Government Electronic and Mobile Services (GEMS-2022) Maturity Index

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ESCWA, an innovative catalyst for a stable, just and flourishing Arab region

MISSION
Committed to the 2030 Agenda, ESCWA's passionate team produces innovative knowledge, fosters regional consensus and delivers transformational policy advice. Together, we work for a sustainable future for all.

Economic and Social Commission for Western Asia

Government Electronic and Mobile Services (GEMS-2022) Maturity Index

December 2022

United Nations
Beirut

Acknowledgements

Key messages

- *There is a marked increase in the number of government services and entities being assessed every year. This is due to increased use of e-government services in the Arab region, and to the expansion of the index on the local level so as to involve more entities.*

- *E-government services have increased in both the financial and educational sectors, as well as in internal affairs. This indicates that individuals and entities have learned to cope with the reality imposed by the COVID-19 pandemic, which persisted even after the pandemic has receded and the Arab region has entered the recovery stage.*

- *Efforts to digitize more government services in various sectors should be supported, considering the widening gap in the e-government services maturity between Arab countries. Maturity of services can be divided into four main groups: the very advanced level of maturity, the advanced level of maturity, the intermediate level of maturity and the early stage of maturity, each of which has its own pace and national context in digital transformation.*

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Introduction

Digital government services play an important role today in increasing the efficiency of government work, reducing waste and corruption, enhancing transparency, enabling accountability and achieving economic growth. In fact, digital government promotes equality even in countries with special conditions, or for marginalized or underserved people. Expending the implementation of digital transformation contributes to increasing opportunities and services provisioning, thus allowing a direct participation of people in all societies, including remote or disadvantaged areas, and providing all individuals with access to services, whether from their homes or from digital booths or other means. The impact of digital government transformation is not only limited to providing services, but also contributes effectively to achieving several sustainable development goals, such as enhancing digital literacy (Goal 4), digital inclusion (Goals 5, 8 and 10), innovation (Goal 9), and enhancing the efficiency of institutions (Goal 16).

Since early 2020, the COVID-19 pandemic has clearly demonstrated the important role of digital government transformation. Indeed, the use of digital platforms has allowed the continuous supply of government services despite limited in-person meetings and interaction with institutions. There was a need to enhance digital government services and provide them through various channels (such as web portals and mobile applications) and make them available to all, to facilitate their use and increase users' satisfaction and trust.

After studying several available global indicators, it appeared that they primarily measure the availability of e-government services without, however, considering their maturity, use or individual satisfaction. Therefore, ESCWA has developed a tool to measure the maturity of e-government services and highlight what needs to be developed, as part of its efforts to support policymakers and decision makers in the Arab region in developing and updating appropriate national plans to accelerate the implementation of digital transformation and to provide and use digital government services and increase their efficiency. Maturity, in the context of GEMS[1], indicates that a service has been digitized throughout its steps, that it was promoted using marketing and awareness campaigns, that it is well-used by individuals and businesses and that support and communication tools are directly provided to them. As most global indicators do not cover these aspects, and rely more on measuring service availability, the GEMS index was launched in 2014.

The index is being assessed for the fourth time since 2019, with the participation of 18 member States, namely: Algeria, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, the State of Palestine, Qatar, Saudi Arabia, Somalia, the Sudan, the Syrian Arab Republic, Tunisia, the United Arab Emirates and Yemen. This report documents data collected from forms that ESCWA

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1.   Government Electronic and Mobile Services Maturity index, which will henceforth be referred to as GEMS.

received from representatives of participating government agencies and shows the results of the assessment at the regional and national levels.

It should be noted that the index only covers government services. Some services may be provided by the private sector, particularly relating to transport and tourism sectors, but they are not included in the GEMS coverage.

1. GEMS conceptual framework

GEMS aims to measure the maturity of government services provided through portals and mobile applications in Arab countries. It aims to provide decision makers and policymakers with an index illustrating some of the dimensions that many global indicators do not show, namely the degree of sophistication of services, their use and user satisfaction, and how adequate and effective are government efforts for public outreach.

To achieve this, 84 government services that are essential for both individuals and businesses, in 11 different categories have been selected (figure 1). It should be noted that a life-cycle principle has been used in the selection of these services. Therefore, some services have been selected because individuals need them throughout the stages of their lives, other services because companies need them for their establishment, the administration of their operations, and even the transactions of their closure.

Figure 1. Categories of services covered by the GEMS index
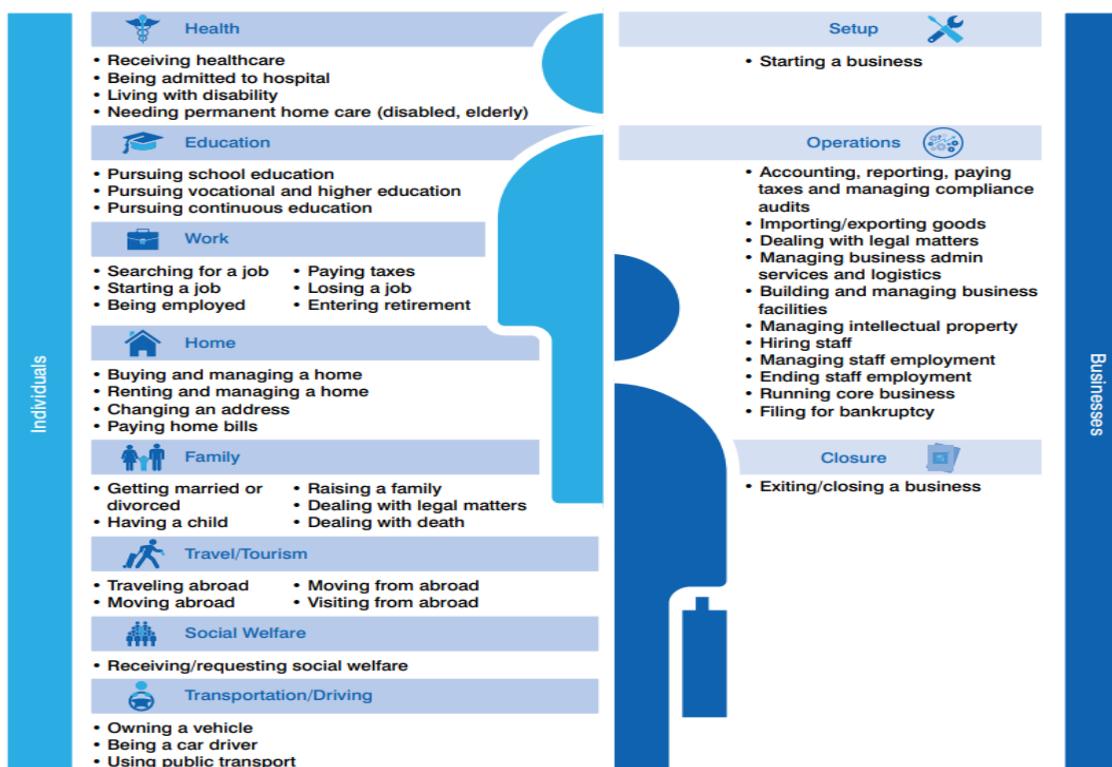
Source: https://www.worldgovernmentsummit.org/observer/reports/2014/detail/government-electronic-and-mobile-services-(gems)-maturity-index (2016).

The list of services covered by the GEMS index is updated continuously and revised annually before the initiation of data collection. It should be noted that in 2021, 11 of the 84 services covered in 2020 were replaced, while in 2022, 12 services were replaced by updated services more suited to the development and the emerging needs of citizens in various sectors. The full list of these services can be found in annex 1. The services are distributed across several different sectors, as shown in table 1. To be noted that the key performance indicator (KPI) related to the availability of support tools for individuals was updated by covering Virtual Reality feature that could be used to assist individuals in benefitting from government services.

Table 1. Distribution of index services to sectors

Sector	No. of services
Transport/Traffic/Police	9
Trade and industry	15
Cross government affairs	8
Education	8
Health	7
Interior	6
Municipal affairs	5
Labour	4
Social affairs	5
Finance	2
Utilities	5
Migration	2
Justice	5
Tourism	3
Total	84

Source: ESCWA calculations.

GEMS index is based on three main pillars (figure 2), namely service availability and sophistication (supply), service usage and user satisfaction (demand) and public outreach (inclusiveness). These indicators are grouped into 11 categories shown in the outer ring of the circle in figure 2. To measure these three pillars, 24 key performance indicators (KPIs) were adopted, with 15 indicators for the first pillar, six indicators for the second pillar and three indicators for the third pillar.

Figure 2. GEMS structure by pillar, sub-pillar and categories, and the distribution of key performance indicators
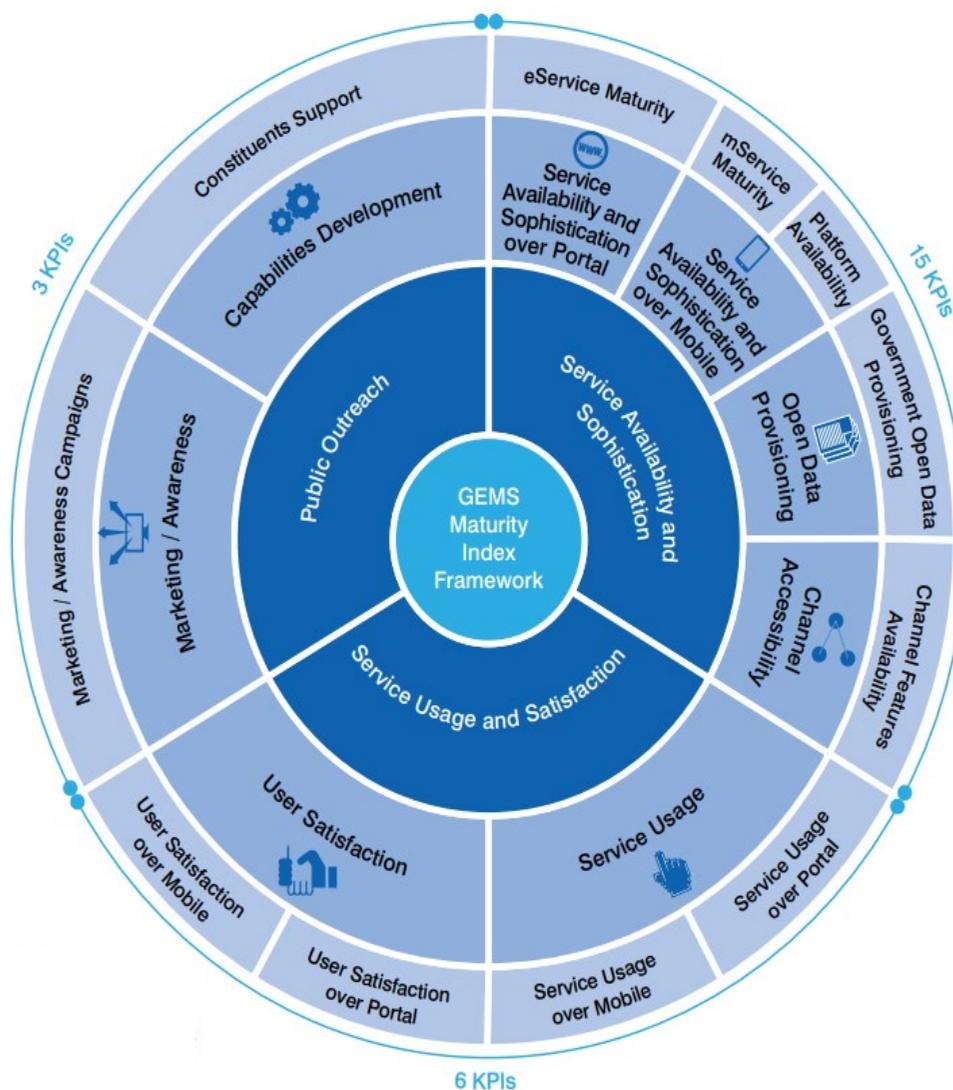
Methodology

In 2022, and in order to facilitate the process of data collection and analysis, then the calculation of the indicators' and pillars' scores, the work process was fully automated through the development of a digital platform (gems.unescwa.org) that covers all work stages from collecting data from all national institutions in the Arab countries, to calculating the results of the indicators.

For the assessment of government services through the portal and mobile applications, three types of working groups were identified to carry out the following tasks:

- National Coordinator: A national coordinator is identified in each of the ESCWA member States to supervise all stages of data collection from the various national entities. He is authorized to communicate with the GEMS team in ESCWA. In the first stage of work, the coordinator undertakes the selection of electronically provided government services, out of the services covered by the index. Electronic services mean those using technological means at any stage of their implementation. For example, if the service requires forms to be submitted electronically, it can be considered electronic but at an early stage of maturity since only part of the procedure is digitized. On the other hand, if the service is implemented fully electronically from the initial request/application to the notification of implementation, this is an indication that the electronic service is largely mature. If the number of services provided electronically is high, this indicates that government entities have come a long way in the digital transformation. After defining the services, the coordinator identifies the representatives of the national entities that provide these digital services, and supervises their work.

- Representatives of the national entities: the national coordinator identifies the representatives of the participating national entities. The representative of the national entity collects data related to his/her entity and the e-services it provides, which are assigned to him/her by the national coordinator. E-services are assessed using a dedicated survey form for this purpose (one form for each service). The entities providing these e-services are also assessed using an entity form (one form for each entity). The e-service evaluation form (annex 3) contains questions about service delivery channels, their maturity, the number of transactions executed electronically and the user's satisfaction. The entity evaluation form (annex 2) contains questions to assess the overall delivery mechanism through the portal and mobile applications, availability of security features, open data provisioning and availability of support tools for individuals and businesses.

- ESCWA working group: This team works at all stages to provide the necessary technical support to the national coordinators in data collection. After completing the data collection process, this team reviews and processes all data, calculates the scores of the 24 key performance indicators (KPI) needed for the calculation of the GEMS final score, and then analyses the results and prepares the final report.

Calculating index results

At the beginning, weights are assigned to all 84 services covered by the index. The weight depends on the service's level of complexity, how digitizable the service is, and what transaction volume is expected for the service. A procedural service that needs several steps to be completed, such as issuing commercial licences, has a different complexity than an information service, such as providing the prices of medicines. In the first case, direct user interaction is needed throughout the procedure, from attaching the necessary documents, to electronic payment, and finally notifying the user that the service has been completed. On the other hand, information services rely more on technical features that facilitate user interaction with web pages. Therefore, former services have the greater weights.

The approach to calculating results is therefore established over a number of steps, from calculating KPIs to the overall value. The report presents the 24 KPIs results, in addition to the values of the three pillars, and the overall result. The weights applied to the three main pillars are distributed as follows: 40 per cent for the first pillar, 40 per cent for the second pillar and 20 per cent for the third pillar.

Reading results

GEMS is a tool to measure the progress and sustainability of the digital transformation at the national level, and to capture a comprehensive picture of the extent of this achievement at the regional level. Policymakers and decision-makers can use this index to assess the current status and maturity of e-government services, as well as to monitor overall progress in digital transformation. National profiles include country-specific recommendations, based on the results presented.

GEMS provides an opportunity to identify vulnerabilities and help develop national plans to increase the maturity of e-government services. For example, if the KPI for providing features for persons with disabilities through the portal is low, this result can be directly leveraged by including these features in the design and development of new services or by adding these features to existing services.

Some KPIs are related to the work of the entity as a whole, not just to a particular service. Those KPIs include the following:

- Portal personalization.
- Channels security levels.
- Overall usage over portal (at the entity level).
- Overall usage over mobile (at the entity level).
- Open data provisioning.
- Open data delivery format.
- Availability of tools to support individuals.
- Percentage of new services accompanied by marketing campaigns (at the entity level).

It is recommended to read the above indicators together to capture a better picture of the entities' performance. For example, the indicator about "Percentage of new services accompanied by marketing campaigns (at the entity level)" is concerned with all e-government services provided by the entity, while the "Percentage of new services accompanied by marketing campaigns" indicator measures which of all 84 services identified in the index is accompanied by marketing campaigns. Therefore, these indicators should be considered together for a general view of the extent to which marketing campaigns are conducted accompanying the services.

The results of all indicators are on a scale from 0 to 1 and are presented as percentages for easier reading.

2. GEMS results at the regional level

A. Overview

In 2022, data were collected from 18 Arab member States: Algeria, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, the State of Palestine, Qatar, Saudi Arabia, Somalia, the Sudan, the Syrian Arab Republic, Tunisia, the United Arab Emirates and Yemen. In phase 1, a national coordination body responsible for implementation was identified in each of these countries; these bodies are listed in table 2.

Table 2. National GEMS coordination bodies in 2022

Country	Responsible body
Algeria	Ministry of Post and Telecommunications
Iraq	Ministry of Planning
Jordan	Ministry of Digital Economy and Entrepreneurship
Kuwait	Central Agency for Information Technology
Lebanon	Office of the Minister of State for Administrative Reform
Libya	General Information Authority
Mauritania	Minister of Digital Transformation, Innovation and Modernization of Administration
Morocco	Digital Development Agency
Oman	Ministry of Transport, Communications and Information Technology
State of Palestine	Ministry of Telecommunications and Information Technology
Qatar	Ministry of Communications and Information Technology
Saudi Arabia	Digital Government Authority
Somalia	Ministry of Communications and Technology
Sudan	National Information Centre
Syrian Arab Republic	Ministry of Communications and Technology
Tunisia	E-Government Unit – Prime Ministry
United Arab Emirates	Telecommunications and Digital Government Regulatory Authority
Yemen	Ministry of Planning and International Cooperation

B. Services and sectors

Although data could not be collected for two of the member States, the total number of services and entities included in the assessment increased significantly compared to 2021. Figure 3 shows the total number of services and entities assessed for all member States between 2021 and 2022.

Figure 3. Total number of services and entities assessed, 2021-2022
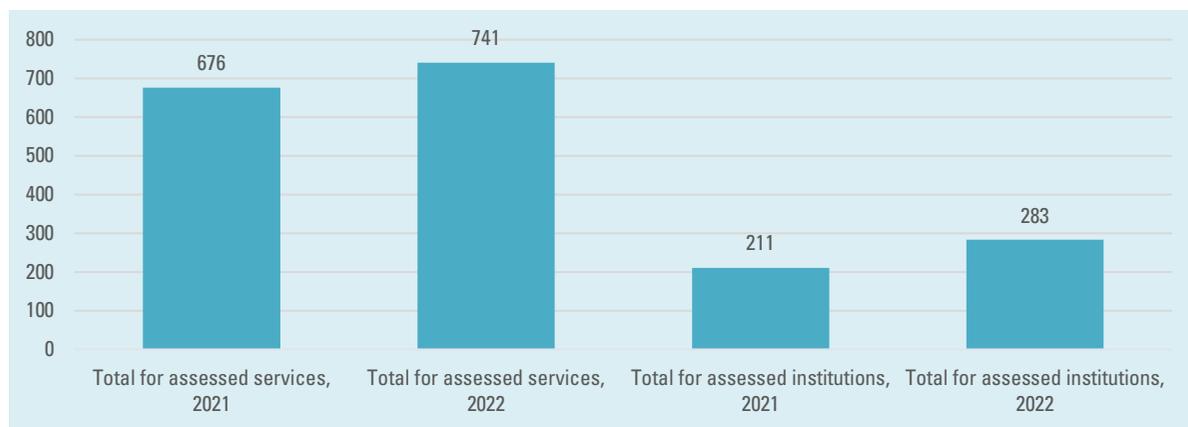
Source: ESCWA calculations.

Figure 4 shows the top five services based on the number of countries in which they are used. As a result of COVID-19 conditions, registration in higher education can be observed in 14 countries, reviewing students' grades can be observed in 13 countries as well as services related to e-learning and issuing certifications in 12 countries. Figure 5 shows that "Issuing academic degrees and transcripts" and "Providing e-learning platforms and virtual laboratories" are the two top services in the assessed countries between 2021 and 2022.

Figure 4. Top five services in the 2022 assessment, according to the countries where they were used
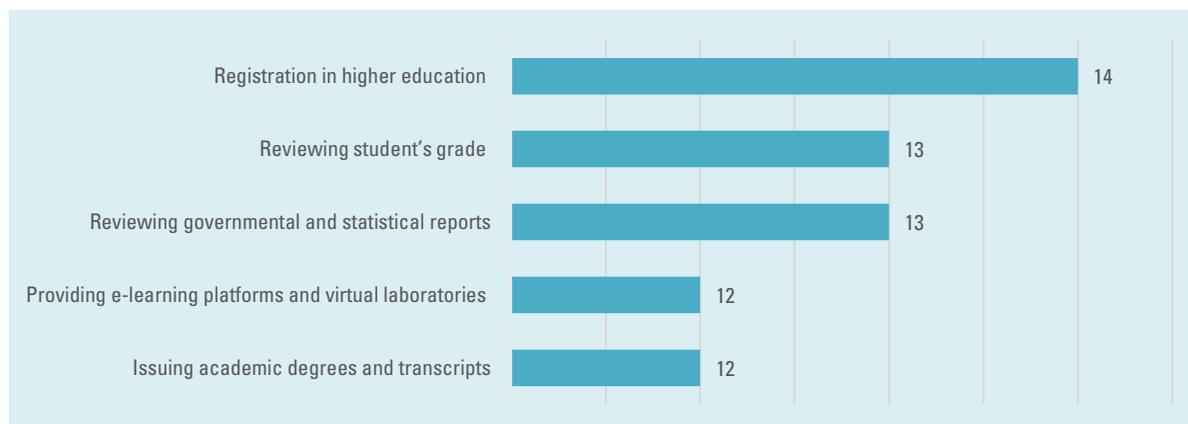
Source: ESCWA calculations.

Figure 5. Top five services mentioned in the assessment between 2021 and 2022
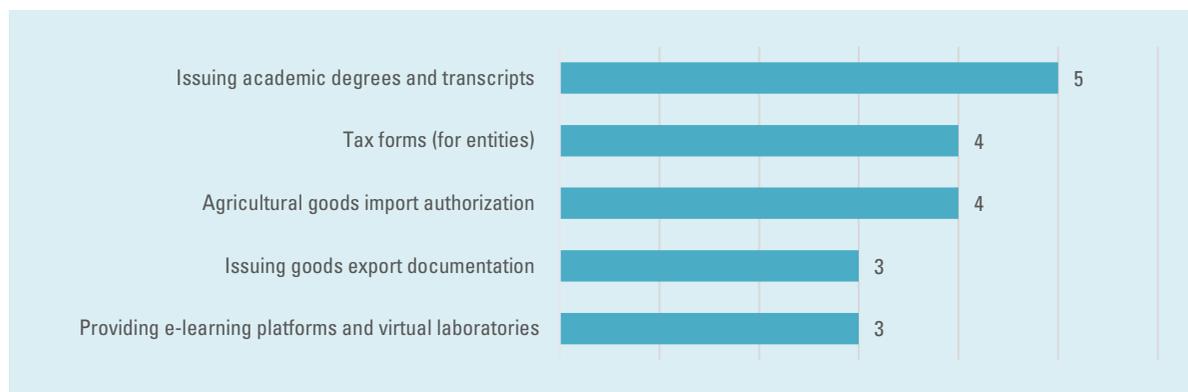
Source: ESCWA calculations.

