RELATIONSHIP BETWEEN SOCIAL SECTOR EXPENDITURE AND NET STATE DOMESTIC PRODUCT IN HIMACHAL PRADESH AND KERALA

Satpal[1] & K.C Sharma[2]

[1]Research Scholar, Department of Economics, HP University, Shimla, India

[2]Professor, Department of Economics, HPU Centre of Evening Studies, Shimla, India

ABSTRACT

The present research study aims to analyses the "Relationship between Social Sector Expenditure and Net State Domestic Product in Himachal Pradesh & Kerala". The objectives of government policies can be accessed through social sector expenditure. The social sector expenditure largely determines the realization of the objective of growth with equity of the government. The government formulates programmers and schemes, and undertakes various social and economic activities, which aims at socio-economic development of the community. It is the political and economic philosophy of a government, which ultimately determines the magnitude and pattern of social sector expenditure in an economy. For having higher productivity, efficiency and equity in the economy quality of social sector expenditure needs to be scanned during regular intervals. Though, a study of social sector expenditure is important in context to all the states but, tends to became all the more relevant and interesting because of remarkable achievements in the field of social sector in both states Despite various economic limitations,they exhibited very high performance with respect to social sector development by both states, respectively. They have marked similarities not only with respect to their social sector model, but in case of other spheres also. Therefore, keeping in the view of economic similarities of both states, an attempt is made to study the causality between social sector expenditure and NSDP.

KEYWORDS: *Social Sector Expenditure, Political and Economic Philosophy, Efficiency and equity, Economic Similarity.*

INTRODUCTION

Social sector expenditure is one of the significant sources to know the government initiative towards human development. Human development emerged as an important indicator of growth and development in modern era.In the early days, the function of the state was to maintain law and order but, now the concept of welfare state is more prominent. Under the concept of welfare state, the state has to retain full employment and is committed to an enormous extension of the state activities for providing security from the cradle to grave. Besides, the concept of welfare state has led to a considerable expansion in government activities both intensively and extensively. This has resulted in a huge increase of government expenditure in developing countries that has been explained by the factors like enhancement of cost of defense, national security against foreign aggression, growth of population, urbanization, and growing concern of the state in the welfare of the citizens.

It is observed that the relevance of public expenditure in general and social sector expenditure in particular, has become the need of hour. Hence, the expenditure on social sector also increased with the passage of time having a motive

of welfare of the people. Social sector contains the expenditure on sub-sectors like education, health, nutrition and social welfare and rural development etc the relevance of such expenditure in present time is certified as Human development index to include these variables as indicator of development. United nation also accepted the criterion and started ranking of countries on the basic of human development index. India also achieving the heights in HDI time and again, hence reached at medium ranking form the lower one, yet a lot has to achieve in the upcoming year, that could be possible after increasing the social sector expenditure.

Himachal Pradesh and Kerala, has remarkable achievements in the field of social sector.They have marked similarities not only with respect to their social sector model, but in case of other spheres also. Whereas, Kerala stands number one with respect to social sector development in the category of large states, it be so with respect to Himachal Pradesh in the group of small states.Kerala has achieved universal literacy; Himachal Pradesh too is very close to this target with respect to both males and females. The health care indices in these two states are also comparable to countries with more advanced economies.

REVIEW OF LITERATURE

- Sacks and Harris (1964) analyzed various determinants of state andlocal government expenditure. They highlighted that fiscal transfers play an important role inachieving inter-state equity.

- Fisher (1964) postulated that public expenditure is influenced by the distribution of income along with tax capacity.

- Adams (1966) indicated that social philosophy had a positive influence and individualistic philosophy had a negative impact on the level of public expenditure.

- Sharma (1978) found that in Indian states, the growth of public expenditure in general and social sector in particular, affected by the fiscal efforts of respective government.

- Singh and Sahni (1984)studied the causality direction between national income and public expenditure in India by using the Granger test. The study considers the total as wellas disaggregated expenditure data was used for the period 1950 to 1981, and concluded that thestudy did not support the Wagnerian hypothesis.

