as a whole showed no significant tendency to increase as a proportion of total expenditure, or of the GDP with rising incomes. Education and health expenditure tended to rise as a proportion of total government expenditure for the first two groups.

Peacock (1979) made an attempt to identify the various determinants of growth of government expenditure in major industrial countries of the Western Europe as well as United States and Canada. The study found that long term increase in government expenditure coupled with growing centralized control of it, in these countries. He also lists out reasons of growing public expenditure and correlates its growth to the formation and evolution of political decision making process in democracy.

Rao (1981) disclosed that the ideological leaning of the parties in power do not significantly affect the level of expenditure in the states, but intend to create imaginary output differentials. It was concluded that less stable governments made significantly higher level of government expenditure, particularly on social and economic services.

George (1982) examined the problem of revenue expenditure spiral in Kerala, leaving a heavy revenue deficit year after year. To resolve this problem, he suggested the need of more central transfers.

Sharda (1987) examined as to how far budgeting instruments have been used by the government of Himachal Pradesh to achieve the goals of growth and social justice. The study covered the time period from 1967-68 to 1981-82. The analysis revealed that the growth of government expenditure in Himachal Pradesh is in line with Wagnerian doctrine. There has been a perceptible shift in the structure of government expenditure during the period under reference.

Jacob (1993) demonstrates on the finances of the state of Kerala, for the period 1950-90. He listed out the non-developmental expenditure, major factors contributing to the state's fiscal crisis in general, and non-plan revenue expenditure in particular.

Guhan (1995) studied social sector expenditure of the Government of India during the period 1991 to 1995-96. The study found that social sector expenditure have not given due importance by economic reforms as required. It was observed that the states are mainly responsible for the bulk of social expenditure either of their own or as an agent in the centrally sponsored programmes. A national policy focused on social expenditure stated that an economic reform has no relevance unless more funds are allocated at the centre, and at the state level for social expenditure.

Dev and Mooji (2002)<sup>78</sup> analyzed the trend in India, during the period 1990-91 to 2000-01 of central and state budgets on social sector expenditure. The paper focused on overall level of allocation of expenditure on education and health and inter-state disparities. It was observed that India's performance in the social sector was far from satisfactory and was lower in 1990s vis-à-vis 1980s. It was emphasized that, in view of very low rank held by India with respect to human resource development, it is all the more important that both social sector expenditure, and its utilization pattern should improve.

## **OBJECTIVE OF THE STUDY**

The present study is an attempt to analyze the determinants of social sector expenditure in Himachal Pradesh and Kerala. Therefore, the study aims to know the determinants or the factors affecting the social sector affecting in the both states, respectively.

## **METHODOLOGY**

The study is based on secondary data. The data is collected from various relevant issues of Economic Surveys published by Government of Himachal Pradesh and Kerala, reports of Comptroller and Auditor General of India, budget documents of Government of both states, Annual Financial Statements of Government of the respective states. In order to examine the

group of determinants of each item of social sector expenditure among the explanatory variables and to identify the significant factors associated with each item of expenditure, an ordinary least square (OLS) model is estimated. The relationship between the two variables is estimated as a linear or straight line relationship, defined by the equation:

$$Y_i = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + \dots + b_6x_6 + e$$

Where, Y are the dependent variables,  $Y_1$ =Total Expenditure on social sector,  $Y_2$ =Revenue expenditure on social sector,  $Y_3$ =Capital expenditure on social sector,  $Y_4$ =Non-plan expenditure on social sector,  $Y_5$ =Plan expenditure on social sector.

Where, X are the explanatory variables,  $X_1$ = Grants-in-aid,  $X_2$ = Degree of urbanization,  $X_3$ = Percentage of SC population to total population,  $X_4$ = Percentage of SC population to total population,  $X_5$  = GSDP at current prices,  $X_6$ = State own revenue

$b_0$  is the intercept or the constant and  $b_i$  are the slope. The line is mathematically calculated such that, the sums of distances from each observation to the line are minimized.

By definition, the slope indicates the change in y as a result of a unit change in x. The straight line is also called the regression line or the line of best fit.

The method of calculating the regression coefficient (slope) is called ordinary least square (OLS). OLS estimates the slope by minimizing the sum of squared differences between each predicted and the actual value of Y.

