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**DIGITALIZATION
PROFILES OF LOCAL
GOVERNMENT
MANAGEMENT
THE ARGENTINEAN
CASE**

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Abstract: This paper presents digitization profiles of Argentine local governments, built based on the following variables: technological availability, digital skills, the use of digital technologies and the provision of digital services. The profiles are proposed as a tool for the design of policies and, at the same time, studies on municipal digitization that exceed the traditional criteria of municipal scale and territorial belonging, which are revealed to be insignificant in the evidence gathered.

The design is based on the results on digitalization of the Project “State Capacities in a Post-Pandemic Municipal Agenda”, a study of unprecedented characteristics due to the participation of ten study centers and the production of sample-type information on a national scale.

Digitization is understood as the use of digital technologies to continue providing valuable public services in the 4th. Industrial Revolution oriented to the production of public value. The resulting profiles are the following: digitization of low development, digitization in development, traditional digitization and consolidated digitization.

The article firstly presents the theoretical and methodological framework of the study, then points out the main findings and the profiles built and finally reflects on the contributions that they mean for the production of policies and the academic field.

Keywords: Digitization: Local Governments. Innovation. Argentina. Covid 19

INTRODUCTION

This article asks about the different digitization profiles of Argentine local governments in a pandemic context. The assumption from which it starts is that local governments have been developing different digitization strategies for more than three decades. These strategies have been put to the test and accelerated in the context of

isolation due to the COVID 19 Pandemic. For this reason, this context made it possible to characterize and identify the different digitization profiles of governments as a contribution to the construction of policies.

The prevailing digitalization profiles in local governments resulting from the Project “State capacities in a post-pandemic municipal agenda” are presented, directed by Dr. Patricia Nari, with the participation of ten research centers in the national territory. Within the framework of the aforementioned project, the agendas of local governments, management capacities, cooperation relations and the digitization of local management were mapped at the national level with the purpose of producing knowledge about municipal public capacities to address the new local agendas emerging from the Pandemic.

Digitization of management (DG) is understood as the use of digital technologies to continue providing valuable public services in the 4th. Industrial revolution or Internet age, oriented to the production of public value (Benington, J. & Moore, M. H., 2010; Moore, 2013) for citizens. The preliminary results have been published in the “Notebook No. 5: Mapping and characterization of the digitization of management” of the Project, available at <https://polilab.unr.edu.ar/wp-content/uploads/2022/07/Cuaderno-5.pdf> and have been presented at the III National Congress of Public Administration Studies “Transformations in Public Administration in the face of the new complexity”. September 2022, La Plata, Argentina.

As noted above, the intention of the profiles is to make a contribution to the design of comprehensive digitalization public policies, taking into account the diversity of GL in the Argentine federal territory and the dispersion of municipal policies. Likewise, it is a methodology that has proven its value for the study in the national context and can be

applied in comparative studies in the regional and international context.

The value of these profiles lies in the fact that their construction has been carried out based on information provided by the municipalities themselves in the field work, as indicated, it is not a merely deductive process, but a deductive-inductive one, which allows it to be considered a tool for comparative research, the design and implementation of evidence-based policies. The information was built based on primary sources, a survey of 123 local governments and secondary information resulting from management documents, information from social networks, from national and international organizations. For the construction of the sample, the following criteria were taken into account:

- Type of local government: Municipalities and other types of local government are considered.
- Quantity of population according to ranks:
 - M1: More than 250,000
 - M2: Between 100,001 and 250,000
 - M3: Between 50,001 and 100,000
 - M4: Between 10,001 and 50,000
 - M5: Between 5,001 and 10,000
 - M6: Between 1 and 5,000
- Region: Center, Cuyo, GBA, Litoral, NOA, Pampeana and Patagonia.
- Province Capital: Province capitals are included.
- Organic Charter: Local governments with and without organic charter are considered.

The article firstly presents the theoretical and methodological framework of the study, then points out the main findings

and the profiles built and finally reflects on the contributions that they mean for the production of policies and the academic field.

