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Positive Statistics

Published Research Papers

Author: Ahmed Jamal Al-Jassar

Innovator of Positive Statistics Methodology

2025

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Preface

This volume brings together a collection of research studies that apply and further develop the Positive Statistics Methodology, an innovative branch of applied statistics that focuses on measuring empowerment, improvement, and positive advancement. The works included here represent both theoretical foundations and empirical applications across diverse domains, including demographic analysis, education, infrastructure, and sustainable development.

All of these studies have been previously published on the Social Science Research Network (SSRN), where they have been formally indexed and disseminated through several specialized electronic journals within the platform, including the *Educational Sociology eJournal*, the *Built Environment eJournal*, the *Sustainability & Economics eJournal*, and the *Development Economics eJournal*. Such classification and distribution have enhanced their academic visibility and facilitated broader engagement with scholars, practitioners, and institutions worldwide.

The purpose of compiling these studies into a single volume is to provide researchers, academics, and policymakers with a comprehensive reference that demonstrates the dual role of Positive Statistics as both a rigorous scientific framework and a practical analytical tool. Each study illustrates, through methodological clarity and careful analysis, how this approach shifts the focus of inquiry from diagnosing decline to tracing trajectories of progress, empowerment, and improvement.

The organization of this volume is designed to guide the reader progressively—from empirical applications based on national data sources, such as census results and development indicators, to theoretical reflections that consolidate the methodological and philosophical underpinnings of Positive Statistics. Taken together, these contributions aim to establish Positive Statistics as a recognized branch of applied statistics, offering innovative perspectives and tools aligned with contemporary research and policy needs.

It is my hope that this book will inspire further inquiry, stimulate scholarly debate, and contribute to the growing recognition of Positive Statistics as an emerging scientific school of thought with both local and global relevance.

Baghdad – 2025
Ahmed Jamal Al-Jassar
Innovator of Positive Statistics Methodology

Table of Contents

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An Analytical Study of Iraq's Demographic Indicators Based on the Positive Statistics Methodology Based on the Results of the 2024–2025 General Population and Housing Census in Iraq

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Abstract

Demographic statistics serve as essential foundations for policy planning, particularly in countries undergoing economic and social transitions such as Iraq. The 2024–2025 General Population and Housing Census marked a pivotal moment for assessing the population landscape and informing future, knowledge-based decisions.

This study introduces an analytical framework grounded in the Positive Statistics methodology, aiming to shed light on demographic capabilities and developmental opportunities—unlike the conventional approach which often emphasizes negative diagnosis. It analyzes census indicators from multiple angles, including age structure, gender balance, urban–rural distribution, dependency ratios, and provincial disparities.

The findings reveal that Iraq is currently experiencing a demographic opportunity phase, with more than 60% of the population within working age, a balanced gender ratio, and an expanding urban setting.

The study recommends adopting Positive Statistics as a conceptual planning framework, integrating population results into national development strategies, and expanding cooperation between government entities and research institutions to develop forward-looking models based on these indicators.

Keywords: Iraq, Demographic Indicators, Positive Statistics, Planning, Sustainable Development, Decentralization

1. Introduction

Population censuses are among the most critical strategic tools for countries to formulate their public policies, as they provide a centralized, objective database to understand the social and economic realities and diagnose development needs.

In Iraq, the results of the 2024–2025 General Population and Housing Census offered the first reliable dataset after years of institutional and structural challenges. However, demographic analysis in Iraq and the Arab world has traditionally focused on problems—rapid population growth, poverty, weak infrastructure—while ignoring the positive capacities embedded within the data (Abu Zaid, 2018).

This study presents a new analytical approach titled “Positive Statistics”, which stems from the foundations of positive psychology. Combined with long field experience in social and population analysis, this approach redefines statistics as tools for empowerment and planning, rather than merely for documentation or crisis reporting.

2. Research Objective

The study aims to apply this approach in reading the current demographic landscape of Iraq and to offer an integrated analytical vision that supports public policy and proposes practical ways to transform indicators into opportunities for employment, empowerment, and spatial justice.

3. Research Problem

Despite the great value of census data in Iraq, its use has remained limited to descriptive or alarmist approaches, which highlight weaknesses such as unemployment, poverty, and inequality among provinces.

The data has not been effectively used to produce developmental scenarios, or to connect demographic structure with education, economy, or labor markets.

Main research question:

How can the Positive Statistics methodology be used to transform the 2024 census indicators into inputs for national planning that focuses on potentials rather than crises?

Sub-questions include:

- What development opportunities exist within Iraq's age structure?
- How can gender balance support women's economic participation?
- What is the link between increasing urbanization and fair urban planning?
- How can comparative analysis between provinces lead to decentralized development?
- How can national policies be formulated based on this new reading of numbers?

4. Study Goals

Analytical Goals:

1. Provide an advanced analytical reading of demographic indicators from the 2024–2025 census using Positive Statistics.
2. Reveal hidden demographic opportunities within the population's age structure.
3. Analyze gender balance in light of potential for social and economic empowerment.
4. Interpret urban–rural distribution through the lens of spatial justice.
5. Evaluate dependency ratios as dual indicators of current pressure and future potential.
6. Compare selected provinces to uncover patterns of demographic divergence with planning implications.

Foresight and Applied Goals:

1. Propose future scenarios (optimistic, moderate, deteriorating) based on demographic indicators.
2. Link indicators directly to policy areas: education, employment, urban planning.
3. Support decision-makers with quantitative tools for decentralized population planning.

4. Promote the use of Positive Statistics in research, education, and media institutions.

5. Significance of the Study

Scientific and Methodological Significance:

- Introduces the concept of Positive Statistics into demographic analysis in Iraq.
- Represents the first organized scientific attempt to formalize Positive Statistics as an applied analytical framework for population data.
- Offers a critical alternative to conventional demographic discourse by shifting focus from challenges to opportunities.

National and Developmental Significance:

- Enables Iraqi planners to capitalize on current demographic structure in designing sustainable policies.
- Supports a shift from central planning to accurate, localized development.

Social and Media Significance:

- Reconstructs the image of the population in public discourse—from being a burden to being a potential resource.
- Enhances public trust in official statistics as a tool for hope and planning, not just diagnosis.

6. Methodology

The study adopts a descriptive-analytical methodology, with an interpretive and foresight-based dimension, structured around the principles of Positive Statistics as follows:

6.1 Theoretical Framework

The study is grounded in the modern school of Positive Statistics, which draws conceptually from Positive Psychology (Seligman, 2000) and its extensions in

economics and social sciences (Stiglitz, Sen, 2009). This framework focuses on "what is going well" rather than merely diagnosing dysfunction.

6.2 Analytical Tools

- Official census datasets were analyzed using ratios, proportions, and comparative analysis between provinces.
- Visual charts were created to enhance understanding and connect findings to applied development dimensions.
- A comparative analysis was conducted on three provinces representing geographic diversity (Baghdad, Nineveh, Basra), with the intention of generalizing the approach in future studies.

6.3 Indicator–Recommendation Link

After each analytical axis, the study presents a direct interpretation that connects the statistical indicator to a specific development field (e.g., how dependency ratios inform educational planning or how urbanization rates impact resource distribution).

6.4 Limitations

- The study relies solely on officially published data, without delving into unpublished microdata.
- Economic, health, and education sectors were referenced only indirectly, serving the demographic context.
- The study is presented as a pilot model that can be replicated in future research targeting other provinces or sectors.

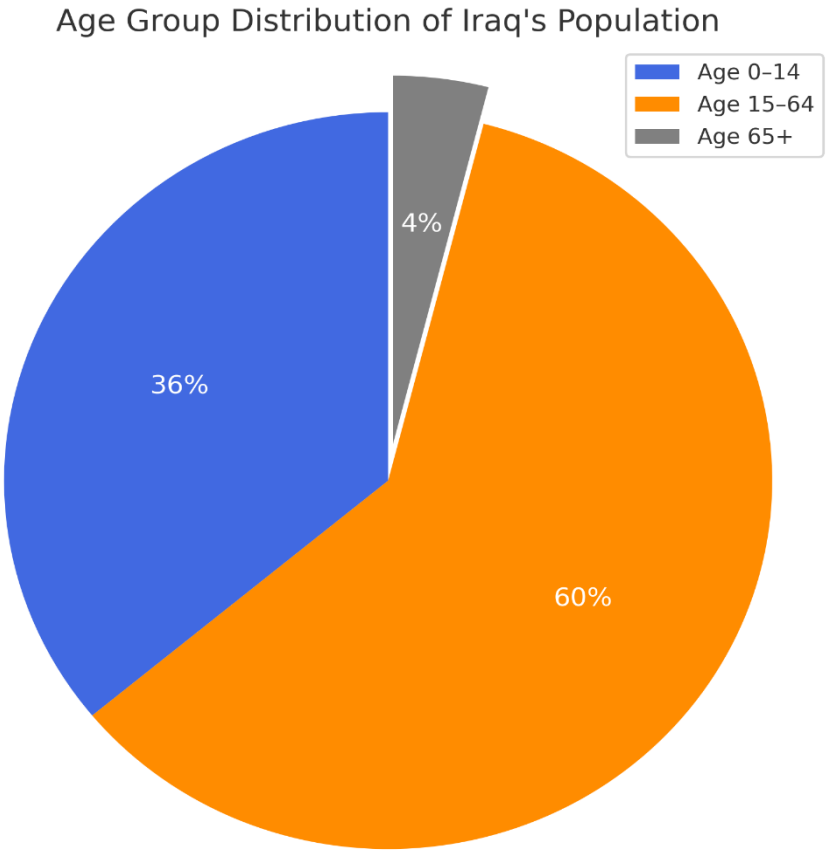
7. Key Findings

By analyzing Iraq’s 2024–2025 census data using the Positive Statistics lens, the study reveals several core opportunities for demographic development:

7.1 The Demographic Gift: Dominance of the Productive Age Group

- Age 15–64: **60.44%** of the population
- Age 0–14: **35.90%**
- Age 65 and above: **3.66%**

Figure (1): Age Group Distribution of Iraq's Population



Interpretation:

This age distribution reflects a demographic opportunity window—a large labor force relative to dependents. However, if not invested in through advanced education and employment policies, it could evolve into a future burden of aging.

Recommendation:

Develop a national plan to empower youth, with vocational training and incentives for the private sector (UNFPA, 2023).

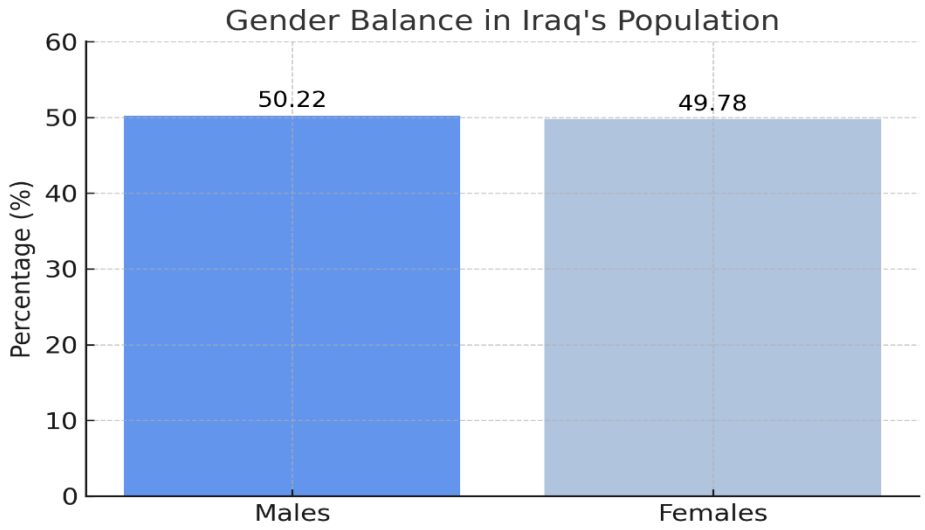
Scenarios:

- Optimistic: If 30% of unemployed youth are employed by 2030, rapid economic growth may follow.
- Moderate: If employment rates stay unchanged, the country will experience stagnant development.
- Deteriorating: Neglecting this opportunity could result in increased unemployment and social tension.

7.2 Gender Balance: An Environment for Equity

- Males: **50.22%**, Females: **49.78%**
- Sex ratio: **101 males per 100 females**

Figure (2): Gender Balance in Iraq's Population



Interpretation:

A healthy gender balance supports inclusive population policies, particularly in education and employment.

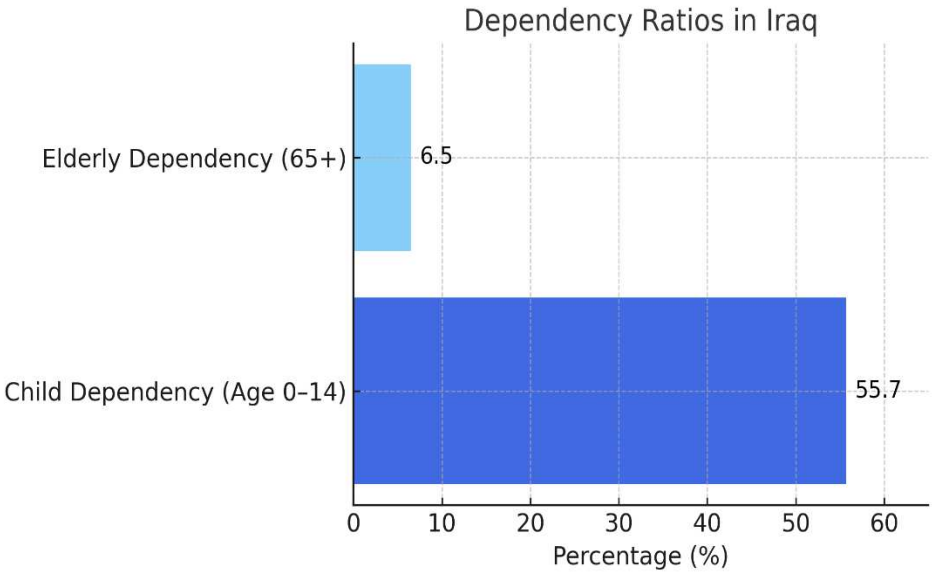
Recommendation:

Promote women's economic empowerment, especially in stable provinces, by linking local work and care policies to this balanced ratio.

7.3 Dependency Ratios: Pressure That Can Be Turned into Investment

- Total dependency ratio: **62.7**
    - Children (0–14): **55.7**
    - Elderly (65+): **6.5**

Figure (3): Dependency Ratios in Iraq



Interpretation:

High child dependency signals a future responsibility, but also an opportunity if early investments in education, health, and nutrition are made.

Recommendation:

Revise basic education curricula and align them with future skills, ensuring today's children become economically productive adults.

