

Revisiting the role of funding: Lessons from expenditure and performance on cleanliness in an inter-temporal setting

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Recommended citation:

Gupta, S; Sachdeva, R. (2022). *Revisiting the role of funding: Lessons from expenditure and performance on cleanliness in an inter-temporal setting* (CSEP Discussion Note 11). New Delhi: Centre for Social and Economic Progress.

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Revisiting the role of funding:

Lessons from expenditure and performance on cleanliness in an inter-temporal setting

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Editor's Note: This Discussion Note is an annex to the CSEP Working Paper, 'Revisiting the role of funding: Lessons from expenditure and performance on cleanliness in Indian cities' by the same authors. The Working Paper can be accessed here: <https://csep.org/Rl8lduV>

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Introduction

Indian cities and towns account for an estimated 480 million people currently, which is almost 1.5 times the entire population of the United States and this urban population is expected to increase to about 600 million by 2030 (McKinsey Global Institute, 2010). While urban population is increasing, urban services have not been able to keep up with the growing needs. For example, only 75-80% of municipal waste is collected, a marginal improvement from 72% in 2010, and out of this, only about 22-28% is processed and treated. Similarly, water availability is about 70 litres per-capita per-day (lpcd) in urban areas compared to 135-150 lpcd required for hygienic living (Ministry of Housing and Urban Affairs, 2019). A low level of service delivery is not fait accompli for a lower middle-income country like India. In 2011, an Indian government appointed High Powered Expert Committee (HPEC) noted that “the state of urban service delivery in India’s cities and towns is far poorer than is desirable for India’s current income levels.” (HPEC, 2011, p.43).

There is near unanimity on the need to undertake three fundamental reforms to provide globally accepted service delivery levels: strengthen urban governance by implementing the 74th constitutional amendment of devolving powers to the urban local bodies (ULB) in letter and spirit; focus on capacity building so that future urban development happens in a planned manner; and, significantly increase spend on urban infrastructure by 6-8 times at today’s level for the next 15-20 years (McKinsey Global Institute, 2010).

The call to step-up funding on urban infrastructure is not without merit. India’s municipal revenue as a percent of GDP has remained constant at 1% since 2007–08. This is very low compared to other developing nations such as Brazil and South Africa whose ratio stood at 7.4% and 6% respectively in 2010. (Ahluwalia, et al, 2019).

