THE FINANCIAL PATH TO URBAN DEVELOPMENT: MUNICIPAL REVENUES AND CAPITAL OUTLAY

Abstract

This paper attempts to empirically test the relationship between municipal revenue streams and capital outlay focused on building new infrastructure and amenities for sustainable urban development. The cross-sectional data from municipal corporations across 26 Indian states and Union Territories has been used. An Ordinary Least Squares model was used to estimate the coefficients of own tax revenue, own non-tax revenue and government transfer income/revenues. The main results of the study show that while own non-tax revenue sources have greater influence in determining capital outlay, own tax revenue sources have relatively weak relationship. Transfers from the central government are significant factors influencing capital outlay of the municipal corporations while state government transfers seem to be statistically insignificant. The study also employs several diagnostic tests to ensure validity of the results and robustness of the model employed. Model diagnostics reveal that the results are efficient and model is a good fit to the data. The paper then concludes with discussion on the results obtained and policy suggestions along with indicating scope for further research in the field.(Research design, sampling procedures, data collection tools and techniques, and numerical result/value should be included in abstract)

Keywords: municipal finance, sustainable development, property tax, local government finance, capital outlay.

JEL Classifications: R51, R58, H71, H72.

Introduction

This paper attempts to answer the question of local governance "whether municipal taxation and revenue streams influence urban development?". The taxes/fees imposed by local government bodies especially urban local bodies (ULBs) in India are the 2nd major source of revenue after government transfers. ULBs are primarily dependent on transfers from higher level of government in India's 3-tier governance structure. This over-reliance limits the ability of these lower tier governments to influence development in regions and cities of the country. Such local governments are well suited for promoting growth and development at local levels due to their proximity to the public and superior knowledge of the local needs and preferences (Oates, 1972). Local governments in a country work at the grassroot levels to provide services and public goods to the population therefore they are active economic agents in promoting growth not only at regional level but at a national level too.

The rate of urbanisation in India is growing exponentially, which is placing more strain on urban local bodies (ULBs)[1]. The pressure to provide high quality services and infrastructure in the cities is worsened by the increasing rate of migration to the cities in search of better employment and living standards by the rural population. The strain is higher on larger urban local bodies such as Municipal Corporations. The ULBs in India are categorised as Municipal Corporations (governing larger metropolitan areas with population over a million), Municipal Councils or Municipalities (governing relatively smaller cities with less than a million population) and Nagar Panchayats that govern towns or cities with population up to a lakh[2].

