

# An Economic Analysis of Public Expenditure in Municipalities and Panchayats of Haryana

M.M. GOEL\*  
ISHU GARG\*\*

## ABSTRACT

*We are required to understand, analyse and interpret the public expenditure on Municipalities and Panchayats in India including Haryana as local governments have an important place in the age of fiscal federalism. The study reveals that public expenditure on Municipalities and Panchayats in Haryana has increased at an appreciable Compound Annual Growth Rate (CAGR) of 15.37 per cent for the period 2011-12 to 2020-21. It has been found that own resources of Municipalities and Panchayats are not sufficient to meet their expenditure requirements. Also, for some years, Municipalities and Panchayats have not utilised their entire resources. The delays involved in the provision of grants and other transfers towards Municipalities and Panchayats must be prevented. We can be hopeful for the things to take shape in the real sense by understanding and adopting the canons of public expenditure advocated by Dr B.R. Ambedkar that every Government should spend the resources garnered from the public not only according to rules, laws and regulations but should also see that 'faithfulness, wisdom and economy' are adhered to in the acts of expenditure by the Government of Haryana including Municipalities and Panchayats. To improve the functioning of Municipalities and Panchayats, we need manpower and elected representatives to street SMART (Simple, Moral, Action Oriented, Responsive and Transparent). We have to adopt a sustainable fiscal path including judicious expenditure by keeping in mind the receipts that fall in the domain of needonomics (economics of needs).*

**Keywords:** *Municipalities, Panchayats, Canons of Public Expenditure by Ambedkar, Street SMART Model*

---

\*Former Vice-Chancellor, JNU Jaipur and The Rajiv Gandhi National Institute of Youth Development (RGNIYD) (Gol). Email: mmgoel2001@yahoo.co.in

\*\*Research Scholar at Department of Economics, Kurukshetra University, Kurukshetra.

## INTRODUCTION

Local governments have an important place in the age of fiscal federalism in India including Haryana. The role of local governments in the provision of local public goods is indispensable (Tiebout, 1956). Therefore, empowerment of the local governments is one of the priority areas for state governments in India. In this regard, Central Finance Commission as well as State Finance Commissions are constituted which recommend allocations of resources from Central as well as state governments to local government comprising Municipalities and Panchayats.

No doubt, Municipalities and the Panchayats directly deal with the local population and are the main providers of key services at the grassroots level to the citizens (Singh and Singh, 2015). Therefore, these institutions deserve adequate attention from their state governments. Accordingly, Haryana is also primarily responsible to regulate and coordinate with Municipalities (including Municipal Committees, Municipal Councils and Municipal Corporations) as well as Panchayats (including Zila Parishads, Panchayat Smitis and Gram Panchayats). In this regard, public expenditure on Municipalities and Panchayats by state government becomes relevant.

### **Review of Literature**

To justify the need of the present research work, related literature has been reviewed as follows:

Aijaz (2007) examined the major issues and challenges for urban local governments in India. For this purpose, data on key urban local government characteristics - constitution and governance, duties, composition, management and finance practices, state/local-level initiatives and problems were collected from six urban centres situated in three northern/north-western states of Haryana, Rajasthan and Uttaranchal. The study revealed that urban local governments in India continue to remain plagued by numerous problems, which affect their performance in the efficient discharge of their duties. These problems relate to the extent of participation and rule of law in the municipal decision-making process, transparency in the planning and implementation of infrastructure projects, and level of efficiency in various municipal management and finance practices.

Bandyopadhyay (2012) assessed the performance of the urban local bodies in the state of Karnataka by using Data Envelopment Analysis. The study found that the overall average collection

efficiency of property taxes is lowest in the smallest cities and the highest in the medium size cities. Also only 27.5 per cent of the Operations & Maintenance (O&M) expenditure requirements were fulfilled by the own revenues of local bodies. Besides, the results revealed that the Municipalities on an average could reduce 27 per cent of their expenditures on O&M, labour and establishment to provide the same levels of services provided currently by them.

National Institute of Urban Affairs, New Delhi (2015) assessed the capacity building needs of Municipalities in India. The study identified some serious cause of concerns for Municipalities as discord in functional relations between the Municipalities and states, acute shortage of staff (technical and general) at all levels, frequent transfer of officers, lack of state level resource institutions which would be better equipped to handle local needs (with most capacity building efforts not based on demand but routine ad-hoc trainings) and absence of dedicated municipal cadre. The study recommended that Municipalities in India need to invest in systematic knowledge management. Rather than depending solely on capacity building activities that target individual capacity, the Municipalities should pursue institutionalisation of the capacity that is created. There is a need to include governance reforms within urban local bodies to complement capacity building initiatives so that the knowledge can be sustained in the mid- to long-run.

Muniswami (2018) examined the income and disbursement of Municipal Corporation of Kurnool in Rayalaseema region in Andhra Pradesh for the years 2007-08 to 2016-17. The study revealed that during 10 years the total receipts increased more than three times that is from ₹ 7405.77 lakh in 2007-08 to ₹ 28475.45 lakh in 2016-17; while for the same period total expenditure was raised by seven times from ₹ 3965.36 lakh to ₹ 28216 lakh. Besides, in 2007-08 the share of revenue receipts was less than half of total revenue receipts. But, by 2015-16 the share of revenue receipts increased to 76.02 per cent. Negative growth rate in total revenue receipts of Kurnool Municipal Corporation is registered in two out of 10 years of study.

After studying the literature, it has been identified that there exists no study which analyses in economic terms the public expenditure incurred on Municipalities and Panchayats for the State of Haryana.

