International Journal of Sustainable Development and Planning
Vol. 19, No. 6, June, 2024, pp. 2285-2294
Journal homepage: http://iieta.org/journals/ijsdp

Assessing Regional Development Disparities in Wasit Governorate a Descriptive Analysis of Service Delivery and Resource Allocation

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https://doi.org/10.18280/ijsdp.190627

Received: 13 February 2024
Revised: 24 May 2024
Accepted: 3 June 2024
Available online: 24 June 2024

Keywords:
spatial development, regional disparity, resource allocation, development indicators, Wasit Governorate

ABSTRACT

The importance of spatial development within regional planning frameworks has long been recognized due to its profound impact on socio-economic inequalities and resource distribution. This research aims to identify and analyze spatial development disparities within Wasit Governorate, focusing on the implications of current development strategies and the allocation of resources. The primary objective of this study is to evaluate the developmental impact of the Regional Development Program on the administrative units within Wasit Governorate. Employing a descriptive analytical approach, the study uses various spatial development indicators to uncover the reasons behind the limited impact of service development and to propose effective mechanisms for resource allocation. The methodology involved several stages: data collection from sectoral departments, qualitative assessments through interviews with local officials and stakeholders, and the selection of spatial development indicators such as labor force, area of administrative units, and gaps in essential services (water, sewerage, health, education). Analytical techniques, including factor analysis and comparative analysis, were used to identify and understand the underlying factors affecting spatial development and to highlight disparities among the administrative units. The findings reveal significant disparities in development outcomes across different administrative units. Despite extensive implementation efforts, the developmental impact remains uneven, necessitating a reevaluation of the current distribution mechanisms. The study suggests a new allocation system that considers both population size and specific development needs of each unit to promote more balanced regional development. Key conclusions emphasize the need for revising current strategies to enhance developmental equity and efficiency. The research advocates for a multi-faceted allocation framework that integrates various planning standards, ensuring investments are both strategic and impactful. Recommendations include the enhancement of allocation methodologies, regular assessments of development status, leveraging local development capabilities, and strengthening stakeholder engagement to ensure inclusive and effective development strategies. By addressing these issues, the study aims to contribute to the broader discourse on regional development, providing a foundation for policymakers to refine strategies that lead to more balanced growth and reduced disparities across Wasit Governorate.

1. INTRODUCTION

The spatial dimension plays a crucial role in the comprehensive development process across various sectors. The study and measurement of development serve as essential tools for highlighting spatial disparities between regions. Throughout the twentieth century, numerous researchers have emphasized the importance of identifying and revealing these disparities prior to the implementation of any national development policies or programs to prevent exacerbation of these issues. For instance, Tigran selected specific indicators such as average life expectancy, average income, and average real estate prices for the Republic of Armenia to analyze these spatial disparities [1]. Mac Mashiri noted that the establishment of mechanisms to measure the outcomes of spatial development is crucial in determining the key success factors in South Africa [2].

In Iraq, a regional development program was introduced to enhance the spatial dimension by formulating provincial development strategies aimed at improving living standards through the implementation of economic and social development programs and fostering an investment-friendly environment [3, 4]. Wasit Governorate was chosen as the study area for this research due to its diverse administrative units and significant variations in development levels, making it an ideal case for examining spatial development disparities. The current state of spatial development in Wasit Governorate is characterized by uneven resource distribution and developmental outcomes, necessitating a thorough analysis to understand the underlying factors contributing to these

disparities.

This research focuses on assessing the developmental impact of the Regional Development Program on the administrative units of Wasit Governorate to identify the causes of its limited service development impact. The aim is to develop a mechanism that will guide future plans and policies in a more effective and equitable manner [5]. The study employs a descriptive analytical approach to examine and analyze the regional development projects in Wasit Governorate using planning indicators to measure the level of development.

In summary, the introduction highlights the significance of the spatial dimension in regional development, provides a rationale for selecting Wasit Governorate as the study area, and outlines the current state of spatial development in the region. This sets the stage for a detailed exploration of the disparities and the formulation of effective resource allocation mechanisms.

2. LITERATURE REVIEW

The study of spatial development disparities has been a significant area of focus in both domestic and international research. This section aims to compare existing literature on similar topics, highlighting the innovative aspects of this study and its theoretical and practical significance.

2.1 Domestic research

In Iraq, regional development programs have been introduced to enhance spatial planning by developing provincial strategies aimed at improving living standards and fostering an investment-friendly environment. Previous studies have analyzed the spatial disparities in different regions of Iraq, such as the evaluation of the urban structure of Al-Kut City and the assessment of development plans in Wasit Province [3, 4]. However, disparities in development outcomes remain a significant challenge. This study aims to address these challenges by proposing a new framework for resource allocation that considers both population size and specific developmental needs.