THE IRRUPTION OF DIGITAL TECHNOLOGIES

Information and communication technologies (ICTs) have been producing changes in society in recent decades, changes that have become disruptive since the beginning of the 21st century. These transformations have an impact on work, social and family relationships, and to a large extent on the dynamics and life of cities, as evidenced by the pandemic (Grandinetti and Nari, 2021). Therefore, local governments are urged to produce transformations that allow them to govern social processes of this nature and produce local value. They are challenged to rethink their practices, models and norms to develop meaningful policies.

The accessibility to the new ICTs, especially the Internet, have contributed to generating essential channels of more fluid management and access for citizens and their organizations to local public policies. There is agreement in academia that public administrations are undergoing transformation, although in different ways and modalities, as Criado (2016), Criado and Gil-García (2019), Gil-García et al. (2018) or Meijer et al. (2017). The Digitization of management is a valuable tool in this context. According to Mergel, Edelman, & Haug (2019) it can be understood as the use of digital technologies to continue providing valuable services in the Internet age, both online and offline, automated and personalized, through standardization (Andal-Ancion, Cartwright, & Yip, 2003, Meijer & Bekkers, 2015).

It is also necessary to point out the emphasis of international organizations on innovation and the digitization of governments. In this sense, the Organization for Economic

Cooperation and Development (2018) points out that *“The use of digital technologies as an integral part of governments’ modernization strategies to create public value. It is based on a digital government ecosystem made up of government actors, non-governmental organizations, companies, citizen associations and individuals that support the production of and access to data, services and content through interactions with the government.* (page: 391).

For its part, the Latin American Center for Development Administration raises the value of public innovation from a double perspective, as a facilitator for building capacities to deal with an era of exponential changes —adaptive innovation—, and in turn, as an engine to build directions in these transformations —anticipatory innovation (CLAD, 2020).

From a regional perspective, Latin America and the Caribbean are located in an intermediate position, compared to the development of digital ecosystems in other regions (CAF - Development Bank of Latin America, 2020). In this sense, on a scale from 0 to 100, it has an index of 49.925, which gives it a greater degree of progress compared to Africa (35.05) and Asia Pacific (49.16), but places it behind Western Europe (71.06), North America (80.85), Eastern Europe (52.90) and the Arab States (55.54). This situation has experienced a jump from the isolation measures dictated by the pandemic.

During the pandemic, the different levels of the State had to deploy a set of available tools to guarantee the correct provision of services in an unprecedented context and severe financing restriction due to the double decrease in public resources due to the drop in income and the significant increase in expenses derived from pandemic care (Ortega and Carignani, 2020). In particular, local governments, due to their proximity and small-scale characteristics, were forced

to transform and reorient their actions. The resilience of the State indicates the ability to continue carrying out the usual procedures and providing its public services in the new context (Grandinetti and Nari, 2022).

DIGITIZATION OF MANAGEMENT: ANALYSIS MODEL

As it was noted above, digitization of management (DG) is understood as the use of digital technologies to continue providing valuable public services in the 4th. Industrial revolution or Internet age, both online and offline, (Mergel, Edelman, Haug, 2019), oriented towards the production of public value (Benington, J. & Moore, M. H., 2010) for citizens towards sustainable and inclusive development in the region.

The DG faces multiple barriers of a structural type, such as the availability of resources, and socio-cultural ones, such as current regulations, the level of technological appropriation, expectations and innovation experiences (Mergel, 2022). This affects the provision of services, the organizational culture and relations with citizens.

It is important to point out that it is not a direct relationship between the availability of resources and the high level of digitalization, on the contrary, it is a more complex relationship that links the structural and cultural barriers that municipalities have for digitalization. with the results achieved in terms of applied technologies, digitized services, digital innovations developed in the pandemic and appropriation of public agents and citizens. It is about understanding the digitalization capacity in a relational way, as the result of the relations established between the existing barriers and the applied strategies.

The digital capacity, therefore, mobilizes and involves the various dimensions of the life of the municipalities; its policies, processes, products, results and involves changes and

learning in the actors themselves. In addition, it brings political and policy options, sustained efforts, conditions, tools and methods into play (Grandinetti and Zurbriggen, 2021).