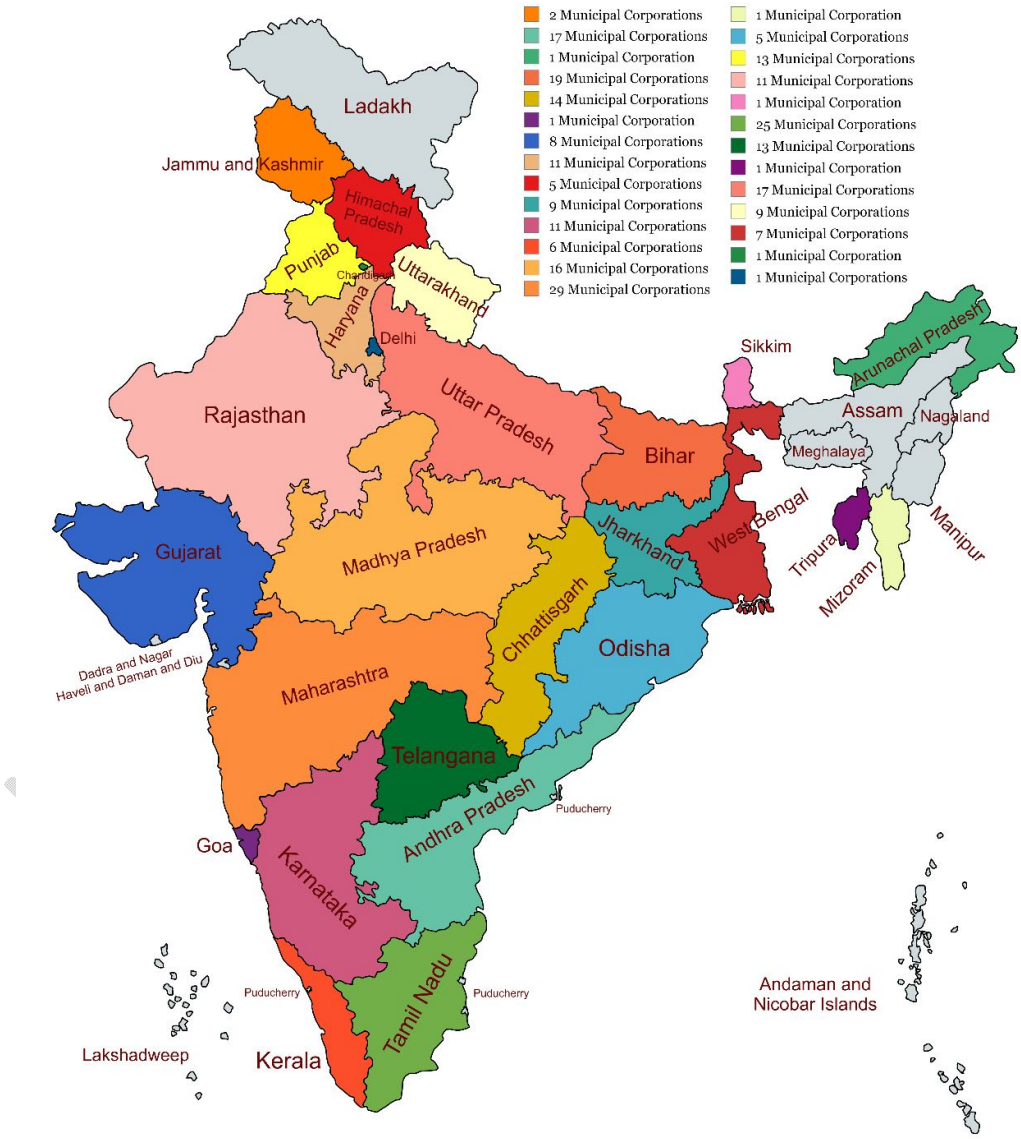
Capital Expenditure by local governments especially larger urban government bodies is believed to influence economic growth and welfare in cities(Kuntari, 2019; Kuntari et al., 2019). Municipal Corporations also actively influence growth outcomes at the district levels and their fiscal functions such as taxation and expenditure also have macro-economic linkages at state level (Bandyopadhyay et al., 2024). Several studies in developing countries have tried to assess the impact of municipal finances on economic growth of the regions. However, in India, there are very few studies on this relationship.

In this paper we assess the impact of municipal taxes and other revenue streams in determining the quantum of capital outlay incurred by municipal corporations of Indian states. The study holds merit because the general conjecture of decentralisation theory is that

[1] Municipal Performance Index (2020), Ministry of Housing and Urban Affairs, Government of India.
[2] RBI's Report on Municipal Finances.

capital outlay by municipal governments actively builds infrastructure and other public assets in the cities which in turn attracts more businesses and firms that bring with them new employment opportunities and income streams for the population. Figure 1 shows the selected states of the country for empirical estimation and number of municipal corporations in the respective states.

Rest of the paper is structured as: the next section includes relevant empirical and theoretical insights from the extant literature. Third section describes data and the empirical methodology adopted for estimation. Fourth section presents results of the model and



Source: *Author's own representation using the data from Local Government Directory, Ministry of Panchayati Raj, Government of India.*

discusses the outcomes. Finally, the paper concludes with implications and suggestions.

(Suggestions: 1. By showing all the study variables, better to draw the conceptual framework considering theory/theoretical framework, 2. Set the hypotheses/research questions? 3. Better to set the hypotheses because of quantitative study, 4. Objectives of the study should be stated in clearly and separately with measurable variables)

