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Pali Gaur, Shikha Singh

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## Can issuers contribute to infrastructure development through municipal bonds in India? Evaluation of factors using AHP approach

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Pali Gaur\*

Regenesys Business School,  
Sandton, South Africa  
Email: pali.gaur@gmail.com  
Email: palig@regenesys.net  
\*Corresponding author

Shikha Singh

Sparsh Global Business School,  
Greater Noida, India  
Email: shikhabirsingh@gmail.com

**Abstract:** This study aims to fill a gap in the literature by identifying, the most significant factors attributing to the slow growth of municipal bonds in India. Nine factors were identified, and then divided into three categories: proper governance, issuer's strength, government support. We used the analytical hierarchy process, a quantitative method of decision-making, to evaluate the importance of the factors presented in the study using data collected from 13 experts. The results showed that government support, as a category, is the most important. The analysis also indicated that audited reports, incentives to issuers, revenue stability and updated accounting and financial management practices are the most important factors among all nine sub-factors. We confer the propositions of the analysis for policy makers and other regulatory bodies through this paper.

**Keywords:** municipal bonds; issuers; municipal corporations; governance; AHP; infrastructure development; urban local body; ULB; bond market.

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**Biographical notes:** Pali Gaur is currently employed as a Senior Lecturer at Regenesys Business School in Sandton, South Africa and conducts training sessions in the area of Finance. She holds a PhD degree from Symbiosis International University and her research interests include municipal bonds, green bonds, green finance, and volatility spillovers. She has published articles in prestigious journals indexed under Scopus and ABDC-A and & C categories, and has worked with reputable institutions such as TASMACH, ISBM, and SIIB in Pune and NCR. Having a brief stint in corporate, she has also explored the derivatives market while heading the training and development wing of Brightstar Research LLP in Gurgaon.

Shikha Singh is currently working as an Associate Professor (Adjunct) in Sparsh Global Business School, Greater Noida and also serving as a guest faculty for economics and persuasive communication at SOIL Institute of Management, Manesar. She is also the Founder & Director of Swabodh Studio: a training, consulting and advisory firm through which she delivers her corporate trainings to several corporates of repute. She has worked with many reputable organisations like Symbiosis (Noida), NMIMS (Mumbai), LBSIM (New Delhi), Amity Global Business School and ICFAI Business School to name a few. She has received her Doctorate degree from Malaviya National Institute of Technology (MNIT), Jaipur and has published research papers in various reputed international peer reviewed journals. She is an internationally certified Soft Skills Trainer, POSH certified trainer and an Image Consultant as well. She also holds an MPhil and Master's degree in Economics.

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## **1 Introduction**

Infrastructure growth has been a crucial affair for the governments towards urban development. Municipal bonds as a key vehicle to finance such growth are widely used by local municipalities in many developed and emerging nations (Tiron-Tudor et al., 2021) but its pace has not been quite fascinating in India. However, the ability to access the domestic capital market for investments via debt issuances, particularly those sold in local currency, has thus reawakened interest (Platz, 2009) in the same. Despite the size, prominence, and the existence of the municipal bond market in India since 1997, it remains less established relative to other financial markets, especially in the US, which is a leader in bond issuances. The petite Indian municipal sector constitutes only 2% to 3% of the entire income of the central and the state government in comparison to 20% to 35% of those of developed nations, which is attributed to institutional and regulatory (Khan, 2013) reasons. The municipal revenue is the representative of the status of the Indian municipal corporations and accounts for less than 1% of India's GDP, a pitiful figure when compared to the rest of the world<sup>1</sup>. Albeit the important role played by the municipal issuers in the bond issuance process can add value to the overall infrastructure development. With this background, researchers have been conducting studies explaining, replicating, and predicting municipal bond issuances/sales and factors impacting their sluggish growth like political corruption (Butler et al., 2009), mandatory disclosures (Cuny, 2018), low operating revenues (Padovani et al., 2018) and others.

The result of this study can be used by the policymakers to design the issuing framework containing the most important factors speeding up development of municipal bond market in India. The bond issuers can also use this study to incorporate key recommendations for successful bond issuances and adapting market-based financing mechanisms for raising funds towards the infrastructure growth and expansion. Use of market-based avenues for raising finance reflect the soundness of the issuing urban local body (ULB) as accessing the capital markets follow strict discipline. Deliberating and providing such inputs were the main motivations for conducting this study.

This study aims to identify the key factors responsible for the slow growth of municipal bonds in India. The result of this study can be used by the policymakers to design the issuing framework containing the most important factors speeding up development of municipal bond market in India. The bond issuers can also use this study

to incorporate key recommendations for successful bond issuances and adapting market-based financing mechanisms for raising funds towards the infrastructure growth and expansion. Use of market-based avenues for raising finance reflect the soundness of the issuing ULB as accessing the capital markets follow strict discipline. Deliberating and providing such inputs were the main motivations for conducting this study. Further the synthesis of the literature performed appraises to acknowledge the following research questions:

- RQ1 What are most influential factors from the issuer's end impacting the sluggish growth of municipal bonds in India?
- RQ2 What policy recommendations should be prioritised considering the framework and limitations of regulatory bodies in India?