## RESULTS AND DISCUSSIONS

### Factors affecting Social Sector Expenditure in Himachal Pradesh and Kerala

The factors governing or determining social sector expenditure in the both states are grants-in-aid, per capita income, contribution of primary sector, degree of urbanization, percentage of Schedule caste (SC) population, percentage of Schedule Tribe (ST) population, Gross State Domestic Price at current prices, total population and state own revenue. Here, an attempt is made to find out the determinants of social sector expenditure in the state of Himachal Pradesh and Kerala.

A multiple regression is run to study the impact of various explanatory variables, namely grants-in-aid, per capita income, contribution of primary sector, degree of urbanization, percentage of Schedule caste (SC) population, percentage of Schedule Tribe (ST) population, Gross State Domestic Price at current prices, total population and state own revenue on social sector expenditure in Himachal Pradesh and Kerala. Before, running multiple regression the problem of normality found in the data. In order to overcome the problem of normality, data need to be transformed. There are multiple ways of transforming or normalizing a data. Some of them are taking difference, taking logarithm, taking ln (natural logarithm), subtracting mean from the value, subtracting median from the values. The transformation method used here is logarithm. After taking the logarithm, the data became normal. Therefore, after the transformation of data multiple regression models are applied for dependent and independent variables to get desired output and result.

After the normalization of data, the independent variables collected are highly correlated with one or more of other independent variable in the dataset. This gives rise to the problem of multi-collinearity. Whereas, multiple regression model assumes that the independent variables shouldn't have highly correlated to each other. The assumption is tested

using Variance Inflation Factor (VIF) values. VIF values higher than 10 indicate that multi-collinearity is a problem in the existing data. There are few possible ways to remove the multi-collinearity. One possible solution is to center the data. To center the data, means to subtract the mean score from each observation for each independent variable. However, the simplest solution is to identify the variables causing multi-collinearity (i.e. through correlations or VIF) values and removing those variables from the multiple regression analysis.

A multiple regression is run to study the impact of various explanatory variables on total social sector expenditure and various other categories of total social sector expenditure in Himachal Pradesh and Kerala. Out of all above mentioned independent variables, three variable i.e. total population, per capita income and contribution of primary sector are excluded from the analysis because of multi-collinearity problem in the case of Himachal Pradesh while, total population, per capita income, contribution of primary sector and percentage of SC Population in case of Kerala. Other six variables taken together, which significantly predicted total social sector expenditure F-statistics =194.113,  $p < 0.05$ ,  $R^2 = 0.968$  and F-statistics =276.87,  $p < 0.05$ ,  $R^2 = 0.972$  for both the state, respectively.

### **Determinants of Total Social Sector Expenditure in Himachal Pradesh and Kerala**

In the present section, an attempt is made to study the determinants of total social sector expenditure in Himachal Pradesh and Kerala (Table-5.1).

Table 5.1 shows that the  $R^2$  and adjusted  $R^2$  values of the regression are close to 0.968 and 0.963, and hence it is a good fit regression model for Himachal Pradesh. The analysis revealed that degree of urbanization followed by percentage of SC population to total population, percentage of ST population to total population and GSDP at current prices emerged as the strongest determinants of total social sector expenditure that are significant at one per cent level in Himachal Pradesh. With one per cent increase in variance of degree of urbanization, there was 0.420 per cent change in the variance of total social sector expenditure. Secondly, with one per cent increase in variance of SC population to total population results, 0.188 per cent changes in the variance of total social sector expenditure. As, one per cent change in variance of ST population to total population and GSDP at current prices, there was 0.145 and 0.341 per cent change in the variance of total social sector expenditure respectively, justifying the strongest determinants of total social sector expenditure in Himachal Pradesh, over the period under study.

The table shows further, that there are no such indicators that turned out to be significant one, but, have a negative impact on total social sector expenditure in the state. Further, it is observed that grant-in-aid and state own revenue, has no significant impact on total social sector expenditure in Himachal Pradesh, showing the values greater than the values of significant at any level (i.e. 1%, %5 and 10% respectively). The p-values for Grants-in-aid and State own revenue stood at 0.446 and 0.874 per cent that are not significant witnessing any impact on total social sector expenditure in Himachal Pradesh. Determinants of total social sector expenditure in Kerala are also shown in Table 5.1. The above table reveals that the  $R^2$  and adjusted  $R^2$  values of the regression are close to 0.972 and 0.968, and hence it is a good fit regression model for Kerala, also like as Himachal Pradesh

