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Open Government Data Practices of Municipalities as a Local Public Service: Evidence from Metropolitan Municipalities in Turkey

Bir Yerel Hizmet Olarak Açık Yönetişim Veri Uygulamaları: Türkiye'de Büyükşehir Belediyelerinden Örnekler

Fırat Gündem[1]

Öz

Belediyeler, veriye dayalı yönetişim açısından yerel yönetimler ve toplum arasındaki sivil katılımın en önemli paydaşlarından biridir. Bu nedenle, yerel düzeyde Açık Yönetişim Verileri (bundan sonra OGD olarak anılacaktır) uygulamalarının verimliliğini ölçmek önemlidir. Bu çalışma, Türkiye'de büyükşehir belediyeleri tarafından sunulan yerel hizmetlerin bir parçası olarak OGD uygulamalarının ne ölçüde gerçekleştirildiğini araştırmayı amaçlamaktadır. 2009 yılında Amerika Birleşik Devletleri'nde OGD uygulamaları açısından yerel yönetimlerin desteklenmesi, sadece Amerika Birleşik Devletleri yerel yönetimlerinde değil, dünyanın çeşitli belediyelerinde de önemli değişikliklere neden olmuştur. Bu gelişmeler, yerel makamlar tarafından açıklanan verilerin içeriği hakkında daha fazla tartışmaya neden oldu. Belediyeler ve toplum arasındaki şeffaflık, katılım ve iş birliği tartışmaları OGD uygulamalarına ilgiyi canlı tutsa da Türkiye'deki büyükşehir belediyeleri henüz emekleme aşamasında. Bu nedenle, bu çalışma Türkiye'deki OGD uygulamalarına dair önemli bir boşluğu doldurmaktadır. Halihazırda İstanbul, İzmir, Balıkesir ve Konya Büyükşehir Belediyeleri olmak üzere açık veri portalına sahip sadece dört büyükşehir belediyesi bulunmaktadır. Bu bağlamda, bu çalışma bu belediyelerdeki OGD uygulamalarına daha yakından bakmayı amaçlamaktadır. Sonuçlar, büyükşehir belediyelerinin yetersiz miktarda ve kalitede veri sağlamaktan mustarip olduğunu göstermektedir. Belediyeler, veri formatları ile toplum için potansiyel sonuçlar arasındaki ilişkinin farkında değildir. Bu nedenle sınırlı veri yayınlama politikaları, belediyeler ve yerel halk arasında daha iyi sivil katılıma neden olmamaktadır. Dolayısıyla bu düzensizlikler büyükşehir belediyelerinin şeffaflığını, toplumsal katılımı ve hesap verebilirliğini azaltmaktadır.

Anahtar Kelimeler: Açık Yönetişim Verisi, Açık Veri Portalı, Lisanssız Veri Formatı, Büyükşehir Belediyeleri, Türkiye

ABSTRACT

Municipalities are one of the most important stakeholders of the civic engagement between the local authorities and society in terms of data-based governance. That's why it is important to measure the efficiency of Open Government Data (OGD hereinafter) practices at the local level. This study aims to investigate the extent to which OGD practices as a part of local services provided by metropolitan municipalities in Turkey. Supporting local authorities in terms of the OGD practices in the United States in 2009 has caused significant change not only in local governments of the United States but also in various municipalities all over the world. These caused further debate about the contents of data that has been disclosed by local authorities. Although the debate about the transparency, participation, and collaboration between the municipalities and society kept the interest alive for the OGD practices, there is not much to say for Turkey's metropolitan municipalities. Therefore, this study fills an important gap in OGD practices in Turkey. Currently, there are only four metropolitan municipalities consisting of Istanbul, Izmir, Balikesir, and Konya Metropolitan Municipalities that have open data portals. In that context, this study attempts to take a

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closer look at the OGD applications in those municipalities. Results show that metropolitan municipalities suffer from providing insufficient quantity and quality of data. Municipalities are not aware of the relationship between the data formats and potential outcomes for society. That's why limited data publishing policies do not cause better civic engagement between municipalities and locals. Thus, these disorganizations reduce the metropolitan municipalities' transparency, participation, and accountability.

Keywords: Open Government Data, Open Data Portal, License-free Data Formats, Metropolitan Municipalities, Turkey

INTRODUCTION

In 2009, the president of the United States Barrack Obama signed a memorandum named "Memorandum on Transparency and Open Government". This memorandum was about making government more and more transparent that has never been so far in terms of data. The memorandum was leaning heavily on three pillars: transparency, public participation, and collaboration (Gascó-Hernández, 2014). This memorandum has caused an important change not only in local governments of the United States but also in various municipalities all over the world. Although government structures were different than each other both in the United States and the rest of the world, there were many observable efforts in terms of Open Government Data (OGD) practices by the national and local authorities. The reasons behind the efforts were various. These reasons consisted of both governance, civic engagement, and economic perspectives. Much research stressed the potential contribution of OGD practices on economic opportunities, government transparency, and civic engagement (Zhu & Freeman, 2019). As a result, these efforts created OGD practices more and more visible around the world. What was the starting point of OGD and who were the promoters? In order to answer these questions, we had better take a look at the previous debates from Obama's memorandum.

One of the first legal bases of OGD was initialized by the Electronic Freedom of Information Act Amendments in 1996 in the United States. According to the amendment, all government agencies are mandated to provide official information in electronic forms for public inspection and copying and using new technology in order to increase public access (Kassen, 2013). Then in 2002, E-Government Acts were developed through innovative use of e-government. The E-Government Acts targeted to provide user-friendly access to the government. In 2007, the Open Government Act made important contributions to data gathering and data accessibility. Thus, Obama's memorandum should not be perceived as his decision on his own but rather as a complementary part of some previous regulations on making government more effective in terms of data (McDermott, 2010). Then, the United States started to adopt the regulation that mentioned but the accessibility of data was on a request from citizens and/or businesses. This led to another debate about the way of disclosure and the quality of data that has been released on the open data portals of the municipalities. In order to meet the expectations from open data policies, the data should have certain features. In 2009, a group of civil activists call themselves the Open Government Working Group itemized 8 principles for the features of open data. The data is open when it is 1-complete, 2-primary, 3-timely, 4-accessible, 5- machine-processable, 6-non-discriminatory, 7-non-proprietary, 8-licence-free (Dawes, 2010). Later, scholars and activists defined open data on three principles. First, the data should be freely available and accessible which means a non-proprietary CSV (comma separated values) file format that is free and broadly used. Second, the data should be processable which means that data allow researchers to combine the data set with other data sets, convertible to another output, and communicable. Lastly, data should be made publicly available for universal participation which means that allows users without much technical skills and software knowledge (Thorsby et al., 2017).

