



Application of Local Online Service Index (LOSI) Methodology in Jordan

LOSI Application in Irbid, Mafraq, Jerash, Amman, As-salt, Zarqa, Madaba, Karak, Ma'an, AlFuhays, Naour, AlDolail, Sahab, AlQuweera, AlHashmiyyeh, AlJeeza, Ainalbasha, AlRussifah, and Deiralla.

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Contents

Acknowledgement.....	2
1. Introduction.....	1
2. Assessment Methodology.....	2
2.1 The Instrument	2
2.2 The Process	2
3. LOSI Application in Jordan.....	3
3.1 Study Team.....	3
3.2 Study Context	3
3.3 Public Administration Structure in Jordan	6
3.4 Assessed Municipalities	8
3.5 Result Analysis.....	9
3.5.1 Institutional Framework	12
3.5.2 Content Provision.....	12
3.5.3 Service Provision.....	14
3.5.4 Participation and Engagement	15
3.5.5 Technology.....	15
4. Local Electronic Government in Jordan	17
4.1 Electronic government strategies in the context of municipalities.....	17
4.2 Recommendations for local electronic government in Jordan.....	17
5. Conclusions.....	17

1. Introduction

Cities are essentially a collection of human, social, economic and cultural networks and are settings in which a sense of belonging and togetherness can be fostered and in which the public processes that support social cohesiveness and development can be optimized and made more efficient and efficacious. Towards this end, increased attention should be given to assessing the online presence of local government in cities. A logical starting point is assessing the role of cities as service providers and examining city portals as the key mechanism for e-government in such contexts.

Local Online Service Index (LOSI) is used, since 2018, by UN DESA to assess local government portals. This process was initiated in 2018 as a pilot study assessing portals in 40 cities, following 2020 with 100 cities and seeks to continue to provide evidence-based data to contribute to the assessment of progress made in local e-government development. In the 2022 study, the assessment was scaled up to include 193 cities in different regions of the world.

The burgeoning interest in e-Government development, combined with the growing number of requests for inclusion and representation in the local e-government survey, led the study organizers to establish the LOSI Network. The Division for Public Institutions and Digital Government of the United Nations Department of Economic and Social Affairs (UN DESA) and the United Nations University Operating Unit on Policy Driven Electronic Governance (UNU-EGOV), have established LOSI Network. LOSI Network includes national representative entities that are willing to apply LOSI instrument in their national context, assessing municipalities' portals. Jordan is one of the countries that are represented in LOSI network. This initiative is expected to help in assessing a much larger number of portals bringing:

- Broader coverage and representation of the status/maturity of local e-government;
- A more comprehensive and complete portrait of local e-government worldwide, with the larger survey sample allowing more accurate insights, more consistent analysis, and the opportunity to better identify the challenges, difficulties and opportunities cities have in common (and where there is divergence);
- The opportunity to engage in broader evidence-based analysis of the online presence of local governments worldwide, with increased capacity for productive comparisons and the ability to identify areas in need of improvement;
- The establishment of a network of experts and practitioners that can share good practices and lessons learned.

The second chapter describes briefly LOSI methodology. Section three presents Jordan context and the results of LOSI application in Jordan cities. Based on the results, chapter four introduces some suggestions that could advance local e-government in Jordan. Chapter five concludes the report.

2. Assessment Methodology

2.1 The Instrument

The Local Online Service Index (LOSI) is a multi-criteria index that captures e-government development at the local level, by assessing information and services provided by local governments through official websites. The LOSI comprises 86 binary indicators related to five criteria: institutional framework, technology, content provision, services provision, and participation and engagement. Each of the indicators forming LOSI is equally considered for calculating the score of each city surveyed to arrive at the final ranking. The final ranking of cities reflects the total number of indicators met.

The institutional framework criterion considers institutional, organizational and policy aspects appeared on local government portals. The technology criterion focuses on technical features of the portals to specify how the site and content are made available for users; relevant indicators relate to factors such as accessibility, quality, functionality, reliability, ease of navigation, visual appeal, and alignment with technology standards. For content provision, the aim is to identify the extent to which essential public information and resources are available online. The fourth criterion is services provision, focusing on the availability and delivery of targeted government services, and the fifth and final criterion is participation and engagement, which assesses the availability of mechanisms and initiatives for interaction and opportunities for public participation in local governance structures.

2.2 The Process

Each of the 86 LOSI indicators generated a binary question in the LOSI Questionnaire. Each indicator was ascribed a value of 1 (yes) if it was found in a city portal and a value of 0 (no) if it was absent. The overall LOSI value for a city is the normalized value of the 86 indicators for that city. Based on the LOSI calculated value, the top-down ranking shows the relative position of the city among all those measured.

Based on the total number of indicators met, cities are assigned to one of four levels or groups ranging from very high to low. The range of LOSI group values for each level are mathematically defined as follows: very high LOSI values range from 0.75 inclusive to 1.00, high LOSI group values range from 0.50 inclusive to 0.75, middle LOSI values range from 0.25 inclusive to 0.5, and low LOSI values range from 0.0 to 0.25. In all references to these ranges in text and graphic elements, the respective values are rounded for clarity and are expressed as follows: 0.75 to 1.00, 0.50 to 0.75, 0.25 to 0.50, and 0.00 to 0.25. The data collection and survey research took place during the second half of 2021. Each city's portal was assessed by at least two researchers, who conducted the assessment in one of the national languages. After the initial assessment, the evaluations by the two researchers for each city were compared, and any discrepancies were reviewed together and resolved by the researchers. A final review and verification of all the answers was carried out by a senior reviewer. Once the LOSI value was approved by the senior reviewer, the statistics team assigned the LOSI ranking.

3. LOSI Application in Jordan

3.1 Study Team

The assessment for Jordan cities has been led by an expert researcher of e-government (senior assessor) at Al-Balqa' Applied University. To obtain the LOSI survey results for 2022, a total of 13 volunteer researchers in Jordan (using country's official languages) assessed the selected city portals, using LOSI. The 13 researchers come from four universities of Jordan (five assessors from Al-Balqa' Applied University, one of them has served as senior assessor, two assessors from Yarmouk University, two assessors from Mutah University, and one assessor from Princess Sumaya Technology University. The other three assessors work for other government agencies and NGOs. All assessors have a Ph.D. or MSc degree in related disciplines such as e-government, information systems, information technology, and urban planning. The assessment has been conducted during June and July 2021 via the e-government assessment platform hosted on the UN DESA website¹.

3.2 Study Context

Jordan is on the High EGDI group and more specifically in H1 rating class (UN E-Government Survey 2020) with a score of 0.5309, ranked 117 of 193 countries. Jordan is relatively low in EGDI ranking in Western Asia region (Figure 1).

