Causal Linkage Between Social Sector Expenditure and Economic Growth: Evidence From India

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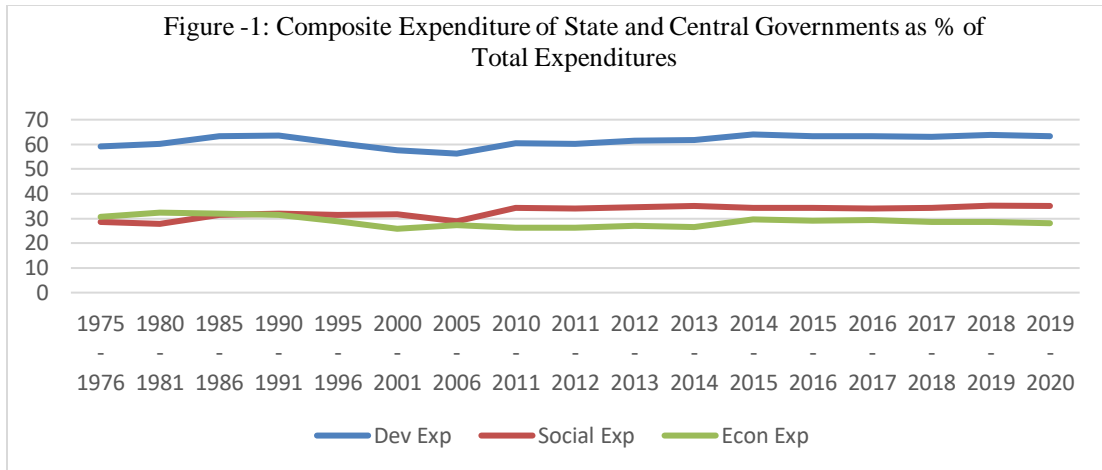
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Abstract: The development process across the world observed a relationship between expenditure in social sectors and economic development. Academicians and policymakers have widely discussed the growth-propelling role of the social sector. This paper studies the causal relationship between spending in the social sector and economic development using annual time series data from 1972-73 to 2019-2020 for India. The results portray a significant bi-directional relationship between GDP per capita and expenditures on education, family welfare, housing, urban development, water supply and sanitation, nutrition, social security and welfare, labour and labour laws and welfare of scheduled caste and tribes. However, there exists a unidirectional causality from health expenditure to economic development. This result indicates the significant contribution of social spending on the economic growth of a developing country like India, which will be of substantial help to the policymakers to devise appropriate policies.
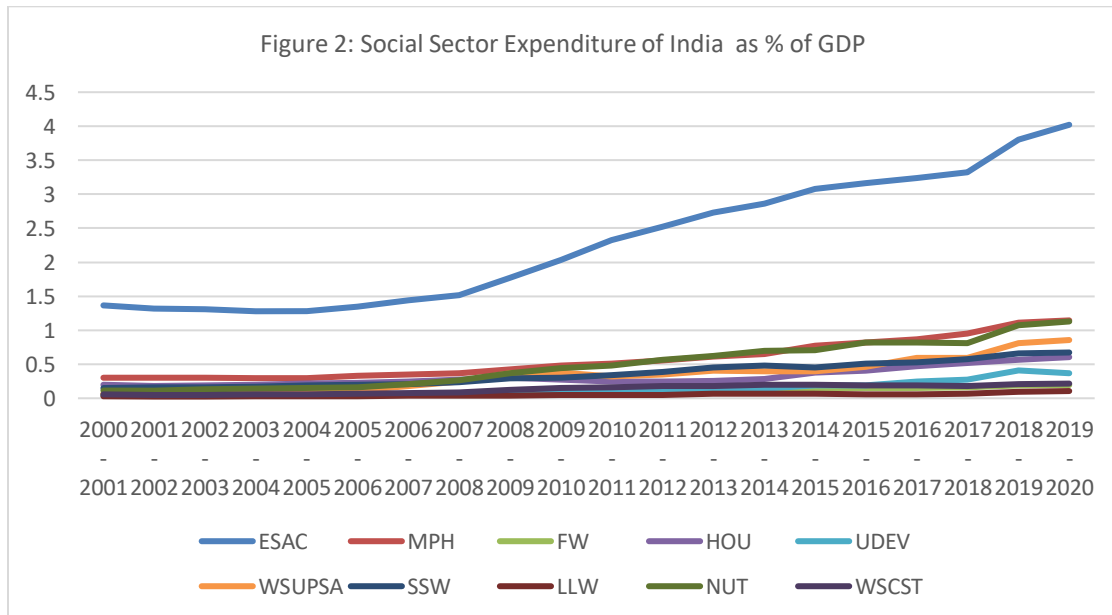
Keywords: Social expenditure, Per capita GDP, Social development, human development and social stock exchange

