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Evaluating financial sustainability of municipalities in India for enhanced access to the urban challenge fund: Insights from financial indicators

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Abstract

This study evaluates the financial sustainability of municipalities located in hilly states in India and assesses their preparedness to participate in the Urban Challenge Fund, with a specific focus on their potential to access the bond market. The analysis includes eight urban local bodies, using panel data spanning fiscal years 2019-20 to 2022-23. Employing panel data regression techniques, the study uses the proportion of municipal surplus to total revenue receipts as a proxy for financial sustainability. The key explanatory variables include Earnings before Interest, Depreciation, and Amortization (EBIDA) as a share of total revenue and interest payments relative to total revenue. Control variables include regional classification (hill versus northeastern states) and municipal population. To ensure robustness, statistical diagnostics and tests for normality were conducted. Findings reveal significant fiscal stress among hilly municipalities, characterized by consistently negative EBIDA-to-revenue ratios and persistent revenue deficits, with negligible interest payments, suggesting limited capacity for market-based borrowing. These structural financial weaknesses raise concerns about the financial viability and sustainability of Government initiatives, such as AMRUT and the Urban Challenge Fund in hill regions. The study is geographically limited, focusing exclusively on eight municipalities from hill states, and does not account for governance quality or service delivery performance. Consequently, findings may not be generalizable to other regions or broader urban contexts in India.

Keyword: Financial assessment, financial performance indicators, national municipal accounting manual, hilly states

Introduction

The 74th Constitutional Amendment Act (CAA) marked a watershed in India's urban governance framework. It empowers Urban Local Bodies (ULBs) to function as institutions of local self-governance. This legislative milestone devolved 18 functional responsibilities including urban planning, water supply, waste management, and public health to ULBs, enabling them to address urban challenges at the grassroots level. However, the efficacy of these devolved powers remains contingent upon their financial capacity to mobilize and manage resources effectively.

India's urbanization trajectory has been rapid and transformative. The urban population increased from 27.8% in 2001 to 31.2% in 2011, registering an absolute growth of 90.9 million people ^[1]. Projections suggest that urbanization will accelerate further, with urban residents expected to constitute 40% of the population (600 million) by 2030 and 50% (800 million) by 2050 ^[1]. As urban areas contribute nearly 80% of global GDP, leveraging this demographic shift is crucial for India's economic growth. However, the fiscal capacity of Indian municipalities remains weak. Municipal revenues contribute only about 1% of India's GDP, far below the global average of 6-8% in comparable economies such as Brazil and South Africa ^[2, 3]. The government's target to increase this share to 2.01% by 2032 ^[1] underscores the scale of reform required. Moreover, stark regional disparities persist: per capita municipal own revenue as a percentage of per capita state income ranges from 0.2% in Bihar and Jharkhand to 6.1% in Madhya Pradesh ^[4], reflecting deep inequities in revenue mobilization capacities.

The fiscal stress is particularly acute in India's hilly and north eastern states, including Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Sikkim,

Himachal Pradesh, Jammu and Kashmir, and Uttarakhand. Despite an uptick in urbanization rates Sikkim (49.5%) and Jammu and Kashmir (40%) being notable cases most of these states remain below the national urbanization average of 35-37% [5]. Their unique geographic, demographic, and infrastructural constraints exacerbate fiscal vulnerabilities, limiting revenue generation and increasing dependence on intergovernmental transfers.

Municipal bond markets, regulated by SEBI and guided by Smart City and AMRUT guidelines from MoHUA [6, 7], necessitate annual accrual-based financial statements for all participating entities. The credit ratings of these bonds are contingent upon the rigorous evaluation of these financial statements.