- Bhatt et.al (1991) applied Granger, Sims and multiple Rank F-tests toexamine the nature of causal relation between public expenditure and nationalincome in different states in India. The study covered the time period from theyear 1969 to 1989–90. The Granger test by and large supported the Keynesianview that public expenditure promotes income growth. However, the Sims testproduced evidence in favour of Wagnerian view, advocating the reversecausation. Sims test and the multiple ranks F-test showed evidence in favour ofthe unidirectional causation running from the public expenditure to income,supporting the Keynesian view.

- Bhatt and others (1993) made an attempt to inquire the nature ofcausal relationship between total expenditure and tax receipts during the period 1969-70 to 1998in India. The Granger, Sims and multiple F-ranksare applied in the study to test the causationbetween total expenditure and tax revenue. It was concluded that there exist unidirectional causality relationship between thegovernment expenditure and tax revenue.

- Khalid Qudair (2000) conducted a study of Saudi Arabia during the period 1970 to 1999.He investigated the relationship between differentmeasures of real government expenditure, and real Gross Domestic Product using

Engle-Granger co-integrationtechnique. The finding of this paper support Wagner's Law, certify that the realgovernment expenditure is determined largely by real Gross Domestic Product.

OBJECTIVE OF THE STUDY

The present study is an attempt to analyze therelationship between social sector expenditure and net state domestic product in Himachal Pradesh and Kerala.Therefore, the study aims to find out the causality relationship between social sector expenditure and net state domestic product in the both states, respectively.

METHODOLOGY

The study is based on secondary data. The data is collectedfrom various relevant issues of Economic Surveys published by Governmentof Himachal Pradesh and Kerala, reports of Comptroller and Auditor General of India,budget documents of Government of both states, Annual FinancialStatements of Government of the respective states. In order to investigate the direction of causality between social sector expenditure and GSDP in Himachal Pradesh and Kerala using annual data for the period 1971to 2016, Granger Test is used. Granger Causality is a kind of statistical feedback. This theorem states that a time series Y is said to be caused by a time series X, if current value of Y can be better predicted by best value of X and Y than past value of Y alone. Clearly, this theorem is based on the improvement of the predictive efficiency of the model with the introduction of the best value of X. To test the causality following model will be used:

$$Y_t = \alpha \sum_{i=1}^{a} \beta_1 Y_{t-1} + \sum_{i=1}^{r} Y_i X_{t-i} + v_{1t} \tag{1}$$

$$Y_t = \alpha^1 \sum_{i=1}^{n} \beta^1 Y_{t-1} + \sum_{i=1}^{m} Y_i X_{t-i} + v_{2t} \tag{2}$$

$$\text{or as} \begin{bmatrix} \Phi_1 & \Phi_{12} \\ \Phi_{21} & \Phi_{22} \end{bmatrix} \begin{bmatrix} Y_t \\ X^t \end{bmatrix} \begin{bmatrix} a \\ a^1 \end{bmatrix} \begin{bmatrix} V_1^t \\ V_2^t \end{bmatrix} \tag{3}$$

Where ϕab (a, b=1, 2) are as defined above.

Granger bivariate casualty can be deduced as:

$X_t \rightarrow Y_t$ (X_t cause Y_t if $\phi_{12} \neq O$)

$Y_t \rightarrow X_t$ (Y_t cause X_t if $\phi_{21} \neq O$)

$X_t \rightarrow Y_t$ (X_t cause Y_t and Y_{-t} cause X_{t1} if neither ϕ_{12} nor ϕ_{21} is zero)

X_t and Y_t are independent if $\phi_{12} = \phi_{21} = O$

FINDINGS

Causality betweenNSDP and Social Sector Expenditure

An attempt is made to identify the causality between the NSDP and total social sector expenditure in Himachal Pradesh as well as Kerala.