1. Introduction

The extant literature in macroeconomics has accentuated the significance of both social and economic progress in the economic development of a nation (Sen, 2005; Devi, 2005). India, too, has demonstrated immense interest in social and economic sector development as both contribute to economic growth. India's development expenditure as the percentage of total spending has hovered around 60 percent of the total expenditure across the past several decades (Figure 1). While the social development expenditure had increased from 28% in 1975 to 35% in 2019, the economic sector expenditure is steady at around 30% of total spending. In terms of GDP, growth of developmental outlays, which was merely 1% of GDP during 1985-1986, jumped to 17% of GDP in 2019-2020. The social sector spending had also increased from 0.27% of GDP in 1985-1986 to 9.58% of GDP in 2019-2020.

Figure -1: Composite Expenditure of State and Central Governments as % of Total Expenditures

Authors own Construct based on data from EPWRF

Figure 2: Social Sector Expenditure of India as % of GDP

Authors own Construct based on data from EPWRF

In this paper, we focus mainly on sector-specific spending and its causal linkage with economic growth. The study has identified ten social sectors, namely Education, Sports, Art and Culture (EASC), Medical and Public Health (MPH), Family Welfare (FW), Water Supply and Sanitation (WSUPSA), Housing (HOU), Urban Development (UDEV), Welfare of Scheduled Caste, Scheduled Tribes and OBC (WSCST), Labour and Labour Welfare (LLW), Social Security and Welfare (SSW), Nutrition (NUT). Figure 2 shows the trend of social sector spending in India. As a percentage of GDP, social sector spending in education is highest (4 percent), while spending on other sectors hovers around 0.5 to 1% of GDP (Table 1).

Table-1: Social Sector Expenditure of India as% of GDP

Year	ESAC	MPH	FW	HOU	UDEV	WSUPSA	SSW	LLW	NUT	WSCST
2000 - 2001	1.367	0.306	0.055	0.196	0.041	0.069	0.150	0.028	0.114	0.057
2001 - 2002	1.314	0.299	0.055	0.181	0.039	0.079	0.159	0.025	0.112	0.050
2002 - 2003	1.312	0.299	0.051	0.192	0.044	0.085	0.164	0.025	0.132	0.048
2003 - 2004	1.279	0.296	0.049	0.198	0.046	0.113	0.167	0.027	0.143	0.056
2004 - 2005	1.284	0.296	0.046	0.221	0.052	0.121	0.185	0.027	0.149	0.059
2005 - 2006	1.350	0.326	0.047	0.231	0.046	0.118	0.198	0.028	0.160	0.068
2006 - 2007	1.439	0.349	0.048	0.241	0.060	0.176	0.211	0.039	0.206	0.076
2007 - 2008	1.513	0.368	0.052	0.278	0.073	0.242	0.239	0.034	0.263	0.090
2008 - 2009	1.774	0.420	0.064	0.305	0.100	0.365	0.289	0.040	0.367	0.119
2009 - 2010	2.037	0.478	0.076	0.270	0.089	0.378	0.301	0.044	0.440	0.147
2010 - 2011	2.321	0.510	0.082	0.245	0.114	0.323	0.339	0.049	0.481	0.162
2011 - 2012	2.526	0.560	0.088	0.248	0.113	0.346	0.390	0.050	0.567	0.180
2012 - 2013	2.726	0.616	0.104	0.259	0.141	0.406	0.448	0.064	0.620	0.184
2013 - 2014	2.866	0.653	0.106	0.288	0.140	0.398	0.478	0.071	0.693	0.200
2014 - 2015	3.079	0.770	0.147	0.373	0.190	0.394	0.455	0.071	0.710	0.194
2015 - 2016	3.167	0.821	0.147	0.404	0.192	0.463	0.512	0.062	0.821	0.190
2016 - 2017	3.239	0.870	0.147	0.471	0.242	0.598	0.532	0.061	0.821	0.185
2017 - 2018	3.324	0.952	0.159	0.515	0.277	0.593	0.577	0.070	0.807	0.178
2018 - 2019	3.803	1.115	0.185	0.570	0.409	0.814	0.657	0.092	1.078	0.206
2019 - 2020	4.021	1.145	0.195	0.605	0.364	0.856	0.673	0.106	1.129	0.216