### ***Objectives of the Study***

The main objective of the study is to make an economic analysis

of public expenditure on Municipalities and Panchayats in Haryana. However, the economic analysis is done under following sub-objectives:

1. To make a descriptive analysis of public expenditure on Municipalities and Panchayats via computing compound annual growth rates, and yearly percentage changes.
2. To examine the role of public expenditure on Municipalities and Panchayats in economic growth.
3. To investigate the determinants of public expenditure on Municipalities and Panchayats.
4. To measure the efficiency of Municipalities and Panchayats in the utilisation of resources.
5. To draw policy implications flowing from the results.

## **Research Methodology**

### *Time Period*

To achieve the objectives of the study, secondary data are used for the time period covering 10 years from 2011-12 to 2020-21.

### *Selection of Variables and Data Sources*

In present context, the variable public expenditure on Municipalities and Panchayats is prepared by taking the summation of grants-in-aid and compensation and assignments to Municipalities and Panchayats. It is imperative to mention here that data as regards the finances of Municipalities and Panchayats in Haryana vary in different reports and documents of Government of Haryana. Even indicators of data are different in various reports. Despite that, data given in Finance Accounts (for various years), Government of Haryana have been helpful in making the variable public expenditure on Municipalities and Panchayats.

Besides, to examine the role of public expenditure on Municipalities and Panchayats in economic growth, Gross State Domestic Product (GSDP) is used as a proxy for economic growth. Moreover, keeping in mind the availability of data, three potential determinants of public expenditure on Municipalities and Panchayats are selected in terms of GSDP (income variable), consumer price index (inflation variable) and number of employees working in local bodies. However, the variables selected for the study along with their data sources are presented in Table 1.

TABLE 1: VARIABLES OF THE STUDY AND SOURCES OF DATA

Purpose	Variables	Symbol	Measurement Unit	Data Source
Objective 1	Grants-in-aid to Municipalities and Panchayats	PEMP (Public Expenditure on Municipalities and Panchayats)	₹ Crore	1. Finance Accounts (for various years), Government of Haryana 2. Budgetary Transfers to Local Bodies 2020-21, Government of Haryana
	Compensation and Assignments by State Government to Municipalities and Panchayats			
Objective 2	Gross State Domestic Product (at current prices) as a proxy of economic growth	GSDP	₹ Crore	1. Statistical Abstract of Haryana (for various years)
Objective 3	Gross State Domestic Product (at current prices)	GSDP	₹ Crore	
	Consumer Price Index for working class as an indicator of Inflation	CPI	Index	
	Number of Local Bodies Employees	LBE	Number	
Objective 4	Revenue and Expenditure of Municipalities and Panchayats	-	₹ Crore	1. Annual Technical Inspection Report on Panchayati Raj Institutions and Urban Local Bodies for the year 2014-15; 2. Annual Technical Inspection Report on Panchayati Raj Institutions and Urban Local Bodies for the year 2016-17.

Source: Researchers' Compilation.

**Techniques Used For Economic Analysis**

To facilitate the analysis, techniques are selected according to the requirement of particular objective. Statistical values are to be calculated with the help of Statistical Package for Social Sciences (SPSS: Version 20) and DEAP (Version 2.1). Also, some calculations are done with the help of MS-Excel. However, the following techniques are used in present study:

**Percentage Change**

In order to know the percentage change in the value of any variable over its previous year's value, the following formula is used:

$$\text{Percentage Change} = \frac{\text{Current Year's Value} - \text{Previous Year's Value}}{\text{Previous Year's Value}} \times 100$$

**Compound Annual Growth Rate (CAGR)**

Following Gujarati (2003, p. 178), an equation of exponential trend is in the form:

$$Y = AB^t \quad \dots(1)$$

(Where, B= (1+r) and 'r' is the rate of compound growth)

Taking natural logarithm on both sides of equation (1), we get

$$\text{LN}(Y) = \text{LN}(A) + t\text{LN}(B)$$

Or  $y = a + bt$  [Where,  $y = \text{LN}(A)$ ;  $b = \text{LN}(B)$ ]

Now, the application of Ordinary Least Square on the log-linear function (2) will give the estimates of parameters of a and b and in the form  $\hat{a}$ :and  $\hat{b}$  respectively.

$$\text{Now, } \hat{b} = \text{LN}(\hat{B}) \quad \text{or} \quad \hat{b} = \text{LN}(\hat{1} + r)$$

Taking Anti-logarithm on both sides, we get  $e^{\hat{b}} = 1 + r$

Thus,  $r(\%) = (e^{\hat{b}} - 1) \times 100$  which is the required CAGR.

**Linear Regression Model**

To examine the role of public expenditure on Municipalities and Panchayats in economic growth, following linear regression model is fitted as adopted by Hariharan (2008):

$$GSDP_t = a + \beta PEMP_{t-k} + u_t, \dots \dots \dots (A)$$

Equation (1) explains that PEMP (Public Expenditure on Municipalities and Panchayats Bodies) of 't-k' period affect GSDP of 't'

period. Here, k stands for number of lag;  $u_t$  is random disturbance term. The significant value of regression coefficient or slope coefficient ( $\beta$ ) confirms the impact of  $PEMP_{t-k}$  on  $GSDP_t$ . Now, to estimate  $\beta$ , Ordinary Least Square (OLS) can be applied.

To investigate the determinants of public expenditure on Municipalities and Panchayats, following regression model is fitted:

$$PEMP_t = \alpha + \beta GSDP_{t-k} + \phi CPI_{t-k} + \lambda LBE_{t-k} + u_t \dots\dots\dots (B)$$

Equation (2) can be estimated by OLS, so that the impact of three independent variables on dependent variable ( $PEMP_t$ ) can be known. The significant scores of  $\beta$ ,  $\phi$  and  $\lambda$  will ensure that  $GSDP$ ,  $CPI$ , and  $LBE$  determine  $PEMP$ .

