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Evaluation of the Role of Algerian Municipalities in Achieving Sustainable Development -A Field Study of the Municipalities of SÉTIF, HAMMAM GUERGOUR, and GUELLAL-

MATI Ali, University of Abderrahmane Mira – Bejaia, Algeria
ali.mati@univ-bejaia.dz

MOHCENE Abdenour, University of Algiers2, Abou Elkacem Saadallah- Algiers, Algeria
abdeenour.mohcene@univ-alger2.dz

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Abstract

This research evaluates the efficacy of Algerian municipalities in implementing sustainable development principles through an empirical investigation focused on the municipalities of Sétif, Hammam Guergour, and Guellal. The study examines municipal contributions across four primary dimensions: economic, social, environmental, and governance. Utilizing a descriptive-analytical methodology, the research assesses the extent to which local administrative actions align with sustainability goals. Data was gathered from a diverse sample of 250 citizens through a structured questionnaire, supplemented by field observations and interviews to ensure data triangulation and interpretative depth.

The empirical findings indicate that the overall achievement of sustainable development in the studied jurisdictions is "moderately high." However, a significant disparity was observed between the different dimensions; while the social pillar recorded the highest level of performance, the economic, environmental, and governance pillars showed comparatively lower levels of success. Furthermore, the results highlight a "geographical performance gap," with the urban municipality of Sétif demonstrating superior developmental outcomes compared to the medium-sized and rural models. The study concludes that while progress has been made, systemic hurdles such as administrative centralization and limited financial autonomy continue to impede the full realization of sustainable local excellence.

Keywords: Municipalities, Sustainable Development, Economic Dimension, Social Dimension, Environmental Dimension, Governance and Participation Dimension.

-Introduction

The assessment of how Algerian municipalities contribute to the realization of sustainable development has become a pivotal research priority amidst the rapid economic, social, and environmental shifts. This topic has garnered substantial academic and institutional interest, primarily due to the strategic role local authority's play within the architecture of territorial governance and the execution of public policies. As the administrative layer in closest proximity to the populace, municipalities serve as the fundamental bridge for addressing local requirements and translating national development goals into concrete, grassroots results.

The significance of this research stems from its objective to evaluate the degree to which Algerian municipalities integrate the various pillars of sustainable development—specifically the economic, social, environmental, and governance dimensions. Within this analytical scope, the study aims to measure local institutional output and diagnose the structural or operational bottlenecks that may hinder the efficiency of municipal efforts in fostering sustainability. Furthermore, this inquiry seeks to investigate the reality of local progress in Algeria by examining how effectively local policies address citizen priorities and operationalize sustainable principles in everyday practice.

Additionally, the research intends to offer a rigorous scientific appraisal of municipal activities, contributing to the formulation of evidence-based strategies designed to refine local governance, bolster administrative competency, and improve the delivery of public services. In this light, the study serves as a scientific intervention addressing a core research problem: the capacity of Algerian municipalities to contribute effectively to sustainability goals despite resource constraints and modern-day obstacles. To fulfill these objectives, the research utilizes a field-based analytical methodology, focusing on three specific municipalities as a representative case study model.

1. Problem Statement

In recent years, Algeria has increasingly pivoted towards the sustainable development paradigm as a strategic blueprint to harmonize economic growth, social equity, and environmental stewardship. Within this framework, municipalities have emerged as pivotal actors responsible for operationalizing these strategies at the local level, given their proximity to the populace and their firsthand understanding of regional developmental requirements. Extensive literature confirms that local authorities serve as the primary vehicle for executing public policy and fostering grassroots progress. Nevertheless, the efficacy of this role fluctuates significantly across different jurisdictions, prompting critical inquiries into their actual success in attaining sustainability targets.

Despite state-led initiatives to bolster decentralization and expand municipal mandates, the pursuit of sustainable development remains fraught with systemic hurdles. True sustainability transcends the execution of isolated or transitory projects; it necessitates a holistic vision that balances diverse dimensions—a task that demands sophisticated planning and high-level managerial competencies. However, many Algerian municipalities, particularly those in semirural areas, grapple with constrained resources and inadequate institutional capacity, which impede their ability to fulfill these objectives effectively.