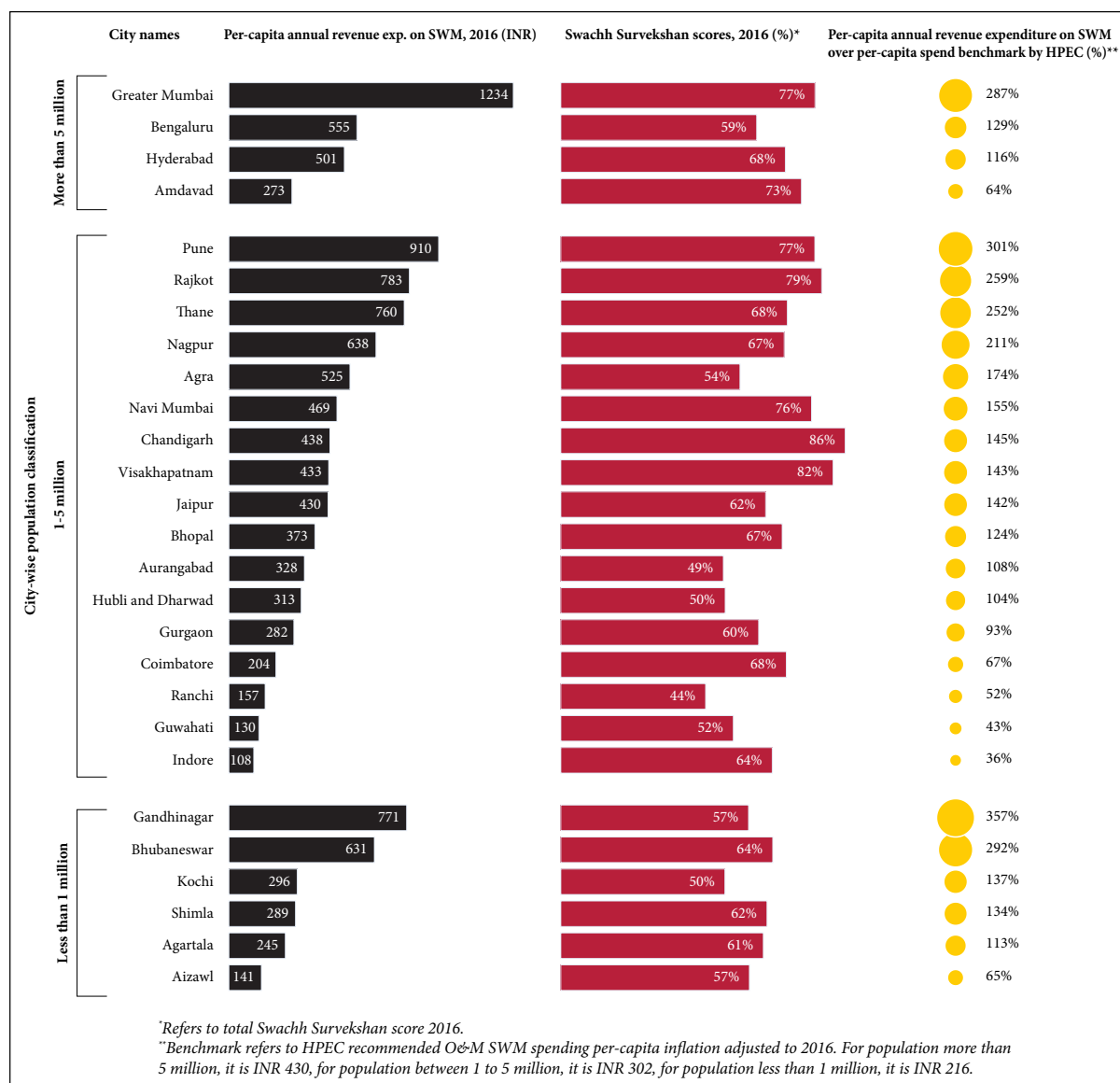
While the case for increasing funding to cities is eminently strong, it still begs the question, are we spending the current money efficiently? In the paper titled *Revisiting the role of funding: Lessons from expenditure and performance on cleanliness in Indian cities*, we analysed revenue expenditure on solid waste management (SWM) and compared it to what they ought to spend to provide acceptable levels of service delivery, and the level of service delivery achieved, as captured by Swachh Survekshan survey. The results are counterintuitive:

- Lack of funding is not a binding constraint in every city to deliver acceptable levels of SWM services. Nineteen out of 27 cities spend more than the required amount,¹ yet none has a perfect cleanliness score.² Nine out of these 19 spend at least 1.5 times more than the benchmark amount.
- While expenditure has a significantly positive influence, it explains only 23% of the variation in performance, indicating the importance of non-monetary factors such as stable city leadership, effective public-private partnerships, and citizen engagement in providing better SWM services.

¹ High Powered Expert Committee (HPEC) recommended in 2011 per-capita operation and maintenance expenditure requirement for eight urban services. O&M expenditure consist of O&M of physical assets, staff, and related administrative cost which is equivalent to the revenue expenditure in our analysis. “The assessment of investment requirements by the Committee is based on the service standards prepared by the ministry of Urban Development which is: 100 percent waste collection, treatment and disposal of solid waste for all cities” (HPEC, 2011). We have adjusted the recommended expenditure by taking into account the inflation as of 2016 and 2020.

² The cleanliness score is measured by Swachh Survekshan survey, an initiative by ministry of housing and urban affairs. The number of cities evaluated has increased from 73 in 2016 to 4320 cities. 70% of weightage in the survey is given to achieving SWM and sanitation outcomes and majority of the cities show stable performance in the survey over time.

Figure 1: Majority cities spend more than the benchmark but don't have the 'perfect' cleanliness score, 2016



Note: HPEC Operation & Maintenance (O&M) expenditure consist of O&M of physical assets, staff, and related administrative cost which is equivalent to the revenue expenditure in our analysis. Revenue expenditure includes establishment, administrative, O&M, program expenses, and interest and charges.