Existing literature pointed out at addressing the overall framework for bond issuances over the globe relating to innovation in municipal financing, maturity transformation (Cestau et al., 2019), bond yields based on religiously fractionalised counties (Bergstresser et al., 2013) and other secondary costs associated with the bond issuance process. The maximum impact of the unregulated debt market could be felt on the number of bond issuances in the past decade. The literature provides a combination of qualitative and quantitative studies related to issuers and investors. This study is different from previous researches in the following ways:

- 1 the study highlights the issuer's perspective for further analysis
- 2 application of AHP approach to quantify the results for better understanding in comparison to traditional literature using qualitative approach
- 3 the study aims to systematically find out the key issues responsible for the slow progress of the municipal bond market from the issuer's outlook.

Though it seems that issuer's stance has been unique in terms of information asymmetry (Bastida et al., 2014; Daniels et al., 2010), by looking at the history it was observed that aspects related to voluntary disclosures (Cuny, 2016), credit risk (Liu, 2012), simpler bond issuances (Harris and Piwowar, 2004), and credit ratings (Cornaggia et al., 2018), have been of the same magnitude. Looking at the investors' stance, it is observed that municipal bond markets in developing nations have long neglected retail investors, despite studies (Gaur and Singh, 2023) indicating that factors like credit rating, yields, tax benefits, and financial soundness play a major role in retail investors' decision to purchase municipal bonds. However, recent changes and developments in the regulatory framework, ratings, timelines, and updated acceptance to financial manuals can be seen with bond issuances by various state governments. The paper intends to make a significant contribution to the knowledge of prime factors responsible for the stagnancy in municipal bonds market in India, particularly in the last decade.

The rest of the paper is organised as follows: after the introduction, Section 2 illustrates the literature, and Section 3 draws the categorisation of the factors in the study. Section 4 highlights the data and methodology. The empirical results are discussed in Section 5 and, finally, Section 6 concludes with findings and policy recommendations.

## 2 ROL

More municipal bond issuers have understood the importance of raising which also includes municipal green bonds issued by subnational government entities, the analysis along with implementation of which needs a climate justice approach (Herrera, 2024) funds through innovative financing mechanisms (Kapesa et al., 2022; Whitaker, 2018) but only a few could take the benefit of these innovations due to lacking environments. A reflection of the same can be seen by the fact that only 5 municipal bond issues were made prior 2010, and only one bond issue (PMC) was issued in 2017 (ICAI, 2018). The reasons attributing to these lacking environments relate to relatively smaller size of the ULBs (Samal, 2021). Unresolved norm conflict issues with conventional municipal bonds impede their effectiveness and issuance, thereby creating legal uncertainty surrounding bond issuance (Hutahayan et al., 2024). Many studies have been discussing the factors influencing the municipal bond market individually and discussing initiatives taken by the then government for propelling the development of the municipal bond market (Chattopadhyay, 2006). Based on the literature available and the research reports (Chattopadhyay, 2006) have also highlighted the inadequacies of the municipal bodies like frail financial health of the ULBs, negligent maintenance of accounts and audits, absence of proper database at the municipal level, and revenue raising capability. A significant improvement in the financial system is a combined effort of financing the economic development and integration of emerging economies into the global market (Vo, 2016), which also poses different challenges for the institutional and legal framework in the financial system. Similar challenges are being faced by municipal bonds in India as an emerging economy focusing on the infrastructural development in the coming years.

The mainstream literature focuses on municipal bond demand and the effects of various situations on it observed by the issuers. Out of those, some studies are listed here exhibiting the impact on municipal bonds based on region, size of the ULB, crisis periods like COVID-19 and the demographic fractionalisation as well as transitioning of the population. A recent work by Odusami and Mansur (2022) examined the impact of the Covid-19 pandemic on the US municipal bond market and found a negative impact on the cumulative performance of municipal bonds in the recent years though US has been the leader in terms of number of bond issuances. Another study by Chen et al. (2022) studied the impact of political polarisation on the government financing through municipal bond. Using COVID-19 pandemic as exogenous shock, they found a more considerable effect on the enlarged financing costs of a country which has been experiencing more pandemic cases, largely impacting the social welfare of the economy. Pethe and Lalvani (2005) in their study have identified severe limitation of tax revenue powers of ULBs in the state of Maharashtra, due to insufficient devolution of taxation powers. Butler and Yi (2022) examined the casual impact of aging population on the municipal access to credit and highlighted challenges which the municipalities have to face to cope up with the systematic demographic transition.

