



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

LOSI Application in Bethlehem, Beit-Sahour, Beit-Jala, Jenin, Ramallah, al-Bireh, Jericho, Abu Dis, Qalqilya, Khan Yunis, Hebron, Gaza City, Halhul, Jabalia, Beit Hanoun, Tubas, Rafah, Nablus, Beit Lahia, Tulkarem

Prepared by: Saleem Zoughbi

Under the Methodology of
UN DESA & UNU E-GOV

July 2022



■ LOSI

UNITED NATIONS
Department of Economic and Social Affairs

UNITED NATIONS UNIVERSITY
Operating Unit on Policy-Driven Electronic Governance

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Acknowledgments

The Department of Economic and Social Affairs of the United Nations (UN DESA), through its Division for Public Institutions and Digital Government (DPIDG), through its United Nations E-Government Survey has been an inspiration to this study. The strong support of the UNU-EGOV, part of the United Nations University (UNU), has provided as well as motivation for the development of the Application of Local Online Service Index Methodology in Palestine this study. The report was prepared by Saleem Zoughbi under the observance of Vincenzo Aquaro (Chief, DPIDG), Delfina Soares (head, UNU-EGOV), and Deniz Susar (UN DESA). A sincere appreciation to them for their continued support. Final report formatting and editing was done by Zeynep Sude Neriman.

The strong support of the Ministry of Telecommunications and Information Technology (MoTIT) of the government of Palestine, as well as the Higher Council of Innovation and Excellence (HCIE) of Palestine, have been instrumental in this study, particularly with contacts and technical support with cities governing councils.

A sincere appreciation is expressed to his excellency minister Dr. Ishaq Sadr (MoTIT) and Mr. Adnan Samara (Chairman of HCIE). For their continued support to this study.

The following team has been very helpful in conducting the online assessment and has contributed to this study. Appreciation and gratitude are due to every one of them:

- ✓ Dr. Ra'id Shomali (A special appreciation is expressed for his support of LOSI survey).
- ✓ Mr. Fadi Murjanah (director of e-Government in MoTIT).
- ✓ Ms. Shuroq Salahat, Mr. Anwar AlShaer, Ms. Khaleda M. Maraghah, Mr. Mahmoud T. Abu Sbaih, Ms. Majd Abu Hakmeh, Mr. Mohamed Aslam Sabri, Mr. Mohammed Yasin, Ms. Mona Daoud Bargooti, Ms. Mr. Imad Albaba.

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Objective of this Report

There has not been a central or unified effort to assess portals of cities in Palestine. These were left to each individual municipal council to plan and implement.

This report is about a study conducted to assess the online services that may be available on selected Palestinian cities' portals. In fact, the main objective was to assess the portals in general, with focus on online services, pointing out the difficulties and strengths as well as challenges and opportunities municipal councils may encounter to enhance and develop their local governments' digital transformation.

This report is developed based on data gathered by applying portal assessment criteria and indicators of Local Online Services Index (LOSI) developed by the UN Department of Economic and Social Affairs.

CHAPTER 1: Local Government in Palestine

Palestine

The State of Palestine is territorially part of geographic Palestine and is composed of two areas: West Bank of Jordan that includes East Jerusalem, and the smaller part Gaza Strip. These two parts were occupied by Israel in 1967. Political developments following the Oslo accords between the Palestine Liberation Organization and Israel, the Palestinian Authority was established in these two areas as an autonomous state. This state is recognized by more than 130 UN member states and aspires to full independence as a sovereign state.

The total population is more than 4.5 million. The state consists of sixteen administrative divisions, called governorates, of which the Hebron district is the largest with a population close to 750,000 residents. The Gaza governorate (with Gaza City as its district capital) is the second largest with a population of 650,000. The State of Palestine considers East Jerusalem (occupied by Israel in 1967) to be its capital, although the city of Ramallah functions as its administrative center as politically Jerusalem is inaccessible to the Palestinian government. Ramallah has a population of around 60,000 residents and is regarded as the most liberal area in the state, as well as its economic and cultural center.

The Ministry of Local Government in Palestine is the government body that supports cities, villages, urbanization, and local governance. In fact, according to OECD, urban population in Palestine is 75.3% of the national population.

Municipal Councils

In any country, the central national government is the highest tier of governance. Depending on geographic and regional organizational matters, governance is transferred to lower levels or tiers. In Palestine, the country is divided into regions called ‘governorates’. Each of these has a governor who addresses overall regional affairs and connects with the national government. In each governorate, there are cities and villages, for which there is either an elected council of members (for cities) or a rural council (for villages) who serves as the governing body. Referred to as a local government, it represents the lowest tiers of public administration of a level that is both geographically localized and has limited powers.

The term “municipal council (MC)” would be used to refer to the elected local governing body of a city.

There are vital services for the city that the MC has the duty to continuously monitor and support, for which they are responsible for people and businesses within the city. Among these are common tasks (Type I) such as social care, schools, housing and planning and waste collection, but also lesser-known ones (Type II) such as licensing, taxation, business support, registration services and pest control.

MC members work with local people and partners, such as local private sector businesses and other organizations, including governmental and semi-governmental ones, to agree on local priorities and coordinate delivery of services.

In addition, it is well established that local governments are not allowed to handle certain tasks as they belong to the national government. Of these are the passing of by-laws, approval of budgets, imposition of rates and other taxes, levies.

Approach to Digital Transformation

One of the highest priority issues addressed in cities development, particularly for the digital transformation of the city services, is the legislative/regulatory changes: the proper legislation and regulatory framework for the city governance should be well reassessed as technology is targeted for city development. This will lead to enhancing the issue of transparency and open local governance. This is mandatory not only to implement successful digital transformation, but also to empower residents and get them engaged working together to fulfil their expectations for a happy city life.

The digital transformation of cities adopts a strategy that is based on:

- ✓ Exploiting all kinds of existing resources efficiently
- ✓ Empowering knowhow in form of skilled experts as well as existing infrastructure, tools, etc. as may fit city project work
- ✓ Setting all projects and transformation work to achieve goals in part or in full, based on the strategic vision of the city government:

Within this context, city portals are the frontend of local governance, which not only support and serve residents, but also provide a platform for digital development gradually, leading to successful digital transformation.

Any approach used by local government planners and strategists would have to reckon with fundamental and unequivocal facts that include the following:

- ✓ Technology advances so rapidly that it becomes necessary to continuously “chase the digital wave”. Agility of modern technology is a key factor for success.
- ✓ The importance of local government is sometimes overlooked or undervalued, or perhaps not given a fair share of development, when it comes to information technology and the developing communications platforms (reasons may be economic, industrial, etc.)
- ✓ Local governments are increasingly incorporating digital technologies for many reasons, the most common of these is to publish and disseminate public information.
- ✓ With the widespread connectivity and social media, many residents tend to have more direct interaction with local governments. This causes city councils keen responding to the needs and concerns of residents.
- ✓ It is clearly noticed that e-government development is high on political agendas, but the emphasis has mainly been on national priorities and progress rather than local governments.

The first step perhaps in digital transformation of local governments is the creation of an effective, enriched portal. Hence a study of city portals is a key step toward finding a pathway for forward development of local governance. Technically it is envisaged

that such pathway would focus mainly on Portal Technology. However, this can be done with employing technologies related to fields such as cloud computing, big data and its analytics, mobile applications, and collaboration in social media.

This approach is global, and very true in the case of Palestinian cities. In fact, exploring potential ways of adapting this approach is the *raison-d'être* of this study.

e-Government in Palestine

The Ministry of Communications and Information Technology has carried out many projects to implement e-government, which is important in enhancing government services provided to residents and the business sector, as well as inter-government agencies. These services were designed and implemented with the goal of improving the quality of life for the Palestinian citizen.

The most important of these services and resources include the following:

- ✓ The electronic payment system: Its importance is to push the wheel of electronic payments in Palestine, which would enhance the collection rate of government payments and reduce cash circulation in Palestine, as well as saving time, effort, and costs for the Palestinian citizen in obtaining and paying government services. The electronic payment system consists of the electronic payment gateway (system), the unified entry mechanism, the unified portal for e-government services, and an application to access electronic services through smart mobile devices.
- ✓ The National Data Carrier: The data carrier provides a secure way to exchange data and facilitates the process of linking and providing services in an easy and secure electronic way between different institutions. In the current phase of the project, work has been done to provide services between government institutions only. After final testing it will provide services to the business sector.
- ✓ Automation of services: to save time and effort by providing services in automated and online procedures.

