

**Social Sector Expenditure and India's Development: An Empirical Assessment During
2001-02 to 2015-16**

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Abstract

Issues relating to linkages of social sector with economic growth have been in much attention by researchers in recent times. Sustained and equitable economic growth is a major objective of government expenditure policy and as such, it is obligatory of any government to improve the quality of life of people which is mainly carried out by incurring public expenditure in areas such as health, education, and other social services. The term social sector is often used to refer to Education, Health and Nutrition sectors. In theory there appears to be a positive relationship between social sector expenditure and economic growth, which the paper aims to examine using empirical data. The present research paper evaluates the effectiveness of social sector expenditure policy' from an economic development perspective by undertaking a regression analysis of Economic Development (GDP) as dependent variable and social sector expenditure components are independent variables. The time period consider for this study is span of 15 years from 2001-02 to 2015-16 and the secondary data obtained from RBI database. From the results, it can be found that public expenditure on Education, Sports, Art and Culture; Medical and Public Health; Water Supply and Sanitation; Housing; Urban Development; Nutrition and Rural Development is found a positive impact on economic development while public expenditure on Social Security and Family Welfare is observed negative impact on economic growth during the study period.

Keywords: Economic Growth, Social Sector And OLS Regression.

Introduction

Both economists and policymakers acknowledge economic growth as one of the most important indicators of welfare level in a country. Therefore, increasing the income level is the main concern of public policies. Studies in the related immense literature on the determinants of economic growth have commonly examined the effects of economic factors like capital and labor stocks, financial development, investment, productivity, level of production technology,

trade, etc. (Domar, 1946, Solow, 1956, Barro, 1991, Mankiw, 1995, Bassanini and Scarpetta, 2002, Hausmann et al, 2005).

Until the endogenous growth theories, the traditional neoclassic approach which underlined that the macroeconomic policies of the government are not effective on the economic growth dominated the growth literature. On the contrary, the endogenous growth models take government expenditures in health, education, social security and even indese areas into account while modeling the growth of countries. The origins of endogenous growth models are based on the studies of Romer (1986), Lucas (1988), and Barro (1990). The endogenous growth models have focused on the role of human capital as a key driver of economic growth (Stokey, 1991) which directs the public expenditures to invest in the human capital stock.

The combination of the expenditures on social sector also matters in the endogenous growth models that there are important and direct relations between the government expenditures like education, health, social protection and social security and economic growth. Education is one of the most important factors which contributes to the sustainable economic growth and competitiveness of the countries. Therefore, it is expected that education expenditures contribute to the economic growth by increasing the efficiency and productivity levels of individuals. Health expenditures have multiple contributions to economic growth in both the short-run and long-run. Healthy workers become more productive while ill workers become less productive and tend to be absent in workplace or work inefficiently. Moreover, healthy children, possible workers in the future, can affect the income routes of countries.

Public expenditure by itself, however, is not guaranteed to achieve its objectives mainly due to inefficiencies in the provision of social services. An analysis of the linkages between social sector expenditure and economic development enables examining whether government spending is properly channelized to achieve economic growth indicators. In view of the above, the present study makes an attempt to evaluate the ‘effectiveness of public expenditure policy’ from economic development perspective.

Review Of Literature

Roy and Chai (1999) noticed that minimize the social costs of economic reforms have not been successful. Zhang and Zou (2001) observed that the central allocation of its budget on social and community services by cutting the center's spending on all other functions can promote regional growth. Over the years, public expenditure on the social sectors and poverty alleviation has

increased substantially in absolute terms (Shariff et al, 2002). From 1996 onwards, the emphasis of growth strategy shifted more to other human development aspects, such as health, education, housing, and rural roads (Dev and Mooij, 2004). Ghosh (2006) suggested that the sequence of policy should be such that the human development induced growth process has to be strengthened for lifting the states from the vicious to virtuous cycle category. In India, this democratic function of the government faces a serious threat from the nature of fiscal crisis that has developed. A transcending of this fiscal crisis is critical to liberating the government from constraints in spending, and reducing the social costs of spending cuts (Ramakumar, 2008). According to Alam et al (2010) expenditures in the social sector can affect economic growth. Such social expenditures enhance productivity by providing infrastructure, education, health and harmonizing private and social interests. Expenditures in social sector contribute to be more sustainable and more likely to result in faster growth.