This ensures stronger financial discipline and improves creditworthiness. While a few states, such as Tamil Nadu, Maharashtra, and Gujarat, have successfully accessed the municipal bond market, most hilly states have yet to leverage this opportunity, despite having adopted accrual-based double-entry accounting systems under the National Municipal Accounting Manual (NMAM) [7]. This gap persists even as recent policy initiatives, such as the Urban Challenge Fund (UCF) announced in the Union Budget 2025-26, explicitly link urban infrastructure financing to access to capital markets. The UCF's Rs 1 lakh crore corpus mandates cities to co-finance 50% of project costs through bonds, loans, or public-private partnerships (PPPs). In order to raise funds from bond markets, it is imperative that these ULBs have good credit rating, requiring them to be financially sustainable with robust fiscal frameworks and to promote this MoHUA is providing an incentive of Rs 13

crores for every Rs 100 Cr bond issue approved in AMRUT operational toolkit [8]. The existing empirical research on the financial sustainability of ULBs has further highlighted that, when coupled with technical assistance, such funds can catalyse sustainable urban development and foster inclusive growth.

To further understand research undertaken in the domain of ULBs financial sustainability, particularly in hilly areas, the authors propose to conduct a systematic literature review. For this, the authors used the Scopus database, which is known for its comprehensive and in-depth coverage of rigorously reviewed, high-quality articles. The search incorporated keywords such as "*Municipal Finance*", "*Urban Challenge Fund*", "*Financial Sustainability*", and Boolean combinations like ("*Seven Sisters*" OR "*Hill States*") AND ("*financial sustainability*") in TITLE-ABS-KEY. The initial search yielded 4,511 results, reflecting the broad keyword strategy necessitated by the topic's niche nature. Filters were applied to identify peer-reviewed journal articles in English, published between 2020 and 2025, with a thematic focus on accounting, finance, and urban studies. This process yielded 13 articles selected for full-text analysis. To enhance the breadth and depth of the review, 9 additional authoritative sources, including reports from government bodies and multilateral organisations, were incorporated, facilitating a well-rounded and comprehensive synthesis (Fig. 1). The review adhered to the PRISMA framework to enhance methodological transparency and replicability, thereby situating the analysis within post-AMRUT and Smart Cities Mission policy contexts.