In short, based on the available information, the variables that allowed the identification of differentiated profiles of digitalization of management were constructed: technological availability, digital skills, digital technologies in use and available digital services.

DIGITIZATION PROFILES OF ARGENTINE LOCAL GOVERNMENTS

Based on the results achieved in this investigation and the analysis model presented, the following profiles can be distinguished:

1. **DG under low development:** high levels of structural barriers, low PC rate per inhabitant and internet connection, and sociocultural, low levels of digital skills in municipal staff and medium or low levels of appropriation of technologies. The type of predominant technologies is desktop software and social networks, presenting lower levels in relation to the use of management systems. In relation to digitized services, they present a null or low development of digital services, with little appropriation by the citizenry in case they are implemented. Finally, these are municipalities that have not developed digitization of services in the pandemic or have done so very little, since they do not have the competences for the development of their own or the adaptation of systems.
2. In this group can be found local governments of the NEA and Cuyo regions and those of medium-low population size, corresponding to the M4, M5 and M6 ranks.

3. **DG traditional:** high or medium level of structural barriers, low or medium PC rate per inhabitant and Internet connection, and sociocultural, medium levels of digital skills, with a higher proportion of staff using desktop tools and medium levels of appropriation of technologies first and second generation. The predominant types of technologies are desktop software, social networking and embedded management systems. They present digitized services linked to procedures and payments or claims and suggestions, with little or medium appropriation by citizens. Finally, these are municipalities that have developed some type of digital service for pandemic care but have done so very rarely.
4. Local governments from the NEA and Cuyo regions can also be found in this group, as well as from the NOA and Center regions, the latter to a lesser extent. Local governments are to a greater extent of medium-low population, being more preponderant the M4.
5. **DG under development:** low level of structural barriers, medium or high rate of PC per inhabitant and Internet connection, and sociocultural, where there is evidence of a significant number of profiles with competencies for the management of complex systems, a high level of competency in managing tools of desktop and a medium/high level of appropriation for the different technologies. The municipality has developed 1st, 2nd and 3rd generation technologies, including in these mobile applications and collaborative work tools. It provides various digital services surveyed with medium or high levels

Variables	Indicators	Values
Technological availability	Availability of PCs per inhabitant	Low Medium Low Medium High High
	Availability of PCs with Internet access per inhabitant	
Digital skills	Availability of specialized technical personnel	Low Medium Low Medium High / High
	Digital skills level	It introduces basic rudiments Uses desktop applications Manages complex systems Analyzes/develops computer systems
Use of digital technologies	Technologies available according to technological generations.	Qty. 1st generation Qty. 2nd generation Qty. 3rd generation Qty. 4th generation
	Level of appropriation of technology workers	Low Medium High
	Availability of free software	No / Yes
Provision of digital services	Digital services implemented in the pre-pandemic	Qty. Procedures and payments Qty. Claims and suggestions Qty. Consultation of regulations Qty. Participation instances Qty. Open data
	Emerging digital services for pandemic care.	No / Yes
	Level of appropriation of the citizens of the services	Low Medium High

Table N° 1: Variables for the construction of local government profiles

Source: self made

of citizen appropriation. Likewise, they have developed more than one digital tool or service during the pandemic, consolidating a digitization profile.

6. In this group can be found mainly local governments of the Pampean and Central regions. The population of these local governments is not clearly defined. Although they hover between the M2 and M4 ranges, some variables may be present in smaller local governments, such as the availability of digital services.
7. **DG consolidated:** low level of structural barriers, high rate of PC per inhabitant and Internet connection, and sociocultural, where a significant number of profiles with competencies for the management of complex systems and for the analysis and development of systems and a level of appropriation are

evident high for different technologies. The municipalities have different types of 1st, 2nd and 3rd generation technologies and have incorporated 4th generation technologies. The municipality provides a wide variety of digital services, including services linked to citizen collaboration, and has high levels of citizen ownership. It develops free software initiatives and has also developed digital procedures, management tools and digital services during the pandemic; which speaks of its capacity for digital innovation.