2.2 International research

Internationally, numerous studies have examined spatial development disparities. For instance, Tigran's research in Armenia utilized specific indicators such as average life expectancy, average income, and real estate prices to analyze spatial disparities [1]. Similarly, Mac Mashiri's work in South Africa emphasized the need for mechanisms to measure spatial development outcomes and identify key success factors [2]. Studies in Serbia and Armenia have provided methodological contributions to measuring regional development disparities, offering valuable insights that can be applied to the Iraqi context [1].

Additionally, research in other countries has provided useful frameworks for understanding and addressing spatial development issues. For example, studies in Europe have emphasized the importance of regional development for economic growth and social equity [6]. Similarly, research in South Africa has focused on developing frameworks for measuring spatial planning outcomes, which can be adapted to the Iraqi context to improve the effectiveness of regional development programs [2].

2.2.1 Innovative aspects of study

This study distinguishes itself by integrating both domestic and international perspectives, highlighting its innovative approach in proposing effective mechanisms for resource allocation. By employing a descriptive analytical approach and utilizing various spatial development indicators, this research aims to uncover the reasons behind the limited impact of service development in Wasit Governorate and propose practical solutions to enhance resource distribution.

2.2.2 Theoretical and practical significance

The theoretical significance of this study lies in its contribution to the understanding of spatial development dynamics and the factors influencing regional disparities. By integrating domestic and international research perspectives, the study provides a comprehensive analysis of the issues and proposes innovative solutions.

Practically, the study offers actionable recommendations for policymakers to enhance resource distribution mechanisms. The proposed framework aims to address the specific needs of each administrative unit, ensuring more effective and equitable development outcomes. These recommendations are expected to improve socio-economic stability and promote sustainable growth across Wasit Governorate.

In conclusion, this literature review underscores the importance of addressing spatial development disparities and highlights the innovative contributions of this study. By building on existing research and offering new insights, the study aims to contribute to the broader discourse on regional development and provide practical solutions for achieving balanced growth.

3. SPATIAL DEVELOPMENT

Development is the process through which society achieves comprehensive and integrated progress towards well-being in an efficient and effective manner. It relies on the optimal utilization of natural and human resources and is integral to national policies that aim to foster economic growth and social justice. This focus extends to human indicators that enhance the quality of urban life, promoting stability within cities [7]. Spatial disparity and inequality pose significant threats to economic and social activities [6], and the spatial organization of investments plays a crucial role in development efforts. The detection and analysis of developmental issues serve as critical indicators of spatial imbalances, guiding the establishment of new systems for future development [8].

Spatial development studies have gained importance as they seek to address the adverse effects of industrial concentration in specific areas, unlike others [9]. The primary challenge for development policies is to diminish spatial disparities and balance the development process [10]. This has sparked a new focus on enhancing planning processes within the field of spatial development, often leading to debates among economic and spatial development planners, as well as other experts [11].

Spatial development employs a scientific approach that examines three levels of spatial analysis: national, regional, and local. Regional development acts as a bridge between national objectives and local actions, representing the spatial dimension of national development and providing a framework for local development activities [12].

4. SPATIAL DEVELOPMENT INDICATORS

Spatial development indicators encompass a broad array of elements that reflect the development level within a specific area. These indicators serve as tools that quantify or qualify a particular condition. Coefficients provide a synthetic measure, aggregating selected indicators to realistically describe the current situation. They are employed to gauge progress, enhance conditions in targeted areas, identify zones requiring more focus, and offer a comprehensive overview of spatial development within a specified region [13].

Key elements among these indicators include national gross domestic product, education levels, healthcare quality, and infrastructure attributes such as road and electrical systems, unemployment rates, poverty indicators, equitable income distribution, environmental quality, water and air purity, population density, and green spaces [14]. These indicators are crucial in assessing the success of various initiatives and serve as vital communication tools between project managers and policymakers. They necessitate careful consideration and adoption in decision-making processes [15].

Spatial indicators have become integral in treating cities and their diverse sectors as unified analytical entities. This approach enables an understanding of development progress or decline across human, economic, urban, demographic, and environmental dimensions. The variance in these factors over time influences population movements and densities, attracting more residents to certain areas [16], thereby alleviating urban center congestion and guiding effective spatial investment strategies [17].

5. REGIONAL DEVELOPMENT PROGRAM BUDGET IN IRAQ

Iraq faces challenges due to structural discrepancies in its spatial economic framework, which have obstructed the implementation of development programs and their financial distributions, both spatially and sectorally [18]. To enhance the spatial distribution of investment allocations, these are aligned with the standards set forth in the provincial development plans and are consistent with the principles of administrative decentralization stipulated by the Constitution of the Republic of Iraq in 2005 [19]. Consequently, the responsibilities of sectoral ministries have evolved to include determining needs within the provinces and developing and executing plans and programs for infrastructure that significantly impact citizen welfare. Regional programs are designed to address economic, social, and environmental challenges [20], representing crucial administrative tools for delivering services across various sectors and achieving associated social and economic objectives [21, 22]. Initiated in 2006, this program allocates financial resources from the central government to the governorates based on population size and the relative significance of each governorate. These allocations are then distributed within the governorates to administrative units Figure 1.

