

Original Research Paper

Analyzing the Role of Political Divisions in Spatial Transformations, with an Emphasis on Urban Sprawl and the Formation of Marginalized Communities (A Case Study: Tehran's Districts 18 And 19)

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Abstract

This research examines the effects of these changes on the spatial structure of cities and the challenges arising from them. In this regard, the current study was conducted with the aim of measuring and analyzing the role of political divisions and their effects on the spatial transformations of Tehran's Districts 18 and 19, with an emphasis on the phenomenon of sprawl and the formation of marginalized communities. Based on the research objectives and the components under review, the research is of an applied type, and its method is descriptive-analytical. Theoretical data were prepared using a documentary method, and empirical data were prepared using a survey method. The statistical population consisted of 93 experts and specialists selected through judgmental or purposive sampling. To analyze the information obtained, statistical tests such as the one-sample T-test and Friedman test were used in SPSS software. The analysis of the role of political divisions in the spatial transformations of Tehran's Districts 18 and 19 showed that these divisions have been unable to manage sprawl and the formation of marginalized communities in these areas and, in some cases, have intensified spatial instabilities. In the economic dimension, an increase in land prices and a weakness in attracting investment and the equitable distribution of opportunities are evident. In the environmental dimension, the destruction of ecosystems and a reduction in biodiversity are visible. In the socio-cultural dimension, although a sense of belonging and social participation has improved, social divides and inequalities have intensified. In the physical dimension, excessive development and the growth of informal settlements have reduced the quality of life.

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Introduction

Urban spatial transformations, as a key topic in geographical studies and urban planning, require a precise examination of the numerous factors influencing them (Hosseini & Amirian, 2020: 148). These urban transformations are influenced by various factors, including urban expansion, economic reforms, and political (e.g., political divisions) and social dynamics (Decha & Adad, 2024).

Therefore, political divisions are among the most important of these factors, directly and indirectly affecting the processes of urban formation, development, and spatial structure. These divisions not only play a legal and administrative role in urban management but can also shape specific social, economic, and cultural patterns that ultimately impact urban spaces (UN-Habitat, 2016).

As a fundamental tool in land management and planning, political divisions play a decisive role in shaping spatial structures and urban development (Ningrum *et al.*, 2024). These divisions are designed to optimize resource distribution and facilitate urban and rural management. However, in some cases, due to a mismatch with the actual needs of cities and socioeconomic developments, they create unintended consequences such as sprawl and the uncontrolled growth of marginalized communities (Glasmeier & Farrigan, 2007). This phenomenon is particularly evident in the metropolises of developing countries, such as Tehran, where inefficient divisions have caused spatial inconsistencies and numerous problems in urban structures (Pilehvar, 2021).

Urban sprawl, as a direct result of inappropriate political divisions, leads to the formation of marginalized communities in many metropolises. This phenomenon occurs due to a lack of suitable land for development in central areas and a tendency toward cheaper lands on the outskirts of cities (Bueno-Suárez and Coq-Huelva, 2020). In Iran, metropolises like Tehran are also witnessing the expansion of marginalized communities in their peripheral areas due to population pressure and a lack of sufficient infrastructure in central regions. These communities often lack proper urban planning and adequate infrastructure, which leads to a decrease in the quality of life for residents and an intensification of social and economic problems (Jia *et al.*, 2020).

Political divisions that unequally distribute resources and facilities among different urban areas play a significant role in intensifying spatial inequalities (Ningrum *et al.*, 2024). Marginalized areas, formed due to sprawl, often lack strong social interactions and a sense of community among residents. Due to a lack of access to suitable economic and social opportunities, these areas become hotbeds for social problems such as unemployment, crime, and poverty. This situation intensifies social inconsistencies and causes social tensions in urban areas (Jaeger *et al.*, 2010).

Another negative consequence of inefficient political divisions is the increased pressure on urban infrastructure. Uncontrolled urban expansion and a mismatch between spatial development and infrastructure capacities lead to a decline in the quality of public services and create management crises in cities (Siatan *et al.*, 2024). In these conditions, providing services such as water, electricity, sewage, and public transportation to sprawling and marginalized areas comes with high costs, and due to limited resources, these services are often unequally distributed among different areas (Irandoost *et al.*, 2018).

Given the challenges raised, a review of political division policies and the adoption of comprehensive and sustainable approaches to urban spatial management are essential (Wang *et al.*, 2021). In Districts 18 and 19 of Tehran Municipality, the inefficient role of political divisions and poor urban management in the formation of spatial transformations and the growth of marginalized communities has been very significant. Due to their geographical location on the city's outskirts and a lack of proper distribution of urban services, these areas face problems such as sprawl and uncoordinated development. Inaccurate administrative divisions and inefficient demarcation of areas have increased the spatial and social gaps between different parts of these districts, and non-residential and unused lands have gradually been converted into residential areas. These new areas lack sufficient infrastructure and services, and due to rapid population growth and uncontrolled migration, which is itself a result of easy access to cheap land and a lack of adequate oversight, they have experienced unsustainable development and severe sprawl. The lack of cohesive planning for political divisions and a lack of coordination

among different institutions have led to spatial and social inequalities, creating unfavorable conditions for the residents of these areas. These inequalities have not only reduced the quality of life but have also intensified economic, social, and environmental problems in these districts. Therefore, a review of political divisions and an improvement in urban management in these areas are of great importance to prevent unbalanced urban expansion and the formation of marginalized communities.

In this regard, this study aims to measure and analyze the role of political divisions in the spatial transformations of Tehran's Districts 18 and 19, with an emphasis on sprawl and the formation of marginalized communities. In line with this goal, the main research question is:

≠ What is the role of political divisions in the spatial transformations of Tehran's Districts 18 and 19, with an emphasis on sprawl and the formation of marginalized communities?