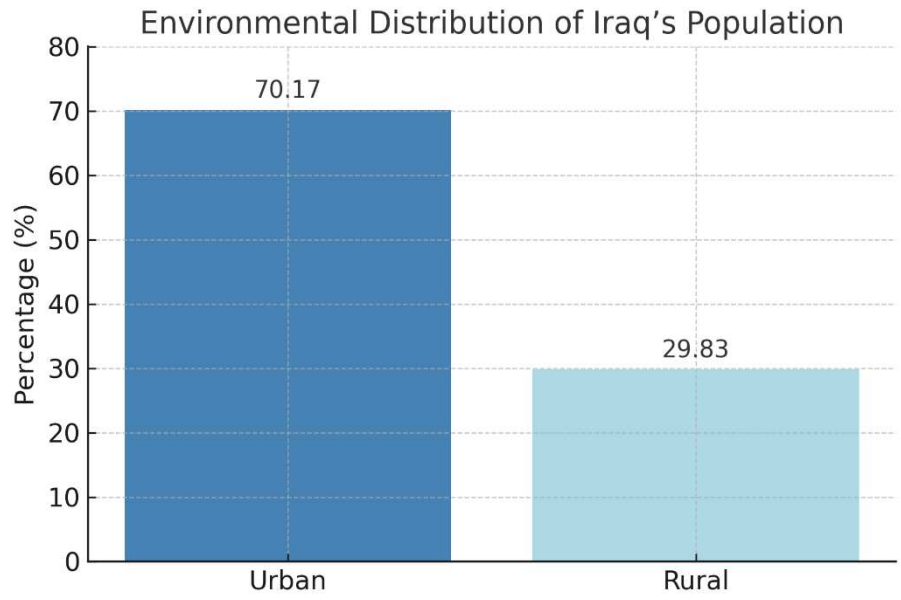
Scenario:

If pre-university education improves by 25% by 2030, the dependency ratio could decrease to less than 50 within a decade.

7.4 Urbanization as a Tool for Spatial Development

- Urban population: **70.17%**
- Rural population: **29.83%**

Figure (4): Environmental Distribution of Iraq's Population



Interpretation:

The growing urbanization indicates a population shift that increases pressure on services, but also allows for dense and efficient development with smart urban planning.

Recommendation:

Adopt spatially just urban planning, ensuring fair access to schools, hospitals, infrastructure, and preventing random urban sprawl.

Scenarios:

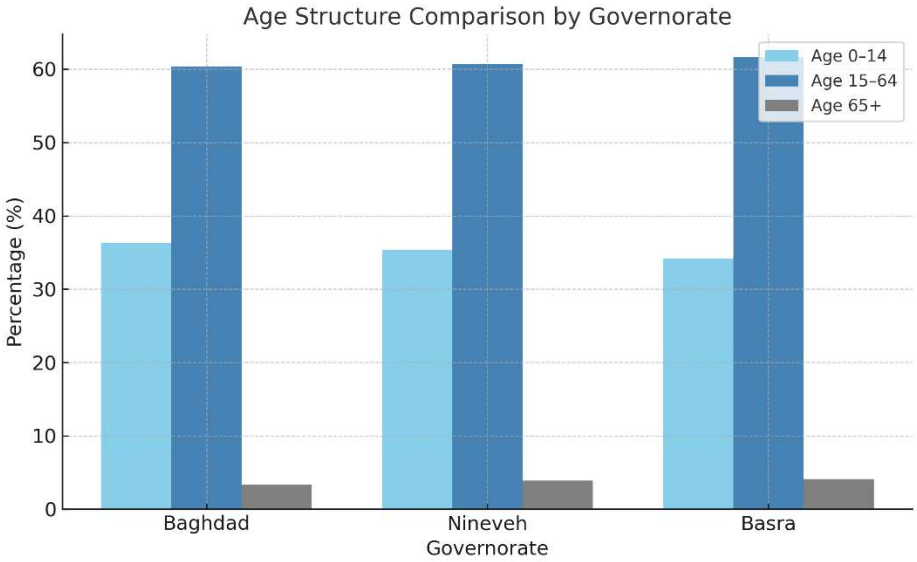
- Positive: Cities become production and service hubs if transport and housing systems are modernized.
- Negative: Urban explosion and service collapse if rural migration continues without proper planning.

7.5 Provincial Disparities: Gateways for Decentralized Planning

Table (1): Age Structure Distribution by Governorate in Iraq

Governorate	Age 0–14 (%)	Age 15–64 (%)	Age 65+ (%)
Baghdad	36.26	60.38	3.37
Nineveh	35.38	60.72	3.89
Basra	34.18	61.68	4.13

Figure (5): Age Structure Comparison by Governorate in Iraq



Interpretation:

While all three provinces share favorable age structures, Basra shows a higher elderly proportion—indicating a need for enhanced health and social care, while Nineveh needs education investments due to recent conflict.

Recommendation:

Prepare local demographic profiles for each province and allocate budgets according to age and spatial structure.

8. Scientific Contribution

This study offers a multidimensional contribution by applying a novel analytical model to demographic data in Iraq. It opens new pathways for using statistics as tools for empowerment and policy-making, not just for monitoring.

8.1 Conceptual Level: Establishing the Positive Statistics Framework

As one of the first Arabic-language studies to apply the Positive Statistics approach to official census data, this research presents the concept as a complete analytical system, grounded in theoretical works by Seligman and Stiglitz.

8.2 Analytical Level: Turning Numbers into Foresight Tools

The study surpasses descriptive reporting by proposing future scenarios and linking each indicator to a policy field. It integrates spatial comparisons (provinces) and thematic analysis (gender balance and policy implications).

8.3 Applied Level: A Model for Decentralized Population Planning

The study serves as a guiding model for governorates and planning departments, allowing them to build local demographic profiles. It also offers a base for the national population plan and sectoral performance evaluations in education, health, and employment (2023).

8.4 Institutional Level: Bridging Statistics and Decision-Making

The study enhances the role of Iraq's Central Statistical Organization (CSO) and geographic information systems as effective sources of insight, not just data providers. It proposes regular "Positive Population Reports" as qualitative alternatives to crisis-focused reports.

9. Recommendations

9.1 National-Level Recommendations

1. Launch a National Demographic Opportunity Program targeting ages 15–34, including vocational training and private-sector employment incentives.
2. Integrate Positive Statistics into public policy formulation by linking demographic data with developmental outcomes.
3. Update the 2025–2035 National Population Strategy to reflect census insights and tailor investments by province.
4. Strengthen women's roles through equity-based social and economic policies using gender-sensitive indicators.

9.2 Local-Level Recommendations (Governance and Decentralization)

1. Prepare a "Demographic Development File" for each province, including age, gender, environment, and dependency indicators for budget allocation.
2. Restructure education and health services in urban areas to match population growth.
3. Activate rural planning and offer economic and service-based incentives to reduce unplanned urban migration.
4. Establish local partnerships with universities to analyze and update demographic data for spatial planning.

9.3 Academic and Research Recommendations

1. Introduce Positive Statistics as a formal subject in departments of statistics, economics, planning, and social sciences in Iraqi universities.
2. Support applied demographic research that builds local environmental, gender, and spatial indicators for each governorate.
3. Publish an annual report titled *"Monitoring Iraq's Demographic Potentials"* in partnership between CSO and research centers.

4. Cooperate with international organizations like the UNFPA and World Bank to develop open digital platforms for dynamic data access and analysis.

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An Analytical Study of Progress in SDG 15 and SDG 16 Indicators in Iraq (2015–2020) Using the Positive Statistics Methodology

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Abstract:
This study aims to analyze the progress made by the Republic of Iraq in achieving Sustainable Development Goals 15 (Life on Land) and 16 (Peace, Justice, and Strong Institutions) during the period 2015–2020. The analysis is conducted using the "Positive Statistics" methodology as an analytical framework that emphasizes tracking developmental achievements and highlighting trends of improvement, rather than merely focusing on challenges and gaps.

Five key indicators were selected to represent critical environmental and security dimensions: forest area, proportion of degraded land, number of intentional homicide victims, perceived level of safety, and number of victims of human trafficking. These indicators were analyzed using official data sources and based on international and national standards.

Appropriate statistical tools for time-series data were employed, most notably the Mann-Kendall trend test and the simple linear regression model, to monitor trends and assess their statistical significance. The results indicated a relative improvement in several indicators, reflecting a tangible impact of certain environmental and security policies implemented over the past five years.

This study represents an early applied attempt to employ Positive Statistics in evaluating sustainable development indicators at the national level. It contributes to the Iraqi literature by providing a balanced reading of developmental realities—highlighting achievements alongside challenges—in a manner that supports more effective policy-making and decision support.

Keywords: Sustainable Development, Iraq, Positive Statistics, Environment, Security, Forests, Human Trafficking.

1. Introduction

Contemporary societies are increasingly in need of analytical tools that align with developmental transformations—tools that do not merely diagnose shortcomings, but also focus on tracking improvement trends and documenting developmental achievements. Within this context, the present study seeks to offer an alternative analytical reading of Iraq's Sustainable Development Goal (SDG) indicators by employing the "Positive Statistics" methodology as an analytical approach that highlights constructive trends in developmental performance.

In 2015, the United Nations General Assembly adopted the 2030 Agenda for Sustainable Development, which includes seventeen goals covering economic, social, and environmental dimensions. Among these, Goal 15—concerning the conservation of terrestrial ecosystems—and Goal 16—focused on promoting peace, justice, and strong institutions—are considered particularly pivotal in contexts characterized by environmental and institutional fragility, such as Iraq.

Despite the availability of official data and national development reports, most previous studies have predominantly focused on identifying problems and challenges. This approach has often resulted in a pessimistic analytical narrative, potentially undermining the impact of ongoing developmental policies and limiting their effectiveness.

Against this backdrop, the present study is grounded in the hypothesis that statistical analysis, when directed toward identifying successes and developmental opportunities, can serve as a motivational tool to support positive change and expand the reach of effective development interventions. Accordingly, the study adopts the Positive Statistics methodology—an emerging analytical paradigm that aims to highlight areas of improvement in national indicators, thereby supporting data-driven planning and efficient resource allocation.

This study focuses on analyzing a selected set of indicators from SDGs 15 and 16 over the period 2015–2020, using quantitative analytical tools to measure trends and assess their statistical significance. The objective is to provide a more balanced perspective on the state of sustainable development in Iraq.

While numerous studies have addressed sustainable development in the Iraqi context, the literature lacks analytical approaches that emphasize improvement trends and highlight positive aspects of developmental performance. This gap

underscores the importance of the current study and grants it both practical and theoretical significance.

2. Research Problem

Despite the availability of numerous national and international reports addressing sustainable development indicators in Iraq, most studies tend to focus predominantly on negative aspects and the challenges hindering the achievement of these indicators. While this diagnostic approach is essential for identifying weaknesses, an exclusive focus on failures risks overlooking signs of progress and improvement. Such a partial representation may fail to reflect the full developmental picture and may, consequently, weaken the effectiveness of policies and decision-making processes.

Within this prevailing one-sided analytical tendency, the Iraqi literature lacks methodological approaches that shed light on improvement trends and relative achievements within the development trajectories. This highlights the need for a new analytical framework that restores balance in data interpretation—one that considers positive aspects alongside structural or contextual problems reflected in the indicators.

Accordingly, this study is driven by a central research problem: To what extent can the "Positive Statistics" methodology be adopted to provide a more balanced and effective analytical reading of sustainable development indicators in Iraq, particularly those related to Goal 15 (Life on Land) and Goal 16 (Peace, Justice, and Strong Institutions)?

3. Significance of the Study

The significance of this study stems from a set of scientific and practical considerations, the most notable of which are as follows:

1. **Topical Importance of the Selected Goals:** The focus on SDG 15 (Life on Land) and SDG 16 (Peace, Justice, and Strong Institutions) is of particular relevance due to their direct connection to environmental and social stability—two of the most pressing challenges Iraq has faced over the past two decades.
2. **Innovative Use of the Positive Statistics Methodology:** This study employs the Positive Statistics methodology as an innovative analytical

framework applied for the first time to Sustainable Development Goal indicators in the Iraqi context. The methodology aims to highlight improvement trends and areas of progress alongside traditional critical monitoring, thereby contributing to a more balanced and constructive understanding of developmental realities.

3. **Development of a Generalizable Applied Model:**
   The study presents a practical model that can be replicated across other areas and indicators, whether at the national level or in similar regional contexts. This opens new avenues for scientific research in the field of developmental statistical analysis with a constructive orientation.

4. Objectives of the Study

This study aims to achieve several key objectives, as outlined below:

1. To provide a systematic analysis of a selected set of indicators related to Sustainable Development Goals 15 and 16 in Iraq, covering the period from 2015 to 2020.
2. To apply the Positive Statistics methodology in processing relevant statistical data, with the goal of evaluating the progress made in a way that highlights improvement trends in developmental performance.
3. To identify underlying positive trends within the selected indicators and assess their statistical significance using appropriate quantitative analytical tools.
4. To develop a more balanced data-driven analytical perspective that supports developmental planning efforts and enhances the capacity of decision-makers in shaping relevant policies.

5. Research Questions

This study is guided by a central research question:

- To what extent can the Positive Statistics methodology contribute to offering a constructive and comprehensive analytical reading for measuring progress in SDG 15 and SDG 16 indicators in Iraq?

From this overarching question, several subsidiary questions emerge to direct the analytical framework of the study:

1. What are the patterns of change observed in the selected indicators during the period from 2015 to 2020?
2. Do these indicators reflect statistically measurable positive trends with meaningful analytical implications?
3. To what extent can the findings of the analysis inform decision-makers and support the development of public policies, particularly in relevant environmental and institutional domains?

6. Methodology of the Study

This study adopts a **quantitative analytical approach** to track changes in a set of indicators related to Sustainable Development Goals 15 and 16 in Iraq during the period 2015–2020. The methodology is aimed at providing an objective quantitative reading that highlights developmental trends characterized by improvement, in line with the perspective of **Positive Statistics**.

6.1 Data Sources

The analysis relies on **official and reliable data** from both national and international sources, including:

- The Iraqi Ministry of Planning – Central Statistical Organization (CSO)
- Reports issued by United Nations agencies related to the Sustainable Development Goals
- The SDG Global Indicator Database

6.2 Selected Indicators

Five key indicators were selected to quantitatively represent specific targets within the two SDGs under study. These are as follows:

Indicator	Related Goal	SDG Code
Forest area (as a percentage of total land area)	Goal 15	15.1.1
Proportion of degraded land	Goal 15	15.3.1
Number of victims of intentional homicide per 100,000 population	Goal 16	16.1.1
Proportion of population that feels safe walking alone at night	Goal 16	16.1.4
Number of victims of human trafficking per 100,000 population	Goal 16	16.2.2

These indicators were selected based on the relative consistency of available time-series data and their representation of essential environmental and institutional dimensions.

6.3 Analytical Tools

To achieve the objectives of this study, two primary quantitative tools were employed:

a. Mann-Kendall Trend Test:

A non-parametric statistical test used to detect monotonic trends in time-series data. It is especially suitable for datasets that do not follow a normal distribution, which is often the case with environmental and social indicators due to irregular patterns and limited time points.

b. Simple Linear Regression Model:

This model was utilized to estimate the direction and rate of quantitative change in the studied indicators. It helps measure the average rate of improvement or decline over the analysis period and determine the statistical significance of the trend's slope, as well as the strength of the relationship between time and the indicator values.

c. Integration Between Tools and Methodology:

The combination of these two tools reinforces the operationalization of the Positive Statistics methodology. The Mann-Kendall test provides an objective identification of general trends without requiring assumptions about the underlying data distribution. In contrast, simple linear regression offers precise estimation of change rates and statistical significance for indicators with consistent time-series data.