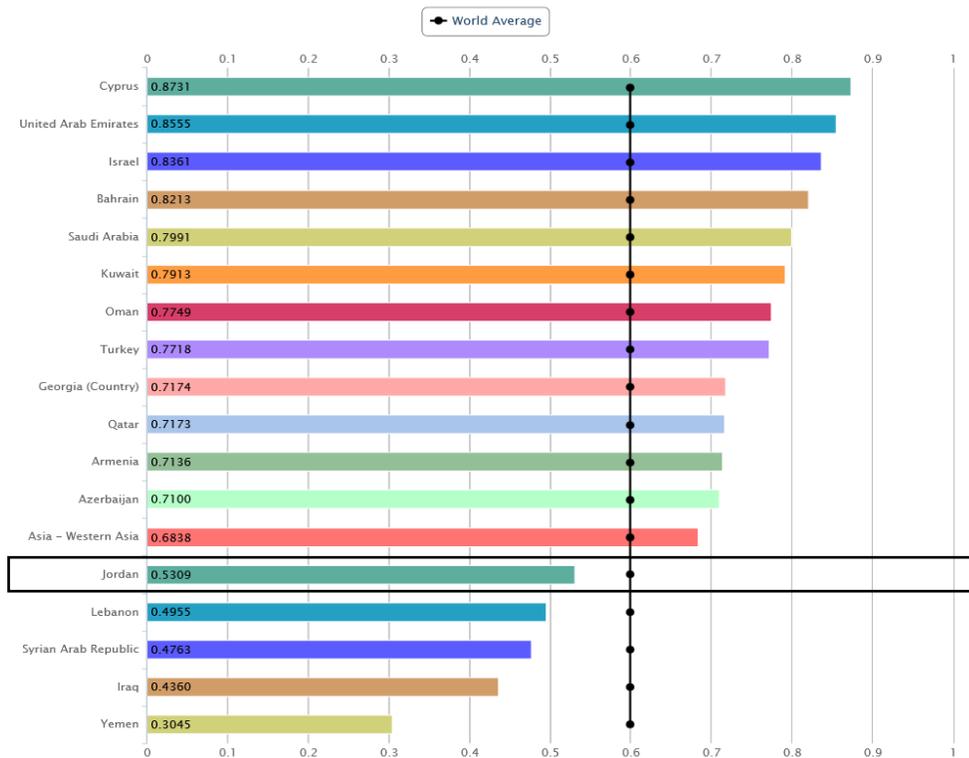


Figure 1. 2020 e-Government Development Index, Western Asia (UN E-Government Survey)

¹ <https://publicadministration.un.org/egovsurvey/Home.aspx>

The current LOSI evaluation has been conducted in Jordan, specifically focusing on local context (municipalities or cities). In 2020 LOSI assessment (UN Survey) Jordan's largest city, Amman, scored 0.3865 which places it in the Middle LOSI group, 47th of 86 cities. As per figure 2, Amman score extremely lower than world, region, and sub region leader cities but slightly higher than sub region LOSI average².



Figure 2. 2020 Local Online Service Index for Amman (2020 UN E-Government Survey)

Jordan, officially named The Hashemite Kingdom of Jordan, is a middle-income economy and among the smallest economies in the Middle East. The total land area of the country is 89,342 km² (34,495 sq. mi) and had a population of about 11 million in 2021, almost 80 per cent living in urban areas, and over three million people in the capital Amman, according to the Jordanian Department of Statistics³.

In Jordan, the Internet penetration increased by 0.8 per cent in 2020, standing at 66.8 per cent in January 2021 with a total of 6.84 million Internet users. Further, the number of mobile connections has reached a total of 8.01 million, according to a report issued by DataReportal⁴. In Jordan, more than 90 per cent of Jordanian Internet users are social networkers, specifically of Facebook, meaning that 66 per cent of the population has Facebook accounts, according to several reports by Pew research centre (Poushter, 2015)⁵.

Although great efforts have been made, Jordan still faces major challenges in implementing an effective e-government project. Having limited natural resources, Jordan has realized the importance of governance initiatives to look for alternative sources. Particularly, Jordanian

² <https://publicadministration.un.org/egovkb/en-us/Data/City/id/43-Amman/dataYear/2020>

³ http://dosweb.dos.gov.jo/DataBank/Population_Estimares/PopulationEstimates.pdf

⁴ <https://datareportal.com/reports/digital-2021-jordan>

⁵ Pew Research Center survey was conducted in 40 nations among 45,435 respondents during 25 - 27/5/2015.

government had decided to apply ICT practices to boost the social and economic progress as well as its government operations, until 2008. Based on UN E-Government Development Index value (EGDI) surveys 2004-2020, Jordan had moved upwards from 68th in 2004 to 50th in 2008 (Figure 3). However, Jordan dropped in ranking during 2008-2020 when the country finally ranked at 117 place in 2020, from 50th place in 2008, according to EGDI. Figure 4 represents E-government development index values for Jordan 2008-2020. As per the figure, during the years 2008 to 2018, Jordan slightly outperforms the EGDI's world average. However, in 2020, Jordan's EGDI value is less than the EGDI's average world.

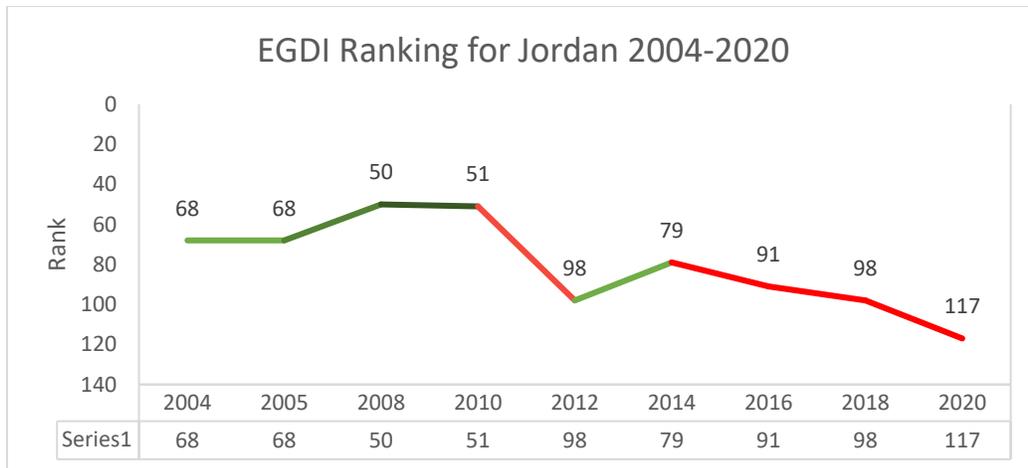


Figure 3. E-government Development World Ranking for Jordan, according to UN EGDI