The top-ranking sectors in 2022, in terms of services assessed in each sector, were the financial, educational and internal affairs sectors (table 3). Progress is also registered in providing e-services in the labour, justice, trade and industry sectors, while some Arab countries started providing e-services related to social affairs, migration, health, municipal affairs and tourism, with the potential to expand the scope of these sectors to include a larger number of services throughout the Arab region.

Table 3. Number and percentage of e-services assessed in each sector

Sector	Distribution of the index services per sectors (out of 84 services)	The maximum value of the number of services that can be assessed for 18 countries	Number of assessed services for 18 countries	Services assessed in each sector in 2022 (percentage)
Finance	2	36	22	61
Education	8	144	87	60
Interior	6	108	58	54
Cross government affairs	8	144	77	53
Utilities	5	90	48	53
Labour	4	72	38	53
Justice	5	90	44	49
Trade and industry	15	270	125	46
Transport/Traffic/Police	9	162	75	46
Social affairs	5	90	41	46
Migration	2	36	16	44
Health	7	126	55	44
Municipal affairs	5	90	39	43
Tourism	3	54	16	30

Source: ESCWA calculations.

In terms of the results achieved by sectors across the Arab region, depending on the average results of assessed services in each sector, it can be noted that the utilities, education and interior affairs sectors are on top of the list. On the other hand, some other sectors still need to do more to digitize their services, such as justice and tourism (figure 6).

Figure 6. Average results of e-government services assessed by sector
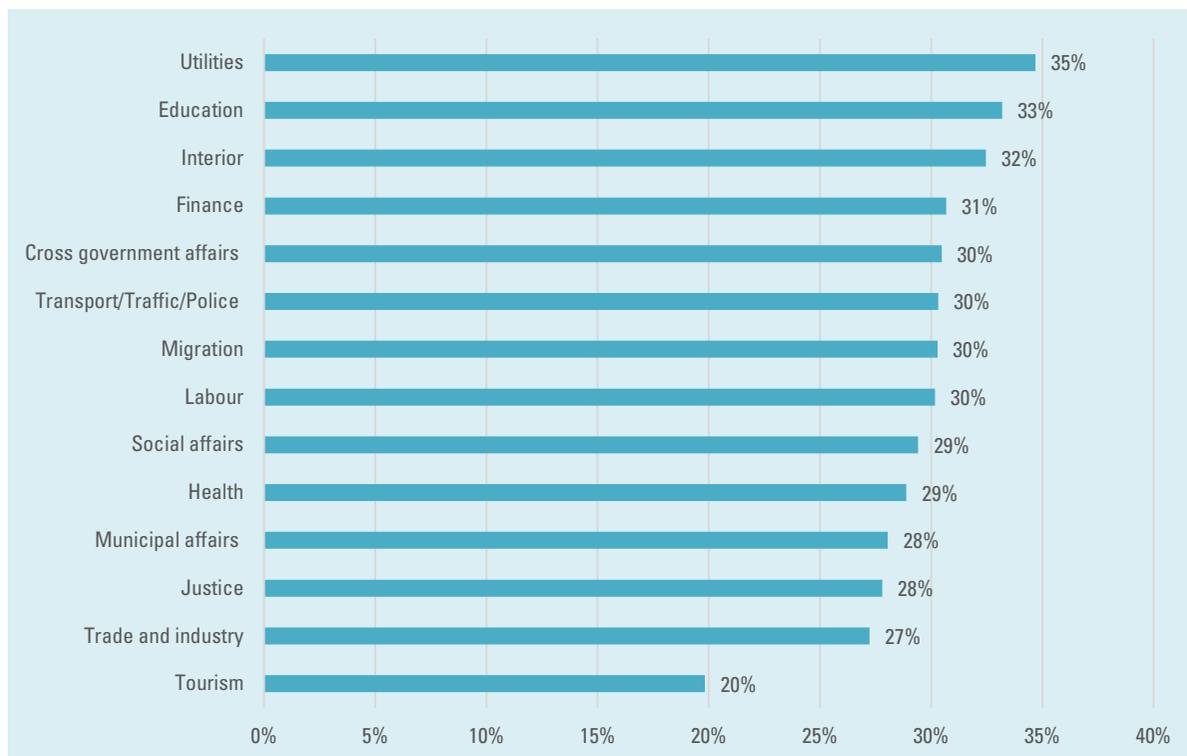
Source: ESCWA calculations.

C. Overall results

Figure 7 shows the overall ranking of the Arab countries according to their scores in the GEMS index. Arab countries participating in the assessment could be divided into three main groups. The first group represents values above 50 per cent, and includes: Saudi Arabia, Qatar, the United Arab Emirates, Oman, Jordan and Kuwait. The second group has scores above 10 per cent and below 50 per cent, and includes: Morocco, Tunisia, the State of Palestine, Algeria, Iraq and the Syrian Arab Republic. The third group (less than 10 per cent) includes Lebanon, Yemen, the Sudan, Mauritania, Libya and Somalia. There is a significant difference between the highest and lowest scores, ranging from 1 to 87 per cent.

Figure 7. Overall score in GEMS 2022
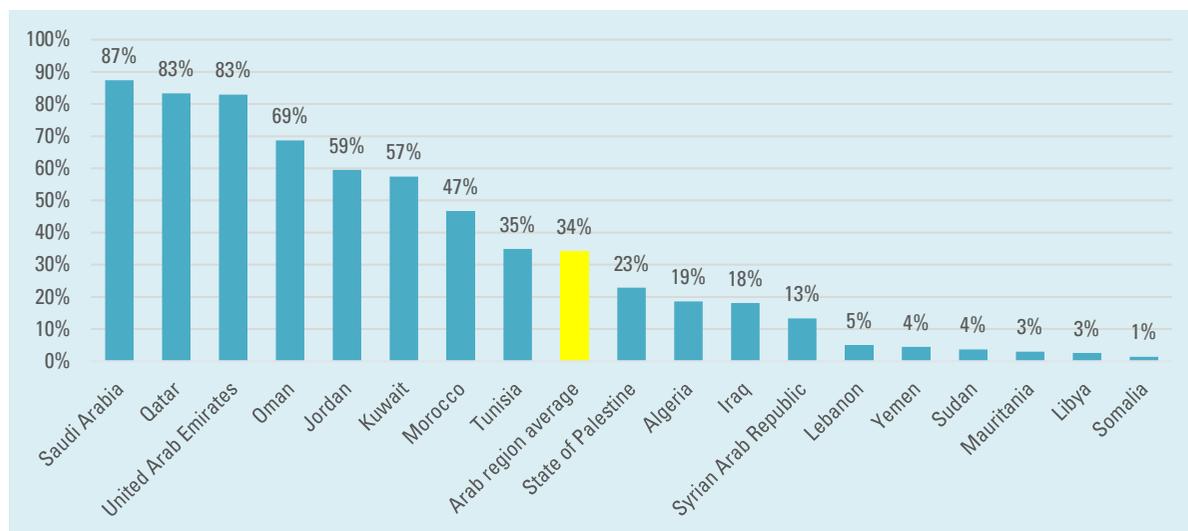
Source: ESCWA calculations.

As for more granular results, the scores for the first pillar of "service availability and sophistication" (figure 8) range between 2 and 96 per cent. In terms of this pillar, results are divided into four groups: countries with scores above 80 per cent (Saudi Arabia, the United Arab Emirates and Qatar); countries with scores between 50 and 80 per cent (Oman, Kuwait, Jordan and Morocco); countries with scores between 10 and 50 per cent (Tunisia, the State of Palestine, Algeria, Iraq and the Syrian Arab Republic); and countries with scores of less than 10 per cent (Yemen, Lebanon, Mauritania, the Sudan, Libya and Somalia).

Figure 8. Ranking according to the first GEMS pillar (Service availability and sophistication)
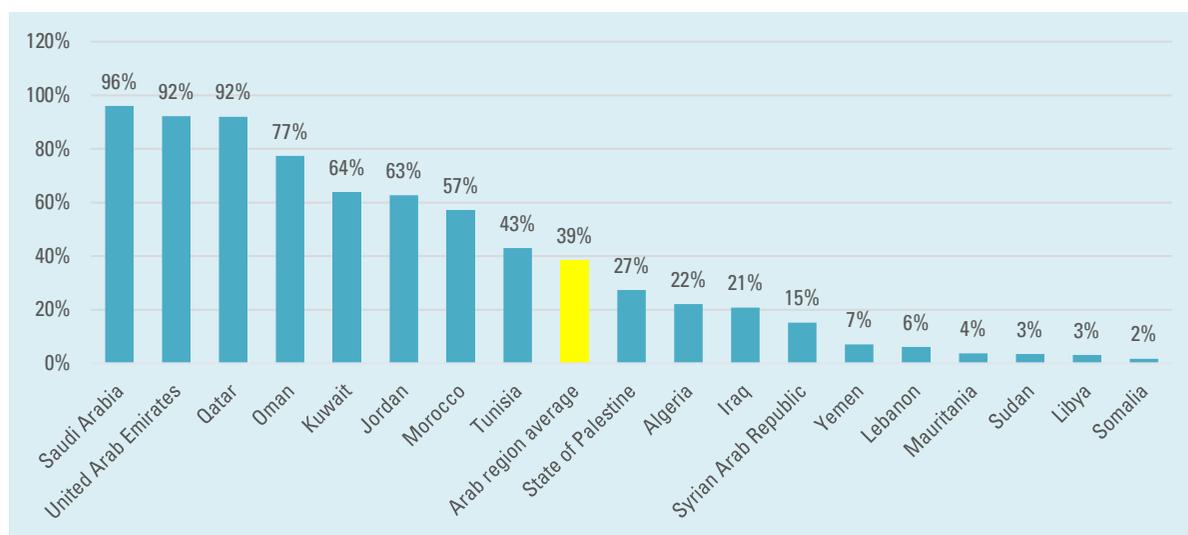
Source: ESCWA calculations.

When compared to the results of the same pillar in 2021, scores for more than half of the countries have clearly increased (figure 9).

Figure 9. Changes in results for the first GEMS pillar between 2021 and 2022 (Service availability and sophistication)
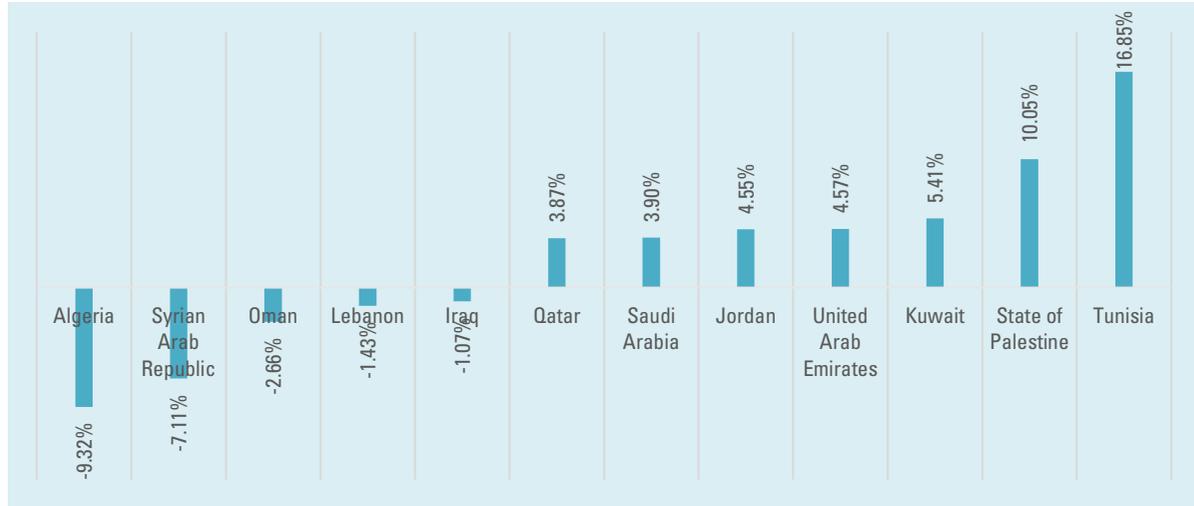
Source: ESCWA calculations.

In terms of the results of the second pillar "service usage and user satisfaction" (figure 10), the scores range between 1 and 79 per cent. The results of this pillar vary across member states, with five countries exceeding the 50 per cent threshold: Saudi Arabia, Qatar, the United Arab Emirates, Oman and Jordan. When compared to the results of the same pillar in 2021, scores for most countries have clearly increased (figure 11).

Figure 10. Ranking according to the second GEMS pillar (Service usage and user satisfaction)
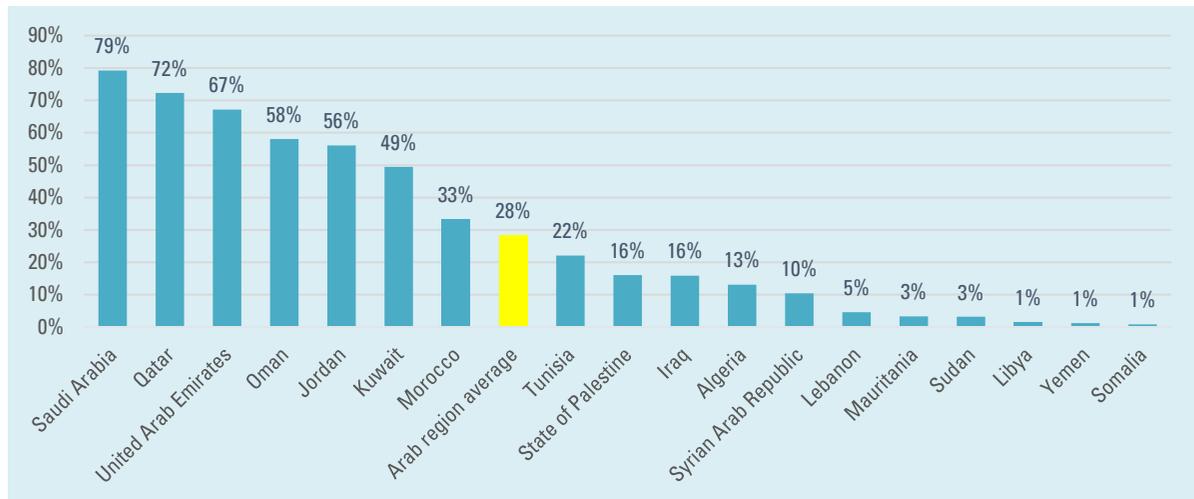
Source: ESCWA calculations.

Figure 11. Changes in results for the second GEMS pillar between 2021 and 2022 (Service usage and user satisfaction)
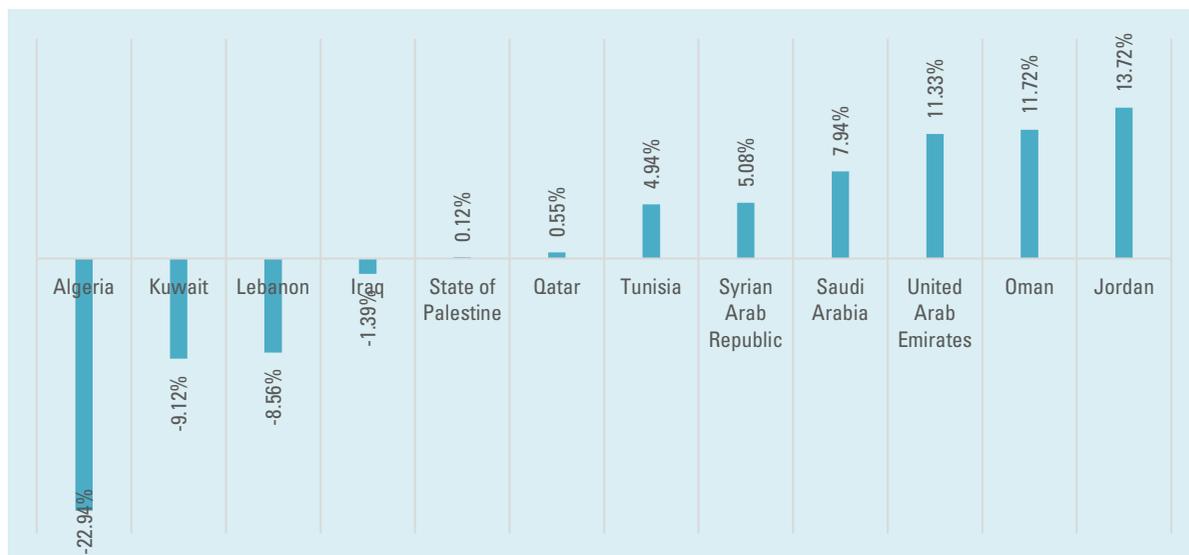
Source: ESCWA calculations.

For the third and final pillar which is public outreach (figure 12), the range for scores was 1 to 96 per cent. The following seven Arab countries have crossed the 50 per cent threshold: the United Arab Emirates, Qatar, Saudi Arabia, Oman, Kuwait, Jordan and Morocco. Compared to the 2021 results, it is evident that this pillar's scores in 50 per cent of the countries taking part in the assessment have increased (figure 13).

Figure 12. Ranking according to the third GEMS pillar (Public outreach)
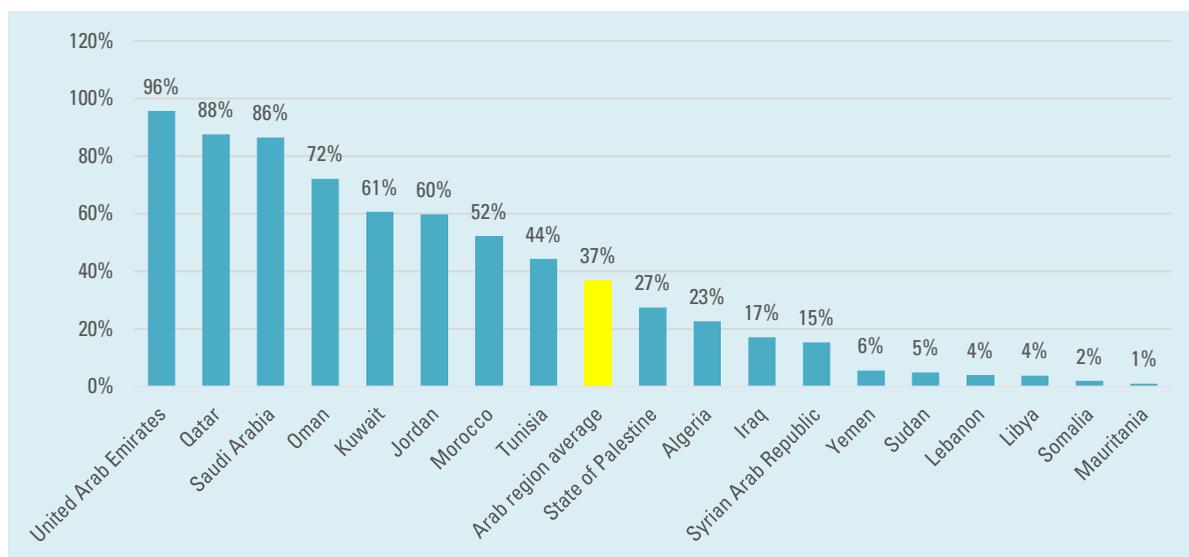
Source: ESCWA calculations.

Figure 13. Changes in results for the third GEMS pillar between 2021 and 2022 (Public outreach)
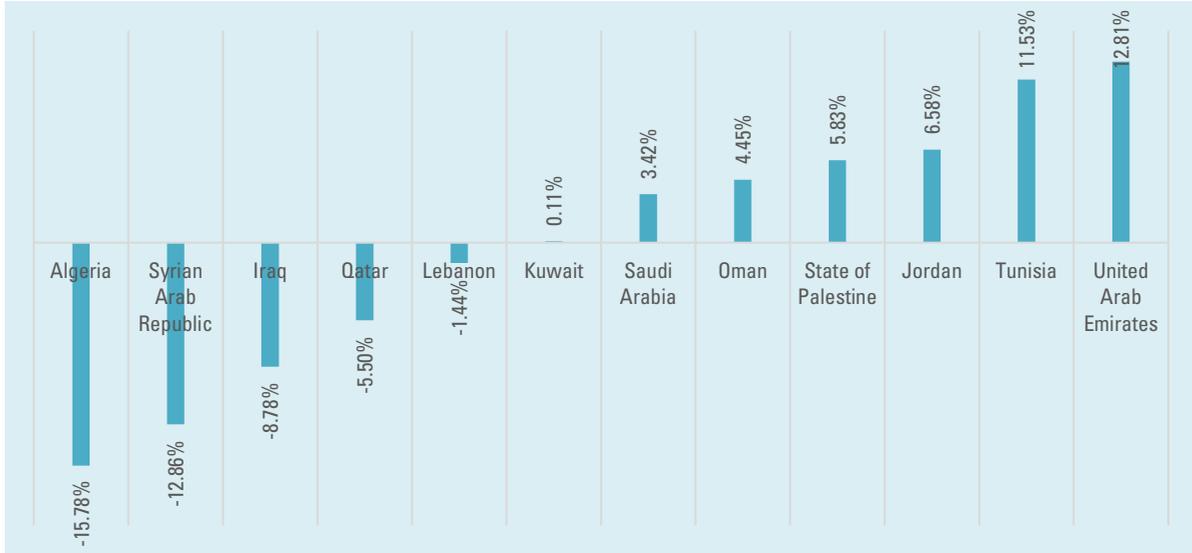
Source: ESCWA calculations.

Table 4 shows in detail the heat map of the KPIs for the Arab region. The availability of mobile applications is generally low, resulting in low usage rates of mobile services. The indicator of persons with disabilities enablement is also low on both portal and mobile services. However, results for the "portal personalization" and "channels security level" indicators are acceptable.