Since the focus of this study is on bond issuers (municipal corporations/ULBs), we precisely aimed at the papers that discussed the key factors attributing to the slow growth of municipal bonds from the issuer's end, our search led to limited number of papers contributing to this area. The papers led us to the identification of some major governance issues relating to the lack of timely and mandatory disclosure requirements, regulatory framework (World Bank, 2011) and contribution by other market participants

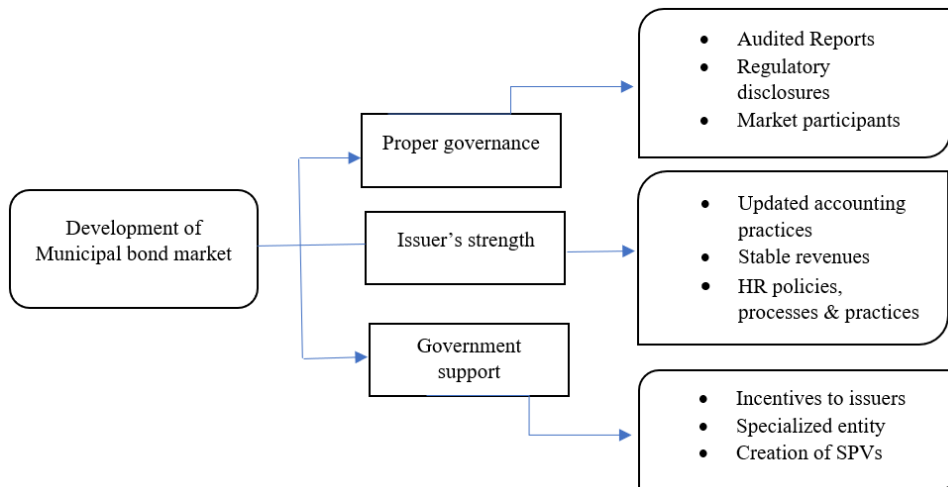
like credit rating agencies, financial advisors and underwriters (Daniels and Vijayakumar, 2007). Limited revenue sources and a high reliance of ULBs on Central and State grants for funds have indicated a limitation of stable revenues with these bodies (ICAI, 2018). The few non-tax handles available to ULBs also limited the revenue growth over a long period. Expansion of revenues using land rents and tax on land value has been advocated in a study by Mishra (2019). The majority of the issuers did not have audited accounts, but instead published annual reports and financial statements rendering opaqueness to the investors (Nallathiga, 2015). In addition, the lack of migration to a double entry accounting system, as well as non-uniformity due to non-adherence to NMAM accounting standards, made interpretation of municipal finances difficult. The 14th CFC made performance grants available on the condition that ULBS submit audited annual reports (Singh and Dhanda, 2021). Adoption of new accounting standards was recommended for the upliftment of the municipalities. A skills gap among ULB employees, particularly in terms of understanding the commercial borrowing market and the processes involved in creating structured debt obligations (SDOs), as well as long-term capital expenditure planning (Pethe and Lalvani, 2005) also added to the list of developments needed by the issuers for the overall progress of the municipal bond markets in India. HR policies and practices relating to the training and skill upgradation of the employees for better performance of the ULBs came to the limelight by some researchers (Rao, 2015). Capacity building in terms of knowledge and expertise is required not only for municipal functionaries (officials and elected representatives), but also for other stakeholders in the municipal bond market. An alternative study from recent times (Abbas, 2022) highlighted the importance of timeliness of financial information by the issuer for reducing the information asymmetry.

Against the challenges also known as supply side constraints, some recommendations by the researchers are also made. Kapoor and Pati (2017) have recommended linking additional central or state grants to the ability of the ULB for raising funds, as a measure incentivising the stakeholder in the municipal bond market. Introduction of a special purpose vehicle (SPV) has been under discussions and is being implemented by various financial institutions like India Infrastructure Finance Company Ltd (IIFCL) and Infrastructure Development Finance Company (IDFC). Bond issuers could acquire funds at reduced price in comparison to likewise rated corporate bonds due to the tax exemption (Cestau et al., 2019) but will be capable of utilising more benefits once the factors discussed above can be implemented leading to an array of finances. One of the major reason contributing to the limitation of resources at the ULB level is attributed to the absence of revenue surplus to be transferred to capital account (Rao, 2015). Evidently, numerous studies have been performed to affirm high bond offering yields, regulatory enforcements for disclosure practices, innovative financing using non-conventional methods like municipal bonds, marginal tax rates and credit rating parameters influencing the bond issues for infrastructure financing. However, very few studies have focused on the future potential of municipal bonds by understanding the challenges from the issuer's end and ways to overcome them for creating a vibrant municipal bond market in India. Hence, this study endeavours to bridge the gap by examining the critical factors attributable to the slow progression of municipal bonds from issuers perspective and trying to acclaim some strong policy recommendations vital for implementation by the bond issuers.