When Open Data policies had been deployed in the various institutions in the world, the United Nations released a manual called "Guidelines on Open Government Data for Citizen Engagement". In

that manual, United Nations defined open data as a material that anyone can use for any purpose, without restriction. Also, in that manual, citizen engagement is an essential part of the OGD practices. This refers to the two-way proactive data sharing policies instead of releasing data on a request. One way is releasing data, but the other way is having feedback from users and renovating the data. Also, the manual suggests structured data in machine-readable, linked, and raw formats. Although shiny interfaces could communicate better with users, providing raw data shows the transparency and openness of the data stores that public institutions have at their disposal. Thus, users and scholars may observe whether raw data is compliant with the processed data. Furthermore, United Nations gives certain examples of data sets that may increase civic engagement such as Parliamentary data, Public expenditure, Budgeting data, Environmental data, Demographic data, Socio-economic indicators, Healthcare data, Geographical data, Local transportation data, etc. (Management, 2013).

When it comes to Turkey, OGD practices are in their infancy. One of the main reasons for lagging is legal uncertainties. The national statistic body, named Turkstat is responsible for releasing data by law both at the national and local levels. On the other hand, Turkstat mostly releases macro-level data. Although Turkstat has micro-level data, releasing those are upon a request, mostly not free, and the data is lacking from spatial levels. Also, researchers are allowed to reach out the most detailed micro-level data but processing and analyzing them are only available in Turkstat Data Research Centers in specific Turkstat institutions. This means that researchers should be in those research centers in person. Even in that case, researchers are neither allowed to copy data nor allowed to use their own software for further analysis. Obviously, these restrictions make Turkstat out of OGD concepts.

Nevertheless, Turkey had initialized some legislation in order to make its own institutions adapt to the OGD process. Turkey has initialized some regulations named "On Right of Information Acquirement" in 2003 and "Personal Data Protection Law" in 2016. These regulations framed the concepts for accessibility to some services such as e-government applications. However, these were just one part of the OGD practices which regulate the access of citizens to bureaucratic transactions. Moreover, Turkey has established an important Digital Transformation Office on various topics such as Digital Turkey, Artificial Intelligence, Big Data, Cyber Security, etc. Open Data is one of the projects that has been conducted by the Digital Transformation Office but there is no concrete outcome for the OGD practices yet. When the webpage of the Open Data project of the Digital Transformation Office has been checked, there is no data or link to any data portal. This may make researchers wonder about the international connections for OGD that the Turkish government participated in. Turkey was one of the parts of Open Government Partnership which has been found by the government leaders and civil society advocates to promote transparent, participatory, inclusive, and accountable governance in 2011. Although Turkey has presented a National Action Plan in 2014, then it has been designated as inactive because of having failed to deliver National Action Plan in 2016. Since then, the Turkish government seems quite inactive although the previous attempts.

Since the Turkish government seems inactive so far in terms of OGD, one research question rises about the metropolitan municipalities' OGD practices. What are the main drivers of OGD practices at the local level and how much are those prevalent? And what about the extent and quality of the data that municipalities posted? Among 1390 municipalities, there are only 7 municipalities that are running open data portals. Four of them are metropolitan municipalities (Istanbul Metropolitan Municipality, Izmir Metropolitan Municipality, Konya Metropolitan Municipality, and Balikesir Metropolitan Municipality) and three of them are sub-province municipalities (Sahinbey Municipality located in Gaziantep and Küçükçekmece and Beyoğlu Municipalities located in Istanbul).

On one hand, releasing data sometimes might be thought of a subject to the politics of the incumbent when it pertains to national issues such as the number of deaths during the Covid-19 crises or inflation rates recently. That's why political restrictions might be one of the explanatory factors that reveal the reluctance of the local municipalities. Although political restrictions may play a role, it seems it is not the only explanatory factor. For example, when it is compared with the European peer municipalities, there is a significant time lag in order to realize OGD policies between Turkish municipalities and European municipalities. Then, it seems the main reason is lacking regulatory legislation from top to the bottom. Today, the central government's performance is not complementary in terms of OGD. Even, it might not be wrong if one thinks that the Turkish government structure is not user-friendly in terms of OGD. For example, Open Data Barometer has been ranked Turkey 26th out of 30 countries consisting of G-20 (minus EU), Latin American, Middle Eastern, and Asian in terms of open data. There is the same result in the rank of the Global Open Data Index for Turkey. Turkey is ranked 45th among 94 other countries in terms of open data.

All these even make the Turkish case more interesting. On one hand, a restrictive and reluctant national authority, on the other hand only a few metropolitan municipalities that run open data portals. How do they work? Are these portals having the expected deliveries from open data portals? Are they following the consensus about the features of the open data or just posting some irregular data onto their web pages? And most importantly, are they becoming more transparent, participative, and collaborative? The paper will make an attempt to answer these questions. The paper is structured as follows. In the second section, we will focus to understand the size and deliveries of the OGD policies with various examples from the world. In the third section, we will analyze the OGD practices of four metropolitan municipalities as Istanbul, Izmir, Konya, and Balikesir. And section four will discuss and conclude.

2- The Institutional Applications of OGD

As it has been stated, there are many OGD practices all over the world. In order to understand the extent to which OGD applications, Figure 1 is created.