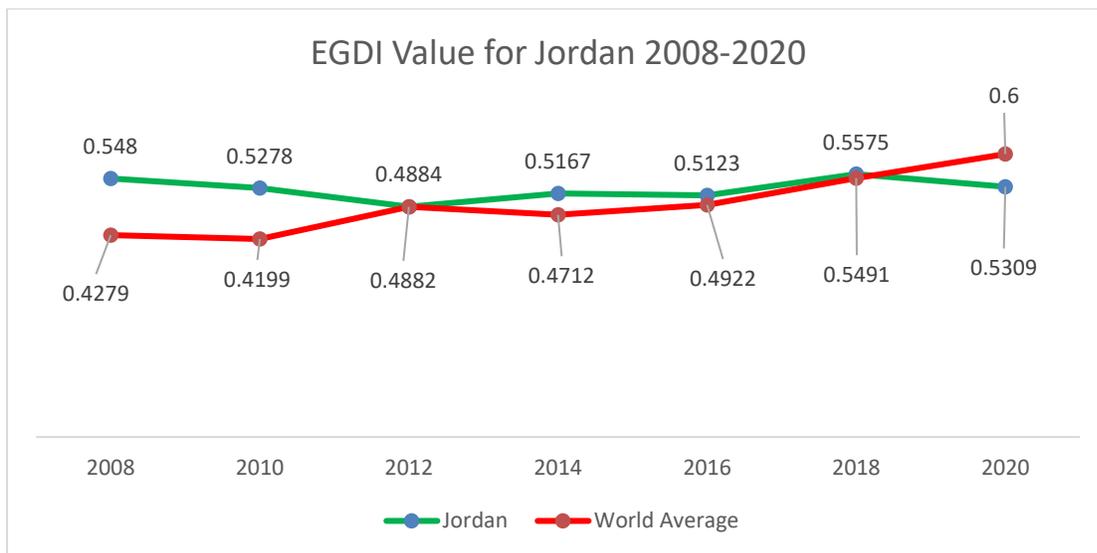


Figure 4. E-government Development Values for Jordan, according to UN EGDI

Similarly, based on UN e-Participation Index (EPI), Jordan ranked in 148th place globally in 2020, dropping from the 71st place in 2014 (Figure 5). In 2014, Jordan achieved a significant improvement by 30 places compared to 2012 when it was ranked at 101st place. Jordan also had a great move upwards from being ranked 90th in 2005 to 15th in 2008, putting in place enhanced national portals which include features that increase citizen engagement. The period of 2008-2012 represents a hard time for country's ranking when Jordan had a big drop and occupied one of the lowest positions of 193 countries worldwide.

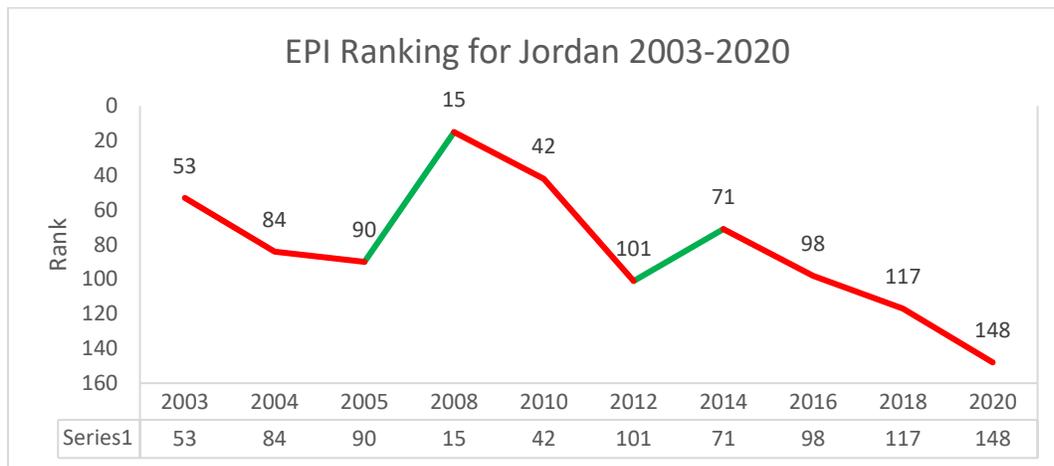


Figure 5. E-Participation Index World Ranking for Jordan

3.3 Public Administration Structure in Jordan

Jordan is a constitutional monarchy (monarchy with a parliamentary system) based on the constitution promulgated on January 8, 1952⁶. The Constitution of 1952 created a constitutional monarchy with a monarch, prime minister, council of ministers, bicameral legislature, judiciary, and high tribunal. Jordan's political and administrative system is characterised by a high degree of centralisation. Local governance operates on two complementary administrative levels in Jordan: governorates under the Ministry of Interior, and municipalities (baladyat in Arabic) under the Ministry of Local Administration, which has been established in 1965 under the name of the Ministry of Municipalities.

The multi-level governance system in the country divides the Kingdom in 12 governorates (Irbid, Mafraq, Jerash, Ajloun, Amman, AlBalqa, AlZarqa, Madaba, Karak, Tafilah, Ma'an and Aqaba) comprised of 104 municipalities⁷. Each governorate is headed by a governor and appointed by the

⁶ Sources: The Jordan Ministry of Local Administration. <https://www.mola.gov.jo/Default/Ar>
 Myriam Ababsa (2013), Municipalities and Issue of Local Governance, in Atlas of Jordan, Presses de l'Ifpo, Institut français du Proche-Orient. <https://books.openedition.org/ifpo/5043?lang=en>
 OECD, Towards a New Partnership with Citizens *Jordan's Decentralisation Reform*.
<https://www.oecd.org/gov/towards-a-new-partnership-with-citizens-9789264275461-en.htm>
<https://portal.cor.europa.eu/divisionpowers/Pages/Jordan.aspx>

⁷ Department of Statistics. Estimated Population of the Kingdom by Municipality and Sex, at End-year 2020.
http://dosweb.dos.gov.jo/DataBank/Population_Estimares/Municipalities2020.pdf

King through the Minister of the Interior and they maintain law and order at the local level, in their respective areas. The regional government acts as the executive instrument for implementing cabinet decisions at the local level. Essentially, these governorates are an extension of the central government.

As for municipalities, each municipality is headed by a mayor and 6 to 11 councillors, who are all elected for a four-year term. Only half of Amman's council is elected, whilst the other half, together with the mayor are directly appointed by the Council of Ministers. The Aqaba Special Economic Zone are managed independently, under the Prime Minister. While municipalities are administered separately, they remain under the remit of the Ministry of Local Administration.

The emergence of municipalities in Jordan goes back to 1920, before the founding of the state in 1921, as the number of municipal councils in Jordan reached ten municipal councils. The Irbid Municipal Council was established in 1883 followed by As-Salt Municipal Council in 1887, then the Municipality of Karak in 1895 and the Ma'an Municipal Council, which was established in 1898.

Municipalities were established by law in 1955, three years after the adoption of the Constitution. The municipal system covers only the inhabited zones of Jordan, and excludes the BADIYA (desert areas). In the country, there are four categories of municipalities: 1: Governorate centres (those municipalities represent each governorate centre plus the Greater Amman Municipality); 2: District centres, this category includes all cities/towns that have over 15,000 inhabitants; 3: Caza centres, this category includes all residential areas (small cities or towns) with a population of between 5,000 and 15,000), and finally, a fourth category for all other municipalities in the country.

