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RESEARCH ARTICLE

Measuring Algeria's Digital Transformation through an Indicator Based Assessment for Digital Algeria 2030

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ABSTRACT

Research aims: This study describes Algeria's digital transformation using indicators relevant to the five axes of the national strategy for Digital Algeria 2030.

Design/Methodology/Approach: The analysis uses published secondary data and descriptive comparisons. The main series covers the UN E-Government Survey editions of 2020, 2022 and 2024, with national telecommunications data for 2019 to the first half of 2023. The 2025 UNCTAD assessment and Network Readiness Index provide supplementary evidence.

Research findings: Mobile and fixed internet subscriptions increased. Algeria's published EGDI score rose from 0.5173 in 2020 to 0.5956 in 2024, while its rank improved from 120 to 112 in 2022 before falling to 116 in 2024. The OSI rose in 2022 and fell in 2024. Changes to the 2024 TII and HCI methods limit direct comparisons across editions; the lower HCI score cannot establish a decline in digital skills. E-commerce indicators show expansion alongside continued use of cash on delivery. The results provide a descriptive baseline for the 2025-2030 strategy rather than an estimate of its effects.

Practitioners/Policy Implications: Policymakers should assess service usability, skills and opportunities for online participation alongside connectivity. Direct measures of service use, completion rates and user experience would strengthen monitoring of the strategy.

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1. Introduction

Governments use digital technologies to improve public-service delivery, administrative coordination and access to information. Evaluating this transformation requires evidence about the services available to users as well as the infrastructure supporting them.

Connectivity provides a foundation for digital administration, but subscription growth alone does not show whether services are accessible, usable or effective. A broader assessment should distinguish infrastructure, education, online services and economic activity.

In Algeria, Mokhtari (2024) discusses digital transformation in the context of globalisation. The National Strategy for Digital Transformation in Algeria 2025-2030 provides a policy framework for Digital Algeria 2030 (High Commission for Digitalization, 2024). Earlier initi-

atives, including the e-Algeria programme, form part of this policy background (Aggoune & Riahla, 2023).

The national strategy organises digital transformation around infrastructure, human capital, governance, the economy and society. These axes provide a useful structure for examining published indicators, although the indicators do not cover every strategic objective.

An assessment of progress must distinguish the conditions preceding the strategy from results achieved during its implementation. Most of the time-series evidence examined here comes from 2020-2024 and therefore provides a baseline for the 2025-2030 programme.

The available evidence also measures different aspects of transformation. Telecommunications subscriptions describe access, while composite indices combine several inputs or assess the features of online services. Changes in one measure need not imply equivalent changes in another.

Studies of Algerian e-government and digital learning offer evidence about particular systems and institutions. Bringing national indicators together can complement these studies, provided that the analysis respects differences in coverage, reference year and measurement method.

This paper asks: What do published indicators show about Algeria's digital transformation, and which issues do they identify for monitoring Digital Algeria 2030?

The study maps selected indicators to the five strategic axes and examines their published scores, rankings and underlying definitions. It identifies areas for further investigation without constructing a new composite score or estimating the proportion of strategic targets achieved.

The assessment uses national telecommunications statistics and reports from the United Nations, the International Telecommunication Union, UNCTAD, the Portulans Institute and the World Bank. Global rankings provide comparative context, rather than a controlled comparison with matched countries.

The evidence shows increasing subscriptions and variation in online-service and participation measures. The interpretation of these patterns requires attention to changes in index design and to the distinction between a published score and the outcome it is intended to represent.

The resulting overview can support the selection of monitoring priorities. It also indicates where direct observations of service use, accessibility, skills and institutional performance would be needed to assess implementation.

2. Literature Review

2.1. *Digital Algeria 2030 and the analytical framework*

2.1.1. Overview of the strategy

The National Strategy for Digital Transformation in Algeria covers 2025-2030. Its English version is dated 2 August 2024 and sets out the direction for Digital Algeria 2030 (High Commission for Digitalization, 2024).

The strategy links connectivity and digital public services with the development of the digital economy and wider social inclusion. Digital security and the regulatory framework support its strategic axes.

2.1.2. The five strategic axes

The five axes are basic ICT infrastructure; human capital, training, research and development; digital governance; the digital economy; and digital society (High Commission for Digitalization, 2024).

