Different perceptions, different open government strategies: The case of local Mexican public managers

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Abstract. Open government has become a research trend among e-government scholars around the world. However, most research in this field has focused on national policies and the implementation thereof. Typically, this is related to Open Government (OG) ecosystems, data, policies and models, yet very little attention has been paid to the most basic level: the municipal/local level. The purpose of this research paper is to fill this gap. We based our research on an instrument for the assessment of OG priorities in Spanish municipalities (Gómez, Criado, & Gil-Garcia, 2017a). This instrument for assessment was adapted to Mexican municipalities. In so doing, we surveyed 67 cases of Mexican public officials working on OG or in transparency offices in municipalities across Mexico during 2017. This paper reports the findings of this exploratory research, grouping concepts of perception, and analyzing four elements of OG: 1. Open Government; 2. Transparency; 3. Citizen Participation and 4. Open Data. Going forward, we used factor analysis to group concepts and identify two principal perspectives for addressing OG policy implementation in local governments, one oriented at fostering technological innovation, and another at promoting democratic values of co-responsibility. Broadly, we discovered there is some emphasis on democratic values and some on technological innovation. We also found varying levels of knowledge on this topic in Mexican municipalities. Another finding is that OG policies are not well-defined due to a lack of resources for the promotion of genuine transparency, participation, and collaborative actions.

Keywords: Open government, transparency, citizen participation, open data

Key points for practitioners:
- There are two main visions to understand Open Government from the perspectives of public managers in Mexico: a) Democratic values and co-responsibility, and b) Technological Innovation.
- Transparency and Access to Information are the main concepts related to Open Government, according to Mexican public managers.
- Open Government concept is still ambiguous among the public managers in Mexican municipalities.

1. Introduction

Most scholars assume that OG is being adopted and implemented with the same political objectives and practical tools elsewhere; however, we assume that differences exist in these processes. The main

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purpose of this research is to provide evidence for the conditions of municipal public managers who deal with open government (OG) policies, and their (different?) perceptions of what OG is, and how it should be implemented in their cities. This is important in order to have a common reference point to understand the barriers, obstacles and challenges that local authorities face when adapting to OG in their local political contexts. In order to achieve this goal, we conducted a national survey in Mexico, assessing different perspectives of this topic among municipal public managers.

OG has become a global movement that has been rapidly expanded in the last decade. Governments around the world have become members of the Open Government Partnership (OGP), and today, 70 countries, and 20 sub-national authorities, have made over 2,500 commitments in this direction (Piotrowski, 2017; Bartoli & Blatrix, 2018). Hence, the justification of the importance of this study is manifold. On the one hand, the study of OG as a research topic is in its infancy. The corpus of research is currently growing, as is the quantity of data on the different dimensions and areas related to this notion from the perspective of Public Administration. Another argument to support the interest of this article is the need to understand the perception of public managers in charge of OG initiatives. Hence, in recent years a number of initiatives have been adopted in the name of OG. However, it is not clear if public officials managing those public actions have a shared notion of their implications. This is a key aspect for the identification of the features employed by public policy stakeholders working in the field of OG within public sector organizations. Besides, this study is based on empirical and unpublished data collected from a research project on the local level of government. Last but not least, analysis of the Mexican case provides added value to this article, as it is one of the countries with the longest traditions in the implementation of transparency policies. At the same time, Mexico is one of the co-founders of the Open Government Partnership.

Even though this global initiative has gained national government/state support, it lags behind most of the work done at the lower levels of public administration, such as local governments and, in particular, municipal governments. Very little research has focused on this matter (Routzouni et al., 2019; Muñoz et al., 2019; Corrêa & da Silva, 2014). For example, research conducted in over 20 municipalities in Brazil was conducted in order to understand how government became more open. This investigation revealed that online portals are an effective implementation of OGP principles. A similar study by Ganapati and Reddick (2014) on U.S. municipal governments that adopted open-government initiatives analyzes the perception of the chief administrative officers (CAOs) in three dimensions: transparency, participation and collaboration. These authors found that CAOs' perceptions of OG have an important impact on their agendas, and found more positive results in terms of collaboration than in terms of participation and transparency.