Other important projects that indirectly support and contribute to providing the necessary infrastructure for the operation of e-government are:

- ✓ Private Cloud Computing and Disaster Recovery: Cloud computing for the State of Palestine is being planned to undertake the establishment, management and operation of the state's modular systems or any shared resources in all their types. It would provide infrastructure resources and services. This will enable organizations to benefit from storage, backup and information security. Cloud computing will collect and provide the necessary government services at lowest costs and best practices.
- ✓ In addition, a disaster recovery project is implemented which aims to ensure the continuity of work without interruption in the provision of various electronic services, in the event of natural or security disasters or failure in the main system

Palestinian cities development plans

Traditionally local government in Palestine has developed into a process of a self-reliant and independent technical activity. It is also driven by the greater affinity to development and effective embracement of modern technologies.

The development of cities was planned thoroughly with many international donor agencies, such as the European Union and the World Bank. This has started at the beginning of the 21st century, particularly from 2002 to 2012. Development focused on generic priority themes of urban development such as:

- ✓ Ensure a state of stability, security, and the rule of law inside the city
- ✓ Developing, improving, and diversifying customers' services
- ✓ Improving and maintaining the infrastructural utilities of the city
- ✓ Maintaining and conserving environment, public health and safety
- ✓ Creating innovative initiatives to motivate human resources
- ✓ Empower and promote cooperative relations with stakeholders

In all projects relating to these themes, the development of a well-designed and effective city portal is mandatory. As such, this study is to examine and assess the existing local government portals.

CHAPTER 2: The Study

Online Services of Local Governments

There are two keywords that define the transformation of local government: Online and Service. The issue of online is easily understood and managed, as it refers to the capability to do actions over the Internet. In other words, this refers to the capability of communication between systems (users and providers). Users are residents normally, and providers are the local government and its affiliated bodies. Being “online” implies that three significant characteristics of communication should be well maintained. These are: (1) the speed of connection, (2) reliability and (3) high networking capability. Communication via the Internet is instantaneous, seamless, interactive, borderless, and far-reaching¹.

A service is an interaction between the local government and people or institutions aspiring for such service. This interaction could be one-sided, or interactive. The kind of interaction identifies the degree of maturity of the service providers.

These services once implemented on a local government portal, residents can connect to the portal and interact for such services.

Online services can range from simple to complex. A basic online service may help residents acquire information and data through a search engine, while a complex one might be an online interaction resulting in a service being completed where the person needs to input data, make choices and the portal responds according to the service designed and implemented. For the facilitation of using such online services to residents’ services should be recorded and invoked by the local e-Government portal when needed, to track progress, deliver and data regarding its delivery for further reference by the LG staff if need be in the future (for verification, quality control, and statistics), in addition to assisting in providing search abilities and maintain privacy and security of identities and private data.

It is essential to indicate that online services may be free or paid.

Online services are of two types when it comes to who is responsible for them:

- ✓ Type I: The local government (municipal council)
- ✓ Type II: Other governmental bodies and organizations as nationally defined

Most all services need both types of providers but in varying degrees and responsibilities. For example: paying municipal tax is totally the reusability of the local government (municipality) but providing health advice and process basic services related to health, which is the responsibility of the central health ministry, but the ministry may get the local government involved so the person can access health services through the city portal, as done in many cities in the world. In these cases, the local government would be acting on behalf of the ministry concerned. Some cities do this; hence the citizen can find practically all the online services he needs, through the city portal. In other cities, the portal simply recommends the resident to go to the ministry of health for those services without providing them.

¹ Harvard Business Review: <https://hbr.org/2016/01/how-local-governments-are-using-technology-to-serve-citizens-better>

Examples of type I services include:

- ✓ Communication: providing lookup information for the resident, acquiring comments and notes and communicating them to the proper office of the local government. This also includes social media applications.
- ✓ Real-Time Information: providing related time information related to life in the city, such as public transportation bus schedule, traffic reports, weather, news, and related announcements from the government.
- ✓ Business: providing news and services regarding any commerce or economics-related activities and services, such as looking at paid taxes, payments, and requests.
- ✓ Government: this are perhaps the most common and fundamental type of services, as they are the ones that are directly offered by city portals. Examples of these are the real-estate tax, land property taxes and permits, applications for services, utilities and public services requests and registration.

Type II services are usually handled by other governmental organizations and not the local government, yet the local government is a partner in many ways and hence city portal is involved in this type of service, at least in directing the citizen to the proper address and instructions where to find such services. Examples include services for schooling, public health, medical urgent services, hazards, such as fires etc., entertainment and culture news and events. It also includes services of city maps and route planning around the city.

Overview of city portals

City portals are in general designed and built according to the request made by the municipal council. In many cases the technical designer, implementer, and later the portal master, would suggest to the council what to include in the portal. In Palestine, cities are responsible for their own portals and content. At the national level, there is an agreement between ministries and national government agencies that their portals should conform to a common template. The independence of cities in developing their portals has resulted in versatile formats and often differs greatly for residents who access a city portal to easily look for the same service or information in a different city.

It is observed that many of the portals of Palestinian cities are not updated periodically, mainly since the nature of their portals is publishing information in nature, i.e., emergent with most of its capabilities is to share information to help the residents locate answers based on files and documents, and of course, providing city news and the municipal council news and actions.

Very often the technical staff who oversees the portals are subcontracted, and a junior technology graduate employee is assigned the task of acting as a webmaster. Therefore, very little change or progress can be observed apart from news of the mayor, the council and related city affairs, and announcements.

Local e-government survey

The Need

There is no doubt that advances in technology have introduced a significant opportunity for service providers to transform the way they deliver them. Local government through its MC and their permanent staff find ample opportunities to adopt new and innovative ways of delivering services. With online applications and through the Internet, residents can access these services from anywhere and anytime. Access through city portals is a critical factor in the quality and efficiency of service delivery. Innovating technology tools and resources are widely employed in all sectors of the society, resulting in advancing the interaction between city governments and residents.

It is widely accepted that using technology in online service delivery enhances not only the efficiency, speed, and accuracy of service and local government performance, but also promotes transparency and accountability. In addition, it enhances interaction and participation of residents, which would lead also to mitigating corruption.

Another important advantage of using online services is that the processes implemented will result in a better vision of public administration, leading to perhaps re-engineering of processes that deliver these services. Further, it may suggest new enterprise architecture solutions which may help in restructuring the local government, reducing costs and increasing efficiencies.

Without a sound and official legislation regarding digital transformation many decisions and issues will be left to the discretion, and perhaps heuristic approach of technical staff [in](#) Implementing the portal. This legislation covers many issues like data privacy, and access to information. Other legislation issues are related to cybercrimes such as fraud, copyright, defamation, hacking, cyber extortion, data breach, identity theft, harassment, and stalking.

Measuring city portals for online services require fundamental knowledge about the policy and strategy used in implementing the portal.

Local government portals should have been created based on city/municipality e-Government Strategy. For example: there must be an Implementation plan which should be aligned with national and sustainable development goals. There must be a reference to e-Participation and/or digital inclusion/engagement, social media, enabling usage by the most vulnerable groups such as the Poor, immigrants, older persons, persons with disabilities, women, and youth. The strategy should include the availability of a budget for the portal as well as partnerships with other national or international cities and/or the private sector or civil society.

Methodology

The need for assessment of local e-government portals has been addressed by the Division for Public Institutions and Digital Government of the United Nations Department of Economic and Social Affairs (UNDESA). Realizing the significance of introducing and formalizing a tool to assess city portals, emphasis was centered on content provision, services provision, participation and engagement, and technology. As a result, a survey tool comprising 86 indicators relating to five criteria entitled “Local Online Service Indicators (LOSI)” was designed and tested.

There were 80 indicators defined as LOSI in the 2020 edition of the United Nations E-Government Survey. These are divided into five different criteria. Each one assesses

an important aspect of the portal:

1. **Technology:** The examination and assessment of the technology used in the portal is an integral part of the assessment. The main objective is to assess how the site and content are made available for residents. This is done through using indicators that measure accessibility, quality, functionality, reliability, ease of navigation, visual appeal, and alignment with technology standards. This is HOW the service is delivered.
2. **Content provision:** The content is the main scope and domain of any online service. No service can be delivered unless proper information is passed to the citizen requesting this service. The indicators in this category assess the extent to which essential public information and resources are available online. This is WHAT the service is about.
3. **Services provision:** Services for local government are many and versatile. The portal should be able to offer different types of services online. The residents will be able to access a variety of online services that would satisfy their needs whenever they need them. Some of these services may even interlink with national e-government services. This is WHICH services are offered.
4. **Participation and engagement,** which assesses the availability of mechanisms and initiatives for interaction and opportunities for public participation in local governance structures. More comprehensive information on the 2020 survey methodology and LOSI indicators are available in the annexes. This is HOW the service and the citizen interact.