Infrastructure concerns the technical foundation for digital connectivity and services. The human-capital axis covers training and research, while digital governance concerns the use of digital systems in public administration.

The digital-economy and digital-society axes extend the agenda to economic activity and social participation. Together, the five axes provide the organising framework for this study.

2.1.3. Mapping indicators to the strategic axes

The following indicators provide partial evidence relevant to each axis. This mapping is an analytical choice by the study and is not an official scorecard for the national strategy.

Infrastructure: telecommunications subscriptions, internet use and the UN Telecommunication Infrastructure Index (TII).

Human capital: the Human Capital Index (HCI) used in the UN E-Government Survey. This index differs from the World Bank Human Capital Index and is not a direct test of digital skills.

Governance: the UN E-Government Development Index (EGDI), with separate attention to its Online Service Index (OSI) component.

Society: the UN E-Participation Index (EPI), which assesses government provision of opportunities for online participation rather than actual citizen participation.

Economy: e-commerce and digital-payment indicators, supplemented by the broader Network Readiness Index (NRI). The NRI also covers dimensions outside the digital economy.

Institutional and security context: the ITU Global Cybersecurity Index (GCI) and selected Worldwide Governance Indicators (WGI). These measures provide indirect context for trust rather than a direct measure of users' confidence in digital services.

The measures overlap. The EGDI is the arithmetic mean of the OSI, TII and HCI, and the EPI also contributes to the OSI. They are therefore interpreted as related measures rather than independent confirmations of the same finding (United Nations Department of Economic and Social Affairs [UNDESA], 2024).

2.2. *Key E-Governance Initiatives in Algeria*

Earlier national programmes and sectoral studies help explain the setting in which digital services developed.

Their findings concern specific systems and should not be treated as evidence of nationwide effects.

Aggoune and Riahla (2023) discuss the e-Algeria programme in a preprint on information agility in e-government systems. Their study provides background on the programme and proposes a method for evaluating systems.

The same preprint presents TAWASSOL as a proposed platform for integrating access to government services. The proposal illustrates an approach to coordination; it does not establish a nationwide rollout or a measured improvement in Algeria's OSI (Aggoune & Riahla, 2023).

Belhocine et al. (2019) evaluate the National Housing File in the Algerian housing sector. Their case study examines e-governance within housing administration and provides sector-specific evidence rather than a national measure of public-service performance.

Aouissi (2024) studies e-learning at Ghardaia University and identifies a need for staff training and institutional support. Benaida (2023) compares the usability of Algerian and UK e-government websites. These studies draw attention to skills and usability, but their findings cannot be generalised to all Algerian public institutions.

3. Methodology

The study uses a descriptive review of published quantitative indicators. It compares scores across available editions and reports international rankings where supplied by the publisher. It does not estimate causal effects, test hypotheses or produce a harmonised annual panel.

The five strategic axes organise the analysis. Indicator selection reflects relevance and public availability, with the limitations of each proxy made explicit. No common weighting scheme combines the measures, and no quantified national-target attainment score is calculated.

The principal sources are the 2020, 2022 and 2024 UN E-Government Surveys. Additional sources include the Algerian Ministry of Post and Telecommunications report for the first half of 2023, World Development Indicators, UNCTAD's 2025 assessment, the NRI 2025 country profile, the ITU GCI 2024 report and the archived 2025 WGI revision. The WGI series uses one release for all selected years to avoid mixing revisions.

The UN comparison covers 2020-2024. Telecommunications subscriptions cover 2019 to mid-2023; annual internet-use estimates cover 2019-2023. UNCTAD reports several reference periods, and the NRI 2025 is a supplementary observation outside the main period. Publication years do not necessarily equal the years of the underlying observations. Because the national strategy covers 2025-2030, the earlier indicators are interpreted as baseline conditions. Changes to UN index methods in 2024 limit direct trend comparisons (UNDESA, 2024).

4. Findings

The findings describe published values and their implications within the coverage and methodological limits of each source.

4.1. *Infrastructure*

Subscriptions and internet-use estimates describe different aspects of connectivity. One person may hold several subscriptions, so subscription counts cannot be read as counts of unique users.