Literature Review

Political divisions, as a result of the thought and ideology of each country's political system, express how its geographical space is organized and managed (Gottmann, 1975). This system involves dividing a country's territory into smaller units such as provinces, counties, and districts, with the goal of facilitating the implementation of national and local policies, optimizing resource distribution, and providing public services. As an administrative-geographical structure, political divisions play a key role in strengthening effective governance and improving the management of different regions. Various criteria are effective in the design and implementation of these divisions, the most important of which include geographical features (such as location and topography), demographics (such as population density and distribution), cultural aspects (such as ethnic and linguistic diversity), and economic factors (such as economic patterns and natural resources). These criteria help in shaping administrative boundaries and determining the duties and authorities of each unit (Aggarwal, 2022). In different countries, the principles and foundations of political divisions vary according to specific historical, cultural, and local conditions. For example, in some countries, cultural and ethnic factors play an important role in determining borders, while in other countries, economic and geographical

criteria may have precedence. However, the main goal is common to all countries: to improve the efficiency and effectiveness of governance in different regions in a way that meets the needs of the local population and achieves balanced and sustainable development (Zhang et al., 2020).

In addition to their role in organizing and managing geographical space, political divisions are considered a key tool for improving governance and strengthening public participation in different regions of the country (Cogo and Dallabrida, 2015). The creation of divided units such as provinces, counties, and districts provides the basis for decentralization and bringing decision-making closer to the people. This approach, by transferring a portion of authorities and responsibilities from the national to the local level, facilitates greater citizen participation in governance and decision-making processes (He, 2022). In other words, political divisions act as an effective platform for decentralization and allow citizens at local and regional levels to play an active role in planning, developing, and implementing policies. This not only leads to increased transparency and accountability of local institutions but also helps to strengthen the sense of belonging and create social cohesion among people in different regions (Godec and Nikšič, 2023). By creating this closer interaction between local institutions and local communities, public trust in the governance system increases, and citizens feel that their needs and wishes are considered in decision-making processes. This, in turn, helps to reduce social conflicts and promote political stability, providing the basis for sustainable and balanced development in different regions. Therefore, political divisions are not only an administrative-geographical tool but also act as an engine for promoting public participation and strengthening local governance (Smith and Jones, 2021). One of the fundamental challenges in political divisions is finding a balance between decentralization and centralization. Disproportionate and illogical divisions can lead to regional inequalities and geographical deprivations. For example, if regions rich in natural resources are ignored in political divisions or local institutions do not have proper access to these resources, unequal development may occur in the country. Therefore, policymakers and planners must pay sufficient attention to factors such as

demographic characteristics, development levels, and access to resources when designing political divisions (Brown, 2019). From a developmental perspective, political divisions can help improve social security and cohesion and strengthen intra- and inter-regional economic ties. Also, its proper implementation leads to increased productivity, economic efficiency, fair distribution of resources, and poverty reduction, which are among the main goals of long-term sustainable development programs in countries (Gustafson and Ryan, 2021).

In addition to creating coordination in the provision of public services, political divisions lead to better and more effective access to facilities for people and provide the possibility of more comprehensive planning for economic and social development. Also, spatial organization, by creating a structured and stable framework, strengthens the necessary ground

for social, economic, and cultural interactions and helps in integrated development (Anderson, 2021). The efficiency of political divisions arises from the fact that by categorizing regions into homogeneous units, the process of local management and administration of affairs improves. This provides the basis for security, unity, and public cooperation, and by improving the administrative system, it creates suitable conditions for people's participation in national and local decisions. On the other hand, efficient divisions provide the possibility of offering better services in all regions of the country, which leads to an increase in social, economic, and cultural welfare (Ahmadipour, 2011).

The effect of political divisions on urban spatial transformations is multifaceted and influences residential patterns, land use, and social integration (Benassi and Iglesias-Pascual, 2022).

Table 1. Positive and Negative Effects of Political Divisions on Urban Spatial Transformations

Dimension	Positive Effects	Negative Effects
Management	- Increased flexibility in local planning - Improved supervision and resource allocation aligned with regional needs - Strengthened coordination between urban and rural levels	- Increased bureaucracy and operational costs - Overlapping responsibilities between local and national institutions - Reduced convergence in macro policies
Social	- Enhanced local participation and regional identity - More equitable distribution of public services - Reduced migration by creating local opportunities	- Intensified ethnic/regional conflicts - Cultural heterogeneity due to extreme decentralization - Formation of marginalized settlements in less-developed areas
Economic	- Growth of local economies by focusing on regional advantages - Reduced logistics costs with the development of specialized infrastructure - Targeted investment attraction	- Intensified inequality in development between regions - Harmful competition among regions for national resources - Duality of formal and informal economies in marginalized areas
Environmental	- Sustainable management of natural resources (water, forest, soil) - Reduced pressure on ecosystems through local planning - Development of environmentally friendly technologies	- Destruction of ecosystems due to industrial competition - Instability in managing border resources - Increased pollutants from unbalanced development
Physical-Spatial	- Development of infrastructure proportional to ecological capacity - Reduced sprawl through integrated planning - Optimized land use	- Expansion of informal settlements along new borders - Unbalanced development of facilities between adjacent regions - Destruction of historical fabric
Spatial Transformations	- Facilitated targeted regional development: Aligning administrative divisions with demographic and economic patterns to reduce spatial inconsistencies. - Strengthened urban-rural links: Creating integrated development corridors between regions. - Flexibility in population redistribution: Managing migration by creating new growth poles.	- Spatial gap: Intensified inequality in access to opportunities between new and old administrative areas. - Fragmentation of territory: Formation of artificial borders that disrupt ecological and economic cohesion. - Unbalanced development: Concentration of facilities in new administrative centers and the marginalization of other areas.

Source: Ahmadipour, et al., 2011; Wang & Wang, 2020; Benassi & Iglesias-Pascual, 2022

There are various theories for analyzing the impact of political divisions on urban spatial transformations, each examining these phenomena from a specific perspective. These theories explore the effects of political divisions

and the development of decentralized cities and the expansion of marginalized areas from economic, social, physical, and managerial viewpoints. Since the processes of administrative and political division of space

typically lead to spatial inequalities, these theories play a crucial role in understanding these processes and their consequences in cities and their surrounding areas. Below are some of these key theories.