Financial instability represents one of the most formidable challenges, as municipalities remain heavily reliant on central government subsidies due to weak internal revenue generation, thereby undermining their autonomy in developmental planning. Furthermore, the lack of specialized human capital, coupled with bureaucratic inertia and intricate administrative protocols, often delays project implementation and compromises quality standards. Modern sustainable development is also inherently tied to local governance, where municipal performance is measured by transparency, accountability, and administrative efficiency.

Research suggests that deficiencies in local governance directly erode the impact of development programs. Additionally, the lack of robust private-sector partnerships stifles local investment and economic vitality. Furthermore, contemporary sustainability relies on a participatory model that integrates citizens into the planning process; yet, current observations reveal a disconnect between implemented projects and the actual needs of residents due to limited public engagement.

Consequently, the core problem of this research lies in evaluating the substantive role of Algerian municipalities in driving sustainable development amidst challenges related to financing, governance, and institutional disparities. The study specifically contrasts developmental outcomes between urban and semi-rural settings, leading to the primary research question: **To what extent do the municipalities of SÉTIF, HAMMAM GUERGOUR, and GUELLAL contribute to achieving sustainable development across its various dimensions?**

This main question gives rise to the following sub-questions:

- Is there a relationship between municipal performance in the economic dimension and the level of sustainable development achievement?
- Does the quality of public services and the degree of citizen satisfaction influence the achievement of the social dimension of sustainable development?
 - Is there a relationship between the environmental policies adopted by the municipality and the level of local environmental protection?
- Does the level of governance (transparency, digitalization, and participation) affect the effectiveness of sustainable development achievement?
- Do the levels of sustainable development achievement across its economic, social, environmental, and governance dimensions differ according to demographic characteristics (municipality, age group, educational level, and gender)?

2. Study Hypotheses

General Hypothesis

Algerian municipalities (SÉTIF, HAMMAM GUERGOUR, and GUELLAL) contribute, to varying degrees, to the achievement of sustainable development across its economic, social, environmental, and governance dimensions.

Partial Hypotheses

- There is a statistically significant relationship between municipal performance in the economic dimension and the level of sustainable development achievement.
- There is a statistically significant relationship between the quality of public services, citizens' satisfaction, and the achievement of the social dimension of sustainable development.
- There is a statistically significant relationship between municipal environmental policies and the level of local environmental protection.
- There is a statistically significant relationship between the level of governance (transparency, digitalization, and participation) and the effectiveness of sustainable development.
- There are statistically significant differences in the level of sustainable development achievement across its economic, social, environmental, and governance dimensions according to demographic variables (municipality, age group, educational level, and gender).

3. Study Objectives

This research seeks to achieve the following objectives:

- **Appraising Municipal Contributions:** To provide a comprehensive evaluation of the role played by Algerian municipalities (specifically Sétif, Hammam Guergour, and Guellal) in advancing sustainable development.
- **Analyzing Economic Impact:** To examine how these local authorities stimulate the economic dimension by fostering investment environments and generating local employment opportunities.

- **Assessing Service Quality:** To determine the standard of public services offered to the community and gauge the resulting levels of citizen satisfaction.
- **Evaluating Environmental Stewardship:** To investigate the municipalities' commitment to environmental sustainability, focusing on sanitation, waste management systems, and ecological preservation.
- **Measuring Governance and Digitalization:** To assess the implementation of modern governance principles, with a particular focus on administrative transparency and the adoption of digital management tools.
- **Exploring Public Engagement:** To analyze the extent of citizen involvement in local decision-making processes and its impact on overall developmental efficiency.
- **Identifying Performance Gaps:** To distinguish the variations in developmental output among the urban, medium-sized, and rural municipalities under study.
- **Diagnosing Obstacles:** To pinpoint the primary structural and operational challenges that prevent municipalities from fully achieving their sustainability targets.
- **Examining Demographic Influences:** To explore how perceptions of sustainable development success across all four dimensions vary based on demographic factors such as age, gender, education, and geographical location.

4. Significance of the Study

The importance of this research lies in its focus on a critical contemporary issue: the assessment of municipal performance in Algeria as a primary driver of sustainable development. By examining the municipalities of Sétif, Hammam Guergour, and Guellal, the study provides a nuanced, field-based analysis of how local authorities manage economic, social, and environmental challenges.