Table 1 reports growth in mobile and fixed internet subscriptions. The final subscription observation is for the first half of 2023. The internet-use column gives annual population estimates from the World Bank's current World Development Indicators series (World Bank, 2026).

Table 1 Internet subscriptions and annual internet use

Year	Mobile internet subscriptions (3G and 4G)	Fixed internet subscriptions	Individuals using the internet (% of population)
2019	36,911,428	3,580,456	55.8
2020	38,772,562	3,789,128	63.5
2021	41,780,199	4,175,372	72.2
2022	44,757,505	4,705,846	74.8
2023*	45,144,609	5,095,712	76.2

*Sources: Ministry of Post and Telecommunications (2023); World Bank (2026). *The 2023 subscription counts refer to the first half of the year; the internet-use estimate refers to the calendar year. Population estimates are rounded to one decimal place.*

Table 2 Selected fixed internet technologies and total subscriptions

Year	ADSL	FTTH	Fixed 4G LTE	Total fixed internet*
2019	2,334,005	43,115	1,191,612	3,580,456
2020	2,500,080	72,314	1,204,931	3,789,128
2021	2,656,942	165,244	1,340,957	4,175,372
2022	2,792,695	478,172	1,423,425	4,705,846
First half 2023	2,771,460	740,109	1,571,912	5,095,712

*Source: Ministry of Post and Telecommunications (2023), French-language report. *The total also includes WiMAX and leased lines, which are not displayed as separate columns. These categories account for the difference between the three displayed technologies and the total.*

Table 2 shows the composition of fixed internet subscriptions. FTTH subscriptions increased from 43,115 in 2019 to 740,109 in the first half of 2023. ADSL remained the largest category. These counts describe technology adoption and do not directly measure connection speed, reliability or service quality.

Figure 1 and Table 3 present the TII values reported in the three UN survey editions. The index scores range from 0 to 1.

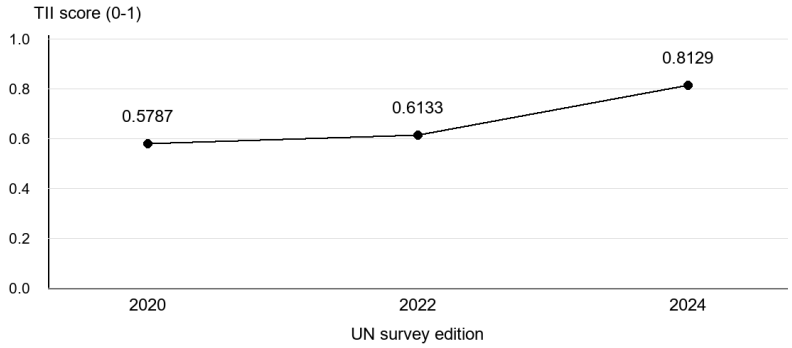


Fig. 1. Reported TII scores in the 2020, 2022 and 2024 editions

Table 3 Reported Telecommunication Infrastructure Index scores

TII	2024	2022	2020
Algeria (Value)	0.8129	0.6133	0.5787

Sources: UNDESA (2020, 2022, 2024).

The published TII score rose from 0.5787 in 2020 to 0.8129 in 2024. However, the 2024 methodology replaced the fixed-broadband subscription component with an affordability component. The difference therefore combines changes in the measured conditions with a change in index construction (UNDESA, 2024).

The national subscription figures independently document expanded access. Together, these observations provide relevant baseline information for the infrastructure axis, but they do not identify the effect of particular investments or demonstrate achievement of the strategy's targets.

4.2. *Human Capital*

The UN HCI combines education-related measures with an e-government literacy component introduced in 2024. It provides a proxy for conditions relevant to the use of digital services rather than a direct assessment of individual digital competence.