With the approval of the 2015 Decentralisation Law and Municipality Law, the government has undertaken a first important step towards promoting a more bottom-up approach to the identification of service needs and policy priorities. Jordan is currently revamping the role of its sub-national levels by re-allocating competencies to institutions in the municipalities to allow greater development and community involvement in the decision-making process, more opportunities for citizens to participate in decision-making, and encourage citizens to contribute and benefit from more sustainable local development and a more equal distribution of economic benefits.

Municipalities in Jordan have a role to play in endorsing the economic and social development of local services provided to localities. According to the Municipal Act, No. 29 of 1955 39 functions belong to municipalities' responsibilities. Municipalities are responsible for urban planning, public health, education, culture, sport, public safety, etc. However, it should be noted that the central government had a tendency to privatize certain competencies that should be a priority devolved to municipalities, and the range of their responsibilities is now limited to solid waste management, street lighting, storm water drainage, public markets, and others. Nevertheless, municipalities face great challenges to perform those functions due to the weakness of their financial, human

resources, managerial, and technical capabilities⁸. The lack of independence of local government in managing local funding, public participation, and capacity building are additional major challenges⁹.

Municipalities' budgets are also highly dependent on government transfers, which include the government-collected property tax, whilst the municipality itself also collects taxes on services and local projects.

In general, the majority of Jordanian municipalities are in deficit. More than half of Jordan's municipalities are currently experiencing an acute deficit and concomitant high degree of indebtedness. The total public debt of municipalities, as of January 2022, has reached around 320 million Jordanian dinars (around \$451 million dollars), according to the minister of local administration¹⁰. Municipalities receive a low share of public expenditures. Only three percent of the central state budget is dedicated to municipalities, yet central fiscal transfers represent more than half of the municipal revenues. The main item of expenditure is salaries, which constitute more than half and up to 84 percent of expenditure¹¹.

3.4 Assessed Municipalities

This report is the first one to assess e-government service provision in cities in Jordan. It assessed 19 cities. Nine cities considered governorate centres, namely Irbid, Mafrq, Jerash, Amman, As-salt (the major city of Balqa governorate), AlZarqa, Madaba, Karak, and Ma'an). The cities of Ajloun (north of Jordan) and Tafilah (south of Jordan) have no websites/portal. The remaining 10 assessed cities, represent district centres (with a population of over 15,000), namely AlFuhays, Naour, AlDolail, Sahab, AlQuweera, AlHashmiyyeh, AlJeeza, Ainalbasha, AlRussifah, and Deiralla. To the best of the researchers' knowledge, and based on extensive research, those are the only 19 municipalities/cities that have a "working" website or portal.

A total of 70 indicators, out of the 86 that composed LOSI, have been considered in this assessment. Sixteen out of 86 indicators were not included in the assessment since those services are not provided by local governments in Jordan. Of those, 15 belong to Services Provision criterion and one to Participation and Engagement criterion, as summarized in Figure 6. Even though, not required in local level, there are some municipalities that provide access (through links) to some of the above 16 services. The municipalities (e.g., Amman, Irbid, Maan, AlZarqa, and AlFuhays) does not provide those services directly but it offers via its website a link to Jordan's e-government national portal, so, citizens can move to Jordan's e-government national portal (<https://portal.jordan.gov.jo/wps/portal#/>) and receive those services there. Those municipalities are highlighted in parenthesis in Figure 6.

⁸ <https://www.oecd.org/regional/regional-policy/profile-Jordan.pdf>

⁹ Taamneh, M. M., & Alqdha, H. M. (2020). Challenges facing local government in Jordan and strategies to address them. *Problems and Perspectives in Management*, 18(3), 402.

¹⁰ almamlakatv.com.shorturl.at/bmqPX

¹¹ shorturl.at/itvHX

Some municipalities (e.g., AlZarqa and Irbid) also direct citizens to a unified electronic portal concerning several local services electronic payment, such as buildings tax, paving, professional licence, and construction license fees. The unified portal (<http://ptp.mof.gov.jo/index3.aspx?aspxerrorpath=/PTPCustLoginPage.aspx>) was developed and organized by the Ministry of Local Administration in cooperation with the Ministry of Finance and the United Nations Development Program (UNDP).

It is worth mentioning that several services, although not included in the LOSI methodology, they are a part of municipalities' services and responsibilities in Jordan and they can be online requested/applied via municipalities' websites such as Amman, AlZarqa, Ma'an, AlFuhays, and Ain Albasha. Those services include for example tree pruning, lighting maintenance, trash cart placement, rodent control, and speed bump requests.

<p>Services Provision</p> <ul style="list-style-type: none"> Police online declaration Online drivers' license (e.g., Amman, Irbid, Maan) Online environment-related permit (e.g., Amman, Maan, AlFuhays) Online residency permit (e.g., Irbid, Maan) Online birth certificate (Irbid) Online death certificate (Irbid) Online marriage certificate (Irbid) Address change notification (AlZarqa) Online land title registration Online vehicle registration Online vacancies Business tax payment (AlZarqa, Amman) Online fees payment (AlZarqa, Amman, Irbid, Maan, Madaba) Water payment (Irbid) Electricity/gas payment (Irbid) <p>Participation and Engagement</p> <ul style="list-style-type: none"> Report of any form of discrimination (Amman, Maan, AlFuhays)

Figure 6. LOSI indicators not provided at local level in Jordan

3.5 Result Analysis

Amman, country's capital, is ranked top the list scoring 0.57. It is the only city that score in High LOSI group. Jordan cities considered in the survey score between 0.11 and 0.57 (Table 1). Most of Jordan cities are in Low LOSI group (Figure 7).

City	Score	Rank	Type	LOSI Group	Region	Population ¹²
Amman	0.57	1	The capital/ Governorate centre	High LOSI	Central	3,908,123
Irbid	0.36	2	Governorate centre	Middle LOSI	Northern	951,452
AlZarqa	0.34	3	Governorate centre	Middle LOSI	Central	731,255
AlMafrq	0.34	3	Governorate centre	Middle LOSI	Eastern	142,401
Maan	0.31	5	Governorate centre	Middle LOSI	Southern	47,200
AlQuweera	0.29	6	District centres	Low LOSI	Southern	25,496
AlHashmiyyeh	0.21	7	District centres	Low LOSI	Central	91,198
Jerash	0.21	7	Governorate centre	Low LOSI	Northern	111,976
AlFuhays	0.20	9	District centres	Low LOSI	Central	21,413
Madaba	0.20	9	Governorate centre	Low LOSI	Central	169,347
AlDolail	0.20	9	District centres	Low LOSI	Central	57,655
Sahab	0.20	9	District centres	Low LOSI	Central	145,956
Naour	0.19	13	District centres	Low LOSI	Central	79,527
AlJeeza	0.19	13	District centres	Low LOSI	Central	89,102
Ainalbasha	0.19	13	District centres	Low LOSI	Central	122,152
AlRussifah	0.17	16	District centres	Low LOSI	Central	44,449
AlKarak	0.17	16	Governorate centre	Low LOSI	Southern	114,750
As-Salt	0.16	18	Governorate centre	Low LOSI	Central	154,164
Deiralla	0.11	19	District centres	Low LOSI	Central	57,786

Table 1. Jordan cities in the LOSI 2022

Greater Amman municipality (GAM) leads Jordanian municipalities as it ranks first in all criteria, except services provision as it is ranks second. This is expected as Amman is the capital of Jordan and it's the centre of political and commercial activities in the country. GAM often has the greatest budget (423 million Jordanian dinar in 2021)¹³. The budgets for Jordanian municipalities range from 1 million to 45 million Jordanian dinar. Irbid and AlZarqa municipalities are the next two biggest budgets with 45 and 35 Jordanian dinar respectively.