The tool is a questionnaire containing the 80 indicators in form of questions that are binary in nature, allowing a “yes or present” or “no or absent” answer with values of 1 and 0 respectively. The sum of all values forms the LOSI value of the city. A normalized value (A value of 0 to 1:00) is computed, by dividing the total LOSI value by the number of questions, 80. City ranking can be obtained by sorting their LOSI values.

Further, by considering the value of LOSI for each city, cities are classified into five different levels or groups ranging from very high to low:

- ✓ **Very High LOSI level:** Cities with very high LOSI values are those that meet at least 60 of the 80 indicators analyzed and have LOSI values between 0.75 and 1.00.
- ✓ **High LOSI level:** Cities which have high LOSI values meet between 40 and 59 indicators and have LOSI values in the range of 0.50 to 0.75.
- ✓ **Middle LOSI level:** Cities which meet 20 to 39 indicators, i.e., have LOSI values in the range of 0.25 to 0.50.
- ✓ **Low LOSI levels:** All cities that meet less than 20 indicators with a value of 0.00 to 0.24 are of primitive portal capability.

A team of 10 research assistants (assessors) and an academic professor joined the author in conducting this study. The Palestinian Ministry of Telecommunication and

Information Technology through the director of the e-government, as well as the Higher Council of Innovation and Excellence, supported the study.

A group of 20 cities was selected, and assigned to assessors, where each was asked to assess four cities: two cities to be assessed, and two assessments of others to be reviewed. These assessments were carried out individually. These cities were selected based on geographic. All cities and towns with LG have been selected. As for the West bank 14 cities and towns were selected, distributed by north, Central and South West bank. For Gaza, 6 cities were selected out of 9.

In addition, the document “Local Government Questionnaire (LGQ) for the United Nations E-Government Survey” was administered to all cities in the study and collected.

Data was collected and verified. Descriptive statistics and computations were carried out accordingly.

The following are the cities selected for the study.

	City / Town	URL
1	Abu Dis	https://www.abudis.ps/ar/
2	al-Bireh	https://al-bireh.ps/
3	Beit Jala	http://www.beitjala-city.org/ar/
4	Beit Sahour	https://beitsahour.ps/
5	Bethlehem	https://www.bethlehem-city.org/
6	Halhul	http://halhul-city.ps/site/
7	Hebron (al-Khalil)	http://www.hebron-city.ps/
8	Jenin	https://www.jenin.city/
9	Jericho	https://www.jericho-city.ps/
10	Nablus	http://nablus.org/index.php/ar/
11	Qalqilya	https://qalqiliamun.ps/
12	Ramallah	https://www.ramallah.ps/
13	Tubas	https://www.tubas.ps/
14	Tulkarm	http://mtulkarm.com/

Table 1 - Selected Palestinian cities: 1- West Bank

	City / Town	URL
15	Beit Hanoun	http://beithanoun.ps/
16	Beit Lahia	http://www.bietlahia.mun.ps/
17	Gaza City (Ghazzah)	https://www.mogaza.org/
18	Jabalia	https://www.jabalia.ps/
19	Khan Yunis	http://www.khanyounis.mun.ps/
20	Rafah	https://murafah.ps/mun/

Table 2 - Selected Palestinian cities: 2- Gaza Strip

CHAPTER 3: Results of the Survey

Survey Data

General LOSI values

Preliminary analysis of the data showed clearly that there is a major gap in online services, on one side, but also showed a strong motivation and effort in structuring portals and developing them.

Descriptive statistics and computations were carried out according to LOSI procedures. While doing the assessment, answers to some questions were indeterminable. In the analysis, as the main concern was the number of definite “yes” answers all missing questions (left blank) where around 5 to 10 questions in some cases. So, they were considered as a “no” answer.

After computing LOSI, and normalizing the values, indicators were observed to be less than 0.60. This meant that as all were examined, were either low or medium level online services portals with the exception of three cities scored between 5.0 and 6.0 (which considered here in this report as high). Table 3 shows results.

Cities with HIGH Level LOSI		Cities with LOW Level LOSI	
City	LOSI Value	City	LOSI Value
Ramallah	0.586	Khan Yunis:	0.345
Nablus	0.575	Tubas	0.333
Hebron	0.529	Beit Lahia	0.333
		Jericho	0.322
		Halhul	0.322
		Rafah	0.322
		Jabalia	0.310
		Tulkarem	0.310
		Abu Dis	0.218
		Jenin	0.210

Cities with MEDIUM Level LOSI	
City	LOSI Value
Bethlehem	0.483
al-Birch	0.437
Gaza City	0.425
Qalqilya	0.414
Beit-Sahour	0.368
Beit Hanoun	0.368
Beit-Jala	0.356

Table 3 - Overall LOSI indicator values for cities assessed

The complete list is shown in the graph below.

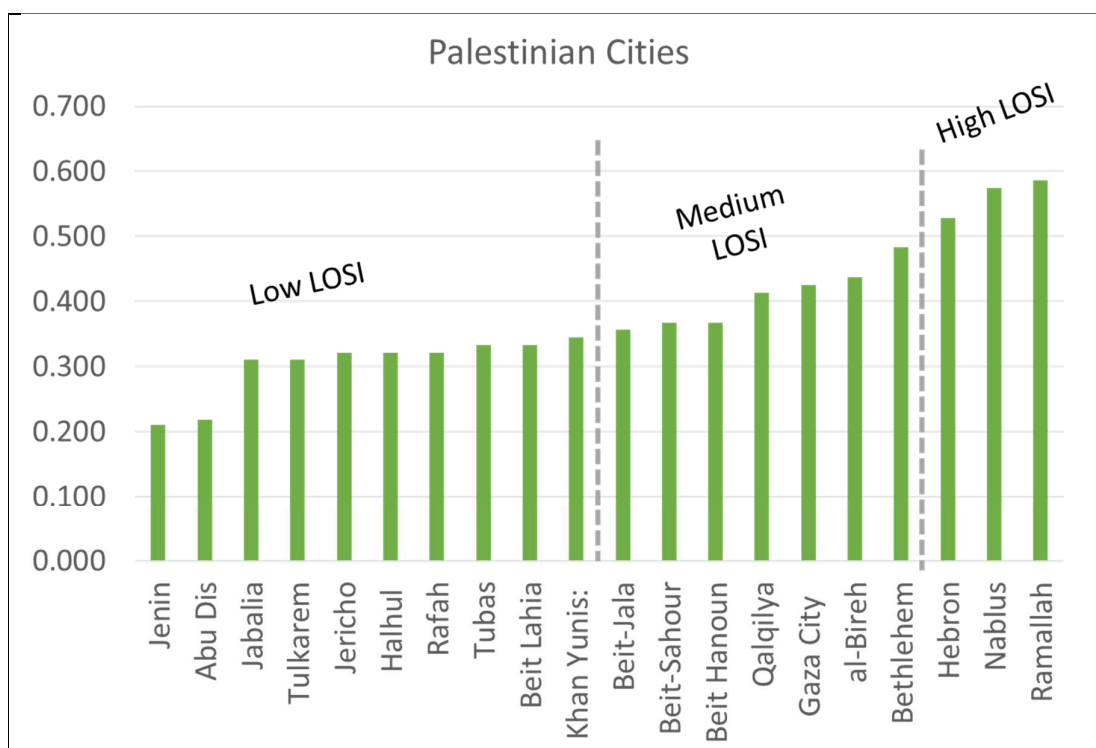
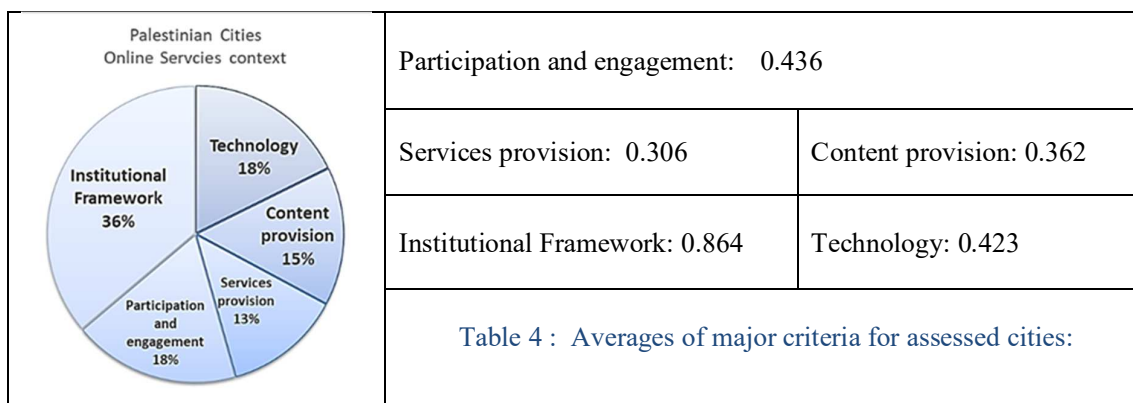


Figure 1 - Complete LOSI values for cities that were assessed

LOSI Criteria values

Following the five criteria that LOSI was structured according to, technology seems the most that is met by the assessed cities. Content provisions was also addressed; however, services provision and Participation and engagement were weak. Table 4 shows the average of these criteria for all cities.