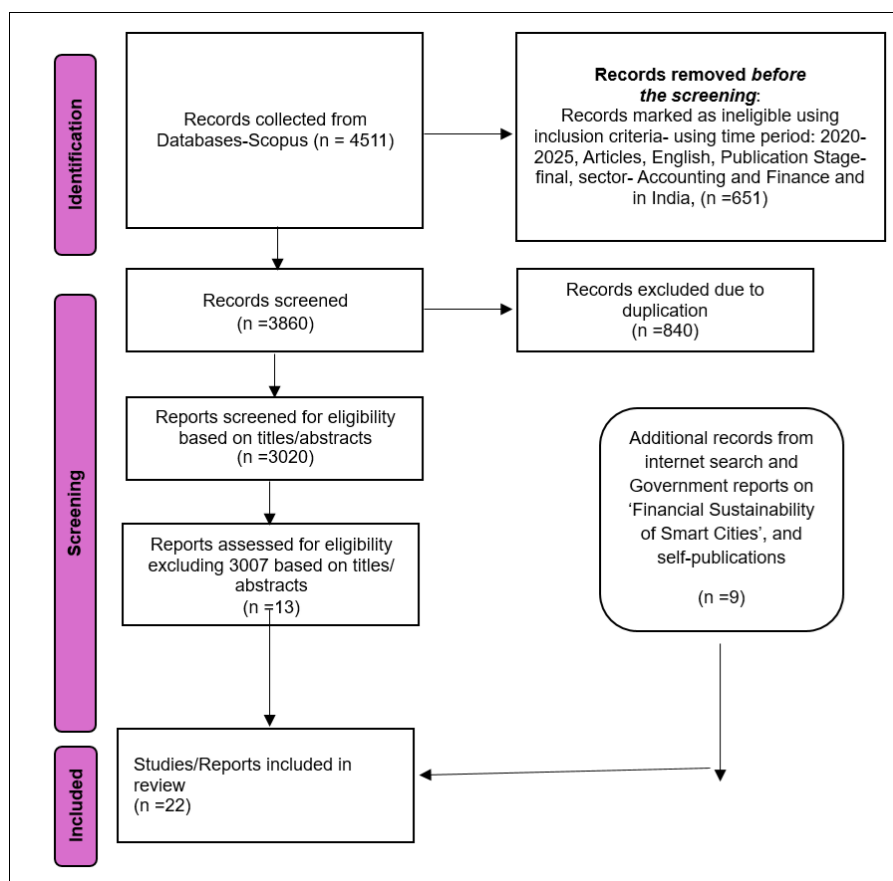


Fig 1: Inclusion and exclusion criteria (Prisma framework)

The resultant documents were subjected to in-depth content analysis to understand the prominent themes associated with the financial sustainability of ULBs. Table 1 provides a thematic synthesis of the research domain.

The analysis highlights persistent structural and institutional challenges that undermine municipal financial sustainability. Some of these include - overdependence on Transfers ^[20], weak financial reporting (impacting investor confidence) ^[2], and underdeveloped capital markets restricting access to long-term financing. Additionally, the

scarcity of time-series and comparable datasets constrains empirical analysis and policy benchmarking.

Given the looming infrastructure investment needs estimated at over Rs 1 lakh crore over the next two decades ^[1] and the co-financing mandate of the UCF, comprehensive financial assessments of ULBs in hilly states are both urgent and indispensable. Such assessments must holistically examine fiscal health, borrowing capacity, and institutional readiness to access capital markets.

Table 1: Thematic synthesis of existing literature

Theme	Key Findings	Methodologies/Frameworks	Relevance to North eastern/Hilly ULBs
Revenue Diversification	Municipal reliance on narrow revenue streams limits resilience; fines and fees can lead to extractive practices, Mughan ^[9] ; Chowdhury and Samanta ^[10] .	Fiscal ratio analysis; revenue composition review	NE ULBs are heavily dependent on transfers; limited scope for diversified revenue sources like user charges or bonds.
Cost Efficiency	Public financial management efficiency directly impacts service delivery, Azwitamisi and Ngwakwe, ^[11] ; efficiency indices help measure fiscal sustainability Meyer and Neethling ^[12] .	Efficiency metrics; benchmarking of service delivery costs	Limited institutional capacity in hilly ULBs constrains their ability to manage costs and improve operational surpluses.
Governance Mechanisms	Governance and institutional structures shape municipal finance outcomes and resilience to crises, Bardozzetti <i>et al.</i> , ^[13] ; Darmawati <i>et al.</i> ^[14] .	Institutional analysis; performance-based governance reviews	Weak governance frameworks in hilly regions impede the effective implementation of financial reforms and crisis preparedness.
Transparency and Accountability	ESG practices and transparent disclosures improve market confidence and financial performance, Shaikh ^[15] ; bibliometric reviews highlight growing focus on reporting quality, Darmawati <i>et al.</i> ^[14] .	ESG reporting frameworks; accrual accounting analysis	Inconsistent financial reporting in Northeastern ULBs deters investors and hampers access to municipal bonds.
Institutional Reforms	Fiscal decentralization and structural reforms are critical for improving municipal finance, Chowdhury and Samanta, ^[10] ; Bardozzetti <i>et al.</i> , ^[13] .	Policy evaluation; decentralization index	Legacy governance and weak reform adoption limit autonomy and financial innovation in hill state municipalities.
Macroeconomic Influences	External shocks such as pandemics severely impact municipal revenues and exacerbate fiscal stress, Bardozzetti <i>et al.</i> , ^[13] ; Cornaggia <i>et al.</i> , ^[16] .	Scenario analysis; crisis impact modelling	Volatility (e.g., pandemics, migration trends) worsens fiscal uncertainty in hilly municipalities.
Municipal Bond Issuance	Strong accrual reporting and compliance with SEBI-like frameworks facilitate bond issuance, Zedan <i>et al.</i> , ^[17] ; ESG-linked municipal bonds emerging globally, Shaikh, ^[15] .	SEBI compliance analysis; credit rating frameworks	NE ULBs' weak reporting systems and limited credit ratings hinder bond market participation despite regulatory reforms.
Urban Challenge Fund (UCF)	Performance-based financing requires robust financial health and reporting systems Lee <i>et al.</i> , ^[18] ; Meyer and Neethling, ^[12] .	Creditworthiness scoring; budget-performance alignment	Hilly ULBs struggle to meet UCF entry benchmarks due to fiscal deficits and institutional constraints.
Systematic Reviews and Global Practices	Bibliometric and PRISMA reviews highlight evolving trends in local government finance and sustainability practices, Darmawati <i>et al.</i> , ^[14] ; Canales <i>et al.</i> , ^[19] .	PRISMA-based systematic reviews; bibliometric mapping	Provides guidance for best practices in resource-constrained hilly municipalities.