In analyzing the effects of political divisions on urban spatial transformations, various theories exist, each examining these phenomena from a specific perspective. These theories explore the impacts of political divisions and the development of decentralized cities and the expansion of marginalized areas from economic, social, physical, and managerial viewpoints. Since the processes of administrative and political division of space usually lead to spatial inequalities, these theories play a crucial role in a more accurate understanding of these processes and their consequences at the level of cities and their surrounding areas. A review of some of these key theories is provided below:

1. Spatial Pluralism Theory: This theory emphasizes the diversity and multiplicity in the spatial structure of cities, showing that the way administrative and political divisions are made can lead to different distributions of resources and services in various parts of the city. These divisions, as a result, lead to the formation of areas with distinct social, economic, and physical characteristics, which can fuel the development of marginalized areas and spatial dispersion. In other words, political divisions in metropolises cause some areas to have less access to resources and services, leading to the expansion and formation of marginalized communities. This theory has been emphasized by researchers such as Harvey (1973) and Soja (2010) (Soja, 2010; Harvey, 1973).

2. Spatial Inequality Theory: According to this theory, political divisions can cause and intensify spatial inequalities at the urban level. This means that urban marginalized areas suffer from economic, social, and physical problems due to the lack of attention to social and economic issues during the division processes. These inequalities lead to the formation of marginalized communities and the growth of sprawl, as these areas often lack urban facilities and infrastructure. Specifically, this issue has been discussed in studies by Smith (1996) and Sassen (2001) (Sassen, 2001; Smith, 1996).

3. Dual City Theory: This theory seeks to explain how political divisions can sometimes lead to the division of urban space into two different parts: one with advanced

characteristics and the other with subordinate characteristics. These divisions cause a growth in social and economic gaps and, consequently, the formation of marginalized areas. Political divisions can accelerate this process because in some cases, cities use different policies to manage different areas, which leads to an intensification of spatial inequality. Harvey (1973) and Dikeç (2007) are among the researchers who have applied this theory in various urban and political division contexts (Dikeç, 2007; Harvey, 1973).

4. Spatial Reproduction Theory: This theory holds that spatial transformation in cities results from social, economic, and political processes that are reproduced within the urban space. Political divisions, especially concerning marginalized areas, can lead to the reproduction of inequalities and spatial dispersion. In other words, political divisions can create structures within cities that cause unbalanced growth between central and marginalized areas. This issue is especially seen in large metropolises. Theorists such as Brenner (2004) and Harvey (1973) have addressed these processes (Brenner, 2004; Harvey, 1973).

5. Sprawl Theory: This theory examines how cities develop in a progressive and decentralized way, which leads to sprawl and the formation of marginalized communities. This growth is usually due to a lack of proper planning in political divisions and a lack of attention to improving public services and infrastructure in distant areas. Political divisions can intensify the excessive and sprawling growth of cities, as some areas, especially on the periphery, are deprived of urban facilities, and this leads to the expansion of marginalized communities and physical and social problems. This theory has been discussed in studies by Squires (2002) and Bruegmann (2005).

Among the theories presented in this research, "**Spatial Inequality Theory**" has been chosen as an efficient and suitable framework for analyzing the relationship between political divisions and urban spatial transformations. By focusing on the unjust distribution of resources, services, and opportunities across space, this theory can accurately explain the decisive role of political divisions in shaping urban development patterns and the expansion of marginalized communities. Spatial Inequality Theory is based on the principle that the unequal distribution of urban resources and

services in different areas, especially in central and marginalized areas, directly affects the quality of life and development opportunities. In marginalized areas, political divisions often act unfairly, leading to reduced access to essential facilities such as health, education, infrastructure, and economic opportunities. This lack of access to facilities, combined with the over-concentration of resources and services in central areas, deepens spatial and social gaps. The result of these inequalities is the emergence and expansion of marginalized communities and sprawl in less-developed areas. In these areas, residents, due to a lack of resources and facilities, are forced to live in areas with lower quality and incomplete infrastructure. This situation not only puts more pressure on urban infrastructure and services but also leads to an intensification of economic and social inequalities. In addition, the expansion of illegal and unlicensed construction in these areas reduces the quality of life and exacerbates environmental and social problems.

Therefore, Spatial Inequality Theory, by emphasizing the unjust distribution of resources and services, can well explain complex processes such as the expansion of marginalized communities, urban sprawl, and the intensification of socioeconomic inequalities. This theory not only reveals the role of political divisions in shaping these patterns but also provides solutions to reduce inequalities and improve spatial management.

Ahmadipour et al. (2024) analyzed how unsuitable political divisions lead to the destruction of natural ecosystems in the Bakhtegan and Tashk river basins. Their research shows that frequent administrative changes in upstream areas have increased the number of political-administrative territories, causing conflicts over water resources. This has led to a lack of coordinated basin management, growing hydropolitical tensions, and the neglect of natural ecosystems. Excessive water use upstream, without considering downstream needs, has accelerated the drying of the lake. The study concludes that political-administrative borders often don't align with natural boundaries, complicating water resource management and preventing a holistic

approach to development that benefits the entire basin.

Political divisions and spatial justice

Malekshahi et al. (2024) examined the effect of political-spatial divisions on spatial justice in Lorestan province. Their findings indicate that upgrading political divisions in Lorestan has not led to an improvement in spatial justice. As the primary tool for organizing space, political divisions are crucial for achieving balanced development and spatial justice. However, the current model of political divisions in Lorestan has failed to meet political-administrative needs and is inefficient in service delivery and development. This highlights the need for a re-evaluation of the structure and function of these divisions.

Rahimi et al. (2021) studied the role of political divisions in implementing land-use planning programs in Kermanshah province. Their research revealed that social cohesion among population groups (with a score of 0.77) has the greatest impact on the suitability of administrative-executive frameworks for land-use programs. Additionally, the logical arrangement of political division units (counties, districts, etc.) based on ethnic and religious groups (with a score of 0.65) is effective for optimal program implementation. In the context of spatial division and corresponding information, intra-province zoning based on official criteria (with a direct effect of 0.79) played the most significant role. These findings emphasize that social factors and logical spatial divisions are the most important factors for the success of land-use planning.

Riahi et al. (2020) analyzed the factors contributing to the inefficiency of the political division system in Urmia county. The study found that the political division system, a complex and multifaceted process, has been influenced by centralized policies, failing to create an efficient system. This inefficiency stems from several factors, including:

Centralization

Lack of attention to local and regional needs

A unidimensional view in political division laws

The dominance of security-political considerations

Interference from influential official and unofficial figures

Disregard for the natural, ecological, cultural, and geographic context in determining political centers

Additionally, the lack of specialized local experts is another reason for the system's inefficiency. These factors have prevented political divisions from effectively responding to the needs of different regions.