Authors own Estimation

The primary motivation in conducting this research lies in the fact that, although India is the fifth biggest economy globally, a significant portion of its population still relies on the government provisioning for essential services. "*The government is committed to investing in social sector viz education, healthcare, skill development, providing employment opportunity, housing, sanitation etc. to bring overall improvement in socio-economic indicators and achieving SDGs*" (Economic Survey 2020-21 Volume 2, pp 361). Thus, the government of India commits to the development of the masses and ushers, the social obligation to eliminate illiteracy, malnutrition, poverty, unemployment, etc., by allocating resources towards meeting societies' needs. The Indian government, to uplift the quality of life of its citizens, has endeavored to set up the Social Stock Exchange (SSE), which would direct more resources into the social sector. The social sector spending has also been strengthened by the inclusion of the CSR funds, i.e., 2-3% of companies profit, as prescribed by the Companies Act 2013. The SSE panel and Securities Exchange Board of India (SEBI) are framing guidelines for the government to identify the priority sector and direct their attention for uplifting the industry by delivering developmental policies. To achieve the SDG (Sustainable Development Goals) goals 2030, India is drawing the attention of investors for investment in Social sector Impact Bonds, Green bonds and making the funds available for the development of the social sector.

The rest of the paper is organized as follows: section two details the theoretical background and perspective in the social sector spending, followed by a literature review in section three. Section four entails the data and the methods followed by results and discussion in section five. Section six concludes the paper.

Theoretical Perspective
Social Sector
 'Social sector' expenditure is defined as public expenditure incurred under the heading' social services' and 'rural development in the budgets. The social services sector emphasizes expenditure on education, sports, art and culture, medical and public health, family welfare, water supply and sanitation, housing, urban development, the welfare of scheduled caste, scheduled tribes and other backward classes, labour and labour welfare, social security and welfare, and nutrition. The 'rural development' comes under the 'economic services' and includes expenditure on anti-poverty and employment generation schemes. Such expenditure either takes the form of revenue expenditure or capital expenditure. There are two main perspectives to understand the social sector; i.e., Human Resource Development and Human Development.

Human Resource Development Approach
According to this approach, social sectors are those which enhance human capital. Human capital refers to "the stock of skills and productive knowledge embodied in people." It indicates to those agents in the economy who can generate income. The proponents of this theory stressed that human capital formation happens when people invest in schooling, health, on-the-job training, and searching for information about job opportunities and migration. Therefore, investments in sectors like education, health, and labor welfare improve labor-force productivity and are justified for two reasons: First, it helps to increase the financial rate of return in terms of increase in the per capita income (due to education spending), and second, improved firm-level productivity due to better health (Schultz, 1961 & Becker, 1962).