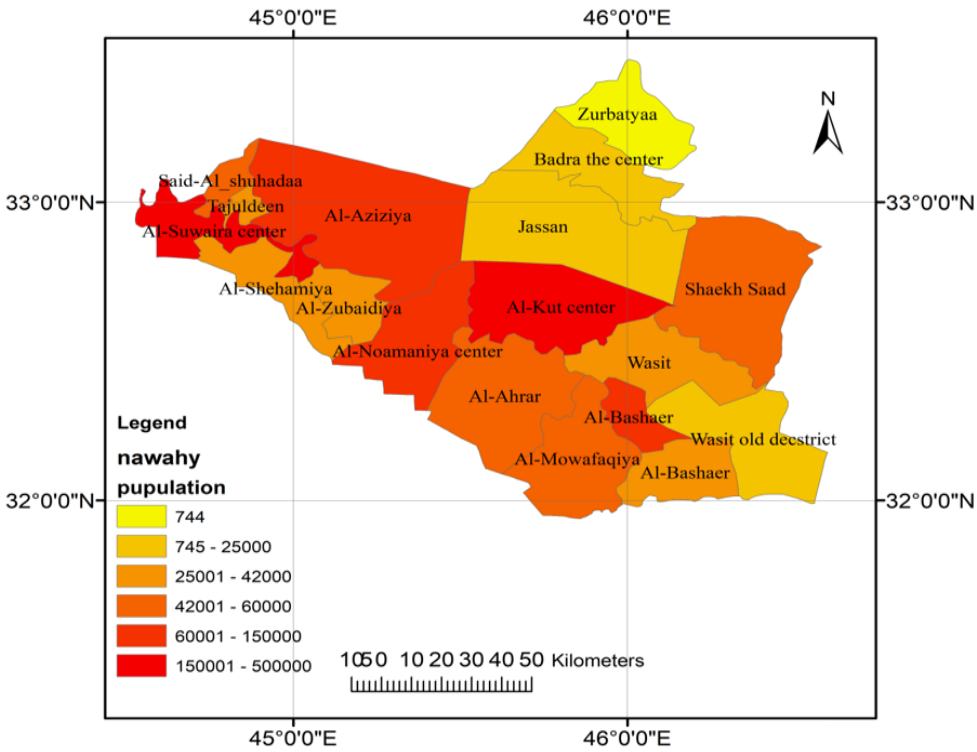

Figure 1. Population distribution according to administrative units of Wasit Governorate for the year 2022 [23]

Investment allocations within the Regional Development Program are spatially distributed across administrative units in the form of projects targeting various service sectors. These sectors include networks and stations for sewage, municipal works, general infrastructure, health services, drinking water, as well as roads, electricity, and building projects. Despite over fifteen years of ongoing implementation, the developmental impact of the program remains unclear, prompting a reassessment of the executed plans. This review aims to analyze the reality of spatial development, highlight disparities [24] between administrative units, and propose a new mechanism for the spatial distribution of investment allocations to expedite the development process.

6. RESEARCH METHODOLOGY

The study employed a descriptive analytical approach to examine the spatial development disparities within Wasit Governorate. This methodology was chosen due to its effectiveness in providing a comprehensive understanding of complex phenomena by describing and interpreting conditions as they exist. The research methodology involved several distinct stages:

Data Collection

- Quantitative Data: Data were collected by the researcher from various government sources, including the Wasit Governorate Planning and Follow-up Department and the Regional and Local Development Department at Wasit Planning Department. The quantitative indicators obtained included population density, infrastructure quality, and service delivery metrics.
- Qualitative Assessments: Interviews and consultations with local officials and stakeholders were conducted to gain insights into the challenges and effectiveness of current development programs.

Indicator Selection

The study utilized a set of spatial development indicators to assess and compare development levels across different administrative units. These indicators included:

- Labor Force: Represents the active working population within the administrative unit.
- Area of the Administrative Unit: Refers to the total geographical area covered by the administrative unit.
- Deficit Gap in Essential Services: Includes gaps in water, sewerage, health, and education services.
- Industrial Importance: Measured by the percentage of industrial establishments in the administrative unit compared to the total number in the entire province.

Analytical Techniques

- Factor Analysis: This statistical method was employed to identify various underlying factors that affect spatial development. It helped in understanding the interrelationships among the indicators and determining which factors were most influential in shaping development patterns.
- Comparative Analysis: Development levels of administrative units were compared using the collected data to highlight disparities and identify particularly underdeveloped areas.

Framework Development

Based on the findings from the data analysis, a new framework for resource allocation was proposed. This framework was designed to address the specific needs of each administrative unit, taking into consideration both their population size and developmental requirements.

Validation and Testing

- Simulation Tests: The proposed allocation framework was preliminarily tested through simulations to evaluate its potential effectiveness in reducing developmental disparities. These tests helped in identifying possible improvements and adjustments needed for the framework.
- Stakeholder Feedback: Feedback from stakeholders, including local officials and community members, was sought to refine the approach and ensure its relevance and applicability to local needs.