### 3 Categorisation of factors

This theoretical framework assumes that the slow growth and development of municipal bond market can be attributed to three key variables, which are further sub-divided into nine subcategories. *Proper governance* of the issuer is identified through timely audited reports of the issuing authority, meeting mandatory regulatory disclosures by SEBI and other regulatory bodies, and role and involvement of the market participants assisting the complete bond issue process. *Issuer's strength* is recognised by acceptance and following updated accounting practices mandated by the authorities, having stability in the revenues of the issuer with an aspect of expansion of those revenues, and implementation of proper HR policies, processes, and practices to acquire and maintain trained work force for proper management of the municipal corporation as issuer. *Government support* is the need of the hour towards developing the municipal bond market in India, which can be acknowledged by giving incentives (monetary) to issuers, creating a specialised entity which can operate as one stop solution to all the problems faced by the issuer, and creation of SPVs for executing a smooth financial support system to the issuer. Figure 1 presents the categorisation of the factors into their sub-factors from the issuer's perspective in the municipal bond market. This can aid in identifying the most critical items contributing to the slow pace of municipal bond market growth and the assistance required by policymakers and other regulatory bodies to work on them for improvement in the overall progress and expansion of the municipal bond market.

**Figure 1** Categorisation of factors and sub-factors for the slow progress of municipal bonds (see online version for colours)

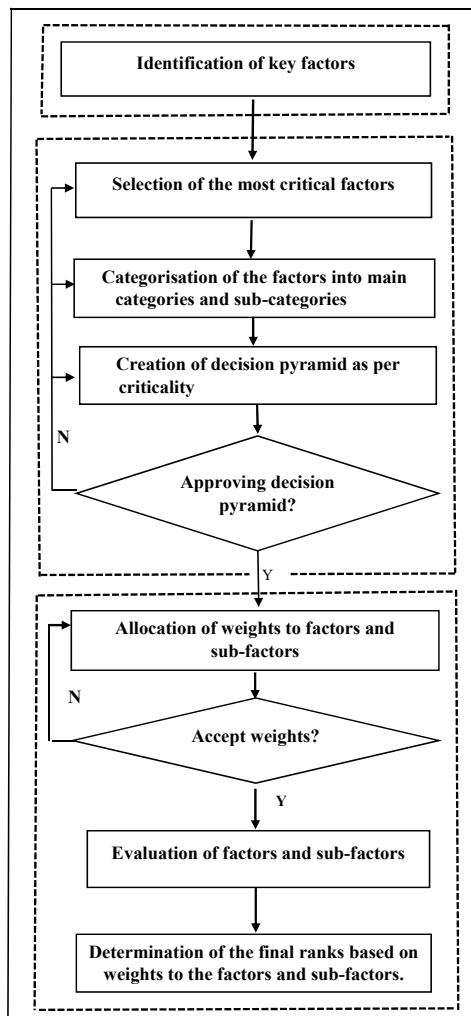


Eventually, an essential feature of this categorisation is that it is applicable in regions with emerging financial markets which are adaptable to a positive change. Many developing markets lack the necessary requirements to be fulfilled by the issuers to finance this requirement. Furthermore, developed markets have a higher level of financial decentralisation of regional and local governments relative to emerging markets, justifying the model's use in developed markets as well.

## 4 Research methods

The study used analytical hierarchy process (AHP) to compute the factors discussed in this paper for evaluating their relative importance. AHP mathematically converts conceptually subjective or fuzzy factors into quantitative variables, enabling researchers to evaluate alternatives objectively (Saaty, 1986, 1988), making it easier for the decision maker to understand the significance of the factors presented in the study. The AHP technique is a measurement that, according to De Steiguer et al. (2003), aids in the hierarchical organisation of problems and the use of quantitative and qualitative analysis to make judgements based on a variety of factors. It heavily relies on expert judgement to produce priority scales (Saaty, 2008), which is why it is being adopted in the study. AHP is applied in several steps, for assessing the factors recognised in the study, and are shown in Figure 2.

**Figure 2** Research flow





After identifying the key factors contributing to the slow pace of the municipal bond market, we built a 3-tiered structure and allocated classifications to those factors. The classifications identified from the study are proper governance, issuer strength, and government support. Figure 1 illustrates the three classifications and their sub-categories. After building the structure, comparative judgments were made for the determination of relative importance of the factors. A pair-wise matrix was created to rank the comparative judgements into ratio-scale measurements. We compared the importance of each pair of factors using a nine-point scale. The scale-measurement employed here is shown in Table 1. For the evaluation, we used five values: 1, 3, 5, 7, and 9, which represent equal importance, weak importance of one over another, strong importance, exhibited importance, and absolute importance. We asked respondents to evaluate one set of factors, and with the use of this scale create the pairwise comparison matrix. To illustrate this, the expert opinion on incentives to issuers is compared by means of question “How significant are incentives to bond issuers when compared to revenue stability?” If the experts’ response is ‘exhibited importance’, 7 as a value is inserted in the matrix and 1/7 as a value is inserted if the experts are certain that revenue stability has “exhibited importance” once equated with issuer incentives.