Human Development Approach
Human development, as per several studies has proved to be an alternative approach to social development. According to United Nations Development Program (UNDP), it is "*the process of enlarging people's choices and focuses on the state of existence of people and includes empowerment, cooperation, equity in basic capabilities and opportunities, sustainability and security*." It claims to put people in the limelight, improves their basic capabilities by increasing their intrinsic value through the supportive measures of education, health, and nutrition. To sum up, while the human development approach treats human beings as ends in themselves, the human resources development approach focuses on the means or the productivity aspects of human beings. One commonality between the two concepts is that human resource development provides the precondition for human development, which in turn contributes to economic growth.

Social and Economic Development
To understand the impact of social sector spending on economic development, it becomes imperative to highlight the outcome of social expenditure in the form of social development. The UNDP defines social development as "*sustainable human development which enhances human capabilities for enlarging human choices.*" The three main aspects of social development, i.e., social services, social transfers, and social integration. Social services refer to as health and education services. Social transfers entail social security, livelihood generation, and remunerative employment, and finally, social integration reduces violence through peace (Streetan, 1981).

In another study, Ghai (2000) confirms strong leadership committed to social service provision; strong state capacity, infrastructure, and the state's central role in providing social services; and the composition of social spending, especially on primary education and healthcare as the main contributing factors in determining social development. Researchers also report that "Social Development is a process of transformation in values, institutions, and practices, brought about the deliberate use of policy and planning instruments with the active involvement of concerned people to raise their levels of living and quality of life". On the other hand, economic development refers to the increase in per capita income, per capita value-added, etc., of the citizens of a country.

Literature Review

The review of studies on the relationship between public expenditure and economic development observed mixed evidence. Public spending in the social sector influences development by creating socially inclusive, healthy, and economically solid societies and enhances productivity (Mundle, 1998; Arora, 2001; Guha and Chakraborty, 2003; Majumder, 2005; Dev and Ravi 2007; Kannan and Pillai, 2007; Sen and Karmakar, 2007). There is a negative causal relationship between state spending on education and health on economic development in African nations, mostly due to corruption, bureaucratic defects, and underinvestment (Eggoh et al., 2015). The studies made by Kormendi & Meguire, 1985 witnessed no relationship between social sector expenditure and economic growth.

Education and health are the primary components of the social sector spending for any country. For instance, Gupta & Verhoeven (2001) has compared the education and health spending efficiency for 37 African countries with countries from Asia, Europe, and America and found massive inefficiencies for African countries versus others. These inefficiencies result from primarily high government wages and the intra-sectoral allocation of government resources but are unrelated to private spending. In another study, Gupta et al. (2002) highlighted that improved access to schools and reduced child mortality were the main concerns of governments in India. Hence, they have pumped significant investment into the education and health sectors. Public expenditure on health care facilities protects people from various health hazards, viz., malnutrition, infant and maternal mortality, and helps in improving the quality of life of people and development of human resources in an economy (Arora, 2001; Bloom & Canning, 2005; Majhi & Malik, 2018).

Esfahani & Ramirez, 2003; Hong et al. 2011 argues that public expenditure on transport & communication accelerates economic growth by propagating different socio-economic activities in the most accessible mode. Further, health gain and improving the productivity of the masses through better sanitation and clean drinking water supply bears better results (Purohit, 2014; Pattayat& Rani, 2017). Public expenditure on social security uplifts the educational and health conditions of the weaker and vulnerable sections in society and provides stamina in enhancing their living standards (Ohlan, 2013; Sen &Sahu, 2017). Thus, public expenditure on education, health, and basic economic infrastructure brings a harmonious relationship between social and private interest and enhancement of labor productivity, contributing to the overall development of an economy.

Regarding cyclicality of social spending, using the sample of middle-income economies, Doytch et al. 2010 examined the indicators of economic growth and social sector spending focusing on education and health. They concluded that expenditure on education was acyclical whereas spending on health was procyclical.