There are two rivalschools of thought defining the causalrelationship. First, Wagner (1890) hypothesize that public expenditure is anendogenous variable and grows faster than the national income. Wagner'slaw viewed that public

expenditure plays no role in generating nationalincome; hence, the causality direction runs from national income to publicexpenditure. However, Keynes (1936) argued that public expenditure is anexogenous variable and can be used to generate national income. For thisreason, public expenditure is a cause rather than effect of national income. Therefore, the causal relationship should run from public expenditure tonational income. In both the approaches, the focus is only on theunidirectional causal link between the public expenditure and the national income. Social Sector expenditure is an important part of public expenditure therefore; both theoretical aspects are equally applied in this case also.

Time series data has been used to examine the direction of causality between social sector expenditure and NSDP in Himachal Pradesh and Kerala. Firstly, thestatistical properties of the data are examined, such as stationarityandsubsequently an attempt is made to determine whether or not there is long-termrelationship between the two variables by using methodology developedby Granger to test the hypotheses.

Many macroeconomic time series contain unit roots dominated bystochastic trends, as developed by Nelson &Plosser (1982). Unit roosts areimportant in examining the stationarityof a time series, because a non-stationaryregressor invalidates many standard empirical results. Thepresence of a stochastic trend is determined by testing the presence of unitroots in time series data. In this study, an investigation of the stationarityproperties of the time series using the graphical, partial autocorrelation andAugmented Dickey-Fuller (ADF) test is made.For studying the causality between the aforementioned variables, it isnecessary that they are stationary. For checking stationarity, the graphical,autocorrelation and Unit root test are applied. Unit root is applied on levelsthen differencing the equations till stationarity is arrived. The causality resultof variables is obtained only on filtered series, which shows that this test onactual data and first differenced series is sensitive to an existence ofautocorrelation among the residuals. After making data stationary, Grangers 'causality test is applied to interpret final results of causality.

StationarybetweenNSDP & Variables of Social Sector Expenditure

Firstly, both the variables NSDP and Total expenditure on Social sector are made stationary the causality is tested

Unit Root Test for Stationarity of NSDP

H_o: NSDP has a unit root (data is non-stationary)

H_1: NSDP does not have a unit root (data is stationary)

Table 1:Augmented Dickey Fuller Test Statistics for the Variables of Social Sector Expenditure

S.No	Variables	t-value p-value	Levels		1st difference		2nd difference	
			H.P	Kerala	H.P	Kerala	H.P	Kerala
1	NSDP	t-value p-value	12.25(1.00)	4.79(1.00)	0.06(0.95)	3.40(1.00)	-12.33(0.00)	-7.08(0.00)
2	Social Sector expenditure	t-value p-value	-0.97(0.75)	3.75(1.00)	3.75(1.00)	3.40(1.00)	-8.63(0.00)	-12.45(0.00)
*= 1 % Level of significance **=5 % Level of significance ***=10% Level of significance								

Table 1 shows that NSDP of both state i.e. Himachal Pradesh and Kerala was not stationary at level, as the p-value is >0.05 and null hypothesis is accepted. It is observed that the p-value of Augmented Dickey Fuller test is greater than the critical values at 1%, 5% and 10% level of significance which, indicates that NSDP has a unit root at level,

thereby, indicating that the data is non-stationary at level. In order to make the data stationary, first difference of NSDP was computed and the ADF test was conducted on it. It is found that the value of Augmented Dickey Fuller test is greater than the critical values at 1%, 5% and 10% level of significance which, indicates that NSDP has a unit root at the first difference and data is non-stationary at the first difference also. The test is then conducted after taking the second difference of the first differenced equation, and found that the value of Augmented Dickey Fuller test is smaller than the critical values at 1%, 5% and 10% level of significance, which indicates that NSDP does not have a unit root at the second difference, thereby indicating that the data is stationary at the second difference at all the three 1%, 5% and 10% level of significance.

Similarly, ADF test is applied on total social sector expenditure in Himachal Pradesh and Kerala. The test is applied firstly at level, if not stationary; ADF test is applied on first difference and on the second difference.