After the completion of the comparison matrix, we estimated priority weights, the consistency index, and the consistency ratio between the factors with the use of score matrix. There is a cutoff that should not be exceeded when calculating the consistency ratio. For matrices larger than 4 by 4, it is advised that the consistency ratio be between 0 and 0.1 (Haq and Kannan, 2006; Saaty, 1986). A high degree of reliability is observed when projected consistency ratio less than or equal to the acceptable value. In contrast, if the measured value is greater than the optimal limit, the matrix’s judgments become inconsistent, and the assessment must be revisited (Haq and Kannan, 2006). To get the consistency ratio, consistency index is divided by the random consistency index. The consistency index in this study is 0.117, indicating that it passed the consistency test.

**Table 1** Scale measurement

<i>i compare with j</i>	<i>a<sub>ij</sub></i>	<i>a<sub>ji</sub></i>
If i and j are equally important (equal importance)	1	1/1
If i is slightly more important than j (Weak importance)	3	1/3
If i is more important than j (strong importance)	5	1/5
If i is strongly more important than j (exhibited importance)	7	1/7
If i is absolutely more important than j (absolute importance)	9	1/9

Based on the review of some literature and non-academic reports, it is believed that a study based on primary data has the potential to throw up new insights and highlight focus areas for regulators to give the municipal bond markets the impetus it needs. The availability of data in the municipal bond market is trivial, making it challenging to find the market’s flaws. With AHP analysis as a technique, one of the critical stakeholders (issuers) can be reached out for the inputs using the primary data collection through a structured interview questionnaire. The questionnaire used a qualitative way of answering 10 significant questions related to the various aspects of pre and post bond issuances.

#### *4.1 Data*

The study is conducted on primary data collected by expert opinions from the municipalities in the NCR region. The selection of experts was limited to the people employed in municipal corporations in different designations but holding responsible positions to be answerable, when inquired. The reason behind this selection is that these people are the ones who are aware of the real time issues faced by them while involved in the bond issue process. The data was gathered using a structured interview questionnaire, which was administered via phone calls and some via Zoom calls. Two in-person visits to the municipal corporations also formed the part of data collection. The recordings were then transcribed and converted into meaningful data, which was utilised for analysis to draw the AHP matrix. The secondary data was retrieved through the reports and working papers on the RBI and SEBI websites.

#### *4.2 Sample*

The data was collected through structured interview questionnaire from 13 experts in the municipal corporations. The population in the case of issuers (municipal corporations) is the total number of municipal corporations operating city-wise in India. As per (census 2011), the total number of municipalities operating in India is 247. The target population is the municipal corporations that have issued bonds between 2010–2020. The number of municipal corporations issuing bonds was found to be 26. Due to the importance of the strategic decisions taken in the NCR region, the sample is drawn from the National Capital Region, where the number of municipal corporations has come out to be 13. The experts were familiar with the bond financing option for infrastructure development and had knowledge of sources of raising funds through different sources at the local level. Due to their considerable experience and our convenience, the experts were requested to participate in this study and offer their opinions. AHP as a tool is advantageous when compared with other methods as it does not need large samples to get appropriate outcomes and researchers also claim that two expert judgments are illustrative (Darko et al., 2019). However, the sample size of 13 in this study is thus justified and considered a decent sample.

### **5 Analysis**

The demographics of the sample are shown in Table 2. Male respondents dominated by 76% as against a meagre 23% of female respondents. Sixty-nine percent of the participants were over the age of 50. Forty-six percent of the respondents have 10 to 15 years of experience, and 38% have more than 15 years of experience. Three of the respondents were Additional Municipal Commissioners, two were joint Commissioners, six were Senior Accounts Officers (SAO), and two held managerial positions.