Chen et al. (2023) explored the spatio-temporal links between political division adjustments and urban form in China. The study showed that changes in political divisions significantly impact urban growth patterns, causing development to be scattered in specific areas and affecting the distribution of urban spaces, infrastructure, and transportation networks. Particularly in cities under urban development policies, these changes can alter the development pattern of regions and shift urban concentration. This indicates the decisive role of administrative divisions in shaping urban spaces.

Chen et al. (2023) examined the effects of government-led administrative division reforms on polycentric urban development in China. The results showed that these administrative division reforms (ADA), especially through the restructuring of urban boundaries, had a significant impact on polycentric urban development. More positive effects were observed in central and adjacent eastern cities, while there was no significant impact in western China. These changes primarily influenced land-use and industrial structure. The research emphasizes the need to consider socioeconomic conditions when implementing ADA to effectively influence urban spatial transformations.

Wang et al. (2021) investigated the spatial effects of political divisions on land-use intensity in the middle reach of China's Yangtze River. Their findings revealed that land-use intensity (LUI) differs significantly between county-level administrative units, and this gap widened between 2010 and 2017. Factors like fixed-asset investment per unit of land, GDP per capita, and the share of the service sector have a direct impact on LUI. Furthermore,

county-level administrative units not only have cooperative spatial interactions but also exhibit competition, which acts as a deterrent and helps increase land productivity in cities along the middle Yangtze River.

The Area under Study

Tehran's District 18 has a unique historical background. The initial core of this area developed from the village of Yaftabad, which, due to its strategic location at the entrance to the capital and low land prices, became a center for attracting low-income migrants and industrial workers. This process of migration has created a dense and unconventional residential fabric with a population density of 718 people per hectare and a per capita land share of only 13.92 square meters. The street network in this area is mostly narrow and low-capacity, and more than 745 hectares of its land are allocated to Tehran's green belt, which shares a border with the 25-year urban boundary. Geographically, this district is bordered by the Fath Expressway to the north, the Kan Stream to the east, and the Azadegan Expressway to the south and west. According to 2021 statistics, its population is 444,886, with %51.2 male and %48.8 female.

District 19, the western neighbor of District 18, has developed gradually over the past four decades and is now considered one of the city's marginalized areas with a population of approximately 295,627 (including 255,533 within the city limits and 64,299 households). This district is connected to District 17 to the north, District 16 to the east, and District 18 to the west. With 13 neighborhoods, including Khaniabad-e Now, Nematabad, and Shokoufeh, it plays an important role as the "capital's international gateway" in urban development plans. The total area of District 19 is about 1,024 square kilometers, of which only 203 square kilometers are within the urban boundary (Areas 1 to 3), and the rest is designated as a periphery (Areas 4 and 5). The district's location at the southwestern entrance of Tehran makes it a key site for important urban infrastructure (Fig. 1).

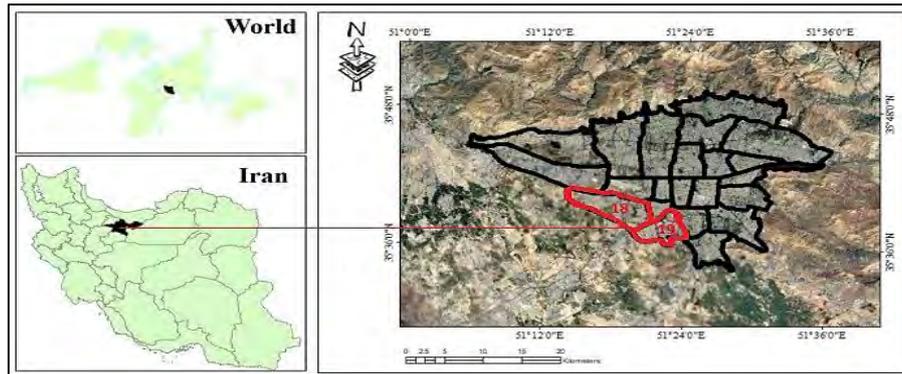


Fig 1. Study Area and Population Distribution of Cities in Iran

Methodology

Based on the research objectives and the components under review, the research is applied and the methodology is descriptive-analytical.

The criteria for selecting experts and specialists were theoretical knowledge, practical experience, willingness and ability to participate, and accessibility. A notable point in determining the number of experts was to ensure the comprehensiveness of different perspectives. Based on these criteria, a total of 93 experts and specialists were selected through theoretical saturation in the fields of urban geography, urban planning, and land-use planning to participate in the research process. Since the goal was not to generalize the results, a purposive or judgmental sampling method was used for the statistical population. The data needed to measure and analyze the role of political divisions and their effects on the spatial transformations of Tehran's Districts 18 and 19, with an emphasis on urban sprawl and the formation of marginalized communities, included five dimensions (economic, social, physical, managerial, and environmental) and 37 indicators. The data collection tool was a

researcher-made questionnaire, which was administered in the year 2024.

To determine the reliability of the research tool, Cronbach's Alpha was used, with a value of 0.809, indicating very good reliability. Factor analysis was used to determine the validity of the questionnaire, and a KMO value of 0.78 shows that the questionnaire has a good level of validity. For data processing, inferential statistical tests, including the one-sample T-test and Friedman test, were used in SPSS software.

Results and Discussion

Demographic Characteristics of the Statistical Population

This study was conducted with the participation of 93 individuals. The largest age groups were 39-46 years old and 55 years and older (24% each), while the smallest were 47-54 years old (16%) and 31-38 years old (17%). Only 19% of the sample consisted of young people aged 22-30. In terms of gender, 63% were male and 37% were female, indicating a more prominent presence of men. The educational level of the participants was primarily high: 52% had a master's degree, 32% had a bachelor's degree, and 16% had a doctorate, which reflects the study's focus on individuals with postgraduate education (Table 2).

Table 2. Summary of Demographic Data

Variable	Category	Frequency	Percentage
Age	22-30 years	18	19
	31-38 years	16	17
	39-46 years	22	24
	47-54 years	15	16
	55 years and older	22	24
Gender	Male	59	63
	Female	34	37
Education	Bachelor's	30	32
	Master's	48	52
	Doctorate	15	16

Measurement and Analysis of the Role of Political Divisions in the Spatial Transformations of Tehran's Districts 18 and 19: The Economic Dimension

In this part of the research, a one-sample T-test was used to evaluate and analyze the current

role of political divisions in spatial transformations, with an emphasis on urban sprawl and the formation of marginalized communities from an economic perspective in Tehran's Districts 18 and 19 (Table 3).