Also, certain scholars have studied open government at the local level from the perspective of open data. Among these scholars, we highlight the studies of Grimmelikhuijsen and Feeney, 2017; Schmidthuber et al., 2018, Afful-Dadzie and Afful-Dadzie, 2018; and Valenzuela and Ochoa, 2018. Particularly et al. (2014) investigate Spanish municipalities and use an assessment tool developed by the Organization for Economic Cooperation and Development (OECD) for the classification of groups of municipalities according to their performance in terms of the implementation of OG practices. Tejedo-Romero and Araujo (2018) found that municipal governments ruled by more progressive ideologies disclose more information and are more transparent. They also discovered that information is more freely disclosed when regional and municipal governments share the same ideology. The topic of OG ecosystems deals with the conditions – human, infrastructural, political, regulatory – for the promotion of OG policies at different levels of government. However, at the level of government which is closest to citizens, very few cases of OG policy implementation have been researched (Cejudo et al., 2017; Gómez et al., 2017a; Schmidthuber et al., 2018).

Based on previous research, this study contributes to the understanding of OG implementation at the municipal level. This is an exploratory research project focused on the conceptual perception of OG by public managers in Mexican municipalities. We set forth two research questions that guide this study: (RQ1) How do local public managers in Mexico understand the concept of OG?

(RQ2) How do local public managers in Mexico understand the different components of the concept of OG?

The rest of the article is organized into five sections. After this introduction to the research topic, the second section is a literature review of the phenomenon of OG, with a special focus on the municipal level of government. The third section describes the methodology and data collection in the Mexican case. The fourth section will present the findings of the research; and the final section concludes with a discussion of this paper's findings, its limitations and suggestions for future research.

2. Literature review

Open government has been studied by different scholars in recent years. A broad range of topics arises from this new field of research. This literature review is divided in two subsections; the first one is related to open government evolution and maturity; the second one is focused on open government at the municipal level and is the main topic of this article.

2.1. The evolution of the open government concept

The OG concept cannot be understood without first contemplating a conflict of visions and diversity of perceptions. OG includes, but is not limited to, various topics of public management such as transparency, accountability, open data, access to information, interoperability, new technologies, democracy, and citizen participation (Ruvalcaba-Gomez et al., 2017b). Furthermore, the perceptions of public managers in terms of OG are also crucial to understanding how OG is becoming a policy field and to what extent OG has the opportunity to become a topic of interest in the public sphere, especially in local governments.

In recent years, OG has been reconsidered, leading to new associations. An article by Yu and Robinson (2011) reviews the background of the concept. They mention that in the past OG was synonymous with public accountability. Parks (1957) highlighted the importance of context in understanding OG, and its relevance for the political agenda.

Another source of OG comes from the digital government trend which characterized the first years of the 21st century and monopolized the attention of reformers and policy entrepreneurs in different contexts. After more than ten years, the Web 2.0, social technologies, and open data platforms have revolutionized the debate surrounding OG (Janssen et al., 2012; Kassen, 2013; Khayyat and Bannister, 2015). In broad terms, digital spaces have become areas of collaboration and platforms for collective action (Criado et al., 2013).

Nowadays, we find different concepts related to OG. First, it must be noted that the OG should not be understood as an equivalent notion to transparency. Transparency is not sufficient to achieve a more open government, since the incentives for participation must work so as to achieve collaboration between government and organized civil society. In the words of Meijer, Curtin and Hillebrandt (2012a, p. 11) "open government is not only about openness in informational terms but also about it in interactive terms". These authors describe OG as a matter of vision in government transparency and citizens' voices in public policy processes. This leads to an expanded concept of OG as a management model based on transparency, but also participation and collaboration (Lee and Kwak, 2012). We understand OG as an

"... institutional technological platform which transforms government data into open data in order to allow its use, protection and collaboration by citizens in government decision making, accountability and improvement of public services" (Sandoval-Almazán, 2013).

The three key issues of OG (transparency, participation, and collaboration) are constantly being re-thought and re-conceptualized, and they are broadly defined by and even often confused with one another, especially participation and collaboration. In practice, these principles are related to actions that allow for the co-operationalization of these concepts. Also, open data is included as a key element on this triade. Following President Obama's memorandum, the three sub-areas have been the objects of study of several research projects focused on the OG phenomenon (Abu-Shanab, 2015; Grimmelikhuijsen & Feeney, 2017; Lathrop & Ruma, 2010; McDermott, 2010; A. J. Meijer et al., 2012a).