Quality Assurance Measures

To ensure the quality of the analysis, several measures were implemented:

- Data Verification: Data collected from governmental sources were cross-verified to ensure accuracy and reliability.
- Consistency Checks: Regular checks were performed to ensure that the data and analytical processes remained consistent throughout the study.
- Validation of Results: The results of the factor and comparative analyses were validated through multiple rounds of review and testing, incorporating feedback from stakeholders to enhance the robustness of the findings.

This methodological framework provided a rigorous basis for analyzing the developmental impact of the Regional Development Program and proposing effective modifications to enhance its efficacy. The approach ensured that the findings were grounded in empirical evidence and relevant to the local context, thereby supporting the development of actionable and sustainable policy recommendations.

7. PROPOSED STANDAEDS FOR DEVELOPMENT AT THE ADMINISTRATIVE UNIT LEVEL

Development measures vary based on the objectives and characteristics of a given initiative, whether they are economic or social, qualitative or quantitative. There is no universally ideal method or indicator for measuring spatial development disparities. Owing to the variety of development measures and their significant conceptual and practical diversity [25], researchers are afforded the flexibility to select the methodology that best suits their study. The factor analysis scale developed by Berry is regarded as a critical standard for interpreting spatial relationships and identifying factors that contribute to regional strengths or weaknesses [26].

To elucidate development disparities, the following indicators will be utilized:

1. Labor Force Aged 15 to 64 Years: Represents the active working population within the administrative unit.
2. Area of the Administrative Unit: Refers to the total geographical area covered by the administrative unit.
3. Deficit Gap in Heavy Sewerage and Rainwater Services: Calculated as the percentage of areas within the administrative unit not served by sewerage networks.
4. Deficit Gap in Municipal Services and Infrastructure: Measured by the percentage of streets within the administrative unit that are unpaved.
5. Educational Services Deficit Gap (School Buildings): The local planning standard requires the provision of one primary school per 2,500 residents and one secondary school per 10,000 residents, taking into account the spatial distribution of the population. The gap is calculated by subtracting the number of existing schools from the number required according to these standards.
6. Health Services Deficit Gap (Health Centers): Defined by the standard of providing one health center for every 10,000 residents. The gap is determined by subtracting the number of existing centers from the number required as per this standard.
7. Drinking Water Services Deficit Gap: The standard for drinking water services stipulates a provision of 350 liters per person per day. The gap is calculated by subtracting the actual amount of water supplied from the amount required according to this standard.
8. Area of Arable Agricultural Land: The percentage of arable agricultural land within the administrative unit relative to its

total land area.

9. Relative Industrial Importance: Measured by the percentage of industrial establishments in the administrative unit compared to the total number in the entire province.

These indicators are categorized into social indicators (items 3, 4, 5, 6, and 7) and economic indicators (items 1, 2, 8, and 9). The subsequent table, Table 1 displays the status of these development indicators at the administrative unit level within Wasit Governorate.

The table presented above indicates that the administrative units of Sayyid al-Shuhada and Old Wasit have not had their development indicators measured by the planning teams in the relevant sectoral departments due to their recent establishment. Consequently, these units will be excluded from the process of measuring development indicators to prevent the generation of unrealistic data for these units.

Furthermore, the organization of the nine development indicators is clearly divided into two categories:

1. Indicators with Positive Effects: These include the first, second, eighth, and ninth indicators. Administrative units achieving the highest rates in these indicators are ranked first, whereas those with the lowest rates are ranked last.

2. Indicators with Negative Effects: Comprising the third, fourth, fifth, sixth, and seventh indicators, the ranking logic is inverted compared to the positive indicators. Here, the administrative unit with the highest rate is placed last, establishing a reversed hierarchy for these specific indicators.

The hierarchical structure of development indicators across the administrative units of Wasit Governorate is detailed in Table 2.

Table 1. Development indicators in administrative units [23]

	Administrative Unit	Labor Force (Age 15-64)	Administrative Area (km²)	Sewerage Services Gap	Municipal Services Gap	Education Gap (School Buildings)	Health Sector Gap (Health Centers)	Drinking Water Gap	Percentage of Arable Land	Relative Industrial Importance
1	Kut	262897	1761	32	21.44	39	52	87	20	45
2	Suwayra	86150	427	15	64.44	54	25	51	98	8.2
3	Numaniyah	67275	1144	27.5	90.29	44	50	68	34	6.4
4	Aziziyah	60266	1431	50	44.15	48	36	0	95	7.3
5	Al-Hai	57418	324	46	87.47	58	20	32	49	14
6	Zubaidiyah	32508	226	51.5	-	-	-	-	-	-
7	Al-Ahrar	32114	479	85	71.19	45	83	159	75	4.7
8	Al-Muwafaqiya	32057	1226	72.5	43.26	33	16	91	57	2.5
9	Sheikh Saad	30257	1124	75	62.96	23	66	271	51	1.4
10	Al-Bashair	23117	1801	75	61.85	41	75	30	78	1.3
11	Al-Shehimiya	21174	641	85	89.46	21	100	0	77	-
12	Wasit Subdistrict	21124	920	80	61.13	50	75	15	87	1.1
13	Taj al-Din	19877	775	85	61.77	30	20	209	41	1.1
14	Al-Dabouni	14103	120	79.5	53.72	56	87	479	83	2.8
15	Badra	13668	742	80	24.8	36	50	30	52	1
16	Jassan	9213	940	57.5	65.52	29	0	92	16	2.2
17	Zurbatiyah	7845	1176	90	---	-	-	-	-	-
18	Kut	7126	1927	85	83.25	10	+66	494	97	1
19	Suwayra	409	649	60	85.53	40	0	250	40	-