Table 2: P Values and their Contemporary Interpretation

p-Values	Interpretations
$p \leq 0.01$ (1%)	Very strong evidence against null hypothesis, i.e. result is highly significant
$0.01 < p < 0.05$ (1% to 5%)	Strong evidence against null hypothesis, i.e. result is significant
$0.05 < p < 0.10$ (5% to 10%)	Moderate evidence against null hypothesis, i.e. result is marginally significant
$p > 0.10$ (10%)	Little or no evidence against null hypothesis, i.e. result is not significant

Table 2 depicts that social sector expenditure of Himachal Pradesh became stationary at the second difference. On the other hand, the social sector expenditure of state of Kerala became stationarity at second difference. Figure 1 depicts the stationarity and non-stationarity of various variables of both states, respectively.

Causality between Total Social Sector Expenditure and NSDP in Himachal Pradesh and Kerala

Granger Causality Test between total social sector expenditure and NSDP in Himachal Pradesh reveals(Table 3) that null hypothesis is accepted as p-value is 0.474 meaningthereby, that the total social sector expenditure does not affects NSDP and alternate hypothesis isaccepted.Further, the analysis revealed that NSDP does Granger cause total social sector expenditure as the p-values are less than the critical values. The p-value is 0.020, which depicts that the null hypothesis i.e. NSDP does not Grangercause total expenditure is rejected. The result shows that there existsuni-directional causality between total social sector expenditure and NSDP. Total social sector expenditure does not Granger causes NSDP however; NSDP granger cause total social sector expenditure.It is observed that in Himachal Pradesh, Causality runs from NSDP to total social sector expenditure. The present study does support Wagner'sHypothesis of long run relationship between public expenditure and GSDP that stated the long-run relationship between total expenditure and GSDP, causality runs fromGSDP to total expenditure.There is not an empirical support to Keynesian's law in Himachal Pradesh for the period 1971–72 to 2015–16.

GRAPHS

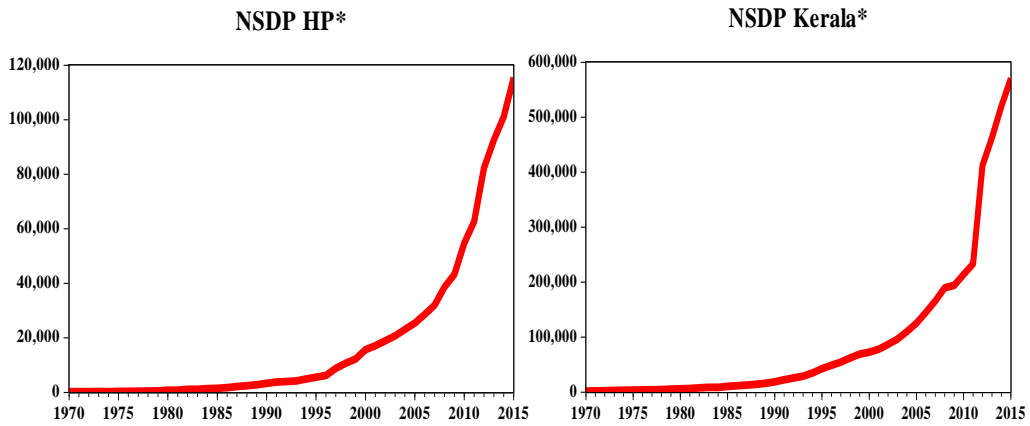**Graphs Showing non Stationary and Stationary of NSDP of HP and Kerala**
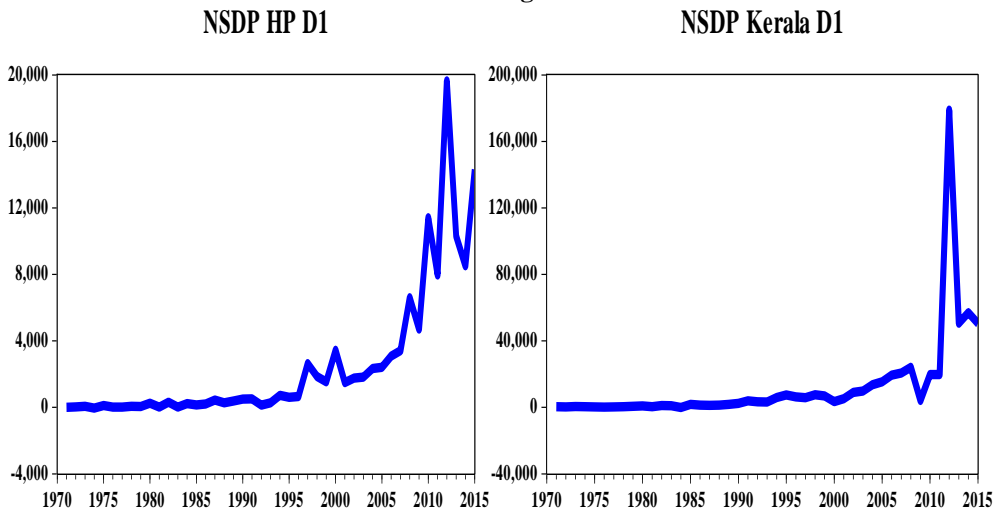
NSDP HP*