But while comparing this result with the high-income countries, the spending on education and health is counter-cyclical. In another work, Del Granado et al. (2013) compares the developed and emerging countries. The results portray that social spending on education and health is procyclical in developing countries and a cyclical in developed countries. The study also indicates that the spending on health and education behaves in an asymmetric pattern i.e., procyclical during good times and a cyclical during bad times.

2. Method

The study uses annual time series data on ten social sector expenditure and economic development variables (such as gross domestic product and per capita income) from 1972-73 to 2019-2020 for India (see Table 2). The study considers expenditure on education, sports, art and culture, medical and public health, family welfare, water supply and sanitation, housing, urban development, the welfare of scheduled caste, scheduled tribes and other backward classes, labour, and labour welfare, social security and welfare, and nutrition. We collect data from the EPWRF database.

Table 2: List of Variables sourced from EPWRF

GDPPC	Per Capita Gross Domestic Product
ESAC	Education, Sports, Art and Culture
MPH	Medical and Public Health
FW	Family Welfare
WSUPSA	Water Supply and Sanitation
HOU	Housing
UDEV	Urban Development
WSCST	Welfare of Scheduled Caste, Scheduled Tribes and OBC
LLW	Labour and Labour Welfare
SSW	Social Security and Welfare
NUT	Nutrition

We use a battery of econometric techniques for determining the causal relationship between social sector expenditure and economic development in India. We employ the Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) unit root test to test the stationarity. The ADF test is as follows:

$$\Delta Y_t = \alpha_0 + \alpha_1 t + \alpha_2 Y_{t-1} + \sum_{j=1}^{p} \alpha_j \Delta Y_{t-j} + \varepsilon_t$$

The null hypothesis i.e., has a unit root, is rejected when the absolute ADF test value is higher than the critical value. It implies that the coefficient is significantly other than zero thus is stationary or does not contain a unit root.

On the other hand, the Phillips-Perron (PP) test is a modified Dickey-Fuller test that corrects autocorrelation and heteroskedasticity in the error term ε_t. One advantage of this test over conventional ADF is it selects lag length by itself . It is given by the following equation:

$$Y_t = \mu + \alpha y_{t-1} + \varepsilon_t \quad \ldots\ldots\ldots\ldots (2)$$

Next, we attempt to determine the optimal lag length using the VAR model. The optimal number of lag lengths (k) is selected by using the Akaike (AIC), Hannan and Quinn (HQIC), and Schwarz's Bayesian (SIC) information criteria. We follow Lutkepohl (1993) to link the maximum lag lengths (kmax) and the number of endogenous variables in the system (m) to the sample size (T) using the formula m x kmax=T1/3. After estimating the optimal lag, we estimate the long-run relationship(s) between the variables included in vector Yt, where Yt includes several integrated series at the same level. The long-run relationships between the variables included in vector Yt are estimated using Johansen Maximum Likelihood approach. Specifically, we denote Yt as a vector autoregressive process of order k (i.e., VAR(k))

$$Y_t = A_0 + \sum_{i=1}^{k} A_i Y_{t-i} + u_t \ \dots\dots\dots\dots\dots\dots\dots\dots(3)$$
$$\Delta Y_t = A_0 + \Pi Y_{t-i} + \sum_{i=1}^{k} \Gamma_i \Delta Y_{t-i} + u_t \ \dots\dots\dots\dots(4)$$

where Yt denotes a vector containing social sector expenditure variables and per capita GDP. To examine the long-run relationship(s) among variables under study, Johansen (1988) test has been established to test for the existence of cointegration relationships among the eleven variables of the model (r<11). This is equivalent to testing the hypothesis that the rank of matrix Π in Eq. (4) is at most r. Reduced-rank regression can then be used to form a likelihood ratio test of that hypothesis based on the so-called trace statistic, or the maximum eigenvalue statistic.