This integrative approach allows for a more comprehensive and accurate analytical reading that aligns with the philosophy of Positive Statistics, which goes beyond diagnosing crises to emphasize improvement trends and promote evidence-based decision-making.

6.4 Study Limitations

- The analysis is confined to the period **2015–2020**, based on the availability of consistent and documented official data.
- The study includes only the indicators for which **published data were available**, which may not fully represent all dimensions of Goals 15 and 16.

7. Results and Discussion

This section analyzes the five selected indicators, each representing a core target within SDGs 15 and 16. The Mann-Kendall test was applied to identify the direction of the trend (increasing or decreasing), while the simple linear regression model was used to estimate the rate of statistical change and its significance.

Table 1. Data and Statistical Analysis Results of the Selected Indicators

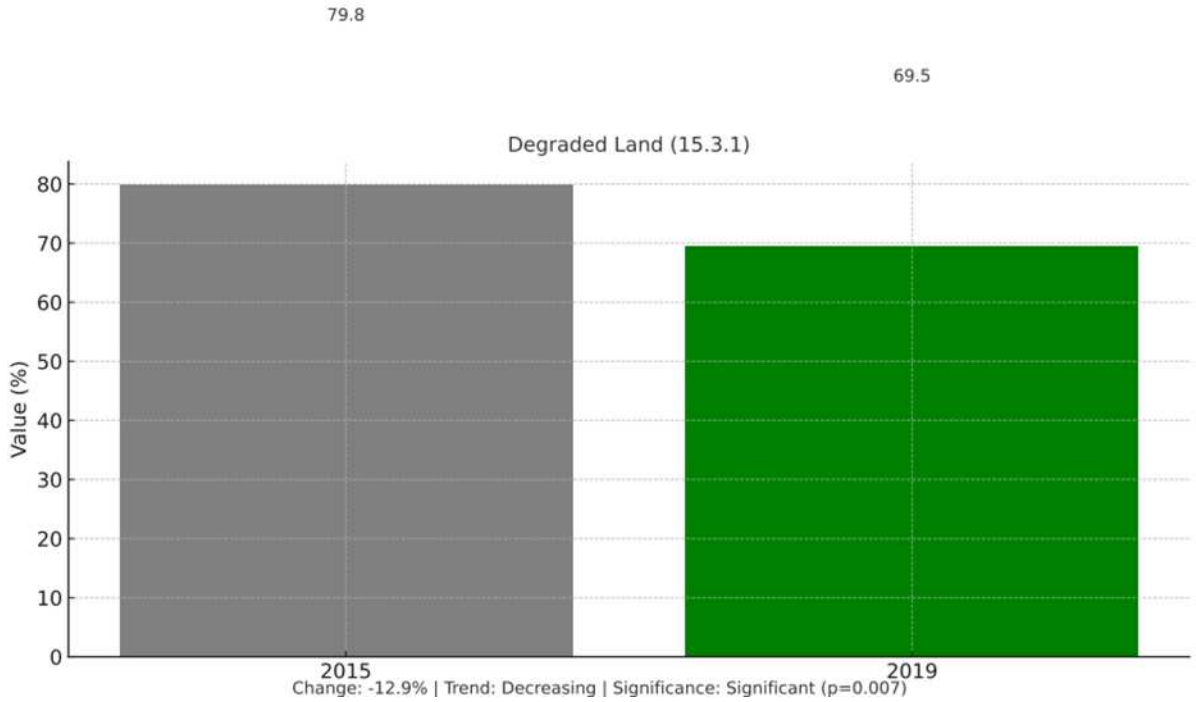
Indicator	Initial Value	Final Value	% Change	Period	Trend Type	Statistical Significance
Forest Area (15.1.1)	1.3%	3.1%	+138%	2018–2020	Increasing ↑	Not significant in Mann-Kendall ($p = 0.33$), significant in regression ($p < 0.0001$)
Degraded Land (15.3.1)	79.8%	69.5%	–12.9%	2015–2019	Decreasing ↓	Statistically significant ($p = 0.007$)
Homicide Victims (16.1.1)	1,783	1,363	–24%	2015–2020	Strongly decreasing ↓	Highly significant ($p = 0.002$)
Perceived Safety (16.1.4)	—	48.9%	—	2020 only	Not available	Trend analysis not possible due to single-year data
Human Trafficking Victims (16.2.2)	115	55	–52%	2018–2020	Decreasing ↓	Not statistically significant ($p = 0.33$), but clear numerical decline

This table demonstrates varying degrees of improvement across the indicators. While some show statistically significant positive trends, others indicate numerical progress without sufficient statistical evidence—highlighting both the potential and the limitations of the available data.

Forest Area (15.1.1):

Although the Mann-Kendall test did not indicate statistical significance ($p = 0.33$), the results from the simple linear regression model revealed a very strong positive correlation ($r = 1.0$, $p < 0.0001$). This suggests a notable annual increase in forest cover during the study period. The observed improvement is likely attributable to the activation of afforestation programs and the implementation of new environmental initiatives. These developments represent a positive indicator of the direction of environmental policy efforts.

Figure 1: Forest Area – Indicator 15.1.1

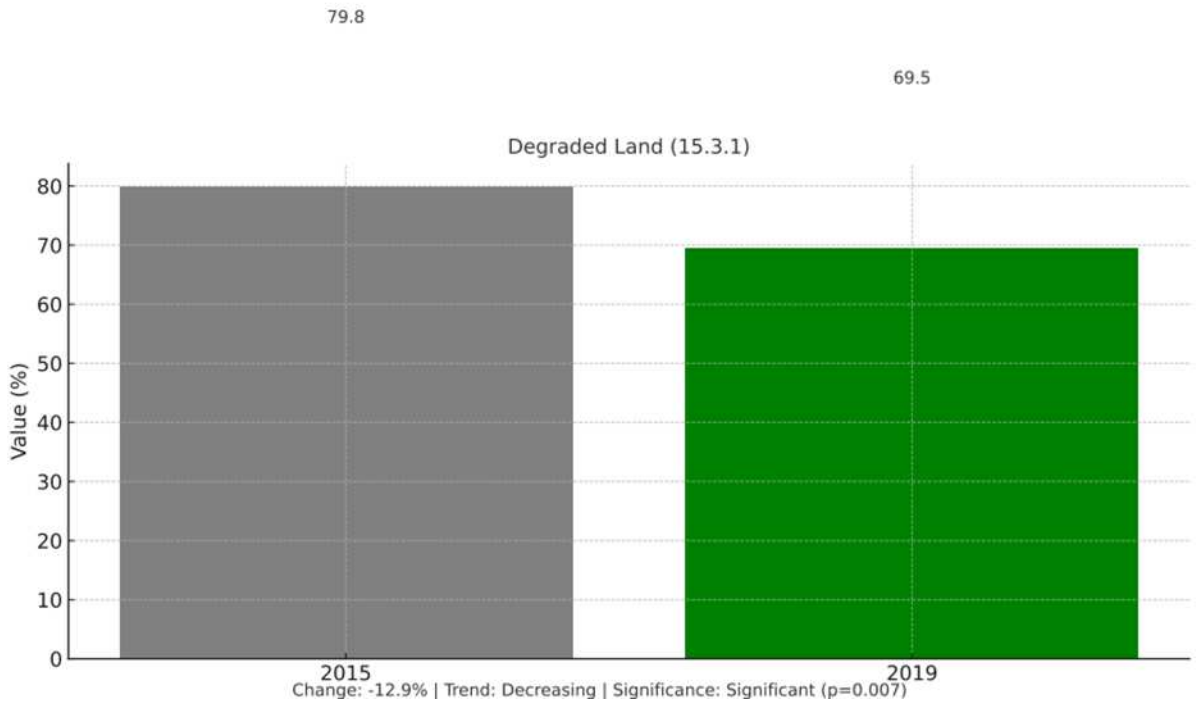


Source: Prepared by the researcher based on Table 1

2. Proportion of Degraded Land (15.3.1):

This indicator recorded a clear decrease from 79.8% to 69.5% over the analysis period. The trend was found to be statistically significant according to the Mann-Kendall test (p = 0.007). This decline indicates a relative improvement in land management policies and efforts to combat desertification, reflecting progress in addressing environmental degradation.

Figure 2: Proportion of Degraded Land – Indicator 15.3.1

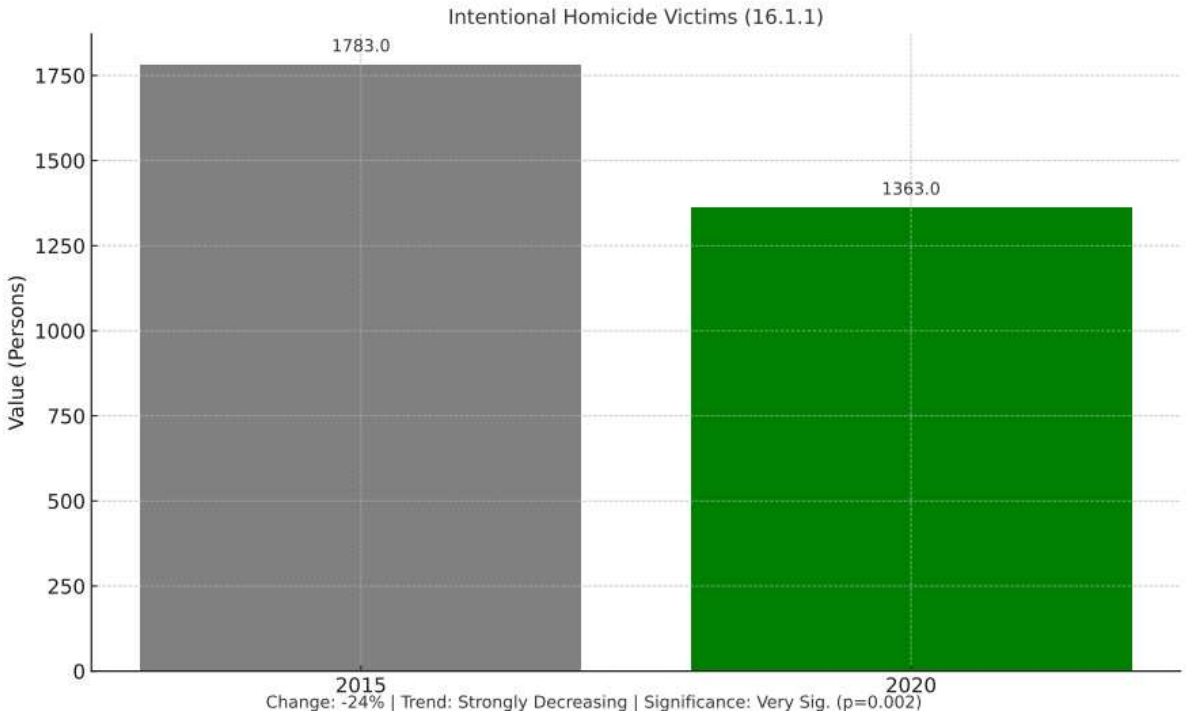


Source: Prepared by the researcher based on Table 1

3. Number of Victims of Intentional Homicide (16.1.1):

This indicator demonstrated a clear downward trend, with high statistical significance (p = 0.002). The simple linear regression model estimated an average annual decrease of approximately 84 cases, reflecting a notable improvement in public security indicators, particularly in the later years of the study period.

Figure 3: Victims of Intentional Homicide – Indicator 16.1.1



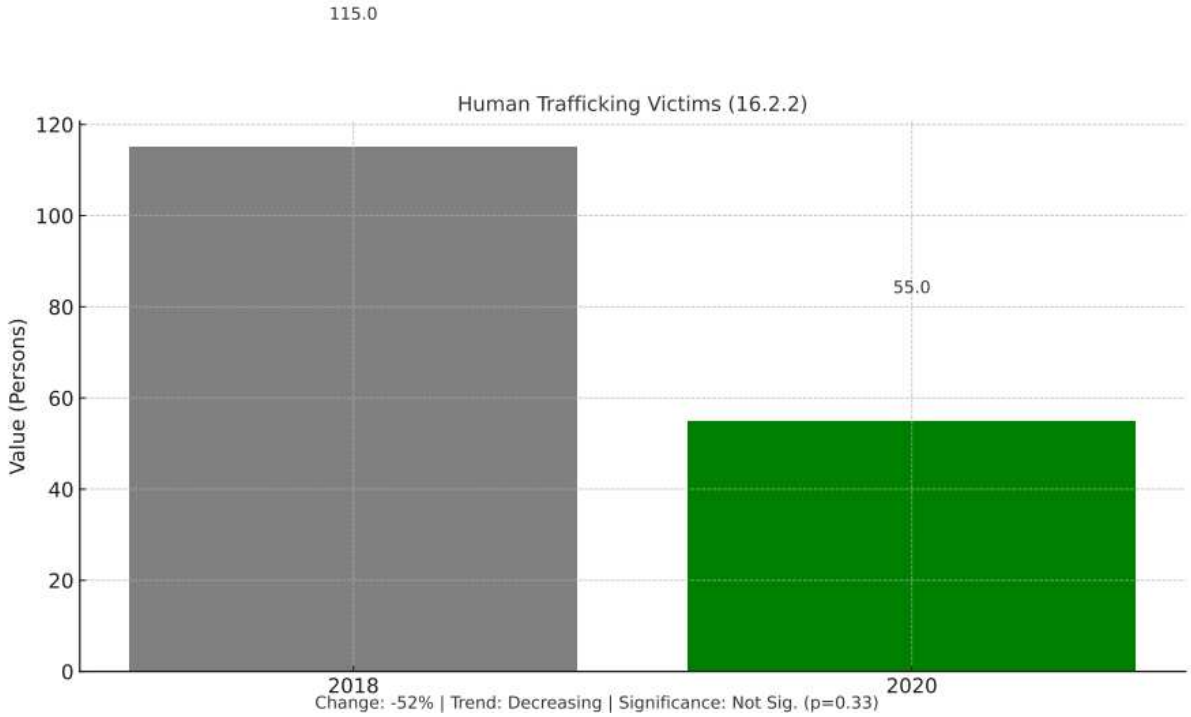
Source: Prepared by the researcher based on Table 1

4. **Perceived Safety While Walking Alone at Night (16.1.4):**
   Due to the availability of data for this indicator for only one year (2020), it was not possible to conduct a trend analysis. However, the recorded percentage (48.9%) serves as a useful baseline for expanding future monitoring efforts, especially in assessing public perceptions of safety.