Table 4. KPI heat map (Percentage)

Country/KPI	Availability of support tools	Percentage of new services accompanied by marketing campaigns (entity level)	Percentage of new services accompanied by marketing campaigns	User satisfaction over mobile	User satisfaction over portal	Overall usage over mobile (entity level)	Overall usage over portal (entity level)	Service usage over mobile	Service usage over portal	Open data delivery format	Open data provisioning	Channels security level	Channels interoperability	Persons with disability enablement through mobile	Feedback enablement through mobile	Availability of languages on mobile applications	Persons with disability enablement through portal	Feedback enablement through portal	Availability of languages on the portal	Applications availability on various mobile platforms	Mobile services availability level	Mobile services sophistication levels	Portal personalization	Portal services sophistication level
Algeria	0.27	0.27	0.15	0.04	0.14	0.19	0.44	0.00	0.20	0.27	0.39	0.39	0.03	0.00	0.06	0.25	0.00	0.22	0.28	0.08	0.23	0.17	0.20	0.35
Iraq	0.19	0.19	0.14	0.00	0.27	0.14	0.51	0.05	0.25	0.33	0.35	0.25	0.00	0.00	0.13	0.17	0.05	0.14	0.20	0.00	0.14	0.19	0.35	0.25
Jordan	0.62	0.60	0.57	0.49	0.76	0.37	0.87	0.30	0.73	0.66	0.86	0.76	0.79	0.05	0.27	0.58	0.09	0.58	0.64	0.21	0.56	0.38	0.90	0.86
Kuwait	0.61	0.63	0.59	0.48	0.67	0.26	0.84	0.23	0.61	0.60	0.62	0.83	0.40	0.07	0.65	0.59	0.08	0.72	0.58	0.47	0.65	0.70	0.70	0.76
Lebanon	0.07	0.03	0.00	0.01	0.05	0.05	0.15	0.03	0.05	0.12	0.11	0.10	0.00	0.00	0.04	0.04	0.00	0.04	0.04	0.01	0.03	0.04	0.15	0.04
Libya	0.04	0.02	0.04	0.01	0.00	0.05	0.02	0.01	0.01	0.05	0.03	0.07	0.00	0.00	0.07	0.05	0.01	0.07	0.05	0.01	0.05	0.01	0.05	0.01
Mauritania	0.00	0.00	0.03	0.03	0.06	0.00	0.00	0.03	0.07	0.00	0.00	0.00	0.00	0.00	0.01	0.08	0.00	0.01	0.08	0.04	0.08	0.05	0.00	0.07
Morocco	0.6	0.6	0.40	0.33	0.39	0.10	0.67	0.11	0.58	0.76	0.78	0.86	0.23	0.01	0.39	0.55	0.02	0.44	0.57	0.32	0.54	0.46	0.85	0.60
Oman	0.6	0.5	0.95	0.56	0.84	0.15	0.77	0.47	0.74	0.71	0.79	0.87	0.61	0.95	0.95	0.78	0.95	0.95	0.78	0.39	0.66	0.82	0.75	0.93
State of Palestine	0.41	0.30	0.07	0.06	0.10	0.20	0.74	0.04	0.13	0.52	0.61	0.57	0.06	0.02	0.07	0.19	0.07	0.16	0.21	0.06	0.18	0.17	0.50	0.23
Qatar	0.8	0.9	0.96	0.83	0.80	0.51	0.88	0.52	0.72	0.91	0.84	0.90	0.84	0.95	0.95	0.80	0.78	0.96	0.78	0.94	0.95	0.90	1.00	0.91
Saudi Arabia	0.81	0.88	0.94	0.74	1.00	0.81	0.68	0.71	0.75	0.97	0.98	1.00	1.00	0.88	0.98	0.80	0.96	1.00	0.81	0.82	0.93	0.99	1.00	0.99
Somalia	0.04	0.00	0.00	0.00	0.01	0.00	0.05	0.00	0.01	0.02	0.03	0.04	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.05	0.02
Sudan	0.09	0.03	0.00	0.01	0.01	0.09	0.11	0.01	0.01	0.02	0.06	0.10	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.10	0.02
Syrian Arab Republic	0.17	0.11	0.15	0.07	0.09	0.09	0.25	0.08	0.15	0.05	0.08	0.15	0.10	0.00	0.07	0.14	0.00	0.08	0.12	0.12	0.21	0.18	0.20	0.18
Tunisia	0.57	0.49	0.24	0.05	0.31	0.09	0.79	0.05	0.44	0.81	0.79	0.72	0.21	0.00	0.11	0.36	0.01	0.37	0.40	0.06	0.30	0.30	0.70	0.48
United Arab Emirates	0.97	0.90	0.96	0.62	0.93	0.43	0.80	0.56	0.71	1.00	0.88	0.95	0.93	0.93	0.98	0.81	0.96	0.98	0.81	0.64	0.84	0.97	1.00	0.97
Yemen	0.08	0.05	0.02	0.00	0.02	0.00	0.06	0.00	0.02	0.09	0.09	0.11	0.00	0.00	0.03	0.05	0.00	0.07	0.05	0.00	0.05	0.03	0.15	0.09

Source: ESCWA calculations. The standard used in the heat map ranges from 0 per cent (dark red) to 100 per cent (dark green), with 50 per cent being the average score.

D. Analysis of results

1. The relation between GEMS and GDP

World Bank data on GDP per capita[2] were used to examine the relation between GEMS results and GDP values for Arab countries covered by the index. Figure 14 indicates that there is a relation between the two variables, where most high GDP per capita scored high on GEMS, and vice versa, indicating that a higher level of digital transformation contributes to the economic development. At the same time, a good level of economy assists in developing mature e-services.

Figure 14. The relation between GEMS (horizontal axis) and GDP per capita
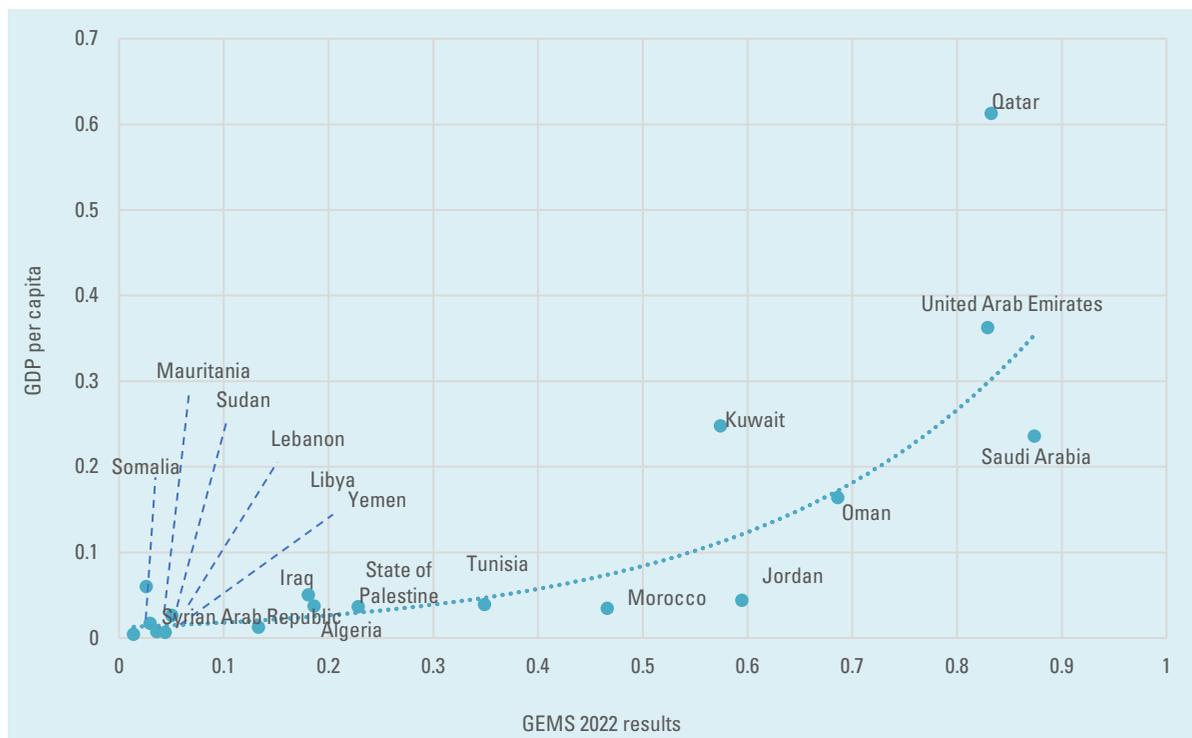
Source: ESCWA calculations.
Note: The vertical axis is GDP per capita divided by 100,000.

2. The relation between GEMS and the online service index (OSI)

Figure 15 compares between the 2022 results of GEMS and OSI, a sub-index for the e-Government Development Index (eGDI) that the United Nations Department of Economic and Social affairs (UNDESA) measures for all countries worldwide. Overall, there is both a consistency and an integration between the two indexes. The availability of e-government services on the Internet should be accompanied by an advanced level of maturity in terms of service sophistication, usage

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2. https://data.albankaldawli.org/indicator/NY.GDP.MKTP.CD?locations=1A&view=chart

and user satisfaction and public outreach. This indicates the importance of integrating the two indexes to provide a better view of the extent of the digital transformation, in terms of both supply and demand.

Figure 15. Arab region performance in OSI (2022) and GEMS (2022)
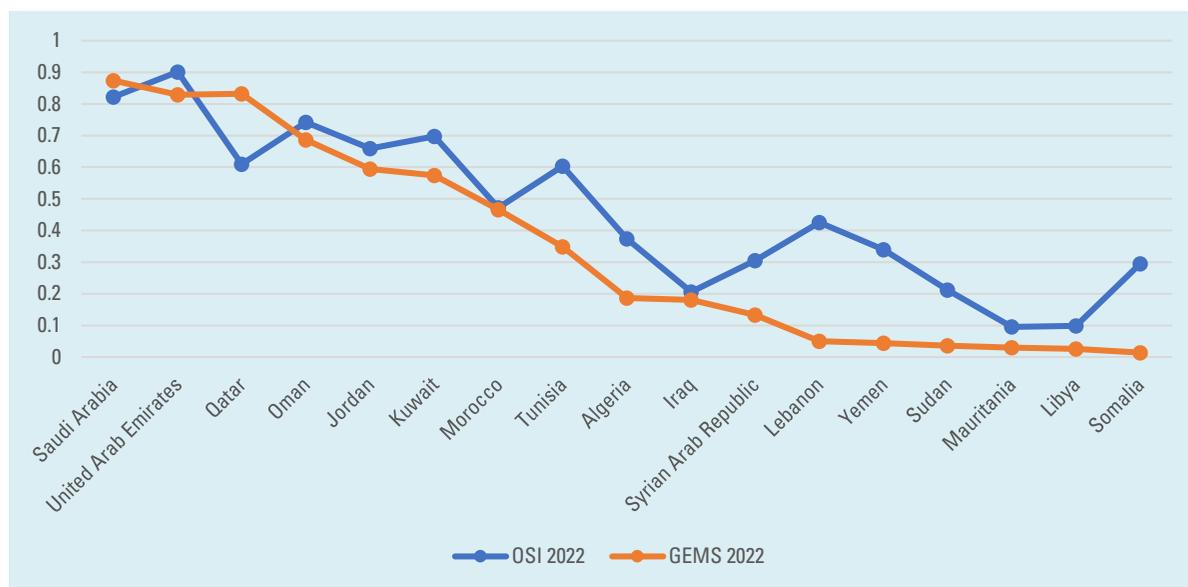
Source: ESCWA calculations for GEMS. OSI calculations: https://publicadministration.un.org/.

3. General Comments

1. There is a marked increase in the number of services and entities being assessed every year. This is due to increased use of e-government services in the Arab region, and to the expansion of the index on the local level so as to involve more entities.
2. The GEMS 2022 assessment shows an increase in e-government services in both the financial and educational sectors, as well as in internal affairs. This indicates that individuals and entities have learned to cope with the reality imposed by the COVID-19 pandemic, which persisted even after the pandemic has receded and the Arab region has entered the recovery stage.
3. A comparison of 2021 and 2022 results shows that overall GEMS scores have increased in some Arab countries and decreased in others, which indicates that the pace of progress in digital transformation is different from one member State to the other, depending on national contexts.
4. The overall results of GEMS 2022 show a widening gap in the e-government services maturity, ranging between 1 and 87 per cent. Services can be classified in four different groups, as follows: very advanced level of maturity, advanced level of maturity, intermediate level of maturity and early stage of maturity. Each group has its own pace in digital transformation. Therefore, efforts to digitize more government services in various sectors should be supported. This calls for supporting Arab countries that are still at an early stage of implementation and drawing on the expertise of Arab countries to accelerate the digital transformation process.

5. **In terms of service availability and sophistication (pillar 1):** seven Arab countries have scores above 50 per cent. This is a good indicator that services are available and have reached a significant level of sophistication. As for the six countries where scores were less than 10 per cent, they should seek to strengthen their technological infrastructure, provide more services electronically, fully digitize services at all stages and make them available through different means, including portals or mobile applications.

6. **In terms of service usage and user satisfaction (pillar 2):** Only five Arab countries scored higher than 50 per cent, which highlights the necessity to focus on providing services through different channels and following up on and addressing citizens' complaints about services.

7. **In terms of public outreach (pillar 3):** Efforts to reach the public have not been consistent across the Arab region. This is evident in the wide interval of scores of this pillar, ranging between 1 and 96 per cent. Launching marketing campaigns to accompany e-government services is key. It is also important to pay attention to providing support tools to individuals and businesses (such as virtual reality and live chat 24/7).

8. **In terms of key performance indicators:** At the regional level, KPI results highlight the need to enhance mobile applications, provide features for persons with disabilities to access available e-services, and facilitate user feedback and enhanced interaction, whether on portals or mobile applications. It is also important to showcase the need for more applications on different platforms with improved usage rates, and to support channel inter-operability, so that transactions can be completed via mobile if they are started through the portal and vice versa.

3. GEMS results at the national level

This section presents the detailed results of each participating member State that provided data for calculating the 2022 index. The section then offers country-specific recommendations for policymakers in e-government programmes and services.

A. Algeria

The following table shows the overall scores of the index in 2021 and 2022.

	2021	2022
GEMS global value (percentage)	35	19
Regional ranking	8	10
Number of assessed services	34	36
Number of assessed entities	17	13

The following table shows the distribution of assessed services by sector.

Sector	No. of services
Transport/Traffic/Police	4
Trade and industry	5
Cross government affairs	4
Education	4
Health	
Interior	6
Municipal affairs	1
Labour	1
Social affairs	2
Finance	2
Utilities	3
Migration	1
Justice	3
Tourism	
Total	36

1. Main pillar results

The following table shows the scores for the three main pillars in 2022, and compares them to the 2021 scores.

Pillar	2021 score (percentage)	2022 score (percentage)
Service availability and sophistication	31.47	22.15
Service usage and user satisfaction	36.05	13.12
Public outreach	38.42	22.64

The following radar chart shows a comparison between the scores of the index pillars and the number of services assessed, with the regional average and maximum score recorded.

Algeria
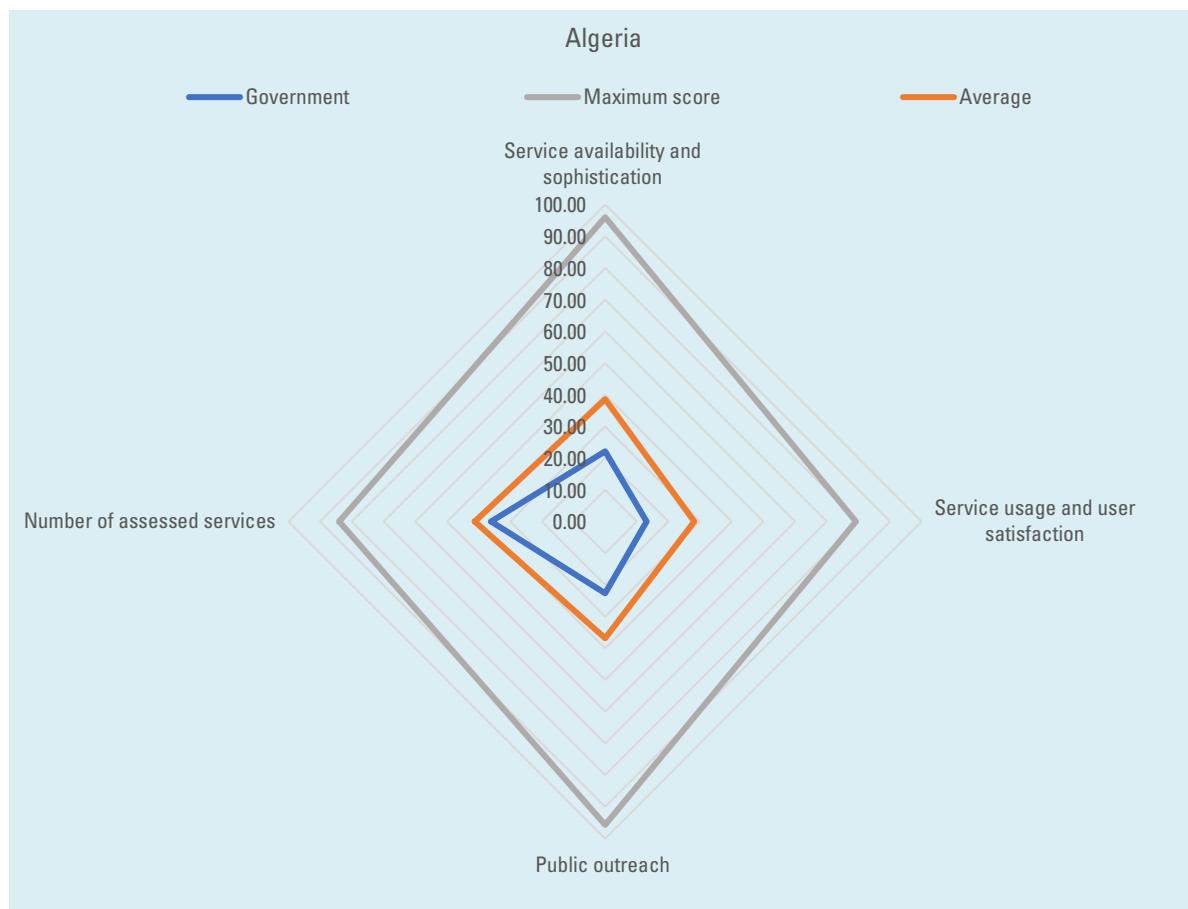
The following tables show the results of key performance indicators in 2021 and 2022, according to each main pillar.

2. Service availability and sophistication KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Portal services sophistication level	36.11	34.59
Portal personalization	60.00	20.00
Mobile services sophistication level	27.05	17.35
Mobile services availability level	20.68	23.32
Applications availability on various mobile platforms	6.07	7.61
Availability of languages on the portal	31.72	27.82
Feedback enablement through portal	20.40	21.56
Persons with disability enablement through portal	5.56	0.00
Availability of languages on mobile applications	24.98	24.98
Feedback enablement through mobile	6.97	5.80
Persons with disability enablement through mobile	0.00	0.00
Channels interoperability	6.91	3.20
Channels security level	55.00	39.00
Open data provisioning	41.05	39.00
Open data delivery format	32.63	27.00

3. Service usage and user satisfaction KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Service usage over portal (service level)	33.20	20.11
Service usage over mobile (service level)	5.00	0.16
Overall usage over portal (entity level)	81.84	43.75
Overall usage over mobile (entity level)	17.22	18.75
User satisfaction over portal	29.97	13.88
User satisfaction over mobile	50.74	3.73

4. Public outreach KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Percentage of new services accompanied by marketing campaigns (from services assessed in the index)	25.17	14.64
Percentage of new services accompanied by marketing campaigns (from total services at the entity level)	36.02	26.77
Availability of support tools	48.42	27.00

Conclusions and recommendations

The overall index score for this year has decreased compared to last year's results, which is clearly shown in the decreasing scores of the three main pillars.

In terms of KPIs, progress can be observed in mobile services availability level, applications availability on various mobile platforms, feedback enablement through portal and overall usage over mobile (entity level). However, the remaining indicators' scores have decreased in general.

The overall index score indicates that e-government services have reached an intermediate level of maturity. It is therefore recommended to make more government services available electronically to cover various sectors, and to make further efforts to provide personalization features in available web pages. It is also recommended to develop mobile services availability, enhance persons with disability enablement through the portal and mobile, provide support tools and support individuals while using these services.

B. Iraq

The following table shows the overall scores of the index in 2021 and 2022.

	2021	2022
GEMS global value (percentage)	21	18
Regional ranking	10	11
Number of assessed services	30	27
Number of assessed entities	13	11

The following table shows the distribution of assessed services by sector.

Sector	No. of services
Transport/Traffic/Police	5
Trade and industry	7
Cross government affairs	2
Education	3
Health	1
Interior	3
Municipal affairs	
Labour	2
Social affairs	2
Finance	
Utilities	1
Migration	
Justice	1
Tourism	
Total	27

1. Main pillar results

The following table shows the scores for the three main pillars in 2022, and compares them to the 2021 scores.

Pillar	2021 score (percentage)	2022 score (percentage)
Service availability and sophistication	21.90	20.83
Service usage and user satisfaction	17.21	15.83
Public outreach	25.93	17.15

The following radar chart shows a comparison between the scores of the index pillars and the number of services assessed, with the regional average and maximum score recorded.
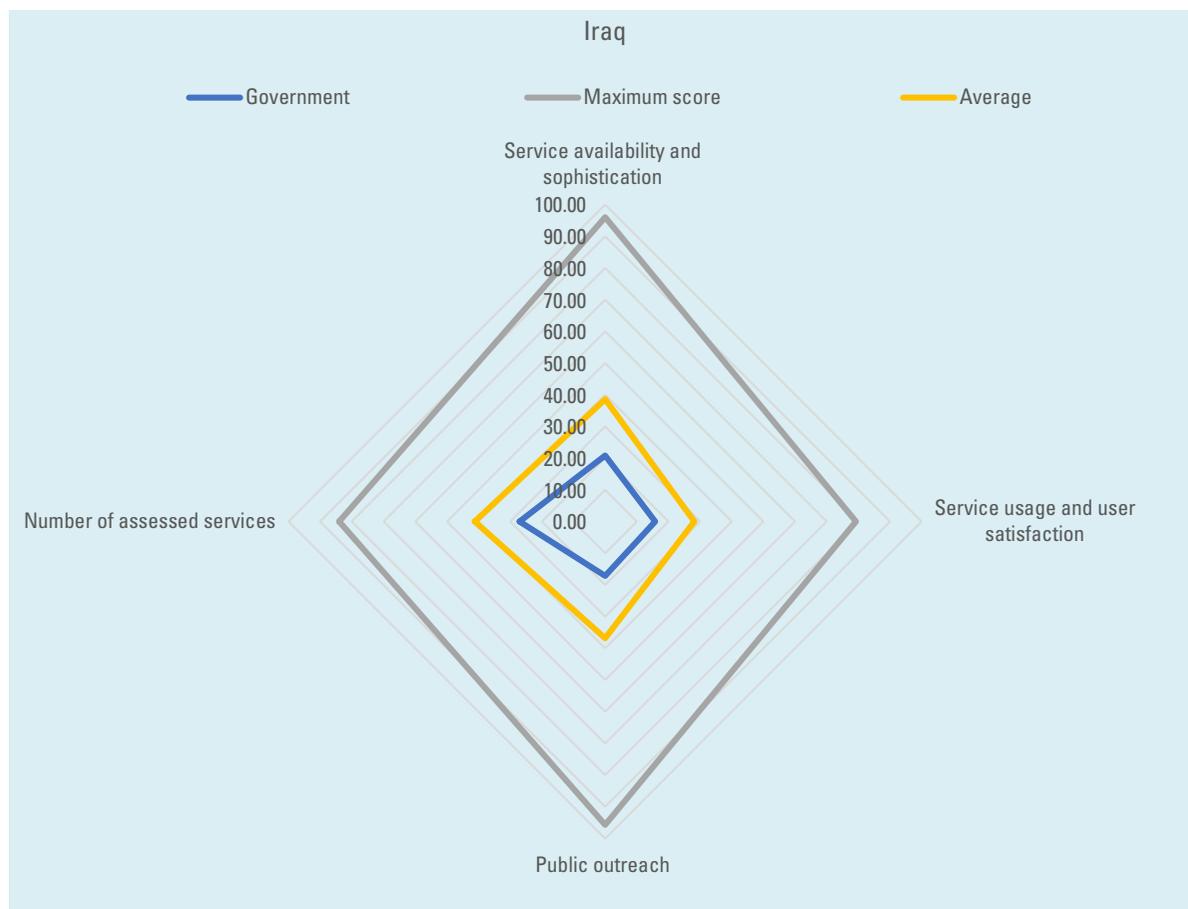
The following tables show the results of key performance indicators in 2021 and 2022, according to each main pillar.