Interestingly, AlQuweera and AlHashmiyyeh municipalities rank at 6th and 7th place respectively. Although AlQuweera and AlHashmiyyeh are small municipalities (district centres), they rank higher than bigger ones, which often have greater budgets and own higher technical and human resources

¹² Department of Statistics. Estimated Population of the Kingdom by Municipality and Sex, at End-year 2020.

http://dosweb.dos.gov.jo/DataBank/Population_Estimares/Municipalities2020.pdf

¹³ <https://www.jordantimes.com/news/local/gam-council-approves-2021-draft-budget>

(e.g., As-salt and Karak). This supports the LOSI 2020 findings that financial and technical issues are important for providing e-services at the local level but the managerial vision or political support (e.g., from the mayor or municipal council) seem also critical toward digital transformation at municipal level.

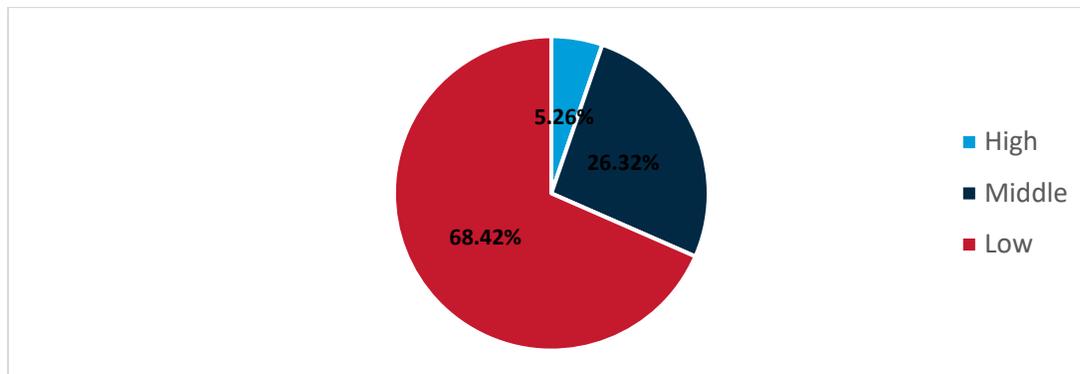


Figure 7. Percentage of cities at each LOSI level

LOSI 2022 features five criteria, institutional framework, content provision, services provision, participation and engagement and technology. Table 2 presents the cities with the highest ranking in each subgroup.

Institutional Framework		Content Provision		Services Provision		Participation and Engagement		Technology	
City	Rank	City	Rank	City	Rank	City	Rank	City	Rank
Amman	1	Amman	1	Amman	1	Amman	1	Amman	1
Maan	2	AlMafraq	1	AlZarqa	2	Jerash	1	AlZarqa	2
Irbid	3	AlQuweera	1	Irbid	3	AlMafraq	3	Irbid	3
AlZarqa	3	Maan	4	Sahab	3	AlRussifah	3	Sahab	4
AlFuhays	3	AlHashmiyyeh	5			AlZarqa	5	AlMafraq	5
Ainalbasha	6	Irbid	6			Irbid	5	Madaba	5
AlMafraq	7	AIDolail	7			AlFuhays	5	AlKarak	5
AlHashmiyyeh	7	AlJeeza	8			AlQuweera	5	As-Salt	8
Naour	7	AlZarqa	9			AIDolail	5	AlQuweera	8
Sahab	7	Madaba	9			Naour	5	Maan	10
AlJeeza	7							AlFuhays	10
								Ainalbasha	10
								Naour	10
								Deiralla	10
								Jerash	10

Table 2. Leading 10 cities in each LOSI 2022 subgroup

3.5.1 Institutional Framework

Figure 8 illustrates that the most frequently satisfied institutional framework criteria are related to providing clear information regarding the organizational structure of the municipality (68 per cent) and providing links to other government agencies (68 per cent). The results indicate that 26 per cent of city portals provide name and contact information for the heads of departments and 21 per cent of the municipal portals required authentication (e.g., digital ID, login credentials, mobile key, etc.) to access online services and restricted access areas on the municipal portal. Fifteen per cent of city portals publish e-government or digital government strategy or equivalent online. Fifteen per cent of city portals publish e-government or digital government strategy or equivalent online.

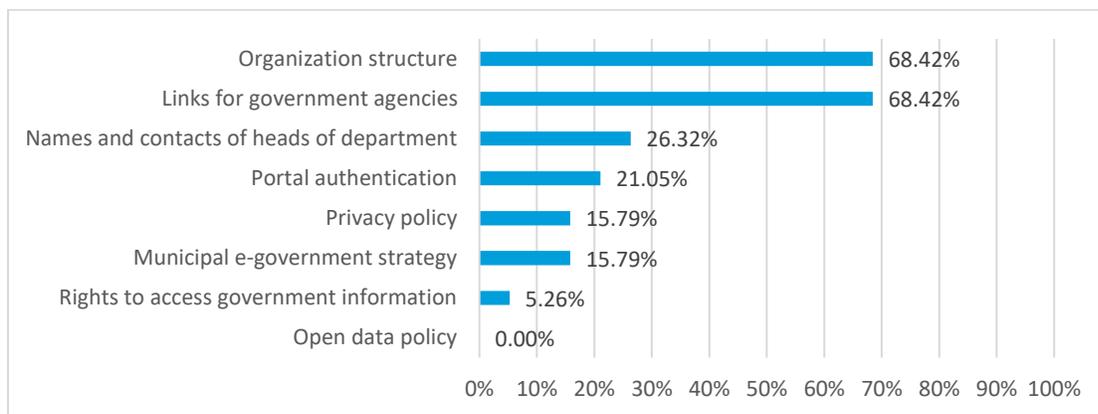


Figure 8. Implementation of institutional framework indicators in city portals

The institutional framework subgroup also focused on whether privacy policy statements and information on citizens' rights to access government information (e.g., Freedom of Information Act, Access to Information Act, etc.) are provided on the city portal. Respectively, 15 and 5 per cent of the city portals satisfied these two indicators. Finally, none of the city portals publish an open data policy.