Motivation for this Note

The findings of the above-mentioned paper are robust at a cross-sectional level.³ However, it may or may not hold good in a time varying, dynamic setting. The cross-sectional study tested if cities with *higher spend* had better performance, while this Discussion Note tries to analyse if *increase in spend* overtime improves performance? We stress test the findings by comparing spend and outcome on SWM for two distinct time periods: 2016 with that of 2020 and 2020 with 2021. Prima facie, we expected to see real per capita expenditure increase overtime on (SWM) urban services, and to that extent the overtime analyses between 2016 and 2020 would tell us what happens to outcomes when real spend increases overtime. This is the first analysis. However, how do we test

³ We used data for 2016 for expenditure on SWM and cleanliness score from Swachh Survekshan survey

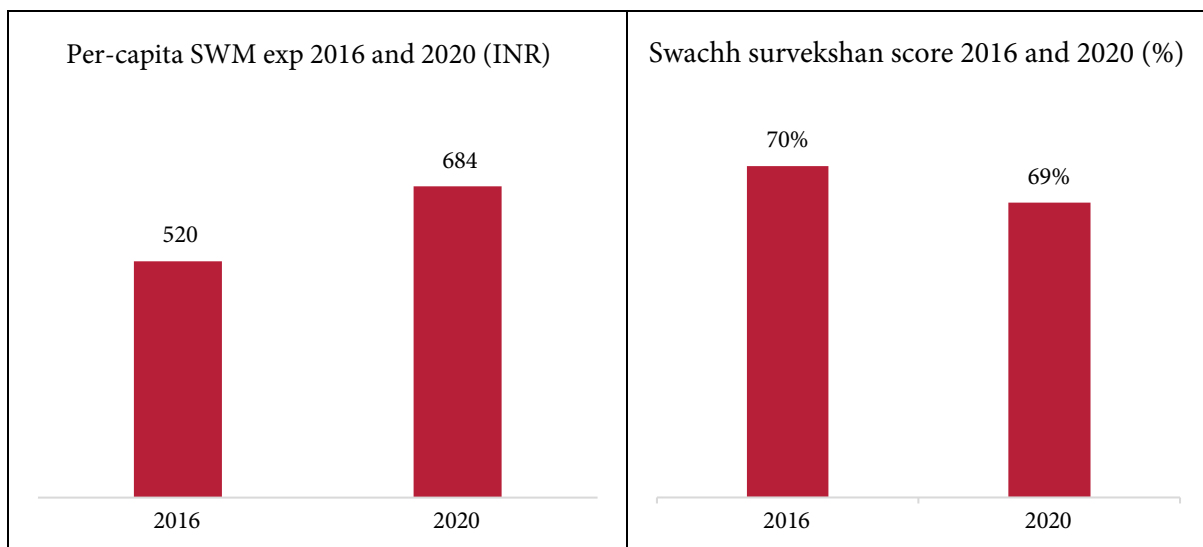
the opposite scenario, that is, whether decline in expenditure results in deteriorating performance or not? COVID induced fiscal stress between 2020 and 2021 gives us an interesting opportunity to study precisely this; if the reduction in expenditure is associated with worse outcomes or not. This is the second analysis that we conduct in this Note.

Both the analyses are limited to 11 cities,⁴ for both increase in spend between 2016 and 2020 and decrease in spend between 2020 and 2021, instead of our original list of 27 cities due to lack of municipal budget documents availability on public platform for the concerned time periods, and/or budget documents only being available in the regional dialect.⁵

Increase in overtime spend on SWM does not necessarily result in improved cleanliness performance

We compare the SWM services revenue expenditure per-capita and Swachh Survekshan (SS) score of cities between 2016 and 2020 to understand how change in spend affects change in performance. On an average, the spend per-capita increased by 30% from INR 520 to INR 684⁶ between 2016 and 2020 but there was no significant change in average score which moved from 70% to 69%.

Figure 2: Increase in real per-capita expenditure of 30% did not result in significant improvement in survey scores between 2016 and 2020



Note: Simple average is taken for the 11 cities. The 2020 expenditure values are adjusted for inflation at 2016 level.

Source: Various municipal budget documents, and Swachh Survekshan survey 2016 and 2020.

In order to understand if this average picture holds good at a distributional level, these cities were divided into three classes: First, those who had an increase in expenditure between 2016 and 2020 of more than 10%. Second, cities with change in expenditure between -10% /+10%, and third, cities with a decrease in spend per-capita of more than -10%.

⁴ For inter-temporal comparison between 2016 and 2020, we consider the following cities: Gurgaon, Chandigarh, Visakhapatnam, Ahmedabad, Shimla, Greater Mumbai, Pune, Bhopal, Hyderabad, Bengaluru, Jaipur. For comparison between 2020, non-covid year, and 2021, covid year, we consider the following cities: Pune, Greater Mumbai, Chandigarh, Varanasi, Bhopal, Bengaluru, Kanpur, Shimla, Delhi-NDMC, Hyderabad, Jaipur. Some cities mentioned in the first list, did not have 2021 budget available yet and some cities in the second list were not part of the 2016 SS. Hence there are differences in the two lists.