**Data Envelopment Analysis (DEA)**

DEA is used to measure the efficiency. In present context, output oriented version of DEA is applied because output orientation belongs to output maximisation for a given level of inputs and output maximisation is most appropriate for the public services because budgetary pressures prevent expansion of inputs to produce these services (Steering Committee, 1997). DEA model aiming at output maximisation for a given level of input, is given below:

Maximise  $F_n$  (Efficiency score for  $n^{th}$  year) with respect to weights ( $w_1, w_2, \dots, w_n$ ) and  $F_n$

Subject to the constraints:

$$\begin{aligned} \sum_{j=1}^N w_j y_{ij} - F_n y_{in} &\geq 0 & i=1,2,\dots,I \\ \sum_{j=1}^N w_j x_{kj} - x_{kn} &\leq 0 & k=1,2,\dots,K \\ \sum_{j=1}^N w_j &= 1 & j=1,2,\dots,n \\ w_j &\geq 0 & j=1,2,\dots,n \end{aligned}$$

This linear programme signifies that there are 'n' number of years where 'K' inputs are used to produce 'I' outputs. The terms ' $y_{in}$ ' and ' $x_{kn}$ ' indicate the observed amounts of output 'i' and input 'k' respectively for  $n^{th}$  year. The term ' $w_j$ ' express weights applied across n years; when linear program for  $n^{th}$  year is solved, these weights helps in determining the most efficient method of producing  $n^{th}$  year's output.

The efficiency score ( $F_n$ ) for the  $n^{th}$  year should be maximised subject to a number of constraints. For the same, weights ( $w_j$ ) and efficiency score ( $F_n$ ) can be varied. Moreover, another important task of the weights is to form the hypothetical year (DMU) lying on the efficient frontier or isoquant.

Meanwhile, the first constraint indicates that the output of hypothetical weighted average has to be at least as great as  $n^{\text{th}}$  year's output scaled up by factor  $F_n$ . The second constraint state that weighted average of inputs cannot be larger than  $n$ 's input. Third constraint shows weights must sum to unity which has the effect of pulling in the efficient frontier (isoquant) to form a tighter envelope around the data. Fourth constraint implies the non-negativity of weights. However, the present linear programme has to be run for each year in the sample so that the full set of efficiency scores can be obtained.

### **Analyses and Interpretations**

#### ***Descriptive Analysis of Public Expenditure on Municipalities and Panchayats***

In present context, public expenditure incurred on Municipalities and Panchayats is the summation of grants-in-aid and compensation and assignments given to Municipalities and Panchayats for their functioning. Table 2 explores that public expenditure on Municipalities and Panchayats have grown from ₹ 1820.44 crore in 2011-12 to ₹ 4213.00 crore at the CAGR of 15.37 per cent. Moreover, highest percentage rise in public expenditure on Municipalities and Panchayats is 64.30 per cent for the year 2016-17.

From the perspective of grants-in-aid, highest CAGR that is 28.66 per cent is estimated for grants-in-aid received by Panchayats. During 2011-12 to 2013-14, and 2017-18, the size of grants-in-aid given to Municipalities is higher than the size of grants-in-aid received by Panchayats; however for the remaining years, the reverse has happened. Along with this, the values of percentage changes reveal that the allocation of funds varies over the years.

Besides, compensation and assignments by State government to Municipalities and Panchayats is increased from ₹ 99.42 crore in 2011-12 to ₹ 221.80 crore in 2018-19 at the CAGR of 21.65 per cent. However, after 2018-19, no funds are given as compensation and assignments by State government because schemes of excise duty share, and share of surcharge on VAT has been discontinued from the month of September, 2018 on the recommendation of the 5th State Finance Commission, Haryana(Finance Department, Haryana, 2020-21). However, public expenditure on Municipalities and Panchayats (PEMP) as a percentage of GSDP is found to vary between 0.33 per cent (lowest for the year 2013-14) and 0.80 per cent (highest for the year 2017-18). In terms of CAGR, PEMP as a percentage of GSDP is grown at the rate of 3.25 per cent.



TABLE 2: PUBLIC EXPENDITURE ON MUNICIPALITIES AND PANCHAYATS  
IN HARYANA (Rs. in crore)

Years	Grants-in-aid (Centre and State)						Compensation and Assignments by State Government (c)		Public Expenditure on Municipalities and Panchayats (PEMP) (a)+(b)+(c)		PEMP as a % of GSDP
	Grants-in-aid to Municipalities (a)		Grants-in-aid to Panchayats (b)		Grants-in-aid to Municipalities and Panchayats (a)+(b)		Amount	% change	Amount	% change	
	Amount	% change	Amount	% change	Amount	% change					
2011-12	923.65	---	797.37	---	1721.02	---	99.42	---	1820.44	---	0.61
2012-13	1125.24	21.83	962.46	20.70	2087.70	21.31	101.89	2.48	2189.59	20.28	0.63
2013-14	1136.98	1.04	38.22	-96.03	1175.20	-43.71	136.18	33.65	1311.38	-40.11	0.33
2014-15	744.64	-34.51	1192.04	3018.89	1936.68	64.80	144.59	6.18	2081.27	58.71	0.48
2015-16	1045.99	40.47	1261.94	5.86	2307.93	19.17	293.15	102.75	2601.08	24.98	0.52
2016-17	1585.77	51.60	2263.80	79.39	3849.57	66.80	423.95	44.62	4273.52	64.30	0.76
2017-18	2466.82	55.56	2283.43	0.87	4750.25	23.40	390.52	-7.89	5140.77	20.29	0.80
2018-19	2092.31	-15.18	2547.17	11.55	4639.48	-2.33	221.80	-43.20	4861.28	-5.44	0.69
2019-20	2279.46	8.94	3098.12	21.63	5377.58	15.91	---	---	5377.58	10.62	0.69
2020-21 <sup>BE</sup>	1809.00	-20.64	2404.00	-22.40	4213.00	-21.66	---	---	4213.00	-21.66	0.55
<b>CAGR</b>	<b>11.52</b>	---	<b>28.66</b>	---	<b>16.18</b>	---	<b>21.65</b>	---	<b>15.37</b>	---	<b>3.25</b>

Source: 1. 'Finance Accounts' (Various Years), Government of Haryana.