Figure 1: Number of OGD in the World

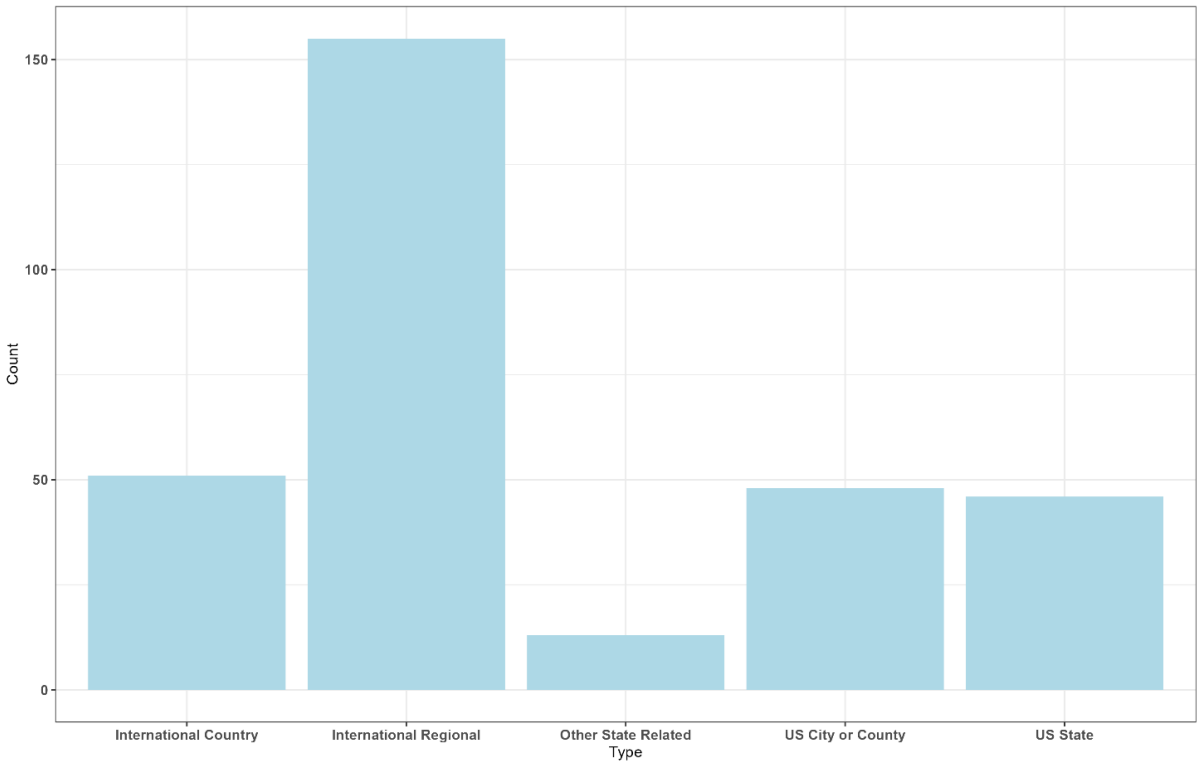
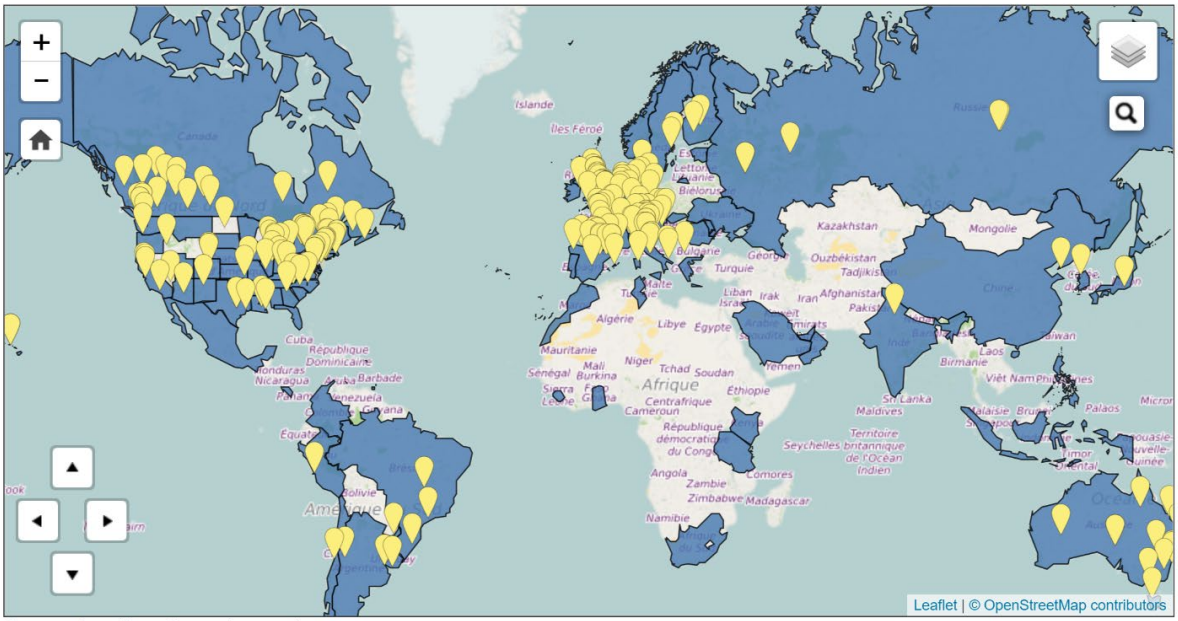


Figure 1 shows the number of OGD applications in the world. According to Figure 1, there are 46 open data portals in the US States, 48 open data portals in US Cities and Counties, 51 open data portals in international (mostly European) countries that spread out to the world, and 155 open data portals in international regions. Figure 2 visualizes these data portals spatially.

Figure 2: Map Representation of Open Data Portals



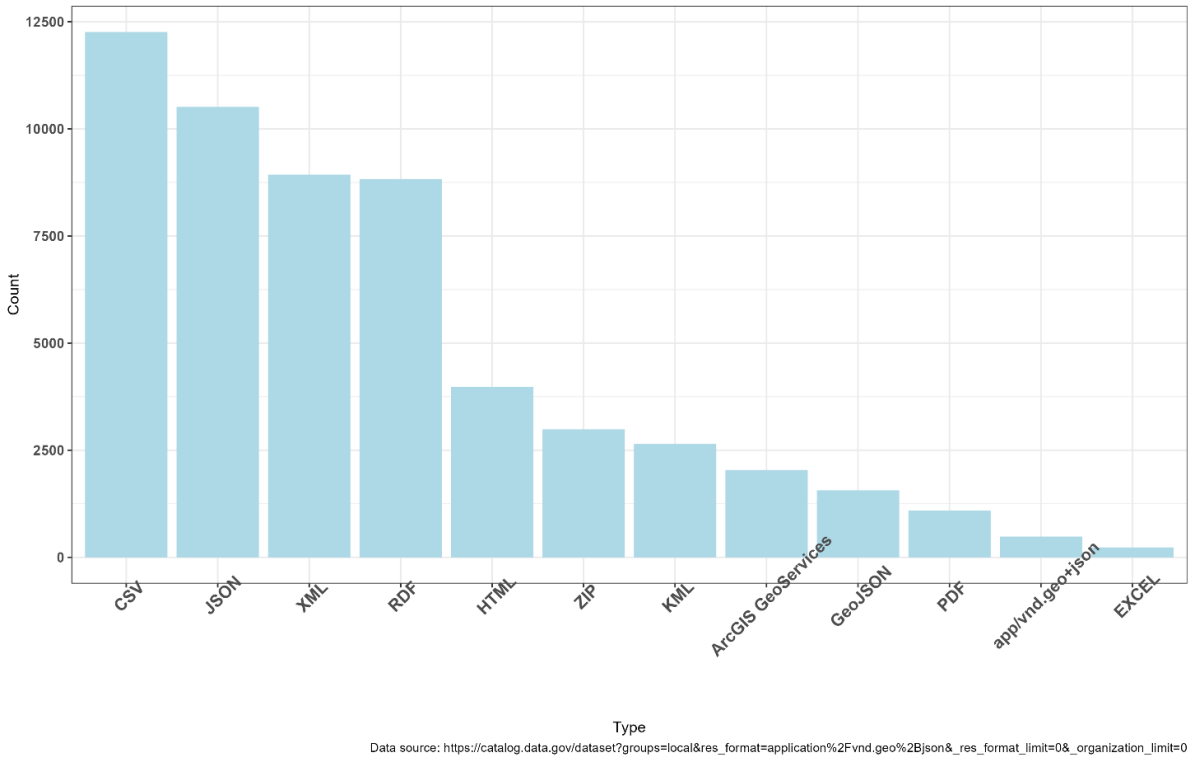
Resource: https://www.data.gov/open-gov/

In Figure 2, darker areas show the countries that currently are a part of OGD while yellow dots show their spatial distribution. According to the map, OGD practices are clustered mostly in developed countries such as the United States, Canada, Australia, Europa, etc. The lighter areas show the

countries that have not participated in OGD practices. Although there are 4 open data portals that belong to the metropolitan municipalities, Turkey seems not a part of OGD applications.