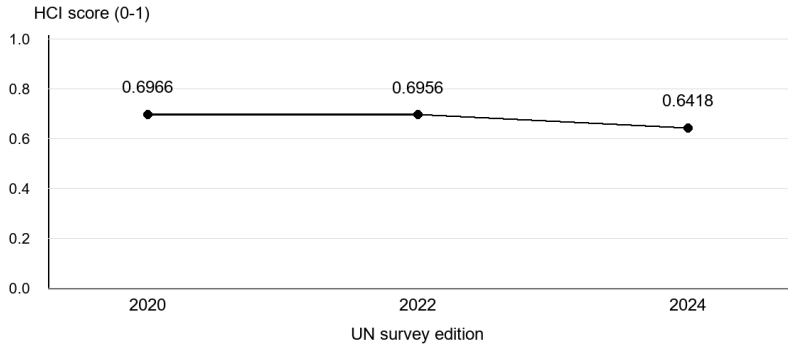


Fig. 2. Reported HCI scores in the 2020, 2022 and 2024 editions

Table 4 Reported UN Human Capital Index scores

HCI	2024	2022	2020
Algeria (Value)	0.6418	0.6956	0.6966

Sources: UNDESA (2020, 2022, 2024).

The published HCI was 0.6966 in 2020, 0.6956 in 2022 and 0.6418 in 2024. In 2024, UNDESA added e-government literacy and changed the weighting to five equally weighted components. The resulting discontinuity prevents the lower score from establishing a comparable decline in education or digital skills.

Monitoring the human-capital axis therefore requires consistent measures of skills and training in addition to the HCI. The present series cannot establish a failure of strategy implementation or quantify a growing skills gap.

4.3. *Governance*

The EGDI summarises infrastructure, human capital and online-service provision. The OSI is examined separately

to clarify the service dimension; it is already included in the EGDI.

4.3.1. Performance in the E-Government Development Index (EGDI)

Table 5 reports the published EGDI scores and global ranks. Ranks describe relative position among countries and need not move in the same direction as scores.

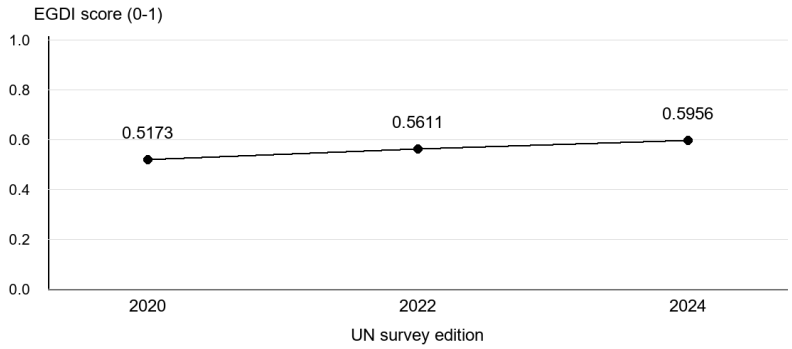


Fig. 3. Reported EGDI scores in the 2020, 2022 and 2024 editions

Table 5 E-Government Development Index scores and ranks

EGDI	2024	2022	2020
Algeria (Rank)	116	112	120
Algeria (Value)	0.5956	0.5611	0.5173

Sources: UNDESA (2020, 2022, 2024).

The published EGDI score increased across the three editions. Algeria's rank improved from 120 in 2020 to 112 in 2022, then fell to 116 in 2024 despite the higher score. A country can gain points while losing places if other countries improve their relative position.

Changes to the component indices limit interpretation of the score increase. The EGDI describes broad conditions for e-government and does not by itself show the integration or effectiveness of every public service.

4.3.2. Online Service Index (OSI)

The OSI assesses features of government online services. Its score concerns the assessed online provision and should not be treated as a direct measure of user satisfaction or successful completion of services.

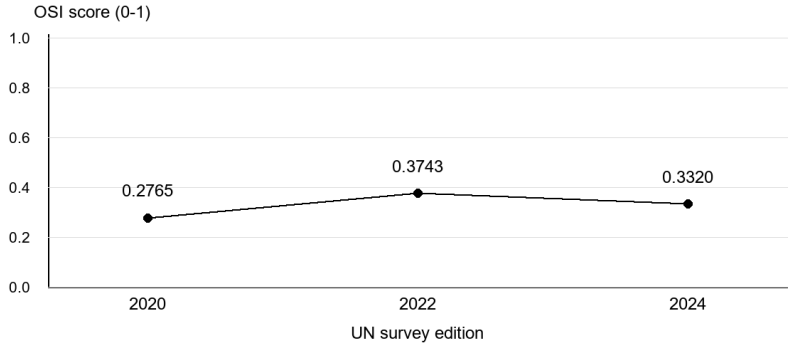


Fig. 4. Reported OSI scores in the 2020, 2022 and 2024 editions

Table 6 Online Service Index scores

OSI	2024	2022	2020
Algeria (Value)	0.3320	0.3743	0.2765

Sources: UNDESA (2020, 2022, 2024).