**Table 2** Sample demographics

<i>Measure</i>	<i>Occurrence</i>	<i>Proportion</i>
Gender		
Male	10	76.9%
Female	3	23.07%
Age		
30–40	2	15.38%
40–50	2	15.38%
Above 50	9	69.2%
Experience		
5–10 years	2	15.38%
10–15 years	6	46.1%
>15 years	5	38.4 %
Job title		
Additional municipal commissioner	3	23.07%
Joint commissioner	2	15.38%
Senior accounts officer	6	46.1%
Managerial	2	15.38%

*Source:* Author's working

**Table 3** Priority weights in the AHP decision tree

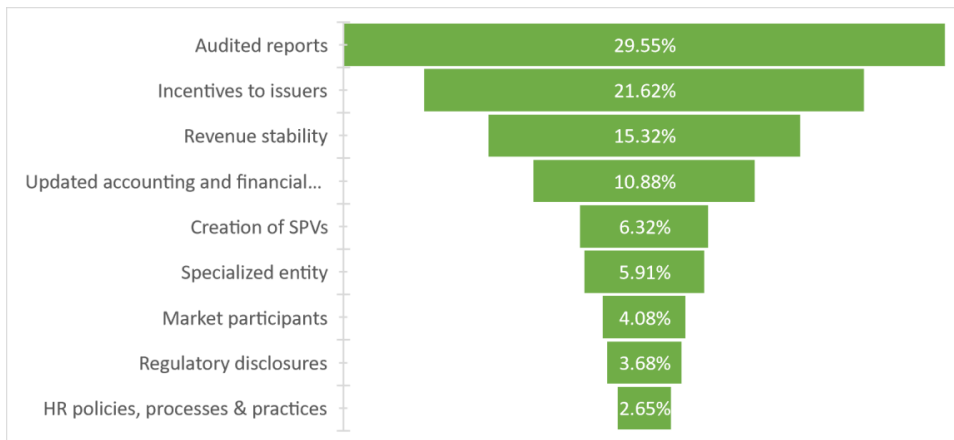
<i>Factors</i>	<i>Weights between categories (%)</i>	<i>Ranking</i>	<i>Weights within categories (%)</i>	<i>Ranking</i>
Proper governance	37.31	2		
Audited reports			29.55	1
Mandatory disclosures			3.68	8
Market participants			4.08	7
Issuer's strength	28.85	3		
Updated accounting practices and financial management			10.88	4
Revenue stability			15.32	3
HR policies, processes, and practices			2.65	9
Government support	38.85	1		
Incentives to issuers			21.62	2
Specialised entity			5.91	6
Creation of SPVs			6.32	5

*Source:* Author's working

Table 3 exhibits the significant weights of each factor and sub-factors, and their ranking. The 'weights between categories' in column 2 shows the overall percentage weight of the respective category of factors. The result of this column implies that the *government support* as a key category, having an inclusive weight of 38.85% and has a crucial

contribution towards the slow progression of municipal bond market from issuer's end. Absence of much needed government support through the creation of SPVs, motivating issuers through monetary incentives and looking forward to establishing a specialised entity for supporting the bond issuance process has been observed. *Proper governance* of the issuer with 37.31% weight, followed by the third category *Issuer's strength* at 28.85% weight. Column 3 labelled as ranking displays the ranks of the percentage weights between categories listed in column 2. Government support occupies the highest rank in terms of weight with Proper governance at the second position and Issuer's strength attaining the third rank. The next is column 4 titled as weights within the categories, presents the percentage weight of each subcategory of the factors recognised in the study. Audited reports and incentives to issuers have achieved the highest percentage weights among all the factors at 29.55% & 21.62%, which intriguingly are close to each other. Revenue stability also has scored a good percentage in terms of weight at 15.32%. However, the value is a bit far off from the top two sub factors. The last column 5 ranks these subcategories based on percentage weight revealed in column 4. Depending upon the rankings, we can conclude that audited reports and incentives to issuers are the most important sub categories of factors in the study.

**Figure 3** Relative importance of the factors prioritised based on 'weights within categories' (see online version for colours)

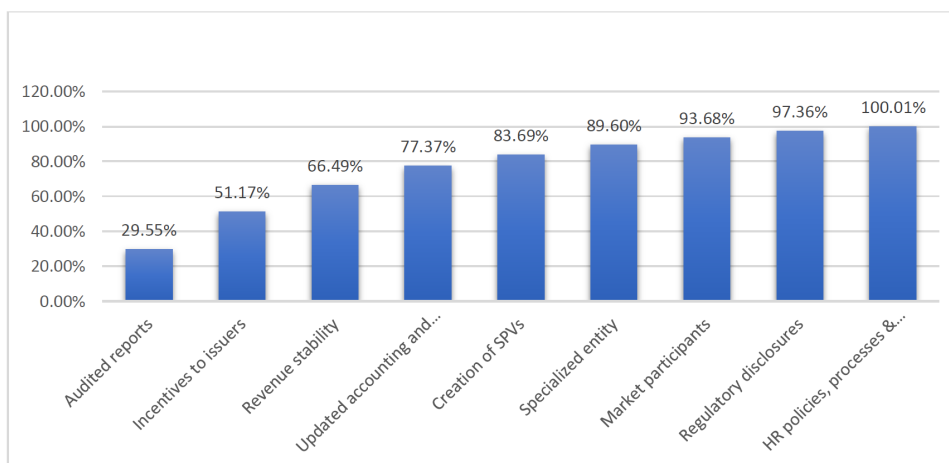


For making it easier to comprehend by looking at it, we have made a column chart displayed through Figure 3 showcasing all the factors with their weights, sorted from largest to smallest. These are the same weights displayed in column 4 of Table 3. Another illustration of cumulative column chart is presented in Figure 4 reflecting the cumulative weights, which are listed in Table 4. The column chart in Figure 4 shows that more than 83% of the contribution towards the sluggishness in the municipal bond market is made by first five factors namely, audited reports, incentives to issuers, revenue stability, updated accounting and financial management practices, and creation of SPVs. The consistency index is also indicated in column 4 of the Table 4 at approximate figure of 12%, showing the acceptable level of the responses and consistency between them.