Transparency, as a component of the field of study of OG, is strongly associated with the right to access to information and accountability. Transparency in open government involves digital transparency, based on open data (Bannister & Connolly, 2014; Bates, 2014; Janssen & van den Hoven, 2015; Kimball, 2011) and the exercise of a fundamental right; access to public information. Thus, the first stage of OG is transparency, but it is an insufficient condition. It requires collaboration via citizen participation (Lee & Kwak, 2012). The idea of government legitimacy is linked to transparency and reinforces the legitimacy of a government and a society's trust in it (Hood, 2011; Jaeger & Bertot, 2010; Sandoval, 2011). Transparency has also been assessed in local governments. Da Cruz et al., (2016) studied the municipal transparency index based on information from official government websites. Meijer et al., (2018) proposed a framework for understanding transparency from several perspectives in the United Kingdom.

Citizen participation and OG design are independent concepts (Wijnhoven et al., 2015). Participation is of great value in civil society and it is related to involvement in political processes. Thus, citizen consultation, deliberation and participation are all part for the decision-making process in public policy development. Following the massive use of Information and Communication Technologies (ICT), participation found a new way to connect citizens with their governments, which gave rise to the concept of e-participation (Girish et al., 2014; Sæbø et al., 2008; Susha and Grönlund, 2012; Vicente & Novo, 2014; Zheng et al., 2014).

Collaboration is another dimension of OG, and probably the most debated one at this moment. In some contexts, collaboration refers to the internal dimension of data and information exchange among different departments within public sector organizations. This approach is connected to the approach to e-government interoperability (Criado, 2012). In other contexts, collaboration is applied to the new public governance approach, involving the increasing engagement of private and third sector stakeholders in public management problem-solving and decision-making (Ansell & Torfing, 2014; Criado et al., 2020; Osborne, 2006; Ruijer & Meijer, 2019). Here, collaboration also highlights the importance of public-private partnerships and alliances in defining public problems, and using public innovation strategies to develop solutions which add public value to the concerned communities.

The open data component has grown dramatically within the literature (Attard et al., 2015; Barry & Bannister, 2014; Conradie & Choenni, 2014; Gil-Garcia et al., 2014; Khayyat & Bannister, 2015; Linders, 2013; Luna-Reyes et al., 2014; Mellouli et al., 2014; Puron-Cid et al., 2012; Sayogo & Pardo, 2013; Zuiderwijk & Janssen, 2014). The open government data research started to grew after Murray-Rust (2008) explore its connections with science.

2.2. Open government at the municipal level

OG has gained relevance in the local political context, becoming a trend, implementing institutional practices in different environments and at levels of government similar to the processes of institutional

isomorphism mentioned by DiMaggio and Powell (1983). This is reflected in political discourse and in the growth of the number of councils and areas of local public administration that address the issues of OG, transparency, open data and citizen participation. In this way, the consolidation of practices in issues related to decision making and the objective of inhibiting corruption is favored.

However, the local level of government seems to be underrepresented in the OG research community. As an example, the Open Government Partnership inaugurated the evaluation process of governmental action plans to local authorities, including 15 pioneers in 2017. At the same time, professional audiences have tended to see national/federal governments as OG champions in the international realm, following the initial momentum of the Obama administration in the United States.

The reasons why local public administrations have received less attention from the OG research community are manifold. Recent OG developments have been substantially fostered by national/federal authorities, and this may have affected the perceptions of OG scholars in terms of their research priorities. Thus, national/federal governments have promoted open data policies or transparency legislation, facilitating the study of factual developments of OG policies. At the same time, different national/federal governments have adopted OG as an issue of paramount importance in their public sector modernization agendas, at least, in areas such as open data, e-contracting, or public innovation.

Despite the foregoing motivations, research on local OG actions and plans has gained attention in recent years. Some cities have become OG leaders by including transparency, participation, and collaboration strategies, and delivering smart governance projects (Ganapati & Reddick, 2014; Carrasco & Sobrepere, 2015). As a matter of fact, local governments are at the level of government which is closest to citizens and are the adequate mechanism for fostering policies oriented at promoting the different dimensions of OG. Participatory projects or collaborative digital platforms developed by local authorities are among the most disruptive experiences in the administrative landscape (Sandoval-Almazán, 2019). Besides, the opportunities to carry out comparative research increase wherever a local research perspective is applied.

Nonetheless, there is not enough research and cases of open government practices at the local level. Some examples are as follows: Corréa et al.'s, (2014) research on 20 municipalities in Brazil is one of the examples of using the ideas of the Open Government Partnership to support transparency portals at this level of government. A similar example can be taken from when the U.S. examined the Chief Administrative Officers regarding their expectations (Ganapati & Reddick, 2014).