Table 2. Ranking of development indicators in administrative units

	Relative Industrial Importance	Percentage of Arable Land	Drinking Water Gap	Health Sector Gap (Health Centers)	Education Gap (School Buildings)	Municipal Services Gap	Sewerage Services Gap	Administrative Area (km²)	Labor Force (Age 15-64)	Administrative Unit
1	Kut	1	3	3	1	8	8	7	16	1
2	Suwayra	2	15	1	10	15	5	5	1	3
3	Numaniyah	3	6	2	17	11	7	6	15	5
4	Aziziyah	4	4	5	4	13	6	1	3	4
5	Al-Hai	5	16	4	15	17	4	4	12	2
6	Zubaidiyah	6	14	12	12	12	11	10	8	6
7	Al-Ahrar	7	5	8	3	6	3	8	9	8
8	Al-Muwafaqiya	8	7	9	9	3	9	13	11	10
9	Sheikh Saad	9	2	9	8	10	10	3	6	11
10	Al-Bashair	10	13	12	16	2	13	1	7	14
11	Al-Shehimiya	11	9	11	6	14	10	2	4	12
12	Wasit Subdistrict	12	10	12	7	5	4	11	13	12
13	Taj al-Din	13	17	10	5	16	12	14	5	7
14	Al-Dabouni	14	11	11	2	7	7	3	10	13
15	Badra	15	8	6	11	4	2	9	17	9
16	Jassan	16	1	12	13	1	1	15	2	13
17	Zurbatiyah	17	12	7	14	9	2	12	14	14

The table presented above demonstrates that the rankings of the indicators used in analyzing each administrative unit within the governorate are not consistent. For instance, the city of Kut is ranked first in the labor force indicator, fourth in municipal services, ninth in relative industrial importance, and third in both the area and sewage services indicators. Similarly, Aziziya is ranked first in the water services indicator and thirteenth in the education sector indicator. This pattern varies across other administrative units as well, illustrating the diverse states of spatial development within each unit. This approach allows for a nuanced measurement of development across the governorate's administrative landscape.

7.1 Development degree scale

This metric is based on the hierarchical classification of regions (administrative units) according to the degree of development measured and the indicators used in the analysis [27]. Refer to the previously mentioned Table 2, which divides the administrative units into three distinct development categories based on the hierarchy established by each indicator:

- Category A: Comprises administrative units ranked from first to sixth, designated as rank (1).
- Category B: Includes administrative units ranked from seventh to eleventh, designated as rank (2).
- Category C: Encompasses administrative units ranked from twelfth to seventeenth, designated as rank (3).

By applying this classification and assigning a specific score to each administrative unit based on their performance in each indicator, we construct Table 3. This table details the scoring and categorization process, allowing for a clear comparison of development levels across the administrative units. The rank will be denoted by the symbol (R) and the degree of that rank by the symbol (S).

To determine the ranking of administrative units based on their degree of development, we multiply the rank (R) assigned to each indicator by the score (S) it achieves for each administrative unit. This calculation results in a developmental ranking for the units, where the unit ranking first is the one with the lowest composite score, indicative of higher development status. This ranking is detailed in Table 4.

The table above clearly categorizes the administrative units into three distinct development groups based on the degree of development scale. The units Al-Aziziyah, Al-Ahrar, Kut, Sheikh Saad, Suwayra, and Numaniyah (ranks 1-6) fall within the first development category, indicating the highest level of development. The units Al-Muwafaqiya, Al-Dabouni, Al-Shahimiya, Badra, and Hay (ranks 7-11) are placed in the second development category. Meanwhile, the units Jassan, Wasit district, Zubaidiyah, Bashaer, Taj al-Din, and Zurbatiyah (ranks 12-17) are classified within the third development category, reflecting the lower tiers of development as per the applied scale.

7.2 Development rank scale

The development rank scale is a metric used to assess spatial development among administrative units and represents the second proposed measure for evaluating development rankings. This scale is calculated by summing the products obtained from multiplying the frequency of each rank by its assigned point value across all indicators used in the analysis. This approach follows a tripartite rank classification as outlined in Table 2, where the first rank is valued at five points, the second rank at three points, and the third rank at one point. The formula for this calculation is R = P1n1 + P2n2 + P3*n3 [27], where 'R' represents the development rank score.