NSDP Kerala*

Figure1

NSDP HP D1

NSDP Kerala D1

Figure2
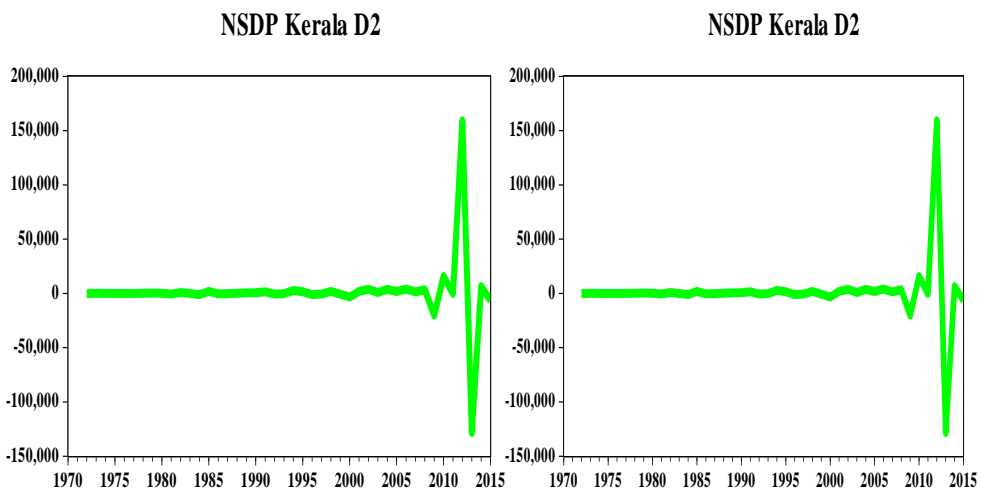
NSDP Kerala D2

NSDP Kerala D2

Figure3

*Augmented Dickey Fuller Test at Level

D1= Augmented Dickey Fuller Test at First Difference

D2=*Augmented Dickey Fuller Test at Second Difference*

Graphs showing non stationary and stationary of Social Sector Expenditure in HP and Kerala