5. Number of Victims of Human Trafficking (16.2.2):

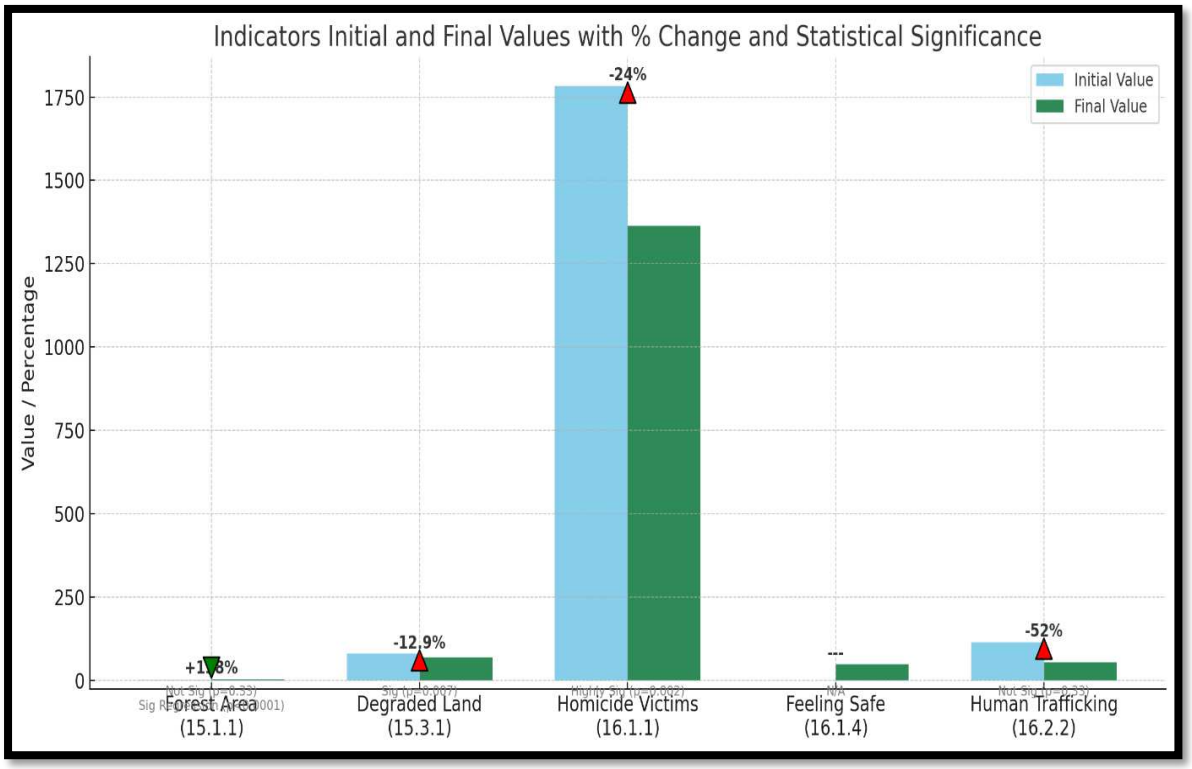
The number of victims decreased from 115 to 55 cases during the analysis period, representing a substantial numerical improvement of 52%. Although the Mann-Kendall test did not indicate statistical significance (p = 0.33), the magnitude of the decline suggests a potential impact of certain security and institutional policies aimed at curbing this phenomenon.

Figure 4: Victims of Human Trafficking – Indicator 16.2.2



Source: Prepared by the researcher based on Table 1

Figure 5: Initial and Final Values, Percentage of Improvement, and Statistical Significance of the Five Studied Indicators



Source: Prepared by the researcher based on Table 1

Summary of Results:

The analysis revealed a notable improvement in four out of the five indicators, either in terms of general trend or statistical significance. Differences were observed between the results of the Mann-Kendall test and the simple linear regression model in some cases, such as with forest area and victims of human trafficking. While the Mann-Kendall test did not indicate statistical significance for these indicators, actual improvements were evident through the increase in forest area and decrease in trafficking victims. Conversely, the regression model showed strong statistical significance in the forest area indicator.

This discrepancy is due to methodological differences between the two tests: the Mann-Kendall test is non-parametric, focusing on monotonic trends and relying on ranking rather than absolute values. As a result, it is less sensitive to quantitative changes, especially in short time series. In contrast, simple linear regression is highly responsive to changes in absolute values, enabling the

detection of statistically significant relationships—even within limited timeframes—when changes are consistent and directional.

These findings highlight the importance of methodological pluralism in the statistical analysis of development indicators. This dual approach provides a more comprehensive and balanced perspective that captures both relative improvements and existing challenges. In this sense, Positive Statistics can be considered an effective tool for evidence-based policy support, particularly in complex contexts where environmental and institutional dimensions are intertwined, as is the case in Iraq.

8. Conclusions

1. The analysis demonstrated that Iraq achieved actual improvement in several indicators related to SDG 15 and SDG 16 during the 2015–2020 period, particularly in degraded land percentage, intentional homicide victims, and victims of human trafficking—reflecting relative progress in both environmental and security dimensions.
2. The study employed the Positive Statistics methodology as an alternative analytical framework focused on identifying improvement trends and positive signals within data, which allowed for a more balanced interpretation of development realities—moving beyond a sole focus on shortcomings.
3. The results from the quantitative tools used—Mann-Kendall and simple linear regression—indicated statistically significant trends in three of the five studied indicators, reinforcing the suitability of these tools within the Positive Statistics framework for national-level performance analysis.
4. The findings suggest that highlighting relative successes, even if partial or incomplete, can help build institutional and public confidence in development programs and foster a supportive environment for constructive, evidence-based change.

9. Recommendations

1. Adopt Positive Statistics as a complementary analytical approach in evaluating development performance, alongside traditional critical methods, to enable a balanced reading of statistical data that acknowledges both challenges and relative successes.
2. Enhance the capacity of Iraq's statistical institutions to develop comprehensive, regularly updated databases that enable the periodic tracking of development indicators, and ensure open access to data for researchers and practitioners to support scientific inquiry and improve analytical quality.
3. Expand the application of Positive Statistics to other social and economic SDGs, such as Goal 4 (Quality Education), Goal 3 (Good Health and Well-being), and Goal 8 (Decent Work and Economic Growth), thereby strengthening the scope and applicability of the methodology.
4. Utilize the findings of this study to inform decision support tools and public policy formulation, particularly in the areas of environmental and social security, by focusing on actual improvement trends supported by quantitative evidence.
5. Encourage future research that applies the Positive Statistics methodology using field-based tools such as surveys and qualitative interviews to enhance the interpretive depth of data and improve contextual understanding of development trends.
6. Emphasize the alignment of development projects and national financial resources with SDG priorities by integrating local efforts with the global agenda, thus improving the effectiveness of development responses and achieving greater impact on targeted indicators.

10. Conclusion

- This study represents a methodological attempt to apply the Positive Statistics approach in analyzing selected indicators from the Sustainable Development Goals in Iraq during the 2015–2020 period, within a context marked by complex environmental and institutional challenges. The findings revealed relative improvements in several areas, especially those

related to land management, reduction in homicide rates, and combating human trafficking.

- By adopting Positive Statistics as an alternative analytical framework, the study was able to provide a more balanced perspective of developmental realities—combining the diagnosis of structural challenges with the documentation of improvement trends. This contributes to strengthening institutional and community confidence in progress pathways and supports the development of evidence-based, constructive policies.
- The study underscores the importance of expanding the application of this analytical approach in future research, whether through integration into national monitoring systems or in the evaluation of additional development goals—thus promoting a culture of empowerment and data-driven development grounded in relative successes and measurable progress.

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Analysis of Improved Technical Education Enrollment in Iraq (2016–2020): A Methodological Application of Positive Statistics

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Abstract:

This paper aims to analyze the evolution of student enrollment in technical education in Iraq during the academic period spanning from 2016-2017 to 2019-2020. This is achieved through the methodological application of the "Positive Statistics Methodology" (PSTM), innovated by the researcher Ahmed Jamal Al-Jassar. The study is grounded in the philosophical and analytical framework outlined in its accredited reference guides (Al-Jassar, 2025a; Al-Jassar, 2025b). The research focuses on tracking indicators of positive improvement and extracting the underlying factors contributing to this growth, consistent with the development-oriented approach adopted by the methodology (Al-Jassar, 2025d). Official data reveal a continuous increase in student numbers, which is considered a qualitative indicator of the vitality of this sector and its capacity to respond to national demands. The study provides a scientific interpretation of these positive dynamics and offers practical recommendations for building a sustainable development model.

Introduction:

Technical and vocational education constitutes a fundamental pillar for sustainable development and a vital component in building national competencies, particularly in countries undergoing economic and societal reconstruction, as is the case in Iraq. This educational sector aims to equip young individuals with specialized practical and professional skills that meet the evolving demands of the labor market and support the efforts towards economic diversification and enhanced productivity.

Despite the structural challenges and historical circumstances that may affect the Iraqi education sector generally, this paper adopts a distinct research framework by applying the "Positive Statistics Methodology" (PSTM), developed by researcher Ahmed Jamal Al-Jassar

in 2025. This methodology is defined as a development-oriented analytical approach that focuses on exploring positive phenomena, monitoring success factors, and understanding the mechanisms of progress, rather than exclusively analyzing deficiencies or problems. Consequently, this study moves beyond the traditional descriptive approach of deficit analysis, offering constructive insights that foresee the future based on identified strengths and achievements (Al-Jassar, 2025d; Al-Jassar, 2025i). Accordingly, this paper seeks to shed light on the notable improvement in technical education enrollment indicators in Iraq during the specified period, and to identify the positive factors underlying this growth, and provide informed recommendations aimed at consolidating and expanding these achievements.

Methodology:

This study rigorously applies the fundamental principles of the "Positive Statistics Methodology" (PSTM) as innovated by researcher Ahmed Jamal Al-Jassar. The research adheres to the standards and foundations outlined in the official documentation of the methodology, specifically:

- "The Official Binding Guide for Using the Positive Statistics Methodology in Research – First Edition" (Al-Jassar, 2025a).
- "Code of Methodological Conduct – Official Ethical Guide for Using the Positive Statistics Methodology" (Al-Jassar, 2025e).
- "Positive Statistics Guide – A Comprehensive View of Concepts, Tools, and Applications" (Al-Jassar, 2025c).

According to the adopted definition within the methodological framework (Al-Jassar, 2025b; Al-Jassar, 2025g), PSTM is defined as: "Positive Statistics is a branch of applied statistics concerned with measuring, analyzing, and interpreting positive factors in human behavior, organizations, and social systems, with a focus on what contributes to growth and improvement."

The analytical steps followed in this study include:

1. **Identification of the Primary Positive Indicator:** The "number of students actually enrolled in technical education institutions" was selected as the primary quantitative indicator of growth and attractiveness.
2. **Analysis of Temporal Trends:** Data collected for the period from the academic year 2016-2017 to 2019-2020 were analyzed to monitor demographic changes in student numbers.

3. **Application of Positive Statistical Analytical Tools:**
    - **Compound Annual Growth Rate (CAGR):** This index was calculated to assess the balanced and sustainable annual growth rate in enrollment numbers. The formula for CAGR is:

$$CAGR = \left(\frac{EV}{BV}\right)^{\frac{1}{n}} - 1$$

Where: EV = End Value BV = Beginning Value n = Number of years

    - **Cumulative Time Series Analysis:** This analysis was conducted to monitor the total cumulative change in student numbers over the time period, highlighting the continuous positive momentum in the growth trajectory (Al-Jassar, 2025c).
4. **Interpretation of Growth within Enabling Contexts:** Quantitative results were linked to potential qualitative factors that contributed to this improvement, such as government policies, labor market demands, or institutional efforts.
5. **Formulation of Constructive Future Recommendations:** Based on PSTM principles, practical recommendations were developed to foster and sustain the observed positive growth trajectory.

Data:

Official published data from the Central Organization for Statistics in cooperation with the Ministry of Higher Education and Scientific Research in the Republic of Iraq (Central Organization for Statistics & Ministry of Higher Education and Scientific Research, 2017; 2018; 2019; 2021) were utilized for the academic years 2016-2017 through 2019-2020.

Results and Analysis:

Table 1 below illustrates the total number of students enrolled in technical education in Iraq during the study period:

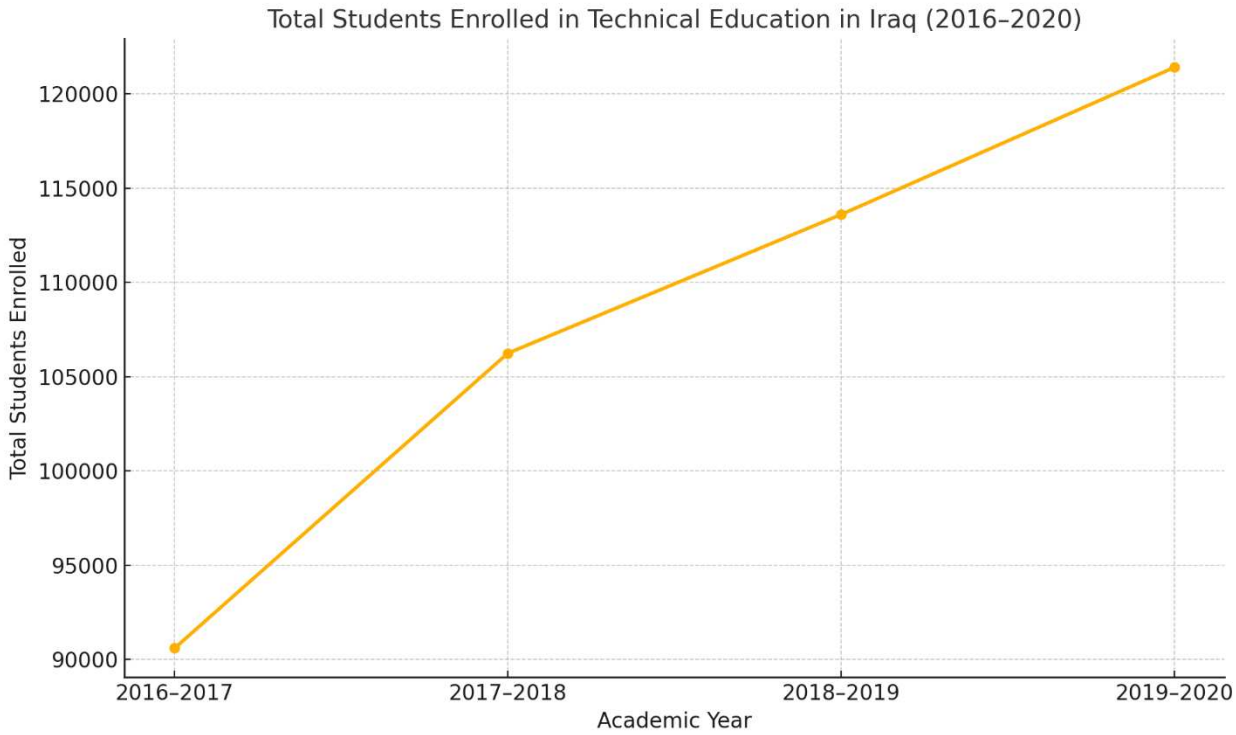
Table 1: Total Students Enrolled in Technical Education in Iraq (2016-2020)

Academic Year	Total Students Enrolled in Technical Education
2016–2017	90,606
2017–2018	106,248
2018–2019	113,605

2019–2020	121,407

Total Increase over the Period: +30,801 students. **Overall Growth Rate over the Period:** 34.0%. **Average Annual Increase:** 10,267 students per year.