- P1 indicates the repetition of the first rank symbol, applicable to ranks one through six.
- P2 covers the repetition of the second rank symbol, spanning ranks seven to eleven.
- P3 pertains to the repetition of the third rank symbol, including ranks twelve to seventeen.

Table 3. The scores of development indicators according to administrative units

	Administrative Unit	Labor Force (Age 15-64)		Administrative Area (km²)		Sewerage Services Gap		Municipal Services Gap		Education Gap (School Buildings)		Health Sector Gap (Health Centers)		Drinking Water Gap		Percentage of Arable Land		Relative Industrial Importance	
		R	S	R	S	R	S	R	S	R	S	R	S	R	S	R	S	R	**S**
1	Kut	1	1	3	16	2	7	2	8	2	8	1	1	1	3	1	3	1	**1**
2	Suwayra	1	3	1	1	1	5	1	5	3	15	2	10	1	1	3	15	1	**2**
3	Numaniyah	1	5	3	15	1	6	2	7	2	11	3	17	1	2	1	6	1	**3**
4	Aziziyah	1	4	1	3	1	1	1	6	3	13	1	4	1	5	1	4	1	**4**
5	Al-Hai	1	2	3	12	1	4	1	4	3	17	3	15	1	4	3	16	1	**5**
6	Zubaidiyah	1	6	2	8	2	10	2	11	3	12	3	12	3	12	3	14	1	**6**
7	Al-Ahrar	2	8	2	9	2	8	1	3	1	6	1	3	2	8	1	5	2	**7**
8	Al-Muwafaqiya	2	10	2	11	3	13	2	9	1	3	2	9	2	9	2	7	2	**8**
9	Sheikh Saad	2	11	1	6	1	3	2	10	2	10	2	8	2	9	1	2	2	**9**
10	Al-Bashair	3	14	2	7	1	1	3	13	1	2	3	16	3	12	3	13	2	**10**
11	Al-Shehimiya	3	12	1	4	1	2	2	10	3	14	1	6	2	11	2	9	2	**11**
12	Wasit Subdistrict	3	12	3	13	2	11	1	4	1	5	2	7	3	12	2	10	3	**12**
13	Taj al-Din	2	7	1	5	3	14	3	12	3	16	1	5	2	10	3	17	3	**13**
14	Al-Dabouni	3	13	2	10	1	3	2	7	2	7	1	2	2	11	2	11	3	**14**
15	Badra	2	9	3	17	2	9	1	2	1	4	2	11	1	6	2	8	3	**15**
16	Jassan	3	13	1	2	3	15	1	1	1	1	3	13	3	12	1	1	3	**16**
17	Zurbatiyah	3	14	3	14	3	12	1	2	2	9	3	14	2	7	3	12	3	**17**

Table 4. Ranking of administrative units according to the degree of development scale

No.	Administrative Unit	Development Score
1	Aziziyah District	70
2	Al-Ahrar District	97
3	Kut District	103
4	Sheikh Saad Sub-district	125
5	Suwayra District	127
6	Numaniyah District	154
7	Al-Muwafaqiya District	168
8	Al-Dabouni Sub-district	168
9	Al-Shehimiya Sub-district	172
10	Badra District	182
11	Al-Hai District	199
12	Jassan Sub-district	212
13	Wasit Sub-district	212
14	Zubaidiyah District	220
15	Bashaer Sub-district	241
16	Taj al-Din Sub-district	260
17	Zarbatiyah Sub-district	283

'n' represents the points associated with each rank level.

- Kut: R = 5×5 + 3×3 + 1×1 = 35
- Suwayra: R = 6×5 + 1×3 + 2×1 = 35
- Numaniyah: R = 5×5 + 2×3 + 2×1 = 33
- Aziziyah: R = 8×5 + 0×3 + 1×1 = 41
- Al-Hai: R = 5×5 + 0×3 + 4×1 = 29
- Zubaidiyah: R = 2×5 + 3×3 + 4×1 = 23

By applying these calculations and comparing the results, the development ranks of the administrative units are derived and displayed in Table 5. It is observed that despite variations within the ranking sequences, the administrative units retain their respective development scores, as illustrated in the accompanying Figure 2.

Table 5. Ranking of administrative units according to the development rank scale

No.	Administrative Unit	Development Rank
1	Aziziyah District	41
2	Al-Ahrar District	35
3	Kut District	35
4	Suwayra District	35
5	Sheikh Saad Subdistrict	33
6	Numaniyah District	33
7	Al-Hai District	29
8	Al-Shehimiya Subdistrict	29
9	Badra District	29
10	Al-Mowafaqiya District	27
11	Al-Dabouni Subdistrict	27
12	Jassan Subdistrict	25
13	Zubaidiyah District	23
14	Wasit Subdistrict	23
15	Taj al-Din Subdistrict	21
16	Al-Bashair Subdistrict	21
17	Zarbatiya Subdistrict	17

As indicated in the data presented above, the administrative units of Wasit Governorate have consistently maintained their respective classifications within the three predefined development categories, as established by the previous two standards. This consistency is further illustrated in Figure 2. However, it is evident that there are significant variations in development levels among these units. These discrepancies underscore the necessity for implementing new and more effective mechanisms to address these differences. The primary objective of establishing the investment budget is to facilitate comprehensive development across various dimensions by strategically allocating financial resources among the governorates. This strategic distribution aims to mitigate development disparities and promote balanced regional growth.