The five sets of values were calculated, and cities were ranked accordingly. Table 5 show these results in alphabetical order of the city names.

City Name	Content	Institutional Framework	Participation	Services	Technical	Overall
Bethlehem	0.48	0.56	0.41	0.39	0.61	0.48

Beit-Sahour	0.36	0.22	0.35	0.28	0.56	0.37
Beit-Jala	0.28	0.33	0.35	0.28	0.56	0.36
Jenin	0.24	0.11	0.24	0.17	0.22	0.17
Ramallah	0.60	0.44	0.65	0.50	0.67	0.59
al-Bireh	0.40	0.22	0.29	0.56	0.61	0.44
Jericho	0.56	0.33	0.24	0.17	0.22	0.32
Abu Dis	0.08	0.11	0.18	0.17	0.56	0.22
Qalqilya	0.56	0.56	0.41	0.17	0.39	0.41
Khan Yunis	0.36	0.33	0.47	0.22	0.33	0.34
Hebron	0.80	0.44	0.65	0.22	0.39	0.53
Gaza City	0.56	0.22	0.71	0.28	0.22	0.43
Halhul	0.48	0.33	0.29	0.33	0.11	0.32
Jabalia	0.48	0.22	0.24	0.28	0.22	0.31
Beit Hanoun	0.44	0.67	0.47	0.11	0.28	0.37
Tubas	0.40	0.78	0.12	0.11	0.44	0.33
Rafah	0.48	0.33	0.24	0.22	0.28	0.32
Nablus	0.76	0.56	0.53	0.39	0.56	0.57
Beit Lahia	0.36	0.44	0.24	0.44	0.22	0.33
Tulkarem	0.36	0.56	0.35	0.22	0.17	0.31
<i>Average</i>	0.45	0.39	0.37	0.28	0.38	0.38

Table 5: The LOSI index for all cities in all five categories alphabetical order

The tables 6 to 9 show the highest seven cities in technology only and kept the same cities for comparison in each of the other criteria: Content provision, Services provision and Participation and engagement. For the sake of having a short list the highest 10 ranking cities (technology) were selected.

Technology

Ramallah	0.67
Bethlehem	0.61
al-Bireh	0.61
Beit-Sahour	0.56
Beit-Jala	0.56
Abu Dis	0.56
Nablus	0.56
Tubas	0.44
Qalqilya	0.39
Hebron	0.39

Table 6 - Technology
Highest 10 cities

Content

Hebron	0.80
Nablus	0.76
Ramallah	0.60
Jericho	0.56
Qalqilya	0.56
Gaza City	0.56
Bethlehem	0.48
Halhul	0.48
Jabalia	0.48
Rafah	0.48

Table 7 - Content Provision
Highest 10 cities

Services provision

Participation and engagement

al-Bireh	0.56
Ramallah	0.50
Beit Lahia	0.44
Bethlehem	0.39
Nablus	0.39
Halhul	0.33
Beit-Sahour	0.28
Beit-Jala	0.28
Gaza City	0.28
Jabalia	0.28

Table 8 - Services Provision
Highest 10 cities

Gaza City	0.71
Ramallah	0.65
Hebron	0.65
Nablus	0.53
Khan Yunis	0.47
Beit Hanoun	0.47
Bethlehem	0.41
Qalqilya	0.41
Beit-Sahour	0.35
Beit-Jala	0.35

Table 9 - Participation and
engagement Highest 10 cities

Institutional Framework

Tubas	0.78
Beit Hanoun	0.67
Bethlehem	0.56
Qalqilya	0.56
Nablus	0.56
Tulkarem	0.56
Ramallah	0.44
Hebron	0.44
Beit Lahia	0.44
Beit-Jala	0.33

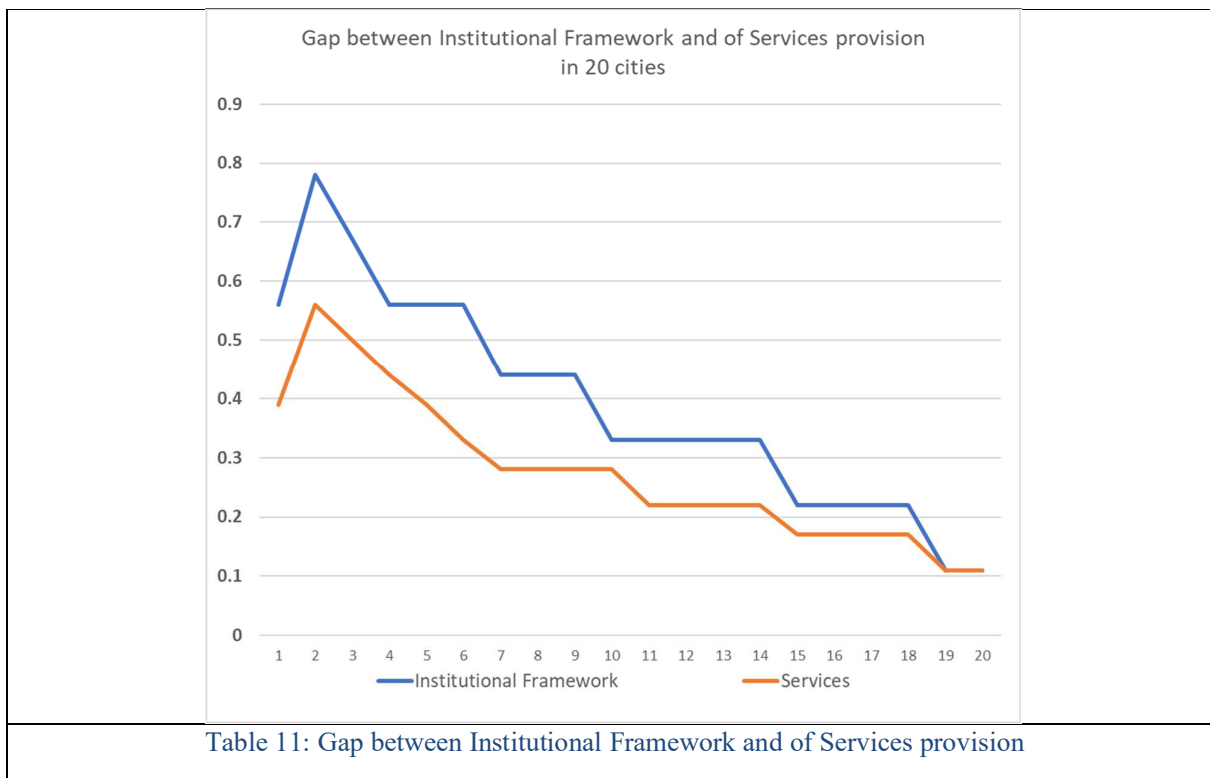
Table 10 – Institutional
framework Highest 10 cities

Overall LOSI

Ramallah	0.59
Nablus	0.57
Hebron	0.53
Bethlehem	0.48
al-Bireh	0.44
Gaza City	0.43
Qalqilya	0.41
Beit-Sahour	0.37
Beit Hanoun	0.37
Beit-Jala	0.36

Table 110– Overall LOSI Highest 10
cities

The overall assessment shows that majority of city portals assessed were emergent level portals with practically no effective online services. The standard deviation was calculated for both (institutional framework has $s = 0.1774$ while that of services provision is $s = 0.1223$). This shows that most of the city portals (MGPs) have different institutional framework levels indicating that some cities are better than others in this criterion, but for services provision t is a smaller value, indicating that most of the cities are of the same level. This confirms that the online services are not well implemented and furthermore most of the cities have the same problem of implementing efficient services. Running the F test on these two sets of data ($F = 0.103375$) shows that the measurements obtained for these 20 cities are mostly likely consistent and hence acceptable.



In the appendices, there are figures that show the indicators values for all sectors.

A specific case for the Palestinian Government in this regard is that the national cyber legislation that was passed by the Palestinian legislative council a decade or so ago, is aligned with the central power given to financial and personal information of citizens in the hands of few government offices. This makes it difficult to have online services with least intervention and central permissions. This dependency on management in public governance makes the implementation of online services that involve fees and personal information very difficult to automate. Hence, almost all MGP of cities do not provide online services to full completion.