Other scholars like Carrasco and Sobrepere's (2014), study of Spanish municipalities shows the evolution of the perception of the open government data initiative in Spain. Grimmelikhuijsen and Feeney (2017) investigate structural, cultural and environmental variables to explain open government accessibility, transparency and participation of 500 U.S. municipalities. Research from Hivon and Titah (2017) provides evidence of citizen participation in open government, and proposes a conceptualization of citizen participation on open data initiatives across various dimensions.

Research from Brazil by Correa et al., (2017) examines 561 municipalities' technical requirements for open government in terms of "active disclosure" supported by the national law based on open government data principles. Finally, a similar study to this research is the one by Ruvalcaba-Gomez et al. (2017b) this paper assesses Spanish municipalities in order to determine concepts, values and expectations from open government. This case provides ideas for understanding the logic behind the behavior of public managers in charge of open government policies.

3. Methodology

Several scholars use different methods to study OG (Zuiderwijk et al., 2015; Sandoval-Almazan & Gil-Garcia, 2016; Zeleti et al., 2014; Hartog et al., 2014). Some of them use quantitative techniques –

Table 1
Sample of surveyed municipalities in Mexico in 2017

State	Municipality
Aguascalientes	Aguascalientes
Baja California	Mexicali, Ensenada, Tecate
Chiapas	Palenque, Orizaba
Chihuahua	Cuauhtémoc
Ciudad de México	Azcapotzalco, Benito Juárez, Venustiano Carranza
Coahuila	Torreón, Saltillo
Colima	Colima
Durango	Lerdo
Estado de México	Toluca, Naucalpan de Juárez, Chalco, La Paz, Chimalhuacán, Acolman, Lerma, Atizapán de Zaragoza, Metepec, Chicoloapan
Guanajuato	Acámbaro, San Miguel de Allende
Guerrero	Taxco, Chilapa de Álvarez
Hidalgo	Pachuca, Huejutla
Jalisco	Puerto Vallarta, Zapopan, El Salto, Zapotlán el Grande, Tepatitlán, Tlajoculco de Zúñiga
Michoacán	Morelia, Uruapan
Morelos	Cuernavaca, Cuautla
Nuevo León	Ciudad Guadalupe, Monterrey, San Pedro, Apodaca
Puebla	Tehuacán
Querétaro	San Juan del Rio
San Luis Potosí	Soledad de Graciano Sánchez
Sinaloa	Ahome, Culiacán, Hermosillo, Navojoa
Tabasco	Centla
Tamaulipas	Tampico, Nuevo Laredo, Reynosa
Veracruz	Córdoba, Poza Rica, Nogales, Boca del Rio, Tantoyuca, Xalapa, Álamo Temapache, Veracruz, Tuxpan
Zacatecas	Guadalupe, Fresnillo

(Reddick, 2011; Cupido & Ophoff, 2014) – and qualitative techniques (Cupido & Ophoff, 2014; Meijer et al., 2012b) and Safarov et al., (2017) use meta-analysis techniques to study the conceptual evolution of the term "OG".

In our research, 207 municipal governments from Mexican municipalities with over 100,000 inhabitants were selected. We gathered information from 67 (33%) responses obtained from surveys carried out from August 2017 to December 2017. This sample was selected based on data from the National Institute of Statistics and Geography of Mexico (INEGI) as described in Table 1. Our data collection was organized into four stages.

1. Explore the web site of the municipality to identify the telephone number, email address, and name of the person responsible for the transparency office.
2. Phone the individual in order to invite him/her to participate in the study and confirm his/her email address to send the link.
3. Two email reminders to answer the survey.
4. Issue the final invitation by phone.

Despite the three invitations issued – one per week – we had a very low response rate. We assume many municipalities opt out for three reasons: Despite our efforts to contact those who did not participate in the survey, we were not successful in finding out what their reasons were not to participate, therefore, a limitation to the study is that one cannot be sure if there is (or isn't) any participation bias. The respondents are public officials in charge of areas of transparency, citizen participation, and information technologies. They are characterized by technical and professional profiles in areas directly related to Open Government.
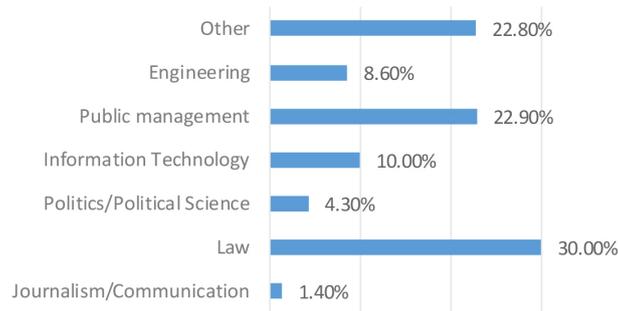
Fig. 1. Educational background of respondents in Mexico 2017.