When we take a closer look at the United States OGD applications, there are 16.770 data sets so far that have been posted by both, national states, cities, and counties. The biggest contributions to these data sets are coming through the City of New York (3193), the City of Austin (1360), the State of Washington (1257), the State of Maryland (1127) and the City of Chicago (858). As mentioned, the type of the data sets is important as well as the quantity of data. The data type is quietly related to civil collaboration and civic engagement. It may give a piece of mind to check the data types that are posted on the web portals in the USA. Figure 3 shows the frequency of data types.

Figure 3: Frequencies of Data Types in US OGD



Data source: https://catalog.data.gov/dataset?groups=local&res_format=application%2Fvnd.geo%2Bjson&_res_format_limit=0&_organization_limit=0

As aforementioned, the data types are very important to achieve OGD goals. As it can be seen from Figure 3 that great numbers of the data sets consist of free formats such as CSV, JSON, XML, RDF, etc. Moreover, the data formats in the USA allow researchers to do spatial analysis as well. Spatial data formats such as ArcGIS GeoServices, GeoJSON are in the top ten data formats. These file formats are non-proprietary, ready-to-use, and processable formats and are important to evaluate data portals as open and free (Veljković et al., 2014). That's why evaluating OGD practices in the United States as open will not be wrong. But it might not be the case for Europe. Petychakis et al (2014) analyzed the 27 European countries' working ministry websites with publicly available datasets and found that only 4% of the data sets are in CSV formats. According to their findings, most of the data sets are stored in PDF (%38) and HTML (%28) formats which are not ready-to-use formats. Their results confirm that European countries are far behind the USA in terms of open data (Petychakis et al., 2014).

OGD practices also pertain to Big Data research. Big Data is basically a large amount of data that is often impossible to store to the local machines because of Volume, Variety, and Velocity. Also, Big Data analytics mostly rely on open data (Hardy & Maurushat, 2017). Many scholars suggest smart usage of Big Data in order to promote OGD outcomes such as real-time solutions to challenges in

agriculture, health, transportation, etc. (Bertot et al., 2014). Big Data as an OGD practice also premises positive impact on the functioning of the cities such as significant effects on economic growth and cost savings. Ali and Titah (2021) report that the value of Big Data for the European public sector is approximately 250 billion US Dollars per year (Ali and Titah, 2021).

Meanwhile, analyzing Turkey's place in terms of OGD is very important. The realization of the OGD practices promises a significant impact from the effective government applications to the new, technology intense economic values in Turkey. Thus, the next section will focus on Turkey's OGD practices in four metropolitan municipalities such as Istanbul, Izmir, Konya, and Balikesir.

3- OGD Practices in Turkish Metropolitan Municipalities

As mentioned, the Metropolitan Municipalities that are in the progress through OGD are Istanbul, Izmir, Konya, and Balikesir Metropolitan Municipalities. Since there is no central pressure on these metropolitan municipalities to the realization of OGD practices, we may think their efforts to maintain data portals are on a voluntary basis. Taking into account a political conflict between two of these metropolitan municipalities (Istanbul and Izmir) and the incumbent, one might think that this is the main motivation for maintaining open data portals for those where metropolitan municipalities that under the rule of the main opposition party, the CHP. But this is not the case for Balikesir and Konya Metropolitan Municipalities. Although the others are run by the main opposition party since the last local elections, Konya and Balikesir Metropolitan Municipalities are currently run by the incumbent, the AKP.

3.1 – Istanbul Metropolitan Municipality

Open Data Portal (ODP, hereinafter) of the Istanbul Metropolitan Municipality (IMM) has become active since January 2020. In comparison to peer Metropolitan Municipalities in Europe and USA, it is quite young. According to the announcements tab of the website of the data portal, there are 195 data sets. Also, there is a data visualization about the total number of data sets that have been posted as a time series which may cause a wrong interpretation.

