

Original Article

Received: 2026/04/11
Revised: 2026/08/17
Accepted: 2026/08/17



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HOW TO CITE THIS ARTICLE

Shokouhbidhendi M. Alizadeh R. Motahar R. Transitioning to a sustainable municipal revenue system in Tehran: A framework based on revenue diversification and positive feedback loops. *Urban Economics and Planning* 8(1):82-108.

DOI: [10.22034/uep.2026.577760.1854](https://doi.org/10.22034/uep.2026.577760.1854)

Transitioning to a sustainable municipal revenue system in Tehran: A framework based on revenue diversification and positive feedback loops

Mohammadsaleh Shokouhbidhendi^{1*}, Reza Alizadeh², Reza Motahar³

1. Assistant Professor, Department of Urban Planning, Faculty of Architecture and Urban Planning, Iran University of Science and Technology, Tehran, Iran
2. PhD Candidate, Department of Urban Planning, Faculty of Architecture and Urban Planning, University of Art, Isfahan, Isfahan, Iran
3. PhD in Urban Planning, Faculty of Architecture and Urban Planning, Iran University of Science and Technology, Tehran, Iran

Abstract

The financing structure of Iranian municipalities has become increasingly reliant on revenues from construction activities, land-use changes, and density selling in recent decades, a trend that has had various consequences for urban development and municipal governance. This study aims to identify and prioritize revenue diversification options for the Tehran Municipality and to propose a framework for the gradual transition from unsustainable to sustainable revenue sources. The research is exploratory and employs a mixed-methods approach. In the qualitative phase, we analyzed 14 laws, one policy document (1907–2025), and one theoretical framework using document analysis, identifying 56 legal capacities. In addition, 11 semi-structured interviews with experts in urban management and municipal finance yielded 47 proposed options. Integrating findings from these two phases produced 84 options, which were then clustered into 25 final policy alternatives. In the quantitative phase, the evaluation criteria were weighted using the Best-Worst Method (BWM), and the alternatives were prioritized through the Additive Ratio Assessment (ARAS) method based on six criteria: revenue sustainability, revenue-generation capacity, ease of implementation, social acceptability, institutional requirements, and equity. The results indicate that options related to intelligent revenue diversification, integration of land-based instruments, financial transparency, and reform of revenue collection systems received the highest priorities. The findings suggest that improving municipal revenue systems depends less on creating new revenue sources and more on enhancing transparency, collection efficiency, and the effective utilization of existing capacities. This study's novelty lies in integrating legal capacities with expert perspectives, systematically prioritizing policy alternatives, and proposing a policy framework for the gradual reform of municipal revenue systems.

Keywords

ARAS method
multi-criteria decision-making
municipal financial sustainability
municipal revenue diversification
Tehran municipality
urban financial sustainability
urban financing

* Corresponding Author: shokouhi@iust.ac.ir

1. Introduction

Sustainable financing is an essential prerequisite for achieving efficient urban management and sustainable development in cities (Zeraat-Kish, 2022; Bisogn et al., 2024). In the urban financial management literature, financial sustainability refers to the ability of local institutions to continuously secure the resources required to provide public services, implement development projects, and respond to citizens' needs without experiencing financial crises. From this perspective, diversifying the revenue portfolio and reducing dependence on limited and volatile sources are regarded as fundamental principles of urban financial governance. As the most important local management institutions, municipalities are responsible for a wide range of urban functions and services, including public transportation, waste management, safety and firefighting services, the development and maintenance of urban infrastructure, the protection of public spaces, and the enhancement of citizens' quality of life (Davoudi, 2019; Hadi-Zenouz et al., 2009). Effective performance of these functions requires access to sustainable, diversified, and reliable financial resources, as the quality of urban services and the capacity to implement development programs depend largely on urban management's financial capacity.

The financing structure of municipalities in Iran has changed significantly in recent decades. As municipalities have reduced their dependence on the government's public budget and moved toward financial self-reliance, a substantial share of municipal revenues has become dependent on sources such as construction-related fees and the sale of development density (Davoudi, 2019; Zeraat-Kish, 2022). Although these sources have enabled the financing of urban projects at certain times, heavy dependence on them has made municipal revenues highly vulnerable to fluctuations in the construction market. The consequences have included financial instability, intensified density selling, increased vulnerability in urban management (Mohammadi, 2020), and the increasing divergence of some revenue-generating practices from the objectives of sustainable urban development.

In contrast, an examination of the country's laws and higher-level policy documents indicates that multiple capacities have been provided to diversify and stabilize municipal revenues. However, a significant proportion of these capacities have not yet been fully utilized. In addition, implementation experience and the views of

urban management experts indicate various options and strategies for reforming the municipal revenue structure. Therefore, the main issue is no longer merely a lack of proposed solutions; rather, it is identifying exploitable capacities, systematically evaluating existing options, and determining implementation priorities for realizing them.

A review of domestic and international studies indicates that previous research has mainly focused on three areas: assessing the sustainability of urban revenues, examining the legal and institutional capacities for financing, and proposing strategies for diversifying revenue sources. Although these studies have made an important contribution to the development of knowledge on urban finance, they have often remained limited to identifying capacities or presenting lists of proposed strategies. Furthermore, when prioritization of options has been considered, the relationships among strategies, their order of implementation, and their interdependent roles in facilitating one another's execution have been overlooked. Consequently, a gap remains in the research literature concerning an analytical framework capable of integrating, evaluating, and organizing legal capacities and expert perspectives into a coherent implementation pathway.

This study seeks to address this gap. To this end, it first identifies and extracts the legal capacities affecting the diversification of municipal revenues (from 1286 to 1404, from the enactment of the first Municipality Law to the latest relevant legislation) as well as the options proposed by experts for diversifying the municipal revenue portfolio. These options are then evaluated and prioritized using the best-worst method (BWM) and the additive ratio assessment (ARAS), a multi-criteria decision-making method. Furthermore, beyond a simple ranking, this study organizes the selected strategies into a four-stage cycle based on positive feedback logic, such that implementing each stage not only improves the municipality's financial condition but also strengthens the conditions for the realization and effectiveness of the subsequent stage. From this perspective, the novelty of the present study lies not only in identifying and prioritizing revenue options, but also in explaining the implementation relationships and synergies among them and presenting a gradual pathway toward financial sustainability. Accordingly, this study seeks to answer two main questions: What are the most important legal capacities and options proposed by experts for diversifying the revenue portfolio of Tehran

Municipality? How are the proposed options prioritized, and how can their implementation sequence be explained within the framework of a positive feedback loop?

2. Theoretical and empirical background

Explaining and analyzing the issue of municipal revenue sustainability requires drawing on theoretical foundations related to local public finance, urban financial governance, and revenue diversification. At the same time, understanding the current state of knowledge and identifying research gaps requires examining empirical studies conducted in this field. Accordingly, this section first reviews the main theoretical frameworks related to financial sustainability and municipal revenues, then examines relevant domestic and international studies to clarify the conceptual foundations of the research and establish its position and contribution within the existing literature.

2.1. Theoretical background

Sustainable financing is regarded as a fundamental pillar of urban governance and a prerequisite for achieving sustainable development in cities. In the public finance literature, fiscal sustainability refers to local governments' ability to continuously secure the resources required to provide public services, implement development programs, and respond to citizens' needs (Danesh Jafari et al., 2014; Sadeghi et al., 2015). From this perspective, the quality of urban fiscal governance depends not only on the amount of revenue available to urban management, but also on the way revenue sources are organized, diversified, stable, and efficiently managed. Local governments require a revenue structure that can maintain a reasonable degree of stability against economic fluctuations and political changes to fulfill their responsibilities effectively (Mozaffari et al., 2016). Numerous fiscal crises in different countries have shown that excessive reliance on a particular revenue source increases the fiscal vulnerability of local governments and reduces their capacity for long-term planning (Carroll, 2005). Therefore, achieving fiscal sustainability requires urban management to employ complementary mechanisms for designing and managing its revenue system – mechanisms that, in addition to diversifying revenue sources, emphasize the quality of fiscal governance, the autonomy of urban management, and the efficient utilization of the

city's economic capacities. In this regard, the urban finance literature has proposed several major theoretical approaches to explain these mechanisms, which are discussed in the following sections.

Revenue diversification theory

Revenue diversification theory is one of the most important theoretical frameworks in local public finance. This theory assumes that sound fiscal performance by local governments requires access to a diverse set of revenue sources, while excessive reliance on a single revenue source increases fiscal risk and institutional vulnerability. Proponents argue that, just as diversification in an investment portfolio reduces investors' risk, diversification in the revenue portfolio can also reduce local governments' fiscal risk. From this perspective, revenue diversification enhances fiscal stability, strengthens the capacity to adapt to economic crises, improves fiscal efficiency, and promotes greater equity in the distribution of the tax burden (Hadi-Zenouz, 2009). Multiple revenue sources also make it possible to replace impaired sources during periods of recession or crisis, thereby increasing the flexibility of urban management in responding to economic shocks (Carroll et al., 2003). Within this framework, diversification does not merely mean increasing the number of revenue sources; it also refers to balancing among different revenue sources so that no single source accounts for a disproportionate share of the local government's fiscal structure. Despite the important role of diversification in enhancing fiscal resilience, this theory focuses less on the origin of revenues than on their composition and balance. This, in turn, raises another important question: what capacities should serve as the basis for generating diversified municipal revenues? One of the most important answers in the urban public finance literature is found in Georgist thought and the theory of land value capture, which emphasizes harnessing the added value generated by urban development as one of the fairest and most sustainable sources of local government revenue.

Georgist theory and land value capture

Georgist theory, rooted in the ideas of Henry George, is regarded as one of the most influential theories in land economics and urban public finance. The central premise is that increases in land values in cities are largely not the result of landowners' investments and activities, but rather the outcome of urban development, public investment, population growth, and the provision of public infrastructure. Therefore, a

substantial portion of land value appreciation is social in nature, and returning part of this value to society through fiscal mechanisms is not only consistent with economic justice but is also considered desirable from the perspective of economic efficiency (George, 1879). According to this view, local governments should return part of the value appreciation generated by urban development to the public financing system through instruments such as land value taxation, property value increase levies, and land value recovery. These resources are considered the most sustainable sources of revenue for local governments because they have less negative impact on productive activities, lower volatility, and a direct connection to urban development (ibid.). Although the legal, economic, and institutional conditions of contemporary cities differ substantially from those prevailing when Georgist theory was formulated, many modern urban financing instruments – including land value recovery, levies based on the current value of real estate, sharing of development benefits, and exploitation of added value created by public investments – have their conceptual roots in this line of thought. From this perspective, Georgist theory shows that a portion of sustainable local government revenues can be generated from the value appreciation created by urban development and public investment. However, effectively using these capacities requires urban management to possess sufficient authority and autonomy to design, collect, and manage these revenue sources, an issue addressed through the concepts of fiscal autonomy and fiscal decentralization.

Fiscal autonomy and fiscal decentralization
Another fundamental concept in the local finance literature is the financial autonomy of local governments and fiscal decentralization. According to this view, local governments can perform their duties effectively when they have sufficient authority to secure and manage financial resources. Fiscal decentralization means transferring part of the revenue and expenditure authority from the central government to local levels of government. It aims to increase the efficiency, accountability, and flexibility of the public administration system. Various studies have shown that local governments' strong dependence on central government grants or a limited number of revenue sources reduces the capacity for independent planning and decision-making. In contrast, utilizing existing legal capacities, expanding local revenue sources, and increasing the authority of urban management in using financial instruments can

strengthen financial independence and improve the resilience of the urban financial system (Hendrick & Moyer, 2002). From this perspective, revenue diversification and effective use of existing legal capacities can be considered one of the mechanisms for achieving financial independence in urban management. However, expanding revenue sources and increasing the financial powers of local governments have not always been accompanied by a theoretical consensus. Some public finance experts believe that diversifying revenue sources, in the absence of transparency and accountability, can reduce citizens' awareness of the real cost of public services, increase spending, and weaken financial discipline. This view has been explained as the "fiscal illusion" theory.