The objective of this paper is to assess the financial performance and market readiness of municipalities in India's hilly states by examining their fiscal health and sustainability through key indicators, such as operating surpluses or deficits, revenue composition, and expenditure trends. It further seeks to evaluate their preparedness to access market-based financing mechanisms, particularly municipal bonds, and to determine their eligibility for participation in the UCF by analyzing relevant financial ratios.

Methodology

This study employs a quantitative research design using panel data to examine the determinants of municipal fiscal balance (Surplus/Deficit) in selected smart cities, hilly states from India. The names of the selected 8 smart cities are Aizawl, Shimla, Sabroom, Haridwar, Dehradun, Guwahati,

Nagaon, and Dharamshala. Hilly states' municipalities face distinct geographical, logistical, and socio-economic challenges compared to other parts of India. Focusing on hilly states' municipalities allows for an examination of how these missions adapted to or performed under these specific conditions.

Data selection

The identification of periods with reliable and comparable data is critical to ensure the robustness of analysis. This study relies on secondary data sourced from the City Finance Portal ^[21]. Given data availability and consistency, the financial years 2019-20 and 2022-23 have been selected for detailed analysis. This time span provides a meaningful interval, allowing for the observation of trends and shifts in financial performance. Moreover, this period is particularly relevant because the SEBI guidelines on due diligence for

municipal bond issuance were introduced in 2019, and access to the municipal bond market and Urban Capital Framework [22] began to materialize post-2019. Thus, financial data were collected from 8 municipalities, forming a balanced panel dataset that captures both cross-sectional variations across cities and time-series changes.

Variable selection

The dependent variable used in this study is the Municipal Surplus, defined as the difference between total revenue and total expenditure. It is a key indicator of fiscal sustainability. The primary independent variables are EBIDA (which reflects operational financial strength), and Interest Expense (representing the cost of debt servicing). Initially, control variables such as population size were considered to account for scale-related differences in fiscal performance across municipalities. However, the population was excluded from the final model due to the presence of multicollinearity, as it showed a high degree of correlation with both revenue and expenditure components. Its inclusion could have distorted the regression estimates and weakened the model's explanatory power.

The analysis begins with descriptive statistics to understand the basic characteristics of the dependent and independent variables across the selected smart cities in hilly states.

Before conducting the panel data regression, a series of diagnostic tests is undertaken to ensure the robustness of the model. These include data sufficiency check to ensure an adequate number of cross-sectional units (cities) and periods to support panel estimation. A Normality test is conducted using the Shapiro-Wilk test to verify if the residuals are normally distributed. The variance inflation factors (VIFs) are used to identify highly correlated predictors. A Breusch-Pagan test is done to detect non-constant variance in the error terms. Additionally, correlation analysis is conducted using the Spearman rank correlation coefficient, which helps identify the strength and direction of monotonic relationships between the variables. After addressing these methodological issues, panel regression analysis is executed to identify the key determinants of municipal surplus in smart cities of hilly states. The Hausman test is used to determine whether to use fixed effects or random effects models.