Figure 1.



Statistical Analysis According to PSTM:

1. **Compound Annual Growth Rate (CAGR):** Using the formula previously mentioned, and applying the available data (BV=90,606 for 2016-2017, EV=121,407 for 2019-2020, and n=3 years), the CAGR was calculated as follows:

$$CAGR = \left(\frac{121,407}{90,606}\right)^{\frac{1}{3}} - 1 \approx (1.340)^{\frac{1}{3}} - 1 \approx 1.1026 - 1 \approx 0.1026$$

The Compound Annual Growth Rate reached approximately 10.26%, reflecting a balanced and sustainable pattern of growth in technical education enrollment during the studied period. This rate indicates an increasing attractiveness of the sector and its ability to draw students.

2. **Cumulative Time Series Analysis:** This analysis shows that the total cumulative change in student numbers during the period exceeded 30,000 students. The consistent upward curve of enrollment, as highlighted in (Al-Jassar, 2025c), indicates sustained positive momentum and an accumulation of successes, reinforcing the idea that this growth is not transient but rather a result of enduring positive trends.

Positive Analysis in Light of PSTM:

In accordance with the philosophy of Positive Statistics (Al-Jassar, 2025b; Al-Jassar, 2025f), this tangible improvement in student numbers represents a "Positive Deviance" worthy of documentation, in-depth analysis, and further development. The continuous increase serves as an indicator of a qualitative shift in societal perception regarding the value of technical education and its role in providing employment opportunities and fostering development.

This improvement can be attributed to several potential positive factors, including:

- **Increasing Attractiveness of Technical Education:** There may be a growing awareness among youth and parents of the importance of technical skills in the evolving Iraqi labor market, leading to increased demand for this type of education.
- **Alignment of Technical Specializations with Market Demands:** Technical education institutions might have updated their curricula and specializations to better align with labor market needs, thereby enhancing employment prospects for graduates.
- **Supportive Government Initiatives and Policies:** Proactive government policies and initiatives aimed at expanding technical education infrastructure, awareness campaigns, or facilitating admission processes could have contributed to the rise in student numbers.

These findings advocate for focusing on the factors that contributed to this success, such as the effectiveness of training programs, the flexibility of educational infrastructure, and student engagement with available opportunities, rather than solely diagnosing traditional challenges.

Study Limitations:

Despite the significance of the results, this study is subject to certain limitations:

- The analysis is confined to a specific four-year period.
- The study does not delve into regional disparities in enrollment numbers across different Iraqi governorates.
- The absence of qualitative data (such as student satisfaction levels, actual post-graduation employment rates, or employer feedback) prevents a deeper insight into certain aspects.

Recommendations: Drawing upon the principles of Positive Statistics, which emphasize strengthening existing strengths and building upon achieved successes, the study recommends the following:

1. **In-depth Analysis of Success Factors:** Encourage detailed qualitative studies and surveys (utilizing PSTM) to identify and document the specific initiatives and success factors that underpinned this growth in enrollment, with the aim of institutionalizing and replicating them.
2. **Strategic Investment in Qualitative Expansion:** Allocate sustainable budgets and devise strategic plans to support the qualitative expansion of technical education programs, focusing on specializations with high demand that meet emerging market needs.
3. **Building Positive National Narratives:** Leverage the positive findings of this study in national media and community campaigns to reshape societal perceptions of technical education, highlighting success stories of graduates and promising career opportunities.
4. **Empowering Educational Leaders and Trainers:** Provide support, recognition, and ongoing professional development opportunities for educational leaders and institutions that have demonstrated significant improvement, as well as for trainers and instructors in this sector.
5. **Measuring New Positive Indicators:** Develop and adopt a broader range of positive indicators (within the PSTM framework, Al-Jassar, 2025c) to measure other aspects of improvement, such as post-graduation employment rates, the quality of practical

training, and the level of partnerships between educational institutions and the private sector (Al-Jassar, 2025l).

6. **Expanding PSTM Application:** Advocate for the adoption of the Positive Statistics Methodology in studying and evaluating other developmental sectors in Iraq, to foster positive and solution-oriented thinking in comprehensive national development processes (Al-Jassar, 2025m; Al-Jassar, 2025n; Al-Jassar, 2025o).

Conclusion:

This study demonstrates how the Positive Statistics Methodology can offer a distinct analytical perspective on developmental phenomena, moving beyond traditional problem diagnosis towards the exploration and enhancement of areas of success. The notable growth in technical education enrollment in Iraq reflects promising potentials for building a replicable and expandable developmental educational model, thereby contributing effectively to the achievement of sustainable development goals.

Official Documentation of Intellectual Property:

This study was conducted using the Positive Statistics Methodology (PSTM) in accordance with the official guide published by its founder, Ahmed Jamal Al-Jassar (2025) (Al-Jassar, 2025a). Official Reference Code: PSTM/2025/001.

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Positive Statistics and Sustainable Development in Iraq: Infrastructure Indicators Toward a Smart Future

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Abstract:

This study analyzes the current state of essential infrastructure in Iraq by applying the "Positive Statistics Methodology" *(Al-Jassar, 2025b, 1)*. The study aims to examine indicators of housing tenure, water sources (for household use and drinking water) supplied via piped networks, wastewater disposal methods through the public network, and municipal waste collection services. These analyses are based on data derived from the General Census of Population and Housing 2024-2025 *(Commission of Statistics and GIS, 2025, 24)*.

The study seeks to systematically monitor current achievements and link them to the Sustainable Development Goals (SDG 1, 6, 11, 12). Furthermore, it provides a constructive analytical interpretation that highlights inherent strengths and empowerment opportunities, while reframing existing challenges as strategic opportunities for growth and development *(Al-Jassar, 2025a, 2)*.

The results indicated remarkable stability in housing tenure in Iraq, reaching 72.14%, alongside significant progress in providing in-house water sources at 86.82%. Conversely, existing challenges were observed in sanitation services and waste management. Quantitative qualitative indicators were calculated using the tools of the Positive Statistics Methodology *(Al-Jassar, 2025c, 18)*, namely: the Positive Empowerment Index (PEI), the Coverage Index (CI), and the Composite Positive Performance Average (CPAI). The Composite Positive Performance Average (CPAI) for all indicators reached 70.10 points out of 100. The study concludes by presenting focused recommendations on utilizing innovation and smart technologies to enhance opportunities for sustainable future improvement.

Keywords: Sustainable Development, Iraq, Positive Statistics, Infrastructure, Housing, Water, Waste, Empowerment, Relative Improvement, Smart Technologies.

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1. Introduction

Basic infrastructure is a fundamental pillar upon which sustainable development is built *(United Nations, 2023).* Its efficiency reflects the state's readiness and capacity to ensure a stable and prosperous quality of life for its citizens. In this context, indicators such as housing ownership, access to water sources, sanitation services, and waste management represent core components that signify the effectiveness of public policies and the level of developmental progress.

Given the structural challenges faced by many countries, including Iraq, there arises a need for analytical frameworks that go beyond traditional models, which often focus solely on diagnosing deficits. In this regard, the *Positive Statistics Methodology (Al-Jassar, 2025b,1)* offers an innovative approach that not only identifies shortcomings but also emphasizes the identification and tracking of existing achievements, areas of strength, and enabling values within the development landscape. This methodology contributes to reinterpreting obstacles and challenges as potential opportunities for growth and improvement.

This study aims to apply this qualitative framework to analyze the data from the most recent national census in Iraq *(Commission of Statistics and GIS, 2025, 24).* from a developmental perspective that highlights relative improvements and latent opportunities. The goal is to construct a comprehensive and constructive depiction of Iraq's developmental trajectory.

2. Research Problem

Despite the presence of quantitative indicators pointing to relative progress in certain sectors of Iraq's basic infrastructure—such as housing and water resources—prevailing statistical readings often remain focused on diagnosing developmental gaps or emphasizing shortcomings. These conventional readings lack an integrated analytical perspective that highlights achieved successes and relative improvements, thereby creating a knowledge gap that hinders the construction of a comprehensive and realistic portrayal of infrastructure in Iraq from a constructive and forward-looking standpoint.

Therefore, there is an urgent need to adopt a new statistical approach that goes beyond merely identifying negative aspects, by also shedding light on strengths and accomplishments, and by reinterpreting existing challenges as developmental opportunities. This is the direction pursued by the present study through the application of the Positive Statistics Methodology *(Al-Jassar, 2025b, p. 2).*

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3. Study Objectives

This study seeks to achieve the following objectives:

- To measure indicators of empowerment and achievement in key sectors of basic infrastructure, including housing ownership, access to water sources (both in-house and potable water through piped supply), sanitation services via public sewer networks, and waste disposal through municipal collection in Iraq.
- To link these calculated indicators with the relevant Sustainable Development Goals (SDGs 1, 6, 11, 12), in order to identify pathways of progress and highlight positive developments within each sector *(Al-Jassar, 2025a, p. 2).*
- To compute qualitative-quantitative indicators using tools from the Positive Statistics Methodology *(Al-Jassar, 2025c, p. 18)*, specifically: the Positive Empowerment Index (PEI), the Coverage Index (CI), and the Composite Positive Achievement Index (CPAI).
- To provide specific future-oriented developmental recommendations, emphasizing the role of innovation and smart technologies in building upon current achievements and transforming challenges into opportunities for sustainable advancement.

4. Methodology

This study employed the *Positive Descriptive-Analytical Methodology (Al-Jassar, 2025b, p. 4)*, which is a branch of applied statistics that focuses on measuring, analyzing, and interpreting positive factors within human behavior, entities, and social systems—not merely identifying gaps or deficiencies. The analysis was based on official data derived from the final results of the General Population and Housing Census in Iraq for the years 2024–2025 *(Commission of Statistics and GIS, 2025, 24).*

The following methodological steps were followed in the analysis:

- **Indicator Classification:** The targeted indicators—namely housing ownership, access to water sources (in-house and potable water through piped supply), sanitation services via public sewer networks, and waste disposal through municipal services—were classified as essential enablers of infrastructure. This classification aligns with the core of the *Positive*

Statistics Methodology (Al-Jassar, 2025b, p. 2), which emphasizes existing strengths and developmental achievements.

- **Use of Statistical Values:** Actual and reliable statistical values from the national census data *(Commission of Statistics and GIS, 2025, 24).* were used to ensure analytical accuracy.
- **Calculation of Quantitative Indicators:** The study computed specific indicators that reflect empowerment and improvement. A reference value of 80% was assumed for housing ownership, representing an acceptable threshold in developing countries, while a 100% reference value was used for the remaining indicators, given their direct relevance to daily life and their impact on quality of life in accordance with the Sustainable Development Goals. The indicators used *(Al-Jassar, 2025c, p. 18)* include:
    - **Positive Empowerment Index (PEI):** This index measures the extent to which a positive goal or targeted benchmark has been achieved. It is calculated as:

      PEI = (Observed Value ÷ Reference Value) × 100
    - **Coverage Index (CI):** This index represents the actual coverage level or the recorded value of the indicator as a percentage. It is calculated as:
      CI = Observed Value × 100
    - **Composite Positive Achievement Index (CPAI):** This index provides an aggregated and comprehensive assessment of overall performance across multiple PEI indicators. It is calculated as the arithmetic mean of PEI values for each sub-indicator.
- **Interpretation of Results:** The findings were interpreted within a constructive framework that highlights latent future opportunities and redefines existing challenges as incentives for innovation and continuous improvement.

5. Positive Results and Analysis

This section presents the findings derived from the General Population and Housing Census in Iraq *(Commission of Statistics and GIS, 2025, 24).*, analyzed through a methodological lens grounded in Positive Statistics *(Al-Jassar, 2025b, p. 2)*. The analysis focuses on identifying strengths, accomplishments, and promising opportunities that can serve as a foundation for sustainable development.

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5.1. Housing Ownership (SDG 1: No Poverty)

Table 1. Housing Ownership Rates in Iraq (2024–2025)

Indicator	Observed Percentage	Reference Value
Owned or free housing with parents	72.14%	80%

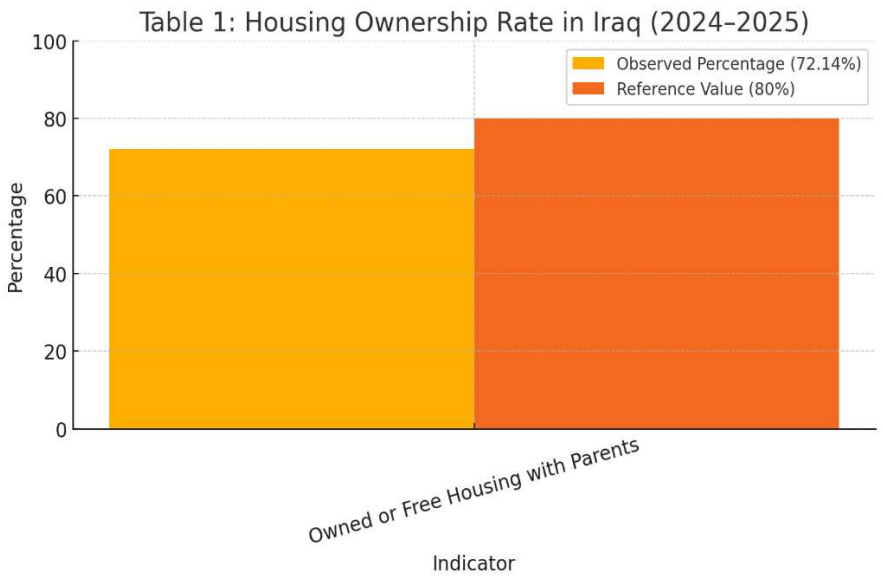
Indicator Calculations:

1.Coverage Index (CI):

CI=Observed Value×100=72.14%

2.Positive Empowerment Index (PEI):

PEI=(8072.14)×100=90.18%



Source: *Prepared by the author based on data from Table (1).*

The results indicate that although the observed housing ownership rate (72.14%) has not fully reached the reference benchmark of 80%, the Positive Empowerment Index of 90.18% reflects a strong relative performance in this domain. This suggests a significant level of societal stability in terms of residential security, aligning with the objectives of SDG 1 related to poverty reduction and access to adequate living conditions.