Fiscal illusion theory and critiques of revenue diversification

Alongside perspectives supporting revenue diversification, part of the public finance literature takes a critical view of this approach's potential implications. The primary theoretical basis for these criticisms is the fiscal illusion theory, proposed by Buchanan. According to this theory, a more complex revenue structure may cause citizens to underestimate the actual cost of public services and the tax burden imposed on them (Carroll, 2005). From this perspective, an increase in the number of revenue sources, the use of indirect taxes, or the fragmentation of financing sources may reduce fiscal transparency and create conditions for expanding public expenditure and government size. Accordingly, some researchers argue that revenue diversification does not necessarily lead to greater efficiency and, under certain circumstances, may result in higher public expenditures (Hendrick & Moyer, 2002). However, studies indicate that the effects of revenue diversification depend on the quality of fiscal governance, the degree of transparency, institutional capacity, and how resources are managed (Carroll et al., 2003). In other words, diversification can improve fiscal performance when implemented within a transparent, accountable framework based on the principles of good urban governance.

Criteria for evaluating municipal revenues

Based on the theoretical foundations discussed above, evaluating municipal revenue options cannot rely solely on their revenue-generating capacity, because urban fiscal sustainability results from the simultaneous interaction of economic, social, institutional, and implementation dimensions (Baghdadi et al., 2021).

Accordingly, each revenue option should be evaluated not only by its revenue-generating capacity but also by its sustainability, flexibility, local autonomy, feasibility, and social acceptability (Izadkhahasti, 2022; Gerami & Shamseddini, 2023). Accordingly, the evaluation criteria used in this study were derived from an analytical review of the literature on urban public finance, revenue diversification, local fiscal governance, and studies evaluating revenue sources. In this process, criteria identified across different studies were reviewed and, following conceptual comparison, those with overlapping or similar meanings were consolidated. The final criteria were then selected based on their frequency in the

literature, relevance to the research objectives, and applicability to evaluating policy options. Table 1 presents the outcome of this process and identifies the criteria that form the basis for weighting, evaluating, and prioritizing the revenue options in the subsequent stages of the study. The indicators presented in Table 1 provide the basis for evaluating the criteria in the subsequent stages of the study. During the evaluation process, experts used these indicators to assess the extent to which each criterion was satisfied by the revenue options. The methodology and findings sections describe in detail the procedure for quantifying these judgments, the scoring scale, and its application in the prioritization process.

Table 1. Criteria for evaluating sustainable revenue (source: research findings)

No.	Criterion	Definition	Indicators	Source
1	Sustainability	The ability to generate a continuous and reliable revenue stream over the long term	Revenue stability over time; low dependence on temporary conditions; revenue predictability	Baghdadi et al., 2021; Izadkhahasti, 2021; Hajilo et al., 2017; Gerami et al., 2023
2	Flexibility	The ability to adapt to economic and institutional changes	Ability to adjust the revenue rate or base; resilience to economic recession; adaptability to environmental changes	Baghdadi et al., 2021; Hajilo et al., 2017; Gerami et al., 2023; Lopez-Olvera, 2025; Motahar et al., 2026
3	Desirability	Compatibility with equity, efficiency, and social acceptance	Degree of social acceptability; economic impacts; equity in the distribution of the financial burden	Baghdadi et al., 2021; Hajilo et al., 2017; Gerami et al., 2023; Lopez-Olvera, 2025; Uryszek, 2018
4	Participatory capacity	The potential for stakeholder participation in revenue generation and management	Ability to engage citizens; transparency of mechanisms; strengthening of social capital	Baghdadi et al., 2021; Izadkhahasti, 2021; Gerami et al., 2023; Mousavi et al., 2023; Motahar et al. (2), 2026
5	Local autonomy	Reliance on local capacities and authorities	Reduced dependence on the central government; greater authority for urban management; utilization of local capacities	Baghdadi et al., 2021; Gerami et al., 2023; Mousavi et al., 2023; Lopez-Olvera, 2025; Uryszek, 2018; Chernick et al., 2025
6	Operationality	The feasibility of implementation under actual urban management conditions	Legal feasibility; implementation costs; required organizational capacity; speed of revenue realization	Baghdadi et al., 2021; Izadkhahasti, 2021; Karimzadeh & Haddadian, 2023; Lopez-Olvera, 2025

These criteria, by covering various dimensions of fiscal sustainability, operational efficiency, stakeholder participation, and local fiscal autonomy, provide a basis for systematically comparing revenue options. Accordingly, in the subsequent stages of the study, the options identified from existing legal capacities and expert recommendations were evaluated and prioritized based on these criteria.

2.2. Empirical background

To clarify the position of the present study within the relevant literature, previous studies have been reviewed in two sections: domestic and international

research. These studies have been categorized and analyzed based on shared thematic areas to identify the main research trends, existing gaps, and the distinctive contribution of the present study. Domestic studies related to municipal revenues can be classified into three main categories: studies evaluating revenue sustainability, studies examining legal and tax revenue capacities, and studies proposing revenue diversification strategies. The first category focuses on assessing the sustainability of urban revenues and diagnosing the weaknesses of municipal financial structures. In this regard, Hajiloo et al. (2017) assessed the revenue structure of Shabestar Municipality using

a descriptive-analytical approach and the Shannon Entropy and TOPSIS techniques, examining municipal revenues during 2012–2016. The results showed that a substantial share of the municipality's revenues came from sources with low and moderate sustainability, while the share of highly desirable revenue sources was limited. Ragheb and Shahri (2020), likewise, using a descriptive-analytical approach based on documentary studies, examined the revenue structure of municipalities and argued that the instability of revenues in relation to persistent urban expenditures constitutes the most important challenge facing urban management, and that developing sustainable revenues is essential for the continued provision of public services. Gerami & Shamseddini (2023) also examined strategies for securing sustainable financial resources through a descriptive-survey approach and statistical analysis, focusing on Marvdasht Municipality's financial situation. They identified revenues from general levies and municipal funds and assets as the most sustainable revenue sources. Collectively, these studies indicate that although understanding the existing situation and assessing revenue sustainability are prerequisites for any structural reform, merely diagnosing the current situation does not provide a clear pathway for implementing revenue system reforms.

The second category of studies has examined the legal, tax, and institutional capacities of urban financing. Vesali Azarsharbani (2017), through a comparative analysis of municipal revenue sources in Iran and various other countries, as well as an examination of international studies and experiences, showed that local taxes and the allocation of a share of national tax revenues are among the most sustainable and practicable sources of municipal revenue in developed countries. Akhgar et al. (2018), using a descriptive-analytical approach and the SWOT model, and examining Grade 1 to Grade 7 municipalities in Isfahan Province, found that smaller municipalities are more dependent on government assistance and argued that incorporating the municipal grading system into legislation could strengthen the realization of sustainable revenues. Mousavi et al. (2021), likewise, using a descriptive-analytical and survey-based approach to examine the revenue structure of Tehran Municipality, identified revenue adequacy, fiscal autonomy, and equity as key principles of sustainable financing and emphasized the need to reconsider municipalities' revenue structure. In the same vein, Izadkhasti (2022), using econometric methods and an

input-output table, examined the untapped potential of value-added tax revenues for Tehran Municipality and attributed a substantial portion of the potential capacity of this revenue source to legal and implementation gaps. The findings of these studies indicate that a significant share of municipalities' revenue-generating capacity is embedded in existing legislation, tax structures, and institutional arrangements; however, how these capacities can be effectively utilized and translated into an actionable program has received comparatively limited attention. The third and most extensive stream of domestic research has focused on proposing revenue diversification strategies and reducing municipalities' reliance on unstable revenue sources. Ghanbari et al. (2011), using the SWOT model and a case study of Zarch Municipality, analyzed strengths, weaknesses, opportunities, and threats and proposed strategies such as expanding urban services, developing revenue-generating projects, and reforming the budget allocation system to increase sustainable revenues. Masgari et al. (2018), using fuzzy analysis and a survey of experts in Karaj Municipality, identified value-added tax, public service charges, and certain statutory levies as the most sustainable revenue sources. Gholipour et al. (2019), using a qualitative approach and thematic analysis based on interviews with experts from Urmia Municipality, identified a range of methods, revenue sources, and challenges associated with achieving sustainable revenues and developed a set of practical strategies for enhancing municipal sustainable revenues.

Aram and Shahvazi (2022), using a descriptive-analytical approach and an expert survey in Tehran, identified allocating a larger share of national tax revenues and value-added tax revenues to municipalities as the most practicable revenue option. Similarly, Abbasi et al. (2022), employing a mixed-method approach that combined content analysis, the Delphi technique, and factor analysis in Arak Municipality, identified the key components influencing sustainable revenues, including general levies, transportation charges, government transfers, environmental levies, and the financial relationship between the municipality and citizens. Subsequently, Farhadi et al. (2024), using a mixed-method approach combining thematic analysis and the Fuzzy SWARA technique, and employing Fooladshahr Municipality as a case study, identified and ranked strategies for achieving sustainable revenues. Their findings showed that revenues generated from levies ranked highest

among the proposed options. A common feature of these studies is their emphasis on developing new revenue sources, utilizing local economic capacities, reforming financial mechanisms, and reducing dependence on construction-related revenues. However, most of these studies have been limited to identifying, proposing, or prioritizing strategies and have paid comparatively little attention to the implementation relationships, sequencing, and interactions among the proposed options.

In addition, some studies have employed forward-looking approaches and multi-criteria decision-making methods to analyze the issue. Baghdadi et al. (2021), aiming to develop an optimal model for securing sustainable revenues for municipal construction projects in Karaj, employed the Delphi method, the analytic hierarchy process (AHP), and the fuzzy ordered weighted averaging (FOWA) method. Their findings showed that intergovernmental tax transfers received the highest priority among the revenue sources. Similarly, Sefidro et al. (2023), using MICMAC and Scenario Wizard software and a case study of District 22 in Tehran, identified the green economy, urban tourism, foreign investment, technological development, and cultural industries as the most important drivers of sustainable revenues. Although these studies represent a step forward compared with descriptive research, their primary focus has nevertheless remained on identifying influential factors or prioritizing options, with comparatively limited attention to designing a systematic, phased pathway for implementing fiscal reforms.

In the international literature, studies related to local government revenues can likewise be categorized into three main areas: revenue diversification, institutional and tax reforms, and fiscal resilience. A substantial body of international research has focused on revenue diversification as a strategy for enhancing the fiscal sustainability of local governments. Suydehous (1994), aiming to examine the relationship between revenue source diversification and the fiscal performance of local governments, employed empirical analysis and developed an index to measure revenue diversification. The findings indicated that greater diversity and balance among revenue sources can play an important role in improving governments' fiscal performance.

Subsequently, Hendrick and Moyer (2002), analyzing data from approximately 240 suburban municipalities in the Chicago metropolitan area during 1988–1997, found that municipalities with greater revenue diversification were less dependent on property taxes

and experienced lower tax burdens. Carroll (2005), through an empirical analysis of U.S. state fiscal data from the 1990s, showed that although political and demographic factors influence revenue structures, tax structure and economic conditions are the most important determinants of revenue diversification and play a central role in reducing local governments' fiscal vulnerability. Jimenez and Afonso (2021), using audited financial data from more than 500 medium-sized and large U.S. cities for the period 2006–2012 and employing econometric analysis, further demonstrated that the type of diversification matters significantly: expanding non-tax revenues improves fiscal capacity and budgetary sustainability, whereas diversification limited to tax revenues does not necessarily produce the same effect. Collectively, these studies indicate that revenue diversification is not merely a means of increasing revenues, but a strategy for reducing fiscal vulnerability, enhancing flexibility, and strengthening local governments' sustainability.