3.5.2 Content Provision

Figure 9 lists the content provision indicators by sectors. Environmental information is the most popular content in the city portals surveyed in this study, followed by sports and culture related information. All other indicators are below 30 per cent.

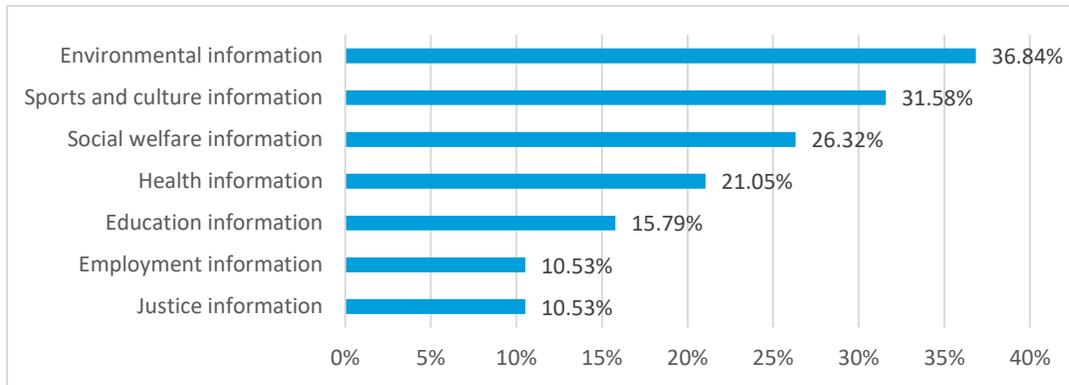


Figure 9. Implementation of content provision indicators in city portals by sectors

Figure 10 lists the most common indicators related to day-to-day activities found in city portals. Waste and recycling information is in the top of the list with 26 per cent of Jordan cities. This is followed by information for vulnerable groups (10 per cent), road safety information (5 per cent) and alerts for weather and natural disasters (5 per cent). There are not any cities that provide public transportation related information or indication of facilitation of free Internet access.

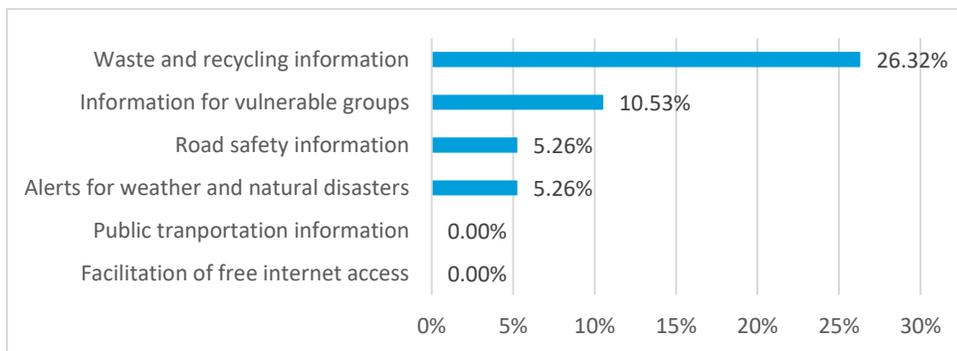


Figure 10. Implementation of content provision indicators in city portals in day-to-day activities

Procurement announcements are provided by 63 per cent of city portals and procurement results by 21 per cent (Figure 11).

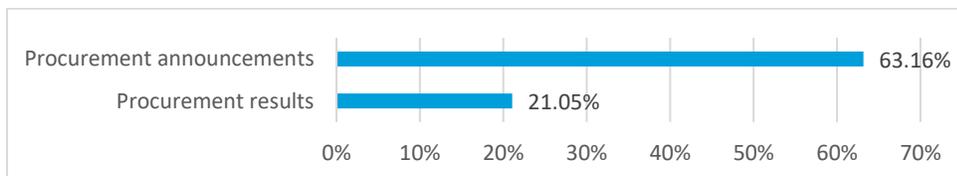


Figure 11. Content provision on public procurement

There is evidence of mobile phone applications in 21 per cent of cities' portals and evidence of smart cities initiatives in 5 per cent of the portals. No portal provides any evidence of emerging technologies use (Figure 12).

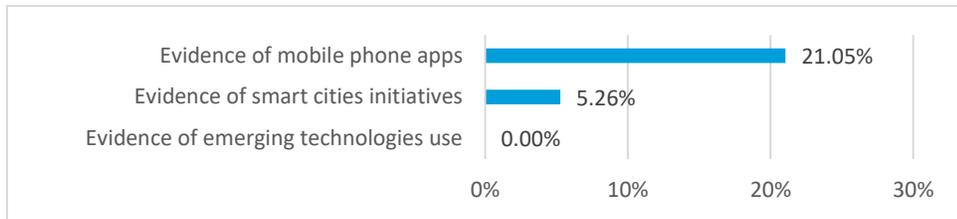


Figure 12. Content provision on new technologies

City portal usage statistics and statistical data and studies are provided by 15 per cent of cities' portals (Figure 13).

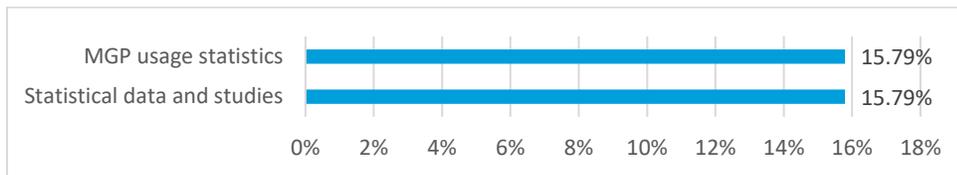


Figure 13. Content provision on statistical data

Municipality information is provided in most of cities' portals while in 42 per cent of them, information about provided services, is given. 21 per cent of the portals provide services in partnership with civil society and foreign language support. Few of them, 5 per cent, provide covid-19 information (Figure 14).

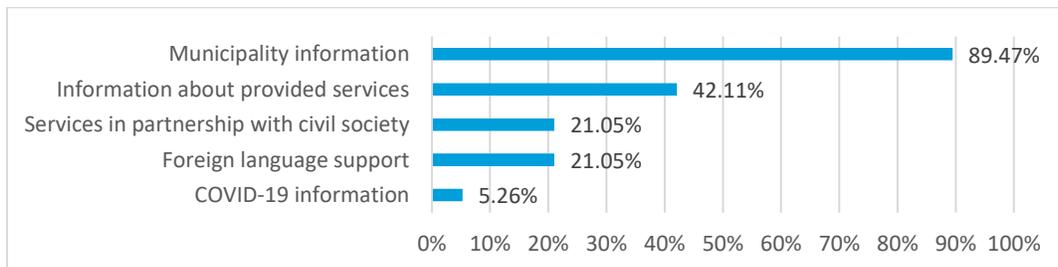


Figure 14. Content provision on other information

3.5.3 Service Provision

The assessment shows (Figure 15), that providing online business license (15 per cent) is on the top of the services list, followed by e-Procurement service (10 per cent) and online building permit (10 per cent).