2. Service availability and sophistication KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Portal services sophistication level	28.95	25.03
Portal personalization	30.00	35.00
Mobile services sophistication level	29.88	18.96
Mobile services availability level	15.39	14.01
Applications availability on various mobile platforms	3.05	0.00
Availability of languages on the portal	19.39	19.91
Feedback enablement through portal	10.70	13.60
Persons with disability enablement through portal	4.64	4.64
Availability of languages on mobile applications	19.39	17.50
Feedback enablement through mobile	9.54	12.52
Persons with disability enablement through mobile	4.64	0.00
Channels interoperability	0.00	0.00
Channels security level	24.83	24.83
Open data provisioning	27.00	35.00
Open data delivery format	27.00	33.00

3. Service usage and user satisfaction KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Service usage over portal (service level)	23.09	25.08
Service usage over mobile (service level)	12.54	5.21
Overall usage over portal (entity level)	53.12	50.60
Overall usage over mobile (entity level)	22.96	13.86
User satisfaction over portal	20.49	26.99
User satisfaction over mobile	0.57	0.00

4. Public outreach KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Percentage of new services accompanied by marketing campaigns (from services assessed in the index)	20.15	13.56
Percentage of new services accompanied by marketing campaigns (from total services at the entity level)	24.13	19.38
Availability of support tools	30.53	19.00

Conclusions and recommendations

The overall index score is not very different from the 2021 score. A slight decrease is observed in the public outreach pillar, while the first and second pillars achieved results similar to those recorded in the previous year. A reasonable number of government services and entities has been assessed and more e-services should be made available to cover other sectors.

In terms of KPIs, progress can be observed in the results of indicators related to portal personalization, feedback enablement through portal and mobile, open data provisioning and open data delivery format. In addition to that, the score of the service usage over portal has increased while the overall scores of other indicators have relatively decreased.

The overall index score indicates that e-government services have reached an intermediate level of maturity. It is therefore recommended to make more government services available electronically to cover various sectors, enhance services availability through the portal and various mobile platforms, enable persons with disabilities to access these services, provide portal personalization and make support tools available for users while using e-services.

C. Jordan

The following table shows the overall scores of the index in 2021 and 2022.

	2021	2022
GEMS global value (percentage)	51	59
Regional ranking	7	5
Number of assessed services	62	79
Number of assessed entities	20	30

The following table shows the distribution of assessed services by sector.

Sector	No. of services
Transport/Traffic/Police	7
Trade and industry	15
Cross government affairs	8
Education	8
Health	7
Interior	6
Municipal affairs	5
Labour	4
Social affairs	4
Finance	2
Utilities	5
Migration	2
Justice	3
Tourism	3
Total	79

1. Main pillar results

The following table shows the scores for the three main pillars in 2022, and compares them to the 2021 scores.

Pillar	2021 score (percentage)	2022 score (percentage)
Service availability and sophistication	58.13	62.68
Service usage and user satisfaction	42.37	56.09
Public outreach	53.22	59.80

The following radar chart shows a comparison between the scores of the index pillars and the number of services assessed, with the regional average and maximum score recorded.

Jordan
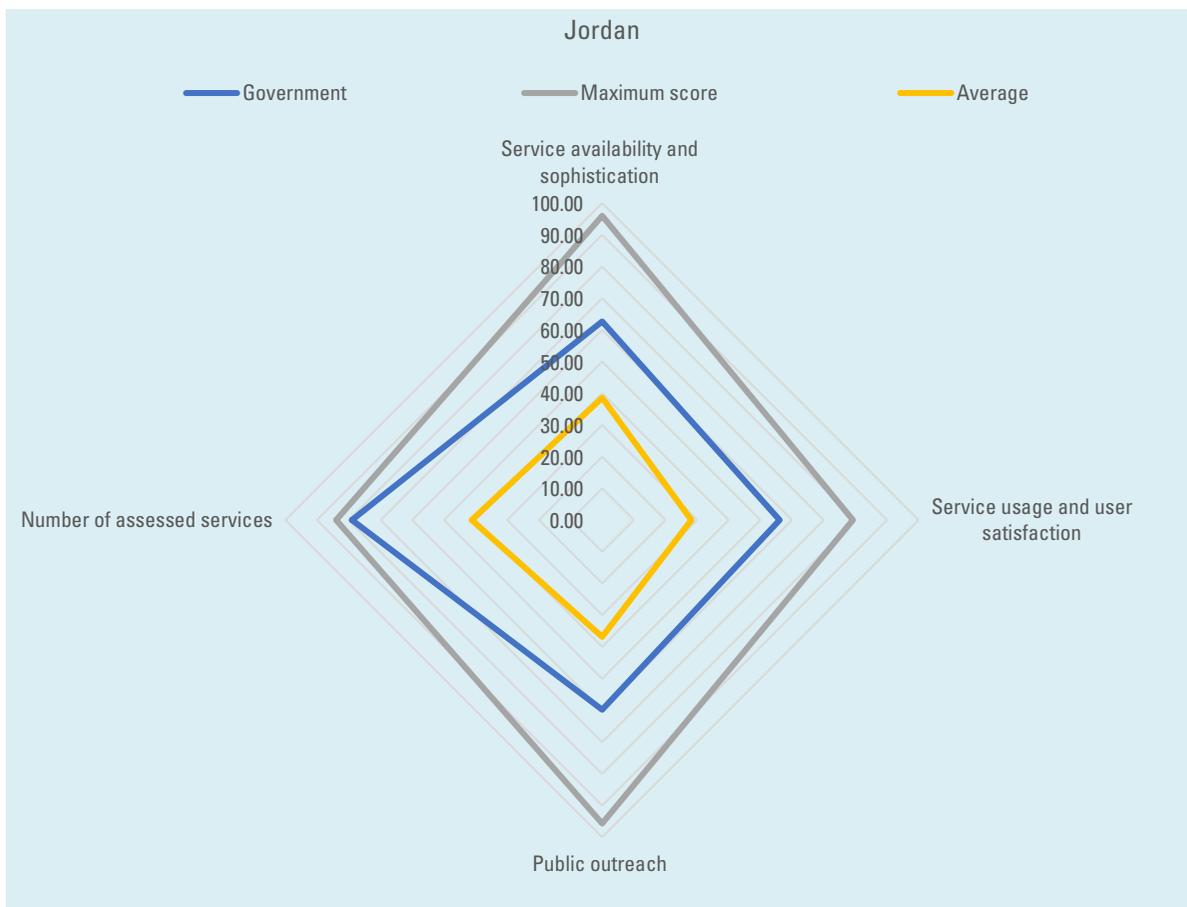
The following tables show the results of key performance indicators in 2021 and 2022, according to each main pillar.

2. Service availability and sophistication KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Portal services sophistication level	71.42	86.27
Portal personalization	90.00	90.00
Mobile services sophistication level	58.09	37.67
Mobile services availability level	43.71	55.85
Applications availability on various mobile platforms	19.83	21.16
Availability of languages on the portal	49.94	64.05
Feedback enablement through portal	52.99	57.63
Persons with disability enablement through portal	20.81	8.71
Availability of languages on mobile applications	43.44	57.94
Feedback enablement through mobile	10.36	26.62
Persons with disability enablement through mobile	0.00	5.39
Channels interoperability	24.05	78.62
Channels security level	67.00	75.50
Open data provisioning	81.00	86.32
Open data delivery format	71.00	66.32

3. Service usage and user satisfaction KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Service usage over portal (service level)	50.95	73.23
Service usage over mobile (service level)	8.97	30.19
Overall usage over portal (entity level)	79.42	87.20
Overall usage over mobile (entity level)	12.18	36.64
User satisfaction over portal	57.08	75.90
User satisfaction over mobile	49.15	49.46

4. Public outreach KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Percentage of new services accompanied by marketing campaigns (from services assessed in the index)	43.57	56.76
Percentage of new services accompanied by marketing campaigns (from total services at the entity level)	43.15	59.57
Availability of support tools	63.00	62.00

Conclusions and recommendations

The overall index score for this year has increased compared to the 2021 results, which is clearly shown in the increasing scores of the three main index pillars. The number of assessed services and government entities is high and covers various sectors.

In terms of KPIs, progress can be observed in the results of some indicators, particularly those related to the portal services sophistication level, mobile services availability, availability of languages on the portal and on mobile applications and feedback enablement through portal and mobile. Progress is also seen in channels interoperability, channels security level, open data provisioning, service usage over portal and mobile, overall usage over portal and mobile (entity level), user satisfaction over portal and mobile, and a higher percentage of new services accompanied by marketing campaigns. On the other hand, a slight decline is observed in other indicator scores such as persons with disability enablement through portal.

The overall index score indicates that e-government services have reached an advanced level of maturity. It is recommended to provide features that take into account the accessibility of persons with disabilities whether through the portal or through mobile applications, and to make mobile applications available through more platforms, which will further enhance the use of mobile applications.

D. Kuwait

The following table shows the overall scores of the index in 2021 and 2022.

	2021	2022
GEMS global value (percentage)	59	57
Regional ranking	6	6
Number of assessed services	65	71
Number of assessed entities	20	21

The following table shows the distribution of assessed services by sector.

Sector	No. of services
Transport/Traffic/Police	3
Trade and industry	15
Cross government affairs	8
Education	8
Health	6
Interior	3
Municipal affairs	5
Labour	4
Social affairs	5
Finance	2
Utilities	5
Migration	2
Justice	4
Tourism	1
Total	71

1. Main pillar results

The following table shows the scores for the three main pillars in 2022, and compares them to the 2021 scores.

Pillar	2021 score (percentage)	2022 score (percentage)
Service availability and sophistication	58.36	63.77
Service usage and user satisfaction	58.57	49.45
Public outreach	60.56	60.67

The following radar chart shows a comparison between the scores of the index pillars and the number of services assessed, with the regional average and maximum score recorded.

Kuwait
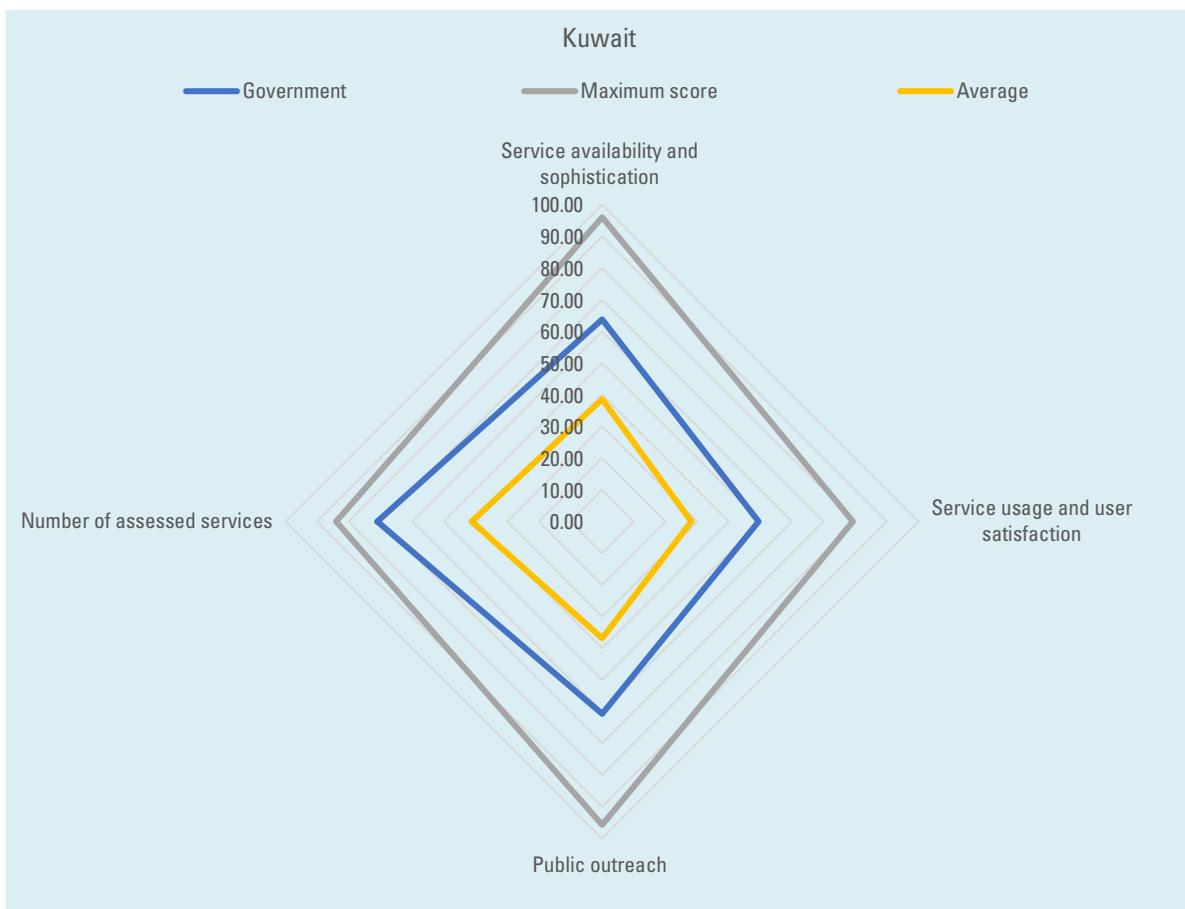
The following tables show the results of key performance indicators in 2021 and 2022, according to each main pillar.

2. Service availability and sophistication KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Portal services sophistication level	73.95	75.75
Portal personalization	65.00	70.00
Mobile services sophistication level	73.90	70.21
Mobile services availability level	50.90	64.83
Applications availability on various mobile platforms	23.40	47.28
Availability of languages on the portal	54.10	58.33
Feedback enablement through portal	51.66	71.72
Persons with disability enablement through portal	11.94	8.13
Availability of languages on mobile applications	52.93	59.22
Feedback enablement through mobile	45.11	65.26
Persons with disability enablement through mobile	7.46	7.46
Channels interoperability	31.67	39.76
Channels security level	77.17	82.50
Open data provisioning	67.00	62.00
Open data delivery format	63.00	60.00

3. Service usage and user satisfaction KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Service usage over portal (service level)	64.27	60.93
Service usage over mobile (service level)	41.42	23.21
Overall usage over portal (entity level)	90.90	84.07
Overall usage over mobile (entity level)	46.94	25.63
User satisfaction over portal	64.47	66.72
User satisfaction over mobile	56.36	47.60

4. Public outreach KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Percentage of new services accompanied by marketing campaigns (from services assessed in the index)	49.05	59.08
Percentage of new services accompanied by marketing campaigns (from total services at the entity level)	57.71	63.27
Availability of support tools	69.47	61.00

Conclusions and recommendations

There was a slight decrease in the overall index score compared to 2021 results. The score of the "service availability and sophistication" pillar has increased, and the number of assessed services and government entities is considered high and covers a wide range of sectors.

In terms of KPIs, progress can be seen in the results of certain indicators, namely portal services sophistication level, portal personalization, mobile services availability level, applications availability on various mobile platforms, availability of languages on the portal and on mobile applications and feedback enablement though portal and mobile. An increase is also seen in channels interoperability, channels security level, user satisfaction over portal and percentage of new services accompanied by marketing campaigns. On the other hand, a relative decrease has been observed in several KPIs such as mobile services sophistication level, persons with disability enablement through portal, open data provisioning, open data delivery format, service usage over portal and mobile, user satisfaction over mobile and availability of support tools.

The overall index score indicates that e-government services have reached an advanced level of maturity. It is recommended to provide features that take into account the accessibility of persons with disabilities whether through the portal or through mobile applications, while making more services accompanied by marketing campaigns and improving support tools for individuals which would improve usage rates.

E. Lebanon

The following table shows the overall scores of the index in 2021 and 2022.

	2021	2022
GEMS global value (percentage)	9	5
Regional ranking	13	13
Number of assessed services	7	4
Number of assessed entities	5	3

The following table shows the distribution of assessed services by sector.

Sector	No. of services
Transport/Traffic/Police	
Trade and industry	
Cross government affairs	
Education	
Health	1
Interior	
Municipal affairs	
Labour	
Social affairs	
Finance	2
Utilities	
Migration	
Justice	1
Tourism	
Total	4

1. Main pillar results

The following table shows the scores for the three main pillars in 2022, and compares them to the 2021 scores.

Pillar	2021 score (percentage)	2022 score (percentage)
Service availability and sophistication	7.56	6.13
Service usage and user satisfaction	13.08	4.52
Public outreach	5.32	3.88

The following radar chart shows a comparison between the scores of the index pillars and the number of services assessed, with the regional average and maximum score recorded.

Lebanon
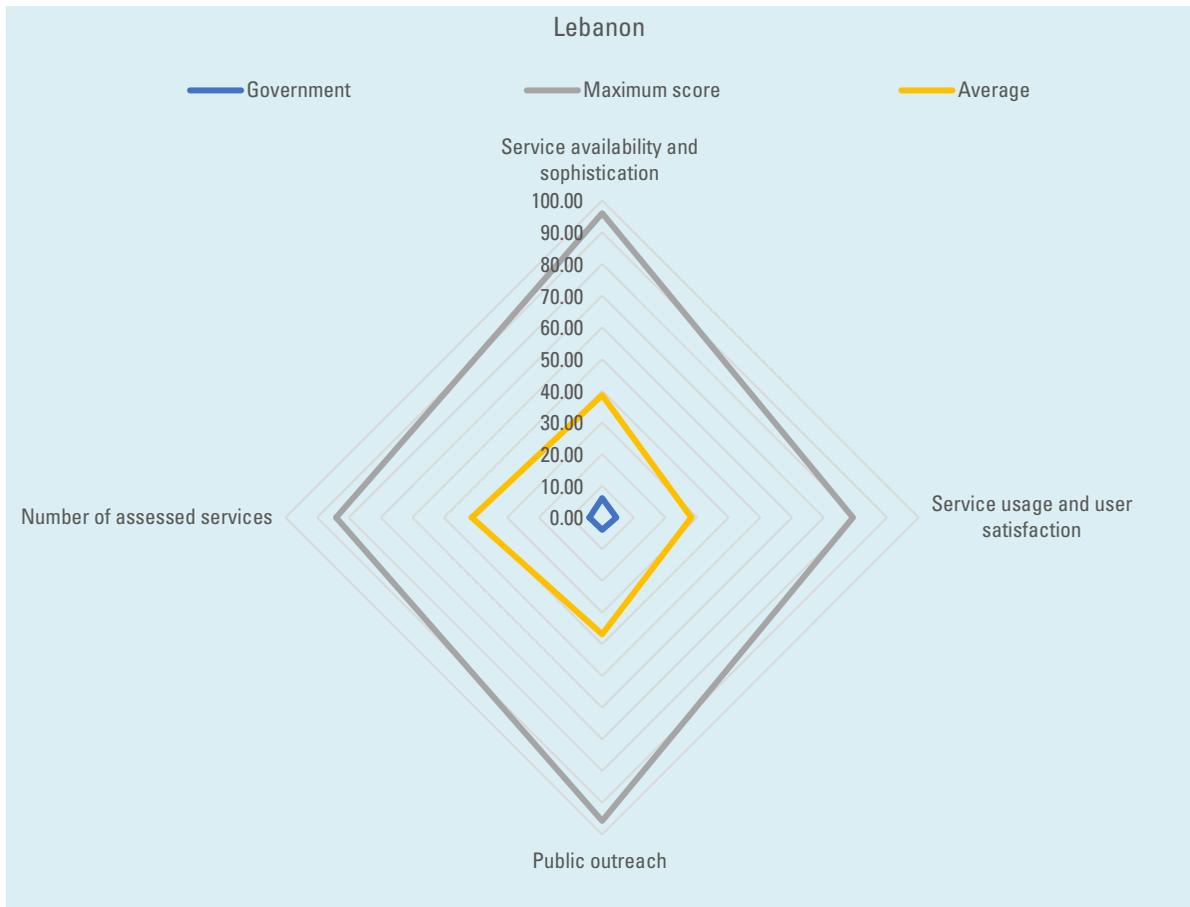
The following tables show the results of key performance indicators in 2021 and 2022, according to each main pillar.

2. Service availability and sophistication KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Portal services sophistication level	8.31	4.02
Portal personalization	10.00	15.00
Mobile services sophistication level	8.62	3.63
Mobile services availability level	4.94	2.65
Applications availability on various mobile platforms	2.49	1.16
Availability of languages on the portal	5.21	4.10
Feedback enablement through portal	2.32	3.98
Persons with disability enablement through portal	0.00	0.00
Availability of languages on mobile applications	4.77	4.10
Feedback enablement through mobile	2.32	3.98
Persons with disability enablement through mobile	0.00	0.00
Channels interoperability	0.00	0.00
Channels security level	13.83	10.33
Open data provisioning	18.95	11.00
Open data delivery format	11.58	12.00

3. Service usage and user satisfaction KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Service usage over portal (service level)	2.49	4.89
Service usage over mobile (service level)	0.77	2.75
Overall usage over portal (entity level)	0.00	15.00
Overall usage over mobile (entity level)	5.00	5.25
User satisfaction over portal	2.46	4.89
User satisfaction over mobile	38.23	1.18

4. Public outreach KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Percentage of new services accompanied by marketing campaigns (from services assessed in the index)	0.91	0.00
Percentage of new services accompanied by marketing campaigns (from total services at the entity level)	0.00	2.50
Availability of support tools	10.00	7.00

Conclusions and recommendations

The overall index score declined compared to 2021, due to a decrease in the scores of the three main pillars. Moreover, the number of assessed e-services and government entities is very low.