The second group of international studies has focused on the role of institutional reforms, fiscal decentralization, and local government autonomy. Cigu et al. (2014), drawing on the theory of local government fiscal autonomy and employing an analytical approach, showed that administrative and fiscal autonomy for local governments is a prerequisite for achieving sustainable development in local communities. Jankovics (2016), through an analytical study of reforms to Hungary's local government financial system after 2010, found that institutional reforms, the introduction of new borrowing rules, and the strengthening of local taxes improved the fiscal condition of local governments, although assessing the long-term effects of these reforms remains necessary. Kisaka et al. (2025), using a descriptive survey and studying 14 local governments in Kenya's Lake Region Economic Bloc, found that strengthening legal frameworks, citizen participation, diversification of tax revenues, and particularly technological development had significant effects on the performance of own-source revenues of local governments, while local economic growth further strengthened these effects. The findings of this group of studies indicate that the success of revenue policies depends not only on financial resources but also on the quality of institutions, legal frameworks, the degree of fiscal autonomy, and local governments' governance capacity.

The third group of studies has focused on strategies to

enhance fiscal resilience and reduce dependence on unstable revenue sources. Chernick et al. (2011), analyzing fiscal data from the largest U.S. cities during 1997–2008, showed that revenue diversification, compared with reliance solely on property taxes, enhances municipalities' capacity to maintain public service levels during economic crises. Park and Park (2017), using cross-sectional regression analysis, examined the relationship between revenue diversification and local government structure and found that the effects of revenue diversification on public expenditure levels depend on local governance structure. Bialek-Jaworska (2022), analyzing data from municipalities and municipally owned companies in Poland, found that the financial flexibility of municipally owned companies and revenue diversification increase municipalities' long-term debt capacity and enable them to finance urban investments. Mohamed and Vadeveloo (2023), through a systematic review of studies conducted up to 2023, identified twelve strategies for diversifying local governments' financial resources, among which crowdfunding and payments for urban ecosystem services were particularly important.

Rao et al. (2023), by developing a framework based on the concept of fiscal resilience and analyzing three decades of local government data, demonstrated that fiscal resistance, recovery, and renewal depend not only on revenue diversification, but also on revenue structure, countercyclical capacities, and strategic planning, all of which play a decisive role in enhancing the capacity to cope with economic shocks. Finally, Lopez-Olvera et al. (2025), analyzing fiscal data from 240 Mexican municipalities, showed that improving tax regulations and designing progressive tariffs proportional to households' economic capacity can increase sustainable revenues for urban management. Overall, although these studies have proposed diverse strategies for enhancing fiscal sustainability and resilience, they have generally examined strategies independently of one another and paid less attention to their interrelationships, implementation sequencing, and synergistic effects in reforming the revenue system.

A review of domestic and international studies indicates that the existing literature has expanded across three main areas: assessing urban revenue sustainability, analyzing legal and institutional capacities for financing, and proposing strategies for revenue diversification. In recent years, in addition to these areas, some studies have employed multi-

criteria decision-making methods and mixed approaches to identify and prioritize revenue options (Baghdadi et al., 2021; Sefidro et al., 2023; Farhadi et al., 2024). Recent international studies have also emphasized the importance of revenue diversification while demonstrating that the type of revenue structure, the degree of fiscal resilience, and the institutional capacity of local governments play decisive roles in the success of revenue policies (Jimenez & Afonso, 2021; Rao et al., 2023). However, as indicated by domestic studies (Mesgari et al., 2018; Aram & Shahvazi; Abbasi et al., 2022; Farhadi et al., 2024) and international studies (Mohamed & Vadeveloo, 2023; Rao et al., 2023; Lopez-Olvera et al., 2025), the primary focus of this body of research has been on identifying, evaluating, or prioritizing revenue options, with proposed strategies generally presented as a set of independent alternatives. Consequently, the interrelationships, implementation sequencing, and synergistic effects of policy options in the transition toward a sustainable revenue system have received comparatively limited attention.

Accordingly, the main gap in the existing literature lies not in identifying new revenue sources or strategies, but in the absence of a framework for integrating legal capacities and expert perspectives, systematically prioritizing options, and explaining the implementation logic and interconnections among them. To address this gap, the present study first extracts legal capacities and options proposed by experts. Then, it prioritizes them using the additive ratio assessment (ARAS) multi-criteria decision-making method. Furthermore, beyond a ranked list of alternatives, it organizes the selected options into a four-stage cycle based on positive feedback logic. Within this framework, policy options are not treated as independent actions but as interconnected components of a system in which implementing each stage strengthens financial and institutional capacities and thereby creates the conditions for the realization and effectiveness of the subsequent stage. This logic aligns with systems approaches that emphasize the role of interrelationships, reinforcing feedback, and interdependencies among system components in shaping outcomes. Accordingly, the novelty of the present study lies not merely in identifying and prioritizing revenue options, but in providing a systemic framework for organizing and sequencing their implementation to facilitate a gradual transition from an unstable revenue structure toward a more sustainable system.

3. Methodology

The present study is applied in purpose and exploratory in nature, employing a mixed-methods approach (qualitative–quantitative). The main objective of the study is to identify the legal capacities and available options for diversifying Tehran Municipality's revenue portfolio, evaluate and prioritize these options based on fiscal sustainability criteria, and ultimately develop an operational framework for enhancing the revenue sustainability of urban management. Since achieving this objective requires the simultaneous use of capacities outlined in laws and regulations, along with the insights and experiences of experts in urban management and urban finance, this study employs a mixed-methods approach. In the qualitative component, we identified, analyzed, and integrated the legal capacities and options proposed by experts. In the quantitative component, we evaluated and prioritized the final options using the additive ratio assessment (ARAS) multi-criteria decision-making method. The research process consisted of four main steps: identifying legal capacities, extracting and analyzing expert perspectives, integrating and formulating revenue options, and finally evaluating and prioritizing these options. In addition, to provide a practical representation of how the selected strategies could be realized, the top-ranked options were organized into a four-stage cycle based on positive feedback logic, thereby explaining not only their priorities but also the reinforcing relationships and implementation continuity among them.

In the first step, to identify the legal capacities for diversifying municipalities' revenue portfolio, all relevant laws, regulations, and policy documents concerning urban management, public finance, and municipal revenues enacted between 1907 and 2025 (1286-1404 in the Iranian calendar) were initially reviewed. From this body of documents, 14 laws and one approved upstream policy document that directly provided capacities for creating, developing, or diversifying municipal revenues were selected. The Georgist theory was also considered as a theoretical framework relevant to the underlying rationale of some of these revenue capacities (the list of these documents is presented in Table 2 in the Findings section). At this stage, qualitative content analysis of documents was employed. Accordingly, the texts of the laws and documents were systematically

examined, and all provisions, authorities, mechanisms, and legal capacities relevant to the creation, development, or diversification of municipal revenues were extracted. The data extraction and classification were performed manually, using the organizational and classification capabilities of Microsoft Excel. The extracted items were then categorized and consolidated based on their nature and revenue-related function and organized into a set of exploitable legal capacities for urban management. To enhance the credibility of the document content analysis, the list of extracted legal capacities and their classification were presented to experts in a focus group session. The experts assessed the comprehensiveness of the identified capacities, the accuracy of linking each capacity to its corresponding legal document, the appropriateness of the classifications, and the absence of overlap. Following discussion, review, and resolution of disagreements, the final version was approved through expert consensus. The objective of this stage was to identify exploitable legal capacities for developing revenue sources, strengthening fiscal autonomy, and reducing dependence on unstable revenues.

In the second step, 11 semi-structured interviews were conducted with experts to identify practical options for revenue diversification. The expert panel included managers and specialists from Tehran Municipality, specialists in urban economics and urban finance, consultants and members of the Tehran City Council, specialists in urban policy and planning, and university faculty members. Sampling was conducted in two stages. First, the initial experts were purposively selected based on their relevant expertise and experience in the research topic. Subsequently, additional participants were identified through referrals from the initial experts using snowball sampling and were recruited into the study. The interviews continued until we reached a point of relative saturation, where new ideas and suggestions became limited in the final discussions. Most perspectives either repeated or complemented those identified earlier. Among the participants, five held doctoral degrees, three were PhD students, and three held master's degrees or had relevant professional experience. Table 2 presents detailed information on the experts' characteristics.

Table 2. Descriptive characteristics of the interviewees (source: research findings)

No.	Educational background	Age	Field of expertise	Organizational position	Years of experience
1	M.Sc. in Economics	45	Urban Economics	Urban Economics Researcher	10
2	PhD Student in Urban Planning	36	Urban Planning and Urban Management	Expert, Deputy of Urban Planning and Architecture, Tehran Municipality	6
3	PhD in Architecture	40	Architecture and Urban Planning	Secretary, Architecture and Urban Planning Commission, Tehran City Council	5
4	PhD Student in Urban Planning	39	Urban Planning and Urban Policy	Advisor to the Urban Planning and Architecture Commission, Tehran City Council	6
5	PhD in Urban Planning	40	Urban Regeneration and Urban Development	Advisor, Urban Regeneration Company	8
6	M.Sc. in Urban Planning	38	Urban Planning and Urban Management	Advisor to the Urban Planning Commission, Tehran City Council	7
7	Economist	55	Urban Economics and Urban Finance	Urban Economics Researcher	25
8	M. in Architecture	42	Urban Planning and Development	Deputy for Steering, Tehran Urban Development Plans Steering and Monitoring Institution	7
9	PhD Student in Urban Planning	38	Urban Planning and Development	Deputy for Promotion and Development, Tehran Urban Development Plans Steering and Monitoring Institution	5
10	PhD in Urban Planning	40	Urban Planning and Urban Development	Faculty Member, Iran University of Science and Technology	12
11	PhD in Urban Planning	54	Urban Planning and Urban Development	Faculty Member, Iran University of Science and Technology	20

Following the interviews, the recorded audio files were transcribed, and the interview transcripts were coded and analyzed using a thematic analysis approach. In the first stage, the interview transcripts were reviewed several times to develop a comprehensive understanding of the data. Subsequently, the suggestions, strategies, and ideas expressed by the experts were extracted as units of meaning and recorded in an initial list. Then, concepts with similar or overlapping content were identified and grouped into common themes. After reviewing and refining the themes, integrated and comprehensive titles were developed for each category of options. This process involved repeated reference to the interview transcripts and was informed by the study's theoretical foundations to preserve the substance of the experts' views while preventing repetition, fragmentation, and conceptual overlap among the options. The outcome of this stage was a set of revenue options that served as the basis for integration with the legal capacities and the formulation of the study's final options.

In the third step, the legal capacities extracted from

the relevant documents and laws were integrated with the strategies and suggestions obtained from the expert interviews. This integration was based on the alignment between existing legal capacities and the experts' proposed implementation strategies. In other words, legal capacities were considered as the institutional and legal foundations for implementing the proposed strategies, while the experts' suggestions were examined by the extent to which they relied on these capacities. In this process, suggestions with similar or overlapping concepts were first consolidated, and repetitive items were eliminated. Each suggestion was reviewed against the identified legal capacities to evaluate its feasibility within the current legal framework. Finally, the final options were derived from the intersection of the two data sources – existing legal capacities and implementation strategies proposed by experts – and were formulated as a set of distinct and feasible revenue options for diversifying the revenue portfolio of Tehran Municipality. This process provided the necessary basis for evaluating and prioritizing the options in the subsequent stage. In the fourth step, the formulated revenue options

were evaluated and prioritized using multi-criteria decision-making methods. Because the ARAS method alone cannot determine the criteria weights, the required evaluation criteria were first identified and weighted. Accordingly, in the first stage, an initial set of criteria was extracted through a review of the theoretical foundations and previous studies related to urban finance, revenue diversification, local fiscal governance, and the evaluation of municipal revenue sources. Then, to assess the suitability of the extracted criteria for the institutional and operational conditions of urban management in Iran, a focus group session was held with seven specialists in urban planning and urban management. The group included university faculty members, experts from the Research Center of the Islamic Consultative Assembly, advisors to the Urban Planning and Architecture Commission of the Tehran City Council, urban planning experts and managers from Tehran Municipality, and urban regeneration consultants. During this session, the extracted criteria were discussed and evaluated in terms of conceptual overlap, necessity, and applicability under the conditions of urban management in Iran. Ultimately, the participants determined the final set of criteria for evaluating municipal revenues through discussion, consensus, and collective agreement (Table 1).