Review of Literature

The extant literature on the relationship between different revenue sources of local bodies on their capital outlay has mixed views. It is found that realisation of local revenue significantly affects the expenditure patterns and decisions of local bodies, and this expenditure in turn promotes infrastructural resources (Nugeraha et al., 2024). Delang and Sitorus (2024) conduct a study to find out how capital expenditure of local governments in Jakarta influences their financial performance and how revenue generation affects capital expenditure using panel data of 22 districts and cities. It is found that local government revenue affects local government financial performance, and capital expenditures have an impact on local government revenue. Aside from that, there is a favourable association between capital expenditures and the financial success of local governments. The relationship between capital expenditures and local government financial performance can be mediated by local government revenue (Delang&Sitorus, 2024). Another study focused on finding the effect of local original revenue and economic growth on capital expenditure of the NTB provincial government of Indonesia found that though there is no significant relationship between locally generated revenue and capital expenditure, the allocation funds by higher level of government largely determine the capital expenditure(Lestari & Basuki, 2024). On the contrary, another study focused on factors that affect capital expenditures of provincial governments in Indonesia used the data from 34 provinces from 2020 to 2022, revealed that local revenue streams and allocation funds both have significant impact on capital expenditures (Ningrum et al., 2024).

In Indian context, very few studies have been done to find out the impact of municipal revenue streams on capital outlay of the municipal governments. The literature mainly focuses on state level studies and surprisingly overlooks the role of local governments. However, there are several studies revolving around similar issues such as, the study by Jain and Joshi (2015) highlights the issues and challenges faced by municipalities across India in raising revenue (Jain & Joshi, 2015). Sekhar&Bidarkar, (1999) compare municipal budgets

across five Indian cities and find that lack of accountability and transparency is a major issue in municipal budgeting whereas inability to finance expenditures through own sourced revenue is another issue. Such inability arises due to the dependence on state governments for setting of taxes and tax rates. The major contributor to local governments' own revenue is the property tax which also needs to be revised and reformed because there are various political and institutional roadblocks (Rao, 2013). Mishra et al., (2022) also observe several ailments in the property tax structure in Indian municipalities contributing to inefficiency in meeting expenditure requirements which in turn affects optimum public service delivery. Aijaz, (2007) also highlights challenges of urban local governments in India, key features emerged in the study indicate the sub-par performance of these governments. It is also found that municipal taxes and revenue streams are second most significant components that determine the financing of urban infrastructure after government transfers (Garg, 2007; Malhotra et al., 2022). Although, there is a vast literature on issues and challenges of municipal governments, there is a concerning lack of empirical studies on the effect of municipal revenue sources on capital outlay, this paper attempts to fill this gap by empirically validating the aforementioned relationship.(Suggestions: 1. Add literatures to strengthen your study. 2. Define study variables and explain/justify them separately (variable wise) with literatures, 3. Draw the conceptual framework considering theory/theoretical framework)

Data and Methodology

The cross-sectional data of municipal corporations of 26 Indian states and UTs[3] for the year 2019-20 has been used to study the relationship. For estimation our main variables include the dependent variable, Capital Outlay (CapO) and independent variables are various revenue sources of the municipal corporations such as Property Tax (PropTx), Water Tax (WTx), Advertisement Tax (AdvTx), Other Taxes (OTx), Rental Income from Municipal Properties (RentY), Fees and User Charges (FeeUchrgs), Sale and Hire Charges (SaleHire), Income from Investments (InvY), Interest earned (r), Transfer Income from Central Government (CnTrf) and Transfer Income from State Government (Strf). Data on all the variables is extracted from the RBI's Report on Municipal Finances (2022)[4]. A detailed description and

[3]Andhra Pradesh, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Mizoram, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Telangana, Tripura, Uttar Pradesh, Uttarakhand, West Bengal, Chandigarh, Delhi.

source of variables is presented in Table 1.All variables are measured in Lakh Rupees(???? not so relevant) and are 2019-20 Budget Estimates of the respective MCs.

(Suggestions: Research design, theory related to the study, sampling techniques, types of data, tools used in data collection, etc. must be included)

Model Specification

Since the dataset used in the study does not include a time variable, we have relied upon Ordinary Least Squares (OLS) method for our empirical estimation. The general form of the OLS model is given as:

$$Y_i = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \cdots + \beta_k X_{ki} + \epsilon_i \quad \ldots 1$$

Where, Y_i is the dependent variable for entity i, α is the intercept, X_{ki} is the independent variable k for entity i, β_k is the coefficient and ϵ_i is the error term for entity i.