Data And Methodology

This paper evaluates the 'effectiveness of social sector expenditure policy' from economic development perspective by undertaking a linear regression analysis of Growth in GDP as dependent variable and social sector expenditure is an independent variable. The time period consider for this study is span of 15 years from 2001-02 to 2015-16. Actual revenue and capital expenditures on Education, Sports, Art and Culture; Medical and Public Health; Family Welfare, Water Supply and Sanitation; Housing, Urban Development; Social Security and Welfare and Nutrition are obtained from RBI database. In the present study Economic development was provide by Gross Domestic Product in market prices in constant mode collected from economic survey.

With the above variables, we have constructed a multiple linear regression model in order to verify the impact of social sector spending on economic development in the Indian context. We expect the coefficient of social sector expenditure to bear a positive sign, which would mean that the higher level of social sector expenditure, the higher level of economic development.

Results And Discussion

Table 1 displays summary statistics for the regression variables during 2001-02 to 2015-16. The average of Economic Development Indictor is Rs. 66768.91billion and it is censoring between 104905.14and 38235.86. The mean expenditure of Social Sector Expenditure has found the highest on Education, Sports, Art and Culture (1629.28) followed by Medical and Public Health

(385.72), Social Security and Welfare (339.72), Urban Development (224.8) and the lowest on Labor Welfare (35.93). The distribution of the data has observed positive Skewness in all components of Social Sector Expenditure.

The specified models as follows

$$\ln y_1 = \alpha + \beta_1 \ln x_1 + \beta_2 \ln x_2 + \beta_3 \ln x_3 + \beta_4 \ln x_4 + \beta_5 \ln x_5 + \beta_6 \ln x_6 + \beta_7 \ln x_7 + \beta_8 \ln x_8 + \beta_9 \ln x_9 + \mu$$

Where

Dependent Variables		
y ₁	=	Gross Domestic Product
Independent Variable		
x ₁	=	Education, Sports, Art and Culture
x ₂	=	Medical and Public Health
x ₃	=	Family Welfare
x ₄	=	Water Supply and Sanitation
x ₅	=	Housing
x ₆	=	Urban Development
x ₇	=	Social Security and Welfare
x ₈	=	Nutrition
x ₉	=	Rural Development
μ	=	Error term

Table -1: Descriptive Statistics of Social Sector Expenditure during 2001-02 to 2015-16

Factors	Mean	Std. Deviation	Maximum	Minimum
Gross Domestic Product	66768.91	21725.88	104905.14	38235.86
Education Sports Artand Culture	1629.28	1023.61	3600.80	596.10
Medical and Public Health	385.72	254.72	933.40	135.40
Family Welfare	64.21	47.30	167.40	23.80
Water Supply and Sanitation	206.17	107.28	459.40	82.10
Housing	81.59	64.69	217.70	17.50
Urban Development	224.91	158.79	525.90	35.70
Social Security and Welfare	339.79	286.41	934.00	50.80
Nutrition	101.96	71.88	215.60	22.50
Rural Development	439.91	357.95	1342.30	124.70

Source: Database, Reserve Bank of India.

Table 2 displays the growth (Exponential) for the regression variables during 2001-02 to 2015-16. The growth of all Economic development indicators has found positive trend and statistically significant during study period. The Gross Domestic Production has growing 7.5 per cent per year. The growth of Social Sector Expenditure is showing positive trend and significant during 2001-12 to 2015-16. The highest growth of public expenditure has observed on Social Security and Welfare (22.2%) subsequently on Urban Development (22.0%), Nutrition (18.6%), Housing (18.6%) and Education, Sports, Art and Culture (14.2%). The lowest growth of public expenditure has observed on Water Supply and Sanitation (11.0%)

Regression Results

Table 3 displays the results of linear regression analysis of Social Sector Expenditure Impact on Economic Development. The table shows that 0.920 per cent of variation in the dependent variable is explained by the 9 factors under study. The coefficient of Medical, Public Health and nutrition is positive sign and statically significant. These variables have significant impact on

economic development during the study period. The effect of public spending on Education, Sports, Art and Culture; Water Supply and Sanitation; Housing and Rural Development, found to be positive association with economic development but not significant.

The coefficient of expenditure on Family Welfare is negative and statistically significant and the coefficient of Social Security and Welfares found negative impact on economic development but not significant. This can be attributed to the facts that increase the public expenditure on Medical and Public Health; Nutrition, Education, Sports, Art and Culture; Water Supply and Sanitation; Housing and Rural Development to improve economic development. The value of R² is 0.999 for this model indicates that model is succeeded explaining 99 per cent variation in dependent variable. Highly significant value 2809.877 of F statistics specifies that variables included in the model have significant influence on dependent variable and model is fitted as best.