Our exploratory survey includes 30 questions. In this paper, we only report 15 questions related to the topic of OG which are focused on three main topics: Definition of the OG, OG Strategies, and Future OG Actions at the municipal level. We used a Likert scale of 1 to 5, where 5 was the most important and 1 was the least important.

We surveyed different public officers, 61% were male and 39% were female. They all work in management agencies directly related to OG, or other areas related to this field, such as citizen participation and transparency. In some cases, we surveyed personnel from the Mayor's Office. 10% of people surveyed worked as elected political officers, and 90% as public servants. The average age of the participants was 39. Most of them have a degree in Law (see Fig. 1). Law, however, was not the only area of expertise.

The first part of this investigation was oriented toward understanding the perception of municipal public managers in the implementation of OG at the local level. This is the descriptive part of the research based on the aforementioned national survey. The second part of this research used the "Principal Components Analysis" (PCA) method and promax rotation to analyze the data. We used the statistical program STATA for Exploratory Factor Analysis (EFA). Our statistical model of "Principal Components Analysis" has a "rotation oblique promax" and "pattern matrix". In this sense, the coefficients shown in the Factor Analysis are regression coefficients and not correlation coefficients (Snook & Gorsuch, 1989; Thompson, 2004). This technique allows us to identify latent variables or factors (Pérez & Medrano, 2010). The EFA is based on the data from a certain number of variables, which allows for less variability. Thus, a large number of indicators can be grouped into a small number of factors (Carroll et al., 2010). Also, the EFA technique is used to reduce a certain number of operational indicators (in this case, the concepts associated with OG) to fewer variables (Kaiser, 1958; Pérez & Medrano, 2010).

4. Findings

This section describes the main findings from the surveys completed by public servants in 67 municipalities across Mexico. It is organized into four parts, divided into two subsections. The first one will describe the content of our questionnaire, presenting results as follows: 1. Open Government; 2. Transparency; 3. Citizen Participation; 4. Open Data. The second section reports the results of the factor analysis which integrates all answers into two different factors.

4.1. Perception of the open government concept

The purpose of this part is to ascertain what municipal-level public servants understand by the term OG and their perception thereof. The first question was an exploratory one. How do you understand
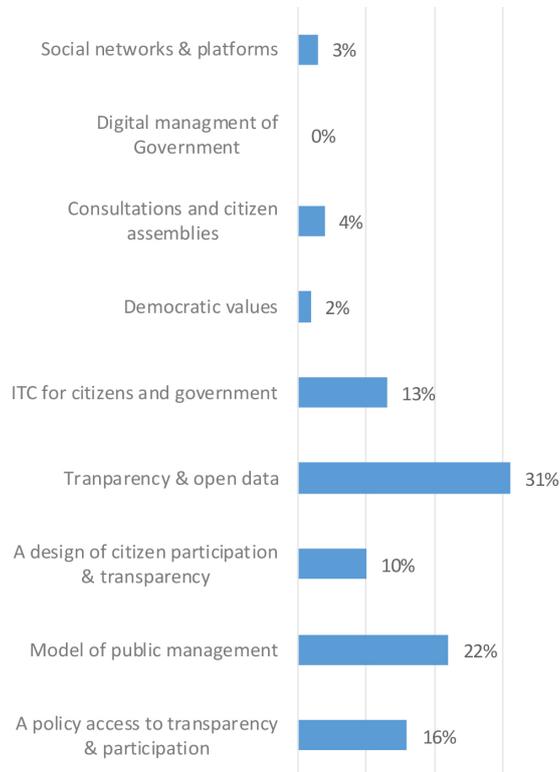
Fig. 2. Perception of the concept of open government.

the concept of Open Government? Answers are shown in Fig. 2. Transparency and open data were the most recurrent answer from municipal public managers in Mexico. This answer was given in 31% of cases. This was an obvious choice and consistent with the global perception of OG, which integrates concepts such as open data, transparency and participation. However, a surprising answer was "Model of public management", which was selected in 22% of cases (see Fig. 2), because from the community of practitioners, the OG is linked to its thematic elements (not to theoretical elements that question the governance model), mainly transparency and citizen participation. However, among the academic community the OG is recognized as a new model of public management (Grimmelikhuijsen & Feeney, 2017; Lathrop & Ruma, 2010; Meijer et al., 2012; Ruvalcaba-Gomez et al., 2020).