Figure 4: Total Number of Datasets

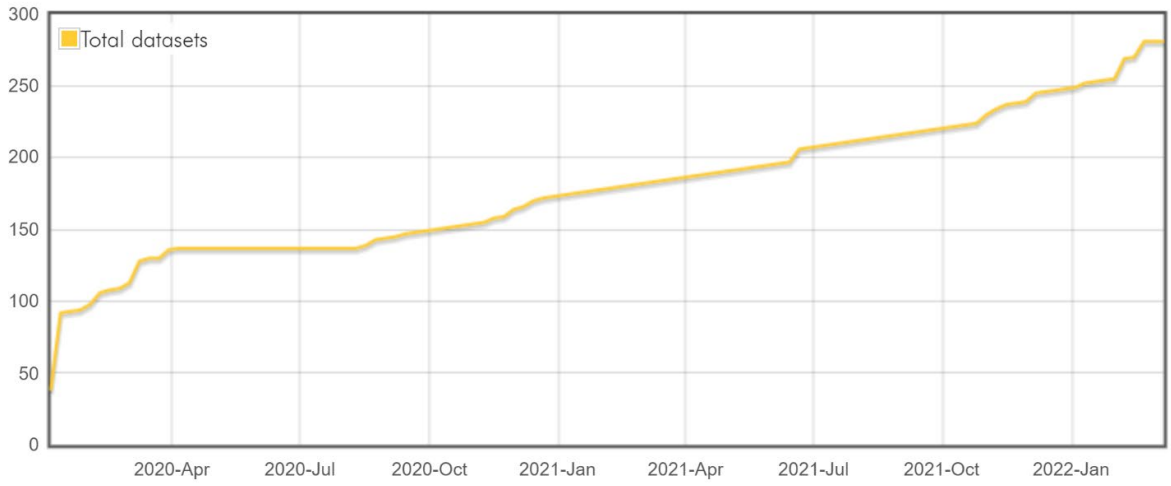
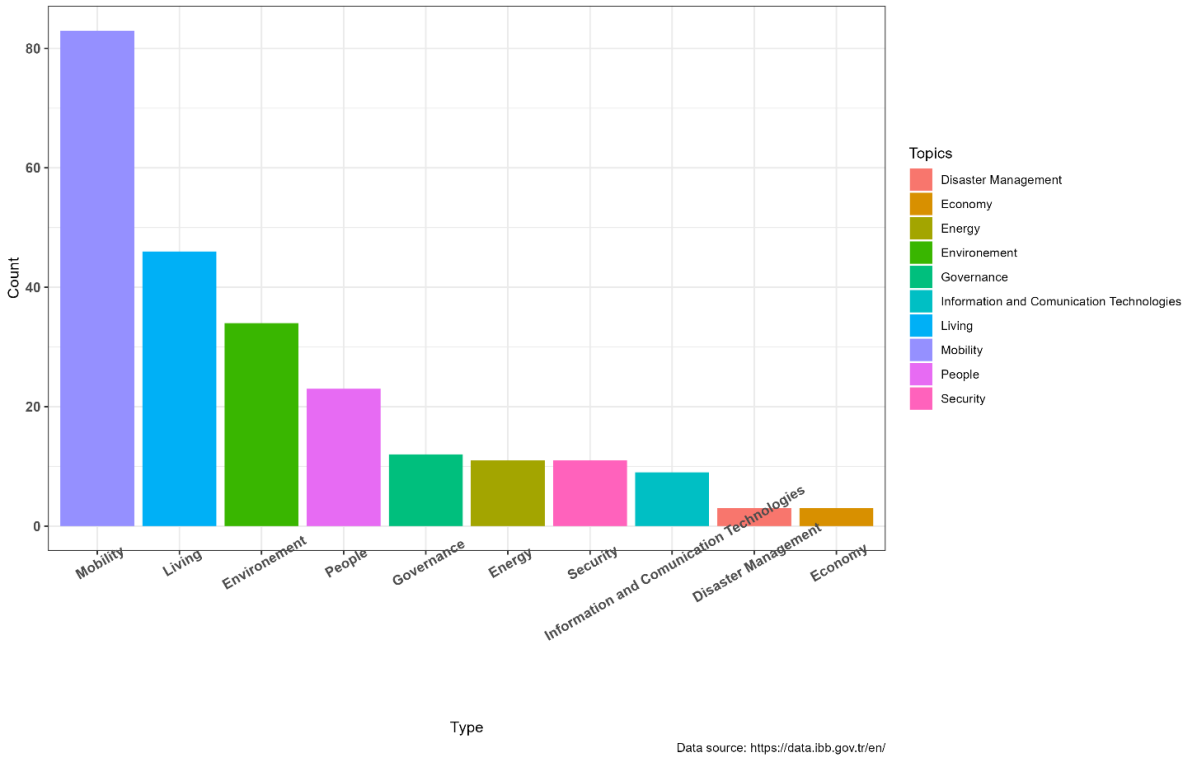


Figure 4 is a time plot that shows the number of data sets that have been posted on the IMM's website since its foundation. However, this chart is obviously leading to wrong interpretations about the number of data sets. Figure 4 shows 250 data sets as of January 2022 but ODP notices users that there

are 195 data sets. This is a result of duplication of specific data sets. That's why researchers should be careful when using this information.

When it comes to the topics about data sets, there are 10 main data topics such as mobility, Living, Environment, People, Governance, Energy, Security, International and Communication Technologies, Disaster Management, Economy. Figure 5 shows the number of topic breakdowns of data sets at the ODP.

Figure 5: Istanbul Metropolitan Municipality Data Topics



Data source: https://data.ibb.gov.tr/en/

As it can be seen from Figure 5, the biggest share of the data set is Mobility. It makes sense because Istanbul is one of the most crowded cities in the world and the most populated city of Turkey. Most likely, people use Mobility information to reach out knowledge about traffic via data sets such as daily vehicle count, traffic density, maximum journeys of the rail system, etc. Moreover, one of the expected outcomes of OGD is related to economic outcomes. However, there are only three data sets under the Economy topic in OPD of IMM. This restricts users' potential contributions to the economy via OGD practices. Also, the data formats are very important to collaborate with users. In order to frame these data posting activities in OGD practices, we need to understand the quality of the data formats. To do this Figure 6 is created.

Figure 6: Istanbul Metropolitan Municipalty Data Topics

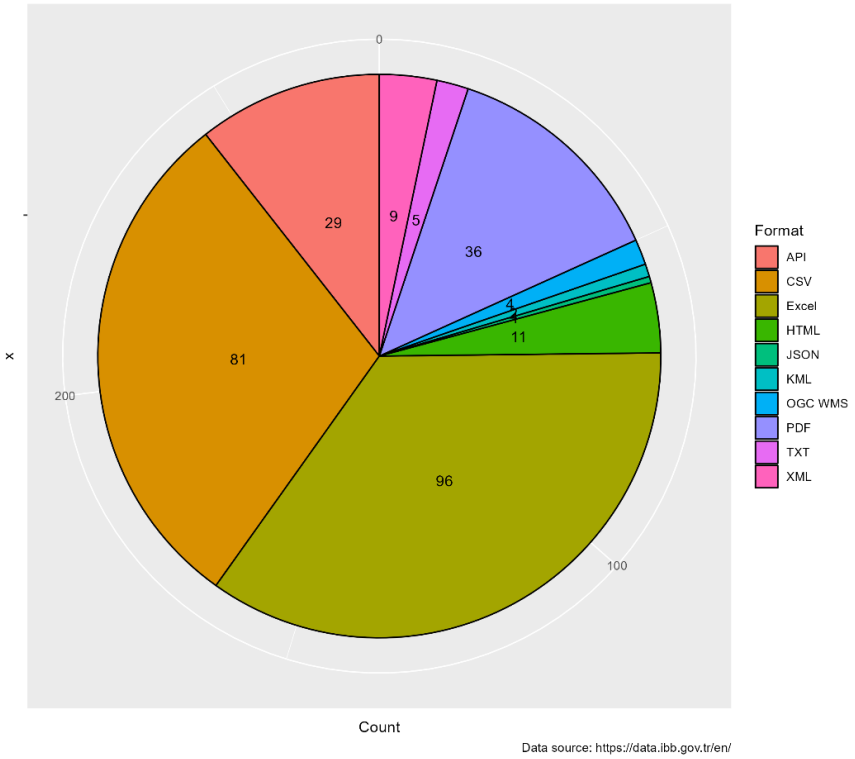
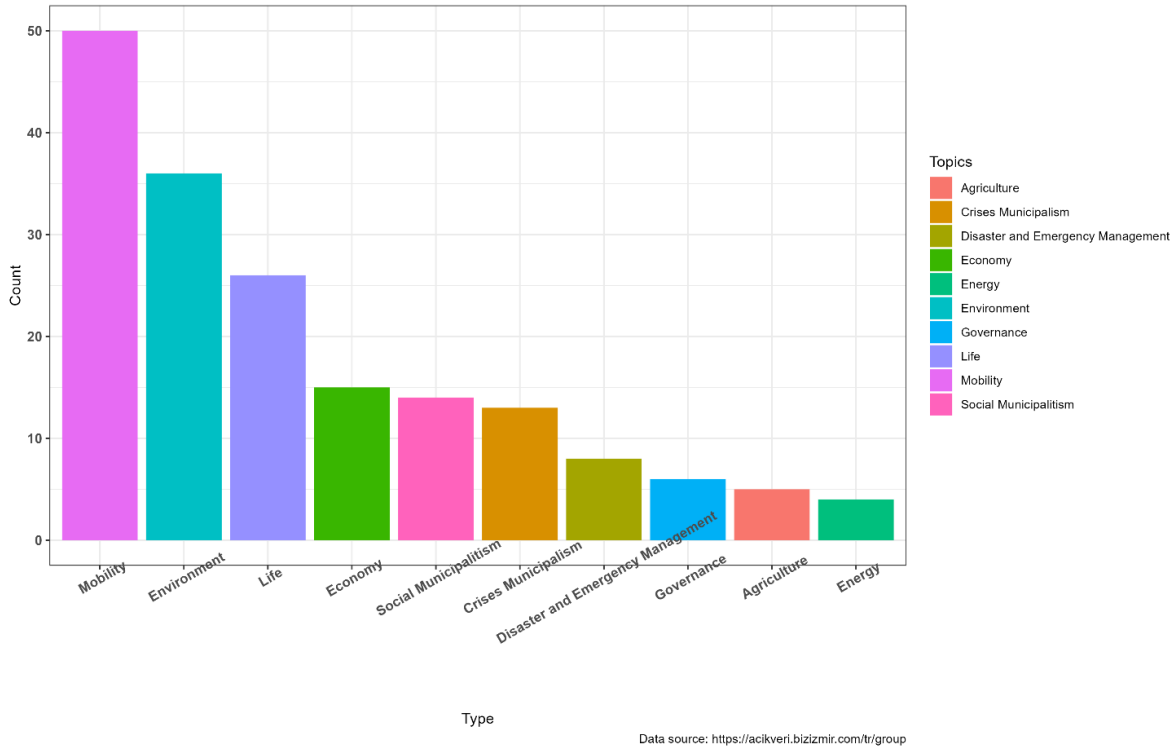