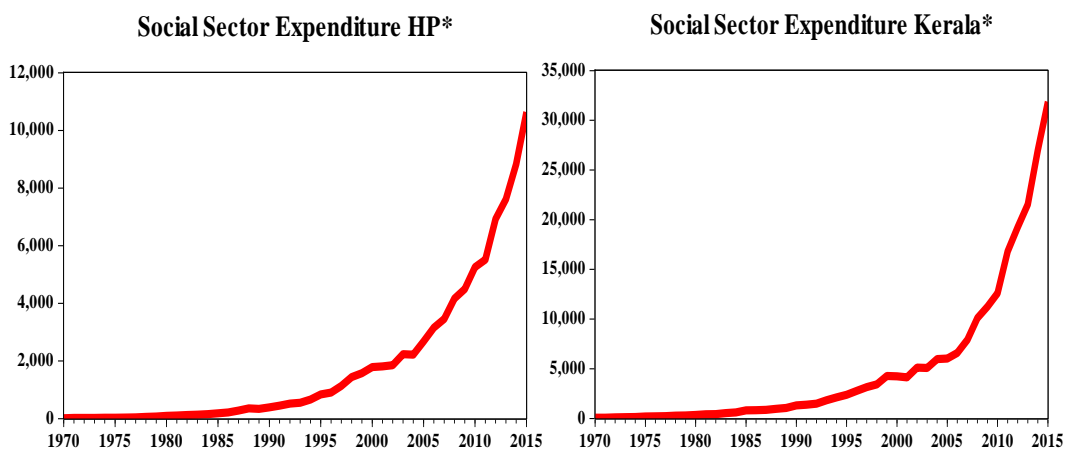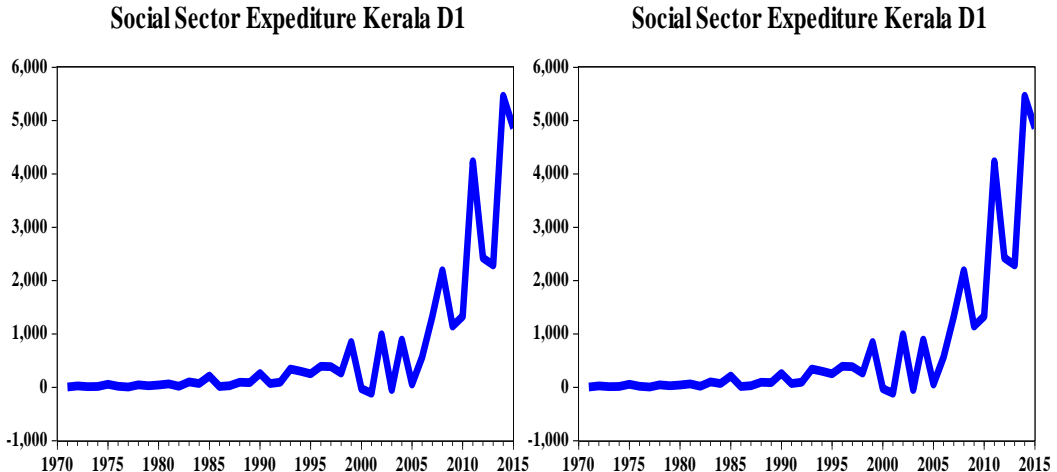
Social Sector Expenditure HP*   **Social Sector Expenditure Kerala***

Figure4

Social Sector Expediture Kerala D1   **Social Sector Expediture Kerala D1**

Figure5

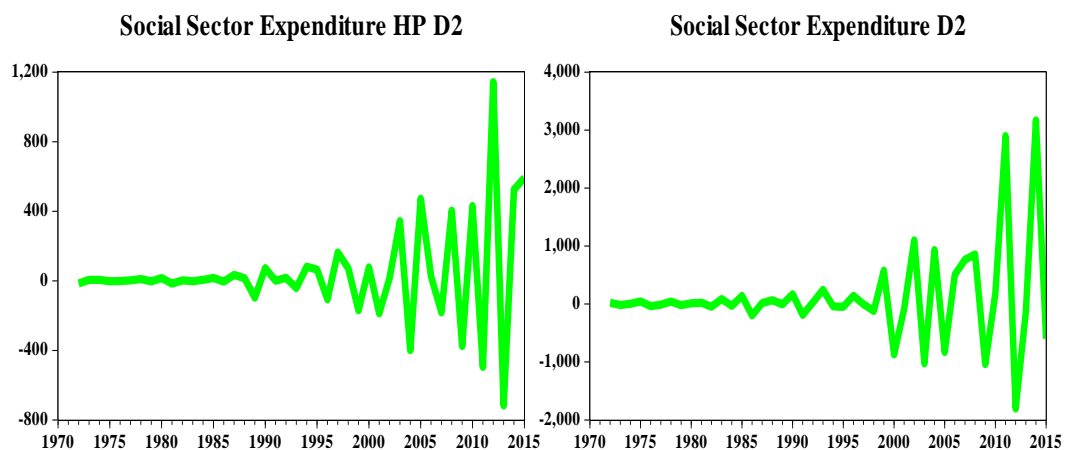**Social Sector Expenditure HP D2**   **Social Sector Expenditure D2**