In terms of KPIs, most declined compared to 2021. However, a slight increase was observed in some indicators, namely portal personalization, feedback enablement through portal and mobile and open data delivery format. A progress was also seen in other indicators such as: service usage over portal, overall usage over portal (entity level), user satisfaction over portal and percentage of new services accompanied by marketing campaign (entity level).

The overall index score indicates that e-government services are still at an early stage of maturity. Therefore, it is recommended to make further efforts to provide e-government services through the portal and through mobile applications and to encourage individuals to use them and enhance accessibility to such services.

F. Libya

The following table shows the overall scores of the index in 2021 and 2022.

	2021	2022
GEMS global value (percentage)	-	3
Regional ranking	-	16
Number of assessed services	-	6
Number of assessed entities	-	2

The following table shows the distribution of assessed services by sector.

Sector	No. of services
Transport/Traffic/Police	
Trade and industry	5
Cross government affairs	
Education	
Health	
Interior	1
Municipal affairs	
Labour	
Social affairs	
Finance	
Utilities	
Migration	
Justice	
Tourism	
Total	6

1. Main pillar results

The following table shows the scores for the three main pillars in 2022, and compares them to the 2021 scores.

Pillar	2021 score (percentage)	2022 score (percentage)
Service availability and sophistication	-	3.08
Service usage and user satisfaction	-	1.50
Public outreach	-	3.80

The following radar chart shows a comparison between the scores of the index pillars and the number of services assessed, with the regional average and maximum score recorded.

Libya
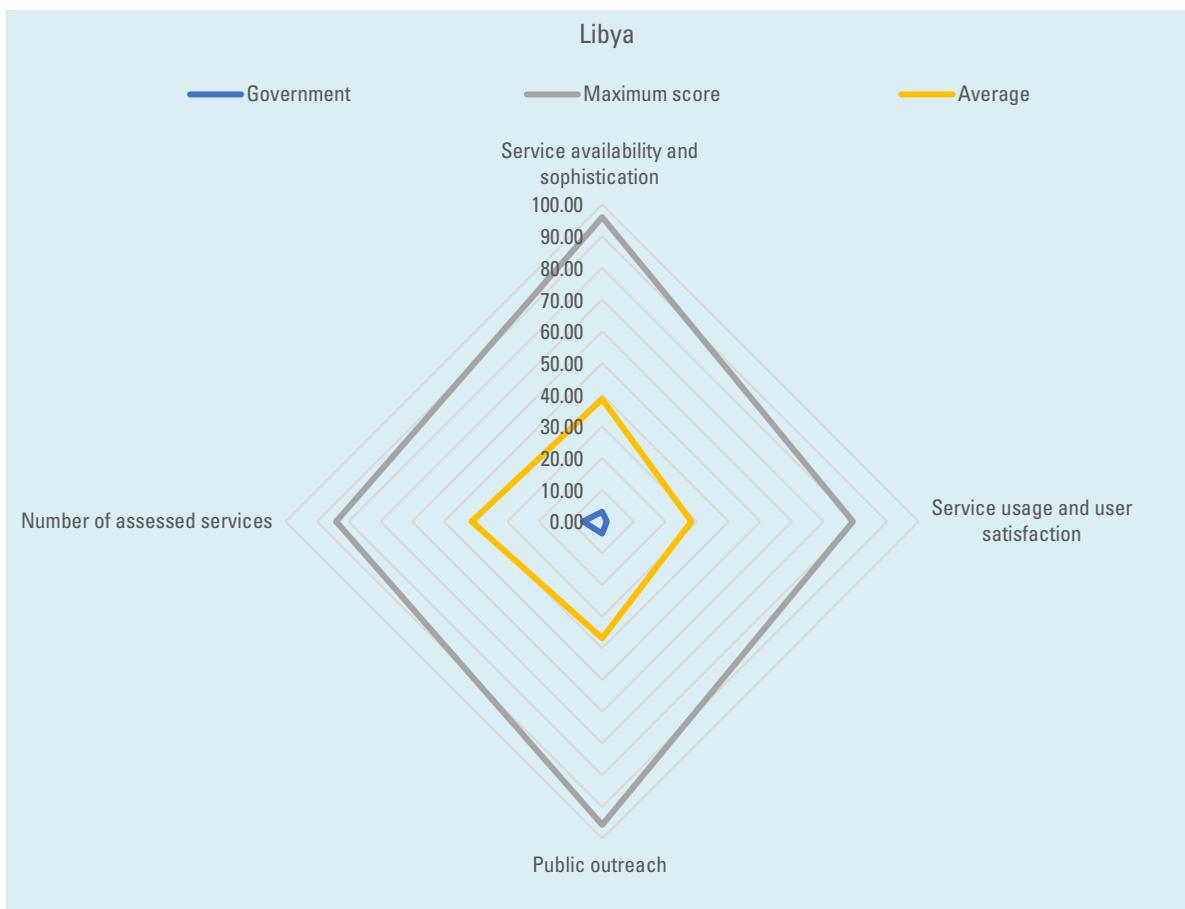
The following tables show the results of key performance indicators in 2021 and 2022, according to each main pillar.

2. Service availability and sophistication KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Portal services sophistication level	-	1.17
Portal personalization	-	5.00
Mobile services sophistication level	-	0.77
Mobile services availability level	-	4.51
Applications availability on various mobile platforms	-	0.65
Availability of languages on the portal	-	5.44
Feedback enablement through portal	-	6.80
Persons with disability enablement through portal	-	1.08
Availability of languages on mobile applications	-	5.44
Feedback enablement through mobile	-	6.80
Persons with disability enablement through mobile	-	0.00
Channels interoperability	-	0.00
Channels security level	-	6.83
Open data provisioning	-	3.16
Open data delivery format	-	5.26

3. Service usage and user satisfaction KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Service usage over portal (service level)	-	0.81
Service usage over mobile (service level)	-	1.08
Overall usage over portal (entity level)	-	1.99
Overall usage over mobile (entity level)	-	5.26
User satisfaction over portal	-	0.00
User satisfaction over mobile	-	0.88

4. Public outreach KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Percentage of new services accompanied by marketing campaigns (from services assessed in the index)	-	3.94
Percentage of new services accompanied by marketing campaigns (from total services at the entity level)	-	2.11
Availability of support tools	-	4.21

Conclusions and recommendations

Libya participated in the GEMS index assessment for the first time in 2022. The number of assessed services and government entities is considered low and covers a limited number of sectors. The results of most KPIs are low.

The overall index score indicates that e-government services are still at an early stage of maturity. Therefore, it is recommended to make further efforts to provide e-government services through the portal and through mobile applications, accompany them with marketing campaigns, encourage individuals to use them and enhance accessibility to such services.

G. Mauritania

The following table shows the overall scores of the index in 2021 and 2022.

	2021	2022
GEMS global value (percentage)	-	3
Regional ranking	-	16
Number of assessed services	-	11
Number of assessed entities	-	0

The following table shows the distribution of assessed services by sector.

Sector	No. of services
Transport/Traffic/Police	2
Trade and industry	
Cross government affairs	1
Education	3
Health	1
Interior	
Municipal affairs	
Labour	2
Social affairs	
Finance	
Utilities	2
Migration	
Justice	
Tourism	
Total	11

1. Main pillar results

The following table shows the scores for the three main pillars in 2022, and compares them to the 2021 scores.

Pillar	2021 score (percentage)	2022 score (percentage)
Service availability and sophistication	-	3.67
Service usage and user satisfaction	-	3.25
Public outreach	-	1.06

The following radar chart shows a comparison between the scores of the index pillars and the number of services assessed, with the regional average and maximum score recorded.
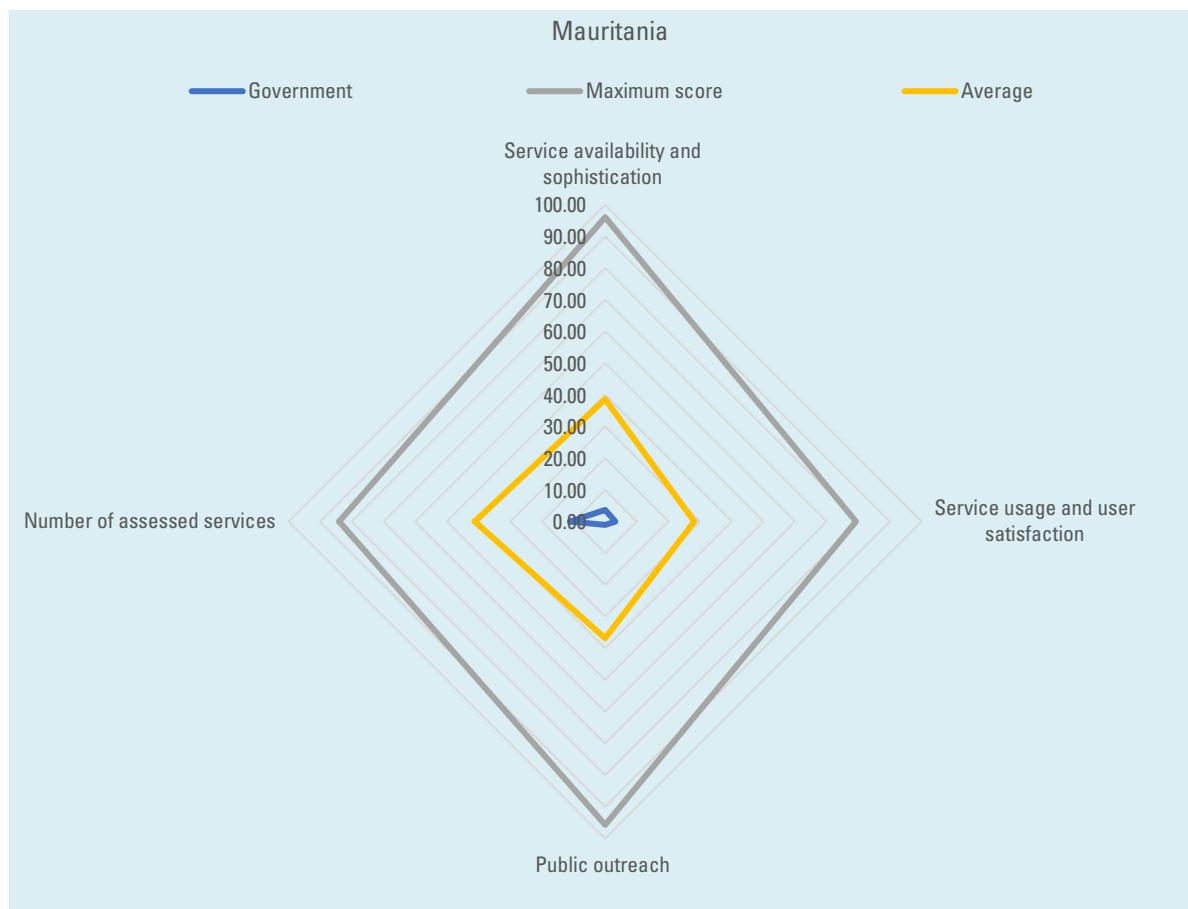
The following tables show the results of key performance indicators in 2021 and 2022, according to each main pillar.

2. Service availability and sophistication KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Portal services sophistication level	-	6.71
Portal personalization	-	0.00
Mobile services sophistication level	-	4.67
Mobile services availability level	-	8.16
Applications availability on various mobile platforms	-	3.96
Availability of languages on the portal	-	7.96
Feedback enablement through portal	-	1.08
Persons with disability enablement through portal	-	0.00
Availability of languages on mobile applications	-	8.09
Feedback enablement through mobile	-	1.08
Persons with disability enablement through mobile	-	0.00
Channels interoperability	-	0.00
Channels security level	-	0.00
Open data provisioning	-	0.00
Open data delivery format	-	0.00

3. Service usage and user satisfaction KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Service usage over portal (service level)	-	7.38
Service usage over mobile (service level)	-	2.82
Overall usage over portal (entity level)	-	0.00
Overall usage over mobile (entity level)	-	0.00
User satisfaction over portal	-	6.19
User satisfaction over mobile	-	2.84

4. Public outreach KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Percentage of new services accompanied by marketing campaigns (from services assessed in the index)	-	3.03
Percentage of new services accompanied by marketing campaigns (from total services at the entity level)	-	0.00
Availability of support tools	-	0.00

Conclusions and recommendations

Mauritania participated in the GEMS 2022 index assessment, while it did not take part in GEMS 2021. The number of assessed services is low, and the national team did not assess the e-services providing entities, leading to low scores for most KPIs.

The overall index score indicates that e-government services are still at an early stage of maturity. Therefore, it is recommended to make further efforts to provide more e-government services through the portal and through mobile applications, develop marketing campaigns, encourage individuals to use them and enhance accessibility to such services.

H. Morocco

The following table shows the overall scores of the index in 2021 and 2022.

	2021	2022
GEMS global value (percentage)	-	47
Regional ranking	-	7
Number of assessed services	-	64
Number of assessed entities	-	28

The following table shows the distribution of assessed services by sector.

Sector	No. of services
Transport/Traffic/Police	7
Trade and industry	7
Cross government affairs	7
Education	8
Health	2
Interior	6
Municipal affairs	5
Labour	4
Social affairs	5
Finance	2
Utilities	5
Migration	2
Justice	4
Tourism	
Total	64

1. Main pillar results

The following table shows the scores for the three main pillars in 2022, and compares them to the 2021 scores.

Pillar	2021 score (percentage)	2022 score (percentage)
Service availability and sophistication	-	57.08
Service usage and user satisfaction	-	33.29
Public outreach	-	52.33

The following radar chart shows a comparison between the scores of the index pillars and the number of services assessed, with the regional average and maximum score recorded.
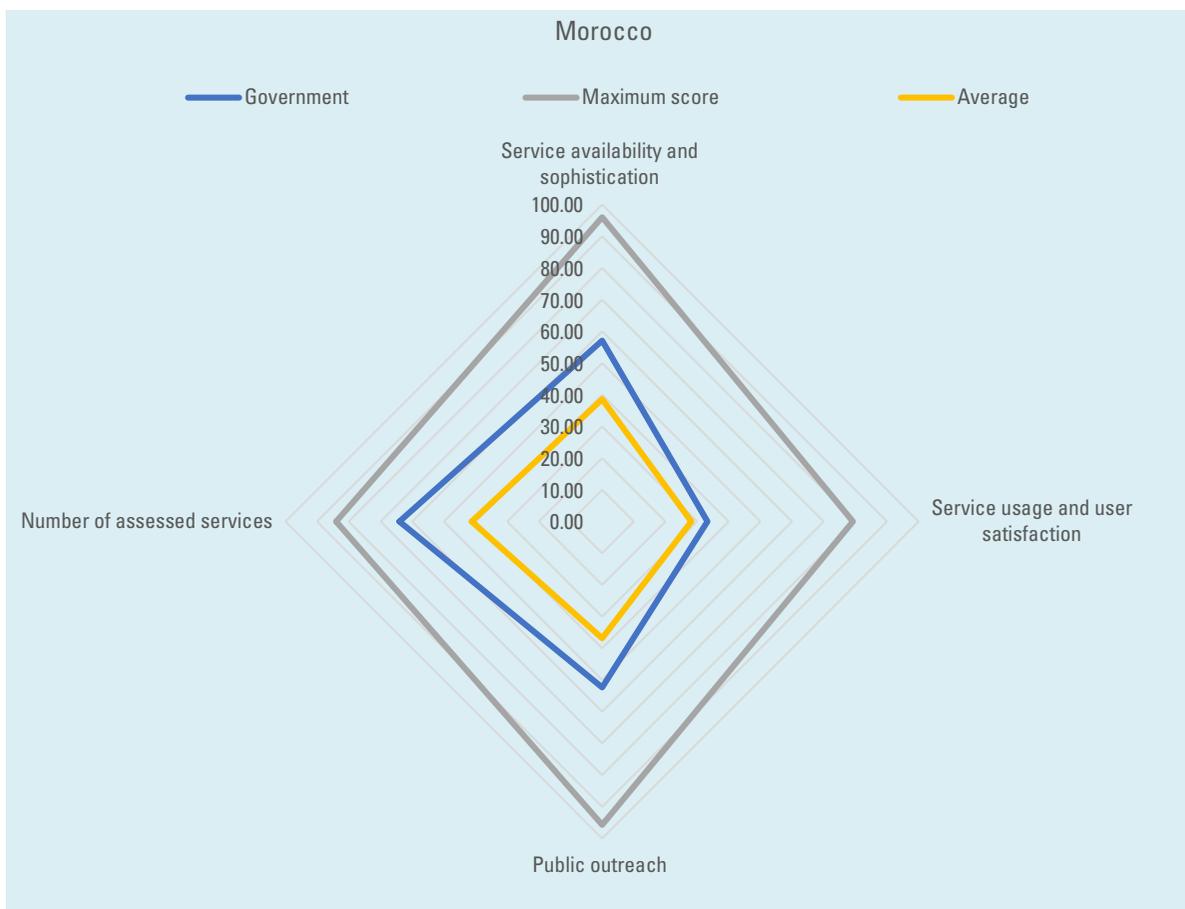
The following tables show the results of key performance indicators in 2021 and 2022, according to each main pillar.

2. Service availability and sophistication KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Portal services sophistication level	-	59.91
Portal personalization	-	85.00
Mobile services sophistication level	-	45.56
Mobile services availability level	-	53.85
Applications availability on various mobile platforms	-	31.66
Availability of languages on the portal	-	57.37
Feedback enablement through portal	-	44.11
Persons with disability enablement through portal	-	2.07
Availability of languages on mobile applications	-	55.37
Feedback enablement through mobile	-	38.89
Persons with disability enablement through mobile	-	1.08
Channels interoperability	-	23.03
Channels security level	-	86.17
Open data provisioning	-	78.00
Open data delivery format	-	76.00

3. Service usage and user satisfaction KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Service usage over portal (service level)	-	57.82
Service usage over mobile (service level)	-	10.76
Overall usage over portal (entity level)	-	67.40
Overall usage over mobile (entity level)	-	9.81
User satisfaction over portal	-	39.01
User satisfaction over mobile	-	32.93

4. Public outreach KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Percentage of new services accompanied by marketing campaigns (from services assessed in the index)	-	39.88
Percentage of new services accompanied by marketing campaigns (from total services at the entity level)	-	62.45
Availability of support tools	-	58.00

Conclusions and recommendations

Morocco participated in the GEMS 2022 index assessment, while it did not take part in GEMS 2021. The number of assessed services and entities is high and covers various sectors. The two main pillars, "service availability and sophistication" and "public outreach", registered good scores with the possibility of encouraging individuals to use e-government services. The overall index score indicates that e-government services have reached an advanced level of maturity.

All KPI scores are deemed good, with the possibility of improving several indicators, namely persons with disability enablement though portal and mobile, mobile services availability, channels interoperability, overall usage over mobile (entity level) and the percentage of new services accompanied by marketing campaigns.

I. Oman

The following table shows the overall scores of the index in 2021 and 2022.

	2021	2022
GEMS global value (percentage)	64	69
Regional ranking	5	4
Number of assessed services	82	82
Number of assessed entities	20	24

The following table shows the distribution of assessed services by sector.

Sector	No. of services
Transport/Traffic/Police	9
Trade and industry	15
Cross government affairs	8
Education	8
Health	7
Interior	6
Municipal affairs	5
Labour	4
Social affairs	5
Finance	1
Utilities	5
Migration	2
Justice	5
Tourism	2
Total	82

1. Main pillar results

The following table shows the scores for the three main pillars in 2022, and compares them to the 2021 scores.

Pillar	2021 score (percentage)	2022 score (percentage)
Service availability and sophistication	80.06	77.39
Service usage and user satisfaction	46.35	58.08
Public outreach	67.70	72.14

The following radar chart shows a comparison between the scores of the index pillars and the number of services assessed, with the regional average and maximum score recorded.
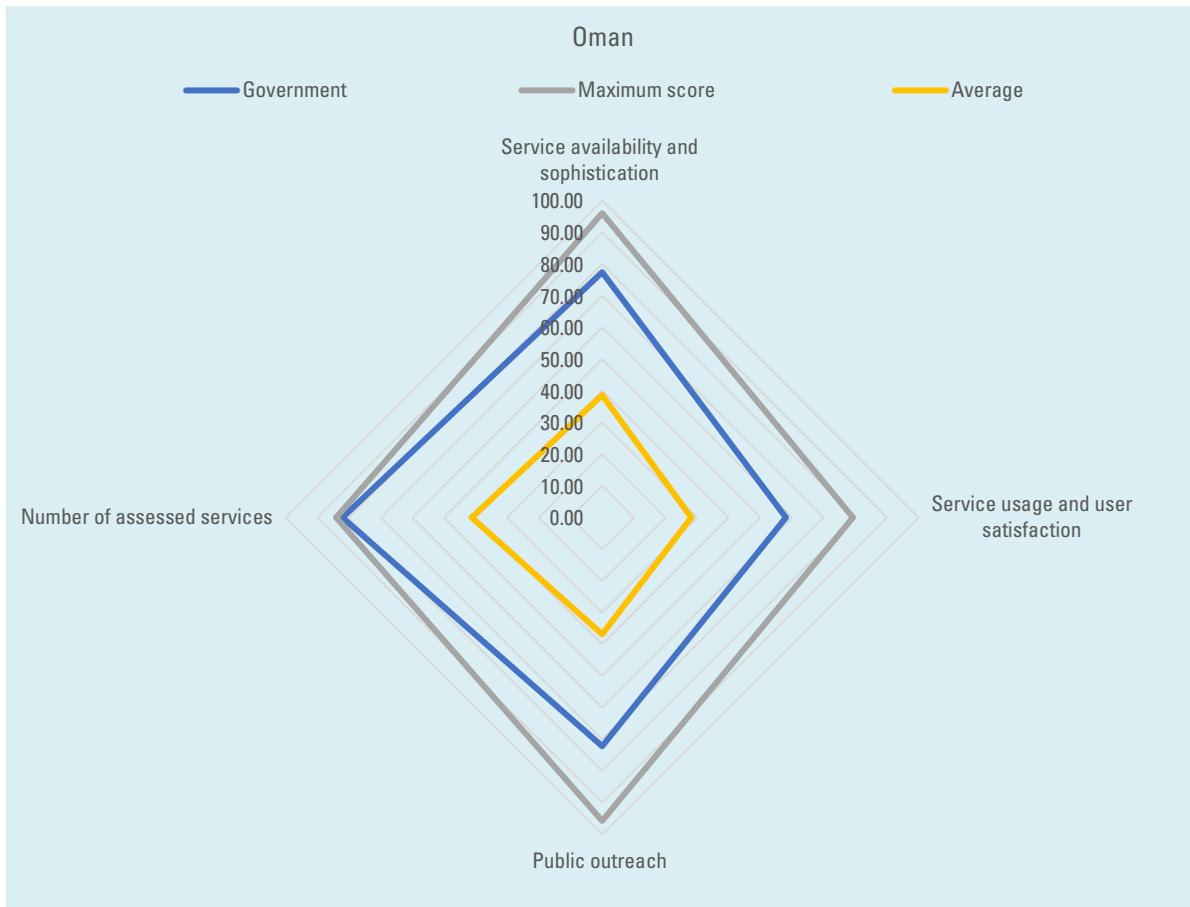
The following tables show the results of key performance indicators in 2021 and 2022, according to each main pillar.