2. Data for the year 2020-21 are taken from 'Budgetary Transfers To Local Bodies 2020-21', Government of Haryana

Note: BE stands for Budget estimate

***Role of PEMP (Public Expenditure on Municipalities and Panchayats) in Economic Growth***

The role of PEMP (Public Expenditure on Municipalities and Panchayats) in economic growth (GSDP) is examined by estimating the equation (1) as presented in the section of research methodology. The results of estimation of equation (1) are highlighted in Table 3.

The results revealed that the PEMP positively affects GSDP up to three years as the slope coefficient up to  $k=3$  are significant. That is PEMP of 't' period have significant positive impact on GSDP in 't', 't+1', 't+2', and 't+3' periods. But, the size of impact reduces in each coming period. It can be seen in Table 3 that an increase of ₹ one crore in PEMP in 't' period brings increments of ₹ 102.854 crore in same period, ₹ 94.618 crore in 't+1' period, ₹ 89.230 crore in 't+2' period, and ₹ 75.279 crore in 't+3' period.

But, the most significant impact of PEMP on GSDP can be seen for  $k=1$ , where the t-statistic of slope coefficient ( $\beta$ ) is largest in comparison of other estimated models. Also, scores of R (=0.938),  $R^2$  (=0.881), Adj.  $R^2$  (=0.863) and F-statistic (=51.593) are also highest in comparison of other models. Here, the score of R indicates very high degree of correlation between PEMP and GSDP. The value of Adj.  $R^2$  indicates that PEMP explains 86.3 per cent variations in GSDP. While the significant score of F-statistic confirms the overall significance of parameter of the fitted model. Also, for  $k=0$  to 2, fitted models are free from autocorrelation. Thus, the estimated coefficients of these models can be used for predictions. In last two fitted models, no conclusion can be made with regard to the problem of autocorrelation because the computed score of DW-statistic falls in the inconclusive region.

Thus, the significant impact of PEMP on GSDP sustains up to three periods. Above all PEMP requires the time of one year to contribute most significantly to economic growth of Haryana.

***Analysis of the Determinants of PEMP (Public Expenditure on Municipalities and Panchayats)***

Among three potential determinants of PEMP, GSDP and CPI are found to grown at CAGR of 11.74 per cent and 5.55 per cent respectively for the time period 2011-12 to 2020-21. On the other hand, the number of LBE is declined from 13857 in 2011-12 to 12549 in 2020-21 at the CAGR of -1.78 per cent. However, GSDP is found to be highest that is ₹ 780612.35 crore for the year 2019-20; while CPI is largest (1281) for the year 2020-21; on the other hand, the number of LBE is highest (20248) during 2013-14.

TABLE 3: RESULTS OF THE ESTIMATION OF REGRESSION MODEL - A

Time Lag (k)	Intercept (a)	Slope Coefficient (β)	R	R <sup>2</sup>	Adj. R <sup>2</sup>	F-statistic	DW-statistic
0	195106.326 (SE=63788.286) (t=3.059) (Sig.=0.016)	102.854 (SE=17.302) (t=5.944) (Sig.=0.001)	0.903	0.815	0.792	35.337 (Sig.=0.001)	*1.048 For n=10, at 1% I.o.s.) (d <sub>L</sub> =0.604 & d <sub>U</sub> =1.001)
1	259009.453 (SE=47731.597) (t=5.426) (Sig.=0.001)	94.618 (SE=13.173) (t=7.183) (Sig.=0.001)	0.938	0.881	0.863	51.593 (Sig.=0.001)	*1.442 For n=9, at 1% I.o.s.) (d <sub>L</sub> =0.554 & d <sub>U</sub> =0.998)
2	327963.383 (SE=57414.246) (t=5.712) (Sig.=0.001)	89.230 (SE=17.190) (t=5.191) (Sig.=0.002)	0.904	0.818	0.788	26.945 (Sig.=0.002)	*1.020 For n=8, at 1% I.o.s.) (d <sub>L</sub> =0.497 & d <sub>U</sub> =1.003)
3	418243.193 (SE=79942.929) (t=5.232) (Sig.=0.003)	75.279 (SE=26.111) (t=2.883) (Sig.=0.034)	0.790	0.624	0.549	8.312 (Sig.=0.034)	0.713 <sup>nc</sup> For n=7, at 1% I.o.s.) (d <sub>L</sub> =0.435 & d <sub>U</sub> =1.036)
4	504175.751 (SE=115441.379) (t=4.367) (Sig.=0.012)	64.948 (SE=45.171) (t=1.438) (Sig.=0.224)	0.584	0.341	0.176	2.067 (Sig.=0.224)	0.913 <sup>nc</sup> For n=6, at 1% I.o.s.) (d <sub>L</sub> =0.390 & d <sub>U</sub> =1.142)

Source: Researchers' computations in SPSS (Version 20.0)  
\*indicates significant at 1 per cent level of significance.  
<sup>nc</sup>means no conclusion.