After finalizing the criteria, the weight of each criterion was determined using the best-worst method (BWM). In this method, experts first identified the most and least important criteria and then expressed their preferences over the other criteria, allowing the final weight of the criteria to be calculated. After determining the criterion weights, the formulated revenue options were prioritized using the additive ratio assessment (ARAS) multi-criteria decision-making method. ARAS is a well-established utility-based multi-criteria decision-making method that enables simultaneous comparison of alternatives based on a set of evaluation criteria. By simultaneously comparing alternatives and assessing their distance from the ideal solution, this method provides a systematic basis for ranking policy options. ARAS was selected because of its computational simplicity, its ability to incorporate multiple criteria, and its capacity to determine the relative utility of alternatives. At this stage, the revenue options were evaluated based on the criteria derived from the theoretical foundations and validated through the focus group, and the final rank of each option was determined. The detailed implementation steps, criterion-weighting procedure, decision matrix

construction, and computational process of the ARAS method are presented in the Findings section. The quantitative data processing, construction of decision matrices, calculation of criterion weights using BWM, and ARAS calculations were performed using Microsoft Excel. The results of this stage provided the basis for identifying priority options and developing the proposed four-stage cycle for diversifying the Tehran Municipality's revenue portfolio.

Finally, the validity of the research findings was assessed in both the qualitative and quantitative components. In the qualitative component, the results of the document analysis, the extraction of legal capacities, and the themes and options derived from the interviews were presented to experts in focus group sessions. Following discussion, revision, and resolution of disagreements, the results were confirmed through final expert consensus. In addition, using two independent data sources – documents and expert interviews – and integrating their findings helped strengthen the validity of the qualitative results. In the quantitative component, the validity of the results was assessed through two approaches. First, the consistency of expert judgments in the BWM was examined by calculating the consistency ratio. After confirming that the ratio fell within the acceptable range, the final criterion weights were derived. Second, before applying the BWM, the evaluation criteria were examined during the focus group session in terms of comprehensiveness, relevance to the research problem, and absence of conceptual overlap, and were finalized through expert consensus. Subsequently, the valid weights obtained at this stage were used as inputs to the ARAS method to construct the weighted decision matrix and prioritize the alternatives.

4. Findings

The study findings are presented in three main sections. First, the legal capacities for diversifying municipal revenues are examined analytically, focusing on legal requirements and existing opportunities. Next, based on expert interviews, the executive, institutional, and operational dimensions of the issue are assessed, and the role of organizational capacities and managerial capabilities in realizing sustainable revenues is evaluated. Finally, by integrating the findings from the two preceding sections, policy options are identified and prioritized using the ARAS multi-criteria decision-making method, thereby

providing a comprehensive and practical basis for guiding municipal financial decision-making.

4.1. Identification and analysis of legal capacities for revenue diversification

To identify the legal capacities relevant to diversifying municipalities' revenue portfolio, 14 laws, one higher-level policy document, and one theory related to land-based financing were examined. These laws were selected based on their relevance to municipal revenue

sources, the fiscal authorities of urban management, land- and housing-based capacities, financial instruments, and urban financing mechanisms. The laws were analyzed using an analytical-comparative approach. Accordingly, for each law, the relevant revenue-generating capacities, implementation constraints, institutional conflicts, and financial implications were extracted and compared. The results of this analysis are presented in Table 3.

Table 3. Legal capacities affecting municipal revenue diversification (source: research findings)

No.	Law / legal document	Revenue capacity	Implementation constraint	Institutional conflict	Financial implication
1	Sustainable Municipal Revenues (2022)	Stabilization and diversification of local charges; share of traffic fines; Urban and Rural Development Fund	Weak infrastructure for collecting charges; dependence on cooperation from national agencies	Limited municipal authority to determine certain rates and revenue bases	Increased revenue stability and reduced dependence on construction-related revenues
2	Regulation of the Land, Housing, and Rental Market (2024)	Charges on properties and unused land; vacant-home tax	Difficulty identifying vacant properties and completing information databases	Dependence on cooperation from the Ministry of Roads and Urban Development, Tax Administration, and Property and Housing Information System	Creation of land-based revenues and reduction of property speculation
3	Regulation and Support for Housing Production and Supply (2008) and Housing Production Leap (2021)	Rehabilitation of deteriorated areas and informal settlements	High rehabilitation costs and limited capital resources	Overlapping responsibilities among municipalities, government, and development agencies	Increased property values and expansion of urban revenue bases in the long term
4	Regulation and Support for Housing Production and Supply (2008)	Tax on undeveloped land; directing development toward inner-city redevelopment	Weak system for identifying and valuing undeveloped land	Conflicts of interest between landowners and implementing institutions	Activation of idle land and increased land-based revenues
5	Housing Production Leap (2021)	Use of government-owned land; National Housing Fund; 99-year lease arrangements	Dependence on central government policies and resource allocation	National priorities may not be aligned with local management interests	Provision of urban development resources and reduction of land acquisition costs
6	Clean Air Act (2017)	Pollution charges and fines; traffic control zones; green bonds	Need for effective monitoring and control systems	Conflicts with the interests of certain economic and transportation activities	Creation of environmental revenues and financing of sustainable projects
7	Urban Renewal and Development (1968)	Urban renewal charges; betterment levy; acquisition of undeveloped land	Outdated property assessment system and weak updating of property values	Lack of coordination between the valuation system and actual market conditions	Strengthening sustainable property-based revenues and capturing urban value increments
8	Continuous Improvement of the Business Environment (2011)	Temporary and permanent markets; stall rental; formalization and transparency of businesses	Weak oversight and difficulty regulating informal activities	Overlapping responsibilities between municipalities and trade and economic institutions	Increased service revenues and development of the local economy
9	Family and Youth Population Support (2021)	Outdoor advertising; compensation for social service costs	Extensive incentives and exemptions	Imposition of social obligations without adequate financial resources	Increased municipal expenditures and reduced certain direct revenues
10	Direct Taxes (1987)	Regional assessed property values; tax data	Gap between assessed transaction values and actual market values	Municipal dependence on decisions of the Tax Administration	Strengthening the basis for calculating charges and increasing property-based revenues
11	National Document on Iranian-Islamic Urban Planning and Architecture (2024)	Urban Identity Development Fund; value increment of historic areas	Lack of clear implementation mechanisms and sustainable resources	Multiplicity of institutions responsible for heritage, urban planning, and urban management	Creation of new revenue capacities based on urban identity and tourism

No.	Law / legal document	Revenue capacity	Implementation constraint	Institutional conflict	Financial implication
12	Seventh Five-Year Plan (2024)	Benefit sharing; land swaps; utilization of outstanding revenues	Ambiguity in implementation procedures and enforcement mechanisms	Conflicts between central government and local management over resource allocation	Increased revenue capacity if the provisions are fully implemented
13	National Budget (2020)	Borrowing instruments; debt swaps; restructuring of project financing	Temporary and annual nature of budget provisions	Dependence on annual decisions by the government and Parliament	Improved short-term liquidity and implementation of priority projects
14	National Budget (2024)	Green financing; swaps involving government properties; financial securities	Capital market constraints and limited capacity to absorb securities	Dependence on government fiscal policies	Increased financial flexibility and financing of capital projects
15	Georgist Theory (1879)	Land value tax; share of value increments generated by development projects	Need for legal reforms and a precise valuation system	Resistance from landowners and land-market stakeholders	Increased sustainable land-based revenues and reduced incentives for land hoarding

The review of the laws indicates that a substantial share of the revenue capacities provided for within the country's legal framework is based on land-based resources, taxes and local charges, urban regeneration, value increments resulting from urban development, and modern financing instruments. However, in many cases, the effective use of these capacities is constrained by factors such as weak information infrastructure, dependence on the cooperation of higher-level government agencies, deficiencies in property valuation systems, and the absence of binding implementation mechanisms. In addition, fragmented laws and regulations and insufficient coordination between national policies and the financial interests of urban management have prevented some of the existing legal capacities from being implemented in practice. Therefore, the mere existence of a legal basis for creating or strengthening revenue sources does not guarantee their realization; it is also necessary to improve executive mechanisms, coordinate between agencies, and create information and financial infrastructures. Overall, the analysis of the laws indicates that developing sustainable municipal revenues requires activating and effectively implementing existing legal capacities, rather than relying solely on creating new resources.

4.2. Identification and analysis of legal capacities for revenue diversification based on expert perspectives

Alongside the review of legal capacities, 11 semi-structured interviews were conducted with experts in the field to identify practical options for diversifying the Tehran Municipality's revenue portfolio. Following transcription of the interviews, the options proposed by the experts were extracted and recorded in an initial list. Suggestions with similar or overlapping concepts were then consolidated, and a single title was assigned to each category. This process identified 47 proposed options, which are presented in Table 4. Given the qualitative nature of this stage, Table 5 identifies, consolidates, and organizes the options proposed by the experts. Accordingly, the column titled "Interview numbers (number of interviews)" indicates the experts who mentioned each option during the interviews, while the number in parentheses represents the number of participants who supported the respective option. This indicates the relative degree of consensus among the experts regarding each option. The options' importance and priority were assessed in the subsequent stage using multi-criteria decision-making methods, and the results are presented in the prioritization section.

Table 4. Options proposed in the interviews (source: research findings)

No.	Proposed option	Brief description	Interview numbers (frequency)
1	Formal redefinition of the concept of “sustainable urban revenue”	Developing an operational and formal definition of “sustainable revenue” in the law, based on indicators such as predictability, long-term reliability, and the ability to support medium-term financial planning, rather than focusing solely on the source of revenue	1 (1)
2	continued use of the floor-area-ratio (FAR) instrument with mechanism reform	Avoiding the complete elimination of revenues derived from FAR and construction by reforming the mechanisms of regulation, pricing, and oversight	
3	Reforming the FAR pricing system based on actual and updated values	Establishing a legal mechanism for the continuous determination and updating of construction FAR prices based on the actual value added to land and buildings	
4	Designing a transparent FAR sale mechanism to reduce rent-seeking and corruption	Establishing transparent and rule-based mechanisms, including clear formulas, public disclosure of information, and systemic oversight, to reduce the gap between official and actual FAR values	
5	Allocating FAR revenues to infrastructure and services commensurate with development intensity	Directing part of FAR revenues toward the development of transportation infrastructure, public services, and urban facilities	1, 3, 4, 5 & 6 (5)
6	Revising the value-added tax distribution system	Reforming tax allocation in favor of cities that bear the costs of infrastructure provision, such as Tehran	
7	Designing interurban fiscal compensation mechanisms	Establishing financial instruments such as regional solidarity funds to compensate for peripheral use of infrastructure without corresponding financial contributions	2 & 11 (2)
8	Reforming the expenditure structure and improving human resource productivity	Assessing the productivity of organizational units and personnel, reducing low-return activities, and restructuring the organization before expanding new revenue sources	
9	Reducing dependence on volatile construction-based revenues	Developing stable revenue bases based on asset management and reducing the share of revenues dependent on the construction cycle	2, 9 & 10 (3)
10	Establishing a technical and quality building passport system	Legally requiring the issuance and registration of technical and quality building passports based on indicators such as quality, seismic resistance, energy efficiency, and environmental standards	
11	Defining a sustainable revenue source from quality building passports	Levying a legally authorized fee or charge for the issuance, monitoring, and updating of building technical passports	2 (1)
12	Establishing an integrated building quality monitoring system	Designing an intelligent system for recording, monitoring, and updating the quality status of buildings, linked to the permitting system and the construction engineering system	
13	Regulating and professionalizing real estate brokerage offices	Licensing, mandatory training, and supervision of real estate brokerage offices, with an official role in registering building technical passports	
14	Establishing an integrated quality-control chain for construction materials and buildings	Monitoring the quality of construction materials, qualifying contractors, controlling construction and operation processes, and linking these processes to the municipal property valuation system	
15	Linking property valuation to quality indicators	Redesigning property valuation based on structural quality, energy efficiency, and environmental standards	