Regression model

$$SUR_{it} = \beta_0 + \beta_1 EBIDA_{it} + \beta_2 INT_{it} + \epsilon_{it} \quad [1]$$

The surplus of municipalities for the period 2019-2020 and 2022-23 in terms of surplus was regressed on EBIDA and Interest variables. The study posits the following hypotheses:

- **H₁:** EBIDA is positively associated with municipal Surplus.
- **H₂:** Interest Expense is negatively associated with municipal Surplus.

These hypotheses are tested using standard statistical methods, including t-tests for the significance of individual coefficients and F-tests for the overall significance of the model, with results evaluated based on p-values at a chosen significance level.

Results

This section presents the descriptive analysis of the variables, followed by correlation analysis. Regression analysis presents the predictors of surplus in hilly areas.

Descriptive analysis

Table 2 presents the descriptive statistics for the key financial variables: EBIDA/TR (Earnings before Interest, Depreciation and Amortization to Total Revenue), Interest/TR (Interest Payment to Total Revenue), and Surplus/TR (Revenue Surplus to Total Revenue).

Table 2: Descriptive analysis

Variable	Obs	Mean	Std. Dev.	Min	Max
EBIDA/TR	16	-0.5225	0.2456	-1.1661	-0.2210
Interest/TR	16	0.000153	0.000531	0	0.0021
Surplus/TR	16	-0.0448	0.3759	-1.1661	0.6210

The negative mean (-0.52) of EBIDA/TR indicates that, on average, the cities are experiencing municipal deficits. In simpler terms, their core operations (like providing services, managing waste, and maintaining infrastructure) are costing more than the revenue they generate from sources such as taxes, fees, and grants. It suggests a systemic issue in municipal financial health within the hilly states. It is also indicating that these cities are likely relying on external funding (e.g., state or central government grants, new borrowings) to cover their day-to-day operational expenses, rather than being financially self-sustaining. This reliance can limit their autonomy and long-term planning capabilities. For Smart City and AMRUT initiatives, this is particularly concerning. If cities can't even cover their basic operational costs, how can they effectively maintain the new, often technologically advanced, infrastructure created through these missions? It raises questions about the long-term viability and operational readiness of "smart" solutions. For example, if a city can't afford to run existing streetlights, how will it manage "smart" streetlights? The standard deviation of 0.25 suggests moderate variability in the cities' financial performance. All values are negative, showing consistent operational deficits.

The low mean (0.000153) indicates a negligible share of revenue spent on interest, reflecting either limited borrowing activity or under-leveraging of municipal finances. On the surface, this might seem positive, suggesting cities aren't burdened by high debt. However, in conjunction with the negative EBIDA/TR, it paints a more complex picture. It strongly suggests a limited borrowing activity for capital expenditure. Cities in India, especially smaller ones or those in challenging geographies, often struggle to access formal credit markets. They might be perceived as high-risk, lack robust financial track records, or simply not have the capacity to prepare bankable projects. This low-interest expenditure likely reinforces the idea that these cities are heavily reliant on grants (from state or central governments, including those for Smart Cities and AMRUT) for their capital projects. They aren't significantly augmenting these grants with market borrowings.

While avoiding high debt is prudent, an extremely low interest burden can also indicate under-leveraging of municipal finances for growth-oriented investments. If cities aren't borrowing for projects that can generate future

revenues or significantly improve services, they might be missing opportunities for development and leveraging their assets effectively. For Smart Cities, specifically, this could mean that only projects fully funded by central grants are being pursued, limiting the scope for larger, more transformative initiatives that might require additional financing. Surplus/TR (Revenue Surplus/Deficit to Total Revenue): The average negative value (-0.0448) suggests a

slight revenue deficit, with a wide range between the most significant deficit (-116.6%) and surplus (+62.1%), indicating considerable fiscal heterogeneity across cities.