TABLE 4: TREND OF POTENTIAL DETERMINANTS OF PELB

<i>Years</i>	<i>GSDP (in ₹ crore)</i>	<i>CPI (in index number)</i>	<i>LBE (in number)</i>
2011-12	297538.52	763	13857
2012-13	347032.01	832	13666
2013-14	400662.12	903	20248
2014-15	437144.71	959	13033
2015-16	495504.11	1016	12534
2016-17	561424.17	1068	12736
2017-18	644963.22	1094	12709
2018-19	704957.38	1141	12709
2019-20	780612.35	1215	14177
2020-21 <sup>BE</sup>	764872.41	1281	*12549
<b>GSDP</b>	<b>11.74</b>	<b>5.55</b>	<b>-1.78</b>

Source: Statistical Abstract of Haryana (for various years)

Note: \*indicates the value is estimated in SPSS (version 20) by using linear trend method.

After examining the trend of GSDP, CPI and LBE, these potential determinants are fitted into Regression Model – B whose estimation' results are presented in Table 5.

It is clear from Table 5 that at  $k=0$ , the regression coefficients  $\beta$  and  $\phi$  are significant. The score of  $\beta$ -coefficient is 0.019 which indicates that increase of ₹ one crore in GSDP in 't' period brings an increment of ₹ 0.019 crore in PEMP in 't' period; while the  $\phi$ -coefficient scores -12.897 which means rise in CPI by 1 point causes a reduction in PEMP by ₹ 12.897 crore. But, LBE does not affect PEMP as the coefficient  $\lambda$  is insignificant. Also value of Adj.  $R^2$  explores that the explanatory variables GSDP, CPI and LBE explain 89.6 per cent variations in PEMP. The significant score of F-statistic confirms that parameters of the fitted model are overall significant. Also the fitted model is free from the problem of autocorrelation.

For  $k=1$ , none of the regression coefficients is significant. Thus, GSDP, CPI and LBE do not determine PEMP in significant manner at  $k=1$ . But, the fitted model is good as explanatory variables are responsible for 64.4 per cent variations in dependent variable. Also, the F-statistic with significance level 0.044 confirms that the parameters of the model are overall significant.

For  $k=2$ , only  $\phi$ -coefficient is significant which indicates that one

TABLE 5: RESULTS OF THE ESTIMATION OF REGRESSION MODEL - B

Time Lag (k)	Intercept	Slope Coefficients			R	R <sup>2</sup>	Adj. R <sup>2</sup>	F-statistic	DW-statistic
		$\beta$ (GSDP)	$\phi$ (CPI)	$\lambda$ (LBE)					
0	8303.926 (SE=3037.750) (t=2.734) (Sig.=.034)	0.019 (SE=0.005) (t=4.006) (Sig.=.007)	-12.897 (SE=5.071) (t=-2.543) (Sig.=.044)	-0.153 (SE=0.075) (t=-2.021) (Sig.=.090)	0.965	0.931	0.896	26.801 (Sig.=0.001)	*1.614
1	-2964.702 (SE=6758.122) (t=-0.439) (Sig.=0.679)	-0.002 (SE=0.010) (t=-0.149) (Sig.=0.888)	9.564 (SE=11.367) (t=0.841) (Sig.=0.439)	-0.161 (SE=0.138) (t=-1.166) (Sig.=0.296)	0.882	0.778	0.644	5.832 (Sig.=0.044)	*2.206
2	-12.488.663 (SE=4228.920) (t=-2.953) (Sig.=0.042)	-0.016 (SE=0.007) (t=-2.368) (Sig.=0.077)	26.329 (SE=7.277) (t=3.618) (Sig.=0.022)	-0.113 (SE=0.090) (t=-1.262) (Sig.=0.275)	0.960	0.921	0.862	15.626 (Sig.=0.011)	3.083
3	-15847.224 (SE=2797.883) (t=-5.664) (Sig.=0.011)	-0.023 (SE=0.005) (t=-4.325) (Sig.=0.023)	31.140 (SE=5.213) (t=5.974) (Sig.=0.009)	0.059 (SE=0.056) (t=1.049) (Sig.=0.371)	0.981	0.961	0.923	24.909 (Sig.=0.013)	2.968
4	-19740.841 (SE=8069.094) (t=-2.446) (Sig.=0.134)	-0.048 (SE=0.023) (t=-2.131) (Sig.=0.167)	46.659 (SE=18.984) (t=2.458) (Sig.=0.133)	0.100 (SE=0.093) (t=1.085) (Sig.=0.391)	0.931	0.867	0.668	4.358 (Sig.=0.192)	2.833

Source: Researchers' computations in SPSS (Version 20.0)  
\*indicates significant at one per cent level of significance.

point rise in CPI in 't' period causes a rise of ₹ 26.329 crore in PEMP in 't+2' period. Also, the fitted model is good as explanatory variables are explaining 86.2 per cent variations in dependent variable. Besides, the significant score of F-statistic confirms the overall significance of regression parameters.

For k=3, the coefficients of GSDP and CPI are significant and indicate that increase in GSDP by ₹ one crore in 't' period causes reduction in PEMP by ₹ 0.023 crore after three years; but one point rise in CPI in 't' period brings an increase of ₹ 31.140 crore on PEMP after three years. Besides, 92.3 per cent variations in PEMP are explained by explanatory variables. Also, the parameters are overall significant as is confirmed by the significant score of F-statistic.

For k=4, the regression parameters are overall insignificant because F-statistic possess significance level 0.192. Moreover, individual coefficients are also not significant. Despite that, the explanatory variables are explaining 66.8 per cent variations in dependent variable.

On the whole, the results of regression model with no time lag (k=0) are most significant because the score of F-statistic is highest in comparison to all cases. Thus, GSDP as well as CPI have immediate significant impact on PEMP. Moreover, GSDP is a positive determinant of PEMP whereas CPI (inflation) negatively determines PEMP.

### ***Efficiency of Municipalities and Panchayats in Utilisation of Resources***

In order to judge the trends in funds utilisation by local bodies, Table 6 is given. Table 6 explores that Municipalities are ahead from Panchayats in case of the amounts of own revenues.