8. Local governments from the Patagonia and Pampeana regions predominate in this group, but there are also those from the GBA and the Center. As far as population ranges are concerned, they are limited to local governments of ranks M1, M2 and M3.

FINAL THOUGHTS

The beginning of this work was the concern about the possibility of building different digitization profiles in Argentine municipalities in order to better understand the municipal reality and overcome the generalization-individualization dichotomy. The assumption from which it starts is that local governments have been developing different digitization strategies for more than three decades. This extensive journey of various initiatives has led to the consolidation of different profiles that can be reconstructed through a correct methodological strategy.

It is the first time that a study of these characteristics has been carried out in Argentina, which allows us to go beyond the available case studies or mere characterization. In the same way, it indicates a possible path for studies on municipalities in different countries of the region, which, as noted, present some vacancies when it comes to having studies on a national scale.

The results presented are based on sample information that takes municipal diversity into account. Given the municipal context, made up of more than 2000 local governments of different scales, institutionalization regimes and territorial location. The profiles are also relevant because they allow us to overcome two traditional approaches to the design of

policies and studies: the municipal scale and belonging to a certain region. The results obtained do not show a direct relationship between the type of digitization and the municipal population, or the region to which the municipalities belong.

This does not mean that the presence in the central regions of the country and Patagonia of municipalities with consolidated or developing digitization profiles cannot be noted, such as the concentration in the NEA, NOA and Cuyo regions of municipalities with low digitization profiles. or traditional digitization. As for the population, there are no such marked parameters that speak of a greater or lesser digitization, although the concentration in medium-scale municipalities of innovative digitization profiles does show. This, likewise, coincides with pre-existing studies.

The study opens the doors to the possibility of studies compared with other countries and regions, given that the research strategy has proven to be effective, as well as the deepening of the different aspects that make up the profiles to develop the field and provide increasing levels. of understanding to a relationship of great complexity. In this sense, it would be of particular value to study the relationship with municipal actors and citizens, in the design, use and appropriation of technologies.

REFERENCES

- Andal-Ancion, A., Cartwright, P. A., & Yip, G. S. (2003). The digital transformation of traditional business. *MIT Sloan Management Review*, 44(4), 34.
- Benington, J., & Moore, M. H. (Eds.). (2010). *Public value: Theory and practice*. Macmillan International Higher Education.
- CLAD (2020). Carta Iberoamericana de Innovación en la Gestión Pública. Disponible en: <https://clad.org/wp-content/uploads/2020/10/Carta-Iberoamericana-de-Innovacion-10-2020.pdf>
- Criado, J. I. (2016, May). Nuevas tendencias en la gestión pública. INAP.
- Criado, J. I., & Gil-Garcia, J. R. (2019). Creating public value through smart technologies and strategies: From digital services to artificial intelligence and beyond. *International Journal of Public Sector Management*.
- Gil-Garcia, J. R., Dawes, S. S., & Pardo, T. A. (2018). Digital government and public management research: finding the crossroads. *Public Management Review*, 20(5), 633-646.
- Grandinetti, R. M., & Nari, P. O. (2021). Ciudades latinoamericanas: la necesidad de ser capaces de gestionar una nueva agenda urbana. *A & P continuidad*, 8(14), 34-45.
- Grandinetti R.M. y Zurbruggen C. (2021) ¿Hackeando lo público? Innovación para la construcción de nuevas capacidades públicas. En “¿Hackear lo público? Innovación en la gestión pública”. Centro Latinoamericano de Administración del Desarrollo.
- Meijer, A., & Bekkers, V. (2015). A metatheory of e-government: Creating some order in a fragmented research field. *Government Information Quarterly*, 32(3), 237-245.
- Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. *Government information quarterly*, 36(4), 101385.
- Organización para la Cooperación y el Desarrollo Económico. OCDE (2016). *Manual para la economía digital*. Recuperado de <https://www.oecd.org>
- Ortega, J. E., & Carignani, A. (2020). Las nuevas necesidades ante la Covid-19: desafíos y tendencias en la provincia argentina de Córdoba. *Cadernos ibero-americanos de direito sanitário*, 9(2), 208-217.