Table 3. Results of the One-Sample T-test Examining the Role of Political Divisions in Spatial Transformations

Factors	Test Value = 3				95% Confidence Interval
	T-statistic	Significance Level	Mean	Mean Difference	Lower Bound
In your opinion, have political divisions had an effect on the local economy of Districts 18 and 19?	-0.35	0.73	2.97	-0.03	-0.22
In your opinion, have political divisions had an effect on attracting development budgets and credits to Tehran's Districts 18 and 19?	0.11	0.91	3.01	0.01	-0.18
In your opinion, have political divisions led to inequality in access to job opportunities in Tehran's Districts 18 and 19?	11.14	0.00	4.02	1.02	0.84
In your opinion, have political divisions had an effect on land and housing prices in Tehran's Districts 18 and 19?	12.38	0.00	4.15	1.15	0.97
In your opinion, have political divisions led to the attraction of investment in Districts 18 and 19?	-10.94	0.00	2.11	-0.89	-1.05
Economic (Overall)	4.09	0.00	3.25	0.25	0.13

Source: Research Findings, 2025

The results of the one-sample T-test on the impact of political divisions on spatial transformations within the economic dimension show that this role was significant for some indicators but lacked a notable effect on others. The overall mean for the economic dimension was 3.25, which is higher than the test value of 3. With a significance level of 0.000, this difference from the baseline value is statistically significant. This indicates that, from the experts' perspective, political divisions have had some influence on the economic transformations of Tehran's Districts 18 and 19, but this influence varies in intensity across different sub-dimensions. A review of the more detailed indicators shows that political divisions have had little effect on the local economy of Districts 18 and 19, as the T-value (-0.35) and significance level (0.73) show this difference is statistically insignificant. Similarly, in the area of attracting development budgets and credits, the one-sample T-value (0.11) and significance level (0.91) indicate no significant effect. These results suggest that changes in political divisions have not directly led to an improvement in the local economy or an increase in allocated financial resources for these areas. As is clear, among the indicators in the economic dimension, land and housing

prices received the highest mean (4.15) from the statistical sample and are recognized as the most significant indicator for the role of political divisions in the spatial transformations of Tehran's Districts 18 and 19. This result shows that, in the opinion of the respondents, political divisions have had a significant effect on the increase of land and housing prices in these districts. On the other hand, investment attraction, with a mean of 2.11, received the lowest mean among the indicators, representing the weakest condition in this area. This indicates that political divisions have not helped to attract investment to these areas and have even had a negative effect. Consequently, it can be said that while land and housing prices have been positively affected as one of the most important economic factors, investment attraction remains a fundamental challenge in these areas that requires serious attention and planning from policymakers.

Measurement and Analysis of the Role of Political Divisions in the Spatial Transformations of Tehran's Districts 18 and 19: The Socio-Cultural Dimension

Measurement and Analysis of the Role of Political Divisions in the Spatial

Transformations of Tehran's Districts 18 and 19: The Socio-Cultural Dimension In this part of the research, a one-sample T-test was used to evaluate and analyze the current state of the role

of political divisions in spatial transformations from a socio-cultural perspective in Tehran's Districts 18 and 19 (Table 4).

Table 4. Results of the One-Sample T-test Examining the Role of Political Divisions in Spatial Transformations

Factors	Test Value = 3				95% Confidence Interval
	T-statistic	Significance Level	Mean	Mean Difference	Lower Bound
In your opinion, have political divisions had an effect on the citizens' sense of belonging to Tehran's Districts 18 and 19?	9.35	0.00	3.94	0.94	0.74
In your opinion, have political divisions had an effect on informal migration to Tehran's Districts 18 and 19?	-0.11	0.91	2.99	-0.01	-0.20
In your opinion, have political divisions had an effect on social interactions among residents of Tehran's Districts 18 and 19?	-9.73	0.00	2.22	-0.78	-0.95
In your opinion, have political divisions had an effect on social trust in urban management in Tehran's Districts 18 and 19?	2.59	0.01	3.20	0.20	0.05
In your opinion, have political divisions had an effect on creating social cohesion between central and marginalized areas (Districts 18 and 19) of Tehran?	-29.84	0.00	1.45	-1.55	-1.65
In your opinion, have political divisions had an effect on cultural conflicts between different urban areas and Tehran's Districts 18 and 19?	-29.84	0.00	1.45	-1.55	-1.65
In your opinion, have political divisions had an effect on access to public services (e.g., education, health, transportation) in Tehran's Districts 18 and 19?	5.24	0.00	3.33	0.33	0.21
In your opinion, have political divisions had an effect on the social participation of residents of Tehran's Districts 18 and 19?	5.82	0.00	3.38	0.38	0.25
In your opinion, have political divisions had an effect on social inequality in Tehran's Districts 18 and 19?	21.47	0.00	4.40	1.40	1.27
Socio-Cultural (Overall)	-1.61	0.11	2.93	-0.07	-0.16

Source: Research Findings, 2025

The results of the one-sample T-test in the socio-cultural dimension show that the role of political divisions in Tehran's Districts 18 and 19 has had varied effects. For some factors, such as citizens' sense of belonging (mean: 3.94) and residents' social participation (mean: 3.38), positive effects are observed. This indicates that these divisions have played an effective role in strengthening social cohesion and local interactions. Access to public services (mean: 3.33) and social trust in urban management (mean: 3.20) are also at a moderate level. However, for factors like creating social cohesion between central and marginalized areas (mean: 1.45) and cultural conflicts (mean: 1.45), significant negative effects are observed. This points to a deep gap between central and marginalized areas and a

weakness in cultural management. These results suggest that political divisions have been unable to effectively respond to the socio-cultural challenges of these areas in many fields and, in some cases, have even worsened the situation, such as with **social inequality** (mean: 4.40), which has the highest mean score among the negative factors.

Analysis of the Role of Political Divisions in Urban Spatial Transformations: Physical Dimension

In this section, a one-sample T-test was used to evaluate and analyze the current role of political divisions in the spatial transformations of Tehran's Districts 18 and 19 from a physical perspective (Table 5).