After closer examination was done, municipal government portals, cities are found to be fairly well positioned regarding content, participation and technology aspects. Table 13 highlights more positive answers along these criteria in the cities that were studied.

Indicators		Percentage of Cities			
Criterion	Total Number	0%-25%	25%-50%	50%-75%	75%-100%
Content	226	9.00 %	11.50 %	14.00 %	20.00 %
Institutional Framework	70	2.00 %	3.00 %	5.00 %	7.00 %
Participation	126	4.00 %	6.00 %	8.00 %	12.00 %
Services	99	3.00 %	4.50 %	6.25 %	10.00 %
Technical	137	4.00 %	6.50 %	10.00 %	12.00 %
Overall	658	22.00 %	31.50 %	43.25 %	61.00 %

Table 12: Quartiles of cities indicators showing how they are distributed among criteria

CHAPTER 4: Conclusions

Status of Local e-Government Portals

Results were divided into three classes:

- A. An Initial class of city portals, where their LOSI is less than 0.18. These portals are primary, simple and of a basic entry level. There are five cities in this class: Tubas, Abu Dis, Rafah, Jericho and Beit Hanoun. The average value for this class of portals is 0.137.
- B. An intermediate class: This class is characterized by more content management and exposition, news, and a sense of reference in knowledge for the citizen. Their LOSI values range from 0.18 to 2.99. There are 12 cities in this class: Jenin, Beit Sahour, Beit Lahia, Halhul, Beit Jala, Tulkarm, Gaza City, Jabalia, al-Bireh, Hebron (al-Khalil), Qalqilya and Khan Yunis. The average value for this class of portals is 0.241.
- C. An Emergence-exit class: This group of portals are fully emergent and ready to step into interaction stage with residents and users, if not already have taken first steps into that stage. There are three cities: Bethlehem, Nablus, and Ramallah. The average value for this class of portals is 0.338.

It is interesting to note that the average and standard deviation for each class. The following table shows these values.

Class	Nr. Of cities	Average	Standard Deviation
An Initial class (LOW Level – LOSI)	10	0.303	0.048
An intermediate class (MEDIUM Level – LOSI)	7	0.407	0.046
An Emergence-exit class (HIGH Level – LOSI)	3	0.563	0.030
	20	0.378	0.103

Table 13: Average LOSI and standard deviation for each class

Considering the following arguments:

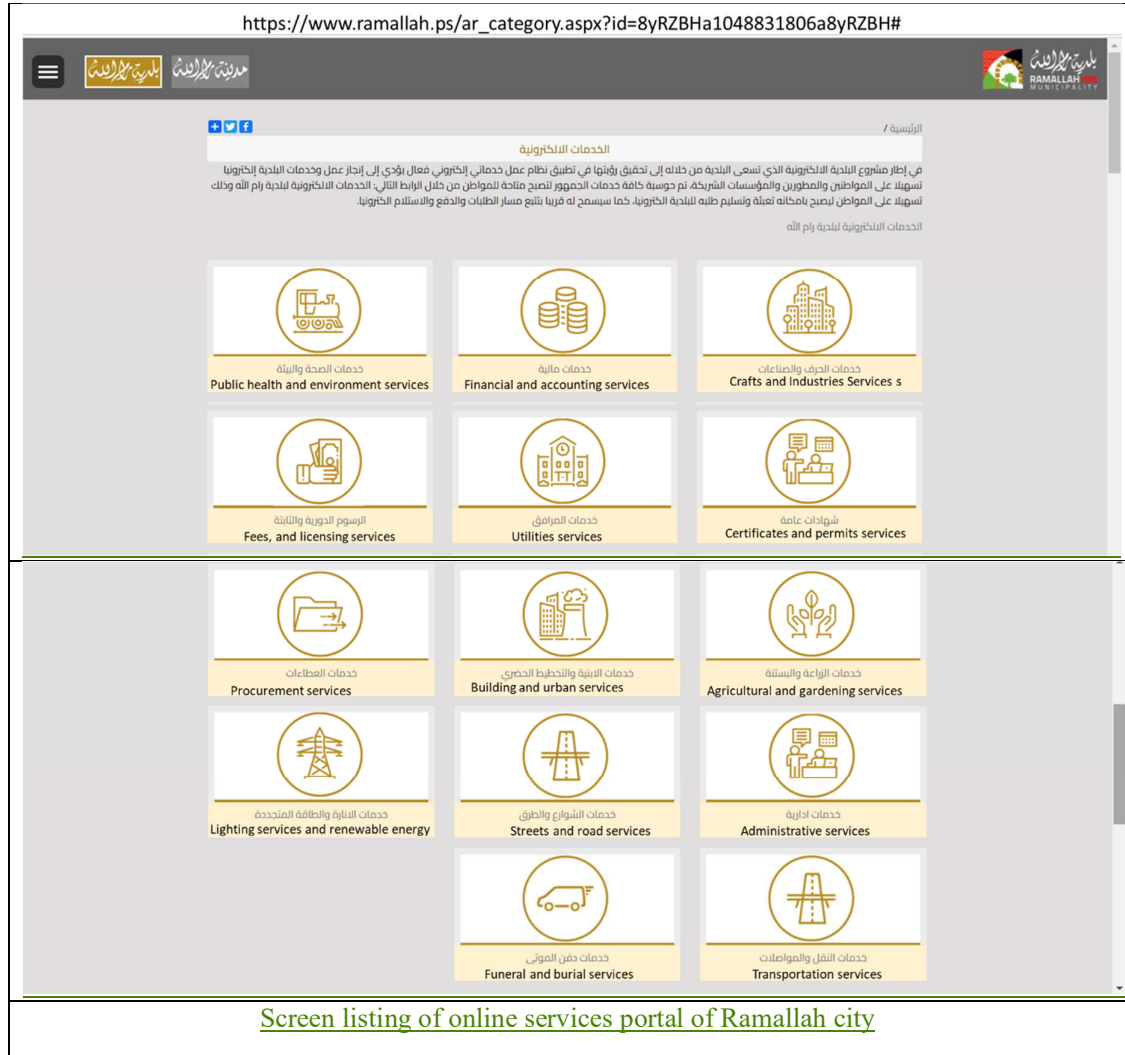
- ✓ There is no fixed standard or template suggested by the ministry of local government to guide city portals developers, the quality of the portal reflects beyond reasonable doubt the expertise and maturity of the technical staff who developed such portals.
- ✓ There must be serious obstacles to integrate and implement online services in the sense of full support for online services.
- ✓ The citizen empowerment through wider Participation and engagement is affected by municipal and local government regulations and arrangement, which is shown to be minimally addressed.

Therefore, the values suggest that three cities among the ones assessed show convergence to a common argument and understanding of how portals can be implemented, while twelve cities have widening and different interpretations and visions of how their portals must conform to international standards as suggested by UN local government online services. The other five cities need a review of their portals and perhaps technical assistance in that regard. As an example of such online services, by far the best

among these cities, can be found here (only in Arabic):

https://www.ramallah.ps/ar_category.aspx?id=8yRZBH1048831806a8yRZBH

Electronic services that cover the following: Crafts and Industries licensing Services, financial services, Health and environment services, public certificates and attestations, building facility Services, periodic and fixed fees, Agriculture and horticulture services, Building and urban planning services, Procurement Services, Administrative Services, Street and road services, Lighting and renewable energy services, Transport services, Funeral services and sewage and waste services. When these services were tested by residents in Ramallah who have tehri records at the Municipality as residents, most of these services were functional, although some problems were spotted, and reported.



Challenges and recommendations

There are many challenges facing the development of local e-government for Palestinian cities. This study showed that these challenges are common to almost all cities, in addition to being generic in nature with particular emphasis on five categories. These categories are bound and cannot be viewed independently.

It is possible to develop a framework to meet each challenge which may not only identify the decisive significance of these challenges, but also shed light on ways of confronting these challenges and mitigating the risk of failure.

Technology Challenge

The technical capabilities of people behind these portals, as shown through data, are fairly good but have a widening gap between different classes of these portals. It is true that in general young technical staff with few years of experience are asked to lead the implementation and support for the portal, but there is a need for a firmer attitude towards having enough experience and careful planning in doing so. As such, the challenges and potential actions for this framework are outlined as follows. Reference is made to the TT (Technical Team) who are one or more persons in charge of designing, implementing and support the portal

1. Inherent technical capabilities (capacity building)

Lack of awareness of IT for the latest technologies in web design, tools and methods of designing portals that are of interactional, but precisely of portals which are transactional and transformational in nature.

Recommendation
<i>Hands-on intensive training and workshops on e-government maturity and online services, with enough training on securing these portals, tending to privacy and security of data as well.</i>

2. Stronger ties with the national e-government

Local e-government has been running separately from the main national e-government system. There are no effective ties and cooperation between both platforms, hence an e-governance divide has been developing fast for example between ministries portals and city portals.