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5.2. In-House Water Source (SDG 6: Clean Water and Sanitation)

Table 2. Percentage of Households with In-House Water Source for Domestic Use (2024–2025)

Indicator	Observed Percentage	Reference Value
In-house water source for domestic use	86.82%	100%

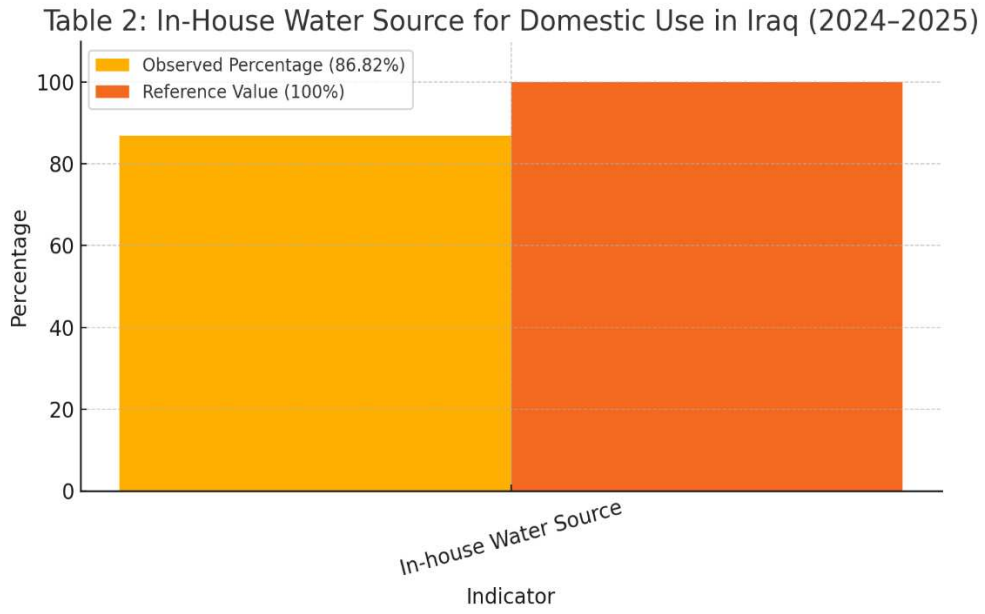
Indicator Calculations:

1.Coverage Index (CI):

CI=Observed Value×100=86.82%

2.Positive Empowerment Index (PEI):

PEI=(10086.82)×100=86.82%



Source: *Prepared by the author based on data from Table (2).*

The availability of water sources within dwellings, with an observed rate of 86.82%, serves as a strong indicator of the accessibility of essential services. It represents a critical element in promoting public health and human dignity, thereby contributing directly to the achievement of Sustainable Development Goal 6 *(United Nations, 2023).* This substantial progress offers a valuable opportunity for further development by strengthening the maintenance of existing water networks and expanding coverage to underserved areas.

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Moreover, the adoption of smart water management technologies—such as leakage detection systems and sensor-based water distribution—can enhance the efficiency and sustainability of water supply systems. Such innovations ensure safe and continuous access to water for all segments of society, while simultaneously minimizing waste and optimizing resource utilization.

5.3. Drinking Water Sources (SDG 6: Clean Water and Sanitation)

Table 3. Percentage of Population Using Piped Drinking Water Sources (2024–2025)

Indicator	Observed Percentage	Reference Value
Piped drinking water sources	65.67%	100%

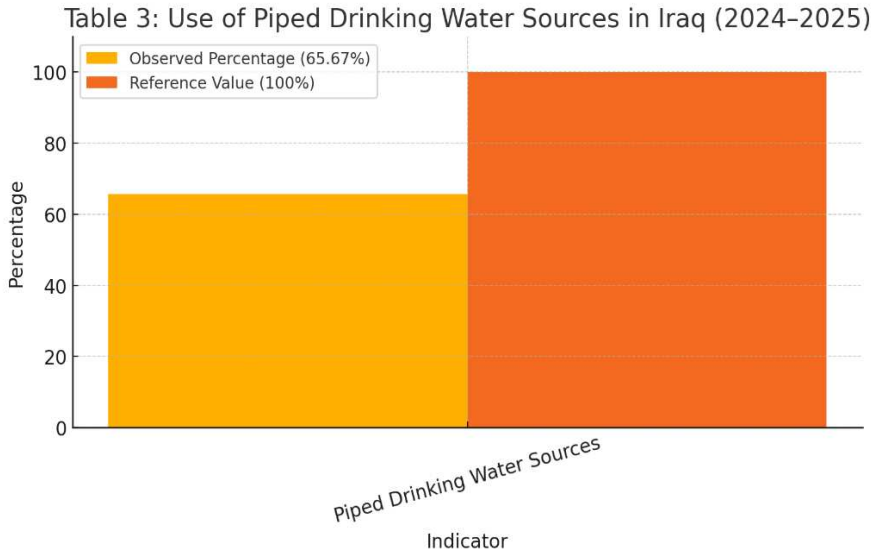
Indicator Calculations:

1.Coverage Index (CI):

CI=Observed Value×100=65.67%

2.Positive Empowerment Index (PEI):

PEI=(10065.67)×100=65.67%



Source: *Prepared by the author based on data from Table (3).*

Despite the achievement of a moderately strong value (65.67%) in the use of piped drinking water sources, water security in Iraq remains an area requiring significant improvement. This indicator reveals an opportunity to enhance water quality monitoring systems, expand the coverage of clean water networks—particularly in rural areas that may depend on less secure sources—and ensure equitable access across geographic and socioeconomic divides.

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Investments in advanced water treatment technologies, as well as in desalination projects where necessary, would contribute to achieving comprehensive and sustainable coverage of safe drinking water. Such developments are crucial for reinforcing public health, reducing environmental risks, and supporting the attainment of SDG 6 in a resilient and inclusive manner.

5.4. Sanitation Services (SDG 6: Sanitation)

Table 4. Percentage of Households with Access to Public Sewer Network (2024–2025)

Indicator	**Observed Percentage**	**Reference Value**
Sanitation via public sewer network	49.45%	100%

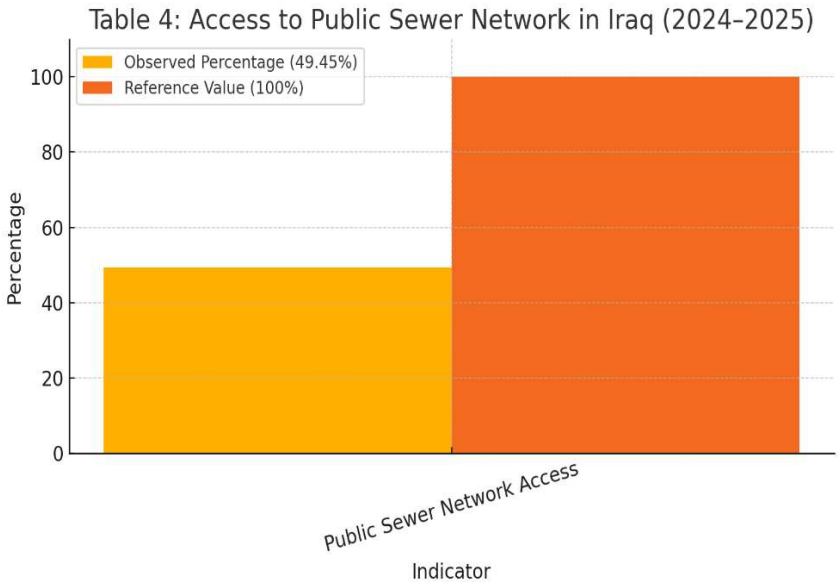
Indicator Calculations:

1.Coverage Index (CI):

CI=Observed Value×100=49.45%

2.Positive Empowerment Index (PEI):

PEI=(10049.45)×100=49.45%



Source: *Prepared by the author based on data from Table (4).*

The observed percentage (49.45%) reflects a significant gap in coverage by public sewer networks, constituting an urgent environmental and public health challenge. However, from the perspective of *Positive Statistics*, this figure also

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reveals a considerable opportunity to develop a sustainable and expansive sanitation infrastructure.

Addressing this issue requires the formulation and implementation of integrated plans for the construction and expansion of modern sewer systems, investment in advanced wastewater treatment facilities, and the promotion of innovative decentralized sanitation solutions in low-density areas. These efforts would contribute effectively to achieving the Sustainable Development Goals related to sanitation and hygiene *(United Nations, 2023).*

5.5. Waste Disposal Services (SDG 11: Sustainable Cities and Communities, SDG 12: Responsible Consumption and Production)

Table 5. Percentage of Households Receiving Municipal Waste Disposal Services (2024–2025)

Indicator	Observed Percentage	Reference Value
Waste disposal services via municipality	58.36%	100%

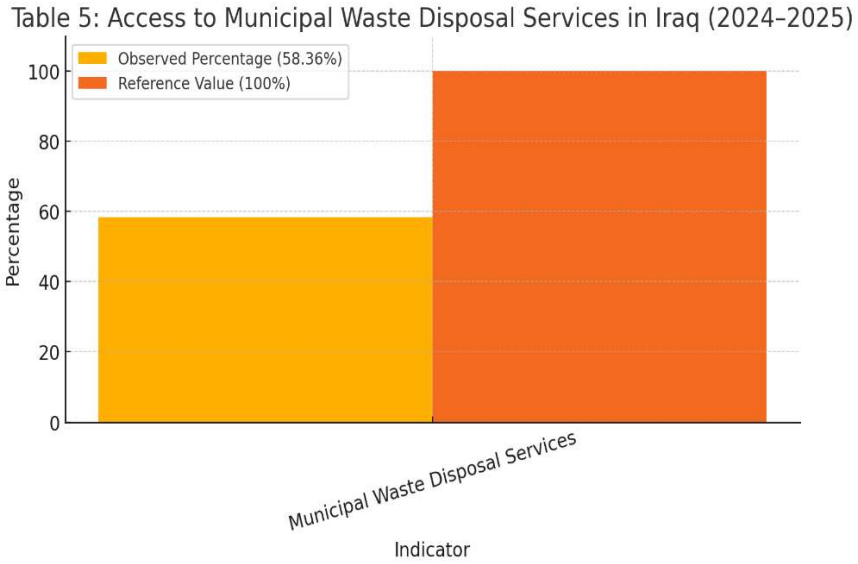
Indicator Calculations:

1.Coverage Index (CI):

CI=Observed Value×100=58.36%

2.Positive Empowerment Index (PEI):

PEI=(10058.36)×100=58.36%



Source: *Prepared by the author based on data from Table (5).*

https://doi.org/10.5281/zenodo.15676078

The recorded value of 58.36% indicates partial progress in the coverage of municipal waste collection and disposal services. However, it remains below the desired threshold for achieving comprehensive and sustainable coverage. This indicator presents a valuable opportunity for transitioning toward a circular economy and integrated waste management systems.

Investments should be directed toward the adoption of smart technologies in waste sorting, recycling, and waste-to-energy conversion. These innovations can significantly contribute to the fulfillment of SDG 11 (Sustainable Cities and Communities) and SDG 12 (Responsible Consumption and Production) *(United Nations, 2023).* Moreover, such advancements can support job creation, enhance environmental health, and improve the overall quality of urban life.

5.6. Compound Positive Performance Average (CPAI)

To provide a comprehensive and aggregated reading of the overall performance across the five calculated indicators, the Compound Positive Performance Average (CPAI) was calculated from the perspective of Positive Statistics *(Al-Jassar, 2025c, 18):*

Compound Positive Performance Average
=Total NumberHousing Ownership + Water inside the Dwelling for Domestic Use + Piped D rinking Water + Sanitation by Public Network + Waste Collection by Municipality

By substituting the values:

CPAI=590.18+86.82+65.67+49.45+58.36=70.10

This Compound Positive Performance Average (70.10 points out of 100) represents the total empowerment required across all indicators. From this, we find a performance that leans towards empowerment and shows that Iraq has achieved relatively significant progress in most basic infrastructure indicators. This value confirms that there is a positive development path to build upon, and that housing stability and water progress compensate for some of the challenges in public network sanitation services and waste management collected by the municipality. This overall figure highlights the need to redouble efforts in less covered services to achieve greater balance in overall development performance, and serves as a strong benchmark that can be used to track future improvement in Iraq's infrastructure from the perspective of Positive Statistics.

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6. Recommendations

Based on the positive analysis of infrastructure indicators in Iraq—and considering the opportunities hidden within the prevailing challenges—this study presents the following recommendations to strengthen the path toward sustainable development:

1. **Promote Smart and Green Housing:**

   Build on the strong foundation of residential stability by developing integrated programs to improve the quality of existing housing units and enhance environmental efficiency. This includes encouraging the adoption of renewable energy systems (e.g., solar panels) and advanced thermal insulation solutions. Investment in smart city projects is also recommended to improve municipal service efficiency and provide environmentally and economically sustainable infrastructure.

2. **Advance Smart Water and Sanitation Management:**

   Expand the coverage of water and sewer networks to reach all underserved areas. It is advised to adopt Internet of Things (IoT) technologies in water management systems to monitor consumption, detect leakages early, and improve distribution efficiency—ultimately reducing waste and enhancing sustainability. Investments should also be made in developing wastewater treatment facilities for non-potable reuse (e.g., industrial and agricultural irrigation), alleviating pressure on freshwater sources.

3. **Transform Waste Management into a Circular Economy:**

   Given the existing challenges, the waste management sector should be turned into an economic and environmental opportunity. This includes investing in integrated infrastructure for waste sorting at source, establishing modern recycling centers, and developing waste-to-energy plants. A national awareness campaign is essential to promote waste separation culture, along with forming effective public-private partnerships to adopt innovative waste management technologies.

4. **Enable Digital Governance and Open Data Platforms:**

   It is necessary to develop digital open-data platforms that enable policymakers, researchers, and citizens to access accurate and updated information on infrastructure indicators. The expansion of Geographic Information Systems (GIS) use is also recommended to prioritize

geographic interventions and optimize spatial planning for infrastructure projects, thereby enhancing transparency and accountability.

5. **Adopt Positive Statistics as an Official Analytical Framework:**

   It is recommended that Positive Statistics Methodology *(Al-Jassar, 2025b, p. 2)* be officially adopted within statistical and development institutions in Iraq. This approach would reorient reporting and evaluation practices toward tracking progress, empowerment, and achievements. It offers a constructive and motivating vision for developmental efforts, enabling the identification of scalable success stories *(Al-Jassar, 2025c, pp. 13–14).*

7. Conclusion

The findings of this study, based on the Positive Statistics *Methodology (Al-Jassar, 2025b, p. 2)* and data from the General Population and Housing Census *(Commission of Statistics and GIS, 2025, 24).*, demonstrate that Iraq has achieved tangible relative progress in basic infrastructure—particularly in the housing sector and access to in-house water sources. Despite persistent challenges in sanitation and waste management services, the methodology revealed latent potentials for empowerment, even in seemingly constrained contexts.

Positive Statistics offers a unique analytical model that refocuses the statistical lens on elements of success and empowerment. It proposes new approaches for formulating future development policies. The values of the calculated indicators serve as a strong motivation for adopting smart and innovative policies that restructure development priorities in Iraq and realign resource allocation to amplify existing strengths and build on current achievements.

Harnessing smart technologies and local innovation—supported by reliable data and grounded in the Positive Statistics framework—represents a powerful tool for transforming current realities into a forward-looking trajectory aligned with the global vision for sustainable development *(United Nations, 2023)*, and securing a prosperous future for upcoming generations in Iraq.