The OSI rose from 0.2765 in 2020 to 0.3743 in 2022, then fell to 0.3320 in 2024. The 2024 score remained above the 2020 score. Changes in the survey assessment also warrant caution when interpreting differences across editions.

These results support closer examination of online-service provision. Service-level evidence on accessibility, usability and completed transactions would help identify the practical priorities for digital governance.

4.4. *Digital Economy*

This section considers e-commerce and online payments, followed by the broader NRI. These measures cover selected aspects of digital economic activity and readiness rather than the total value added by the digital economy.

4.4.1. E-Commerce Development

UNCTAD's 2025 assessment brings together indicators of registered e-commerce businesses, online payments and connectivity. Table 7 retains the reference periods and approximations reported in that assessment.

Table 7 E-commerce indicators reported in the 2025 UNCTAD assessment

Indicator	Value	Interpretation
Growth in registered e-commerce businesses	Average annual growth of 92% since 2020	Expansion of registered businesses
Online payments for goods and services	Tripled between 2020 and 2024	Growth in recorded online payments
Estimated B2C e-commerce sales relative to GDP	0.8% in 2023	Sales-to-GDP ratio; not a value-added contribution
Individuals using the internet	76.9% in 2023	Estimate published in the assessment
Mobile internet subscriptions per 100 inhabitants	104, as reported in the assessment	Subscription density; not unique users
Cash on delivery	Approximately 90%	Continued predominance in e-commerce payments

Source: United Nations Conference on Trade and Development (UNCTAD, 2025). Reference periods vary across indicators. The internet-use estimate is the value published by UNCTAD; Table 1 uses the subsequently revised World Bank series.

The assessment reports expanding registered e-commerce activity and online payments alongside continued use of cash on delivery. Subscription density above 100 indicates more subscriptions than inhabitants and does not mean that every person uses mobile internet.

The estimated B2C sales-to-GDP ratio describes market sales relative to GDP. It is not the value-added contribution of e-commerce and cannot establish the contribution of the entire digital economy. The figures identify topics for further analysis of payment adoption and business activity without measuring the effects of the 2025-2030 strategy.

4.4.2. Network Readiness Index (NRI)

The NRI covers Technology, People, Governance and Impact. The 2025 country profile supplements the earlier series and is not treated as a 2024 observation (Portulans Institute, 2025). Table 8 reports pillar and sub-pillar scores on a 0-100 scale, with ranks among 127 economies.

Table 8 Algeria in the Network Readiness Index 2025

Pillar/Sub-pillar		Rank	Score
Technology Pillar		84	37.23
Sub-Pillar	Access	79	63.09
	Content	79	20.60
	Future technologies	92	28.01
People Pillar		99	31.06
Sub-Pillar	Individuals	57	53.08
	Businesses	116	17.33
	Governments	109	22.76
Governance Pillar		119	32.93
Sub-Pillar	Trust	109	34.70
	Regulation	111	41.31
	Inclusion	122	22.76
Impact Pillar		110	39.85
Sub-Pillar	Economy	101	23.35
	Quality of life	97	49.55
	SDG Contribution	113	46.66

Algeria ranked 109th of 127 economies in the NRI 2025, with an overall score of 35.27. Within the Technology pillar, Access scored 63.09, while Content and Future technologies scored 20.60 and 28.01. The Businesses sub-pillar scored 17.33. These results describe the profile's distribution of readiness measures; they do not establish the cause of differences between pillars.