Table 5. Results of the One-Sample t-test Examining the Role of Political Divisions in Spatial Transformations

Factors	Test Value = 3				95% Confidence Interval
	T-statistic	Significance Level	Mean	Mean Difference	Lower Bound
In your opinion, have political divisions had an effect on the growth of unlicensed settlements due to weak supervision in Tehran's Districts 18 and 19?	-15.29	0.00	1.96	-1.04	-1.18
In your opinion, have political divisions had an effect on transportation and traffic in Tehran's Districts 18 and 19?	21.27	0.00	4.38	1.38	1.25
In your opinion, have political divisions had an effect on the quality of construction and urban infrastructure in Tehran's Districts 18 and 19?	1.95	0.05	3.16	0.16	0.00
In your opinion, have political divisions had an effect on access to public and recreational spaces in Tehran's Districts 18 and 19?	9.24	0.00	3.96	0.96	0.75
In your opinion, have political divisions had an effect on coordination in the design and implementation of urban infrastructure in Tehran's Districts 18 and 19?	1.55	0.12	3.14	0.14	-0.04
In your opinion, have political divisions had an effect on the scattered distribution of urban services in Tehran's Districts 18 and 19?	0.09	0.93	3.01	0.01	-0.22
In your opinion, have political divisions had an effect on the status of green spaces in Tehran's Districts 18 and 19?	1.65	0.10	3.14	0.14	-0.03
In your opinion, have political divisions had an effect on sprawl and the formation of marginalized communities in Tehran's Districts 18 and 19?	-8.96	0.00	2.39	-0.61	-0.75
Physical (Overall)	2.81	0.01	3.14	0.14	0.04

Source: Research Findings, 2025

The results of the one-sample t-test in the physical dimension indicate that the role of political divisions in the spatial transformations of Tehran's Districts 18 and 19 has varied effects. Some factors, such as access to public and recreational spaces (mean: 3.96) and transportation and traffic (mean: 4.38), show positive and significant effects. This suggests that political divisions have been successful in improving transport infrastructure and increasing access to recreational spaces in these districts. However, for factors like the growth of unlicensed settlements (mean: 1.96) and sprawl and the formation of marginalized communities (mean: 2.39), there are significant negative effects. These results indicate that weak supervision and improper planning in

these areas have led to illegal growth and excessive settlement dispersion. Additionally, the status of green spaces (mean: 3.14) and construction quality (mean: 3.16) are at a moderate level, but they do not have a significant difference from the baseline, indicating average performance in these areas.

Analysis of the Role of Political Divisions in Urban Spatial Transformations: Physical Dimension

In this section, a one-sample T-test was used to evaluate and analyze the current role of political divisions in the spatial transformations of Tehran's Districts 18 and 19 from a physical perspective (Table 5).

Table 5. Results of the One-Sample t-test Examining the Role of Political Divisions in Spatial Transformations

Factors	Test Value = 3				95% Confidence Interval
	T-statistic	Significance Level	Mean	Mean Difference	Lower Bound
In your opinion, have political divisions had an effect on the growth of unlicensed settlements due to weak supervision in Tehran's Districts 18 and 19?	-15.29	0.00	1.96	-1.04	-1.18
In your opinion, have political divisions had an effect on transportation and traffic in Tehran's Districts 18 and 19?	21.27	0.00	4.38	1.38	1.25
In your opinion, have political divisions had an effect on the quality of construction and urban infrastructure in Tehran's Districts 18 and 19?	1.95	0.05	3.16	0.16	0.00
In your opinion, have political divisions had an effect on access to public and recreational spaces in Tehran's Districts 18 and 19?	9.24	0.00	3.96	0.96	0.75
In your opinion, have political divisions had an effect on coordination in the design and implementation of urban infrastructure in Tehran's Districts 18 and 19?	1.55	0.12	3.14	0.14	-0.04
In your opinion, have political divisions had an effect on the scattered distribution of urban services in Tehran's Districts 18 and 19?	0.09	0.93	3.01	0.01	-0.22
In your opinion, have political divisions had an effect on the status of green spaces in Tehran's Districts 18 and 19?	1.65	0.10	3.14	0.14	-0.03
In your opinion, have political divisions had an effect on sprawl and the formation of marginalized communities in Tehran's Districts 18 and 19?	-8.96	0.00	2.39	-0.61	-0.75
Physical (Overall)	2.81	0.01	3.14	0.14	0.04

Source: Research Findings, 2025

The results of the one-sample t-test in the physical dimension indicate that the role of political divisions in the spatial transformations of Tehran's Districts 18 and 19 has varied effects. Some factors, such as access to public and recreational spaces (mean: 3.96) and transportation and traffic (mean: 4.38), show positive and significant effects. This suggests that political divisions have been successful in improving transport infrastructure and increasing access to recreational spaces in these districts. However, for factors like the growth

of unlicensed settlements (mean: 1.96) and sprawl and the formation of marginalized communities (mean: 2.39), there are significant negative effects. These results indicate that weak supervision and improper planning in these areas have led to illegal growth and excessive settlement dispersion. Additionally, the status of green spaces (mean: 3.14) and construction quality (mean: 3.16) are at a moderate level, but they do not have a significant difference from the baseline, indicating average performance in these areas. role of political divisions in the spatial transformations of Tehran's Districts 18 and 19 from an institutional-managerial perspective (Table 6).