Normality test

The Shapiro-Wilk W test was performed to assess the normality of the data. The results are shown below in Table 3:

Table 3: Shapiro-wilk test results

Variable	Obs	W-statistic	p-value	Interpretation
Surplus/TR	16	0.8242	0.00026	Reject H ₀ - Not normally distributed
EBIDA/TR	16	0.9164	0.02964	Reject H ₀ - Mild deviation from normality
Interest/TR	16	0.3055	0.00000	Reject H ₀ - Strong non-normality

All three variables fail the normality test. Interest/TR exhibits severe non-normality ($W = 0.3055$, $p < 0.001$), while Surplus/TR and EBIDA/TR show moderate to mild deviations from normality. These results suggest that the regression models should account for these non-normal distributions to avoid bias in the analysis and non-parametric test are deployed.

Spearman's rank correlation: Spearman's rank correlation test was conducted to examine the monotonic relationship between key variables. The results are summarized in Table 4 as under:

Table 4: Correlation analysis

Variable	Surplus/TR	EBIDA/TR	Interest/TR
Surplus/TR	1.0000		
EBIDA/TR	0.7688*	1.0000	
Interest/TR	0.2163	0.3105	1.0000

*p-value = 0.0005 for Surplus/TR and EBIDA/TR.

Surplus/TR and EBIDA/TR: The correlation coefficient of 0.7688 indicates a strong positive monotonic relationship, with statistical significance ($p = 0.0005$). Higher EBIDA is associated with higher surpluses, confirming that financial health impacts overall fiscal performance. **Surplus/TR and Interest/TR:** The weak correlation (0.2163) and p-value (0.4211) suggest no significant relationship between interest payments and revenue surpluses. **EBIDA/TR and Interest/TR:** The weak correlation (0.3105) and p-value

(0.2418) suggest no significant relationship between operational efficiency and interest payments.

Regression analysis (Fixed effects model)

A Fixed Effects Model (FEM) was used to evaluate the impact of EBIDA/TR and Interest/TR on Surplus/TR, accounting for unobserved city-level effects. The regression results are summarized in the following Table 5:

Table 5: Regression analysis (Fixed effect model)

Variable	Coefficient	Std. Error	t-value	p-value	95% Confidence Interval
EBIDA/TR	0.9391	0.1353	6.94	0.000	[0.6081, 1.2702]
Interest/TR	-13.4246	78.0645	-0.17	0.869	[-204.4414, 177.5923]
Constant	0.4479	0.0806	5.56	0.001	[0.2506, 0.6451]

Table 6: Model Summary

Statistic	Value
R ² (within)	0.9014
R ² (between)	0.6153
R ² (overall)	0.5916
F-statistic	27.43
Prob > F	0.0010
rho (city-level variance)	0.8380
F-test (city effects)	9.68
Prob > F (city effects)	0.0066

The coefficient for EBIDA/TR (0.9391) is statistically significant ($p < 0.01$), suggesting that higher operational efficiency (EBIDA) leads to a higher revenue surplus. A 1-unit increase in EBIDA/TR is associated with a 0.939 increase in Surplus/TR, indicating a strong positive relationship. The coefficient for Interest/TR (-13.4246) is

statistically insignificant ($p = 0.869$), implying that interest payments do not significantly affect the green operating surplus in the sampled cities. As shown in Table 6, R² (within) value of 0.9014 indicates that 90.14% of the variation in Surplus/TR is explained by within-city variation, confirming that city-level fixed effects are

significant. The F-test for city effects ($p = 0.0066$) further supports this finding.

Table 7: Variance inflation factor (VIF)

Variable	VIF	1/VIF
EBIDA/TR	1.11	0.903
Interest/TR	1.11	0.903

Both EBIDA/TR and Interest/TR have a VIF of 1.11, indicating that multicollinearity is not a concern. The low VIF values suggest that the independent variables are not highly correlated with each other and do not distort the regression results.

Discussion: This study investigated how two key financial health metrics, the EBIDA ratio (Earnings before Interest, Depreciation, and Amortization as a ratio to total revenue) and interest burden (interest payments as a ratio to total revenue) influence the green municipal surplus (Surplus/TR) in the hilly areas.