**Table 1: Determinants of Total Expenditure on Social Sector in Himachal Pradesh and Kerala**

Model	Unstandardized Coefficient				Standardized Coefficient		t-value		p-value	
	B		Std. Error		Beta		HP	Kerala	HP	Kerala
	HP	Kerala	HP	Kerala	HP	Kerala				
C	-16.708	-0.846	3.345	0.274			-4.995	-3.089	0.000	0.004
Zscore (Grants-in-Aid)	0.241	0.144	0.312	0.039	0.043	0.186	0.770	3.739	0.446	0.001*
Zscore (Degree of Urbanisation)	3.662	0.255	0.591	0.231	0.420	0.061	6.192	1.105	0.001*	0.276
Zscore ( % of SC Population)	9.520	#	2.243	#	0.188	#	4.245	#	0.000*	#
Zscore ( % of ST Population)	2.345	0.128	0.712	0.255	0.145	0.017	3.292	0.500	0.002*	0.620
Zscore (GSDP at CurrentPrices)	0.334	0.686	0.091	0.068	0.341	0.675	3.683	10.161	0.001*	0.000*
Zscore ( State own Revenue)	0.014	0.137	0.088	0.064	0.012	0.123	0.159	2.156	0.874	0.037**
R-squared	0.968	0.972	Adjusted R-squared				0.963	0.968		
p-value	0.000	0.000	F-Statistics				194.113	276.877		

**Note:** \*1% level of significance

\*\*5% level of significance

\*\*\*10% level of significance

The values of % of SC Population to total population are not taken in the case of Kerala, due to the problem of multi-collinearity.

The analysis shows again that Grants-in-aid, GSDP at current prices, and state own revenue become apparent determinants of total social sector expenditure in Kerala. Grant-in-aid stood significant at 1 per cent level having the value of p statistics 0.001. It means, with one per cent increase in variance of grant-in-aid results 0.086 per cent change in the variance of total social sector expenditure. Similarly, GSDP at current prices also evident significant p-value (0.000) at 1 per cent, signifying that one per cent increase in variance of GSDP at current prices ensue 0.675 per cent change in the variance of total social sector expenditure. Further, when one talk about the state own revenue, it stood significant at 5 per cent level possessing the p-value 0.037. This outcome further stated that one per cent increase in variance of state own revenue signify 0.123 per cent change in total social sector expenditure in Kerala, under the study period. Table stated further, that the variable degree of urbanization, percentage of ST population to total population has no significant impact on total social expenditure witnessing the p-values 0.276 and 0.620 per cent respectively, in the state of Kerala.

The results of table 5.1 regarding the comparison of determinants of total social sector expenditure in Himachal Pradesh and Kerala sated that the regression model is good fit for both the states. Degree of urbanization, percentage of SC population to total population, percentage of ST population to total population and GSDP at current prices emerged as the strongest determinants of total social sector expenditure Himachal Pradesh, whereas grant-in-aid, GSDP at current prices, and state own revenue are strongest determinant of total social sector expenditure in Kerala. It is observed that GSDP at current prices become as a determinant of total social sector expenditure in both states.

## CONCLUSIONS

Social sector expenditure is one of the important aspects to know the prosperity of an economy. Human development Index ranking also depends upon social sector expenditure. Social sector includes the essential components of the education, art and culture, health and family welfare, rural development, safe drinking water, nutrition, labour and employment, natural calamities and sanitation etc. Both the states are best performer in term of human development index at national level. The factors affecting social sector expenditure in the both states GSDP at current prices emerged as a strongest determinant. Degree of urbanization, percentage of SC population to total population, percentage of ST population to total population and GSDP at current prices emerged as the strongest determinants of total social sector expenditure in Himachal Pradesh, whereas grant-in-aid, GSDP at current prices, and state own revenue are strongest determinant of total social sector expenditure in Kerala. The percentage of SC and ST population to total population in Himachal is approximately 25 per cent and 6 per cent respectively. Hence, these two factors emerged as the strongest determinant of social sector expenditure. Whereas, the percentage of such population is approximately 10 and 1 per cent in Kerala as a result state own revenue and GSDP at current prices, emerged as the strongest determinant of social sector expenditure. Hence, Himachal has to improve the sources of state own revenue as a consequence better impact could be seen on social sector expenditure.

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