Analysis of the Role of Political Divisions in Urban Spatial Transformations: Institutional-Managerial Dimension

In this part of the research, a one-sample T-test was used to evaluate and analyze the current

Table 6. Results of the One-Sample t-test Examining the Role of Political Divisions in Spatial Transformations

Factors	Test Value = 3				95% Confidence Interval
	T-statistic	Significance Level	Mean	Mean Difference	Lower Bound
In your opinion, have political divisions had an effect on the integrated management of Tehran's Districts 18 and 19?	13.12	0.00	4.11	1.11	0.94
In your opinion, have political divisions had an effect on administrative challenges and bureaucracy in Tehran's Districts 18 and 19?	1.27	0.21	3.11	0.11	-0.06
In your opinion, have political divisions had an effect on the supervision of unauthorized construction in Tehran's Districts 18 and 19?	17.51	0.00	4.06	1.06	0.94
In your opinion, have political divisions had an effect on transparent mechanisms for resource allocation in Tehran's Districts 18 and 19?	-0.38	0.71	2.96	-0.04	-0.27
In your opinion, have political divisions had an effect on the effectiveness of government policies in preventing sprawl and the formation of marginalized communities in Tehran's Districts 18 and 19?	1.42	0.16	3.12	0.12	-0.05
In your opinion, have political divisions had an effect on legal limitations in managing the development of Tehran's Districts 18 and 19?	-1.38	0.17	2.90	-0.10	-0.24
In your opinion, have political divisions had an effect on legal mechanisms to prevent unauthorized expansion in Tehran's Districts 18 and 19?	0.13	0.90	3.01	0.01	-0.15
Institutional-Managerial (Overall)	6.33	0.00	3.32	0.32	0.22

Source: Research Findings, 2025

The results of the one-sample t-test in the institutional-managerial dimension show that the role of political divisions in the spatial transformations of Tehran's Districts 18 and 19 has had varied effects. For some factors, such as integrated management (mean: 4.11) and supervision of unauthorized construction (mean: 4.06), positive and significant effects are observed. This indicates that political divisions have been successful in improving integrated management and reducing unauthorized construction in these areas. However, for factors like transparent mechanisms for resource allocation (mean: 2.96) and legal limitations in development management (mean: 2.90), there is no

significant difference from the baseline, which indicates a weak or average performance in these areas. The effectiveness of government policies in preventing sprawl and the formation of marginalized communities (mean: 3.12) is also at a moderate level and has no significant effect.

Analysis of the Role of Political Divisions in Urban Spatial Transformations: Environmental Dimension

In this part of the research, a one-sample T-test was used to evaluate and analyze the current role of political divisions in the spatial transformations of Tehran's Districts 18 and 19 from an environmental perspective (Table 7).

Table 7. Results of the One-Sample t-test Examining the Role of Political Divisions in Spatial Transformations

Factors	Test Value = 3				95% Confidence Interval
	T-statistic	Significance Level	Mean	Mean Difference	Lower Bound
In your opinion, have political divisions had an effect on the change in water and energy consumption patterns in Tehran's Districts 18 and 19?	-10.10	0.00	2.22	-0.78	-0.94
In your opinion, have political divisions had an effect on environmental pollution resulting from unbalanced development in Tehran's Districts 18 and 19?	2.23	0.03	3.16	0.16	0.02
In your opinion, have political divisions had an effect on the erosion of soil quality in Tehran's Districts 18 and 19?	-19.71	0.00	1.54	-1.46	-1.61
In your opinion, have political divisions had an effect on the vegetation cover of surrounding areas due to scattered development in Tehran's Districts 18 and 19?	-2.55	0.01	2.82	-0.18	-0.33
In your opinion, have political divisions had an effect on waste management in Tehran's Districts 18 and 19?	-11.02	0.00	2.32	-0.68	-0.80
In your opinion, have political divisions had an effect on the creation of effective systems for pollution management in Tehran's Districts 18 and 19?	-2.01	0.05	2.86	-0.14	-0.28
In your opinion, have political divisions had an effect on preventing the destruction of natural ecosystems in Tehran's Districts 18 and 19?	15.01	0.00	4.00	1.00	0.87
In your opinion, have political divisions had an effect on biodiversity in Tehran's Districts 18 and 19?	-14.79	0.00	2.04	-0.96	-1.09
Environmental (Overall)	-8.87	0.00	2.62	-0.38	-0.47

Source: Research Findings, 2025

The results of the one-sample T-test in the environmental dimension show that the role of political divisions in the spatial transformations of Tehran's Districts 18 and 19 has been generally weak, with significant negative effects observed in many factors. A more detailed review of the data reveals a significant difference from the baseline in factors such as erosion of soil quality (mean: 1.54), biodiversity (mean: 2.04), and waste management (mean: 2.32). These values indicate the unfavorable performance of political divisions in preserving the

environment and managing natural resources. For example, the erosion of soil quality and the reduction of biodiversity suggest that unbalanced and sprawling development in these areas has severely damaged natural ecosystems. Additionally, changes in water and energy consumption patterns (mean: 2.22) and the vegetation cover of surrounding areas (mean: 2.82) have also been negatively affected by unbalanced and sprawling development. These issues indicate that current political division policies and planning have failed to effectively address the environmental challenges of these

areas and have, in some cases, worsened conditions. In contrast, a positive and significant effect is observed for the factor of preventing the destruction of natural ecosystems (mean: 4.00), which indicates success in this specific area. This could be the result of implementing particular policies for the protection of natural zones. However, the overall status of the environmental dimension (overall mean: 2.62) is below average, showing that political divisions have been unable to effectively respond to the environmental challenges in most aspects. For instance, the status of environmental pollution from unbalanced development (mean: 3.16) and the creation of effective systems for pollution management (mean: 2.86) are at a moderate level, but this is insufficient to combat serious environmental challenges. Therefore, it is essential to design new policies to improve natural resource management, reduce pollution, and preserve biodiversity. This would help to mitigate the negative consequences of unbalanced and sprawling development and improve environmental quality in these districts.

Friedman Test Results

After determining the status of the role of political divisions in the spatial transformations of Tehran's Districts 18 and 19, with an emphasis on urban sprawl and the formation of marginalized communities, the Friedman test was used to prioritize and rank the status of the dimensions (economic, socio-cultural, physical, institutional-managerial, and environmental) based on their mean ranks. This test reveals the most and least favorable statuses from the perspective of the statistical sample (Table 8). Is there a significant difference between the status of the dimensions (economic, socio-cultural, physical, institutional-managerial, and environmental)? To examine the claim that the ranking of the dimensions' status is not uniform, the following hypotheses are proposed:

H0: The priority of the dimensions' status is the same (the means of the dimensions do not have a significant difference).

H1: At least two priorities are different (the means of the dimensions have a significant difference).

If the significance level of the test statistic is less than the significance level (0.05), hypothesis H1 is accepted.