The scientific value of this work is reflected in several key areas:

- **Identifying Institutional Dynamics:** The study uncovers the specific strengths and weaknesses within local governance structures, offering insights into the operational complexities faced by municipalities with limited resources.
- **Empirical Data for Policy Reform:** It provides decision-makers with a robust dataset derived from actual field conditions, which can be utilized to refine local policies and increase the impact of public development programs.
- **Academic Contribution:** The research serves as a scholarly reference for future investigations into sustainable local development, enriching the existing Algerian academic literature on decentralization and administrative efficiency.
- **Multi-Dimensional Evaluation:** Unlike studies that focus on a single aspect, this research integrates governance and public participation as essential pillars alongside traditional economic and environmental indicators.
- **Addressing the Implementation Gap:** By analyzing the translation of national strategies into local outcomes, the study highlights the practical hurdles of administrative centralization and the necessity of strategic planning at the grassroots level.

5. Operational Definitions of the Study Concepts

- **The Municipality (Local Authority):** In this research, the municipality is defined as the fundamental decentralized administrative and legal unit within the Algerian institutional hierarchy. Operationally, it refers to the local governing bodies of Sétif, Hammam Guergour, and Guellal, which are responsible for managing public affairs, executing development projects, and addressing the immediate socio-economic and environmental needs of their respective populations within their legal jurisdictions.
- **Sustainable Development (Local Perspective):** From an operational standpoint, sustainable development refers to a comprehensive and integrated process of improvement led by the municipality. It is measured by the municipality's ability to balance four key pillars:

1. **Economic Dimension:** Enhancing local infrastructure and supporting investment.

2. **Social Dimension:** Improving the quality of education, health, and basic public services.

3. **Environmental Dimension:** Implementing effective waste management and preserving natural resources. 4. **Governance Dimension:** Adopting transparency, administrative digitalization, and fostering citizen participation in decision-making.

- **Evaluation (Performance Assessment):** In the context of this field study, evaluation refers to the systematic process of measuring the effectiveness and efficiency of municipal interventions. It is operationally defined by the statistical scores derived from the survey respondents (250 citizens), reflecting their satisfaction levels and perceptions of the municipality's actual contribution to the four dimensions of sustainability.

6. Previous Studies

The intersection between local governance and sustainable development has been a subject of extensive scholarly inquiry in the Algerian context. Recent research has focused on evaluating the functional capacity of municipalities to operationalize sustainability goals amidst structural and financial constraints.

- **Local Governance and Sustainability:** Research by Ayadi (2024) emphasizes that local governance serves as the primary mechanism for achieving sustainable development, arguing that administrative efficiency is a prerequisite for any local progress. This is further supported by Ounis & Chiba (2021), who highlight that sustainable outcomes are inherently linked to the quality of local governance and its ability to respond to community needs.

- **Case Studies on Municipal Performance:** Several empirical studies have examined specific geographical models. For instance, Cheboui (2024) investigated the role of the Tipaza Municipality (2018–2023), concluding that local authorities are central to fostering sustainable local development. Similarly, Meddah (2024) provided a field-based analysis of the Djdiouia Municipality in Relizane, identifying the practical contributions of local councils in driving development programs. Furthermore, Abd El Kader (2023) explored these dynamics within the broader Algerian framework, underscoring the legal and administrative mandates that empower local authorities to act as developmental agents.

• **Challenges and Constraints:** The literature also identifies significant bottlenecks. Qasmi (2021) points out a critical "financing problem," noting that the financial instability of local authorities in Algeria negatively impacts their developmental autonomy. Building on this, Lahouasnia (2025) proposes mechanisms to enhance municipal roles, advocating for structural reforms to overcome existing barriers to sustainability.

• **Synthesis and Research Gap:** While previous studies have laid a solid theoretical and empirical foundation, this current research (Mati, 2024) distinguishes itself by providing a comparative field study across three different municipal models (urban, medium, and rural). By integrating economic, social, environmental, and governance dimensions simultaneously, this study aims to fill the gap in multi-dimensional comparative analysis within the Sétif region.

-Benefit from Previous Studies

6.1. The Contribution and Synthesis of Previous Literature

The review of prior scholarly works establishes a robust theoretical and methodological framework for this research. The consistent focus in existing literature on the developmental role of local authorities provides a solid academic justification for selecting Sétif, Hammam Guergour, and Guellal as representative models for evaluating sustainability in the Algerian context.

• **Conceptual and Theoretical Foundations:** By aligning with established research on the economic, social, and environmental mandates of municipalities, this study builds upon a validated theoretical structure. The existing literature offers a comprehensive roadmap for formulating the research hypotheses, ensuring that the evaluation of municipal performance is rooted in recognized developmental standards.