No.	Proposed option	Brief description	Interview numbers (frequency)
16	Replacing the “sustainable revenue” approach with smart revenue portfolio diversification	Reducing dependence on any single revenue source and focusing on diversification of revenue sources	
17	Designing a four-pillar urban financing model	Establishing a legal framework for revenue sources, including service charges, local fees, asset utilization, and social and economic participation	
18	Developing urban service charges based on infrastructure capacity	Enabling the provision of new urban services in exchange for appropriate service charges, while respecting limitations on the commercialization of essential services	3, 4, 5 & 6 (4)
19	Redesigning the local fee system based on the “cost imposition on the city” principle	Requiring each economic or institutional activity to pay in proportion to the traffic it generates, infrastructure consumption, and pressure on urban services	
20	Defining special fees for large-scale institutions and activities	Obtaining compensatory contributions from universities, large corporations, and government organizations that impose disproportionate burdens on urban infrastructure and services	
21	Establishing an active urban asset management system	Productive utilization of urban assets to generate continuous revenue without selling fixed capital assets	3, 4, 5, 6, 8 & 9 (6)
22	Activating social and economic participation in urban projects	Establishing a legal and institutional framework for attracting the participation of philanthropists, large corporations, and economic actors	
23	Establishing transparency and oversight mechanisms for participation	Public reporting and financial oversight to prevent rent-seeking and corruption in participatory projects	3, 4, 5, 6 & 8 (5)
24	Establishing property renovation fees based on a percentage of current property values	Gradually replacing part of the revenues derived from FAR sales with updated property renovation fees	7 (1)
25	Developing a time-bound program for replacing unsustainable revenues	Designing a multi-year transition program to reduce the share of unsustainable revenues and increase alternative revenues, accompanied by annual monitoring indicators	
26	Establishing cross-institutional enforcement guarantees	Establishing national-level oversight and coordination mechanisms to prevent the suspension or interruption of revenue reforms	
27	Separating urban regulatory functions from investment activities	Limiting or withdrawing the municipality from property investment activities and land speculation	
28	Increasing transparency regarding conflicts of interest in the revenue system	Developing regulations to identify and manage conflicts of interest in processes related to land-use changes, FAR, and property investment	
29	Elevating decision-making to the level of strategic policymaking	Establishing high-level governance decision-making mechanisms to align fiscal and urban policies	
30	Maintaining long-term ownership of strategic assets and long-term participation	Maintaining long-term municipal ownership or shareholding in strategic projects, complexes, and land to generate sustainable revenue streams	
31	Developing revenue models based on technology and urban service capacities	Using existing urban infrastructure to support revenue-generating businesses and platforms with municipal participation	8 (1)
32	Redesigning the revenue collection system and integrating fee-collection platforms	Developing automated mechanisms for fee collection, including integration with utility bills, banking services, and digital platforms	

No.	Proposed option	Brief description	Interview numbers (frequency)
33	Aligning the annual budget with medium- and long-term plans	Establishing a program-based budgeting framework aligned with medium- and long-term urban objectives	8 & 9 (2)
34	Establishing a program-based system and institutional coordination among urban agencies	Developing an institutional and governance structure for coordination between the municipality and other institutions, integrated implementation of urban programs, and financial reforms	
35	Shifting from a project-oriented to a program-oriented municipality	Focusing on medium- and long-term programs rather than measuring success based on the number of completed projects	9 (1)
36	Shifting from construction-oriented to operation-oriented revenue	Generating revenue from existing urban capacities rather than creating new development intensity through construction	
37	Increasing the share of sustainable revenues from taxes and fees based on current property values	Redesigning local taxes and fees based on current property values to generate recurring and low-risk revenues	9 & 10 (2)
38	Developing the urban economy and professional asset utilization	Activating untapped economic capacities of the city in tourism, technology, and professional asset utilization	8 & 9 (2)
39	Institutional and legal reforms accompanied by financial transparency	Revising laws, strengthening oversight, and improving financial transparency to ensure the sustainability of revenues	7, 9 & 10 (3)
40	Reforming the urban tax system and creating recurring revenues	Establishing or strengthening a local tax system, including property and land taxes and instruments based on location-based value added	10 (1)
41	Redesigning legal frameworks and ensuring enforcement of laws	Developing clear executive bylaws and guidelines, strengthening enforcement mechanisms, and managing institutional conflicts of interest	
42	Enhancing institutional capacity and urban management	Reducing centralization, increasing transparency, and establishing participatory mechanisms among municipalities, central government, the private sector, and citizens	
43	Changing the dominant logic of urban revenue generation	Moving away from structural dependence on land- and construction-based revenues toward a multidimensional and sustainable approach	
44	Redefining municipal missions and scope of responsibilities	Clarifying activities within the municipality's legally defined missions and avoiding high-risk direct economic activities	11 (1)
45	Increasing transparency and reforming the expenditure structure	Precisely identifying current expenditures, projects, and human resources; assessing productivity; and reforming unnecessary expenditures	
46	Revitalizing and reforming neglected legal revenue sources	Reviewing and updating neglected, legal, and recurring revenues such as property renovation fees, waste management fees, and business-related fees based on current property values	
47	Controlling and streamlining human resources and the administrative structure	Limiting workforce expansion, reforming the administrative structure, eliminating redundant activities, and reducing hidden costs	

The options proposed by the experts shows that, despite the diversity of viewpoints, a considerable proportion of them revolve around several common themes. The most important of these include reducing dependence on construction- and development-intensity-based revenues, developing revenue sources based on land and property values, diversifying the municipality's revenue portfolio, professionally managing and utilizing urban assets, reforming the

expenditure structure and improving organizational efficiency, and strengthening transparency and urban governance. Moreover, a considerable proportion of the proposals, rather than emphasizing the creation of new legal instruments, focus on activating existing legal capacities, removing implementation barriers, and improving coordination among institutions involved in urban management.

4.3. Integration of findings and prioritization of policy options

The policy options identified in this study were developed through a multi-stage integration process. In the first stage, 56 legal capacities were extracted by analyzing laws and regulations related to urban financing, while 47 proposed options were identified through the analysis of semi-structured interviews with experts. These two sets were then compared and integrated; items with conceptual or functional overlap were merged, while distinct items were retained. This process resulted in a list of 84 capacities and proposed options. However, directly incorporating all 84 options into the evaluation process could have led to analytical dispersion and increased computational complexity. Therefore, the researchers conducted an analytical review of these options and clustered them based on alignment of policy objectives, similarity in implementation mechanisms, and convergence in expected financial outcomes. Accordingly, options sharing a common reform orientation were consolidated into comprehensive policy options, while those with distinct and independent characteristics were retained separately.

The resulting framework was presented to the focus group and, following discussion and review, was validated by the experts. Ultimately, 25 final policy options were identified, which served as the basis for constructing the decision matrix and applying the ARAS method to evaluate and prioritize the policy options. To enhance the transparency and traceability of this process, the detailed table of the initial 84 capacities and options is provided in the article's appendix. Before applying the ARAS method, it was necessary to determine the relative importance of the evaluation criteria, as ARAS alone cannot assign weights to the criteria and requires each criterion's weight as an input. Accordingly, during the expert focus group, the criteria derived from the study's theoretical foundations were reviewed, and their weights were determined using the best-worst method (BWM). In this method, experts first identified the most and least important criteria; then expressed their preferences regarding the remaining criteria. The output of this stage was the final weight assigned to each criterion (Table 5), which was subsequently used to construct the decision matrix and implement the ARAS method.

Table 5. Criteria weights (source: research findings)

No.	Criterion	Weight
1	Sustainability	0.20
2	Desirability	0.20
3	Operational feasibility	0.20
4	Participatory capacity	0.15
5	Flexibility	0.15
6	Local autonomy	0.10

After determining the criteria's weights, the 25 final options extracted from the preceding stages were evaluated and prioritized using the ARAS multi-criteria decision-making method. In this stage, the options were assessed based on the weighted criteria to determine each option's relative desirability compared with the others. The steps involved in applying this method in the present study are described below:

Step 1: Constructing the decision matrix

At this stage, the decision matrix was constructed based on the 25 final options (as decision alternatives) and the evaluation criteria derived from the study's theoretical foundations. In this matrix, each row

represents an option, while each column represents an evaluation criterion. The value in each cell indicates the score assigned to each option in a specific criterion.

Step 2: Determining the ideal alternative (A_0)

In the ARAS method, an ideal alternative is defined as a benchmark against which all other alternatives are compared. In this study, the ideal alternative (A_0) was defined as an artificial alternative consisting of the best observed value for each criterion among the alternatives under consideration. Accordingly, for benefit criteria, the maximum value was considered the ideal value, whereas for cost criteria, the minimum value was used as the ideal value.

Step 3: Normalization and weighting of the decision matrix

After constructing the decision matrix, the data were normalized to make the criteria comparable. At this stage, cost criteria were transformed into benefit criteria, after which the values for each criterion were normalized using the corresponding relationships. The following equation illustrates the normalization procedure.

$$\bar{X} = \begin{bmatrix} \bar{x}_{01} & \dots & \bar{x}_{0j} & \dots & \bar{x}_{0n} \\ \vdots & & \vdots & & \vdots \\ \bar{x}_{i1} & \dots & \bar{x}_{ij} & \dots & \bar{x}_{in} \\ \vdots & & \vdots & & \vdots \\ \bar{x}_{m1} & \dots & \bar{x}_{mj} & \dots & \bar{x}_{mn} \end{bmatrix}; \quad i = \overline{0, m}, j = \overline{1, n}.$$

Subsequently, the normalized values were multiplied by the corresponding criterion weights to obtain the weighted normalized decision matrix. The results of this step are presented in Table 6.

Table 6. Weighted normalized decision matrix (source: research findings)

Alternatives/criteria		Sustaina- bility	Desira- bility	Opera- tionality	Partici- pation	Flexibili- ty	Local autonomy
		C1	C2	C3	C4	C5	C6
Redefinition and smart diversification of the sustainable revenue system	A0	0.010	0.010	0.010	0.008	0.009	0.006
Redefinition and smart diversification of the sustainable revenue system	A1	0.010	0.010	0.010	0.008	0.009	0.006
Reform and updating of property valuation based on current market value and quality indicators	A2	0.010	0.010	0.008	0.007	0.007	0.005
Reform and increasing transparency in the density and construction charge system	A3	0.003	0.003	0.008	0.001	0.003	0.001
Development and consolidation of urban improvement charges and municipal assets	A4	0.008	0.008	0.008	0.008	0.003	0.003
Taxation and charges on vacant land, vacant properties, and land rents	A5	0.008	0.010	0.008	0.005	0.005	0.005
Direct capture of value added from urban development	A6	0.010	0.008	0.010	0.007	0.009	0.005
Development of urban service charges based on the "payment for service" principle	A7	0.010	0.010	0.010	0.007	0.007	0.006
Environmental, traffic, and pollution charges	A8	0.005	0.005	0.008	0.008	0.003	0.003
Development of sustainable urban financial instruments and bonds (especially green bonds)	A9	0.010	0.008	0.010	0.007	0.005	0.003
Active management of municipal assets	A10	0.010	0.010	0.010	0.005	0.007	0.006
Maintaining long-term ownership and shareholding in strategic assets	A11	0.005	0.005	0.008	0.003	0.005	0.002
Social and economic participation in urban projects	A12	0.008	0.010	0.008	0.008	0.005	0.006
Financial transparency, auditing, and reduction of conflicts of interest	A13	0.010	0.010	0.010	0.008	0.009	0.005
Reform of the cost structure and organizational streamlining	A14	0.010	0.010	0.008	0.007	0.007	0.005
Transition from project- and construction-oriented management to program- and operation-oriented management	A15	0.010	0.010	0.005	0.008	0.009	0.005
Reform of revenue collection and integration of revenue systems	A16	0.010	0.010	0.010	0.005	0.009	0.006
Using tax and property data to actualize revenue potential	A17	0.010	0.008	0.010	0.007	0.007	0.005
Reform of the distribution system for national taxes and value-added tax	A18	0.003	0.003	0.005	0.001	0.003	0.001
Intercity and regional compensation mechanisms	A19	0.003	0.008	0.005	0.001	0.003	0.002

Alternatives/criteria		Sustaina- bility	Desira- bility	Opera- tionality	Partici- pation	Flexibili- ty	Local autonomy
		C1	C2	C3	C4	C5	C6
Strengthening enforcement guarantees and intergovern- mental coordination	A20	0.008	0.008	0.005	0.008	0.009	0.001
Debt and government land swaps to strengthen sustainable liquidity	A21	0.003	0.003	0.005	0.001	0.001	0.001
Development of urban and housing development funds	A22	0.005	0.003	0.003	0.005	0.003	0.002
Organization of small businesses and urban markets	A23	0.008	0.008	0.008	0.008	0.005	0.003
Redefinition of municipal missions and restriction of high-risk activities	A24	0.003	0.003	0.003	0.001	0.001	0.005
Integration of land-based instruments	A25	0.010	0.010	0.010	0.008	0.009	0.006

Step 4: Calculating the utility function of the alternatives (S_i)

At this stage, the weighted values for each alternative were calculated for each row. The resulting sum represents the utility function (S_i) of each alternative, indicating its overall performance across all evaluation criteria. A higher S_i value indicates a more desirable performance of the respective alternative according to the research criteria.