Recommendation
<i>No matter different or specific local e-government platform is compared to the national e-government platform, there is a need to synchronize, harmonize and implement a local e-government platform that would preserve not only the continuity, but also the interoperability with reduced or modified features. Regulations and protocols must be adopted to maintain such close cooperation and alignment.</i>

3. Resource team for support for portal developers

There is often bafflement and sense of insecurity in issues related to the development of the portal or maintaining it. This is felt by junior as well as mid-level technical staff who are responsible for the development. This is mostly because of the agility of technology, sensitivity of data, and the regulations which have to be respected and adhered to.

Recommendation

<p><i>It is essential to have a resource to refer to when technical guidance and advice are needed, as well as operational and sustainable support for city portals. This resource would be best established as a coordinated technical support group, blended with efficient and proper legal and information management.</i></p>
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Legal Challenge

Portals and online services with their data resources must be subject to laws and regulations that govern their existence, access, and maintenance. Lack of such laws and regulations will result in a disconcerted portal, with all its operations, online services, and data. Violations of security and privacy will most likely occur. Incorrect and failing operations will develop certainly a lack of trust, consequently bad governance. Residents will not have an efficient, satisfying service nor a trustworthy local governance. Based on current Palestinian cyber legislation, such a legal framework can be developed and used to implement rules and regulations. However, it is necessary to align any rules or guidelines to fit the legal and cyber legislation of the Palestinian government. This is done by development of congruence between local and national e-governance; hence it would be possible to develop rules and guidelines that match such congruence and provides legal status of the city portals

4. Congruence between local and national e-governance

In most cases of portal design and implementation, many principles and tools implemented on the national e-government platform are not respected. This is because there is a lack of a detailed list of issues, rules and laws that are honored in local e-government platforms.

Recommendation
<p><i>Working out a cross table that identifies the rules, laws and guidelines that exist within the local government and is in the national e-government platform, pointing out where they are congruent and where differences exist and proper response to such differences should be adopted.</i></p>

5. Rules and guidelines that match such congruence

Portal developers, as well as users once full online services are implemented, need to have well-defined rules and guidelines along which operation is explained in a way that presents and maintains all legal issues respected and clear to all.

Recommendation
<p><i>Consulting experts of law, government officials and experts, it is necessary to develop a written guideline outlining all legal issues related to portals and have this introduced occasionally in dedicated workshops.</i></p>

Partnership Challenge

The Ministry of local government in Palestine has in its strategic priorities to integrate and encourage different municipalities in Palestine, especially in the same governorate, to coordinate and work together. In the case of digital transformation this is the least observed cooperation among them, although they have good cooperation in other areas of local governance. This is perhaps due to priority issues with limited funding for portal and online services. Technical capabilities also may have contributed to the limitation of cooperation in this area.

6. Intercity partnerships

Any technical cooperation between the technical staff of city portals seems to be limited to base first level web design (emergence, interaction). This cooperation is observed to be driven by the staff as colleagues in the same profession and task, but there is a lack of strong institutional cooperation understanding between cities to move forward according to a set of development activities, taking into consideration legal and security and data issues.

Recommendation
<i>With coordination between the Ministry of Telecommunication and Information Technology and the Ministry of Local Government, and the Governor office of each governorate, a discussion could be initiated to reach an agreement on a development plan, based on the results of this study for cities within the governorate, and proceed to implement for all portals in the same governorate.</i>

7. Integrating online services with other government portals

Many of the online services that the citizen needs are handled by either totally different bodies other than the municipality or in combination with other governmental bodies, such as electricity, water and sewage, health, and education departments. This poses obstacles to the residents and users of these services, as they must seek different providers for a service that can be handled by one of them if coordination between such providers can be reached. This is the main reason this study believes that is behind very low, if any, online services available on Palestinian city portals.

Recommendation
<i>It will be a strategic step if such providers and city officials discuss ways where common online services can be synchronized, combined, and shared, if possible, for the purpose of simplifying these online services and making them available easily to residents.</i>

Financial Challenge

As in many projects and operations, financial resources are a critical factor. Financial support for city portal operations in Palestinian cities, similar in essence to any other city government in the world, can be thought of operational, developmental and maintenance support. Currently, municipal councils meet the employment cost of who take(s) care of the portal, and operational expenses. Any costs that relate to maintenance which may be out of the operational costs cannot meet due to values, a special financing is sought to cover such costs. Finally, development costs are rarely met, this includes major changes in hardware, outsourcing software development, workshop, and training. The funds for developmental and maintenance support are usually sought when needed from either the government or from donors to the city development.

8. Budgeting and funding

Limited funding for the portal operation, with no well-defined financial plan annually for provision

Recommendation
<i>Encourage city councils to negotiate with the Palestinian government to make available a higher budget particularly for portals.</i>

9. Sustainability options

As financing is basically through the main city budget, in addition to occasionally donated funds for any small development, sustainability is limited.

Recommendation
<i>It would be beneficial to think of revenue generating measures from the services online, and perhaps data usage, to secure an income that goes to the development budget only and not the main municipality budget.</i>

Summary of Recommendations

<i>Nr</i>	<i>Recommendation</i>	<i>Method of support</i>	<i>Justification</i>
1	Capacity Building	Implement ongoing hands-on intensive training and workshops on e-government maturity and online services	Technical skills, expertise and level of portal staff have been assessed, surveyed and interviewed
2	Stronger ties with the national e-government	Implement policies to synchronize, harmonize and implement a local e-government platform that would preserve not only the continuity, but also the interoperability.	Examining the national e-government (policy and technology), as well as meeting government officials (Ministries of telecom & IT and local government
3	Resource team for support for portal developers	Form a support team as a resource to refer to when technical guidance and advice is needed, as well as operational and sustainable support for city portals.	As a result of the lack of efficient portal and online service design as shown by the survey, and need assessment for development
4	Congruence between local and	Identify rules, laws and guidelines that exist within the local government and are in the	Following recommendation #2 the LOSI values have shown a lack of understanding

	national e-governance	national e-government platform to benefit from and harmonize	of e-government on the local level.
5	Rules and guidelines	Develop a written guideline outlining all legal issues related to portals and have this introduced occasionally in dedicated workshops	The lack of full understanding of online services and absence of a guide (or policy guidelines) for city portal developers to help them converge their work as recommended by the guidelines for public good
6	Intercity partnerships	Encourage an agreement on a development plan, and proceed to implement in many cities	Sharing and learning from success stories and experiences between cities is a very good strategy. This is not limited to Palestinian cities; it is logical to seek sister cities in the world that are twinned with these Palestinian cities.
7	Integrating online services with other government portals	Encourage strategic cooperation among services providers and city officials where common online services can be synchronized, combined, shared,	There are many online services for the resident/ citizens that are similar or shared or partitioned with other government officers such as ministries and national organizations. It is necessary to seek cooperation and partnership.
8	Budgeting and funding	Negotiate with the Palestinian government to make available a higher budget particularly for portals.	This is a high and ongoing priority that should not only maintained in this case but much enhanced and supported.
9	Sustainability options	Think of revenue generating measures from the services online	No matter revenues are small, innovating ways to get funding as revenues from citizens is not only financially good, but committing residents to use these services online.

Appendix A

Cities Population and Index rank

Population of cities surveyed 1,577,000 50%
 Total Urban Population 3,095,144

		CITY	Population	Location	Score	Index
Lower	1	Tubas	15,591	North West Bank	8	0.100
	2	Abu Dis	11,753	Center - West Bank	9	0.113
	3	Rafah	126,305	Gaza Strip	12	0.144
	4	Jericho	19,783	Jordan Valley	13	0.163
	5	Beit Hanoun	37,392	Gaza Strip	13	0.167
Medium	1	Jenin	34,730	North West Bank	15	0.188
	2	Beit Sahour	14,921	Center - West Bank	16	0.200
	3	Beit Lahia	56,919	Gaza Strip	16	0.200
	4	Halhul	21,076	South - West Bank	17	0.208
	5	Beit Jala	16,183	Center - West Bank	18	0.225
	6	Tulkarm	44,169	North - West Bank	18	0.225
	7	Gaza City	410,000	Gaza Strip	19	0.238
	8	Jabalia	168,568	Gaza Strip	20	0.254
	9	al-Bireh	38,192	Center - West Bank	22	0.275
	10	Hebron (al-Khalil)	160,470	South - West Bank	23	0.288
	11	Qalqilya	43,212	North - West Bank	24	0.294
	12	Khan Yunis	173,183	Gaza Strip	24	0.294
Upper	1	Bethlehem	29,019	Center - West Bank	26	0.325
	2	Nablus	130,326	North - West Bank	26	0.325
	3	Ramallah	24,599	Center - West Bank	29	0.363
Table 14: Cities with geographic and population data						