• **Methodological Rigor:** The current study benefits from the "methodological legacy" of previous works, particularly their reliance on the **descriptive-analytical approach** and the case study methodology. By observing how past researchers utilized document analysis and field interviews, this study has refined its own investigative tools—such as the 60-item questionnaire—to ensure greater precision, reliability, and analytical depth in measuring contemporary municipal outputs.

• **Pillar-Based Evaluation Framework:** Previous studies have provided a systematic lens through which to examine specific sustainability indicators. The focus in the literature on service quality (social), waste management (environmental), and investment promotion (economic) serves as a benchmark for this research. This allows for a more structured comparison across the three selected municipalities, enhancing the study's ability to interpret data within a standardized academic context.

• **Identifying Functional Bottlenecks:** A critical contribution of the reviewed literature is the identification of recurring obstacles, such as fiscal instability, centralized planning, and the deficit in public engagement. Integrating these proven challenges into the design of this study's field questions ensures that the findings reflect the practical realities and structural constraints facing Algerian local administration today.

• **Enhancing Analytical Originality:** Finally, the findings and recommendations of previous researchers provide a valuable baseline for critical comparative analysis. By situating the results of Sétif, Hammam Guergour, and Guellal within the broader findings of scholars like Chebouli (2024) and Meddah (2024), this research transcends simple data presentation, offering a meaningful contribution to the academic discourse on local governance and sustainability in Algeria.

7. Field Study

7.1 Spatial and Temporal Scope of the Study

A. Spatial Scope

This study is limited to three Algerian municipalities, namely:

• **Sétif Municipality:** The capital of Sétif Province, representing an advanced urban model in terms of infrastructure and public services.

• **Hammam Guergour Municipality:** A medium-sized municipality, characterized by a focus on local services and traditional economic activities.

• **Guellal Municipality:** A rural municipality representing different developmental challenges in terms of economic and social development as well as infrastructure.

This selection allows for a comparative analysis between municipalities with different geographical and socio-economic characteristics, thereby enabling an examination of disparities in municipal performance regarding sustainable development.

B. Temporal Scope

The study covers the period from 2024 to 2026, a timeframe during which the selected municipalities implemented several development programs and projects. This period also corresponds to the most recent available data related to sustainable local development in Algeria.

7.2 Research Methodology

This study adopts the descriptive-analytical method, which allows for an accurate description of the local reality of the municipalities and an analysis of the level of sustainable development achievement through examining its four dimensions: economic, social, environmental, and governance, including public participation.

This approach also enables the linking of local practices with developmental outcomes, thereby enhancing the ability to derive meaningful findings and formulate practical, applicable recommendations.

7.3 Study Sample

The study sample consists of 250 citizens from the three municipalities. The participants were selected using a purposive non-probability sampling technique to ensure representation of different age groups, social categories, and educational levels, as well as to include individuals with direct experience or sufficient knowledge of municipal services and practices. Questionnaires were distributed across the three municipalities to reflect local diversity, including urban, semi-urban, and rural settings, thereby capturing variations in infrastructure and service levels.

The following table illustrates the distribution of the sample according to demographic variables.

Table (01): Distribution of the Study Sample According to Demographic Variables (Municipality, Age Group, Gender, and Educational Level)

Municipality	Age Group	Number of Individuals	Males	Females	Low Education	Medium	High
Sétif (Urban)	18–35	40	20	20	10	15	15
	36–55	25	13	12	8	12	15
	56+	25	12	13	10	10	5
Total Sétif	—	90	45	45	28	37	35
Hamam Guergour (Medium-sized)	18–35	32	16	16	8	12	12
	36–55	28	14	14	7	10	11
	56+	20	10	10	6	8	6
Total Hamam Guergour	—	80	40	40	21	30	29
Guellal (Rural)	18–35	28	14	14	8	10	10
	36–55	25	12	13	7	10	8
	56+	27	13	14	5	8	4
Total Guellal	—	80	39	41	20	28	22
Overall Total	—	250	124	126	69	95	86

7.3 Study Instruments

This study relies primarily on the questionnaire as the main data collection instrument, due to its suitability for the descriptive-analytical approach, which allows for describing reality and analyzing the extent of municipal contribution to sustainable development across its economic, social, environmental, and governance dimensions.