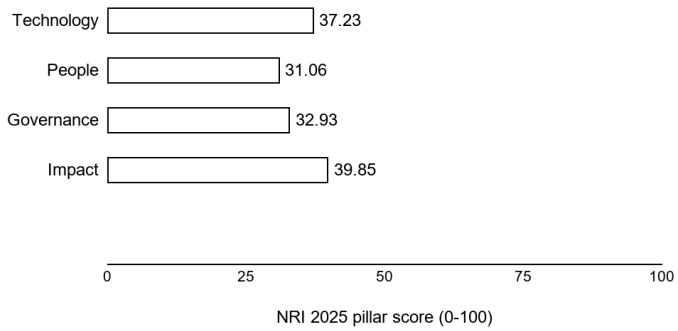


Fig. 5. Algeria's NRI 2025 pillar scores

Source: Portulans Institute (2025), Algeria country profile. Scores range from 0 to 100; a lower rank number indicates a higher position.

4.5. *Digital Society*

The EPI assesses the online information, consultation and decision-making opportunities offered by governments. It does not count actual participants or directly measure social inclusion.

Table 9 E-Participation Index scores and global ranks

EPI	2024	2022	2020
Algeria (Rank)	187	148	183
Algeria (Value)	0.0548	0.2273	0.1548

Sources: UNDESA (2020, 2022, 2024).

Algeria's EPI rose from 0.1548 in 2020 to 0.2273 in 2022, then fell to 0.0548 in the published 2024 edition. Its rank moved from 183 to 148 and then to 187. The 2024 value is an observed survey-edition result, not a projection. The pattern concerns assessed opportunities for participation and does not establish a decline in actual citizen engagement.

4.6. *Institutional quality and cybersecurity*

Cybersecurity commitments and institutional quality provide context for digital services. Neither measure directly tests public trust, the security of a particular platform or citizens' reasons for using a service.

4.6.1. Cybersecurity commitments

The ITU Global Cybersecurity Index assesses commitments across legal, technical, organisational, capacity-development and cooperation measures. The 2024 report classifies Algeria in Tier 3, Establishing (International Telecommunication Union [ITU], 2024).

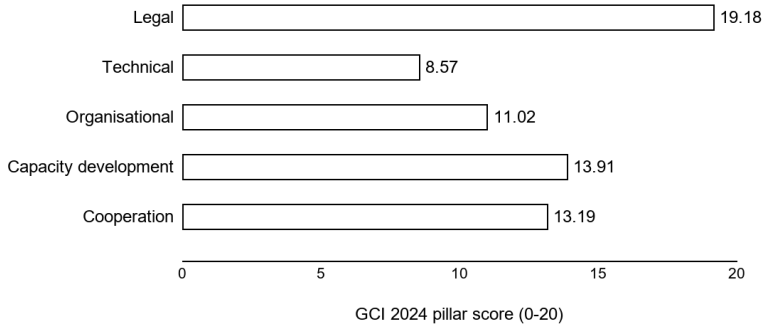


Fig. 6. Algeria's GCI 2024 pillar scores out of 20

Source: ITU (2024), Algeria country profile, p. 70.

The country profile reports 19.18 for legal measures, 8.57 for technical measures, 11.02 for organisational measures, 13.91 for capacity development and 13.19 for cooperation. ITU identifies legal measures as a relative strength and the other pillars as areas for potential growth. These scores concern commitments and do not measure cyberattack incidence, operational security or public confidence.

4.6.2. Worldwide Governance Indicators

The WGI Government Effectiveness and Control of Corruption dimensions describe broader institutional conditions. Table 10 uses the archived 2025 revision for 2020, 2022 and 2024. The values are governance scores on the 0-100 scale, not percentile ranks (World Bank, 2025).

Table 10 Selected WGI governance scores on the 0-100 scale

Indicators	2024	2022	2020
Government effectiveness	46.46	46.15	46.10
Control of Corruption	35.84	34.84	34.99

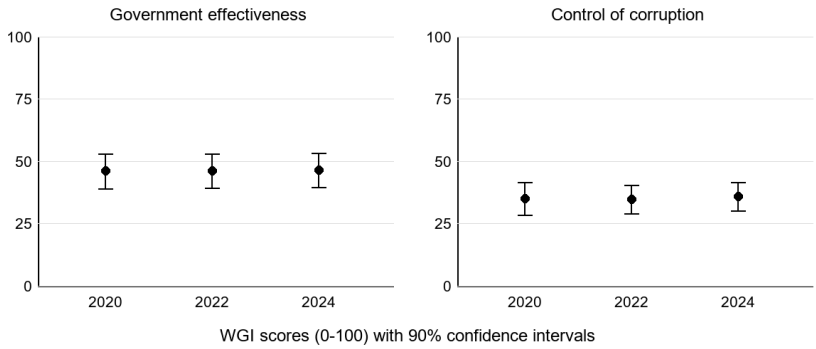


Fig. 7. WGI scores with 90% confidence intervals

Source: World Bank (2025), archived WGI dataset, 2025 revision. Higher scores indicate better assessed governance. Figure 7 shows the associated 90% confidence intervals.