The findings offer valuable insights into the financial dynamics of these urban local bodies. The study found a significant positive relationship between operational efficiency (EBIDA/TR) and revenue surplus (Surplus/TR). This means that when cities are more efficient in their operations, generating higher earnings relative to their total revenue (a higher EBIDA/TR), they tend to have a larger green operating surplus. In simpler terms, better financial management of day-to-day operations directly translates into improved fiscal health for these cities. This highlights the importance of strategies aimed at enhancing revenue collection and controlling operational costs to boost a city's financial well-being.

Interestingly, interest payments (Interest/TR) were found to be statistically insignificant in explaining variations in Surplus/TR. The most likely reason for this is the generally low levels of debt and borrowing among the hill cities. If cities aren't heavily reliant on borrowed funds, the interest they pay on that debt won't have a substantial impact on their overall operating surplus. This suggests that for these cities, other factors like operational efficiency play a much larger role in determining their financial surplus than their debt servicing costs.

This study utilized a Fixed Effects Model, which revealed that a significant portion of the variance in Surplus/TR is attributable to unobserved city characteristics. This is a crucial finding because it emphasizes that each city has unique underlying factors (like its economic structure, governance quality, population density, or historical financial practices) that influence its financial surplus. By controlling for these "city-specific effects," the Fixed Effects Model provides a more accurate understanding of the relationships between EBIDA ratio, interest burden, and green operating surplus, isolating the impact of the measured financial indicators from inherent differences between cities. It suggests that a one-size-fits-all approach to urban financial planning might not be effective, and local contexts must be considered.

Findings suggest that improving operational efficiency is key to achieving fiscal sustainability in hilly cities, and cities should focus on enhancing their internal revenue generation mechanisms and reducing operational

inefficiencies. Further research could investigate other variables that may influence municipal financial performance.

Conclusion

This study is set out to evaluate the financial sustainability and market readiness of municipalities in India's hilly states, with a particular focus on their eligibility to access market-based financing mechanisms such as municipal bonds and the Urban Challenge Fund (UCF). Using key financial indicators including EBIDA/TR, Surplus/TR, and Interest/TR the analysis reveals that municipalities in these regions face deep-rooted structural weaknesses. Negative EBIDA/TR and Surplus/TR scores, combined with negligible Interest/TR, underscore fragile operational health and limited fiscal capacity. These weaknesses partly explain why India's municipal bond market remains concentrated in financially stronger states such as Gujarat, Maharashtra, and Tamil Nadu, while hilly states lag behind.

The findings highlight that, without targeted interventions such as special provisions or incentives under MoHUA's frameworks (including AMRUT and UCF) municipalities in hilly states may continue to struggle to mobilize resources for urban development. The literature review reinforces this need, emphasizing the importance of integrated strategies combining fiscal discipline, diversified revenue streams, and governance reforms. It also identifies significant research gaps, particularly the limited exploration of revenue augmentation interventions.

While the study provides valuable insights into the fiscal conditions of eight ULBs from hill states, its geographic and metric-specific scope limits broader generalizability. Future research should expand the sample size, incorporate qualitative governance and service-delivery factors, and examine emerging financial technologies to create a more comprehensive framework for evaluating municipal financial sustainability across India.

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Author Contributions

- **CA Pankaj Goel:** Conceptualization, Methodology, Software, Validation, Formal Analysis, Data Curation, Writing original draft, Review and Editing,
- **Dr. Shalu Mahajan:** Conceptualization, Methodology, Software, Validation, Formal Analysis, Data Curation,

Review and Editing

- **Prof. Shikha Gupta:** Methodology, Validation, Formal Analysis, Data Curation, Review and Editing
- **Ethics Approval:** NA
- **Data Availability:** The authors confirm that the data set supporting the findings of this study are available and will be shared by the corresponding author upon reasonable request.