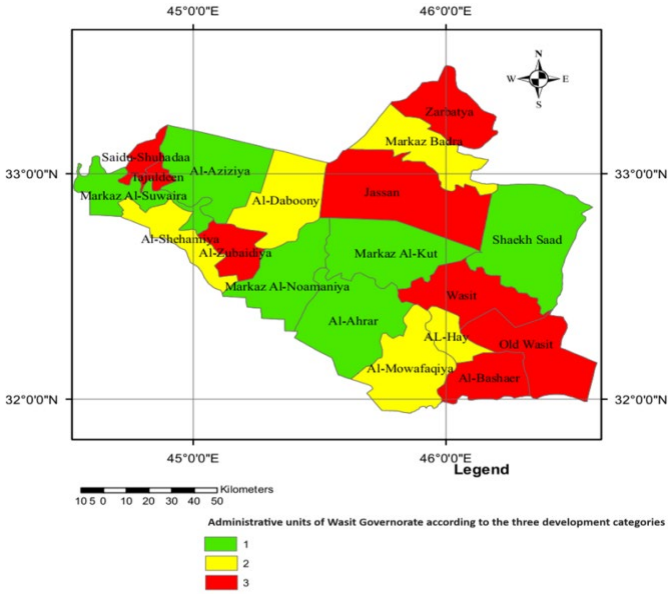

Figure 2. Administrative units of Wasit Governorate according to the three development categories

8. FINDINGS

The research conducted on the spatial development in Wasit Governorate provides in-depth insights into the effectiveness of the current Regional Development Program and its impact on the administrative units. This section summarizes the key findings derived from the comprehensive analysis of development indicators and resource allocation mechanisms. By closely examining the disparities and inefficiencies in the current system, the study lays the groundwork for proposing a more nuanced and equitable approach to development planning. The findings are structured into major themes as outlined below, each highlighting critical aspects of the developmental dynamics within the governorate.

8.1 Key findings

1. Persistent Development Disparities: The study reveals significant disparities in development outcomes across Wasit Governorate's administrative units. Despite ongoing efforts and the longstanding implementation of the Regional Development Program, the impact on development remains uneven and regionally unbalanced.
2. Inadequate Allocation Mechanisms: Current resource allocation strategies, predominantly based on population metrics, are shown to be insufficient for addressing the diverse developmental needs across the governorate. This misalignment has hindered effective development and contributed to the continuation of regional disparities.
3. Proposed New Framework: In response to the identified issues, the research proposes a new allocation framework that considers both the population size and specific developmental needs of each administrative unit. This approach is designed to ensure a more equitable

distribution of resources, tailored to the unique characteristics and requirements of each region.

4. Anticipated Outcomes: The proposed system is expected to reduce developmental disparities by aligning resource distribution with actual needs. This should lead to enhanced socio-economic stability and more sustainable growth across the entire governorate, fostering a more balanced regional development landscape.

These findings underscore the need for a strategic overhaul of the developmental policies and allocation practices currently in place, aiming to achieve a more equitable and effective distribution of resources that caters to the nuanced needs of Wasit Governorate's diverse administrative landscape.

9. DISCUSSION

The findings of this study reveal significant spatial development disparities within Wasit Governorate, aligning with and diverging from existing research in various ways. This section compares the study's results with previous local and international research, discussing consistencies, discrepancies, and exploring the possible reasons for these differences.

Comparison with Local Research:

- Urban Structure Analysis of Al-Kut City: Similar to the findings of the current study, previous research on Al-Kut highlighted significant disparities in urban development and resource distribution. Both studies indicate that despite efforts to implement regional development programs, the impact remains uneven [3].
- Evaluation of Development Plans in Wasit Province: Consistent with this study's results, previous evaluations have shown persistent development gaps across different administrative units in Wasit Province [4].

Comparison with International Research:

- Tigran's Research in Armenia: The use of indicators such as average life expectancy, income, and real estate prices in Armenia shows similar spatial development disparities as observed in Wasit. These findings suggest that certain indicators are universally applicable in assessing regional development disparities [1].
- Mac Mashiri's Work in South Africa: The need for mechanisms to measure spatial development outcomes and identify key success factors, as emphasized by Mashiri, is evident in the current study's findings as well. Both studies underscore the importance of robust measurement frameworks to address developmental disparities [2].

Consistencies:

- Shared Developmental Challenges: The study's results align with international findings in identifying common developmental challenges, such as unequal resource distribution and service delivery gaps. This consistency highlights the pervasive nature of spatial development issues across different contexts.
- Effectiveness of Development Indicators: The use of specific development indicators in both local and international research demonstrates their effectiveness in highlighting spatial disparities. These indicators provide a reliable basis for assessing and comparing regional development levels.