Government Effectiveness changed from 46.10 in 2020 to 46.46 in 2024. Control of Corruption changed from 34.99 to 35.84, with a lower value in 2022. The 90% confidence intervals overlap across the selected years. These small point-estimate differences do not support a clear conclusion of institutional deterioration or improvement.

The WGI provides institutional context, but this descriptive comparison does not estimate how governance affects digital-service use or public trust. Direct evidence would be required to examine those relationships.

5. Discussion

The indicators show expanded telecommunications subscriptions alongside variation in assessed online services and participation opportunities. The differences between dimensions are relevant to monitoring, but measurement changes and overlapping indices limit any claim that one dimension has advanced faster than all others.

The national subscription series provides evidence of broader connectivity. The TII score increase points in the same general direction, although the introduction of affordability in 2024 prevents a direct interpretation of the full score difference as infrastructure growth.

The higher published EGDI score coexists with a fall in the OSI between 2022 and 2024. Because the EGDI averages three components, its overall score can rise while the online-service component falls. These results warrant service-level investigation rather than a conclusion about the success of all administrative reforms.

The lower 2024 HCI requires particular caution. The new e-government literacy component and changed weights alter the measure. The comparison cannot establish a decline in national educational attainment or digital skills.

UNCTAD's evidence documents e-commerce expansion and a continuing reliance on cash on delivery. It does not quantify the entire digital economy's contribution to GDP or identify the cause of payment preferences. Surveys of businesses and consumers could help explain these patterns.

The low EPI score in 2024 concerns assessed online participation opportunities. Evidence about actual participation, accessibility and users' experiences would be needed before drawing conclusions about the extent of citizen involvement.

The ITU and WGI measures add security and institutional context. The GCI assesses commitments, and the WGI scores are estimates with uncertainty. Neither provides direct evidence that public trust has increased or decreased.

The combined evidence supports monitoring connectivity together with service usability, training and participation. Since most observations precede the strategy's implementation period, they identify baseline conditions and questions for evaluation rather than verified effects of Digital Algeria 2030.

6. Limitations and policy implications

6.1. *Limitations*

The sources differ in reference year, coverage and method, so the analysis is not a balanced annual panel. The 2024 HCI and TII changes interrupt direct comparability, and the EGDI, its components and the EPI overlap. The NRI 2025 falls outside the main UN comparison period. WGI revisions alter historical estimates, while confidence

intervals limit interpretation of small changes. Several measures concern reported commitments or assessed online provision rather than experienced outcomes. The descriptive design cannot establish causation, and it does not control for income, population or regional differences.

6.2. *Policy implications*

Monitoring should combine the published indices with direct measures of service completion, accessibility and user satisfaction. Comparable skills assessments and training outcomes would provide stronger evidence for the human-capital axis. Payment and e-commerce data should distinguish registered activity, transactions, sales and value added.

A monitoring framework for Digital Algeria 2030 should record the source, release, reference period and definition of each measure. Consistent observations during 2025-2030 would support an assessment of progress against explicit national targets.

6.3. *Future Research Agenda*

Future research could compare Algeria with selected North African economies using harmonised definitions and consistent data releases. Longitudinal and service-level evidence could help distinguish changes in access from changes in use and outcomes. Any causal analysis would require an appropriate identification strategy beyond the descriptive comparisons presented here.

7. Conclusion

This study examines published indicators relevant to the five axes of Digital Algeria 2030. National statistics document growing internet subscriptions, while UN survey editions show higher published EGDI scores and variable online-service and participation measures.

Methodological changes prevent the 2024 HCI decrease and the full TII increase from being read as directly comparable changes in skills and infrastructure. The e-commerce, NRI, GCI and WGI evidence adds context, with different reference periods and measurement limits.