Figure 6 shows the number of data formats as an indicator of being open and free. As it can be seen from Figure 6, the biggest share of the data sets is in Excel (96) format. Excel is a licensed format and not free. Although free and easy-to-use formats are ranked as second and third such as CSV (81) and API (29) respectively, the number of non-readable formats such as PDF (36) and HTML (11) are pretty high. Moreover, there are no spatial data formats such as GeoJSON, Esri Shapefile at all. Thus, spatial data analysts should find indirect ways to merge these data formats with spatial components. As mentioned, OGD practices are not only releasing data but also making data license-free and available online without any restriction. Thus, we might say the posted data sets are not helpful yet to define IMM's activities as OGD practices.

3.2 – Izmir Metropolitan Municipality

Izmir Metropolitan Municipality's (IzMM, hereinafter) ODP is founded in January 2021. Although it is only one year that past since the foundation, it contains 150 data sets with ten main topics. The data topics are Disaster and Emergency Management, Mobility, Environment, Energy, Living, Social Municipal Work, Governance, Economics, Agriculture, and Crises Municipal Work. Figure 7 visualizes the number of data sets per topic.

Figure 7: Izmir Metropolitan Municipalty Data Topics



Data source: https://acikveri.bizizmir.com/tr/group

In a similar fashion, the ODP of IzMM's has frequently the same topics as IMM. The different topics are Agriculture, Crises, and Social Municipality Work. The contents of those topics make important differences though. Agriculture topics, the data sets consist of "Vegetable and Fruit Prices", "Agricultural Subsidies", "Ovine Subsidies", "Apiculture Subsidies", and "Animal Drinking Water Ponds". These data sets contain information on the subsidies given to the farmers from IzMM. Since these data sets show the relationship between farmers and IzMM, it might be used to measure whether OGD purposes such as civic engagement and collaboration have been fulfilled at the local level in Izmir or not. Also, "Vegetable and Fruit Prices" is an up-to-date data set that encapsulates daily prices of bids and asks for vegetables and fruits since 2006. Therefore, the "Vegetable and Fruit Prices" data set can be used for calculating local food prices as an important indicator of local inflation. However, there are many irregularities in this data. First, the data suffer from the wrong format for the date column that data has. It is formatted Y/M/D for the first 11-12 days of the month, but then it switches to the Y/D/M. This causes a certain amount of waste of time. Second, the data is totally corrupted for 2010-2011-2012-2017-2019 years. There are no significant figures in data sets for those years. These lacking give a piece of mind about the qualification of OGD practices in IzMM.

The data formats in the ODP of IzMM show different patterns than in Istanbul. Most of the data sets are in multiple data formats such as CSV, JSON, API, PDF, etc. In order to see the details on data formats, Figure 8 is created.