However, both Municipalities and Panchayats are dependent on grants-in-aid from Centre and State to fulfill their expenditure requirements. Moreover, CAGRs of revenue and expenditure of Municipalities are higher than the CAGRs of revenue and expenditure of Panchayats. Also for 2011-12, 2015-16 and 2016-17, the expenditures of Municipalities are higher than their revenues; similarly, during 2011-12 and 2012-13, deficit can be seen in case of Panchayats; thus, in remaining years, Municipalities and Panchayats have not utilised their entire funds.

Efficiency scores of Municipalities and Panchayats for resource utilisation are computed by using Data Envelopment Analysis (DEA) and presented in Table 7.

The results given in Table 7 can be explained as follows.

TABLE 6: RESOURCES AND UTILISATION OF FUNDS BY MUNICIPALITIES AND PANCHAYATS

(in ₹ crore)

Years	Revenue and Expenditure of Municipalities			Revenue and Expenditure of Panchayats						
	Revenue		Deficit/ Surplus	Revenue		Expenditure	Deficit/ Surplus			
	Own	Others		Own	Others			Total		
2011-12	675.56 (56.69)	516.14 (43.31)	1191.70	1366.31	-174.61	211.80 (15.24)	1178.13 (84.76)	1389.93	1409.32	-19.39
2012-13	471.00 (24.72)	1434.14 (75.28)	1905.14	1421.65	483.49	237.87 (14.55)	1396.44 (75.45)	1634.31	1639.47	-5.16
2013-14	1275.21 (48.27)	1366.01 (51.73)	2641.22	2258.44	382.78	259.65 (13.26)	1698.27 (86.74)	1957.92	1647.91	310.01
2014-15	570.55 (23.79)	1827.85 (76.21)	2398.40	2225.74	172.66	411.54 (23.60)	1332.23 (76.40)	1743.77	1657.43	86.34
2015-16	1259.35 (38.82)	1985.06 (61.18)	3244.41	3444.41	-200.00	282.06 (17.59)	1321.53 (82.41)	1603.59	1512.12	91.47
2016-17	1264.20 (28.58)	3159.14 (71.42)	4423.34	5214.69	-791.35	277.85 (11.37)	2165.11 (88.63)	2442.96	2365.20	77.76
2017-18	NA	NA	6332.65	3270.13	3062.52	NA	NA	NA	NA	NA
2018-19	NA	NA	5438.32	2950.51	2487.81	NA	NA	NA	NA	NA
<b>CAGR</b>	<b>16.30</b>	<b>34.31</b>	<b>24.61</b>	<b>16.07</b>	--	<b>6.93</b>	<b>7.79</b>	<b>7.90</b>	<b>6.93</b>	--

Source: 1. 'Annual Technical Inspection Report on Panchayati Raj Institutions & Urban Local Bodies For The Year 2014-15'

2. 'Annual Technical Inspection Report on Panchayati Raj Institutions & Urban Local Bodies For The Year 2016-17'

3. Data for 2017-18 and 2018-19 are taken from 'Statistical Abstract of Haryana 2019-20'

4. Figures in parenthesis are percentage of total revenue which is computed by the researcher.

TABLE 7: DEA EFFICIENCY SCORES OF MUNICIPALITIES AND PANCHAYATS CONSIDERING ONE INPUT (REVENUE OF MUNICIPALITIES AND PANCHAYATS) AND ONE OUTPUT (EXPENDITURE OF MUNICIPALITIES AND PANCHAYATS)

Years	Efficiency of Municipalities				Efficiency of Panchayats			
	Overall Technical Efficiency	Managerial Efficiency	Scale Efficiency	Returns to Scale	Overall Technical Efficiency	Managerial Efficiency	Scale Efficiency	Returns to Scale
2011-12	0.973	1.000	0.973	Increasing	1.000	1.000	1.000	Constant
2012-13	0.633	0.642	0.987	Increasing	0.989	1.000	0.989	DRS
2013-14	0.725	0.730	0.993	Increasing	0.830	0.854	0.972	DRS
2014-15	0.787	0.794	0.991	Increasing	0.937	0.954	0.983	DRS
2015-16	0.901	0.904	0.996	Increasing	0.930	0.939	0.991	DRS
2016-17	1.000	1.000	1.000	Constant	0.955	1.000	0.955	DRS
2017-18	0.438	0.627	0.698	Diminishing	-	-	-	-
2018-19	0.460	0.566	0.813	Diminishing	-	-	-	-
<b>Mean</b>	<b>0.740</b>	<b>0.783</b>	<b>0.931</b>	-	<b>0.940</b>	<b>0.958</b>	<b>0.982</b>	-

Source: Researchers' computations in DEAP software (Version 2.1)



### Efficiency of Municipalities

- **Overall Technical Efficiency:** Municipalities are found to be overall technical efficient (capable in achieving maximum possible output from a given set of inputs) only during 2016-17 where efficiency score is one (100 per cent). But in the remaining years, there exists a potentiality of achieving more output with the utilisation of existing input. The mean score of overall technical efficiency is 0.740 thereby indicating the possibility of increase in output (expenditure) by 26 per cent with the existing level of input (revenue).
- **Managerial Efficiency:** During 2011-12 and 2016-17, Municipalities are managerially efficient in converting their input into output. On an average, managerial efficiency score is 0.783 thereby implying the possibility of raising the output (expenditure) of Municipalities by 21.7 per cent via improving the managerial practices involved in Municipalities.
- **Scale Efficiency and Returns to Scale:** Municipalities are found to operate at optimum scale only during 2016-17 as the scale efficiency score is one (100 per cent). But during 2011-12 to 2015-16, the scale of operations of Municipalities is less than optimum as increasing returns to scale are operating in these years. For example, in 2011-12, the Municipalities could raise their output (expenditure) by 2.7 per cent via increasing their scale of operations to the optimum level because increasing returns to scale are found to operate in that year. On the other hand, during 2017-18 and 2018-19, the scale of operations of Municipalities is too big (than optimum) because diminishing returns to scale are operating. Thus, in 2017-18, Municipalities could raise their output by 30.2 per cent by reducing their scale of operations up to optimum level. Finally, mean score of scale efficiency is 0.931 which indicates the potentiality of raising the output by 6.9 per cent via improving the scale of operations for the given input-output mix.