2. Service availability and sophistication KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Portal services sophistication level	95.99	93.36
Portal personalization	85.00	75.00
Mobile services sophistication level	95.32	82.12
Mobile services availability level	63.63	65.80
Applications availability on various mobile platforms	38.01	39.24
Availability of languages on the portal	77.80	77.68
Feedback enablement through portal	94.44	95.27
Persons with disability enablement through portal	96.35	95.27
Availability of languages on mobile applications	68.62	77.90
Feedback enablement through mobile	79.19	95.27
Persons with disability enablement through mobile	76.87	95.27
Channels interoperability	52.37	61.47
Channels security level	84.50	86.83
Open data provisioning	84.00	79.00
Open data delivery format	76.00	71.00

3. Service usage and user satisfaction KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Service usage over portal (service level)	70.48	74.17
Service usage over mobile (service level)	38.12	46.73
Overall usage over portal (entity level)	78.14	76.83
Overall usage over mobile (entity level)	23.54	15.30
User satisfaction over portal	49.01	84.06
User satisfaction over mobile	41.47	56.20

4. Public outreach KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Percentage of new services accompanied by marketing campaigns (from services assessed in the index)	83.67	95.48
Percentage of new services accompanied by marketing campaigns (from total services at the entity level)	45.57	54.84
Availability of support tools	63.16	61.00

Conclusions and recommendations

The overall index score for this year has increased, compared to the 2021 results, which is clearly seen in the scores of the two main pillars: "service usage and user satisfaction" and "public outreach". On the other hand, a slight decrease in the "service availability and sophistication" score was observed. The number of assessed services and government entities is very high, and it covers all sectors.

In terms of KPIs, most indicators witnessed an increase in score compared to the 2021 results. For example, progress can be seen in the scores of the following indicators: mobile services availability, availability of languages on mobile applications, feedback enablement through mobile, persons with disability enablement though mobile, channels interoperability, service usage over portal and mobile, user satisfaction over portal and mobile and percentage of new services accompanied by marketing campaigns. Additionally, the scores of certain KPIs have relatively declined, namely portal personalization, portal services sophistication level, open data provisioning and overall usage over mobile (entity level).

The overall index score indicates that e-government services have reached an advanced level of maturity. It is recommended to make further efforts to provide mobile applications on various platforms and develop support tools for individuals who are using e-services through entities.

J. State of Palestine

The following table shows the overall scores of the index in 2021 and 2022.

	2021	2022
GEMS global value (percentage)	18	23
Regional ranking	11	9
Number of assessed services	22	30
Number of assessed entities	12	19

The following table shows the distribution of assessed services by sector.

Sector	No. of services
Transport/Traffic/Police	
Trade and industry	4
Cross government affairs	6
Education	5
Health	3
Interior	2
Municipal affairs	1
Labour	2
Social affairs	
Finance	2
Utilities	
Migration	1
Justice	4
Tourism	
Total	30

The following tables show the results of key performance indicators in 2021 and 2022, according to each main pillar.

2. Service availability and sophistication KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Portal services sophistication level	19.18	23.08
Portal personalization	15.00	50.00
Mobile services sophistication level	17.74	17.05
Mobile services availability level	18.97	18.29
Applications availability on various mobile platforms	10.20	6.38
Availability of languages on the portal	13.87	21.29
Feedback enablement through portal	10.12	15.51
Persons with disability enablement through portal	0.91	6.80
Availability of languages on mobile applications	12.90	19.07
Feedback enablement through mobile	9.20	6.88
Persons with disability enablement through mobile	0.00	2.16
Channels interoperability	10.83	6.00
Channels security level	30.67	57.00
Open data provisioning	32.00	61.43
Open data delivery format	31.00	52.00

3. Service usage and user satisfaction KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Service usage over portal (service level)	14.48	13.23
Service usage over mobile (service level)	3.74	3.61
Overall usage over portal (entity level)	30.65	74.02
Overall usage over mobile (entity level)	1.10	20.30
User satisfaction over portal	12.48	9.66
User satisfaction over mobile	27.12	5.84

4. Public outreach KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Percentage of new services accompanied by marketing campaigns (from services assessed in the index)	11.11	6.72
Percentage of new services accompanied by marketing campaigns (from total services at the entity level)	14.77	30.36
Availability of support tools	31.00	41.05

Conclusions and recommendations

The overall index score for this year has increased, compared to the 2021 results, due to the increase in the scores of the three main pillars. The number of assessed e-services and government entities is reasonable, and it covers various sectors.

In terms of KPIs, several indicators have increased, compared to 2021, especially the portal services sophistication level, portal personalization, availability of languages on the portal and on mobile applications, feedback enablement though portal, persons with disability enablement through portal and mobile, channels security level, open data provisioning and open data delivery format. Improvement also included the overall usage over portal and mobile (entity level), the percentage of new services accompanied by marketing campaigns (entity level) and the availability of support tools. On the other hand, the scores of several KPIs have declined, namely mobile services availability level, channels interoperability, user satisfaction over mobile and percentage of new services accompanied by marketing campaigns (from services assessed in the index).

Despite the increase in most KPI scores, the index overall score indicates that e-government services have reached an intermediate level of maturity. To enhance national performance related to this index, it is recommended to focus on increasing the portal and mobile services sophistication levels, taking into account persons with disabilities enablement to access these services, encouraging individuals to use mobile applications and enhancing marketing campaigns for new e-services.

K. Qatar

The following table shows the overall scores of the index in 2021 and 2022.

	2021	2022
GEMS global value (percentage)	83	83
Regional ranking	1	2
Number of assessed services	78	81
Number of assessed entities	20	27

The following table shows the distribution of assessed services by sector.

Sector	No. of services
Transport/Traffic/Police	9
Trade and industry	14
Cross government affairs	8
Education	7
Health	7
Interior	6
Municipal affairs	5
Labour	4
Social affairs	5
Finance	1
Utilities	5
Migration	2
Justice	5
Tourism	3
Total	81

1. Main pillar results

The following table shows the scores for the three main pillars in 2022, and compares them to the 2021 scores.

Pillar	2021 score (percentage)	2022 score (percentage)
Service availability and sophistication	88.16	92.03
Service usage and user satisfaction	71.76	72.32
Public outreach	93.08	87.58

The following radar chart shows a comparison between the scores of the index pillars and the number of services assessed, with the regional average and maximum score recorded.

Qatar
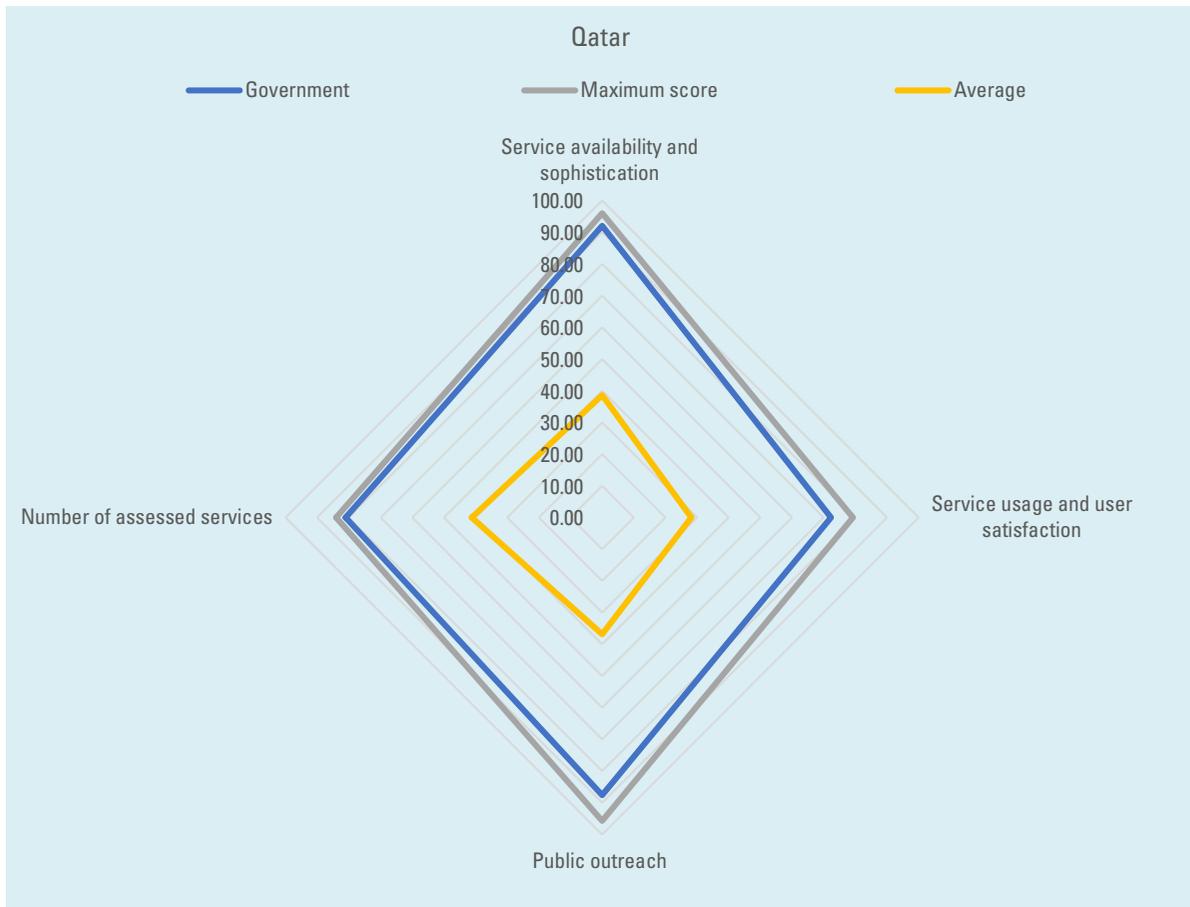
The following tables show the results of key performance indicators in 2021 and 2022, according to each main pillar.

2. Service availability and sophistication KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Portal services sophistication level	89.57	91.18
Portal personalization	100.00	100.00
Mobile services sophistication level	87.60	89.58
Mobile services availability level	85.56	94.64
Applications availability on various mobile platforms	82.09	93.78
Availability of languages on the portal	72.59	78.09
Feedback enablement through portal	84.25	95.94
Persons with disability enablement through portal	84.99	78.11
Availability of languages on mobile applications	75.09	79.59
Feedback enablement through mobile	83.83	94.86
Persons with disability enablement through mobile	81.18	94.86
Channels interoperability	88.08	84.30
Channels security level	82.67	90.33
Open data provisioning	72.63	84.00
Open data delivery format	100.00	91.00

3. Service usage and user satisfaction KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Service usage over portal (service level)	72.02	72.08
Service usage over mobile (service level)	47.80	52.11
Overall usage over portal (entity level)	97.29	87.97
Overall usage over mobile (entity level)	40.94	50.76
User satisfaction over portal	82.71	79.90
User satisfaction over mobile	83.26	83.00

4. Public outreach KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Percentage of new services accompanied by marketing campaigns (from services assessed in the index)	90.17	95.94
Percentage of new services accompanied by marketing campaigns (from total services at the entity level)	80.10	90.00
Availability of support tools	99.00	81.00

Conclusions and recommendations

The overall index score slightly increased this year, compared to 2021, with an increase in the scores of the two main pillars "service availability and sophistication" and "service usage and user satisfaction" and a decrease in the score of the main pillar "public outreach". The number of assessed e-government services and entities is very high, and covers all the sectors included in the index.

In terms of KPIs, progress can be observed in the result of most indicators, compared to 2021, especially the mobile services availability level, applications availability in various mobile platforms, overall usage over mobile (entity level) and the percentage of new services accompanied by marketing campaigns. On the other hand, some KPIs witnessed a slight decline, such as channels interoperability, open data delivery format, overall usage over portal (entity level), user satisfaction over portal and availability of support tools.

The overall index score indicates that e-government services have reached a very advanced level of maturity. However, it is suggested to focus more on increasing the service usage over portal and mobile and providing developed tools to support individuals while they are using the services, such as virtual reality applications.

L. Saudi Arabia

The following table shows the overall scores of the index in 2021 and 2022.

	2021	2022
GEMS global value (percentage)	82	87
Regional ranking	2	1
Number of assessed services	84	84
Number of assessed entities	20	26

The following table shows the distribution of assessed services by sector.

Sector	No. of services
Transport/Traffic/Police	9
Trade and industry	15
Cross government affairs	8
Education	8
Health	7
Interior	6
Municipal affairs	5
Labour	4
Social affairs	5
Finance	2
Utilities	5
Migration	2
Justice	5
Tourism	3
Total	84

1. Main pillar results

The following table shows the scores for the three main pillars in 2022, and compares them to the 2021 scores.

Pillar	2021 score (percentage)	2022 score (percentage)
Service availability and sophistication	92.10	96.00
Service usage and user satisfaction	71.30	79.24
Public outreach	83.05	86.48

The following radar chart shows a comparison between the scores of the index pillars and the number of services assessed, with the regional average and maximum score recorded.

Saudi Arabia
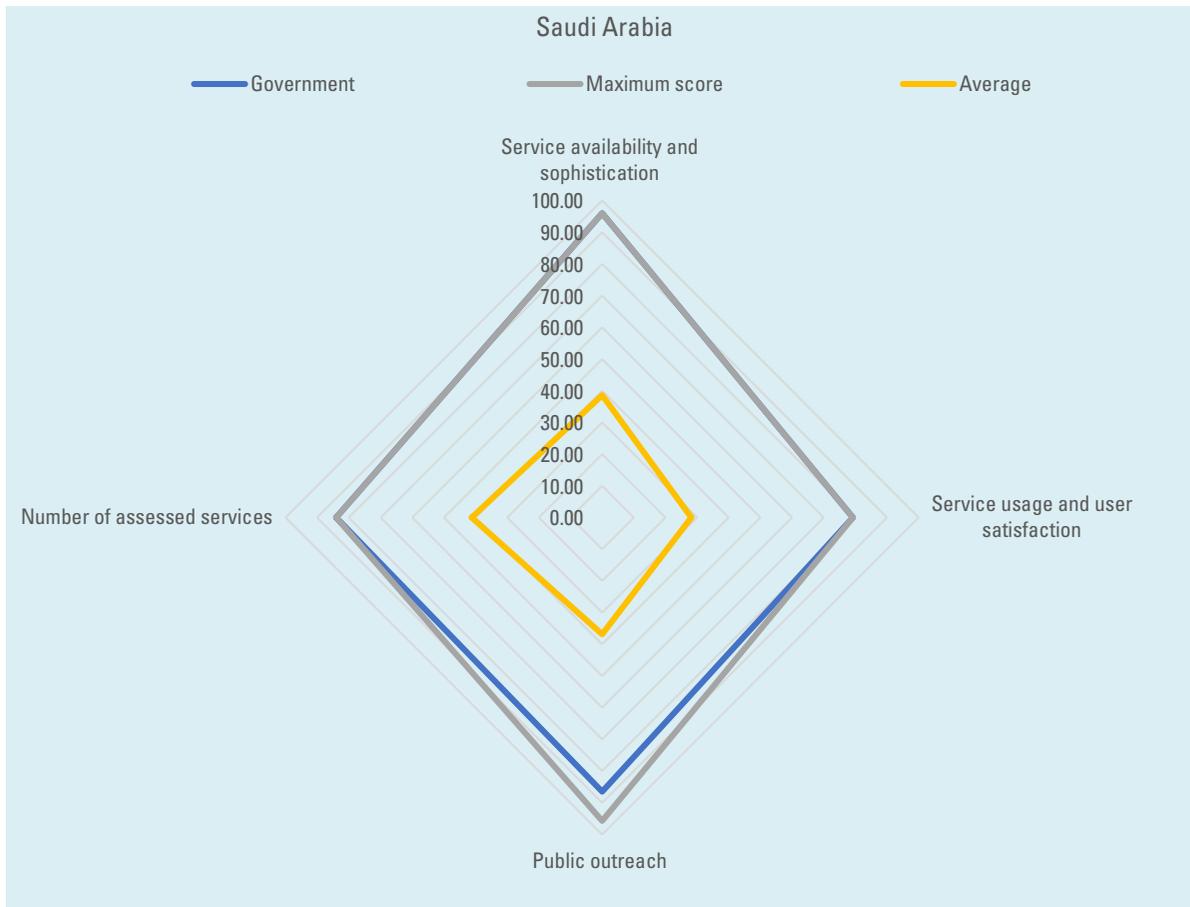
The following tables show the results of key performance indicators in 2021 and 2022, according to each main pillar.

2. Service availability and sophistication KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Portal services sophistication level	100.00	99.47
Portal personalization	100.00	100.00
Mobile services sophistication level	100.00	99.44
Mobile services availability level	86.77	93.13
Applications availability on various mobile platforms	66.40	82.40
Availability of languages on the portal	76.82	80.68
Feedback enablement through portal	97.60	100.00
Persons with disability enablement through portal	64.01	95.69
Availability of languages on mobile applications	75.00	80.22
Feedback enablement through mobile	94.86	97.84
Persons with disability enablement through mobile	60.36	88.14
Channels interoperability	97.55	100.00
Channels security level	97.50	99.67
Open data provisioning	100.00	98.00
Open data delivery format	91.00	97.00

3. Service usage and user satisfaction KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Service usage over portal (service level)	83.44	74.52
Service usage over mobile (service level)	43.21	70.72
Overall usage over portal (entity level)	88.10	68.08
Overall usage over mobile (entity level)	46.65	81.28
User satisfaction over portal	90.39	99.84
User satisfaction over mobile	75.29	74.03

4. Public outreach KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Percentage of new services accompanied by marketing campaigns (from services assessed in the index)	78.73	93.53
Percentage of new services accompanied by marketing campaigns (from total services at the entity level)	71.74	88.26
Availability of support tools	89.47	81.00

Conclusions and recommendations

The overall index score increased in 2022, compared to 2021, with an increase in the scores of the three main pillars. The number of assessed e-government services and entities is very high and has covered different sectors.

In terms of KPIs, the scores of the indicators of the "service availability and sophistication" pillar have increased, compared to 2021. Progress can also be observed in the score of the following indicators: service usage over mobile, overall usage over mobile (entity level), user satisfaction over portal and percentage of new services accompanied by marketing campaigns. On the other hand, the score of certain indicators has relatively declined, such as overall usage over portal (entity level), user satisfaction over mobile and availability of support tools.

The overall index score indicates that e-government services have reached a very advanced level of maturity. However, it is suggested to focus on increasing the service usage levels over portal and mobile and providing support tools for individuals while they are using the services, such as virtual reality applications.

M. Somalia

The following table shows the overall scores of the index in 2021 and 2022.

	2021	2022
GEMS global value (percentage)	-	1
Regional ranking	-	18
Number of assessed services	-	2
Number of assessed entities	-	2

The following table shows the distribution of assessed services by sector.

Sector	No. of services
Transport/Traffic/Police	
Trade and industry	1
Cross government affairs	1
Education	
Health	
Interior	
Municipal affairs	
Labour	
Social affairs	
Finance	
Utilities	
Migration	
Justice	
Tourism	
Total	2

1. Main pillar results

The following table shows the scores for the three main pillars in 2022, and compares them to the 2021 scores.

Pillar	2021 score (percentage)	2022 score (percentage)
Service availability and sophistication	-	1.70
Service usage and user satisfaction	-	0.80
Public outreach	-	2.00

The following radar chart shows a comparison between the scores of the index pillars and the number of services assessed, with the regional average and maximum score recorded.

Somalia
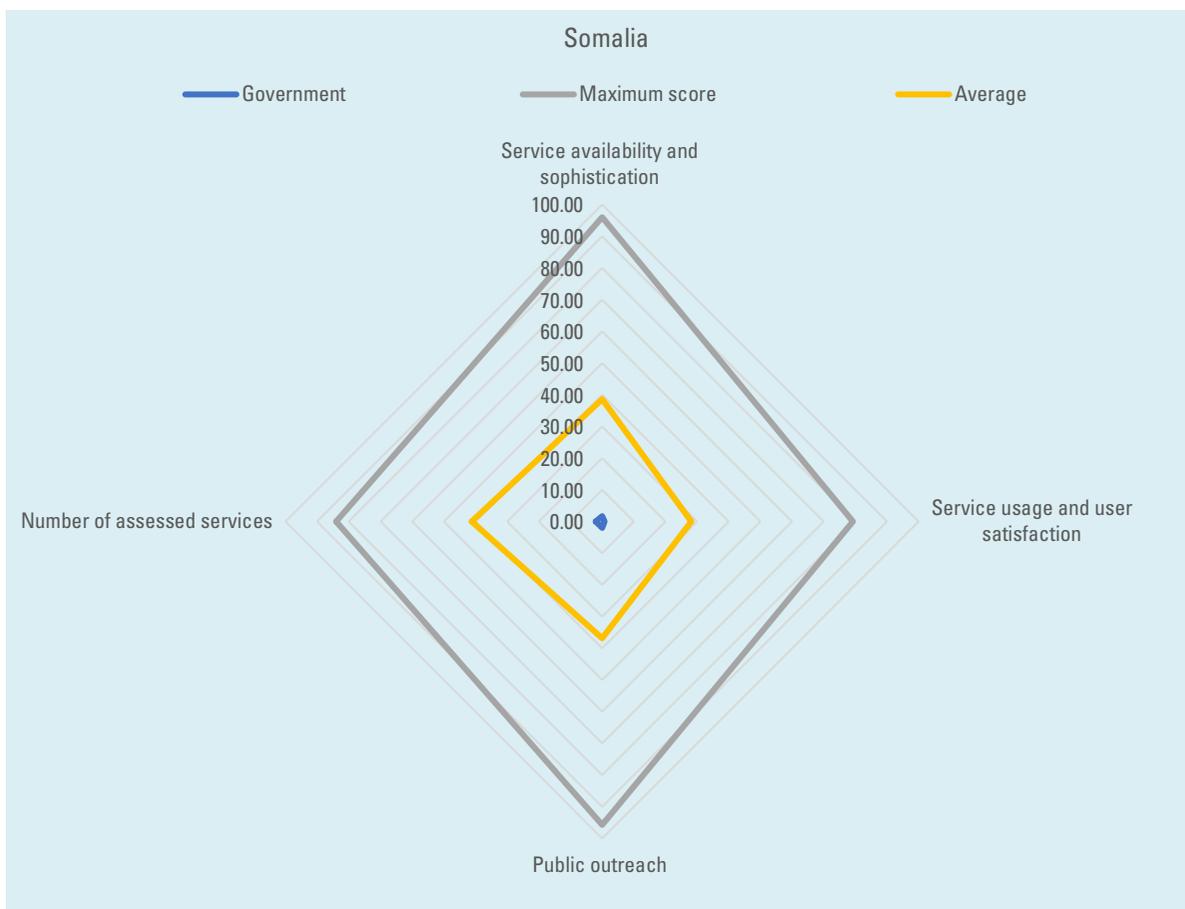
The following tables show the results of key performance indicators in 2021 and 2022, according to each main pillar.