Based on the OLS model in equation 1, we specify our model as:

$$CapO_i = \alpha + \beta_1 PropTx_i + \beta_2 2WTx_i + \beta_3 AdvTx_i + \beta_4 OTx_i + \beta_5 RentY_i + \beta_6 FeeUchrgs_i + \beta_7 SaleHire_i + \beta_8 InvY_i + \beta_9 R_i + \beta_{10} CnTrf_i + \beta_{11} Strf_i + \epsilon_i \quad \ldots 2$$

Where, $CapO_i$ is the capital outlay for observation i, $PropTx_i$ is the property tax, $WTx_i$is the water tax, $AdvTx_i$ is the advertisement tax, OTx_i is other taxes, $RentY_i$ is rent income, $FeeUchrgs_i$ is fees and user charges, $SaleHire_i$ is sales and hire charges,$InvY_i$ is investment income, R_i is the interest earned, $CnTrf_i$ is transfer income from central government, $Strf_i$ is the transfer income from state government and ϵ_i is the error term.

To ensure accuracy and robustness of the results obtained through our model, we employ several diagnostic tests such as Breusch-Pagan/Cook-Weisberg test for heteroskedasticity, White's test for homoskedasticity, Skewness Kurtosis test for normality of the residuals, the results of which are reported in the next section.

[4] Report on Municipal Finances (2022), Reserve Bank of India. URL: https://m.rbi.org.in/scripts/AnnualPublications.aspx?head=Report%20on%20Municipal%20Finances

Table 1. Description of Variables

Variables	Description	Measurement	Source
Dependent Variable			
CapO	Capital Outlay	In rupees Lakh	Data on all variables is extracted from RBI's Report on Municipal Finances (2022)
Explanatory Variables			
PropTx	Property Tax	In rupees Lakh	
WTx	Water Tax	In rupees Lakh	
AdvTx	Advertisement Tax	In rupees Lakh	
OTx	Other Taxes	In rupees Lakh	
RentY	Rental Income from Municipal Properties	In rupees Lakh	
FeeUchrgs	Fees and User Charges	In rupees Lakh	
SaleHire	Sale and Hire Charges	In rupees Lakh	
InvY	Income from Investments	In rupees Lakh	
R	Interest earned	In rupees Lakh	
CnTrf	Transfer Income from Central Government	In rupees Lakh	
Strf	Transfer Income from State Government	In rupees Lakh	

Source: Author's own representation

Results and Discussion

Model Results

The estimated model indicates varying effects of the independent variables on capital outlay of the municipal corporations. The results of the model are reported in Table 2. The dependent variable is highly impacted *by OTx*, *RentY, FeeUchrgs*, *InvY, R*, *CnTrf*, and *Strf*, with *OTx* and *RentY* demonstrating the strongest positive effects. On the other hand, while *SaleHire* is getting close to significance, *PropTx*, *WTx*, and *SaleHire* do not show significant connections at conventional levels. The R-squared value indicates a high overall model fit, indicating that the independent variables account for a significant amount of the variance in the dependent variable. The model's overall relevance is further supported by the F-test. When all independent variables are 0, the constant term represents the dependent variable's baseline level.

(Two suggestions: 1. numerical explanation is essential, 2. result supportive literature must be included)

Table 2. OLS Model Results

The empirical investigation reveals certain notable characteristics. The coefficient for property tax is negative and statistically insignificant despite it being the highest revenue generating source for municipal corporations (Rao, 2013). This insignificant relationship suggests the limitations of empirical estimation in the field of local government finance.The lack of longitudinal data and appropriate accounting mechanisms worsens the problem.