The participants in the survey understand OG as a broader idea, including changes in public administration. Very few of them – 16% – relate OG to public policy. The item that received no attention from the respondents was public administration. Other items such as social networks or, public management or application of democratic values received less attention. On the other hand, the question: "What level of association do other concepts have with open government?" was measured using a Likert scale of five points (1 for the lowest level of association and 5 for maximum highest level of association). Transparency was considered the most related concept (4.81, average). This could be explained because the Mexican Federal Government promotes the idea of linking transparency as a synonym of Open Government. In fact, the federal agency in charge of OG is named: National Institute of Information Access and Transparency (INAI). See Table 2.

One question focused on the advantages or benefits of Open Government (see Fig. 3). In response to this question, most of the users surveyed mentioned information access and transparency (31%) as

Table 2
Levels of association with OG concepts

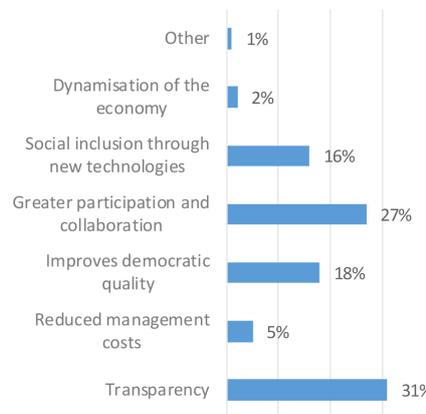| Concepts	Average	Standard deviation
Transparency	4.81	0.67
Information access	4.73	0.74
Open data	4.61	0.79
Participation	4.49	0.81
Collaboration	4.36	0.93
Democracy	4.26	0.97
Digital government	4.23	0.87
Policy co-creation	4.11	1.02
New technologies	4.09	0.96
Interoperability	3.90	0.99
Social media	3.80	0.99
Smart cities	3.57	1.10

Fig. 3. Advantages of the implementation of open government at the municipal level.

the main advantages. Participation and citizen collaboration was the second most common response (27%). improvements in the quality of democracy technologies was the fourth most common response (18%). Finally, Social inclusion accounted for 16% of responses and cost reduction accounted for 5% of responses. Therefore, these benefits were not considered important by a large proportion of respondents.

Another question which appeared on the questionnaire was: What are the main reasons why your municipality implements open government? (see Fig. 4). The most popular answer was to increase transparency (31%) – consistent with previous answers. In terms of popularity, this answer was closely followed by citizen participation and collaboration (27%). Here, it is worth addressing that answers related to public administration received relatively little attention. Answers related to public administration included improvements in interdepartmental relations, cost reduction, and creating on-line collaborative working spaces.

The final question focused on the conceptualization of Open Government: What is your personal perception of the success of the implementation of Open Government actions in your city? Again, using a Likert scale we discovered that 48.6% of the public officials surveyed gave a 4 out of 5 rating to the success of the implementation of Open Government actions in their cities. This means that they expect a positive outcome from OG public policies. This also suggests the existence of an important group of public managers who are not aware of the successful results produced by OG initiatives.

Our second part focused on evaluating public managers' perceptions of transparency at the municipal
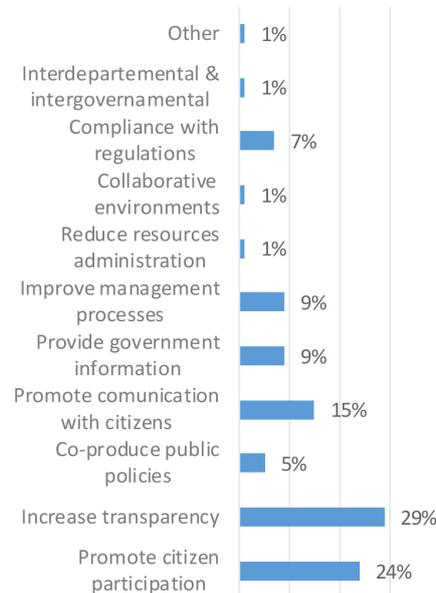
Fig. 4. Reasons for the implementation of OG at the municipal level in Mexico.