Appendix B

Cities index values of categories

The categories of five criteria as defined by UN DESA LOSI as follows:

The set of 87 questions is divided into five categories:

Institutional framework, 9 questions

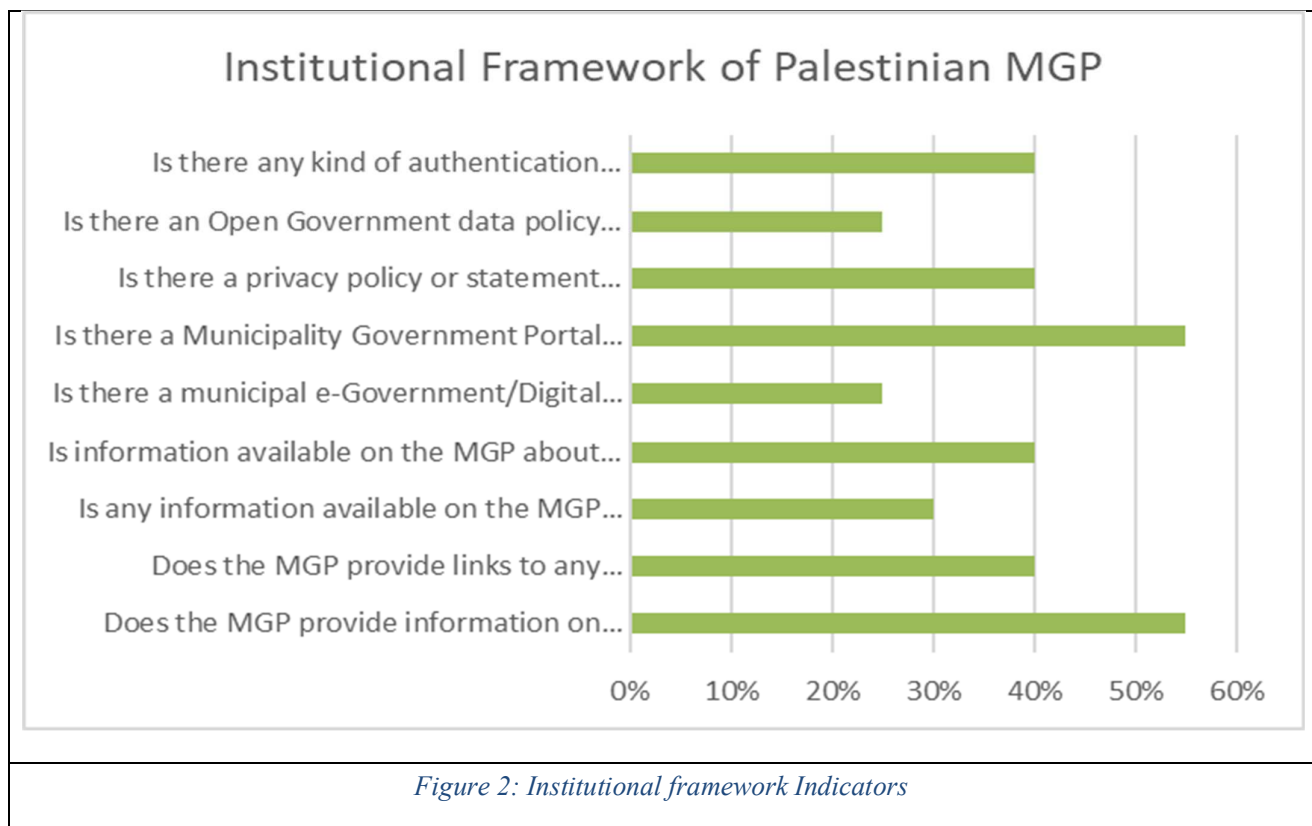
Technology, 18 questions

Content provision, 25 questions

Services provision, 18 questions

Participation and engagement. 17 questions

The answers were normalized by dividing the sum by the number of questions in each criterion, to obtain the index for that criterion. The results were listed in Table 5. However here Figures 1,2,3,4,5 and 6 show results for each category.