Discrepancies:

- Contextual Differences: The study's findings show unique challenges in Wasit Governorate that may not be as pronounced in other regions. For instance, local political and economic conditions significantly influence development outcomes, which may not be directly comparable to the situations in Armenia or South Africa.
- Differences in Development Strategies: The strategies employed in Wasit may differ from those used in other regions, leading to variations in development effectiveness. For example, centralized versus decentralized approaches to resource allocation can result in different developmental impacts.

Exploring the Reasons for Discrepancies:

- Structural Factors: Government policies and infrastructural disparities play a crucial role in shaping development outcomes. Variations in policy implementation and infrastructure quality can lead to significant differences in development across regions.
- Economic and Social Factors: Economic disparities and social conditions, such as population density and cultural factors, can influence the effectiveness of development programs. These factors must be considered when comparing development outcomes across different regions.

10. CONCLUSIONS

This study offers critical insights into the spatial development dynamics within Wasit Governorate, underpinned by a detailed analysis of development indicators and resource allocation mechanisms. Key conclusions drawn from the research emphasize the necessity for revising current strategies to enhance developmental equity and efficiency:

1. Variability of Development Methods and Indicators: The investigation underscores the diversity of methods available for assessing regional development, highlighting the importance of selecting indicators that align with specific developmental objectives. Despite the variety of tools at researchers' disposal, the findings consistently point to substantial disparities in developmental outcomes, suggesting that existing methodologies, while robust, require adaptation to local contexts to improve their effectiveness.
2. Impact of Population-Based Allocations: The study reveals that the current reliance on population metrics to distribute investment significantly contributes to ongoing developmental disparities among the administrative units of Wasit Governorate. This approach often overlooks the nuanced needs of individual regions, leading to suboptimal allocation of resources and perpetuating existing inequalities.
3. Need for a Multi-Faceted Allocation Framework: Reflecting on the challenges identified, the research advocates for the development of a new allocation mechanism within the Regional Development Program. This proposed framework would integrate multiple planning standards, facilitating a more nuanced and equitable distribution of resources. Such a system would not only consider population size but also the specific developmental needs and capacities of each administrative unit, ensuring that investments are both strategic and impactful.
4. Strategic Recommendations for Policy and Practice: To address the highlighted issues effectively, the study

recommends a strategic overhaul of policy and practice. This includes reevaluating allocation distributions to better match the actual needs of the regions, periodically assessing the developmental status to keep strategies responsive to changing conditions, and leveraging local developmental capabilities to enhance overall effectiveness.

These conclusions aim to contribute to the broader discourse on regional development, providing a foundation for policymakers to refine strategies that will lead to more balanced growth and reduced disparities across the Wasit Governorate. The study's recommendations, if implemented, are expected to foster a more equitable distribution of resources, catalyzing sustainable development and enhancing the quality of life for residents across the region.

11. RECOMMENDATIONS

Based on the findings of this study on spatial development in Wasit Governorate, several strategic recommendations are proposed to enhance the effectiveness of regional development initiatives. These recommendations are designed to address the identified disparities and improve the overall developmental impact within the governorate:

1. Enhanced Allocation Methodology: It is imperative to revise the current allocation methodology by integrating both demographic and developmental metrics into the decision-making process. This approach should balance population size with specific developmental needs, ensuring that resources are distributed more equitably and effectively across different administrative units, particularly those in the third development category such as Jasan, Wasit district, Al-Zubaidiyah, Al-Bashair, Taj al-Din, and Zurbatiyah.
2. Regular Development Assessments: Establish a systematic framework for regular assessments of development status across all administrative units. This would involve periodic reviews at defined intervals to ensure that all development initiatives are responsive to the current needs and conditions, allowing for timely adjustments in strategy and resource allocation.
3. Capitalize on Local Development Capabilities: Prioritize the utilization of local developmental capabilities within the administrative units. This approach encourages the leveraging of local resources and strengths in conjunction with centralized planning efforts, thereby fostering more sustainable and community-driven development.
4. Adaptive Planning and Implementation: Develop adaptive planning mechanisms that are flexible and responsive to the dynamic nature of regional development challenges. This involves creating planning processes that can quickly adjust to new data, changing conditions, and emergent opportunities, thereby enhancing the resilience and effectiveness of development strategies.
5. Strengthen Stakeholder Engagement: Enhance the involvement of all relevant stakeholders in the planning and implementation phases of development projects. This should include local governments, community organizations, private sector partners, and residents, to ensure that the development strategies are inclusive and comprehensively address the needs of all community members.

These recommendations are aimed at refining development policies and practices within Wasit Governorate to achieve a more balanced and inclusive growth. By implementing these strategies, it is anticipated that the governorate will witness significant improvements in its developmental outcomes, contributing to the overall socio-economic stability and prosperity of the region.

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