Next, to ascertain the direction of causal flows, we employ the Toda and Yamamoto (1995) causality test, as all series under consideration is found to be I(1). The advantage of using this test is, it can be applied in any of the following cases i.e., the VAR's may be stationary around a deterministic trend, integrated of any arbitrary order, or co-integrated of any arbitrary order. Although, it is like the conventional Granger causality test but has one superior property i.e., with extra lags depending on the maximum order of integration of the series under consideration augments the results. In this approach, we construct a vector-autoregressive model (VAR) in their levels with a total of (k+dmax) lags, where k is the optimal number of lagged terms included which is determined by AIC / SIC criteria. Thus, if k = 1 and if two series yt and xt have different orders of integration, viz., I (0) and I (1) respectively so that dmax =1, then one extra lag is added to each variable. Thus a VAR with two lags is constructed as follows:

$$\begin{bmatrix} y_t \\ x_t \end{bmatrix} = \begin{bmatrix} \beta_{10} \\ \beta_{20} \end{bmatrix} + \begin{bmatrix} \beta_{11}^{(1)} & \beta_{12}^{(1)} \\ \beta_{21}^{(1)} & \beta_{22}^{(1)} \end{bmatrix} \begin{bmatrix} y_{t-1} \\ x_{t-1} \end{bmatrix} + \begin{bmatrix} \beta_{11}^{(2)} & \beta_{12}^{(2)} \\ \beta_{21}^{(2)} & \beta_{22}^{(2)} \end{bmatrix} \begin{bmatrix} y_{t-1} \\ x_{t-1} \end{bmatrix} + \begin{bmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \end{bmatrix} \qquad (3)$$

Then, we conduct a wald test which follows an asymptotic χ2 distribution and is applied if the series under consideration are I (0), I (1) or I (2). It can be also considered even if the series is non-cointegrated and/or the stability and rank conditions are not satisfied, provided "the order of integration of the process does not exceed the true lag length of the model" (Toda and Yamamoto,1995).

3.   Findings and Discussions

The results of ADF and the PP test (given in Table 3) confirm the stationarity of the study variables. The results demonstrate that no variables in their levels have stationarity, as the test statistics fail to reject the null hypothesis of the unit root test. It indicates that the variables are non-stationary in their level; hence we have to check them at a higher order of differencing. Therefore, we consider the first difference of the

variables, and the results reject the null hypothesis of the unit root test at the individual level of significance. The result shows the integration of order one with the first difference of the variables under study.

Following that the variables are stationary in their first difference; we conduct the Johansen Cointegration Test (results reported in Table 4) to check for the long-run relationship between the variables. The results, i.e., the trace statistics and the max eigenvalues, reflect that the social sector expenditure variables and GDP per capita have a long-run relationship. This result gave us hope for striving towards the study's primary objective, i.e., testing for the hypothesized causality between public expenditure on various social sectors and per capita GDP.

Table 3 :Unit Root Test

	ADF Test		PP TEST		Order of
	Level	1st Diff	Level	1st Diff	Integration
GDP	6.27	-3.47**	10.68	-3.36***	I(1)
GDPPC	1.19	-3.24**	6.36	-4.17*	I(1)
ESAC	9.07	-6.26*	10.17	-5.17*	I(1)
MPH	11.74	-3.74**	6.70	-8.24*	I(1)
FW	4.91	-4.94*	10.18	-5.01*	I(1)
HOU	11.25	-4.92*	3.14	-6.89*	I(1)
UDEV	6.04	-6.01*	6.42	-5.83*	I(1)
WSUPSA	0.34	-10.74*	6.45	-3.25**	I(1)
SSW	7.82	-4.91*	8.57	-5.90*	I(1)
LLW	3.29	-3.83**	8.19	-3.67**	I(1)
NUT	2.93	-4.76*	2.49	-4.84*	I(1)
WSCST	5.59	-3.95**	6.67	-3.94**	I(1)

*, ** , *** denotes significance at 1%, 5% and 10% respectively .