**Table 4** Relative weights of the factors

<i>Factors (items)</i>	<i>Relative weights</i>	<i>Cumulative relative weights (%)</i>	<i>Consistency index</i>
Audited reports	29.55%	29.55	12%
Incentives to issuers	21.62%	51.17	
Revenue stability	15.32%	66.49	
Updated accounting and financial management practices	10.88%	77.36	
Creation of SPVs	6.32%	83.69	
Specialised entity	5.91%	89.59	
Market participants	4.08%	93.68	
Regulatory disclosures	3.68%	97.35	
HR policies, processes and practices	2.65%	100.00	

*Source:* Author's working

**Figure 4** Cumulative representation of factors (see online version for colours)

## 6 Findings, conclusions, and recommendations

Municipal bond issuers have an opportunity of raising funds for the growth of the infrastructure with the help of bonds. But only limited municipalities are capable of issuing bonds and raising funds due to numerous factors, also considered as challenges at the issuer's end which has resulted in slow paced progress of the municipal bond market in India. The paper fills the gap in the literature by identifying key factors responsible for sluggish growth of municipal bond market and resolves them as per the priority based on estimated weights using the policy recommendations to be implemented for future growth. To the best of our knowledge this study is unique as none of the works in this domain has evaluated such factors.

The study will assist bond issuers in identifying the most critical factors responsible for lackadaisical growth of municipal bonds in India, which issuers can overcome by implementing the prioritised policy recommendations. The AHP results indicate that the first major category 'government support' as the most crucial one at 38.85%, of all the three categories: proper governance, government support, and issuer's strength. Sub categories related to government support, comprises of *incentives to issuers, specialised entities, and the creation of SPVs*. Incentives to issuers occupies the major weight among the three and is also seen as a vital aspect for promoting issuers for more bond issuances in future. A similar work by Pethe and Lalvani (2005) mentions that state incentives can help in supporting higher resource mobilisation for the ULBs. In terms of initiatives, fiscal incentives and other sustainable credit enhancement options were also commenced at each level of government (Chattopadhyay, 2006) for improving the financial strength and physical expertise at the municipal level. In addition to this, incentives in the form of reductions and tax-exemptions on capital goods required for infrastructural growth is also highlighted by Agrawal and Singh (2018), which is comparable to the bond issues by the municipal corporations for the infrastructure development of urban India. The creation of SPVs has also been highlighted by Singh and Dhanda (2021), Malhotra et al. (2022) and Samal (2021) for urban development processes and is also focused in the speech by deputy governor (RBI) as a key measure for developing the domestic debt market (Khan, 2013). Another important factor for policy makers to consider is infrastructure financing through market-based mechanisms with some additional support of specialised entities. Analogous to the above result (Sheikh and Asher, 2012) in their study have also pointed out at specialised financial institutions to be designated for preparing the ULBs towards issuance of municipal bonds. This result suggests that policymakers should pay extra attention in taking reform steps towards increasing the government support to the issuers by making a robust framework for aiding the smooth bond issuance process.

Out of the individual 'government support' sub factors, incentive to issuers is found to be the major factor followed by creation of SPVs and specialised entities. This ranking is critical for bond issuers because it allows them to prioritise the factors and give attention to the most significant ones. It is notable that even though all the factors are essential, some of them are of utmost importance and needed for the creation of a vibrant municipal bond market. This result suggests to policymakers that government support and the framework for increasing support should be scalable and flexible in relation to the constraints imposed by the sovereign system and dimensions. It also indicates that bond issues are essential because they have a direct impact on infrastructure development. Governments must clearly define and articulate their vision for infrastructure development and implementation in their respective countries. Infrastructure development should be a top priority for any country, especially if rapid growth is desired.

The findings show that the second major category 'proper governance' factors account for approximately 37.31% of the total percentage weight. The sub categories of factors from proper governance include *audited reports, mandatory disclosures, and role of market participants*. Results are in line with studies (Edmonds et al., 2017; Nallathiga, 2015) indicate the importance of audited reports for improving the transparency of the ULBs for a smooth bond issuance process to take off. Another report by Securities Exchange Commission, SEC in (2012) also highlighted disclosure of the financial statements including timely audited reports and market structure as key areas of concern in the municipal securities market<sup>2</sup>. Of all the sub factors under proper governance,

audited reports have attained the highest importance followed by market participants and mandatory disclosures. Comparable work is also quoted by Joshi et al. (2016) highlighting the importance of corporate disclosures and transparency in developing capital markets leading to good corporate governance.