Table -2: Growth of Social Sector Expenditure during 2001-02 to 2015-16

Factors	Growth	't'	p-value
Gross Domestic Product	7.5	61.353	0.000
EducationSportsArtandCulture	14.2	27.826	0.000
MedicalandPublicHealth	14.5	34.129	0.000
FamilyWelfare	15.0	15.828	0.000
WaterSupplyandSanitation	11.0	15.675	0.000
Housing	18.6	31.566	0.000
UrbanDevelopment	22.0	14.615	0.000
SocialSecurityandWelfare	22.2	30.514	0.000
Nutrition	18.6	22.231	0.000
RuralDevelopment	15.7	17.875	0.000
Source: Database, Reserve Bank of India.			

Table -3: Social Sector Expenditure and Economic Growth – Multiple Linear Regression Analysis

Independent Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std. Error	Beta		
(Constant)	7.988*	0.659		12.119	0.000
SocialSecurityandWelfare	-0.042	0.049	-0.125	-0.861	0.422
EducationSportsArtandCulture	0.023	0.263	0.045	0.088	0.933
MedicalandPublicHealth	0.551***	0.261	1.079	2.114	0.079
FamilyWelfare	-.0294*	0.047	-0.606	-6.221	0.001
WaterSupplyandSanitation	0.009	0.078	0.014	0.122	0.907
Housing	0.079	0.046	0.197	1.706	0.139
Nutrition	0.1290*	0.047	0.325	2.721	0.035
RuralDevelopment	0.032	0.041	0.068	0.763	0.474
Model Summary					
Observations	15				
R-Square	0.999				
Adjusted R Square	0.920				
F- value	2809.877				
Sig. of F	0.000				

Dependent Variable: Gross Domestic Product

Note: * significant 1% level, ** significant 5% level and *** significant 10% level.

Conclusions

The growth of Social Sector Expenditure is showing significant positive trend during study period. The highest growth of public spending has observed on Social Security and Welfare; followed by Urban Development, Nutrition, Housing and Education. At the same time, the

growth of economic development also has observed positive trend, but the economic growth of is low when compared to growth of Social Sector Expenditure. The regression results are conforming that the growth Social Sector Expenditure has positive impact on economic growth. The result reveals that public spending on Medical and Public Health; Nutrition, Education, Sports, Art and Culture; Water Supply and Sanitation; Housing and Rural Development have positive impact on Economic development through human development. Therefore, it is needful to increase the public spending on above social services to promote economic development. Supporting the predictions of endogenous growth theories in terms of the importance of human capital, overall results suggest that governments design policies like spend more on social sector to promote economic development.

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Appendix -1: Social Sector Expenditure in India during 2001-02 to 2015-16									
Year	Education, Sports, Art and Culture	Medical and Public Health	Family Welfare	Water Supply and Sanitation	Housing	Urban Development	Social Security and Welfare	Nutrition	Rural Development
2001	596.1	135.4	25	82.1	17.5	35.7	50.8	22.5	124.7
2002	617.4	140.6	23.8	90.5	20.8	40.1	62.1	22.5	139.7
2003	649.3	150.4	24.9	100.7	23.4	57.6	72.6	28.4	158.7
2004	703.5	162.4	25.5	121	28.5	66	81.7	32.3	184
2005	798.7	192.6	27.9	136.4	27.4	69.9	94.7	40.2	215.4
2006	919.6	222.9	30.7	154.2	38.6	112.4	131.9	48.4	247.1
2007	1041.4	253.1	36	191.5	50.3	166.8	181.3	61.8	279.3
2008	1258.7	297.9	45.6	216.1	71	259.2	260.2	84.8	323.8
2009	1558.2	365.4	58	206.8	67.9	289.4	336.5	112.3	426.6
2010	1926.8	423.7	67.8	203.2	94.7	268.5	399	134.5	418.3
2011	2206.5	489.6	76.5	216.3	98.5	302.4	495.3	156.9	471.9
2012	2511.7	567.1	95.9	238.8	130	374.1	570.8	169.6	543.2
2013	2808.6	640.1	103.9	282.3	137.4	390.5	679	195.7	587.8
2014	3241.9	811.2	154.2	393.2	200.2	415.2	747	203.9	1135.9
2015	3600.8	933.4	167.4	459.4	217.7	525.9	934	215.6	1342.3