Figure 8: Izmir Metropolitan Municipalty Data Formats

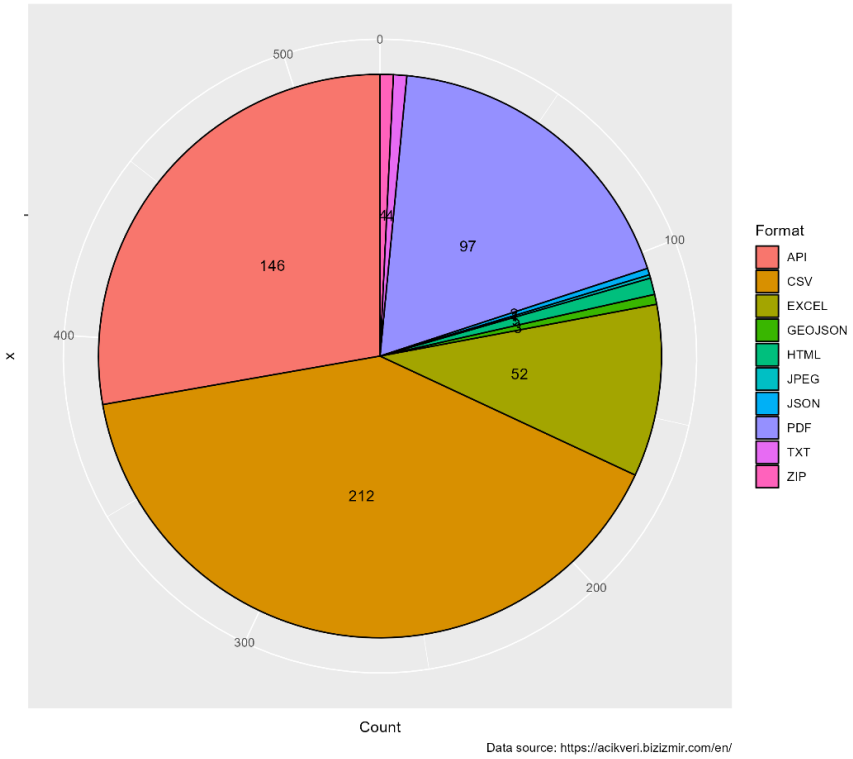
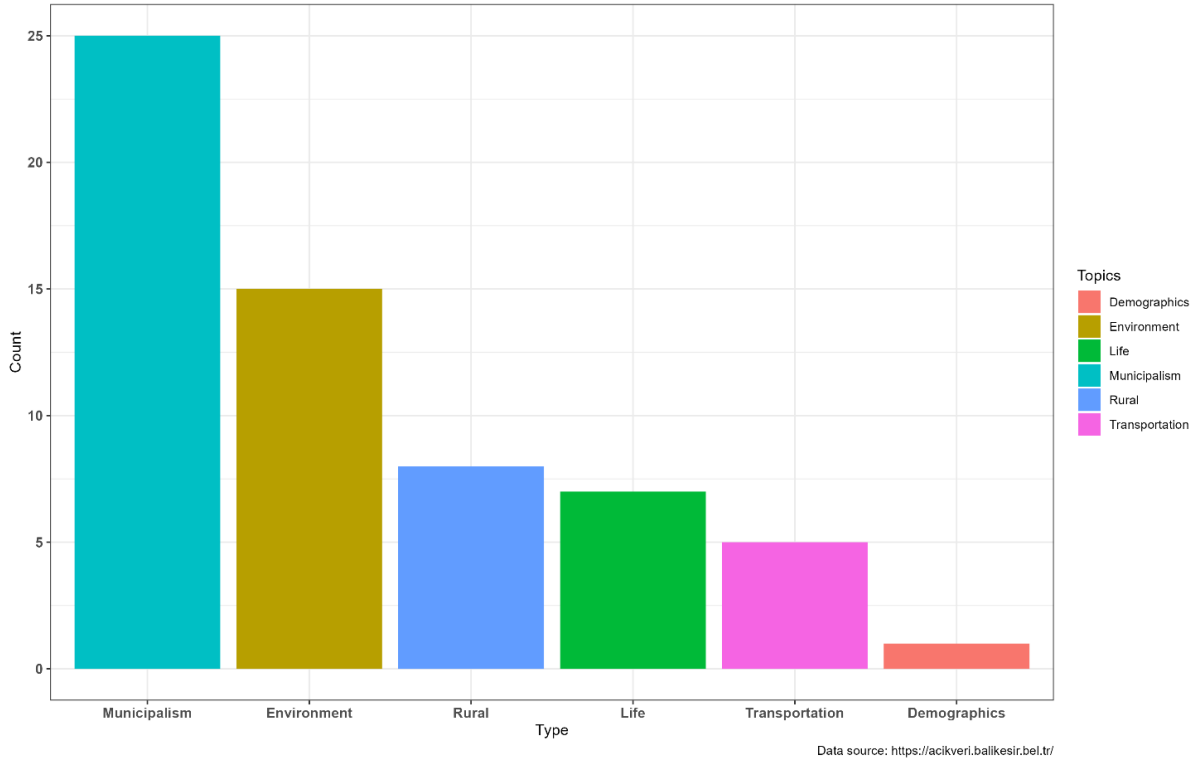


Figure 8 shows the distribution of data formats that are posted at the ODP of IzMM. The results differ from the IMM's results. Since IzMM is following multiple formats posting, the number of easy-to-use, non-proprietary, and machine-processable data sets are quite higher than the IMM's data sets. This makes IzMM more prone to OGD practices. Also, the number of APIs is way more than the ones in OPD of IMM. APIs allow experts to communicate with data via free software and cause more free applications with open data. Thus, we may think IzMM's OPD is in communication more with the data experts. However, IzMM's data portal suffers from the absence of spatial data format. Similarly, with IMM, the number of GeoJSON formats is just 4. This reduces the number of spatial analyses which is quite required for municipalities.

3.3 – Balikesir Metropolitan Municipality

Balikesir Metropolitan Municipality (BMM, hereinafter) has been activated in July 2020. Although BMM is smaller than IzMM in terms of budget and population that are covered, BMM made an earlier attempt to establish ODP than the IzMM. However, the number of data sets that BMM posted is lower than the other metropolitan municipalities. There are 61 data sets as a sum. Also, BMM's OPD provides user metrics. According to the website of BMM, user metrics are 6153 downloads, 299 thousand data views, and 1.6 billion total visits. These numbers are apriori information about the prone of BMM for OGD practices. There are 6 data topics as Environment, Transportation, Life, demographics, Rural, and Municipalism. Figure 9 shows the number of data sets per topic.