2. Service availability and sophistication KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Portal services sophistication level	-	1.52
Portal personalization	-	5.00
Mobile services sophistication level	-	0.10
Mobile services availability level	-	0.73
Applications availability on various mobile platforms	-	0.00
Availability of languages on the portal	-	1.37
Feedback enablement through portal	-	0.91
Persons with disability enablement through portal	-	0.00
Availability of languages on mobile applications	-	0.91
Feedback enablement through mobile	-	0.00
Persons with disability enablement through mobile	-	0.00
Channels interoperability	-	0.00
Channels security level	-	4.00
Open data provisioning	-	3.00
Open data delivery format	-	2.00

3. Service usage and user satisfaction KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Service usage over portal (service level)	-	0.91
Service usage over mobile (service level)	-	0.00
Overall usage over portal (entity level)	-	5.26
Overall usage over mobile (entity level)	-	0.00
User satisfaction over portal	-	0.89
User satisfaction over mobile	-	0.00

4. Public outreach KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Percentage of new services accompanied by marketing campaigns (from services assessed in the index)	-	0.00
Percentage of new services accompanied by marketing campaigns (from total services at the entity level)	-	0.00
Availability of support tools	-	4.00

Conclusions and recommendations

Somalia participated in the GEMS index assessment for the first time in 2022. The number of assessed services is very low, leading to low scores for most KPIs.

It is recommended to make further efforts to provide e-government services whether through the portal or through mobile applications to cover various sectors, accompany these services by marketing campaigns, encourage individuals to use them and enhance accessibility to such services.

N. Sudan

The following table shows the overall scores of the index in 2021 and 2022.

	2021	2022
GEMS global value (percentage)	-	4
Regional ranking	-	14
Number of assessed services	-	2
Number of assessed entities	-	4

The following table shows the distribution of assessed services by sector.

Sector	No. of services
Transport/Traffic/Police	
Trade and industry	
Cross government affairs	
Education	2
Health	
Interior	
Municipal affairs	
Labour	
Social affairs	
Finance	
Utilities	
Migration	
Justice	
Tourism	
Total	2

1. Main pillar results

The following table shows the scores for the three main pillars in 2022, and compares them to the 2021 scores.

Pillar	2021 score (percentage)	2022 score (percentage)
Service availability and sophistication	-	3.45
Service usage and user satisfaction	-	3.15
Public outreach	-	4.89

The following radar chart shows a comparison between the scores of the index pillars and the number of services assessed, with the regional average and maximum score recorded.

Sudan
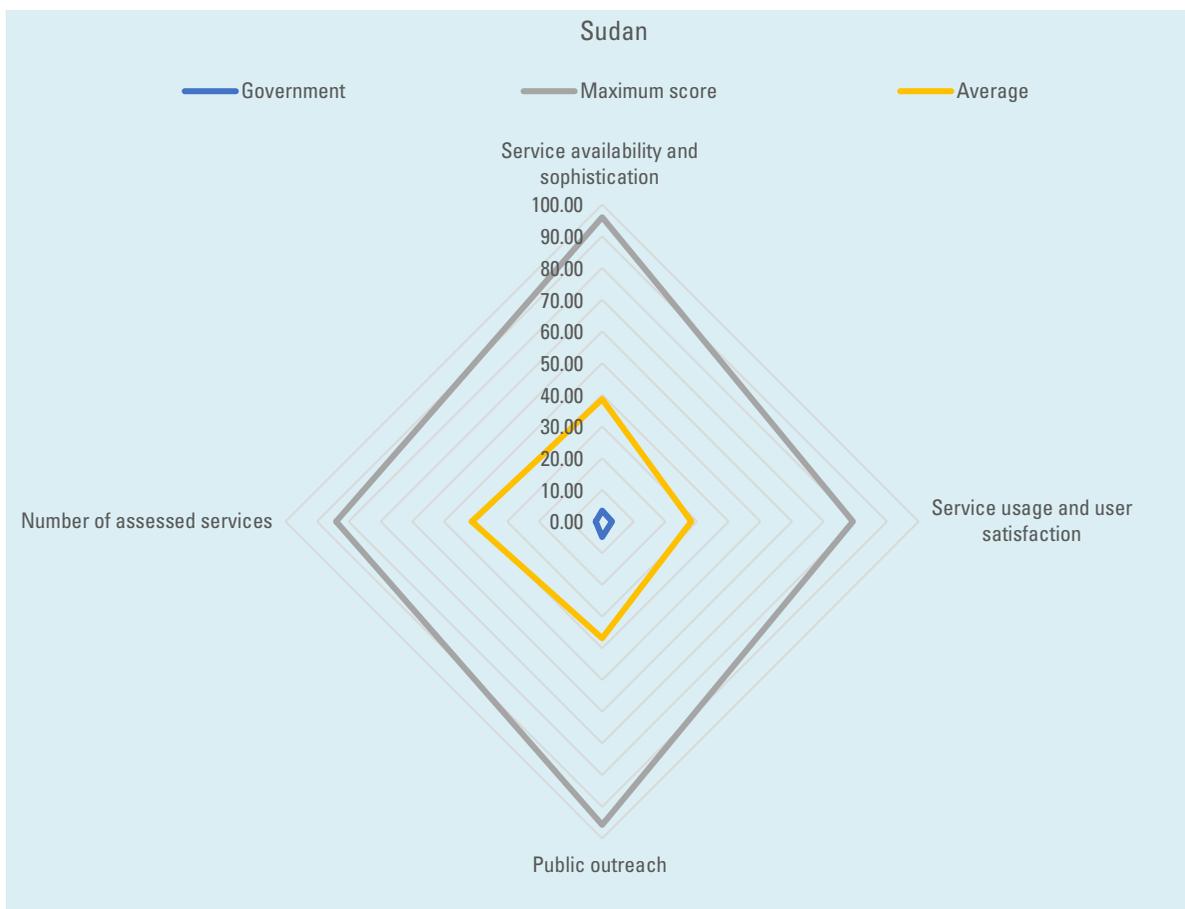
The following tables show the results of key performance indicators in 2021 and 2022, according to each main pillar.

2. Service availability and sophistication KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Portal services sophistication level	-	1.62
Portal personalization	-	10.00
Mobile services sophistication level	-	2.16
Mobile services availability level	-	1.51
Applications availability on various mobile platforms	-	0.65
Availability of languages on the portal	-	1.40
Feedback enablement through portal	-	1.08
Persons with disability enablement through portal	-	1.08
Availability of languages on mobile applications	-	1.40
Feedback enablement through mobile	-	0.00
Persons with disability enablement through mobile	-	1.08
Channels interoperability	-	1.09
Channels security level	-	9.83
Open data provisioning	-	5.56
Open data delivery format	-	2.22

3. Service usage and user satisfaction KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Service usage over portal (service level)	-	1.08
Service usage over mobile (service level)	-	1.08
Overall usage over portal (entity level)	-	10.53
Overall usage over mobile (entity level)	-	8.77
User satisfaction over portal	-	1.08
User satisfaction over mobile	-	0.98

4. Public outreach KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Percentage of new services accompanied by marketing campaigns (from services assessed in the index)	-	0.00
Percentage of new services accompanied by marketing campaigns (from total services at the entity level)	-	2.63
Availability of support tools	-	9.00

Conclusions and recommendations

The Sudan participated in the GEMS index assessment in 2022, while it did not take part in the 2021 assessment. The number of assessed services is very low, leading to low KPI scores.

It is recommended to make further efforts to provide e-government services whether through the portal or through mobile applications to cover various sectors, accompany these services with marketing campaigns, encourage individuals to use them and enhance accessibility to such services.

O. Syrian Arab Republic

The following table shows the overall scores of the index in 2021 and 2022.

	2021	2022
GEMS global value (percentage)	17	13
Regional ranking	12	12
Number of assessed services	29	23
Number of assessed entities	11	8

The following table shows the distribution of assessed services by sector.

Sector	No. of services
Transport/Traffic/Police	6
Trade and industry	
Cross government affairs	2
Education	5
Health	2
Interior	4
Municipal affairs	1
Labour	
Social affairs	
Finance	
Utilities	2
Migration	
Justice	1
Tourism	
Total	23

1. Main pillar results

The following table shows the scores for the three main pillars in 2022, and compares them to the 2021 scores.

Pillar	2021 score (percentage)	2022 score (percentage)
Service availability and sophistication	22.28	15.17
Service usage and user satisfaction	5.34	10.42
Public outreach	28.21	15.36

The following radar chart shows a comparison between the scores of the index pillars and the number of services assessed, with the regional average and maximum score recorded.
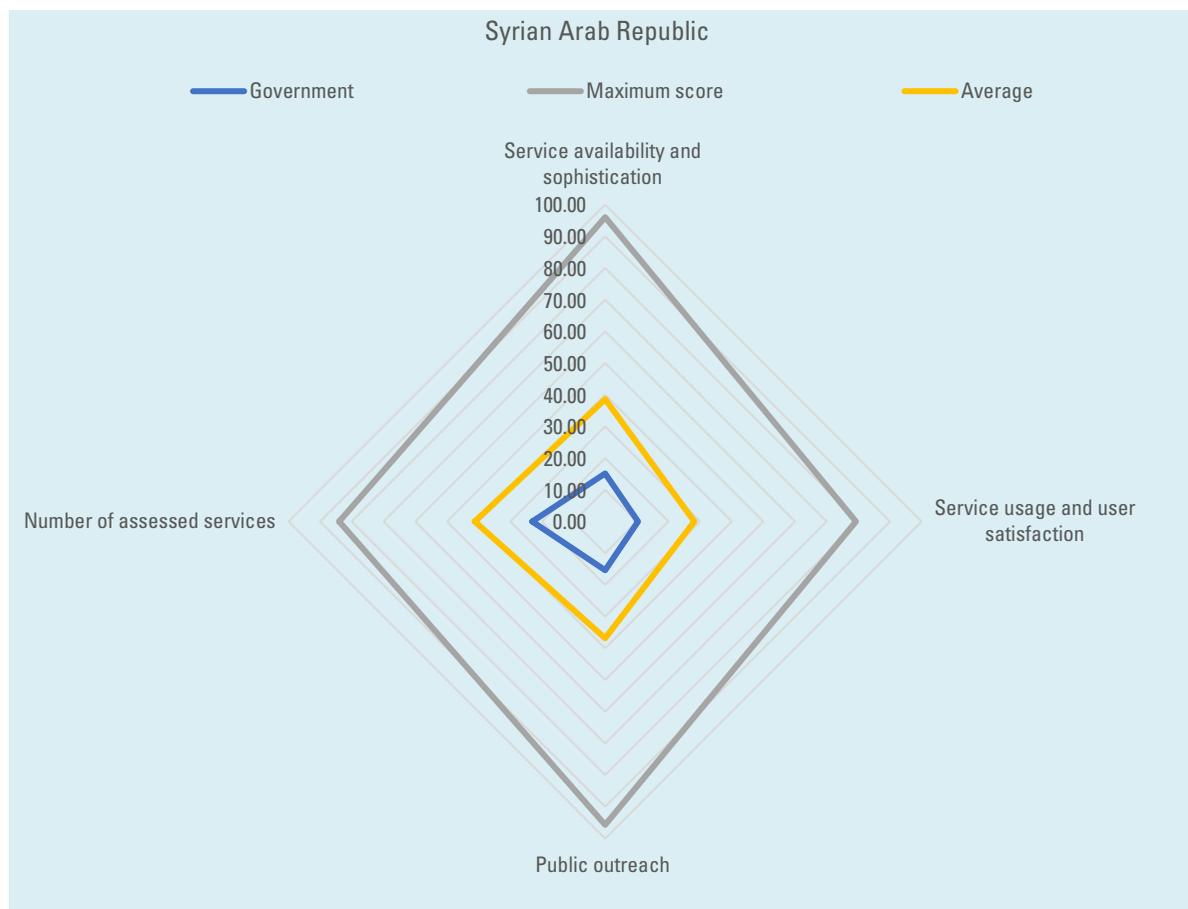
The following tables show the results of key performance indicators in 2021 and 2022, according to each main pillar.

2. Service availability and sophistication KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Portal services sophistication level	32.87	18.06
Portal personalization	35.00	20.00
Mobile services sophistication level	32.17	17.57
Mobile services availability level	18.57	20.80
Applications availability on various mobile platforms	5.07	11.51
Availability of languages on the portal	17.35	12.43
Feedback enablement through portal	3.48	7.79
Persons with disability enablement through portal	0.00	0.00
Availability of languages on mobile applications	17.35	14.43
Feedback enablement through mobile	3.48	6.63
Persons with disability enablement through mobile	0.00	0.00
Channels interoperability	1.53	10.12
Channels security level	32.50	14.50
Open data provisioning	13.00	7.50
Open data delivery format	6.00	5.00

3. Service usage and user satisfaction KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Service usage over portal (service level)	5.40	14.91
Service usage over mobile (service level)	1.53	8.03
Overall usage over portal (entity level)	33.33	25.00
Overall usage over mobile (entity level)	6.83	9.13
User satisfaction over portal	1.08	9.25
User satisfaction over mobile	0.00	6.68

4. Public outreach KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Percentage of new services accompanied by marketing campaigns (from services assessed in the index)	26.74	15.05
Percentage of new services accompanied by marketing campaigns (from total services at the entity level)	16.90	11.11
Availability of support tools	32.63	16.84

Conclusions and recommendations

The overall index score declined this year, compared to 2021. The number of assessed e-government services and entities decreased. The scores of the two main pillars "service availability and sophistication" and "public outreach" declined, while the score of the "service usage and user satisfaction" pillar increased.

In terms of KPIs, progress can be observed in the results of the following indicators: mobile services availability level, applications availability in various mobile platforms, feedback enablement through portal and mobile, channels interoperability, service usage over portal and mobile and user satisfaction over portal and mobile. On the other hand, other KPI scores have declined, namely portal and mobile services sophistication level, portal personalization, availability of languages on the portal and on mobile applications, channels security level and open data provisioning. Moreover, KPIs related to overall usage over portal (entity level), percentage of new services accompanied by marketing campaigns and availability of support tools have also declined.

The overall index score indicates that e-government services have reached an intermediate level of maturity. However, it is recommended to make more government services available electronically with digitization of all their steps, to cover more sectors. It is also recommended to launch more marketing and awareness campaigns along with the services, enable persons with disabilities and encourage individuals to use them and grant particular attention to user satisfaction.

P. Tunisia

The following table shows the overall scores of the index in 2021 and 2022.

	2021	2022
GEMS global value (percentage)	24	35
Regional ranking	9	8
Number of assessed services	32	48
Number of assessed entities	13	32

The following table shows the distribution of assessed services by sector.

Sector	No. of services
Transport/Traffic/Police	5
Trade and industry	9
Cross government affairs	5
Education	6
Health	3
Interior	3
Municipal affairs	1
Labour	2
Social affairs	3
Finance	2
Utilities	5
Migration	
Justice	3
Tourism	1
Total	48

1. Main pillar results

The following table shows the scores for the three main pillars in 2022, and compares them to the 2021 scores.

Pillar	2021 score (percentage)	2022 score (percentage)
Service availability and sophistication	26.20	43.05
Service usage and user satisfaction	17.09	22.03
Public outreach	32.79	44.32

The following radar chart shows a comparison between the scores of the index pillars and the number of services assessed, with the regional average and maximum score recorded.

Tunisia
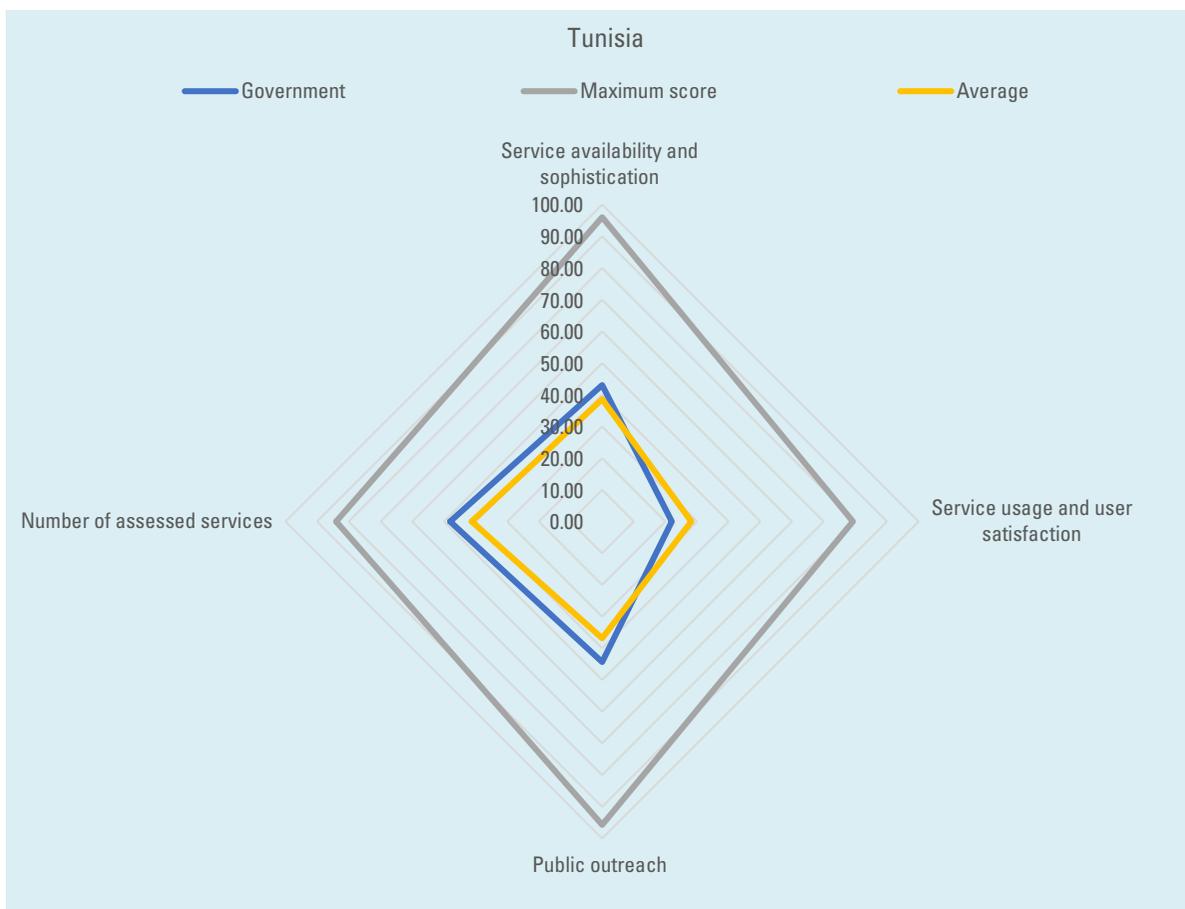
The following tables show the results of key performance indicators in 2021 and 2022, according to each main pillar.

2. Service availability and sophistication KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Portal services sophistication level	36.59	47.86
Portal personalization	35.00	70.00
Mobile services sophistication level	36.27	29.97
Mobile services availability level	15.84	29.98
Applications availability on various mobile platforms	0.65	6.17
Availability of languages on the portal	29.39	40.46
Feedback enablement through portal	27.28	37.31
Persons with disability enablement through portal	15.67	1.08
Availability of languages on mobile applications	24.52	36.05
Feedback enablement through mobile	10.45	11.03
Persons with disability enablement through mobile	7.38	0.00
Channels interoperability	0.00	20.63
Channels security level	34.83	71.67
Open data provisioning	31.00	78.89
Open data delivery format	23.16	81.11

3. Service usage and user satisfaction KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Service usage over portal (service level)	32.14	43.66
Service usage over mobile (service level)	1.37	5.11
Overall usage over portal (entity level)	52.54	79.46
Overall usage over mobile (entity level)	17.82	8.77
User satisfaction over portal	28.71	31.14
User satisfaction over mobile	0.00	4.69

4. Public outreach KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Percentage of new services accompanied by marketing campaigns (from services assessed in the index)	31.09	24.30
Percentage of new services accompanied by marketing campaigns (from total services at the entity level)	33.75	48.79
Availability of support tools	33.68	57.00

Conclusions and recommendations

The overall index score increased this year, compared to 2021, which is shown in the rising number of assessed e-government services and entities and the higher scores of the three main pillars.

In terms of KPIs, most have progressed, compared to 2021 scores, such as portal sophistication level, portal personalization, mobile services availability level, applications availability in various mobile platforms, availability of languages on the portal and on mobile applications, feedback enablement through portal and mobile, channels interoperability, channels security level, open data provisioning and open data delivery format. Progress was also observed in service usage over portal and mobile, overall usage over portal (entity level), user satisfaction over portal and mobile, percentage of new services accompanied by marketing campaigns and availability of support tools. Meanwhile, some KPI scores have declined, namely mobile services sophistication level, persons with disability enablement through portal and mobile and overall usage over mobile (entity level).

The overall index score indicates that e-government services have reached an advanced level of maturity. However, it is recommended to enhance the mobile services sophistication level, applications availability on various mobile platforms and features that take into account the accessibility of persons with disabilities. It is also recommended to provide a mean for feedback enablement through mobile, enhance service usage over mobile and promote user satisfaction over mobile.

Q. United Arab Emirates

The following table shows the overall scores of the index in 2021 and 2022.

	2021	2022
GEMS global value (percentage)	74	83
Regional ranking	3	2
Number of assessed services	79	82
Number of assessed entities	20	29

The following table shows the distribution of assessed services by sector.