⁵ Shortcomings of the budget documents are highlighted in the first working paper, 'Revisiting the role of funding: Lessons from expenditure and performance on cleanliness in Indian cities'

⁶ Inflation adjusted

Table 1: Change in per-capita SWM spent and performance between 2016 and 2020 for three classes of cities

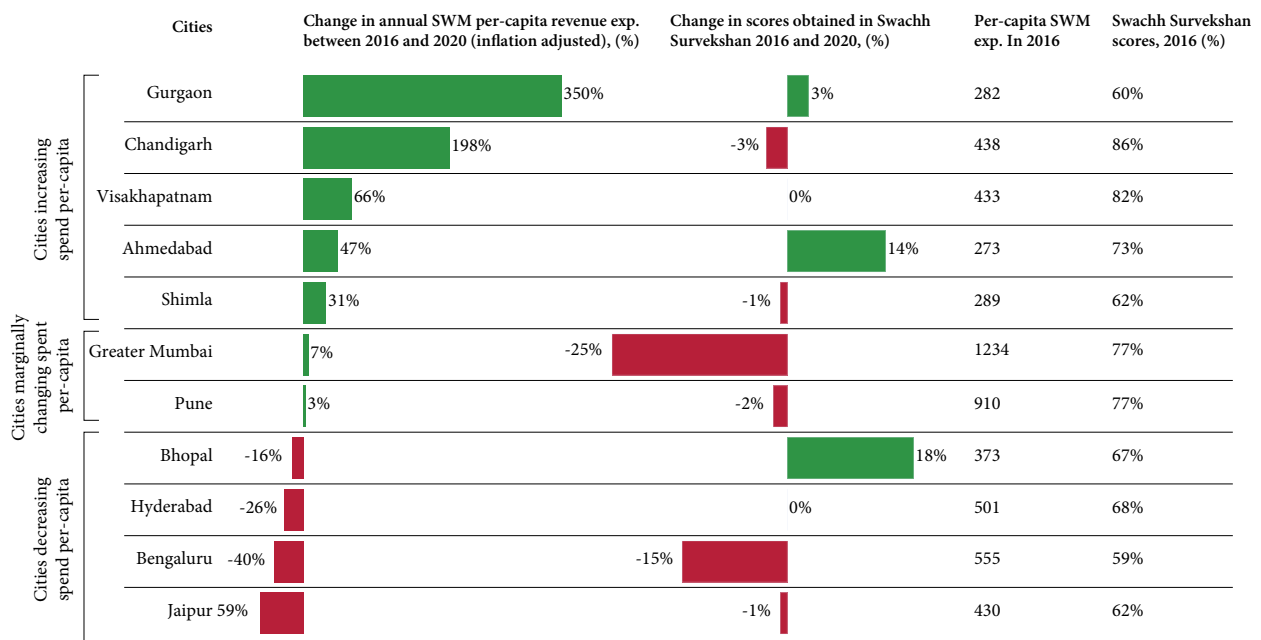
Class of cities	No. of cities	Ratio of 2020 SWM spend per-capita over 2016 spend	Percentage change in SS score between 2016 and 2020
Cities increasing spend per-capita (<i>higher than 10% increase in spend</i>)	5	2.4	4%
Cities marginally changing spent per-capita (<i>between +/- 10% change in spend</i>)	2	1.05	-18%
Cities decreasing spend per-capita (<i>fall is more than 10% in spend</i>)	4	0.64	1%

Note: simple average is taken for spend and score in each class of cities.

Source: Various municipal budget documents, and Swachh Survekshan survey 2016 and 2020.