Step 5: Calculating the relative utility degree (K_i) and final ranking

In the final step, the relative utility degree of each alternative was calculated by comparing its utility value with that of the ideal alternative. The K_i index indicates the extent to which each alternative approaches the ideal condition. Accordingly, the alternatives were ranked by their K_i values, with the alternative having the highest K_i value receiving the highest priority. Table 7 shows the final ranking results.

Table 7. Final ranking of the options (source: research findings)

Rank	Options	Final score (K_i)
1	Redefinition and smart diversification of the sustainable revenue system	1
2	Integration of land-based financing instruments	1
3	Financial transparency, auditing, and reduction of conflicts of interest	0.975
4	Reform of the revenue collection system and integration of revenue systems	0.929
5	Development of urban service charges based on the "payment for service" principle	0.927
6	Direct capture of value added from urban development	0.898
7	Transition from project- and construction-oriented approaches to program- and operation-oriented approaches	0.893
8	Active management of urban assets	0.892
9	Reform of the cost structure and organizational streamlining	0.861
10	Use of tax and property data to activate revenue potential	0.861
11	Reform and updating of property valuation based on current market value and quality indicators	0.861
12	Social and economic participation in urban projects	0.842
13	Development of sustainable financial instruments and municipal bonds, particularly green bonds	0.798
14	Taxes and charges on vacant land, vacant properties, and land rents	0.747
15	Organization of small businesses and urban markets	0.751
16	Strengthening enforcement guarantees and inter-institutional coordination	0.735

Rank	Options	Final score (Ki)
17	Development and stabilization of urban renewal charges and urban assets	0.714
18	Environmental, traffic, and pollution charges	0.630
19	Maintaining long-term ownership and equity stakes in strategic assets	0.536
20	Inter-city and regional compensation mechanisms	0.422
21	Development of urban and housing development funds	0.410
22	Reform and transparency of the density and construction charges system	0.355
23	Revision of the distribution system for national taxes and value-added tax	0.314
24	Redefinition of municipal missions and restriction of high-risk activities	0.310
25	Debt and government land offsetting to strengthen sustainable liquidity	0.277

The ranking results indicate that the top-ranked options primarily focus on reforming the logic and structure of the municipal revenue system rather than merely introducing new revenue sources. At the top of the list are “Redefinition and smart diversification of the sustainable revenue system” and “Integration of land-based financing instruments,” highlighting the importance of structural and strategic approaches to improving the financial sustainability of urban management. Options such as “Financial transparency, auditing, and reduction of conflicts of interest,” “Reform of the revenue collection system and integration of revenue systems,” and “Development of urban service charges based on the ‘payment for service’ principle” also received high scores, underscoring the role of institutional, informational, and managerial infrastructure in improving municipal revenue performance. In contrast, options that rely more heavily on inter-institutional mechanisms, financial resources beyond municipalities’ direct control, or compensatory instruments received lower scores. Overall, the ranking pattern indicates that experts considered institutional reforms, transparency, efficient use of existing capacities, and strengthened

endogenous revenue mechanisms to be higher priorities than solutions dependent on external support or ad hoc financial resources.

Proposed research cycle for the transition to a sustainable revenue system

The prioritization results showed that the top-ranked options are not merely independent solutions; rather, significant interrelationships and reinforcing effects exist among them. Therefore, ranking the options alone was insufficient for designing a reform pathway, and it was also necessary to examine their interrelationships and implementation sequence. Accordingly, in the final stage of the research, we attempted to organize the options with the greatest potential for synergy into a coherent implementation framework. The outcome of this stage is a cycle based on the logic of “positive feedback,” in which each reform action, in addition to generating its own independent benefits, creates the conditions for greater success and effectiveness of subsequent actions. Before presenting the proposed framework, it is necessary to consider the cycle through which municipalities’ dependence on density-based revenue generation is reproduced (Figure 1).

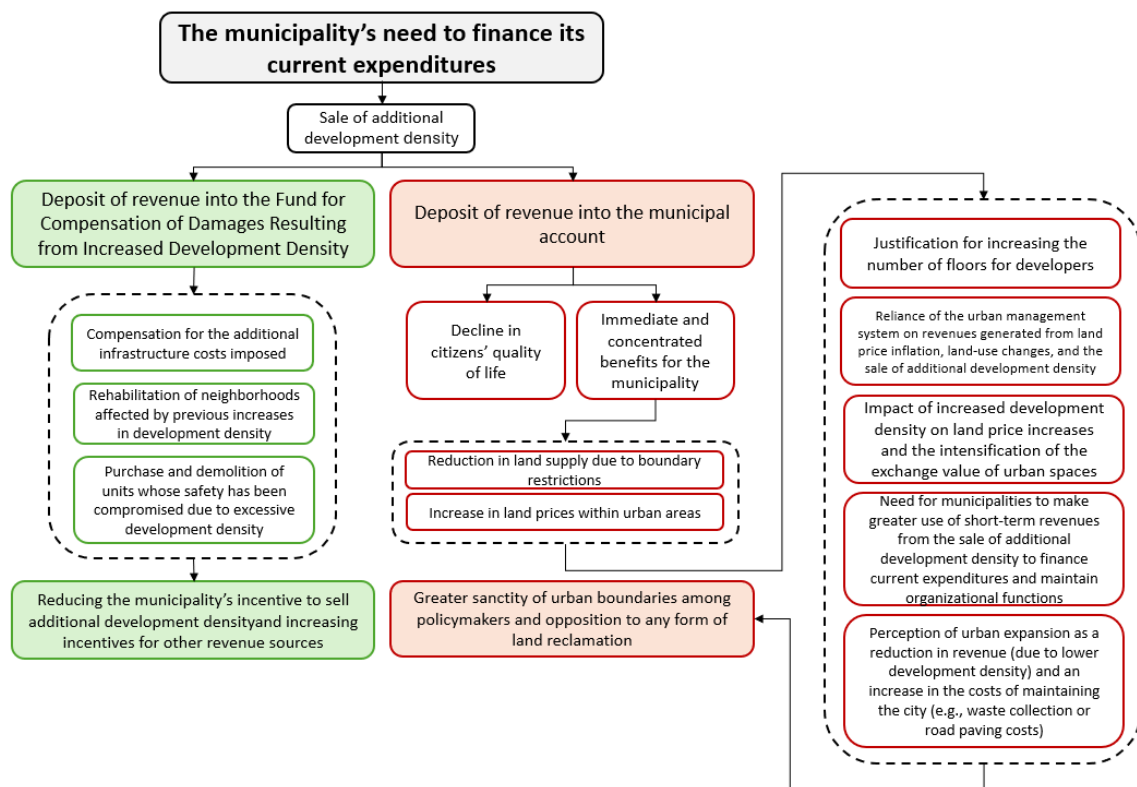


Figure 1. The cycle of municipal dependence on density selling and how to reduce this dependence (source: research findings)

As shown in the figure above, although density selling generates substantial cash revenue for municipalities in the short term, its consequences gradually create conditions that increase the need to continue this practice. Rising land prices, growing dependence of the urban management financial structure on construction-related revenues, increasing costs of urban administration, and higher revenue expectations resulting from the buoyancy of the land market all contribute to transforming density selling from a temporary solution into part of the mechanism through which municipal finances are reproduced. Consequently, a cycle emerges in which each use of this instrument creates greater future dependence on it, making it increasingly difficult to break away from this path. Therefore, the starting point of any reform program cannot simply be the introduction of new revenue sources. Rather, it should first establish mechanisms to weaken the institutional and financial incentives for continuing density selling. For this reason, the proposal developed in this study begins with a preliminary action called “step zero.”

The objective of this step is to reduce the financial attractiveness of density selling by restricting the direct use of revenues generated from increased development density and case-by-case land-use changes. This measure serves as a structural deterrent and, by weakening the existing dependency cycle, creates the necessary conditions for moving toward more sustainable revenue sources. After establishing this prerequisite, the proposed framework is structured around three main steps, with the relationships among them designed according to the logic of a constructive positive feedback cycle. The model assumes that sustainable reform of the municipal revenue system becomes possible when the resources generated at each stage are used, rather than for current expenditures or short-term interventions, to strengthen the subsequent stages of reform. Under such conditions, the output of each stage becomes the input for the next, gradually forming a self-reinforcing cycle (Figure 2) that reduces dependence on unstable revenues and strengthens sustainable revenue-generating capacities.

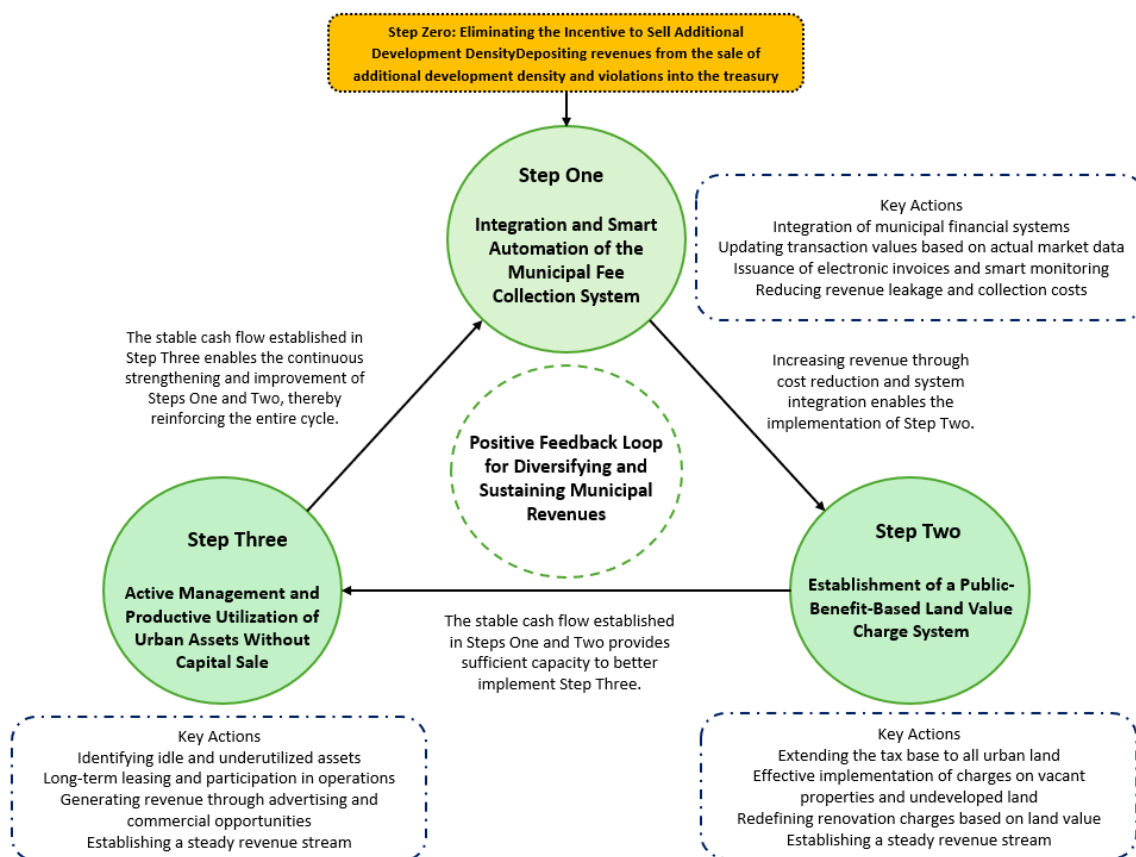


Figure 2. The positive feedback loop of municipal revenue diversification and sustainability (source: research findings)