level. This perception was determined by way of the following question: "Does your municipality have any specific municipal regulations on government transparency?" Our results showed that 77% of the municipal public managers who took part in the survey answered that they have at least one regulation, 10% mentioned that they do not have any at present and that there is no intention to create any regulation in the future; 12.9% answered that they are preparing a regulation which will be implemented within the next 12 months. A related survey question was: "What is your personal perception of the success of the implementation of transparency actions in your municipality?" Results, measured by a Likert scale of 1 to 5 points, show that most municipal public managers perceive that transparency actions are successful in the municipality. 44.3% of the time is was ranked at 4 and 42.9% of the time it was ranked at 5.

4.1.1. Transparency

This section reports on the following question: What are the most efficient tools for promoting citizen participation? Again, traditional, brick-and-mortar government offices obtained the highest rating (27%), websites were mentioned in 19% of cases, and social media platforms in 13% of cases. Other communication channels such as email, phone line, wikis and blogs were mentioned in less than five percent of answers.

4.1.2. Open data

This section deals with the following question: Does your municipality publish open data in a reusable format, which can be edited and processed by citizens? Results are as follows: 61.4% of the surveyed municipalities answered YES, only 17% mentioned they do not currently have that service, but they plan to introduce it in less than one year. 20% mentioned they will not implement open data.

The second question on the questionnaire was: "What is your personal perception of the success of the implementation of open data actions in your municipality?" Our results (based on a Likert scale of 1 to 5) show 44.95% of the surveyed municipalities gave a ranking of 4, and 27.5% gave a ranking of 5 points. Only a few of them (23.2%) gave a ranking of 2 points on the scale. This means that public servants have high expectations for the use of open data in open government practices in Mexico.

Table 3
Factor analysis OG mexican municipalities

Factor	F1. Democratic values and co-responsibility	F2. Perspective of technological innovation
Open data		0.6627
Democracy	0.4936	
Collaboration	0.4482	0.4629
Transparency	0.9605	
Social networks		0.5489
e-Government		0.5205
Participation	0.5737	
Smart cities		1.0049
New technologies		0.8062
Interoperability		0.7540
Information access	0.9726	
Co-creation	0.8677	

4.2. Factor analysis for Mexican municipalities

After presenting some descriptive results that reflect the perception of local public officials in Mexico regarding OG, this section uses a statistical analysis technique for data reduction called Exploratory Factor Analysis (EFA). This analysis is based on the values and results obtained from the survey and linked to a series of concepts previously associated with the term OG. Here, the results of the EFA determined two factors that are interpreted, based on the theory, as the perspectives that Mexican local officials hold of the notion of OG.

Our statistical model of "Principal Components Analysis" has a "rotation oblique promax" and "pattern matrix". In this sense, the coefficients shown in the Factor Analysis are regression coefficients and not correlation coefficients (Snook & Gorsuch, 1989; Thompson, 2004).

The results shown in Table 3 allow us to empirically visualize the two main perspectives with which OG is viewed among public officials. On the one hand, we find a vision oriented toward democratic values and access to information. This shows how officials recognize, in OG, a model of government transformation. On the other hand, a vision associated with technological innovation is recognized, which reveals that there are many officials who see OG as a set of technological tools that facilitates public management and modernizes public administration.

Factor 1 is interpreted as the perspective of "democratic values and co-responsibility". Within this group, we find six relevant concepts: transparency, access to information, co-creation, democracy, collaboration, and participation. Transparency, access to information and co-creation are closely related concepts; whereas, the concepts of participation and democracy are less closely related.

On the other hand, there are seven concepts grouped into the category of "technological innovation" (factor 2): open data, smart cities, new technologies, interoperability, collaboration, social networks, and e-government. Most of the concepts are grouped in the factor of perspective of technological innovation.

Open data, e-government and social networks are consistently integrated into this factor because they are part of a Federal Government Strategy (National Digital Plan for Mexico) to promote access to digital technologies. This finding is consistent with the actual development of Mexican public policy in terms of open government. However, the end result is that such policies are not making Mexico more open, as stated in the results of the national survey on OG carried out by the National Institute of Information Access (INAI) and the Center for Research and Teaching of Economics (CIDE) (Cejudo et al., 2017).