Figure 9: Balikesir Metropolitan Municipalty Data Topics

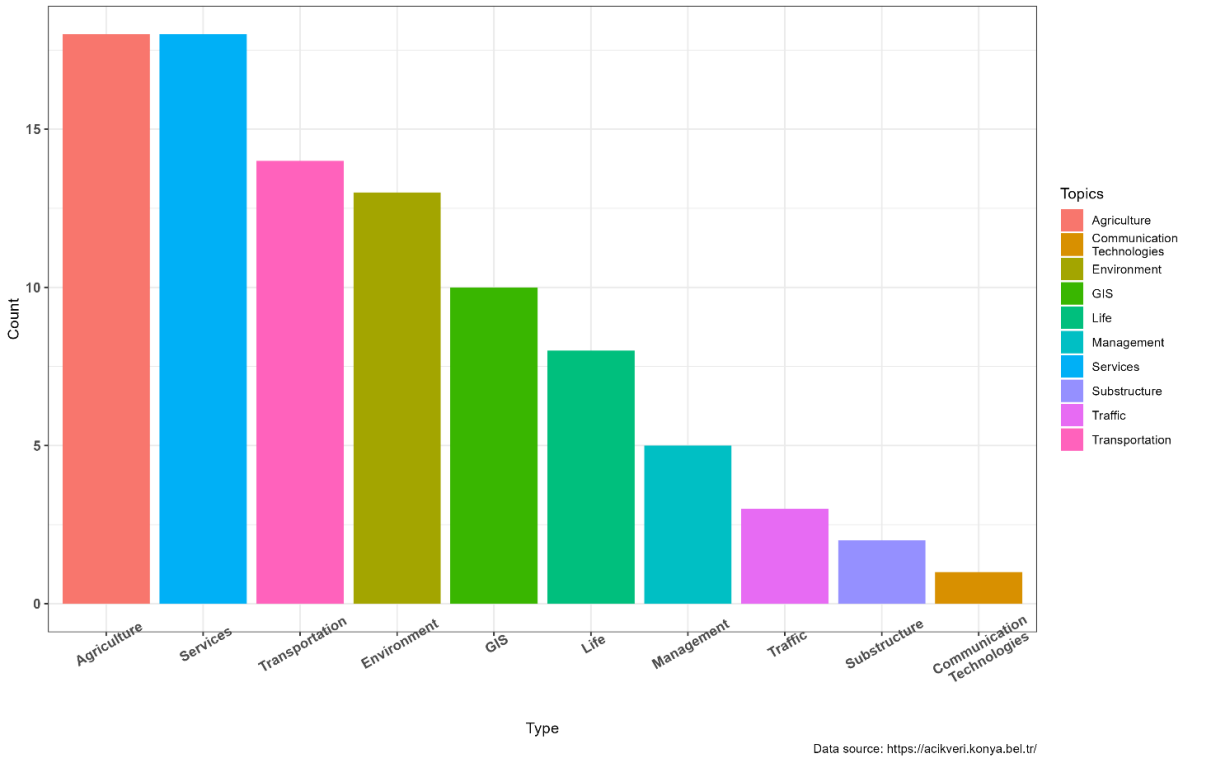


The highest number of data sets are in the Municipalism topic. This topic includes “Vegetables Prices” and “Fish Prices” in various formats such as CSV, Excel, Pdf, JSON, etc. but the data sets are broken. Although it is easy to download them, they are not in easy-to-use forms. In a similar fashion, BMM posts the data sets in various formats as well. This method had made IzMM OPD more compatible with OGD practices. When the OPD of BMM is checked, the number of data formats is constant and the same for all the data sets. For example, under the Environment topic, there are 15 data sets, and all data sets are provided in CSV, Excel, JSON, and PDF formats. Thus, the total data format is equal to four times that of the number of data sets. Thus, the number of each data format is 61. Although it might be seen as a part of providing multiple data formats, it reduces the OGD practices since Excel is not license-free and PDF is not a machine-processable format. Those data formats are equal to 50% of all the data formats in BMM and not appropriate for the OGD practices. Also, BMM has no spatial data formats such as GeoJSON, Esri Shape File, etc.

3.4 – Konya Metropolitan Municipality

The open data portal of Konya Metropolitan Municipality (KMM) is the newest ODP. It has activated in October 2021. From the user metrics that are posted on the website, we learn that the number of downloads is 4809, the number of data views is 14459, and the number of total visitors is 48901. It has 95 data sets as a sum. The topics are Substructure, Geographical Information Systems (GIS), Services, Communication Technologies, Traffic, Transportation, Life, Management, Environment, and Agriculture. Figure 10 shows the number of data sets per topic.

Figure 10: Konya Metropolitan Municipalty Data Topics



The highest number of data sets are equally in Agriculture and Services topics. Apart from the other metropolitan municipalities, KMM is the only one where GIS data sets exist. As a result of the GIS topic, we should expect to see GeoJSON, Esri Shapefile, etc. data formats. When it is checked out, it is easy to reach satisfactory spatial data formats in GeoJSON format. KMM is the only ODP so far that allows users to reach out to the neighborhood and sub-province maps of the city via well-documented GeoJSON files. This makes KMM more collaborative with users in terms of OGD practices. Furthermore, KMM data sets only consist of CSV files other than the GIS topic. Although it seems to lack diversity in terms of format, CSV files meet all the necessary features that OGD requires. CSV files are easy-to-use, machine-processable, and non-proprietary. All these make KMM is quite compliant with OGD practices. The only downside of the KMM is the lower number of data sets. When it's taking into account that the ODP of KMM has just been founded for 3 months, the open data portal of the Konya Metropolitan Municipality is one of the promising data portals among metropolitan municipalities.

CONCLUSION:

One of the main goals of this paper is to evaluate the adaptation process of the metropolitan municipalities in Turkey to the Open Government Data policies. Open Government Data practices basically consist of a strategy that is making the vast amount of data publicly available that hasn't been seen so far. With that strategy, central governments targeted to create great externalities for the society and benefits in terms of transparency, public participation, and collaboration. In the introduction section, the general framework for the OGD has been discussed and the potential gains are also discussed in the second section. Although it has started in the USA, then many developed countries in Europe, and countries such as Canada, Australia, etc. tried to take the necessary steps. Recently, a large amount of data is ubiquitous in those countries and the OGD practices are the main part of this result.

Currently, Turkey seems ambivalent in terms of OGD. The sum of data sets in non-proprietary data formats provided by the four metropolitan municipalities is lower than a quarter of the number of license-free data sets in the USA. Although there are some important steps that have been taken in the past, all of them are incomplete. Turkey has failed to maintain its duties in Open Government Partnership which is one of the leading international institutions consisting of 78 countries and 76 local jurisdictions. Turkey has established Digital Transformation Office and defined open data portals, but its webpage contains some frozen information since 2018. There is no concrete information for the open data portal. One of the most important indicators of this phenomenon, the planned internet domain address for open data portals named "veri.gov.tr" diverts users to the web page of Digital Transformation Office. This creates an important vicious circle for the OGD practices in Turkey.

Furthermore, most of the metropole municipalities are indifferent to the open data portals. It is quite clear that this is a likely outcome when OGD is out of the central government's interest. But still, there are only four metropolitan municipalities that run open data portals out of thirty metropolitan municipalities. It is apparent that Istanbul, Izmir, Balikesir, and Konya Metropolitan Municipalities are run these open data portals in their own interest. As far as we know, they are not in any international networks in terms of OGD. This leads to their efforts being appreciated. Since these municipalities are suffering from lacking institutional collaboration, they are gradually adapting to the new data strategies. That's why there are no standards in terms of data that has been posted.

Four Metropolitan Municipalities are posting data on similar topics. However, the topics in IMM and IzMM are more similar than the BMM and KMM. It is known that Istanbul and Izmir Metropolitan Municipalities are older and more experienced in terms of local services. The number of data sets is quite higher in these municipalities as well. However, most of their data formats are not serving the OGD goals. An important amount of their data is in non-processible formats. Thus, this makes those metropolitan municipalities are far away from the expected outcomes of OGD in terms of transparency, public participation, and collaboration. BMM and KMM have less amount of data in comparison to the IMM and IzMM. But their perspectives are satisfactory in terms of the data feature. First, all data sets are in CSV formats both BMM and KMM. Second, KMM is the only metropolitan municipality that shares spatial data format and maps. For example, it is impossible to reach out of the detailed city maps from the websites of the IMM and IzMM. This is very important to improve collaboration between municipalities and public participation.

Although there is some lacking, the four metropolitan municipalities' practices are in their infancy. In the absence of the central government, this makes sense. However, the metropolitan municipalities should work with a professional cadre in order to maximize transparency, public participation, and collaboration between the institution and citizens. Thus, they can reach out the maximum utilization from open data policies.

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