### Efficiency of Panchayats

- **Overall Technical Efficiency:** During 2011-12, overall technical efficiency score is one (100 per cent) which shows that Panchayats have achieved optimum level of output (expenditure) with the existing level of input (revenue). But in the remaining years, inefficiency of Panchayats is visible. However, on an average, overall technical efficiency score is

0.940 which reveals that Panchayats could raise their output (expenditure) by 6.0 per cent with the existing level of input (revenue).

- **Managerial Efficiency:** During 2011-12, 2012-13 and 2016-17, Panchayats are managerially efficient in converting their input into output. On an average, managerial efficiency score is 0.958 which indicates that Panchayats could increase their output (expenditure) by 4.2 per cent via improving their managerial decision making.
- **Scale Efficiency and Returns to Scale:** During 2011-12, scale efficiency score of Panchayats is one, which indicates that Panchayats are scale efficient that is, they are operating at optimum scale. But in remaining years, Panchayats are found to be scale inefficient under the presence of diminishing returns to scale. This implies their scale of operations is too big than optimum. Thus, in the years of scale inefficiency, Panchayats could increase their output by reducing their scale of operations up to optimum level. Finally, mean score of scale efficiency is 0.982 which indicates the potentiality of raising the output by 1.8 per cent via improving the scale of operations for the given input-output mix.

### Findings of the Study

The findings of the study can be summarised as follows:

- The study reveals that public expenditure on Municipalities and Panchayats have increased at an appreciable CAGR of 15.37 per cent for the period 2011-12 to 2020-21. It has been found that as a percentage of GSDP, public expenditure on Municipalities and Panchayats is quite low.
- The study shows that public expenditure on Municipalities and Panchayats significantly promotes economic growth. However, to influence economic growth in most significant manner, public expenditure on Municipalities and Panchayats requires a time lag of one year.
- It has been noted that GSDP and CPI (proxy for inflation) have immediate most significant impact on public expenditure on Municipalities and Panchayats. In this regard, GSDP is a positive determinant while CPI is a negative determinant. However, number of local bodies employees does not determine the public expenditure on Municipalities and Panchayats.

- It has been found that own resources of Municipalities and Panchayats are not sufficient to meet their expenditure requirements. Also, for some years, Municipalities and Panchayats have not utilised their entire resources.
- It has been observed that on an average both Municipalities as well as Panchayats are inefficient in utilisation of resources. However, in comparison of Municipalities, Panchayats are more efficient in resource utilisation. The results also reveal that Municipalities and Panchayats are managerially efficient for more number of years than the years of scale efficiency. Despite that average scale efficiency of both Municipalities and Panchayats is better than their managerial efficiency.

### **Policy Implications**

- There is need to raise public expenditure on Municipalities and Panchayats in absolute terms and as a percentage of GSDP for the adequate functioning of these institutions as public expenditure incurred on these institutions contribute to over all economic growth.
- The delays involved in the provision of grants and other transfers towards Municipalities and Panchayats must be prevented. Because these delays not only affect the functioning of these institutions but also those private businesses who work in the projects undertaken by these institutions.
- There is need to raise GSDP as it enhances State's capacity to spend more on Municipalities and Panchayats. Since, increase in CPI (inflation) reduces public expenditure on Municipalities and Panchayats; therefore, control over inflation is very necessary.
- No doubt, Municipalities and Panchayats have not sufficient resources. Therefore, to fulfill their requirement and to keep them active, the provision of grants for these institutions must be based on their functioning requirements.
- There is emergence of making Municipalities and Panchayats as efficient by improving their managerial practices and their scale of operations. For this purpose, the regular monitoring of the performance of Municipalities and Panchayats is the need of the hour.
- The state government must have adequate control over

Municipalities and Panchayats to plug corrupt practices, wastage of resources and ensure judicious expenditure which falls in the domain of needonomics.

- We can be hopeful for the things to take shape in the real sense by understanding and adopting the canons of public expenditure advocated by Dr B.R. Ambedkar that every Government should spend the resources garnered from the public not only according to rules, laws and regulations but should also see that 'faithfulness, wisdom and economy' are adhered to in the acts of expenditure by the Government of Haryana including Municipalities and Panchayats.
- To improve the functioning of Municipalities and Panchayats, we need manpower and elected representatives to be street SMART (Simple, Moral, Action Oriented, Responsive and Transparent) in the strict sense.
- We have to adopt a sustainable fiscal path including judicious expenditure by keeping in mind the receipts that fall in the domain of needonomics (economics of needs).

### **Limitations of the Study**

The present study is entirely based on secondary data and such data itself are subject to certain limitations. The major limitation is that the data on a specific variable published in one document do not match with the same variable's data given in another published document of the Government. Also econometric techniques used in the present study have their own limitations which cannot be ignored.