On the other hand, Factor 2 is consistent with the educational background and experience of the municipal public managers who answered the questionnaire. Integrated concepts are related to interoperability,

new technologies and, along with this factor, all of these technologies are linked to transparency and open government policies.

Consequently, the results of this factor analysis for the Mexican case lead us to two different visions of OG policies and actions at the local level of government: one more related to democracy and information availability values; the another one is related to technological devices and innovations. In other words, Mexican municipal public officials are struggling with different policies and guidelines in order to make their governments more open. However, their approach seems to be slightly different in terms of these two perspectives. In the first case, they are opening up local public administrations using the motto of smart cities, open data, new technologies, e-government and social networks, with an approach based on IT. In the second, they are paying more attention to information access, transparency, co-creation, and democratic values, or prioritizing new democratic practices derived from open government policies.

Bearing this in mind, it will be necessary for future research to understand and categorize the implications of these two OG perspectives, and whether (or not) they are concurrently compatible within this group of local governments, and, if so, to what extent. In so doing, it is important to identify the pitfalls of open government policies, as well to assess public managers and elected officials in the process of creating open government policies which address critical dimensions.

5. Discussion and conclusions

The purpose of this paper was to report the exploratory findings of a national survey of municipalities in Mexico, and to understand the perception of Open Government (OG) at the municipal level. Our research included 67 cases across Mexican municipalities studied in 2017. The purpose was to answer two questions: (RQ1) "How local public managers in Mexico understand the concept of Open Government?"; and (RQ2); "How do local public managers in Mexico understand the different components of the OG concept?" Our findings show that municipal public managers in Mexico understand the notion of OG as a synonym of transparency, and information access. Some of them see OG as open data, participation, and very few as collaboration.

On the other hand, more technologically-oriented concepts such as interoperability, or social media are perceived as being less important by public servants. However, they remain an important part of the open government theoretical framework (Kassen, 2013; Gómez et al., 2017b; Khayyat & Bannister, 2015). Here, we may argue that the perception of OG in Mexico requires a broader conceptualization which includes accountability, open data, participation and collaboration (Figueras Zanabria, 2019). Nowadays, OG is focused on transparency practices rather than open data systems or the implications of technological innovation, at least at the municipal level.

Our data reveals that municipal public managers depend on federal government OG policies and information disseminated to their level of government. This explains why most of the public servants mentioned that face-to-face interaction with citizens is nowadays the most common activity at transparency units. This conclusion is supported by the analysis of expectations of surveyed municipalities. In all cases related to the efficiency and success of OG implementation, the perceptions of city managers were close to 4 on the Likert scale of 1 to 5. This could mean a common perception of work to be done, or unfinished projects.

Our findings for Mexican municipalities can be generalized for the rest of the country, because our sample includes cases from 32 states of Mexico and those with the largest populations. Similar results can be expected in other municipalities of a similar size, whereas in the future it would be interesting to explore why some of these cases did not participate in the survey. In other municipalities, with much smaller

populations, OG policies are not defined and they do not have the resources to promote transparency issues or new participatory practices. For this reason, they were not included in the study.

Local governments are now promoting OG policies and measurements at different stages. A good example is the Open Government Partnership Local Program, involving pioneering cities like Austin (USA), Buenos Aires (Argentina), La Libertad (Bolivia), Madrid (Spain), Paris (France), Sao Paulo (Brazil), or Seoul (South Korea), among others. These cities deliver results based on local OG action plans. While this is a very selective group of cities, local authorities all over the world are currently facing common challenges, and a global/local transformation is taking place in terms of the priorities of OG policies and action plans. This includes the dilemma of whether to promote the more technological aspects or transparency/democratic aspects of OG.

Nowadays, more than any other level of government, local governments face the most diverse governance challenges. Current research suggests OG policies offer an avenue for the fulfilment of participative and collaborative aspirations of smart citizens in their relationships with local governments. At the same time, local governments are increasingly concerned with external demands, despite the lack of transformative governance reforms so far. We expect this first exploratory outcome will help to understand the Mexican perception of OG at the municipal level and promote public policies that expand the concepts to make OG clearer or more understandable. We also think that this first approach at the municipal level will contribute to the field insofar as it will foster more actions to deliver open data, transparency, and promote laws and regulations to support these efforts at the level of government which is closest to citizens. Finally, our findings provide some insights for the assessment of OG practices in Mexico and for the fostering of new ideas for future research in this field. Future research may compare OG in different countries and promote public policies related to openness in government.

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