Author's own Estimation

Table 4: Johansen Cointegration Test

Null Hypothesis	Trace Stat	5% critical Value	Max Eigen Value	5% critical value
Ho: r ≤ 0	1279.56	334.98	281.23	76.58
Ho: r ≤ 1	998.32	285.14	235.70	70.54
Ho: r ≤ 2	762.63	239.24	193.68	64.50
Ho: r ≤ 3	568.94	197.37	169.67	58.43
Ho: r ≤ 4	399.28	159.53	119.96	52.36
Ho: r ≤ 5	279.32	125.62	88.94	46.23
Ho: r ≤ 6	190.39	95.75	73.52	40.08
Ho: r ≤ 7	116.86	69.82	53.17	33.88
Ho: r ≤ 8	63.69	47.86	30.54	27.58

Author's own Estimation

Table 5 presents the results of the Toda and Yamamoto causality tests. It shows bi-directional causality between the per capita GDP and education expenditure. It indicates that India has significantly increased

education spending from merely 1 % of GDP in 2000 to more than 4 % of GDP by 2019 due to education's importance on growth. It has uplifted the education sector through facilitating access to schools, providing better teachers training, equipping schools with modern technology, providing students with learning resources, etc. (similar outcomes reported in the work of Sutherland et al., 2010). Further, the study observed a unidirectional causal flow from health to per capita GDP, indicating that safeguarding and uplifting the health conditions of the citizens of the country helps in the growth. Although India's growth process has multiplied in the past decades, the health expenditure has not grown at the same speed (i.e.,0.36% of GDP in 2000 to 1.145% of GDP in 2019-20).

Table 5: TY Causality Test

	F-stat	Prob
GDPPC - ESAC	2.62	0.09
ESAC- GDPPC	17.84	0.00
GDPPC - MPH	0.41	0.67
MPH- GDPPC	13.35	0.00
GDPPC - FW	3.57	0.04
FW- GDPPC	13.82	0.00
GDPPC - HOU	2.89	0.07
HOU- GDPPC	25.48	0.00
GDPPC - UDEV	5.68	0.01
UDEV- GDPPC	6.61	0.00
GDPPC - WSUPSA	6.85	0.00
WSUPSA - GDPPC	5.36	0.01
GDPPC - SSW	0.82	0.45
SSW - GDPPC	10.59	0.00
GDPPC -LLW	13.05	0.00
LLW- GDPPC	21.00	0.00
GDPPC - NUT	9.60	0.00
NUT - GDPPC	5.86	0.03
GDP PC- WSCST	2.51	0.09
WSCST - GDPPC	11.52	0.00

Author's own Estimation

Expenditure on other social sector areas like family welfare, housing, urban development, water supply and sanitation, nutrition, social security and welfare, labour welfare and welfare of scheduled caste and tribes show a bi-directional causality with GDP per capita. The results suggest that the budgetary allocation of the

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government of India on the social sector is helping to enhance the quality of life of its citizens and contributing towards social development which ultimately results in accelerating the development process of the economy. As the causality is bi-directional it can also be said that India's growth is also an impactful factor for the government to make expenditure on the social sector, as with economic growth people income level increases and demand for better social facilities get created in the system.

4. Conclusion

This study has examined the causal relationship between the social sector expenditure and economic development in India using the data for the period 1972-73 to 2019-2020. This analysis is important for the government of India in its effective resource allocation among different sectors and policy formulation on the implementation of welfare schemes. The results show significant bi-directional causal flow between GDP per capita and the expenditures on education, family welfare, housing, urban development, water supply and sanitation, nutrition, social security and welfare, labour and labour laws and welfare of scheduled caste and tribes. Hence, to improve the country's ranking in the human development index and poverty alleviation index, optimal management of public expenditure is vital for the government of Indian.

REFERENCES

Arora, S. (2001). Health, human productivity, and long-term economic growth. The Journal of Economic History, 61(3), 699-749.

Becker, S., & Green, D. (1962). Budgeting and employee behaviour. The journal of Business, 35(4), 392-402.