The third major category 'issuer's strength' is about 28.85% of the total percentage weight and sub-categories of factors include *updated accounting practices & financial management, revenue stability, and implementation of HR policies, processes, and practices*. Of these factors, it appears revenue stability is leading the hierarchy of importance and updated accounting practices and financial management stand behind in terms of precedence, with HR policies, processes and practices in the last position. The findings in the study are in line with other similar works relating to the importance of revenue stability for various purposes like credit rating, financial soundness among others (Banerji et al., 2013; Denison, 2003; Mohanty et al., 2007; Rao, 2015). However, HR policies and practices have acquired the least weight but employee training and development need to be focused as the employees from the ULBs have received criticism for under performance and behaviour at workplace due to corruption and lack of sufficient education. Mpfu and Hlatywayo (2015) contends that effective employee training and development systems and processes are urgently needed to improve employee performance and, as a result, the delivery of basic services to communities.

This study assists bond issuers in determining the significance of the factors when taken as a whole. For example, depending on the data from the experts gathered using (AHP), three of the factors are showing nearly identical levels of importance while also being recognised as of paramount importance among the nine factors. These are audited reports, incentives to issuer, and revenue stability. In terms of importance, updated accounting and financial management practice follows these three factors, though it is ranked first in the 'issuer's strength' category.

### 6.1 Recommendations

Policymakers should warrant active involvement of top officials in municipal corporations like municipal commissioner and director in the allocation of required resources and sustenance system for following the mandatory disclosures towards successful bond issuances. Proper governance of the issuer which is made up of regulations, timeliness of financial statements and mandatory guidelines to be followed is ranked second. Bond issuers must strengthen the governance mechanism by highlighting and communicating the significance and merits of mandatory and timely audited statements for the smooth operation of bond issues. Regulators should keep a close watch on the implementation of the updated accounting mechanisms in municipal corporations like National Municipal Accounts Manual (NMAM). The issuers should also ensure that the people who are employed in these ULBs should possess adequate skills and have some professional experience. The issuers or ULBs can resolve this problem by providing timely training and skill upgradation courses to their existing employees.

The above result is intriguing and underlines the importance of government support in the smooth and successful issuance of bonds. Most previous studies focusing on such factors contend that updated accounting and financial management practices and regulatory disclosures seem to be the most crucial; however, the findings of the study did not approve that, placing them in fourth and eighth place, respectively. The rank allotted to 'creation of SPVs' at fifth position is quite impressive.

Although it is ranked second in the ‘government support’ category when individual category is ranked within themselves, but when the overall ranking of all the sub factors is done, the results showed that four factors prior to ‘creation of SPVs’ have taken the precedence and now it ranks fifth.

Because the study did not delve deeply into more advanced aspects of municipal bond market development, more research into additional critical factors for bond market development is required to enhance the body of knowledge. This kind of study is an initiation to further factors which are country specific relating to corruption, social impact, legal systems, and culture among others which can be added to the list of the ones identified here. The countries suffering from high corruption levels are unable to process municipal finance through bond sales (Butler et al., 2009). However, reduction in the corruption convictions is also observed in a study (Nakhmurina, 2020) through fiscal monitoring on municipal governance.

The study’s findings and tools may be used in future research for the development of other related markets like corporate bond markets and securitisation markets. While this study is limited to India, it can be applied to other emerging markets with similarly underdeveloped municipal bond markets. This study opens the possibility of using this methodology to address other qualitative issues in financial markets by using primary data for a study in the field of finance.

## 6.2 Limitations

Despite a wholehearted attempt to ensure that every perspective of the subject of research has been addressed, there are some limitations in the study that should be acknowledged. Firstly, the study is limited to the variables known to the researchers’ knowledge and the literature review done. There can be a greater number of variables that can be used for the advancement of the topic of study. Moreover, due to the methodology of using pair-wise comparison through AHP, we were not able to undertake a thorough assessment of all possible factors negatively impacting the municipal bond market. Second, we gathered information from 13 municipal government experts. While the sample size adopted in this study is acceptable in AHP based method, a bigger sample size might yield more robust outcomes. In future, research should be conducted to evaluate existing factors on a bigger sample and presumably any other empirical analysis technique. Thirdly, being a market development study, it is one of its kind. As this area is currently enduring dynamic changes because of regulatory developments, new insights from regulators will necessitate a new approach to the study. Therefore, we urge further study to examine the significance of novel factors that could affect the bond issuances positively.

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## Notes

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