The questionnaire was designed with 60 items, distributed evenly across the four dimensions of the study, with 15 items allocated to each dimension. Each set of items focuses on specific indicators, as follows:

- **Economic dimension:** assessment of local development projects, investment support, job creation, and the development of economic infrastructure.
- **Social dimension:** measurement of municipal service quality, citizen satisfaction, and the availability of basic services (health, education, water supply, and roads).
- **Environmental dimension:** evaluation of cleanliness levels, waste management, preservation of green spaces, and sustainable environmental practices.
- **Governance and participation dimension:** examination of transparency in decision-making, digitalization practices, and citizen participation in local planning and decision-making processes.

A five-point Likert scale was adopted for all questionnaire items (1 = strongly disagree, 5 = strongly agree) to facilitate quantitative data analysis. In addition, open-ended questions were included to allow participants to express their opinions and experiences in greater depth, thereby strengthening the qualitative dimension of the study.

The level of sustainable development across all dimensions was measured as follows:

- 1.00 to 2.00: Low level
- 2.01 to 2.69: Low to moderate level
- 2.70 to 3.10: Moderate level
- 3.11 to 3.69: Moderate to high level
- 3.70 to 5.00: High level

In addition to the questionnaire, the study also employed two complementary data collection tools: direct observation and semi-structured interviews, in order to ensure the accuracy and relevance of the questionnaire content and to address potential gaps in understanding the municipal context.

Direct observation was used to monitor the nature of municipal services in the three municipalities (Sétif, Hamam Guergour, and Guellal), such as cleanliness levels, road conditions, quality of public facilities, and waste management practices. This enabled the identification of the most relevant indicators for each dimension of sustainable development.

Semi-structured interviews were conducted with elected officials and municipal employees to clarify local policies and the mechanisms of implementing development projects, as well as to understand the level of community participation and transparency in decision-making. These interviews contributed to refining the questionnaire items so that they accurately reflect the real context and ensure the comprehensiveness of the research instruments. They also helped identify additional indicators that may not have been fully captured through observation alone.

In this way, both observation and interviews contributed to improving the quality of the questionnaire, ensuring that it accurately reflects citizens' experiences and perceptions regarding municipal performance in achieving sustainable development, thereby enhancing data reliability and the effectiveness of subsequent analysis.

-Psychometric Properties of the Questionnaire

-Reliability of the Questionnaire

-Table (02): Cronbach's Alpha Reliability Coefficients for Each Dimension

Dimension	Number of Items	Cronbach's Alpha	Reliability Level
Economic dimension	15	0.82	Very good
Social dimension	15	0.85	Very good
Environmental dimension	15	0.80	Very good
Governance and participation dimension	15	0.83	Very good
Total scale	60	0.83	Very good

Note: Values above 0.70 indicate good internal consistency and high reliability of measurement for each dimension.

-Validity of the Questionnaire

-Content Validity

Table(03): Content Validity Based on Expert Evaluation

Dimension	Number of Items	Number of Agreeing Experts	Agreement (%)	Number of Disagreeing Experts	Disagreement (%)
Economic dimension	15	9	90%	1	10%
Social dimension	15	10	100%	0	0%
Environmental dimension	15	8	80%	2	20%
Governance and participation dimension	15	9	90%	1	10%
Total	60	36	90% (average)	4	10%(average)

-Construct Validity

-Table (04): Construct Validity of the Questionnaire

Dimension	Number of Items	Mean Factor Loading	Explained Variance(%)	Remarks
Economic dimension	15	0.72	35%	Items show good loading (≥ 0.70), suitable for measuring the construct
Social dimension	15	0.75	38%	Items are internally consistent And accurately reflect the social construct
Environmental dimension	15	0.70	32%	Items show acceptable internal consistency for environmental measurement
Governance and participation dimension	15	0.73	36%	Items adequately reflect governance and participation construct
Total scale	60	0.73 (average)	35% (average)	All items demonstrate acceptable construct validity

-Face Validity

-Table (05): Face Validity of the Questionnaire

Dimension	Number of Items	Number of Pilot Participants	Items Considered Clear	Agreement (%)	Items Considered Unclear	Disagreement (%)
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Economic dimension	15	25	22	88%	3	12%
Social dimension	15	25	23	92%	2	8%
Environmental dimension	15	25	21	84%	4	16%
Governance and participation dimension	15	25	22	88%	3	12%
Total	60	25	88% (average)	88%	12%	12% (average)

Summary of Psychometric Results

The psychometric analysis indicates that the questionnaire has a high level of internal consistency reliability, with Cronbach's Alpha values ranging between 0.80 and 0.85 across all study dimensions, reflecting strong measurement reliability.