Furthermore, the coefficient of water tax is also negative and statistically insignificant while the coefficient for advertisement tax - another large source of revenue, is positive but statistically insignificant (refer to Table 2). The coefficient for other taxe

Dependent Variable:CapO	Coef.	St.Err.	t-value	p-value
PropTx	-.211	.586	-0.36	.724
WTx	-2.962	2.015	-1.47	.164
AdvTx	15.786	11.204	1.41	.181
OTx	20.982***	3.382	6.20	0.000
RentY	8.526***	1.554	5.49	0.000
FeeUchrgs	3.569***	.741	4.81	0.000
SaleHire	-6.551*	3.307	-1.98	.068
InvY	-19.664***	3.32	-5.92	0.000
R	40.435***	6.961	5.81	0.000
CnTrf	2.451**	.84	2.92	.011
Strf	-1.158**	.452	-2.56	.023
Constant	27566.53	23302.612	1.18	.257
R-squared	0.99			
Adjusted R-square	0.98			
F-test	163.914			
Prob > F	0.000			
Akaike crit. (AIC)	665.486			
Bayesian crit. (BIC)	680.583			

Source: Author's own calculations.

s is large and statistically significant at 1 per cent level of significance suggesting other taxes

Jarque-Bera Normality Test	White's Test for Homoskedasticity	Breusch-Pagan / Cook-Weisberg Test

such as vehicle tax, sewage tax, and professional tax etc. are major determinants of capital outlay as shown in Table 2.

Coefficient for RentY which is the Rental income from municipal properties is also positive and significant at the 1 per cent level, rental income is a part of non-tax municipal revenues. It is important to note that, all measures of non-tax revenue i.e., rental income, fees and user charges, sale and hire charges, income from investments made by municipal corporations, interest earnings are statistically significant, coefficient of sale and hire charges is significant at 10 per cent level of significance. This suggests that capital outlay of municipal corporations in India is greatly determined by the non-tax revenue sources as compared to tax revenue sources which makes sense because a great proportion of municipal own sourced revenues come from non-tax sources. Another very important and noteworthy result obtained from empirical analysis is the relationship of state transfers (Strf) which includes Assigned Revenues, compensation, State Finance Commission Grants, State grant in aid transfers is negative and statistically significant at the 5 per cent level, this result contradicts the existing literature that posits that state transfer being largest source of income for municipal corporations is the greatest contributor to the municipal expenditures. The coefficient for Transfers from Central government is positive and significant at 5 per cent level suggesting central transfers that include Finance Commission transfers positively influence capital outlay of the municipal corporations.

Diagnostic Tests

The findings of diagnostic tests employed to ensure the robustness of the model and reinforce the results obtained are reported in Table 3.

Jarque-Bera	2.58			
χ^2		.275	0.55	
p-value	.275	0.407	0.459	

Skewness/Kurtosis tests for Normality

Variable	**Pr(Skewness)**	**Pr(Kurtosis)**	**χ^2 (p-value)**
Residual	0.0972	0.2211	4.38 (0.111)

Table 3. Diagnostic Tests

Source: Author's own calculations.

The Jarque-Bera test for normality (refer to column 2 of Table 3) yielded a test statistic of 2.58 with associated p value of 0.275 which is higher than the common significance level, meaning we fail to reject the null hypothesis of the test which states that the residuals of the model are normally distributed. The normality of residuals is further confirmed by the White's test for homoskedasticity (refer to column 3 of table 3) which assumes a null hypothesis of homoskedasticity. The p-value for the test is higher than the 5 percent significance level suggesting that the model yields homoscedastic residuals. In column 4 of the Table 3, we report the results of Bruesch-Pagan/Cook-Weisberg test for heteroskedasticity, the test has a null hypothesis of constant variance. The test was not significant, $\chi^2(1) = 0.55$, $p = .460$, indicating that there is no evidence of heteroskedasticity. Therefore, the assumption of constant variance (homoskedasticity) holds for the fitted values of the dependent variable.The Skewness/Kurtosis test for normality was conducted on the residuals. The joint test was not significant, $\chi^2(2) = 4.38$, $p = .112$, indicating that the residuals do not deviate significantly from a normal distribution. This suggests that the assumption of normality is reasonably met for the residuals.