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A Theoretical Study on the Positive Statistics Methodology

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Introduction

Historically, statistics emerged as a fundamental tool for understanding natural and social phenomena and for managing the affairs of states and societies. However, traditional statistical practices have largely focused on monitoring problems, negative deviations, and analyzing their causes (Harris, 2009). This has led to the formation of a partial picture that tends to highlight gaps and deficiencies. In contrast, there has been a pressing need to broaden the statistical lens to include the brighter aspects of human reality—successes, sources of strength, and achievements—rather than limiting the focus to past failures. From this perspective, the idea of "Positive Statistics" emerged. It redirects statistical analysis toward measuring factors of empowerment and flourishing, serving as a philosophical and methodological response to balance the traditional critical view.

The Positive Statistics methodology was recently developed in 2025 by me, the Iraqi statistician Ahmed Jamal Al-Jassar (Al-Jassar, 2025a), who presented it as a new analytical concept and methodology aimed at reshaping the role of data in building the future. This methodology draws its intellectual roots from the field of Positive Psychology, pioneered by Martin Seligman at the beginning of the new millennium, which advocates for measuring well-being by the presence of flourishing factors, not by the absence of problems. The philosophy of Positive Statistics goes even further by linking statistical tools to profound philosophical insights on human happiness and sustainable development, seeking to transform abstract positive concepts into quantifiable indicators. In this paper, I review the evolution of the idea of Positive Statistics and its philosophical origins, its scientific and methodological foundations as documented in my writings (2023–2025) (Al-Jassar, 2025b; Al-Jassar, 2025d), and

provide a detailed explanation of the tools and indicators used (such as PEI, CI, CPAI, and others). I also discuss the documented practical applications of the methodology in the fields of sustainable development, education, health, and infrastructure, compare it with traditional statistics, address the most significant current challenges and future prospects for this promising approach, and conclude by emphasizing the necessity of adhering to the methodological code of conduct to ensure sound scientific and ethical practice.

Keywords: Positive Statistics, Applied Statistics, Empowerment and Improvement Indicators, Sustainable Development, Positive Statistical Analysis, Statistical Innovation.

The Origin of the Idea and its Philosophical Foundations

The Positive Statistics methodology derives its philosophical legitimacy from an ancient quest to understand the components of a good life and human flourishing. Its roots can be traced to Greek philosophy, specifically to Aristotle's concept of *Eudaimonia*, which posits that true happiness is achieved by cultivating virtues and realizing one's full human potential (Christopher, 2012). The approach of Positive Statistics aligns with this vision by seeking not only to describe manifestations of success but also to empower individuals and societies to identify the pathways that lead them to realize their full potential and achieve genuine flourishing.

The methodology also intersects with the principles of utilitarianism by focusing on maximizing well-being and happiness for the greatest number of people, by directing policies and practices toward building more prosperous and just societies. In addition, Positive Statistics is connected to existential and humanistic philosophies that focus on personal growth and the individual's search for meaning, freedom, and responsibility (Ryan, 2016). It aims to use statistical tools to support individuals in overcoming challenges, discovering their latent capabilities, and living a life of value and meaning.

In the contemporary context, Positive Psychology is the closest theoretical framework that feeds the Positive Statistics methodology. As Seligman and others have pointed out, there is a need to study aspects of strength and psychological health (such as satisfaction, optimism, and resilience) to the same extent as studying disorders and problems (Wright, 2014; Zeil, 2018). However, my vision for Positive Statistics has gone beyond merely applying statistics to Positive Psychology data, to developing a comprehensive statistical approach that systematically operationalizes these principles to achieve tangible positive results (Al-Jassar, 2025b). Thus, Positive Statistics represents an intellectual fusion between the ancient philosophical tradition (the search for the virtuous life) and modern trends in positive behavioral science, which gives it a strong theoretical and moral depth.

With these intellectual roots, and as a result of the growing awareness of the shortcomings of the traditional methodology, the concept of Positive Statistics began to take shape as an academic project in the mid-2020s. Although the term was not explicitly mentioned in classical literature, its first formal proposal came in a series of research papers in 2025 by me (Al-Jassar, 2025b; Al-Jassar, 2025d). I responded to what I described as the "excessive focus on the dysfunctions of society and its institutions" in prevailing statistical analyses, advocating that data should become a tool for empowering and building the future, not just a mirror of past negatives.

My efforts led to the establishment of a new school of thought in statistics that focuses on measuring success and motivation instead of tracking failure and frustration. This trajectory coincided with the emergence of earlier studies that called for a positive perspective in analysis, such as Wright (2014), who addressed statistical analysis in Positive Psychology; Ryan (2016), who discussed statistics as a tool for analyzing success in scientific research; and Zeil (2018), on positive psychological measurements. These efforts reflected a growing interest in developing alternative and constructive visions for understanding human phenomena, and they formed an intellectual groundwork that paved the way for the emergence of Positive Statistics as a comprehensive concept at my hands.

The Scientific and Methodological Foundation of the Positive Statistics Methodology

During 2023–2025, I worked on establishing a robust methodological foundation for Positive Statistics through a number of reference scientific publications (Al-Jassar, 2025a; Al-Jassar, 2025d; Al-Jassar, 2025f). In these works, I laid out the theoretical and practical bases for the new orientation, describing it as a development-oriented analytical approach centered on exploring positive phenomena, monitoring success factors, and understanding the mechanisms of progress. My main contributions include a comprehensive foundational paper on the philosophical foundations and practical applications of the methodology, as well as applied studies in the fields of education, sustainable development, and others (Al-Jassar, 2025b; Al-Jassar, 2025c). These works collectively focus on building an integrated cognitive framework that redefines the relationship between statistics and knowledge, so that data becomes a tool for positive foresight and supporting decision-making towards continuous improvement.

Core Principles of the Methodology

Positive Statistics is based on a set of core principles that guide its methodology and govern its approaches (Al-Jassar, 2025b):

- **The Principle of Construction Instead of Criticism**: Positive Statistics adopts a constructive approach to analysis, aiming to discover patterns and practices that have led to desired outcomes and to analyze the factors that enhance and develop performance, rather than confining itself to criticizing past failures.
- **The Principle of Searching for Success Factors Instead of Failure Causes**: Positive analysis focuses on understanding why some people succeed in achieving their goals, and what distinguishes exceptional positive cases (Ryan, 2016).
- **The Principle of Focusing on Successful Contexts and Best Practices**: It monitors environments and conditions that lead to outstanding performance, studying best practices to adapt and generalize them in other contexts (Wright, 2014).
- **The Principle of Studying Positive Deviance as a Source of Knowledge**: It treats above-average, unexpected performance as a rich source of information (Zeil, 2018).
- **The Principle of Achievement-Oriented Explanatory Models**: It develops models that explain how and why success occurs, integrating quantitative analysis with constructive vision (Christopher, 2012).

Tools and Indicators Used in Positive Statistics

At the level of design and statistical tools, studies guided by Positive Statistics differ in their methodology from traditional studies. In data collection and analysis, the starting point is to identify successful models as the focus of interest and turn them into a statistical reference, instead of making failures the baseline. The sample is sometimes chosen based on outstanding performance (e.g., extreme positive cases) to extract lessons from them, rather than relying solely on random samples whose averages might conceal gems of successful experiences. Research questions are formulated in an inverted manner; instead of asking, “What are the reasons for low performance?” the question becomes, “What are the factors that enhance high performance?” The methodology also encourages the use of in-depth case studies (individual and collective) to gather qualitative and quantitative data to understand the underlying mechanisms of success, and to combine quantitative and qualitative methods to form a comprehensive picture of the positive phenomenon.

To quantitatively measure positive phenomena, specific quantitative indicators have been developed to reflect degrees of progress and empowerment. Among the most important of these indicators used in the official guide (Al-Jassar, 2025) are:

- **The Positive Empowerment Index (PEI):** Measures the percentage of a defined positive goal that has been achieved relative to a reference standard. In other words, it determines to what extent we have approached a targeted positive goal in a specific area (Al-Jassar, 2025a; Al-Jassar, 2025d). For example, if achieving access to a certain service for 80% of the population is considered the optimal development goal, the percentage of those who currently have access to the service will be the PEI value for that indicator.
- **The Coverage Index (CI)** *(sometimes referred to as the Cumulative Improvement Index):* Measures the percentage of access to a service or achievement of a goal across the population or beneficiaries (Al-Jassar, 2025a). This index is widely used in areas of infrastructure and basic services to calculate the extent of current coverage compared to the total target number (Wright, 2014). It expresses the cumulative improvement in service provision over time by measuring the percentage of covered versus non-covered groups (Ryan, 2016).
- **The Composite Positive Achievement Index (CPAI):** Provides a comprehensive, aggregated reading of performance across a set of sub-indicators (Al-Jassar, 2025d). This composite index is calculated to summarize the overall level of achievement in a specific area that takes into account several positive dimensions. For example, to measure progress in infrastructure, the housing empowerment index and the water and sanitation coverage index can be combined into a single composite value that provides a simplified overview of the general situation (Zeil, 2018).

In addition to these tools, the Positive Statistics methodology employs statistical analysis methods suitable for the nature of "growth" and "improvement" data (Christopher, 2012). This includes **cumulative time series analysis**, which monitors the total positive change over a period and highlights the curve of continuous progress (Harris, 2009). The **Mann-Kendall statistical test** is also used to detect the significance of improvement trends — whether the increase is statistically significant or random — as are **linear regression models** to measure the sustainable annual growth rate (such as calculating the Compound Annual Growth Rate, CAGR) (Wright, 2014; Al-Jassar, 2025a).

All of this is within a foundational framework that aims to ensure that the improvement being monitored is not just a coincidence but a real, significant trend that can be built upon (Al-Jassar, 2025d). The methodology also encourages the development of **new**

performance indicators that are sensitive and accurate in measuring the specific positive dimensions of each field (Ryan, 2016). For example, new scales could be created for quality of life and satisfaction, levels of innovation and continuous learning, achievement rates of long-term goals, and criteria for sustainable socio-economic well-being (Zeil, 2018; Al-Jassar, 2025f). The essential condition is that these indicators are both quantitatively measurable and express positive values that we aspire to promote.

In this way, Positive Statistics provides several measurement tools that enable researchers and decision-makers to track tangible improvement and evaluate the impact of positive initiatives in a systematic and objective manner (Al-Jassar, 2025a; Al-Jassar, 2025d).

Documented Practical Applications of the Methodology

Based on the theoretical framework and tools above, several practical applications of the Positive Statistics methodology have emerged in recent years, covering diverse fields from development to education and health. These applications have proven the added value of the methodology in providing balanced readings and new insights into developmental and social reality. Here are the most prominent documented application models in several sectors:

In Sustainable Development and the Environment: Positive Statistics has been used to assess countries' progress toward achieving sustainable development goals. For example, I conducted a study (Al-Jassar, 2025) analyzing progress on certain Sustainable Development Goal indicators in Iraq (especially Goal 15 concerning terrestrial ecosystems and Goal 16 concerning peace and institutions) during the period 2015–2020. The study relied on official data about forest area, degraded lands, safety levels, and other metrics, and used positive trend analysis tools to reveal the relative improvement in a number of these indicators. The results showed a tangible (albeit gradual) improvement in some aspects, such as a decrease in the crime victim rate and an increase in the feeling of safety, which reflected a positive impact of certain policies in recent years. This balanced reading is important because it is an early practical application of the methodology at the national level, as it presented a less pessimistic view of developmental reality compared to traditional analyses that focused only on challenges. The study confirmed the hypothesis that directing analysis to monitor successes alongside challenges generates a motivating tool for decision-makers that supports positive change and boosts the morale of implementation and follow-up teams.

In Infrastructure and Services: Another prominent application was the analysis of data from the 2024–2025 General Census of Population and Housing in Iraq to read the reality of basic infrastructure (housing, water, sanitation, and waste management) through the lens of Positive Statistics. These sectors were classified as empowering

areas related to sustainable development goals (such as Goal 6 for water and Goal 11 for sustainable cities). The results of the analysis revealed important positive aspects that should be built upon, including that the housing ownership rate reached about 72%, which is an indicator of strong residential stability. It also showed that moderate coverage of clean drinking water has been achieved for most of the population, despite serious ongoing challenges in sanitation and waste collection services. More importantly, the study provided a constructive interpretation of these results, viewing the deficiency in waste management as an opportunity for innovation and investment in smart technologies rather than just describing it as a problem. The study also calculated quantitative positive indicators (PEI, CI, and CPAI) for each sector to measure the extent of progress toward desired goals. The housing empowerment index was relatively high, close to 0.90 (assuming an optimal reference target of 80% for housing ownership), which indicates that Iraq is approaching the standard for residential well-being. This constructive reading of service infrastructure allowed for the proposal of practical recommendations focused on enhancing successes (such as maintaining high ownership rates) and addressing the remaining challenges with a spirit of realistic optimism, in line with the principles of Positive Statistics in re-framing problems as opportunities for improvement.

In the Education Sector: Education is a vital field for applying the Positive Statistics methodology due to its connection to building human capabilities. In a study I conducted (Al-Jassar, 2025) on the evolution of enrollment in technical education in Iraq from 2016–2020, the positive methodology was used to analyze official data that showed a continuous increase in student numbers over four years. The results revealed a total increase of over 30,000 students in technical education during the studied period, with a total growth rate of about 34% (a compound annual growth rate of ~10.3%). This continuous increase was considered a **"positive deviant"** that deserved in-depth documentation and analysis, as it indicates a sustainable positive momentum rather than a fleeting surge. The study interpreted this qualitative improvement as an indicator of a change in society's perception of the value of technical education and its role in providing the skills required for the modern labor market. Instead of just numerically monitoring the increase, the positive analysis went on to extract the positive factors underlying the growth. It suggested several potential reasons, including: the increased attractiveness of technical education to youth due to a growing awareness of its career value, the alignment of technical specializations with market needs which raised the employment opportunities for graduates, and the existence of government initiatives supporting the expansion of this sector. This approach revived the discussion about success factors instead of re-hashing the obstacles to higher education. The study concluded with recommendations to focus on strengthening these positive factors (such as developing practical training programs, making technical curricula flexible, and continuing awareness campaigns) instead of the traditional focus on lack of funding or

weak infrastructure alone. In doing so, the methodology provided a different reading of educational challenges, where the increase in students was viewed as a sign of health that should be supported and invested in for further future improvement. It is also worth noting other applications in education documented in the literature, including the use of Positive Statistics to evaluate programs that enhance students' psychological resilience and its impact on their academic achievement, as well as analyzing the relationship between a positive school climate (supportive and safe environments) and student performance levels, where data from one study showed a strong positive correlation between a higher quality school environment and higher academic averages and regular student attendance.

In the Health and Mental Health Sector: Positive Statistics enters the field of health by tracking indicators of health well-being and factors of recovery and resilience, not just rates of disease and death. For example, a case study was documented on the impact of a program to promote gratitude on the mental health of participants. Positive indicators like happiness and optimism, as well as negative indicators like depression and anxiety, were measured before and after the program using accredited psychological scales. The positive statistical analysis showed a significant and sustained increase in the levels of happiness and general satisfaction among individuals who participated in daily gratitude practice, accompanied by a noticeable decrease in anxiety and depression levels. This demonstrates the effectiveness of this positive intervention in improving mental health and proves how Positive Statistics can quantitatively and reliably evaluate the impact of positive interventions. In another study, detailed data on the psychological resilience of survivors of severe life traumas was collected, along with measurements of their social support and optimism, and then positive analysis was used to examine the correlations. It was found that higher social support and a sense of optimism were associated with a significant increase in the resilience of these individuals and their ability to recover. These findings shed light on the factors of flourishing even in pathological or traumatic contexts, which helps specialists design interventions that focus on strengthening support networks and instilling hope as both preventive and therapeutic factors.