The first step focuses on integrating and smartening the system for collecting local charges and municipal revenues. This stage reduces revenue leakage, enhances transparency, updates financial data, and improves collection efficiency, thereby making it possible to increase existing revenues without imposing an additional financial burden on citizens. The resources generated in this stage can financially support the implementation of the subsequent stages. Given the operational nature of these measures, the first step primarily involves short-term actions; it can be implemented at the beginning of the revenue system reform process, before implementing the other stages. The second step establishes a system of public-interest-based land value capture and land-related charges. At this stage, a portion of the value increment generated through public investment and urban development is returned to urban management through legal mechanisms. The outcome is a more stable revenue stream that is less dependent on fluctuations in the construction market. The second step has a medium-term horizon, as its implementation requires completing information infrastructures, reforming certain administrative procedures, and

gradually establishing land value capture mechanisms. The third step focuses on the active management and productive utilization of urban assets without selling public capital. Under this approach, idle and low-performing urban assets are transformed into recurring revenue sources through professional management, targeted partnerships, and use-based revenue models, while ownership of strategic assets is preserved. This step is also primarily achievable over the long term, as its effectiveness depends on establishing professional asset management systems, developing sustainable partnerships, and gradually accumulating financial and institutional capacities within urban management. The revenue generated in this stage can, in turn, be reinvested to strengthen revenue collection infrastructure and develop land value-based instruments, thereby completing the positive feedback cycle. This model demonstrates that the transition from a revenue system dependent on unsustainable sources to a sustainable and diversified system cannot be achieved through a single intervention. Rather, it requires a set of gradual, coordinated, and mutually reinforcing reforms. Within this framework, municipalities' financial sustainability

will emerge from the interaction among institutional reforms, improvements in implementation mechanisms, effective capture of urban value, and professional management of public assets. From this perspective, the most important contribution of the present study lies not merely in identifying or ranking revenue options, but in providing an implementable framework for connecting these options within a coherent and feasible reform pathway.

5. Discussion and interpretation of findings

The results of the prioritization of policy options indicate that, from the experts' perspective, reforming Tehran Municipality's financing system requires rearranging existing structures, improving the efficiency of executive mechanisms, and effectively utilizing existing legal and economic capacities, rather than creating new revenue sources. The high ranking of options such as "Redefining and smart diversification of the sustainable revenue system," "Integrating land-based instruments," and "Financial transparency, auditing, and reduction of conflicts of interest" indicates that the main challenge in urban financial management is not the absence of revenue sources, but rather how these resources are organized, managed, and utilized. This finding is also consistent with the results of the legal analysis and expert interviews, which identified the gap between existing legal capacities and their actual realization as one of the major challenges facing the municipal revenue system.

The high ranking of options such as "Reforming the revenue collection system and integrating revenue systems" and "Developing urban service charges based on the 'payment for service' principle" further indicates that experts consider improving implementation mechanisms and increasing revenue collection efficiency to be more important than creating new revenue bases. This suggests that part of the municipality's revenue potential lies not in introducing new legislation, but in activating existing capacities, reducing revenue leakage, and enhancing the transparency of financial processes. At the same time, the relatively high rankings of options such as "Direct capture of the value added from urban development," "Active management of urban assets," and "Transition from construction-oriented to operation-oriented revenue generation" demonstrate the experts' preference for revenue sources based on assets and values created through the urban development process. This approach can reduce

dependence on unsustainable construction-related revenues and facilitate the development of recurring, predictable revenue streams.

The findings of the present study are broadly consistent with a substantial body of domestic and international literature on urban finance (Vesali Azarsharbani, 2017; Mesgari et al., 2018; Aram & Shahvazi, 2022; Carroll, 2005; Cigu et al., 2014; Mohamed & Vadeveloo, 2023; Reo et al., 2023). Many previous studies have emphasized that municipal financial sustainability depends less on the apparent diversity of revenue sources than on the quality of financial governance, the efficiency of revenue collection mechanisms, institutional transparency, and the capacity of urban management to capture and utilize the value created through urban development processes. Moreover, the experts' emphasis on reducing dependence on construction-related revenues and strengthening land-based instruments is consistent with perspectives that regard land value capture and the recovery of value generated by public investments as important foundations for sustainable urban financing. In contrast, the findings indicate that options whose implementation depends more heavily on decisions by higher-level institutions, broader intergovernmental reforms, or financial resources outside the urban management's direct control received lower rankings. The relatively low rankings of options such as "Reform of the distribution system for national taxes and value-added tax," "Intercity and regional compensation mechanisms," and "Debt and government land swaps" suggest that experts considered endogenous reforms based on controllable municipal capacities more feasible and effective. This finding is important from a policy perspective, as it indicates that a substantial part of the financial reforms required by urban management can be initiated without waiting for extensive changes in national-level institutional structures.

Overall, the findings indicate that the pathway toward improving Tehran Municipality's financial sustainability rests on three main pillars: first, reforming the structure and underlying logic of the revenue system; second, enhancing transparency, accountability, and operational efficiency; and third, systematically utilizing land and urban asset capacities. Accordingly, financial sustainability should not be regarded as the outcome of reliance on a particular revenue instrument, but as the result of a coordinated set of institutional, managerial, and economic reforms that link legal capacities, urban resources, and

implementation mechanisms within a coherent, long-term framework.

The main innovation of the present study can also be identified at this point. Unlike many previous studies that have focused on a single revenue source or specific financial instrument, this research integrates legal capacities and expert perspectives to identify, evaluate, and prioritize a set of policy options. It then develops an implementation framework based on the logic of “positive feedback” by examining the relationships among the prioritized options. As presented in the findings section, this framework demonstrates that municipal financial sustainability is not the result of implementing a single solution in isolation; rather, it emerges from the sequencing, interaction, and mutual reinforcement of a set of institutional, managerial, and economic reforms. From this perspective, the most important contribution of the present study extends beyond identifying and ranking revenue options to explaining how these options can be interconnected and mutually reinforced within a coherent reform pathway toward a sustainable revenue system.

6. Conclusion

This study aimed to develop an operational framework for diversifying the Tehran Municipality's revenue portfolio through a multi-stage research process. First, the legal capacities and experts' proposed options for developing revenue sources were identified and compiled. Subsequently, the decision-making criteria were weighted using the best-worst method (BWM), and the revenue options were evaluated and prioritized using the ARAS multi-criteria decision-making method. In the final stage, the results were not limited to a ranking; instead, the selected options were organized, based on their implementation relationships and mutual effects, into a four-stage cycle grounded in the positive feedback logic, thereby outlining a gradual pathway toward municipal financial sustainability. Accordingly, in addition to identifying the leading revenue options, this study explains the logic underlying their sequencing and the mechanisms through which each stage reinforces the subsequent stages.

The findings indicate that moving toward municipal financial sustainability depends less on identifying new revenue sources than on coordinating legal capacities, implementation requirements, and the appropriate sequencing of policies. The results show that some revenue options, despite possessing

considerable legal or economic potential, cannot achieve the desired effectiveness without the necessary institutional, managerial, and financial prerequisites. Conversely, implementing certain foundational measures can create the conditions for the more successful realization of other options and thereby enhance the effectiveness of the policy package as a whole. This finding underscores the importance of adopting a systemic perspective toward municipal revenue policies, in which the success of each measure depends not only on its own characteristics but also on its position within the implementation chain and its interaction with other policies. Accordingly, this study's most important contribution is a framework that, rather than proposing a fragmented set of revenue-generating measures, explains the relationships among them through a positive feedback cycle. Within this cycle, each stage strengthens the municipality's financial, managerial, and institutional capacities and also creates the conditions necessary for more effective implementation of the next stage, ultimately generating a gradual, self-reinforcing process toward financial sustainability. This approach can help prevent the simultaneous or accelerated implementation of policies that lack the necessary prerequisites and direct limited urban management resources toward measures that play the greatest role in building capacity for subsequent stages.

The findings of this study are, on the one hand, consistent with previous studies emphasizing the need for revenue diversification, strengthening legal capacities, and implementing institutional reforms. At the same time, the results show that the effectiveness of revenue policies does not depend solely on diversifying revenue sources; rather, the way these resources are organized and deployed within a coherent strategy plays a decisive role in enhancing financial sustainability. Nevertheless, this study goes beyond previous research, as most domestic and international studies have been limited to identifying and introducing revenue sources, analyzing legal and institutional capacities, or prioritizing revenue options, while paying less attention to the implementation relationships among these options. In contrast, by integrating legal capacities with experts' perspectives, the present study not only systematically prioritizes the options but also explains their interrelationships, implementation sequence, and the role of each option in creating the prerequisites for implementing subsequent options within a positive feedback cycle.

From this perspective, the main innovation and contribution of this study lies not in introducing new revenue sources, but in developing a systemic and operational framework for organizing and sequencing revenue policies. This framework can substantially address the gap in the literature between identifying revenue-generating strategies and explaining how they can be implemented gradually and coherently.

From a policy perspective, the findings indicate that reforming the municipal revenue system should not be limited to enacting new legislation or defining new revenue sources. Rather, developing an implementation roadmap based on prioritization, sequencing, and an understanding of interrelationships among policies is essential to the success of these reforms. Accordingly, the framework presented in this study can serve as a decision-making tool for urban managers and policymakers, helping reduce dependence on unstable revenues while gradually establishing a diversified, sustainable, and resilient system for municipal financing.

Finally, although this study focused on Tehran Municipality, the proposed framework can also be applied to other cities across the country, subject to adjustments based on their specific conditions. Future studies are also recommended to assess the feasibility and impacts of implementing the proposed cycle in different cities. The most important contribution of this study is that achieving municipal financial sustainability does not depend solely on identifying new revenue sources, but also on logically sequencing their implementation. Accordingly, the innovation of the present study lies not only in prioritizing revenue options, but also in providing a framework for their gradual and synergistic implementation toward achieving municipal financial sustainability.

Authors' Contributions

First Author: 33%; Second Author: 33%; Third Author: 33%.

Acknowledgments

This article is derived from the research project entitled "Sustainable financing system for urban management to reform the law on sustainable revenues and municipal expenditures (case study: Tehran Municipality)," commissioned by the Andishvaran Think Tank. The authors sincerely thank all experts and scholars who, through their collaboration with and support of the Andishvaran Think Tank, contributed to this research by providing specialized advice and professional insights. The authors acknowledge the use of OpenAI's ChatGPT

(GPT-5.6 Luna) as an artificial intelligence-based language assistance tool to translate the manuscript from Persian into English and to translate the text contained in the figures. The tool was used solely for language translation and linguistic assistance; it was not used to generate the research findings, analysis, methodology, or conclusions. The authors reviewed and verified the translated content.

Conflict of Interest

The authors declare no conflict of interest concerning the authorship or publication of this article.