Bloom, D. E., & Canning, D. (2005). Health and economic growth: Reconciling the micro and macro evidence. Working Papers, 42. Centre on Democracy, Development and the Rule of Law. Stanford University. Retrieved from https://fsi-live.s3.us-west-1.amazonaws.com/s3fs-public/BloomCanning_42.pdf

Del Granado, J. A., Gupta, S., & Hajdenberg, A. (2013). Is social spending procyclical? Evidence for developing countries. World Development, 42, 16-27.

Dev, S. M., & Ravi, C. (2007). Poverty and inequality: All-India and states, 1983-2005. Economic and Political Weekly, 509-521.

Devi, T. N. (2005): "Role of the State in Social Sector: Some Reflections", Anvesk, 35(2): 71-84.

Doytch, N., Hu, B., & Mendoza, R. U. (2010). Social spending, fiscal space and governance: an analysis of patterns over the business cycle. UNICEF Policy and Practice, second draft.

Eggoh, J. Houeninvo, H., & Sossou, G. A. (2015). Education, health and economic growth in African countries. Journal of Economic Development, 40(1), 93-111.

Ghai, D. (2000). Social development and public policy: Some lessons from successful experiences. Social development and public policy 1-45. Palgrave Macmillan, London.

Government of India, Department of Economic Affairs (2021), Economic Survey 2020-21 Volume 2, 361

Guha, A., & Chakraborty, D. (2003). Relative positions of human development index across Indian States: some exploratory results. ArthaBeekshan, 11(4), 166-181.

Gupta, S., and M, Verhoeven. (2001). The Efficiency of Government Expenditure: Experiences from Africa, Journal of Policy Modelling,23 (4): 433–67.

Gupta, S., M. Verhoeven, and E.R. Tiongson, (2002). The Effectiveness of Government Spending on Education and Health Care in Developing and Transition Economies. European Journal of Political Economy,18 (4): 717–737.

Kormendi, R. C., & Meguire, P. G. (1985). Macroeconomic determinants of growth: Cross country evidence. Journal of Monetary Economics, 16(2), 141-164.

Lütkepohl, Helmut (1993), Introduction to Multiple Time Series Analysis, Springer-Verlag. Berlin And New York, 1991. ISBN 0-387-53194-7

Majhi, H., & Malik, M. (2018). Health infrastructure development in tribal districts of Odisha: An analysis. Orissa Economic Journal, 50(1-2), 128-134.

Majumder, R. (2004). Human development in India: Regional pattern and policy issues. Indian Journal of Applied Economics, 2(1)

Mundle, S. (1998). Financing human development: some lessons from advanced Asian countries. World Development, 26(4), 659-672.

Ohlan, R. (2013). Pattern of regional disparities in socio-economic development in India: District level analysis. Social Indicators Research, 114(3), 841-873.

Pattayat, S. S., & Rani, P. (2017). Social sector development and economic growth in Haryana. Journal of Economic and Economic Education Research, 8(3), 1-13.

Purohit, B.C. (2014). Efficiency of social sector expenditure in India: A case of health and education in selected Indian states. Healthcare in Low-resource Settings, 2, 26-34.

Schultz, T. W. (1961). Investment in human capital. The American economic review, 51(1), 1-17.

Sen, R.K. (2005): Social Sector Development in India, Deep & Deep Publications, New Delhi.

Sen, T. K., & Karmakar, K. (2007). Reprioritisation of public expenditure for human development. Publications Unit, National Institute of Public Finance and Policy.

Sen, V., & Sahoo, R. R. (2017). Agriculture, labour and social security policies in Dhenkanal districts of Odisha, Its international ramifications. Journal of International Economics, 8(1), 81-96.

Streeten, P. (1981). Development ideas in historical perspective. In Development Perspectives (pp. 100-132). Palgrave Macmillan, London.

Sutherland, D., Price, R., &Gonand, E. (2010). Improving public spending efficiency in primary and secondary education. OECD Journal: Economic Studies, 2009(1), 1-30.

Toda, H.Y., Yamamoto, T. (1995). Statistical inference in vector auto regressions with possibly integrated processes. Journal of Econometrics, 66, 225-250.

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