In Labor and Social Development: Some institutions have benefited from the Positive Statistics methodology to improve the work environment and increase employee productivity. For example, a company implemented a comprehensive program to help employees identify and professionally invest in their personal strengths, and measured employee engagement and job satisfaction before and after the program. The positive statistical analysis revealed a significant and sustained increase in engagement and satisfaction rates among employees who joined the program, accompanied by an improvement in the overall performance of work teams in departments that adopted a strengths-based approach. Data from another study also indicated a strong positive

correlation between positive leadership styles (supportive and motivating for employees) and higher productivity and innovation rates in work teams. These institutional applications confirm that the Positive Statistics methodology is not only useful for major developmental sectors, but also extends to the fields of management and organization to enhance the effectiveness of human resources and build a positive corporate culture. Overall, through these and other examples, it is clear that Positive Statistics offers a new applied perspective capable of extracting hidden successes and providing numerical evidence of what is actually working well, which helps in designing more successful policies and initiatives across different sectors.

Comparison Between Traditional and Positive Statistics

Positive Statistics represents a qualitative shift in the role and purpose of data compared to traditional statistical approaches (Al-Jassar, 2025a; Al-Jassar, 2025d). In terms of focus, traditional statistics is primarily concerned with diagnosing problems, deviations, and their root causes with the aim of addressing and reducing them (Harris, 2009). In contrast, Positive Statistics directs attention toward analyzing potential, effectiveness, and the drivers of growth and flourishing in order to enhance them (Ryan, 2016). The implicit question in the traditional approach is *"What needs to be fixed?"*, while in the positive approach it becomes *"What can be built and developed, and how can we improve performance and enhance positivity further?"* (Wright, 2014).

In terms of data type and analysis, traditional statistics relies on data about problems and deficiencies — such as unemployment rates, illness prevalence, and crime statistics — with analysis focused on identifying the negative causes behind them (Zeil, 2018). Positive Statistics, however, begins with data on well-being, growth, and strengths — such as job satisfaction rates, mental health levels, and innovation rates — and centers analysis on understanding how to build upon and develop these aspects (Al-Jassar, 2025f).

Regarding research objectives, the traditional approach seeks to accurately describe phenomena, explain the causes of problems, and predict risks or negative outcomes in order to control them (Harris, 2009). In contrast, Positive Statistics aims to accurately describe positive phenomena, explain the factors behind success, and predict positive outcomes, with an emphasis on capacity building and continuous motivation for improvement (Al-Jassar, 2025b; Ryan, 2016).

The role of the researcher also differs between methodologies. In traditional statistics, the researcher is seen as a neutral analyst who collects and interprets data to uncover the "truths" behind problems (Christopher, 2012). In Positive Statistics, the researcher acts as a constructive change agent whose role goes beyond description to actively guiding results toward empowering individuals and communities (Al-Jassar, 2025c). In

this sense, the positive researcher does not merely observe reality but proposes actionable pathways for enhancing identified success factors (Wright, 2014).

From the perspective of application scope, traditional statistics is widely used in areas such as economics (e.g., inflation and unemployment analysis), health (e.g., studying disease spread), and sociology (e.g., crime and poverty studies) — all focusing primarily on existing problems (Harris, 2009; Christopher, 2012). Positive Statistics, on the other hand, is applied in fields like Positive Psychology (e.g., happiness and satisfaction studies), human development (e.g., promoting growth and capacity building), and business management (e.g., building positive work environments), with a primary goal of construction and enhancement rather than treatment and restoration (Ryan, 2016; Zeil, 2018). Thus, both methodologies complement one another — the traditional approach addresses shortcomings, and the positive approach develops strengths — together forming a balanced and comprehensive vision for decision-makers (Al-Jassar, 2025d).

There is also an important conceptual difference in the treatment of "error" or deviation. In traditional statistics, any deviation from the mean or expectation is considered a negative error to be minimized and explained (Christopher, 2012). In Positive Statistics, however, deviations in a positive direction — such as an exceptional increase in a performance indicator — are treated as positive values that warrant further analysis because they may reveal successful models worth replicating and scaling up (Al-Jassar, 2025a). Here, "exception" is redefined from being a statistical anomaly to being a positive deviant with significant research value (Zeil, 2018).

Finally, despite these fundamental differences, the literature confirms that Positive Statistics is not a rejection of traditional statistics but rather a complementary extension (Al-Jassar, 2025f). It addresses a cognitive and psychological gap by highlighting small successes and gradual achievements that are often overlooked when the focus remains solely on problems (Wright, 2014). This results in more empowering interpretations of reality, replacing discouraging readings with constructive insights. As stated in my earlier work, Positive Statistics is a call to re-employ the power of numbers and data to build a better future by understanding and developing the latent potential of individuals and communities (Al-Jassar, 2025d). It represents a paradigm shift in the use of statistics — from a tool for measuring deficiency and dysfunction to a framework for understanding the drivers of flourishing and unleashing positive energies (Ryan, 2016).

Challenges Facing the Methodology

Despite the growing intellectual and practical momentum of Positive Statistics, like any nascent scientific field, it faces a number of challenges that need to be addressed to

ensure its establishment and widespread adoption. The most prominent of these challenges is the development of more sensitive and accurate measurement tools for positive aspects. Measuring slight improvements or gradual changes in happiness or empowerment indicators can be more difficult than tracking a large increase in a negative indicator like deaths or losses. Therefore, the methodology needs to innovate precise indicators that capture even weak positive signals in the data, so that small contributions are not lost in statistical noise. Related to this is the challenge of cultural relevance of measurement tools; it must be ensured that the adopted positive indicators are valid for different environments and societies without bias. What is considered "well-being" or "achievement" in one social context may differ in another. This requires research and development efforts to ensure the consistency of the methodology's tools across cultures.

Another challenge is the need for institutional and academic support to adopt and implement the methodology on a wide scale. Positive Statistics requires a change in the research and institutional mindset that has long been accustomed to approaching problems only. Effecting this change requires training staff, qualifying researchers, and integrating positive concepts into higher education curricula. In this regard, important steps have begun to be taken, such as the preparation of an accredited university guide for a course in Positive Statistics to be taught at universities. This guide organizes the course content and includes clear learning objectives to build students' abilities to track improvement indicators and use positive analysis tools. An official licensing system for trainers and researchers in the methodology has also been established, which ensures their scientific qualification and grants them certified authority to use it. These regulatory steps will contribute to establishing professional standards for application and expanding the base of qualified users.

Another challenge is gaining scientific credibility and public acceptance. Any new framework may face some skepticism or reservations from the scientific community in its early stages until evidence of its utility accumulates. Therefore, researchers in Positive Statistics must focus on publishing practical results in prestigious and peer-reviewed journals, and proving the added scientific value of the methodology compared to established methods. I have stressed the importance of translating research into English and publishing it internationally to promote the global spread of the concept. Indeed, many of my works have been published on open global platforms such as Zenodo and SSRN to make them available to researchers around the world. Over time, the accumulation of successful applied studies (as we have seen in education, health, and development) will lead to increased scientific confidence in the methodology and its adoption in more fields.

It is also important to mention the challenge of misunderstanding or misuse. Just as the positive thinking movement was previously misunderstood as ignoring problems or

painting a falsely rosy picture, some may misinterpret Positive Statistics as a call to completely disregard negative data. Therefore, it is important to always emphasize—as I do—that the methodology is complementary, not a form of denial; it does not advocate for eliminating scientific criticism of problems, but for balancing it with the addition of a constructive perspective. Practical application may also face the risk of confirmation bias (i.e., searching for data that only supports the hypothesis of improvement). Therefore, practitioners must adhere strictly to the rigorous scientific methodology and not twist the data to show desirable positive results. It is for this very purpose that the methodological code of conduct and the licensing regulation were designed to regulate the practice, which I will explain in the next section.

Future Development Prospects

Despite the challenges, the Positive Statistics methodology shows promising prospects for development and spread in the coming years, thanks to its great potential in directing quantitative analysis toward serving the goals of human development. On the academic and institutional front, it is expected that the integration of the methodology into curricula and training programs will increase. This has already begun with the launch of specialized university courses in 2025 to teach Positive Statistics, where a 12-week curriculum was prepared that addresses the evolution of statistical thought, the positive school, analysis tools, and areas of practical application, among others. An official licensing system for trainers and researchers in the methodology has also been established, ensuring their scientific qualification and granting them certified authority to use it. These regulatory steps will contribute to establishing professional standards for application and expanding the base of qualified users.

From a scientific research perspective, there is a wide scope for developing new and more comprehensive positive indicators in various sectors. For example, a global community happiness index could be created that combines dimensions of health, education, and income with indicators of social cohesion and quality of life, to provide a holistic picture of a society's well-being. It is also expected that we will see applications of the methodology at broader levels, such as international comparisons or city studies, not just within a single country. Positive Statistics is suitable to be a complementary framework for international development reports by highlighting progress made alongside challenges. The methodology may also be integrated with modern technologies in big data analysis and artificial intelligence, to explore hidden success patterns in large and complex databases. For example, machine learning algorithms could be used to discover common factors among the most innovative companies or fastest-growing economic regions, and then Positive Statistics could be used to turn these factors into operational indicators that can be tracked and monitored over time.

Furthermore, the future holds the possibility of establishing an international network or research community around Positive Statistics, bringing together interested individuals from various disciplines (economics, health, education, management, etc.) to exchange experiences and coordinate research efforts. I have hinted at the importance of spreading the concept of the methodology globally as a step toward its adoption in other contexts, and perhaps in the future, we will see conferences or specialized journals in this new field. The involvement of international organizations (such as the United Nations and the World Bank) in adopting some of the standards of Positive Statistics in their reports will also be a strong push toward its institutional spread.

In conclusion, the Positive Statistics methodology is expected to create a **paradigm shift** in how we use data; from a mere diagnostic tool to a lever for positive change. With the growing global interest in sustainable development and human well-being, the value of any methodology that provides practical insights for creating a brighter future will grow. Positive Statistics is qualified to play this role through its constructive yet organized approach. With continued research and development to improve its tools, and the commitment of its practitioners to the scientific code of conduct, the prospects are wide open for it to become a firmly established part of analytical and decision-making practices in the coming decades.

Adherence to the Methodological Code of Conduct

Recognizing the importance of maintaining the methodology within a strict scientific and ethical framework, a specific **Methodological Code of Conduct** for Positive Statistics was approved, along with an official licensing system to regulate the use and teaching of the methodology. This code obliges anyone who wishes to obtain official accreditation as a practitioner (trainer or researcher) to meet a number of conditions and standards that ensure the proper application of the methodology. Among these mandatory conditions are: successfully completing the official training course and submitting a complete applied project using the methodology in a specialized field to prove the applicant's competence. It also requires full compliance with the provisions of the official guide to the methodology and the clauses of the code of conduct, and signing a written pledge not to misuse or modify the methodology without prior permission from the founder.

The methodological code of conduct sets out the ethical and professional rules that licensees must follow. The most important of these is to preserve the identity of the methodology and not to alter or integrate it in a way that distorts its essence without official approval. It also mandates submitting periodic reports on research and training activities carried out, to ensure transparency and track impact. Trainers are required to use the official accredited sources and guides when transmitting knowledge to others,

to avoid any personal interpretations that could harm the credibility of the content. In turn, the system defines progressive penalties for violating the code of conduct or breaching the licensing terms: starting with a written warning for the first violation, then temporary suspension, and finally revoking the license permanently and officially announcing it in the case of repetition or severe misuse. These strict measures demonstrate the seriousness of those in charge of the methodology in protecting its scientific integrity and preventing any deviations that could cause it to lose its credibility.

From the perspective of research ethics, the code emphasizes the need to follow a rigorous scientific methodology in all positive studies; this includes accurate documentation of sources and data, and a commitment to objective, non-selective analysis (i.e., not ignoring important negative data, but rather placing it in its correct context without exaggeration). The goal is to provide a balanced and realistic picture that builds trust rather than painting a deceptive rosy picture. The code also encourages taking social context into account when interpreting positive results, for example, not using any slight improvement to justify wrong policies or to be complacent about solving still-existing problems. In general, adherence to the code of conduct provides a standard guarantee that the application of Positive Statistics will be done in a responsible and honest manner, maximizing its benefits and avoiding its risks. This commitment is what will preserve the methodology's scientific reputation as it makes its way toward widespread academic and professional recognition.

Conclusion

With my vision, Positive Statistics offers a revolutionary addition to the science of applied statistics, as it moves this science from a singular focus on monitoring failures to a broader horizon that explores factors of success and excellence. Through a deep philosophical foundation and a constructive analytical methodology, I have established the features of a new field that restores balance to the research picture of reality. Positive Statistics does not claim to eliminate criticism or hide problems, but rather calls for balancing them by highlighting the other side of the human experience—the side of achievement and progress. Throughout this paper, we have seen how the idea evolved philosophically and how it was scientifically founded within clear methodological principles, supported by innovative measurement tools such as the positive empowerment and improvement indices. We also reviewed successful practical applications in the fields of development, education, health, and others, which proved the methodology's ability to generate new and useful insights for decision-makers by using the same data but from a different perspective. By comparing the positive and

traditional approaches, it became clear that both are necessary to complete the picture and prevent bias—the former builds on strengths, and the latter addresses weaknesses.

While acknowledging the current challenges, such as the need to develop accurate metrics and gain wider acceptance, the momentum continues toward establishing Positive Statistics as an original branch of applied statistics. The prospects for development are wide open: academic curricula, licensing certificates, new indicators, and interdisciplinary applications. Adherence to the code of conduct ensures that this launch remains on the right scientific and ethical track. Therefore, I can conclude this research by affirming that Positive Statistics represents an essential and complementary perspective in an era of sustainable development goals and humanity's aspiration for a better future. It is a methodology that carries within it a responsible, data-driven optimistic spirit, where success itself becomes a subject for analysis and extraction, which opens new cognitive horizons and directs policies toward empowering human potentials rather than confining them to addressing their deficiencies only. Establishing this vision is capable of enriching scientific knowledge, expanding its horizons, and making statistics a true tool for building a more positive and balanced tomorrow.

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Middle East Academic Publications

This book presents a collection of research papers published in English on SSRN, representing the earliest applications of the Positive Statistics Methodology across various fields, including sustainable development, education, demography, and infrastructure.

It highlights the paradigm shift from traditional deficit-based analysis toward a positive-oriented approach that emphasizes indicators of improvement and empowerment.

Far beyond being a simple compilation, this volume documents a coherent scientific journey that lays the foundations for a new statistical school pioneered by Ahmed Jamal Al-Jassar. It serves as a valuable reference for researchers and decision-makers interested in adopting Positive Statistics within diverse academic and institutional contexts.

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