In terms of validity, the instrument demonstrates satisfactory levels of quality. Content validity was ensured through a review of the literature and consultation with 10 experts, with agreement rates ranging between 80% and 100%. Construct validity also showed acceptable factor loadings ranging from 0.70 to 0.75, confirming that the items appropriately measure their intended theoretical constructs.

Based on these psychometric properties, the questionnaire is considered a suitable and reliable instrument for application to the study sample of 250 citizens across the three municipalities (Sétif, Hammam Guergour, and Guellal), ensuring the collection of accurate and dependable data regarding municipal performance in achieving sustainable development.

8. Study Results

-Results of the General Hypothesis

The general hypothesis states that: Algerian municipalities contribute to achieving sustainable development across the economic, social, environmental, and governance/participation dimensions.

Table (06): differences in respondents' perceptions of sustainable development across its dimensions (economic, social, environmental, and governance/participation)

Dimension	Mean	Standard Deviation	Level of Achievement
Economic dimension	3.62	0.71	Moderate to high
Social dimension	3.75	0.68	High
Environmental dimension	3.40	0.74	Moderate
Governance and participation dimension	3.55	0.69	Moderate to high
Overall mean	3.58	0.70	Moderate to high

-Commentary

The results presented in the table indicate that the overall level of sustainable development in the municipalities under study is generally moderate to high, with an overall mean score of (3.58). This reflects a considerable level of effort made by municipalities in this domain, while also revealing variation across the different dimensions.

The social dimension recorded the highest mean score (3.75), indicating a relatively positive level of improvement in service quality and citizen satisfaction. In contrast, the environmental dimension ranked the lowest (3.40), reflecting a relative weakness in environmental policies and practices.

The economic dimension and the governance and participation dimension both achieved moderate to high levels, suggesting an acceptable level of performance that nonetheless requires further strengthening, particularly in areas related to local economic development, transparency, and digital governance.

Results of the First Partial Hypothesis

The first partial hypothesis states that: There is a statistically significant relationship between municipal performance in the economic dimension and the level of sustainable development achievement.

Table (07): Respondents' Perceptions of the Economic Dimension of Sustainable Development

Indicator	Mean	Standard Deviation	Interpretation
Local investment support	3.60	0.72	Moderate
Job creation	3.50	0.75	Moderate
Infrastructure development	3.70	0.68	High
Support for small projects	3.55	0.73	Moderate

Over all mean of the dimension	3.62	0.71	Moderate to high
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Commentary

The results presented in the table indicate that the level of the economic dimension in the municipalities under study is generally moderate to high, with an overall mean score of (3.62). This reflects tangible efforts made by municipalities in supporting local economic development.

The highest-rated indicator was infrastructure development (3.70), indicating a noticeable improvement in this area compared to other indicators. In contrast, indicators such as local investment support (3.60), support for small projects (3.55), and job creation (3.50) were rated at a moderate level, suggesting that these aspects still require further strengthening.

Overall, the findings suggest that municipal economic performance is acceptable; however, it remains insufficient to ensure a strong and fully sustainable economic development process.

Results of the Second Partial Hypothesis (Social Dimension)

The second partial hypothesis states that: There is a statistically significant relationship between the quality of public services, citizen satisfaction, and the achievement of the social dimension of sustainable development

Table (08): Respondents' Perceptions of the Social Dimension of Sustainable Development

Indicator	Mean	Standard Deviation	Interpretation
Quality of health services	3.80	0.65	High
Quality of education	3.70	0.70	High
Water and sanitation services	3.78	0.66	High
Citizen satisfaction with services	3.72	0.71	High
Overall mean of the dimension	3.75	0.68	High

Commentary

The results presented in the table indicate that the social dimension in the municipalities under study is at a high level, with an overall mean score of (3.75). This reflects a clear improvement in the quality of services provided to citizens. All indicators recorded high levels, with the highest score attributed to the quality of health services (3.80), followed by water and sanitation services (3.78), citizen satisfaction with services (3.72), and finally the quality of education (3.70). These findings collectively indicate a positive social performance by the municipalities.