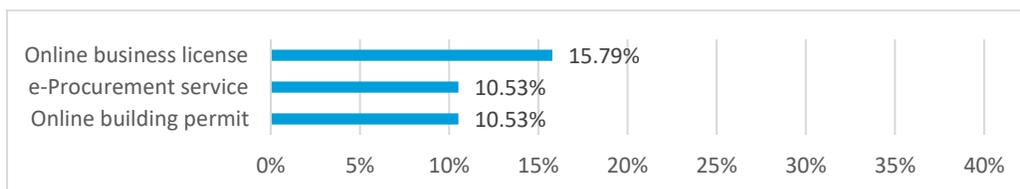


Figure 15. Implementation of service provision indicators in city portals

3.5.4 Participation and Engagement

Figure 16 illustrates that the most frequently met participation and engagement indicators are feedback/complaint submission (94 per cent) and social networking features (84 per cent). Online deliberation processes and reporting of occurrences in public spaces follow with 31 per cent. Lower in the list appear municipality responsiveness emails (10 per cent), quality of email response (10 per cent), information on the public meetings of the municipal council (10 per cent), budget-related information (10 per cent), and announcement of upcoming e-participation activities (5 per cent). None of the cities provide e-Voting, real time communication, feedback about consultation processes, participatory budgeting, participatory land use plan, open data metadata and open data provision.

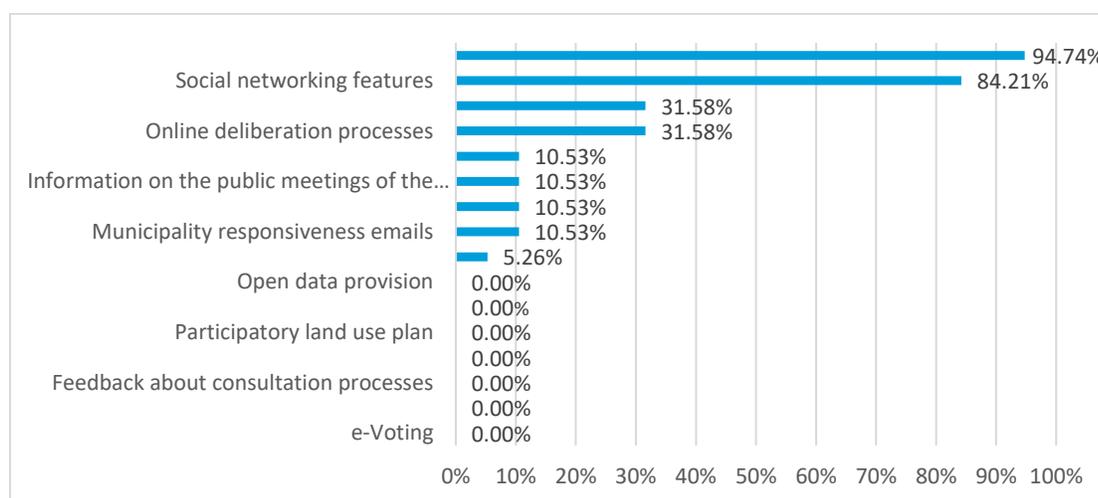


Figure 16: Implementation of participation and engagement indicators in city portals

3.5.5 Technology

As shown in Figure 17, contact details (all cities), browser compatibility (89 per cent), ease of portal finding (84 per cent) and mobile device accessibility (84 per cent) are the most frequently met indicators, respectively, under the technology subgroup. More than half cities (52 per cent) satisfy navigability, helpdesk call number and internal search mechanism indicators. Twenty-one per cent of the portals provide evidence of content update, 15 per cent are aligned with markup validation standards and provide the possibility of personal data access and update. Less cities (10 per cent) provide internal advanced search mechanism, alignment with display standards and the possible of business data update. On the bottom of the list, information on online services use, online user support and personal data updating are provided by 5 per cent of the cities and no city portal is aligned with accessibility standards.

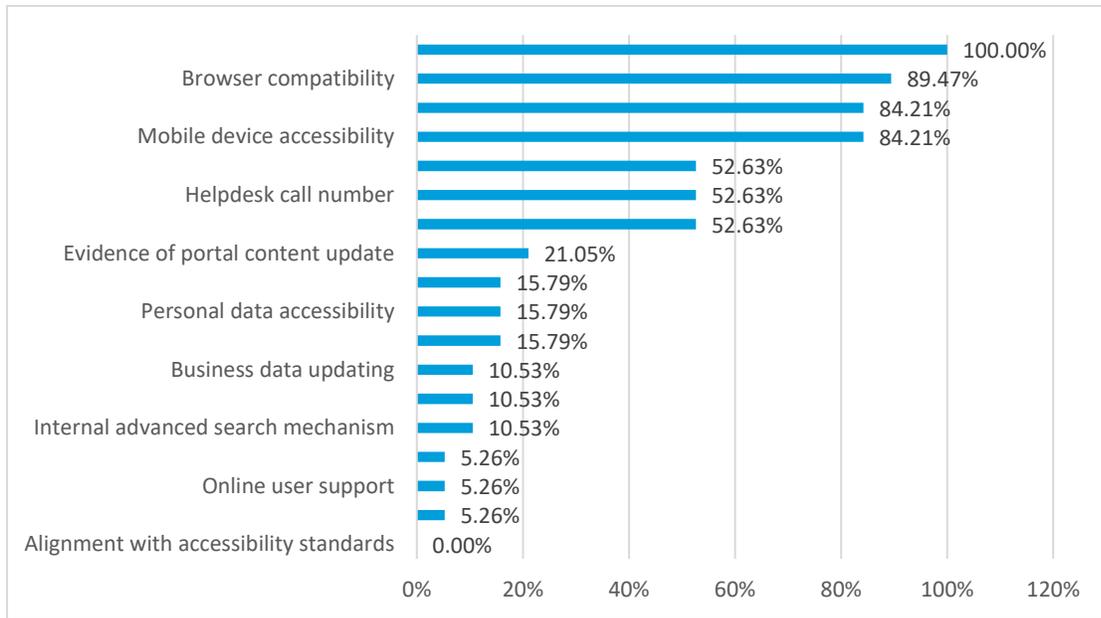


Figure 17. Implementation of technology indicators in city portals

4. Local Electronic Government in Jordan

4.1 Electronic government strategies in the context of municipalities

Jordan undertakes significant efforts to guarantee an efficient and effective public sector and promote good governance. Despite the numerous challenges the country is facing due to the international context, the centralization approach has prevailed in Jordan public administration since independence. Jordan is considered to be one of the countries with the most centralized administration. For decades, the national planning and development process has been directed by the central government. The central government is responsible to provide all basic services: water, electricity, gas, sewerage, primary education, healthcare, civil defence, public transport, housing, and environment. Perhaps, this inhabits a prominent effort to digitalize services at municipal level and be linked to national e-government strategies in the country. The recent Jordan Digital Transformation Strategy 2020 lacks reference to any initiatives or efforts toward enhancing local e-government services¹⁴. However, the Ministry of Local Administration has supported several municipalities to launch several e-services under "Electronic improvement of municipalities" project. The project aims to computerize the financial and administrative systems (i.e., revenues, expenditures, checks, budget and funding, payroll systems, and personnel affairs), to train municipality employees on systems use and to complete the warehouse system computerization.¹⁵

Arab Forum for Smart Cities¹⁶ has also supported several municipalities in Jordan, namely Ma'an, AlFuhays, and Ainalbasha by developing their own websites.¹⁷

Jordan has taken important steps to promote decentralization system with the approval of the 2015 Decentralization and Municipalities Laws toward more powers vested at the Governorate and Municipal level. Nevertheless, the country still faces a challenging road ahead to overcome the political, administrative, and fiscal transformation needed for effective decentralization¹⁸.