Figure6

Augmented Dickey Fuller Test at Level

D1= Augmented Dickey Fuller Test at First Difference

D2=*Augmented Dickey Fuller Test at Second Difference*

Table 3:Granger's Causality Results for Variables of Expenditure on Social Sector in Himachal Pradesh and Kerala

S.No	Variables	F-statistics		p-values		Type of causality	
		H.P	Kerala	H.P	Kerala	H.P	Kerala
1	Total Social Sector Expenditure does not Granger Cause NSDPNSDP does not Granger Cause Total Social Sector Expenditure	3.314 3.000	8.446 0.166	0.474 0.020**	0.001* 0.847	Uni-directional Causality	Uni-directional Causality

*= 1 % level of significance
**=5 % level of significance
***=10 % level of significance

On the other hand, in Kerala, Granger Causality Test between total social sector expenditure and NSDP rejects the null hypothesis as p-value is 0.001 meaningthereby, that the total expenditure affects NSDP and alternate hypothesis isaccepted.Further, the analysis revealed that NSDP does not Granger becausethe total social sector expenditure, as the p-values is greater than the critical values. The p-value is 0.847, which depicts that the null hypothesis i.e. NSDP does not Grangercause total social sector expenditure is accepted. The result shows that there existsunidirectional causality between total social sector expenditure and NSDP. Total expenditure Granger causes NSDP however; NSDP does not cause total social sector expenditure.It is observed that in Kerala, Causality runs from total social sector expenditure to NSDP, whereas in case of Wagner's Law which studies long-run relationship between total expenditure and GSDP, causality runs fromGSDP to total expenditure. The present study does not support Wagner'sHypothesis of long run relationship between social sector expenditure and NSDP in the case of Kerala.There is an empirical support to Keynesian's law in Kerala,for the whole period under study.

CONCLUSIONS

The states of Himachal Pradesh and Kerala are the best performer in terms of social sector expenditure at national level. Education, health, rural development is the main components in which, Kerala is compared to the most developed nations of the world. On the other, hand economic indicators are not much as good as needed in Kerala that is known as dilemma of the state. Himachal is also near to achieve the universal literary both in male and female category.As per as causality between social sector expenditure and NSDP is concerned,the study does support Wagner'sHypothesis of long run relationship between social sector expenditure and GSDP that stated the long-run relationship between total expenditure and GSDP, causality runs fromGSDP to total expenditure. There is not an empirical support to Keynesian's law in Himachal Pradesh for the period 1971-72 to 2015-16. The causality run in the state of Kerala does not support Hypothesis of long run relationship between public expenditure and GSDP.There is an empirical support to Keynesian's law in Kerala for the whole period under study.

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AUTHOR PROFILE

Satpal is working as Assistant Professor in the Department of Economics, Govt. Degree College Rampur Bsr. District Shimla, Himachal Pradesh for last three years. He has completed M.A, M.Phil in Economics, and presently pursuing PhD in Economics, from Himachal Pradesh University Shimla-5. He had worked on "Growth and structure of Forest Sector in Himachal Pradesh" for the completion of M.Phil degree in 2011. Presently pursuing PhD on the research problem titled, "Growth, trends and determinants of social sector expenditure in Himachal Pradesh and Kerala". He has worked on various issues related to Himachal Pradesh and published various articles in editorial page of local news papers time and again.

Dr. K.C Sharma, is a Professor in the Department of Economics, Centre of Evening Studies, HP University, Shimla for last 20 years. He is MA, M.Phil and PhD in Economics. He has supervised more than fifty M.Phil students and around forty PhD students in his tenure. His area of specifications is agriculture, horticulture, banking, and many other aspects of the social sector with respect to Himachal Pradesh and other neighboring states. He has attended and presented research papers in many national and international conferences all over India