Sector	No. of services
Transport/Traffic/Police	9
Trade and industry	13
Cross government affairs	8
Education	8
Health	7
Interior	6
Municipal affairs	5
Labour	4
Social affairs	5
Finance	2
Utilities	5
Migration	2
Justice	5
Tourism	3
Total	82

1. Main pillar Results

The following table shows the scores for the three main pillars in 2022, and compares them to the 2021 scores.

Pillar	2021 score (percentage)	2022 score (percentage)
Service availability and sophistication	87.71	92.28
Service usage and user satisfaction	55.85	67.18
Public outreach	82.89	95.69

The following radar chart shows a comparison between the scores of the index pillars and the number of services assessed, with the regional average and maximum score recorded.

United Arab Emirates
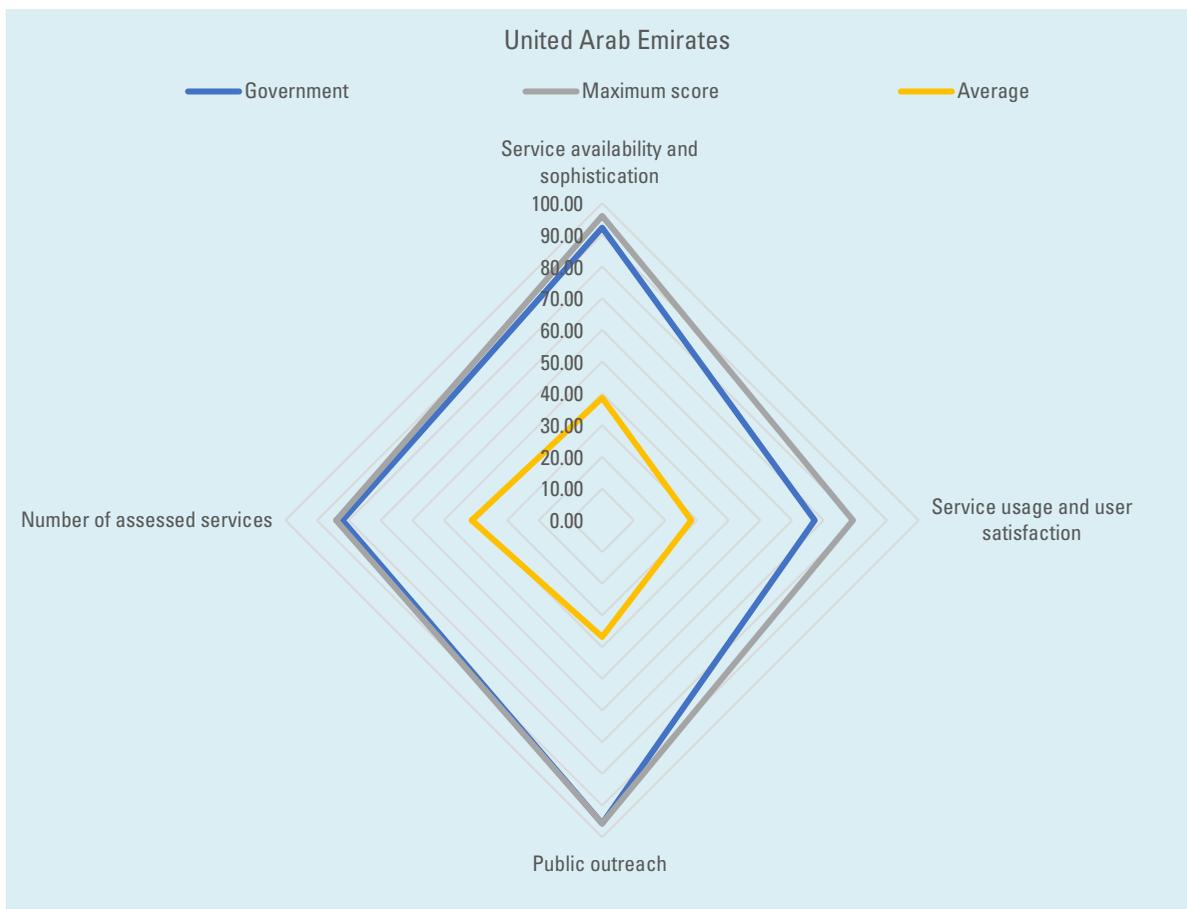
The following tables show the results of key performance indicators in 2021 and 2022, according to each main pillar.

2. Service availability and sophistication KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Portal services sophistication level	93.06	97.48
Portal personalization	100.00	100.00
Mobile services sophistication level	92.64	97.23
Mobile services availability level	75.89	84.31
Applications availability on various mobile platforms	56.72	64.49
Availability of languages on the portal	77.75	81.08
Feedback enablement through portal	89.30	97.60
Persons with disability enablement through portal	90.55	96.27
Availability of languages on mobile applications	75.43	81.45
Feedback enablement through mobile	81.26	97.60
Persons with disability enablement through mobile	82.50	93.20
Channels interoperability	90.56	93.10
Channels security level	95.33	94.67
Open data provisioning	88.00	88.00
Open data delivery format	97.00	100.00

3. Service usage and user satisfaction KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Service usage over portal (service level)	70.67	71.04
Service usage over mobile (service level)	27.57	55.78
Overall usage over portal (entity level)	89.02	80.29
Overall usage over mobile (entity level)	21.22	43.09
User satisfaction over portal	76.82	92.69
User satisfaction over mobile	57.33	62.25

4. Public outreach KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Percentage of new services accompanied by marketing campaigns (from services assessed in the index)	91.00	96.27
Percentage of new services accompanied by marketing campaigns (from total services at the entity level)	70.25	90.00
Availability of support tools	81.00	97.00

Conclusions and recommendations

The overall index score for this year has increased, compared to 2021. This was coupled with an increase in the scores of the three main index pillars.

In terms of KPIs, an increase can be observed in the scores of most KPIs of the two main pillars "service availability and sophistication" and "service usage and user satisfaction", compared to 2021 results. Progress was also observed in all the KPIs of the "public outreach" pillar. In parallel, the scores of some KPIs have declined, such as the overall usage over portal (entity level).

The overall index score indicates that e-government services have reached a very advanced level of maturity. However, it is recommended to focus on increasing the service usage over portal and mobile and overall usage over mobile (entity level).

R. Yemen

The following table shows the overall scores of the index in 2021 and 2022.

	2021	2022
GEMS global value (percentage)	-	4
Regional ranking	-	14
Number of assessed services	-	9
Number of assessed entities	-	4

The following table shows the distribution of assessed services by sector.

Sector	No. of services
Transport/Traffic/Police	
Trade and industry	
Cross government affairs	1
Education	4
Health	1
Interior	
Municipal affairs	
Labour	1
Social affairs	
Finance	2
Utilities	
Migration	
Justice	
Tourism	
Total	9

1. Main pillar results

The following table shows the scores for the three main pillars in 2022, and compares them to the 2021 scores.

Pillar	2021 score (percentage)	2022 score (percentage)
Service availability and sophistication	-	7.05
Service usage and user satisfaction	-	1.20
Public outreach	-	5.53

The following radar chart shows a comparison between the scores of the index pillars and the number of services assessed, with the regional average and maximum score recorded.
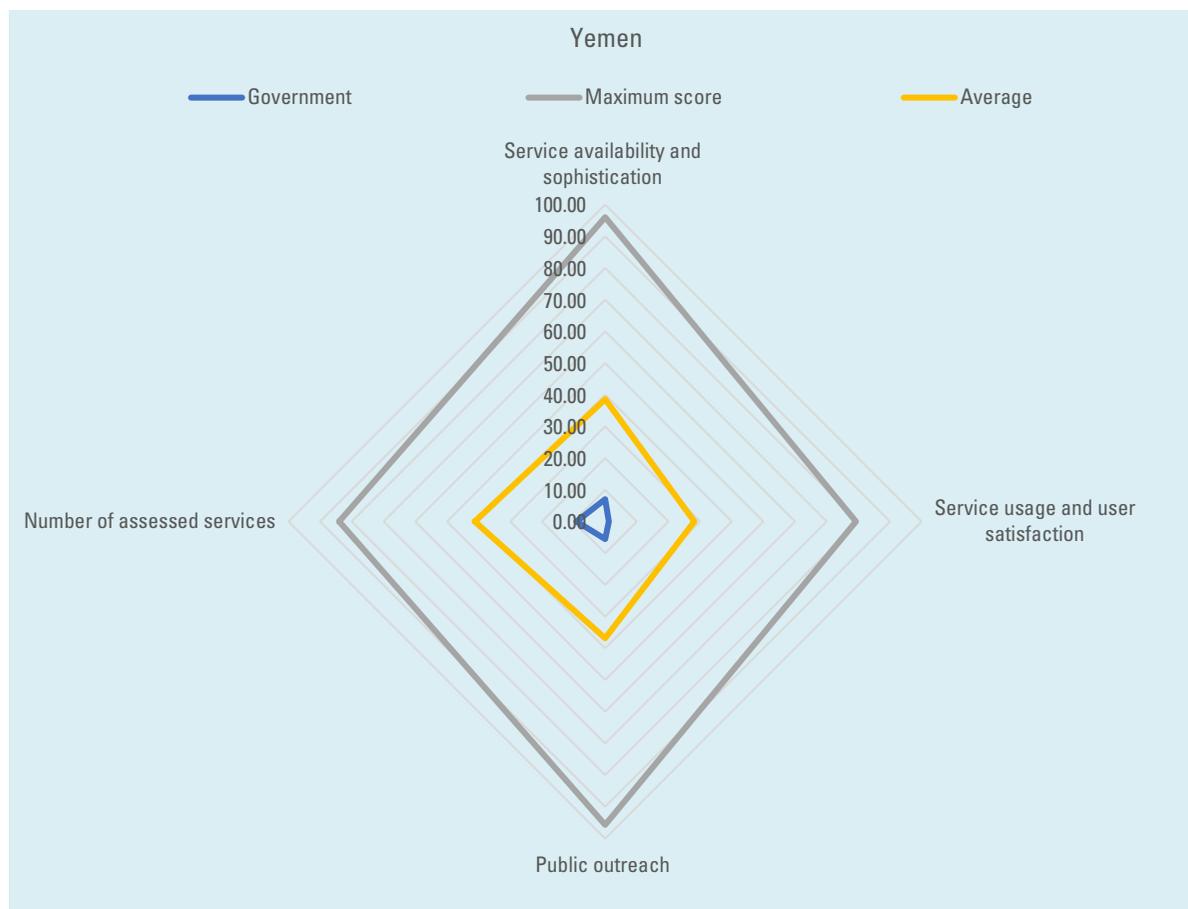
The following tables show the results of key performance indicators in 2021 and 2022, according to each main pillar.

2. Service availability and sophistication KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Portal services sophistication level	-	8.89
Portal personalization	-	15.00
Mobile services sophistication level	-	3.40
Mobile services availability level	-	4.78
Applications availability on various mobile platforms	-	0.00
Availability of languages on the portal	-	5.27
Feedback enablement through portal	-	7.30
Persons with disability enablement through portal	-	0.00
Availability of languages on mobile applications	-	5.27
Feedback enablement through mobile	-	2.82
Persons with disability enablement through mobile	-	0.00
Channels interoperability	-	0.00
Channels security level	-	11.33
Open data provisioning	-	8.89
Open data delivery format	-	9.47

3. Service usage and user satisfaction KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Service usage over portal (service level)	-	2.16
Service usage over mobile (service level)	-	0.00
Overall usage over portal (entity level)	-	5.56
Overall usage over mobile (entity level)	-	0.00
User satisfaction over portal	-	2.14
User satisfaction over mobile	-	0.00

4. Public outreach KPIs

KPI	2021 score (percentage)	2022 score (percentage)
Percentage of new services accompanied by marketing campaigns (from services assessed in the index)	-	2.11
Percentage of new services accompanied by marketing campaigns (from total services at the entity level)	-	5.28
Availability of support tools	-	8.00

Conclusions and recommendations

Yemen participated in the GEMS index assessment for the first time in 2022. The number of assessed e-government services and entities is low, leading to low scores of most KPIs.

The overall index score indicates that e-government services are still at an early stage of maturity. Therefore, it is recommended to make further efforts to provide e-government services through the portal and through mobile applications, accompany them with marketing campaigns, encourage individuals to use them and enhance accessibility to such services.

Annex 1. Services covered by the GEMS index

1. Services for businesses
1.1 Closure
Cancellation of a general commercial license
Approval to transfer or modify ownership
Judicial approval (before closure)
Financial approval for closure
1.2 Establishment
General commercial license issuance, renewal, or amendment
Industrial/manufacturing business regulatory approval, renewal, or amendment
Food & beverage business regulatory approval, renewal, or amendment
Healthcare business regulatory approval, renewal, or amendment
Professional services business regulatory approval, renewal, or amendment
Logistics business regulatory approval, renewal, or amendment
Tourism business regulatory approval, renewal, or amendment
1.3 Operation
Business laws and regulations lookup
Commercial entities information lookup
Government reporting and national statistics lookup
A certificate of origin issuance
Agricultural consignments import permit
Social insurance contributions and labour related payments
Work permit issuance, renewal, or amendment

Building permit issuance, renewal, or withdrawal
Goods export documentation issuance
Industrial equipment import permit
Work permit cancellation
Public tenders' notification
Customs clearance
Government contractor registration, renewal, or amendment
Municipal fees payment for properties (businesses)
Public tender documents purchase
Tax filing (businesses)
2. Services for individuals
2.1 Education
Persons with disabilities registration
Students' grade lookup
Availability of e-Learning platforms and virtual laboratories
Educational certificates and official transcripts issuance
Educational certificate equivalence issuance
Tertiary education registration
Nursery and school registration
Public scholarship application, renewal, amendment, or withdrawal
2.2 Health
Drug availability information and prices lookup
Immunization record lookup and children vaccination reminder
Medical record data (such as blood record and laboratory tests) access and lookup
e-Health services
Electronic medical prescriptions
Scheduling of appointment for public health services

2.3 Family
Civil laws and regulation lookup
Passport issuance, renewal, or amendment (excluding collection of biometric data)
National ID card issuance, renewal, or amendment
Marriage and/or divorce certificate issuance
Birth certificate issuance
Death certificate issuance
Official documents electronic attestation
2.4 Labour
Government vacancies lookup and recruitment
Government employee benefits lookup
Documents issuance for an employee
Certificate of good conduct issuance
Unemployment registration
Labour complaint submission
2.5 Financial/social sector
Tax filing (individuals)
Pension benefits management
Retirement salary certificate issuance
Rehabilitation equipment request
Social assistance request
2.6 Home
Property sales or rental contract issuance or amendment
Utilities reconnection, or transfer
Property valuation
Water bill payment
Electricity bill payment
Utilities complaints submission

Municipal fees payment (individuals)
Utilities connection
2.7 Transport/Driving
Public transport timetables and connections lookup and buying tickets
Public transport card issuance
Driving license renewal
Vehicle registration, renewal, or amendment (excluding technical/mechanical fitness test)
Driving license application and test scheduling
Public taxi booking
Compulsory insurance payment
Traffic fine payment
Vehicle ownership transfer
2.8 Migration/Justice/Tourism
Visit touristic milestones virtually
Buying tickets to visit touristic milestones
Residence visa issuance, renewal, or amendment
Visit visa issuance, renewal, or amendment
Cybercrimes complaint registration
e-filing and fees payment
Requesting approval to organize a tourism/entertainment event

Annex 2. Entity evaluation form

What is the name of the entity?
-
-

Are personalization features available on web pages for end users?
-
-

Are Secure Socket Layer (SSL) certificates available for the entity's electronic services?
-
-

For services provided through the portal, what is the most secure approach for authentication to the portal required by the entity?
-
-

For services provided through mobile, what is the most secure approach for authentication required by the entity?
-
-

To what extent does the entity share open data (structured and non-structured) with individuals?
-
-

In what format is open data provided?
-
-

Service usage and user satisfaction
How many transactions have been fully completed across all the entity's channels in the last 12 months?
-
-

For services provided through the portal, how many transactions have been fully completed only through the portal in the last 12 months?
-
-
For services provided through mobile, how many transactions have been fully completed on mobile in the last 12 months?
-
-
Informing individuals about services
For services provided through the portal, how many new services on the portal have been launched by the entity in the last 12 months?
-
-
From new services provided through the portal, how many services were accompanied by electronic or print marketing campaigns?
-
-
For services provided through mobile, how many new services on the mobile have been launched by the entity in the last 12 months?
-
-
From new services provided through mobile, how many services were accompanied by electronic or print marketing campaigns?
-
-
Are support tools available for individuals in your entity to implement e-services?
-
-

Annex 3.   E-Service evaluation form

Name of e-government service
-
-
Link to the e-government service (website)
-
-
The name of the mobile application through which the service is carried out (if any)
-
-
Link to the mobile application (if any)
-
Services provided through the portal consist of several steps. For each step, state whether it is digitized and executed electronically through the portal.
Availability of information about the service online (required documents, fees, etc.)
Online identification and authentication (national ID number, or any similar method)
Filling out the required form online
Electronic submission of the required documents
Online payment
Inquiry into the status of the transaction online
Receiving notifications online (whether the transaction is successful or not, etc.)
Services provided through mobile phones consist of several steps. For each step, state whether it is digitized and executed electronically through mobile phones.
Availability of information about the service online (required documents, fees, etc.)
Online identification and authentication (national ID number, or any similar method)
Filling out the required form online
Electronic submission of the required documents
Online payment

Inquiry into the status of the transaction online
Receiving notifications online (whether the transaction is successful or not, etc.)
How could the user access a service provided through the mobile (if there is more than one option, please select the top option)?
-
-
If there is a mobile application, how many mobile operating systems (such as Android, iOS or Windows Phone) support the application?
-
-
For services provided through the portal, how many languages are supported by the portal?
-
-
For services provided through the portal, can users' feedback be obtained through the portal?
-
-
For services provided through the portal, are features for persons with disabilities available through the portal?
-
-
For services provided through mobile, how many languages are supported by the mobile application or mobile web interface?
-
-
For services provided through mobile, can users' feedback be obtained via mobile devices?
-
-
For services provided through mobile, are features for persons with disabilities available through mobile devices?
-
-

Can the service be completed via the mobile application if it is started on the portal, or vice versa?
Service usage and user satisfaction
For services provided through the portal, what is the launch date of the service on the portal?
How many transactions for this service have been fully completed across all channels in the last 12 months?
For services provided through the portal, how many transactions have been fully completed only through the portal in the last 12 months?
What is the launch date of this service via the mobile application?
For services provided through mobile, how many transactions have been fully completed only via mobile in the last 12 months?
For services provided through the portal, how many complaints are submitted through all electronic channels (e.g. social networks, portal, mobile, etc.) after completing the related transaction?
For services provided through mobile, what is the user rating for the latest version of the available applications (on the App Store, Google Play Store or Windows Store in your country)?
For services provided through mobile, how many times has an application related to the service been downloaded since its launch date?

For services provided through mobile, how many customers are registered?
-
-
Public outreach
Has the entity conducted electronic or print marketing campaigns for a service provided through the portal in the last 12 months?
-
-
Has the entity conducted electronic or print marketing campaigns for a service provided through mobile in the last 12 months?
-
-
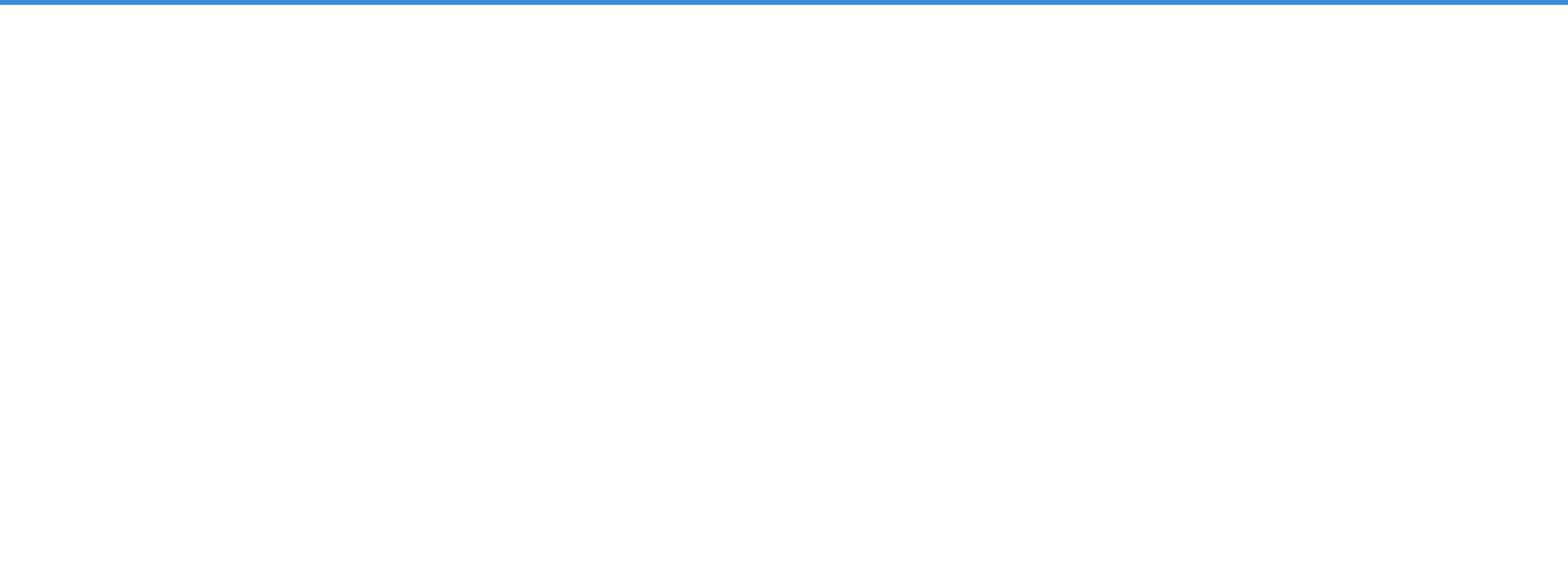
This report includes evaluation results of the Government Electronic and Mobile Services (GEMS) maturity index in 2022 at regional and national levels, with recommendations that could be implemented to enhance the digital transformation of these government services and make them available through digital channels.

GEMS index aims to measure the maturity of government services provided through portals and mobile applications in Arab countries. It seeks to bridge the gap in most global indicators, especially in relation to service sophistication, service usage and user satisfaction. To this end, 84 government services have been identified, among services that each country should deliver electronically for individuals and businesses. A life-cycle principle has been used in the selection of these services. Therefore, some services have been selected because individuals need them throughout the stages of their lives, other services because companies need them for their establishment, the administration of their operations, and even the transactions of their closure.