References

- Abbasi H., Sarihi R., ShahAbadiFarahani A., & Abbasi M. (2022). Identifying the factors affecting the provision of sustainable revenue sources in Arak Municipality. *Urban Economics and Planning*, 3(1): 76-88. <https://sid.ir/paper/986605/en> [In Persian]
- Akhgar H., Zabihi H., & Saeedi A. (2018). Re-reading the Municipality Grading Law toward empowering grade 1 to 7 municipalities for achieving sustainable revenues (case study: Isfahan Province). *Urban Management Studies*, 10(33): 41-55. <https://sid.ir/paper/199413/fa> [In Persian]
- Aram A., & Shahvazi A. (2022). Analysis of strategies for securing sustainable income sources in metropolitan Tehran. *Urban Environmental Planning and Development*, 2(5): 103-114. <https://sid.ir/paper/1022240/en> [In Persian]
- Baghdadi M., Kazemini M., & Shirangi S. (2021). Model for assessing risk-taking and risk aversion factors affecting sustainable municipal revenues (case study: Karaj Municipality). *Structural Engineering and Construction*, 8(4): 26-44. <https://sid.ir/paper/393891/fa> [In Persian]
- Bialek-Jaworska, A. (2022). Revenue diversification and municipally owned companies' role in shaping the debt of municipalities. *Public and Cooperative Economics*, 93(4), 931-975. <https://doi.org/10.1111/apce.12358>
- Bisogno, M., Cuadrado-Ballesteros, B., Manes-Rossi, F., & Pena-Miguel, N. (2024). Financial sustainability and sustainable development in local governments: Empirical insights. *Public Performance & Management Review*, 47(3), 784-811. <https://doi.org/10.1080/15309576.2024.2340116>
- Carroll, D. (2005). Are state governments prepared for fiscal crises? A look at revenue diversification during the 1990s. *Public Finance Review*, 33(5), 603-633. <https://doi.org/10.1177/1091142105276440>
- Carroll, D. (2009). Diversifying municipal government revenue structures: Fiscal illusion or instability? *Public Budgeting & Finance*, 29(1), 27-48. <https://doi.org/10.1111/j.1540-5850.2009.00922.x>
- Carroll, D., Eger, R., & Marlowe, J. (2003). Managing local intergovernmental revenues: The Imperative of Diversification. *Public Administration*, 26(13), 1495-1518. <https://doi.org/10.1081/PAD-120024407>
- Chernick, H., Langley, A., & Reschovsky, A. (2011). Revenue diversification and the financing of large American central cities. *Public Finance and Management*, 11(2).
- Cigu, E., & Romania, I. (2014). An approach of local financial autonomy and implication over sustainable development in the

- knowledge society. *Public Administration, Finance, and Law*, 6, 44-53. <https://ideas.repec.org/a/aic/jopaf/v2014v6p44-53.html>
- Danesh Jafari D., Babajani J., & Karimi Asboei S. (2014). Evaluation of financial and revenue sustainability of Tehran Municipality. *Urban Economics and Management Quarterly*, 2(7): 15-34. <https://iueam.ir/article-1-75-fa.pdf> [In Persian]
- Davoudi P. (2019). Impact of exchange rate shock on construction sector and its implications for Tehran Municipality revenues. *Structural Engineering and Construction*, 8(4): 26-44. <https://sid.ir/paper/393891/fa> [In Persian]
- Farhadi F., Fathi M. R., & Rahimi S. D. (2024). Identification and ranking of strategies for achieving sustainable urban revenues (Case study: Fooladshahr Municipality). *Urban Sustainable Development*, 5(15): 41-55 [In Persian]
- George, H. (1879). *Progress and poverty: An inquiry into the cause of industrial depressions and of increase of want with increase of wealth: The remedy*. New York: D. Appleton and Company
- Gerami M., & Shamseddini A. (2023). Evaluation of sustainable financing strategies for municipalities (case study: Marvdasht). *Resource Development and Management Studies*, 1(2): 13-26. <https://ensani.ir/fa/article/563040> [In Persian]
- Ghanbari A., Mousavi M., SaiedAbadi R., Bagheri Kashkoli, A., & Hoseini Amini H. (2011). Strategies of enabling municipal income enhancement in small cities (Case study: Zarch). *Geography and Environmental Planning*, 22(2(42)): 9-12. <https://sid.ir/paper/358376/en> [In Persian]
- Gholipour R., Darvishzadeh M., & Pirannejad A. (2019). Identification of the methods, resources, and barriers of achieving sustainable urban income (case study: Urmia Municipality). *Public Administration*, 11(1): 151-178. <https://sid.ir/paper/139778/en> [In Persian]
- Hadi-Zenouz B. (2009). Theoretical foundations of municipal revenue systems. *Urban Economics Quarterly*, 2: 4-27. <https://sid.ir/paper/473238/fa> [In Persian]
- Hajilo M., Mirei M., & Pilevar M. (2017). Investigation of Sustainable revenue sources of municipalities (case study: Shabestar). *Urban Economics and Management*, 5(4): 1-22. <https://sid.ir/paper/240223/fa> [In Persian]
- Hendrick, R., & Moyer, S. (2002). Revenue diversification: Fiscal illusion or flexible financial management. *Public Budgeting & Finance*, 22(4), 52- 72. <https://doi.org/10.1111/1540-5850.00089>
- Islamic Consultative Assembly. (1968). *Urban renovation and development law*. Tehran: Islamic Consultative Assembly. <https://rc.majlis.ir> [In Persian]
- Islamic Consultative Assembly. (2015). *Direct taxation law*. Tehran: Islamic Consultative Assembly. <https://rc.majlis.ir> [In Persian]
- Islamic Consultative Assembly. (2017). *Clean air law*. Tehran: Islamic Consultative Assembly. <https://rc.majlis.ir> [In Persian]
- Islamic Consultative Assembly. (2021). *Law on family protection and youth population*. Tehran: Islamic Consultative Assembly. <https://rc.majlis.ir> [In Persian]
- Islamic Consultative Assembly. (2022). *Sustainable revenue and expenditure law of municipalities and rural municipalities*. Tehran: Islamic Consultative Assembly. <https://rc.majlis.ir> [In Persian]
- Islamic Consultative Assembly. (2024). *Land and housing market regulation laws*. Tehran: Islamic Consultative Assembly. <https://rc.majlis.ir> [In Persian]
- Islamic Republic of Iran. (1989/1979). *Constitution of the Islamic Republic of Iran*. Tehran: Islamic Consultative Assembly. <https://www.irib.ir/constitutio> [In Persian]
- Izadkhahesti H. (2022). Structure of sustainable urban revenues and calculation of VAT gap in Tehran Municipality. *Urban Economics and Planning*, 3(4): 64-75. <https://sid.ir/paper/1035527/fa> [In Persian]
- Jankovics, L. (2016). Local government finances in Hungary: From the culprit of fiscal slippages to a source of stability? *Society and Economy*, 38(4), 455-478. <https://doi.org/10.1556/204.2016.38.4.2>
- Jimenez, B. S., & Afonso, W. B. (2022). Revisiting the theory of revenue diversification: Insights from an empirical analysis of municipal budgetary solvency. *Public Budgeting & Finance*, 42(2), 196-220. <https://doi.org/10.1111/pbaf.12309>
- Karimzadeh M., & Haddadian A. (2023). Strategies for developing sustainable revenues in Mashhad Municipality Transportation Organization. *Public Sector Economics Studies*, 2(2): 215-232. <https://doi.org/10.22126/pse.2023.9315.1045> [In Persian]
- Kisaka, C., Maingi, W., & Kiongera, F. (2025). Influence of legal framework on own source revenue performance in Lake Region Economic Bloc counties, Kenya. *Empirical Research*, 6(4), 830-845. <https://doi.org/10.51867/ajernet.6.4.74>
- López-Olvera, S., Olivo-Escudero, J., Hernández-Marroquín, M., López-Olvera, F., Vallejo-Rivera, Y., Rodríguez-Gómez, M., & Rodríguez-Herrero, P. (2025). Towards fiscal sustainable practices in Mexico: The quality of municipal tax regulation and tiered tariffs improve income from solid waste management services. *Waste Management Bulletin*, 3(1), 243-254. <https://doi.org/10.1016/j.wmb.2025.01.009>
- Mesgari S., NaimiSadigh A., & Abdolshah M. (2018). Investigating the main factors influencing municipalities' income and presenting appropriate strategies to make it sustainable. *Geographical Research*, 33(2): 73-89. <https://sid.ir/paper/403311/en> [In Persian]
- Mohamed, N., & Vadeveloo, T. (2023). Diversifying Local government funding in implementing green open space for green city development: A systematic literature review. *Academic Research in Accounting, Finance, and Management Sciences*, 946-961. <https://doi.org/10.6007/IJARAFMS/v13-i2/18067>
- Mohammadi R. (2020). *Analysis of revenue sources of Tehran Municipality over a 28-Year Period*. Tehran: Tehran Urban Studies and Planning Center. <https://rpc.tehran.ir/500.htm?aspxerorpath=/Default.aspx> [In Persian]
- Motahar R., Shokouhbidhendi M. S., & Alizadeh R. (2) (2026). Assessment of the structure and position of the Supreme Council of Urban Planning and Architecture of Iran for needs assessment and feasibility of legal reforms. *Researches in Islamic Architecture*. <https://www.juep.net/jufile?arfile=3430524> [In Persian]
- Motahar R., Shokouhbidhendi M., Yousefi A., & Alizadeh R. (2026). An analytical and problem-oriented study of the missions, position, and structure of the Supreme Council of Urban Planning and Architecture of Iran toward aligning its sectoral interests with the public interest. *Urban Economics and*

- Planning*, 7(11): 46-61. <https://doi.org/10.22034/uep.2026.583584.1903> [In Persian]
- Mousavi S., Karimian Bostani M., & Hafez Rezazadeh M. (2021). Impact of Sustainable and unsustainable municipal revenues on Tehran Metropolis development. *Urban Social Geography*, 8(1): 25-44. <https://doi.org/10.22103/JUSG.2021.2031> [In Persian]
- Mozaffari G., Papoli-Yazdi M., Vosoughi F., & Hataminejad H. (2016). Sustainable revenue model for municipal financing (case study: Tehran). *Geographical Research Quarterly*, 31(4): 24-44. <http://georesearch.ir/article-1-22-fa.html> [In Persian]
- Park, S., & Park, J. (2017). The effect of revenue diversification and form of government on public spending. *Public Budgeting & Finance*, 30(2), 168-194. <https://doi.org/10.1177/109114219402200202>
- Ragheb M., & Shahri R. (2020). Shortage of financial resources in municipalities and replacement with sustainable revenues. *Shabak*, 6(2): 89-98 [In Persian]
- Rao, M., Musso, J. A., & Young, M. M. (2023). Resist, recover, renew: Fiscal resilience as a strategic response to economic uncertainty. *The American Review of Public Administration*, 53(7-8): 529-546. <https://doi.org/10.1177/02750740231186424>
- Sadeghi, S., Mohammadzadeh, P., & Sobhkhiz-Zenouzi, S. (2015). Factors Affecting private sector participation in financing sustainable municipal projects. *Urban Economics and Management Quarterly*, 3(11): 153-167. <https://iueam.ir/article-1-202-fa.html> [In Persian]
- Sefidro A., Mojtah-Zadeh H., & Nadiri M. (2023). Foresight of drivers affecting sustainable urban revenues (case study: District 22, Tehran). *Future Cities Outlook*, 3(4): 1-15. <https://jvfc.ir/article-1-218-fa.html> [In Persian]
- Suydehoud, J. (1994). State-local revenue diversification, balance, and fiscal performance. *Public Finance Quarterly*, 22(2), 168-194. <https://doi.org/10.1177/109114219402200202>
- Uryszek T. (2018). Fiscal sustainability of local governments in the Visegrad Group countries. *Entrepreneurial Business and Economics Review*, 6(3), 59-71. <https://doi.org/10.15678/EBER.2018.060304>
- Vesali Azarsharbani M. (2017). Comparative study of municipal revenue sources in Iran and the world. *Annual Conference on Architecture, Urban Planning, and Urban Management Research*. <https://sid.ir/paper/895365/fa> [In Persian]
- Zeraat-Kish S. (2022). Feasibility study of sustainable revenue generation in Shahrban and Harimban Company. *Tehran Urban Studies and Planning Center*. [In Persian]