### **REFERENCES**

- Aijaz, R. (2007). Challenges for Urban Local Governments in India (Asia Research Centre Working Paper 19). Retrieved from Asia Research Centre (ARC), London School of Economics & Political Science website: <https://core.ac.uk/download/pdf/95545.pdf>
- Bandyopadhyay, S. (2012). Performance Evaluation of Urban Local Governments: A Case for Indian Cities (ICEPP Working Paper 12-32). Retrieved from the International Center for Public Policy (ICEPP) website: <https://scholarworks.gsu.edu/icepp/70>
- Department of Economic and Statistical Analysis, Haryana (2013). *Statistical Abstract Haryana 2011-12*.
- (2014). *Statistical Abstract Haryana 2012-13*.
- (2015). *Statistical Abstract Haryana 2013-14*.

- (2020). *Statistical Abstract of Haryana, 2018-19*.
- (2021). *Statistical Abstract of Haryana, 2019-20*.
- Finance Department, Haryana (2020). *Budgetary Transfers to Local Bodies: 2020-21*.
- Goel, M.M. and Garg, I. (2011). Public expenditure on health and economic growth in Haryana: an analysis. *Research Journal Social Sciences*, 19(2), 29-43.
- Goel, M.M. and Garg, I. (2016). Public expenditure on health and its impact on health infrastructure and health status in Haryana. *Voice of Research*, 5(2), 9-18.
- Goel, M.M. and Garg, I. (2018). Construction of health infrastructure index in Haryana: an econometric approach. *Journal of Technology Management for Growing Economies*, 9(1), 103-123.
- Goel, M.M. and Garg, I. (2019). Determinants of public expenditure on health in Haryana: a vector auto-regression (VAR) approach. *VARTA*, 40(2), 39-55.
- Goel, M.M. &Garg, I. (2017). Technical efficiency of health sector in Haryana: an analysis. *VARTA*, 38(2), 1-16.
- Government of Haryana (2012). *Finance Accounts: 2011-12*.
- (2013). *Finance Accounts: 2012-13*.
- (2014). *Finance Accounts: 2013-14*.
- (2015). *Finance Accounts: 2014-15*. Retrieved from Comptroller and Auditor General of India's website:  
[https://cag.gov.in/uploads/state\\_accounts\\_report/HR\\_Finance\\_Accounts\\_2014\\_15.pdf](https://cag.gov.in/uploads/state_accounts_report/HR_Finance_Accounts_2014_15.pdf)
- (2016). *Finance Accounts: 2015-16*. Retrieved from Comptroller and Auditor General of India's website:  
[https://cag.gov.in/uploads/state\\_accounts\\_report/HR\\_Finance\\_Accounts\\_2015\\_16.pdf](https://cag.gov.in/uploads/state_accounts_report/HR_Finance_Accounts_2015_16.pdf)
- (2017). *Finance Accounts: 2016-17*. Retrieved from Comptroller and Auditor General of India's website: [https://cag.gov.in/uploads/state\\_accounts\\_report/HR\\_Finance\\_Accounts\\_2016\\_17.pdf](https://cag.gov.in/uploads/state_accounts_report/HR_Finance_Accounts_2016_17.pdf)
- (2018). *Finance Accounts: 2017-18*. Retrieved from Comptroller and Auditor General of India's website:  
[https://cag.gov.in/uploads/state\\_accounts\\_report/HR\\_Finance\\_Accounts\\_2017\\_18\\_0.pdf](https://cag.gov.in/uploads/state_accounts_report/HR_Finance_Accounts_2017_18_0.pdf)
- (2019). *Finance Accounts: 2018-19*. Retrieved from Comptroller and Auditor General of India's website:  
[https://cag.gov.in/uploads/state\\_accounts\\_report/Finance%20Accounts-2018-19Vol-1&IIEng.pdf](https://cag.gov.in/uploads/state_accounts_report/Finance%20Accounts-2018-19Vol-1&IIEng.pdf)
- (2020). *Finance Accounts: 2019-20*.

- Gujarati, D. N. (2003). *Basic econometrics* (4th ed.). New York, NY: McGraw-Hill.
- Hariharan, S.V. (2008). State Government Expenditure on Education and its Impact on NSDP in Tamil Nadu (86-94). In A.K. Thakur and Md. A. Salam (Eds.), *Economics of education and health in India* (pp. 86-94). New Delhi, India: Deep & Deep Publications Private Limited.
- Muniswami, S. (2018). Income and disbursement of Urban Local Bodies: A Study of Kurnool Municipal Corporation. *International Journal of Scientific Research and Management*, 6(2), 164-178.
- National Institute of Urban Affairs, New Delhi (2015). *A Study to Qualitatively Assess the Capacity Building Needs of Urban Local Bodies (Municipalities) – Final Report*. Retrieved from NITI Aayog's website:  
[http://niti.gov.in/writereaddata/files/document\\_publication/report-ULB\\_0.pdf](http://niti.gov.in/writereaddata/files/document_publication/report-ULB_0.pdf)
- Office of the Principal Accountant General (Audit), Haryana (2015). *Annual Technical Inspection Report on Panchayati Raj Institutions & Urban Local Bodies for the year 2014-15*.
- Office of the Principal Accountant General (Audit), Haryana (2017). *Annual Technical Inspection Report on Panchayati Raj Institutions & Urban Local Bodies for the year 2016-17*.
- Singh, C. & Singh, C. (2015). Financing of Urban Local Bodies in India (Working Paper No. 493). Retrieved from  
[https://www.iimb.ac.in/sites/default/files/2018-07/WP\\_No\\_493\\_0.pdf](https://www.iimb.ac.in/sites/default/files/2018-07/WP_No_493_0.pdf)
- Steering Committee for the Review of Commonwealth/State Service Provision (1997), *Data Envelopment Analysis: A Technique for Measuring the Efficiency of Government Service Delivery*, AGPS, Canberra. Available online at: <http://www.pc.gov.au/research/supporting/data-envelopment-analysis/dea.pdf>.
- Tiebout, C.M. (1956). A Pure Theory of Local Expenditures. *Journal of Political Economy*, 64(5), 416-424.