Content Provision in MGP

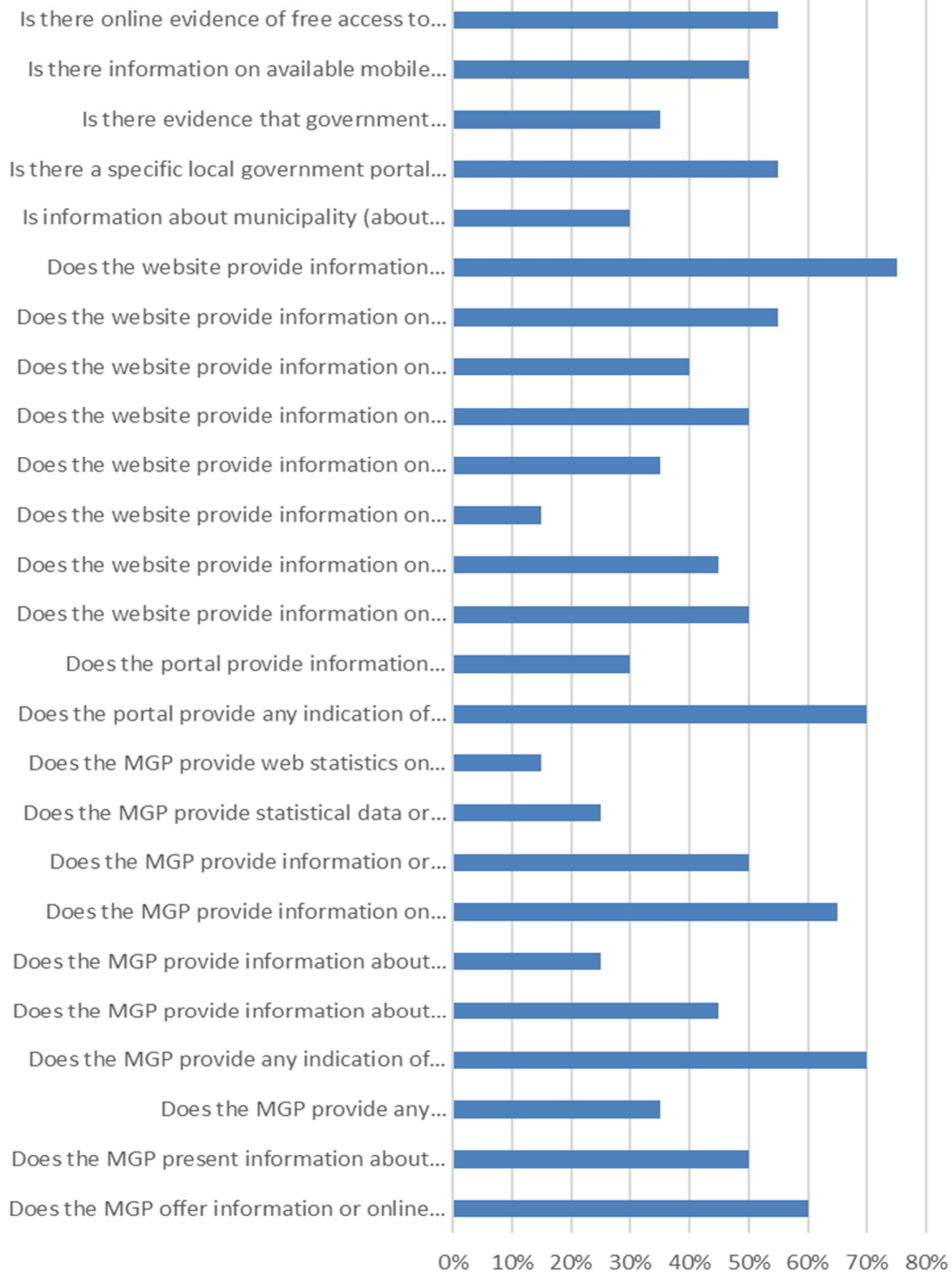


Figure 3: Content provision Indicators

Services Provision of MGP

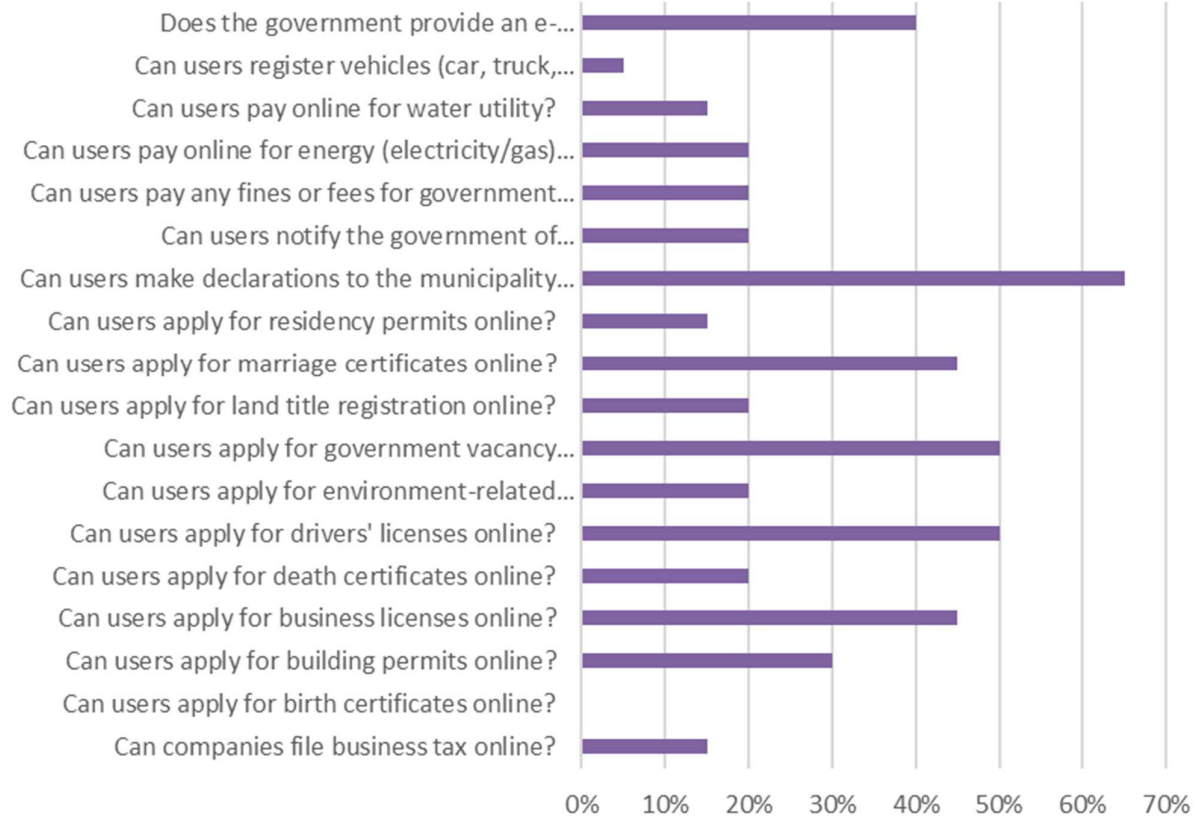


Figure 4: Service provision Indicators

Participation Provision of MGP

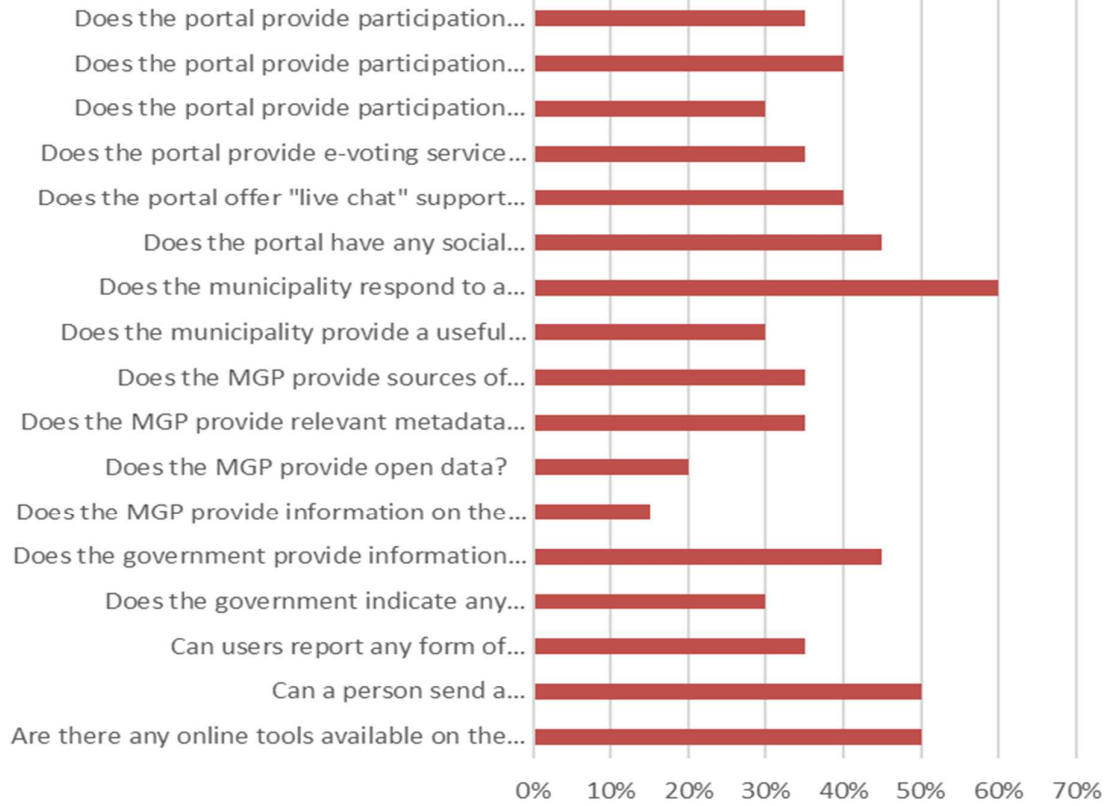


Figure 5: Participation provision indicators

Technology Provision for MGP

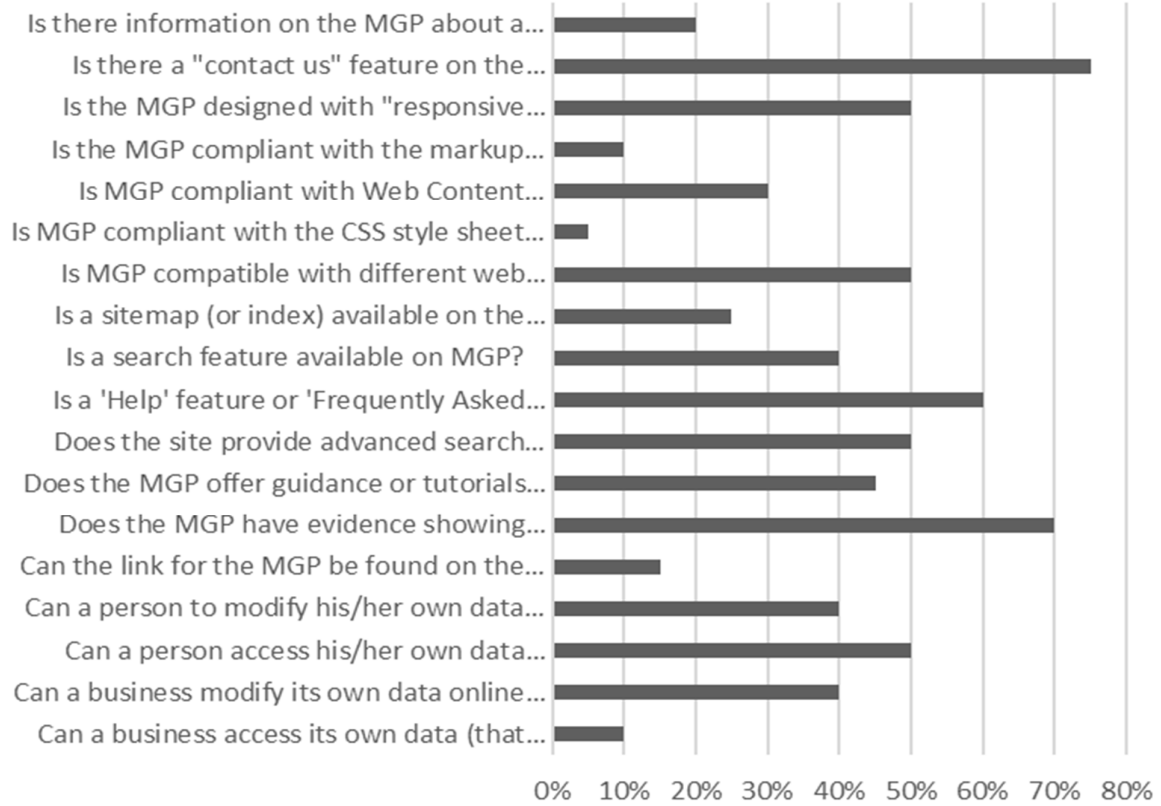


Figure 6: technology provision indicators