4.2 Recommendations for local electronic government in Jordan

Based on the study findings and the existent contextual knowledge of Jordan, some recommendations to promote and foster local electronic government development in Jordan may be advanced.

Institutional Framework aspects

¹⁴ https://www.modae.gov.jo/EBV4.0/Root_Storage/EN/1/Jordan_Digital_Transformation_Strategy_2020_English_Unofficial_Translation.pdf

¹⁷ <https://www.petra.gov.jo/Include/InnerPage.jsp?ID=96318&lang=ar&name=news>

¹⁶ Arab Forum for Smart Cities is a foundation affiliated with the Arab Cities Organization specialized in the field of smart cities, electronic and smart transformation, information technology management and modern management. It was established in 2007 and it's hosted and sponsored in greater Amman municipality. It is chaired by the Mayor of Greater Amman.

¹⁷ <https://www.itcat.org/NewsDescription.aspx?ID=ksUQw5rLZfhk3%2f%2fUxNH8lg%3d%3d>

¹⁸ OECD, Towards a New Partnership with Citizens *Jordan's Decentralisation Reform*. <https://www.oecd.org/gov/towards-a-new-partnership-with-citizens-9789264275461-en.htm>
<https://portal.cor.europa.eu/divisionpowers/Pages/Jordan.aspx>

Regarding Institutional Framework criterion, the design and application of e-government strategies to Jordan municipalities can create value to stakeholders. An e-government strategy can help each municipality to identify and implement the proper goals. Open data policies should be informed ensuring access to government information. Municipalities should have a good insight into residents' perspectives on opening up municipal data and consider them when they develop their open data policies. Proper acts and regulations should be applied to provide the right of public access to records held by municipalities, subject only to limited and specific exemptions to disclosure.

Strengthen collaboration with related government ministries and agencies

Municipalities should provide more information related to health, education, employment, public transportation, and justice issues with respect to their cities or areas under their administration. Developing and enhancing an effective collaboration with related ministries such as ministries of health, education, environment, labour, and justice as well as an interaction with the Department of Statistics of Jordan, the E-government Division at the Ministry of Digital Economy and Entrepreneurship, and the Traffic Department at Public Security Directorate could be a way to own such information.

Free internet access

The provision of municipality wide WiFi services could be improved since it offers several advantages. Residents could use internet constantly in their education, professional and social lives. Tourists and business visitors would also find their stay more pleasant and convenient. A technologically advanced city may also attract people to move in or visit. By offering free wireless connection, local governments in Jordan could help residents with less income and resources. These initiatives can be considered tools for empowerment and social inclusion, as not everyone can afford to buy the equipment and the telecommunication service packages. Free public WiFi hotspots could help people from underprivileged backgrounds to have access to potentially life-changing information, including job opportunities, health advice, online courses, etc.

Securing funds

Municipalities should not only expect the central government's financial support. They should pay more effort and know-how to secure funds or financial and technical aid/support from regional and international agencies to support their digital transformation, for example, collaborating with international organizations such as UNDP, USAID, and EU.

Statistics provision

Local government statistics are essential for a democratic government and they serve to advance businesses and the well-being of municipality's residents. Municipalities could provide statistics about various areas, for example provided services, population, land use, budgets, income, spending, births which informs residents, businesses and organisations and help in taking decisions and designing policies.

Online service provision

The assessment shows that online business license, e-Procurement service and online building permit are provided by few municipalities. Local government should digitise those procedures since it will improve internal efficiency and productivity, it will reduce administrative burden, it will increase transparency and it will result in higher constituent satisfaction.

Encourage participation

More efforts should be towards providing more space for resident's participation. There is no evidence that Jordan municipalities are providing participation tools such as e-voting and e-consultation. Further, no signs toward engaging people in municipalities' budgets (participatory budgeting) nor in the co-design of public services exist.

Existing platforms and tools (e.g., CONSUL software) can be used to promote civic consultations and engagement around key issues in urban areas. The Ministry of Local Administration could also help and organize knowledge-sharing programs related to e-participation to disseminate knowledge among Jordan cities. For example, among other initiatives worldwide, Decide Madrid initiative has successfully implemented to widen public participation in city council decision-making. In Estonia, Tartu city implements several e-participation initiatives aimed at promoting both open and e-government.

Mobile and social media platforms

The number of mobile connections has reached a total of 8.01 million mobile connections, according to a report issued by DataReportal¹⁹. Hence, developing mobile applications for municipalities is no more privilege but is a critical need. In Jordan, more than 90 per cent of Jordanian Internet users are social networkers (specifically of Facebook), with a total of 66 per cent of the population of Jordan having Facebook accounts, according to several reports by Pew research centre²⁰. Therefore, there is a great opportunity for municipalities to use various social media platforms to reach and communicate with their citizenry with popular and nearly zero-cost channels.

User-centric portal

Technology features in municipalities' portals should properly be considered by local administration in order to have an effective and efficient website. In fact, municipality's website is a crucial tool for meeting the needs of residents and connecting with the community. Local government websites are important because most residents would rather go online and look for information rather than pick up the phone or go somewhere to get what they need. It can even be said that finding information is the purpose of a municipality's website in the minds of residents. This makes it crucial not only have a wealth of information available online but to make it easily accessible.

¹⁹ <https://datareportal.com/reports/digital-2021-jordan>

²⁰ Pew Research Center survey was conducted in 40 nations among 45,435 respondents during 25 - 27/5/2015.

5. Conclusions

A remarkable output of the assessment is that most of the services are not provided in local government level in Jordan public administration. Only three services of LOSI list are provided by municipalities. It can be inferred that service provision is more central government oriented.

The study shows that most of the Jordanian municipalities' websites have considerable performing limitations in the LOSI assessment criteria, specifically on those related to service provision, technology, and citizens' engagement features. In fact, all Jordanian municipalities, except GAM, were ranked at the middle or low LOSI group. There is clearly a huge room for improvement on the electronic government area in Jordanian local administration. The present study could provide guidance on aspects that can be transformed and enhanced.