The findings provide a baseline for monitoring the 2025-2030 strategy. They support further investigation of service quality, skills, online participation and payment adoption, but they do not establish the strategy's effects or quantify achievement of its targets.

Declarations

Author Contributions. Conceptualisation, methodology, validation, formal analysis, investigation and data curation: N.D. and A.M. Writing of the original draft: N.D. and A.M. Supervision and review and editing: N.D. All authors have read and agreed to the manuscript.

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Conflicts of Interest. The authors declare no conflicts of interest.

Ethics Approval and Informed Consent. Not applicable.

Data Availability Statement. The analysis uses publicly available secondary data. The reports, country profiles and data releases are identified in the references.

Declaration of Generative AI Use. The authors used Grammarly for language refinement. They reviewed the content and take responsibility for the manuscript.

References

Aggoune, S., & Riahla, M. A. (2023). A method for evaluation of e-Government systems information agility: Case of e-Algeria [Preprint]. Research Square. https://doi.org/10.21203/rs.3.rs-2564949/v1

Aouissi, K. (2024). E-learning realities and challenges: A case of Ghardaia University in Algeria. Filosofija. Sociologija, 35(2), 227–236. https://doi.org/10.6001/fil-soc.2024.35.2.9

Belhocine, O., Djiar, K. A., & Lagati, M. (2019). Performance evaluation of the National Housing File (FNL) for the development of e-governance in the housing sector in Algeria. International Journal of E-Planning Research, 8(4), 60–73. https://doi.org/10.4018/IJEPR.2019100104

Benaida, M. (2023). e-Government usability evaluation: A comparison between Algeria and the UK. International Journal of Advanced Computer Science and Applications, 14(1), 680–690. https://doi.org/10.14569/IJACSA.2023.0140175

High Commission for Digitalization. (2024). National strategy for digital transformation in Algeria 2025–2030: For Digital Algeria 2030 (2 August 2024 version). https://hcn.dz/SNTN-En.pdf

International Telecommunication Union. (2024). Global cybersecurity index 2024 (5th ed.). https://www.itu.int/dms_pub/itu-d/opb/hdb/d-hdb-gci.01-2024-pdf-e.pdf

Ministry of Post and Telecommunications, Algeria. (2023). Rapport sur le développement des indicateurs des services des télécommunications: Premier semestre 2023 [Report on the development of telecommunications service indicators: First half of 2023]. https://www.mpt.gov.dz/wp-content/uploads/2024/03/rapport_TIC-S1-2023-FR.pdf

Mokhtari, A. (2024). Digital transformation in Algeria as an inevitable necessity in light of globalization. Journal of Law and Sustainable Development, 12(8), e3926. https://doi.org/10.55908/sdgs.v12i8.3926

Portulans Institute. (2025). Network readiness index 2025: Algeria. https://download.networkreadinessindex.org/reports/countries/2025/algeria.pdf

United Nations Conference on Trade and Development. (2025). Algérie: Évaluation de l'état de préparation au commerce électronique [Algeria eTrade readiness assessment] (UNCTAD/DTL/ECDE/2025/3). https://unctad.org/publication/algeria-etrade-readiness-assessment

United Nations Department of Economic and Social Affairs. (2020). United Nations e-government survey 2020: Digital government in the decade of action for sustainable development. https://desapublications.un.org/file/781/download

United Nations Department of Economic and Social Affairs. (2022). United Nations e-government survey 2022: The future of digital government (Annexes). https://desapublications.un.org/sites/default/files/publications/2022-11/Annexes%2BCover.pdf

United Nations Department of Economic and Social Affairs. (2024). United Nations e-government survey 2024: Accelerating digital transformation for sustainable development. https://desapublications.un.org/publications/un-e-government-survey-2024

World Bank. (2025). Worldwide governance indicators: 2025 revision [Data set]. https://www.worldbank.org/content/dam/sites/govindicators/doc/wgidataset_with_sourcedata-2025.xlsx

World Bank. (2026). Individuals using the Internet (% of population), Algeria, 2019–2023 (IT.NET.USER.ZS). World Development Indicators. https://api.worldbank.org/v2/country/DZA/indicator/IT.NET.USER.ZS?date=2019:2023&format=json