Conclusion

The empirical estimation carried out in this paper using a cross-sectional data from the municipal corporations of 26 Indian states for the year 2019-20 revealed certain noteworthy results. The own tax revenue sources of the municipal corporations do not seem to be highly associated with the determination of the capital outlay of the corporations. On the other hand, non-tax revenue sources which are also larger contributors to the revenue receipts of these urban local bodies as compared to tax revenue sources are highly significant and actively influence the capital outlay. Transfers and grants from the central government seem to be significant in influencing capital outlay and transfers from state governments come as insignificant determinants. The diagnostic tests employed to reinforce these results also

yielded favourable outcomes thereby ensuring that the model estimated was robust. Capital outlay by the municipal corporations helps in building infrastructure and assets in cities which in turn contributes to the overall urban development. Roads, buildings, and other infrastructure attracts new businesses that provide employment opportunities and income streams for the urban population thereby contributing to sustainable development outcomes. Based on the results obtained in the study, we can conclude that own revenue sources of the urban local bodies in the country need to be augmented. New and innovative mechanisms of financing should be adopted such as municipal bonds and pooled financing. The local governments also need to actively engage in the securities markets. Tax structure should be thoroughly reviewed and optimised on the basis of local conditions and income levels. Finally, there is a desperate need to address data related issues of local governments in the country by establishing centralised portals that store financial as well as performance data of the local governments and these governments must be mandated to ensure accounting and reporting of such data. This will facilitate further empirical research in new dimensions which remain unaddressed severely affecting efficient policy formation.

(Implication of the study should be clearly and separately stated)

References

Aijaz, R. (2007). *Challenges for urban local governments in India*.

Bandyopadhyay, S., Majumder, S., & Sharma, A. (2024). *Fiscal Sustainability of Small and Medium Cities in India: Some New Dimensions* (Paper 2404). International Center for Public Policy, Andrew Young School of Policy …. https://icepp.gsu.edu/files/2024/06/paper2404.pdf

Delang, T. O., &Sitorus, R. R. (2024). The Effect of Capital Expenditure on Regional Financial Performance with Local Original Income as an Intervening Variable in Districts and Cities in NTT Province in 2017-2021. *Journal Syntax Transformation*, *5*(3), 433–445.

Garg, S. C. (2007). Overview of urban infrastructure finance in India. *Financing Cities: Fiscal Responsibility and Urban Infrastructure in Brazil, China, India, Poland and South Africa*, 108–157.

Jain, M., & Joshi, R. (2015). Municipal finances in India: Unresolved issues and way forward. *Cities: The 21st Century India*.

Kuntari, Y. (2019). *Capital Expenditure of Local Governments*. https://www.researchgate.net/publication/343389818

Kuntari, Y., Chariri, A., & Prabowo, T. J. W. (2019). Capital expenditure of local governments. *Academy of Accounting and Financial Studies Journal*, *23*(1), 1–13.

Lestari, R. I., & Basuki, P. (2024). The Effect of Economic Growth, Local Original Revenue, General Allocation Fund, Special Allocation Fund, and Profit Sharing Fund on Capital Expenditure of The NTB Provincial Government. *City*, *316*, 000.

Malhotra, A., Mishra, A. K., & Vyas, I. (2022). Financing urban infrastructure in India through tax increment financing instruments: A case for smart cities mission. *Journal of Public Affairs*, *22*(3), e2554.

Mishra, S., Mishra, A. K., & Panda, P. (2022). What ails property tax in India? Issues and directions for reforms. *Journal of Public Affairs*, *22*(1), e2299.

Ningrum, D. A. S., Fitriasuri, F., Mellita, D., &Sartika, D. (2024). Factors affecting capital expenditure in provincial governments in Indonesia. *JurnalEkonomi*, *13*(01), 1572–1589.

Nugeraha, E. H., Adriani, A., & Hamdani, H. (2024). Analysis of the Relationship between Realization of Local Revenue (Pad) and Realization of Capital Expenditure with Realization of Maintenance Expenditure in Regency/City Governments in South Kalimantan Province in 2010-2016. *International Journal of Education, Information Technology, and Others*, *7*(3), 148–157.

Oates, W. E. (1972). Fiscal federalism. *HarcourtBrace Jovanovich Inc*.

Rao, M. G. (2013). Property tax system in India: Problems and prospects of reform. *DapatDiaksesPada Https://Pdfs. Semanticscholar. Org/96df/0211cb95fda010d7f41cf92b47411ecb3a7e. Pdf [Diakses 01 Mei 2017]*.

Sekhar, S., &Bidarkar, S. (1999). Municipal budgets in India: comparison across five cities. *Economic and Political Weekly*, 1202–1208.