The overall conclusion of rising (falling) spend not resulting in improved (worsened) outcome remains unchanged. Five out of 11 cities had an increase in spend per-capita of 2.4 times, from INR 343 to INR 815. However, this significant increase in spend resulted in only a marginal increase in cleanliness performance of 4%. For example, SWM spend per-capita in Chandigarh became twice between 2016 and 2020, from INR 438 to INR 1304, but it experienced a slight decline in its performance with score going down by 3%. In Visakhapatnam, SWM spend per-capita increased by 1.6 times, from INR 433 to INR 720, between 2020 and 2016, and yet the score remained constant. Conversely, four of these cities experienced a decrease in spend per-capita by 36%, but their performance remained static. Failure to translate higher spend to better services could be a result of inefficient spending and/or inability to optimise non-monetary factors. For example, “Municipal Commissioner of Gurgaon has formed a four-member committee to probe alleged irregularities in the collection, transportation, and dumping of construction and demolition waste by a private firm hired by the civic body in 2019.” (*The Times of India*, 2021)

Figure 3: Increase in spend per-capita on SWM is not necessarily associated with increase in SS score between 2016 and 2020



Note: Change in expenditure is calculated as follow (2020 value/2016 value -1).

Change in score is simple difference between 2020 and 2016 score.

Source: Various municipal corporation budget documents and Swachh Survekshan 2016 and 2020.

The curious case of Greater Mumbai: Highest spender yet consistently deteriorating in cleanliness performance

No-where is the disconnect between spend and performance starker than India's richest municipality, Brihanmumbai Municipal Corporation (BMC). Municipal Corporation of Greater Mumbai ranked 10th in SS in 2016 but the city has had consistently falling scores from 77% in 2016 to 52% and 54% respectively in 2020 and 2021, reaching 37th rank in 2021. What is astonishing is that in 2016, it had the highest spend⁷ on SWM per-capita of INR 1,234 which increased to INR 1,320⁸ in 2020. Noteworthy, that these spend values are close to thrice what the HPEC had recommended, to provide optimal level of SWM services.

One may argue that the spend per capita for Greater Mumbai overestimates the actual per capita spend if one only takes the Census driven population, since a large number of people come to Mumbai for work and leisure, and forms its floating population. Even if we account for the floating population of approximately 50 lakh people (Municipal Corporation of Greater Mumbai, 2020), the per-capita SWM spend still comes out to be at least twice the HPEC benchmark of INR 420 at INR 884 for 2016 and INR 950 for 2020 after adjusting for inflation. The minimum wage in Maharashtra has been one of the lowest at INR 240 compared to INR 670 in Kerala and Haryana at INR 376. This level of overspend and constant slippage in outcomes deserves to be studied, since it will give lessons on how to plug leakage and improve performance.

⁷ within our sample.

⁸ After adjusting for inflation.

Reduction in spend does not systematically worsen the performance

RBI's recent report '*State finances: A study of budgets 2021–22*' estimates that local authorities would lose 15-25% of their revenue in 2021, making it difficult to sustain their current level of service delivery. Our sample of cities exhibit similar pattern: for eight out of 11 cities⁹ the revised estimate for total expenditure for 2020–21 is lower than budget estimate for the same year, on average by 20%. For example, Bhopal's and Bengaluru's revised estimates are 41% and 37% less than their budget estimates, respectively.

With reduction in total expenditure for majority of the cities, we wanted to observe how this COVID-induced fiscal stress impacts service delivery level of municipalities, specifically for SWM. Did it lead to worsening of cleanliness outcomes? To study this, we analysed the change in SWM spend of municipalities between actual spend in 2019–20, a non-covid year, and revised budgetary estimate for 2020–21, a covid year, for 11 municipal corporations.¹⁰ We then juxtaposed them with the change in SS scores between 2020 and 2021.

Cities which reduced spending on SWM did not necessarily observe a decline in SS scores. Bengaluru and Hyderabad had a decrease in SWM revenue expenditure of 2% and 13% respectively, yet their scores increased in 2021 by 16% and 8% respectively. Kanpur and New Delhi Municipal Committee (NDMC) had a reduction in spend of 5% and 11% respectively but had the scores change stay in the narrow band of +/-5%.¹¹