Table 8. Results of the Friedman Test Examining the Priority of the Status of the Studied Dimensions

Variable Name	Mean Rank	Rank	Chi-Square Statistic	Degrees of Freedom	Significance Value
Economic	3.74	2	231.82	4	0.000
Physical	3.16	3			
Socio-Cultural	2.49	4			
Institutional-Managerial	4.43	1			
Environmental	1.17	5			

Source: Research Findings, 2025

The results of the Friedman test show that there is a significant difference between the various dimensions of the role of political divisions in the spatial transformations of Tehran's Districts 18 and 19. The Chi-Square statistic (231.82) and the significance level (0.000), which is less than 0.05, indicate the validity and reliability of the ranking. These results suggest that the different dimensions (economic, socio-cultural, physical, institutional-managerial, and environmental) hold different levels of importance and status from the perspective of urban experts and specialists.

Based on the results, the institutional-managerial dimension is recognized as the most

favorable dimension with the highest mean rank. This indicates that political divisions have performed relatively successfully in areas such as integrated management, supervision of unauthorized construction, and institutional planning. In contrast, the environmental dimension is identified as the least favorable dimension with the lowest mean rank. Problems such as soil quality erosion, reduction of biodiversity, and weak waste management have challenged this dimension.

Other results of the Friedman test showed that the institutional-managerial dimension was ranked first with a mean rank of 4.43, making it the most favorable dimension. This result

indicates that, from the perspective of urban experts and specialists, the role of political divisions in spatial transformations has had the greatest impact in the institutional-managerial domain. Following this, the economic dimension is in second place with a mean rank of 3.74, which demonstrates the importance of

Conclusion

This research aimed to measure and analyze the role of political divisions in the spatial transformations of Tehran's Districts 18 and 19, with an emphasis on urban sprawl and the formation of marginalized communities. The results indicate that these divisions have not been able to effectively manage spatial transformations, particularly regarding sprawl and the formation of marginalized areas. Across the economic, socio-cultural, physical, institutional-managerial, and environmental dimensions, the performance of political divisions has been average or below, and in many cases, has intensified inequalities and management problems. Furthermore, the lack of transparency and inefficiency of existing policies highlights the need for a review and improvement of managerial policies. These findings emphasize that to improve conditions, new mechanisms must be implemented in the design and execution of political divisions, especially in Tehran's marginalized districts.

The results of this study show both consistency and differences with the findings of domestic and international research.

Economic Dimension: Political divisions had a relative effect on economic transformations but showed weak performance in attracting investment and distributing job opportunities. The increase in land and housing prices, a negative effect of this structure, has fueled the process of marginalization, a finding that is consistent with the study by Herrera & Pino (2023).

Socio-Cultural Dimension: The increase in inequality and the lack of impact of political divisions on spatial justice in this research are comparable to the findings of Malekshahi et al. (2024).

Physical Dimension: Political divisions had a dual effect: improving access to public spaces and transportation on one hand, while on the other, fostering the growth of informal settlements and sprawl. These findings are similar to those of Kamali (2023).

this dimension in spatial transformations. The physical dimension is in third place with a mean rank of 3.16, the socio-cultural dimension is in fourth place with a mean rank of 2.49, and finally, the environmental dimension is in fifth place with a mean rank of 1.17 and is recognized as the weakest dimension.

Institutional-Managerial Dimension: Although the supervision of unauthorized construction and integrated management performed well, a lack of transparency in resource allocation and inefficient legal policies created problems, which is consistent with the studies of Kenny (2007).

Environmental Dimension: Political divisions not only failed to improve environmental conditions but, in some cases, caused soil quality erosion, a reduction in biodiversity, and weak waste management. These findings are comparable to the research by Larionov et al. (2020).

Overall, the results indicate that political divisions have been ineffective in managing sprawl and environmental challenges, a finding consistent with studies such as Ahmadipour et al. (2024) on ecosystem destruction and Hosseini and Amirian (2020) on urban sprawl. The present study's results also show that political divisions have not played an effective role in managing the spatial transformations of Tehran's Districts 18 and 19, and in some cases have even exacerbated spatial instability. The Friedman test results revealed that the institutional-managerial dimension had the greatest impact on spatial transformations in these areas, while the environmental dimension was in the weakest position. This ranking shows that while the political division system has been effective in the managerial and economic spheres, it has failed to demonstrate successful performance in the environmental and social spheres. These findings highlight the importance of reviewing political division policies.

Based on the research findings, the following main recommendations are proposed for the areas of study:

- 0 Comprehensive Review of Political Divisions: Conduct a comprehensive review of political divisions in Tehran's Districts 18 and 19, considering the real needs of the population and the spatial and infrastructural capacities, to reduce inequalities and

- increase coordination between different areas.
- 0 Establish an Integrated Management Center: Create an integrated management center to coordinate between different institutions such as the municipality, the Ministry of Interior, and environmental organizations, with the goal of reducing inconsistencies and increasing efficiency in local decision-making.
 - 0 Develop a Comprehensive Urban Plan: Prepare a comprehensive urban development plan focused on reducing sprawl, implementing regional management, and utilizing precise spatial-social analyses for long-term planning.
 - 0 Improve Public Transportation: Develop and improve public transportation networks in Districts 18 and 19, including increasing bus and metro lines and public taxis, to facilitate access to the city center and reduce pressure on marginalized areas.
 - 0 Control Migration: Implement controlled policies for migration to marginalized areas and collect accurate data on the incoming population to manage population growth and prevent problems resulting from uncontrolled migration.
 - 0 Equitable Resource Distribution: Fairly distribute financial resources and urban services such as education, health, and infrastructure between Districts 18 and 19 and other urban areas to reduce spatial and social inequalities.
 - 0 Invest in Basic Infrastructure: Invest in primary infrastructure such as water, electricity, sewage, health, and other basic services in marginalized areas to improve the quality of life and reduce the gap between central and marginalized areas.
 - 0 Create Local Economic Opportunities: Establish local economic opportunities, such as small factories, industrial workshops, and shopping centers in marginalized areas to reduce unemployment and prevent migration to central areas.
 - 0 Enforce Strict Laws: Enact and enforce strict laws to prevent illegal construction and continuously supervise their implementation to curb disorderly development and maintain an organized urban structure.
 - 0 Increase Public Participation: Increase the participation of residents of Districts 18 and 19 in urban decision-making and planning processes through the formation of local councils and the holding of public meetings, to strengthen a sense of belonging and create interaction between the community and local institutions.

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