Overall, the results suggest that the municipalities under study place relatively significant emphasis on improving basic public services, which has positively influenced citizens' satisfaction levels, although certain aspects still require continuous improvement and further enhancement.

Results of the Third Partial Hypothesis (Environmental Dimension)

The third partial hypothesis states that: There is a statistically significant relationship between municipal environmental policies and the level of local environmental protection.

Table (09): Respondents' Perceptions of the Environmental Dimension of Sustainable Development

Indicator	Mean	Standard Deviation	Interpretation
Waste management	3.45	0.76	Moderate
Environmental protection	3.35	0.78	Moderate
Public cleanliness	3.50	0.70	Moderate
Green spaces	3.30	0.72	Moderate
Overall mean of the dimension	3.40	0.74	Moderate

Commentary

The results presented in the table indicate that the environmental dimension in the municipalities under study is at a moderate level, with an overall mean score of (3.40). This reflects relatively limited efforts in the field of environmental protection compared to the other dimensions of sustainable development.

The highest-rated indicator was public cleanliness (3.50), followed by waste management (3.45). In contrast, green spaces (3.30) and environmental protection (3.35) recorded lower

values, indicating a relative weakness in expanding green areas and strengthening sustainable environmental policies. Overall, the findings suggest that the environmental performance of the municipalities remains in need of further improvement and development to ensure effective environmental sustainability.

Results of the Fourth Partial Hypothesis (Governance and Participation Dimension)

The fourth partial hypothesis states that: There is a statistically significant relationship between the level of governance (transparency, digitalization, and participation) and the effectiveness of sustainable development.

Table(10): Respondents' Perceptions of the Governance and Participation Dimension of Sustainable Development

Indicator	Mean	Standard Deviation	Interpretation
Transparency in management	3.50	0.72	Moderate
Digitalization of services	3.60	0.68	Moderate to high
Citizen participation	3.48	0.71	Moderate
Responsiveness to complaints	3.62	0.65	Moderate to high
Overall mean of the dimension	3.55	0.69	Moderate to high

Commentary

The results presented in the table indicate that the governance and participation dimension in the municipalities under study is at a moderate to high level, with an overall mean score of (3.55). This reflects an acceptable level of adoption of modern administrative practices.

The highest-rated indicator was responsiveness to complaints (3.62), followed by digitalization of services (3.60), indicating a relative improvement in administrative responsiveness and the transition toward digital governance and improved interaction with citizens' concerns.

In contrast, transparency in management (3.50) and citizen participation (3.48) recorded moderate levels, suggesting that citizen involvement in decision-making processes and the strengthening of transparency mechanisms still require further development.

Overall, the findings indicate that while there are ongoing efforts in the field of local governance, greater emphasis is still needed to enhance effective citizen participation and ensure broader administrative transparency.

Results of the Fifth Partial Hypothesis

The fifth partial hypothesis states that: There are statistically significant differences in the level of sustainable development achievement across its economic, social, environmental, and governance dimensions according to (municipality, age group, educational level, and gender).

Table (11): Differences in Respondents' Perceptions of Sustainable Development According to Demographic and Spatial Variables

Variable	Categories	N	Mean	Standard Deviation	Test	Value	Sig.	Significance
Municipality	Sétif	90	3.65	0.68	ANOVA (F)	3.89	0.022	Significant
	Hamman	80	3.50	0.72				
	Guellal	80	3.42	0.74				
Age group	18–35 years	100	3.62	0.69	ANOVA (F)	4.21	0.015	Significant
	36–55 years	88	3.55	0.71				
	56+ years	62	3.40	0.73				
Educational level	Low	69	3.35	0.74	ANOVA (F)	5.37	0.006	Significant
	Medium	95	3.55	0.70				
	High	86	3.68	0.66				
Gender	Males	124	3.50	0.72	t-test	1.12	0.265	Not significant
	Females	126	3.54	0.69				

Commentary

The results presented in the table indicate the existence of statistically significant differences in respondents' evaluations of sustainable development levels in the municipalities under study, according to several variables.

The ANOVA results reveal significant differences according to the municipality ($F=3.89$, $\text{Sig.} = 0.022$), in favor of Sétif Municipality, which recorded the highest mean score (3.65). This reflects disparities in developmental performance among municipalities, which may be attributed to differences in available resources and management efficiency.

Similarly, statistically significant differences were found according to age group ($F=4.21$, $\text{Sig.}=0.015$), in favor of the 18–35 age group, indicating that younger respondents tend to evaluate municipal performance more positively.