Abbreviation

- **EBIDA:** Earnings before Interest, Depreciation, and Amortization
- **MRUT:** Atal Mission for Rejuvenation and Urban Transformation ULBs- Urban Local Bodies
- **UCF:** Urban Challenge Fund
- **MoHUA:** Ministry of Housing and Urban Affairs
- **PRISMA:** Preferred Reporting Items for Systematic reviews and Meta-Analyses.

References

1. Awasthi R, Ghosh S, Sharma A, Jain A. Financing cities in India: Municipal revenues and urban infrastructure needs. Washington (DC): World Bank Group; 2021.
2. Reserve Bank of India. State finances: A study of budgets of 2021-22. Mumbai: RBI Publications; 2022.
3. Ramanujam SR. Municipal finance performance across Indian states: An analysis of own revenue trends. Centre for Budget and Governance Accountability (CBGA) Working Paper Series; 2024.
4. Census of India 2011. Population projections for India and states 2011-2036: Report of the Technical Group on Population Projections. New Delhi: Government of India; 2019.
5. Ministry of Housing and Urban Affairs (MoHUA). Smart Cities Mission guidelines. New Delhi: Government of India; 2015.
6. Ministry of Housing and Urban Affairs (MoHUA). Atal Mission for Rejuvenation and Urban Transformation (AMRUT) guidelines. New Delhi: Government of India; 2015.
7. Ministry of Housing and Urban Affairs (MoHUA). AMRUT 2.0 toolkit: Operational guidelines. New Delhi: Government of India; 2021.
8. Mughan S. Municipal reliance on fine and fee revenues: How local courts contribute to extractive revenue practices in US cities. *Public Budgeting & Finance*. 2021;41(2):22-44.
9. Chowdhury P, Samanta G. Municipal financing and infrastructure: A critical analysis of the cities in West Bengal. *Space and Culture, India*. 2021;9(3):6-16.
10. Azwitamisi L, Ngwakwe CC. Public financial management efficiency and electricity service delivery in Limpopo municipalities. *International Journal of Public Sector Performance Management*. 2021;7(3):301-313.
11. Meyer DF, Neethling JR. Testing the amended municipal financial health index (MFHI): An assessment of the financial performance of all metropolitan municipal regions in South Africa. *Journal of Global Business and Technology*. 2024;20(1):15-32.
12. Bardozzetti A, Chiades P, Mancini AL, Mengotto V, Ziglio G. Municipal finance in Southern Italy: Structural criticalities and the effects of the pandemic crisis. *Italian Economic Journal*. 2024;10(3):1233-1279.
13. Darmawati J, Mediawati E, Rasyid S. New trends and directions in local government finance research: A bibliometric analysis. *Public and Municipal Finance*. 2024;13(1):137-149.
14. Shaikh I. Environmental, social, and governance (ESG) practice and firm performance: International evidence. *Journal of Business Economics and Management*. 2022;23(1):218-237.
15. Cornaggia K, Hund J, Nguyen G, Ye Z. Opioid crisis effects on municipal finance. *The Review of Financial Studies*. 2022;35(4):2019-2066.
16. Zedan K, Daas G, Awwad Y. Municipal bonds as a tool for financing capital investment in local government units in Palestine. *Investment Management & Financial Innovations*. 2020;17(1):213.
17. Lee H, Han A, Lee KH. Financial sustainability of hospitals and equity in healthcare access: Using the social resource-based view. *International Journal of Environmental Research and Public Health*. 2023;46(6):2115-2129.
18. Canales HBG, Chalco JM, Cubas WEV, Flores FRF. Financing of municipal current expenditure through local taxes: A systematic review. *Public and Municipal Finance*. 2024;4(4):55-67.
19. Athar S, White R, Goyal H. Financing India's urban infrastructure needs: Constraints to commercial financing and prospects for policy action. Washington (DC): The World Bank; 2022. p. 43-45.
20. Annual Financial Statements. Available from: <https://cityfinance.in>