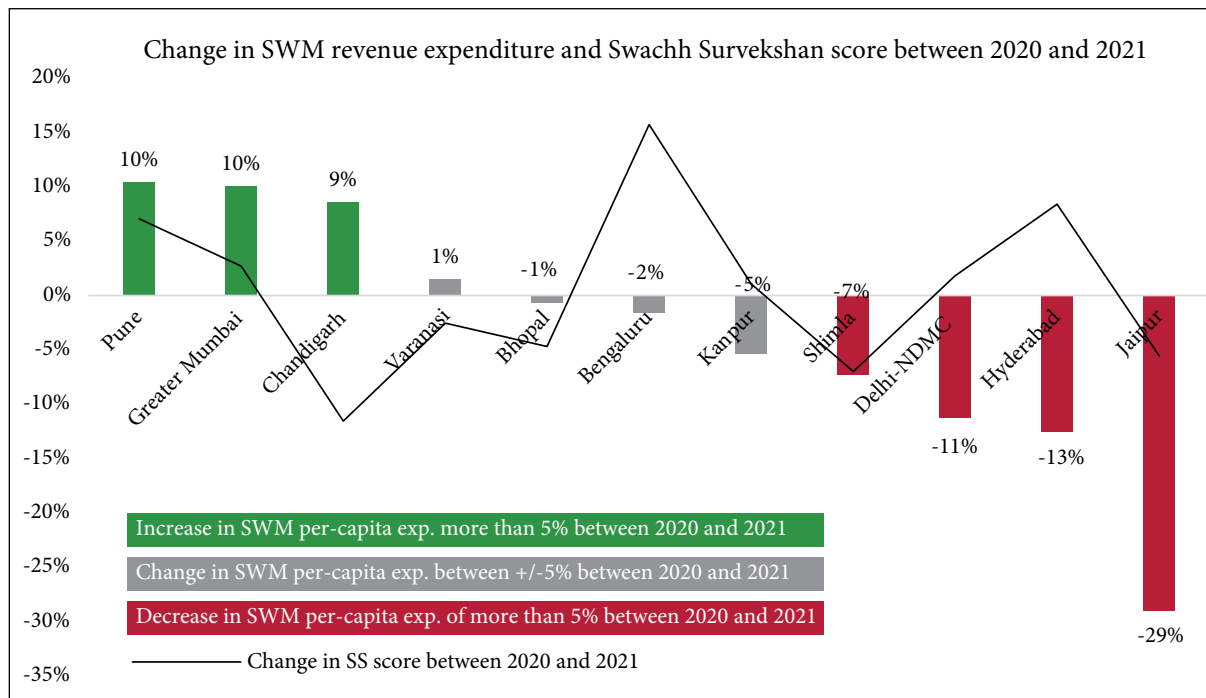
On the other side of the curve, cities which had an increase in expenditure, they did not see a subsequent increase in score. Chandigarh increased its spend by 9%, yet its score fell by 12%. Greater Mumbai increased its spend by 10% and its score stayed in the average band. Only Pune had an increase in expenditure accompanied with increase in score: 10% increase in spend with 7% increase in score between 2020 and 2021. Thus, even in an inter-temporal setting, spend and outcomes don't seem strongly correlated. We fully realize that these results can be at best taken at a directional level, given the low sample size.

⁹ Following cities had lower RE than BE in 2020-21: Bhopal, Vijayawada, Jaipur, Shimla, Bengaluru, Delhi, Chandigarh, Kanpur. Remaining three with re equal to more than BE are Hyderabad, Ranchi, Greater Mumbai

¹⁰ Revised estimates are the closest to actual estimates available currently.

¹¹ The average band for 2016-2020 analysis is +/-10% because it's longer time period. However, for 2020-2021 analysis, the average band is smaller at +/-5% due to the shorter time period.

Figure 4: Decrease in spend per-capita on SWM is not necessarily associated with a decrease in SS score between 2020 and 2021



Note: Change in SS score is difference between 2021 and 2020 score and change between 2020 and 2021 spend refers to annual growth rate.

Source: Various municipal corporation budget documents and Swachh Survekshan 2020 and 2021.

As highlighted in the Working Paper, funding explains only 23% of the variation in SWM performance. Non-monetary factors such as Public Private Partnership (PPP), citizen engagement, and stable leadership go a long way in achieving better service delivery without additional funds.

It is heartening to see the Ministry of Housing and Urban Affairs (MoHUA) realizes the salience of these non-monetary factors. The latest Swachh Survekshan which came out in November 2021 includes PPPs and citizen engagement in its parameters for ranking cities. Giving importance to non-monetary factors will switch the focus from 'how much is being spent?' to 'how efficient is the spend?'. The government should continue to build on this thinking by launching an effort aimed at evaluating spend efficiency for key services like water, sanitation, transport, etc. provided by ULBs. This exercise will help to understand the extent of deadweight and hence scope for improvement in service delivery within existing budget parameters. NITI Aayog in collaboration with MoHUA is ideally placed to work alongside few champion states to do this pilot exercise with an aim to come up with an annual report on expenditure and outcomes across all states and million plus cities in the next 2-3 years. This will usher in a new level of accountability in service delivery, where ULBs could lead the way for the nation.

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