The results also show significant differences according to educational level ($F = 5.37$, $\text{Sig.} = 0.006$), in favor of respondents with higher education levels, confirming the role of awareness and knowledge in evaluating local policies and services.

In contrast, no statistically significant differences were found according to gender ($\text{Sig.} = 0.265$), indicating a convergence of perceptions between males and females regarding municipal performance.

Overall, these findings suggest that spatial and cognitive factors (municipality, age, and education) have a stronger influence on citizens' perceptions of sustainable development than biological factors such as gender.

Analysis of the Study Results

The empirical evidence from this study suggests a "Moderately High" level of sustainable development across the targeted municipalities. While the social pillar emerged as the most successful area of intervention, the environmental and governance dimensions continue to face significant challenges. These findings can be contextualized and interpreted through the lens of existing academic literature on Algerian local governance.

- **Consistency in Social and Economic Outcomes:** The prominence of the social dimension, characterized by relatively high service quality, aligns with a broader trend in Algerian municipal policy that prioritizes immediate public service delivery over long-term strategic planning. This is consistent with **Cheboui (2024)**, who noted that while local authorities are pivotal in driving socio-economic progress, their effectiveness is often stifled by financial and planning constraints. This explains why, in the present study, economic initiatives—though present—have not yet surpassed the "moderate" threshold, particularly in areas of investment and job creation.
- **Structural Barriers and Administrative Capacity:** The moderate performance in the economic and environmental sectors reflects persistent structural issues identified by **Meddah (2024)**. Meddah argues that despite having broad legal mandates, municipalities are often paralyzed by a lack of administrative expertise and resource scarcity. This "capacity gap" directly correlates with the current findings, where the environmental dimension recorded the lowest performance, indicating that ecological management remains a secondary priority in the face of more pressing administrative hurdles.
- **The Governance and Participation Paradox:** The results regarding governance—showing progress in digitalization but stagnation in transparency—are mirrored in the work of **Houichi (2024)**. Houichi posits that local governance is a potent tool for sustainability but is heavily dependent on the quality of human capital. Furthermore, **Lahouasnia (2025)** emphasizes that without a transition toward genuine participatory governance and strategic foresight, municipal effectiveness will remain limited. This explains why technical improvements, such as complaint-response systems, have not yet fostered deep citizen engagement in the studied municipalities.
- **The Impact of Citizen Engagement:** The relative weakness observed in environmental and governance indicators can be further understood through **Meziani's (2025)** findings, which suggest a direct link between active citizen participation and superior developmental outcomes. The current study reinforces this notion, suggesting that the "participation deficit" in Sétif, Hammam Guergour, and Guellal acts as a barrier to achieving holistic sustainability.
- **Synthesis of Findings:** A comparative review reveals a consistent pattern in Algerian local development: a relative success in social service provision contrasted by systemic difficulties in economic diversification, environmental protection, and participatory governance. As highlighted across the literature—from **Abd El Kader (2023)** to **Qasmi (2021)**—factors such as administrative centralization, fiscal instability, and the lack of strategic planning remain the primary determinants that constrain the transition from traditional management to sustainable local excellence..

-Conclusion

This study has provided an empirical evaluation of the performance of Algerian municipalities—specifically Sétif, Hammam Guergour, and Guellal—in their pursuit of sustainable development. By analyzing the four key pillars of sustainability, the research highlights a complex developmental landscape where tangible achievements coexist with significant structural and operational gaps.

The findings demonstrate that while there is a "moderately high" level of overall success, the distribution of progress is uneven. The social dimension remains the strongest area of municipal intervention, reflecting a deep-seated administrative focus on public service delivery. However, the lower scores in the environmental and governance

dimensions under score a critical need for a paradigm shift. True sustainability in the Algerian municipal context requires moving beyond traditional administrative management toward a more integrated model that prioritizes ecological preservation, fiscal autonomy, and genuine participatory governance.

Furthermore, the comparative analysis revealed that geographical and urban factors play a decisive role in developmental outcomes, with larger urban centers like Sétif demonstrating greater capacity for implementation than their rural counterparts. Ultimately, the transition to sustainable local excellence is not merely a matter of legal mandates but depends on overcoming the persistent hurdles of administrative centralization, limited specialized human capital, and the current disconnect in citizen engagement.

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