

Digital communication based on open data and the 2030 Agenda in Latin America: new opportunities

Comunicación digital basada en datos abiertos y la Agenda 2030 en Latinoamérica: nuevas oportunidades

DOI: <https://doi.org/10.32870/cys.v2021.7615>

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The paper values the potential of open data as an opportunity for the development of peaceful and inclusive societies. Studies the Latin American infomediary sector, in the context set by the 2030 Agenda and the Sustainable Development Goals, through the DEPUC analysis (Description, Participation, Use and Characteristics) of 35 cases: the result is the characterization of the contribution of these products to governance and the participation and empowerment of citizens as factors of development of marked transnational relevance and Latin American cooperation.

KEYWORDS: Open data, 2030 Agenda, digital content, communication, Latin America.

El artículo valora la potencialidad de los datos abiertos como oportunidad para el desarrollo de sociedades pacíficas e inclusivas. Estudia el sector infomediario latinoamericano, en el contexto fijado por la Agenda 2030 y los Objetivos de Desarrollo Sostenible, mediante el análisis DEPUC (Descripción, Participación, Uso y Características) de 35 casos: el resultado es la caracterización de la aportación de estos productos a la gobernanza y a la participación y el empoderamiento de la ciudadanía como factores de desarrollo de marcada relevancia transnacional y de cooperación latinoamericana.

PALABRAS CLAVE: Datos abiertos, Agenda 2030, contenidos digitales, comunicación, Latinoamérica.

How to cite this article:

Álvarez García, S., Gertrudis Casado, M. C. & Gértrudix Barrio, M. (2021). Digital communication based on open data and the 2030 Agenda in Latin America: new opportunities. *Comunicación y Sociedad*, e7615. <https://doi.org/10.32870/cys.v2021.7615>

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Submitted: 30/09/19. Accepted: 30/09/20. Published: 10/02/21.

INTRODUCTION

Open data and social change

The opening of data provides an overview of opportunities in which information from the public sector and its reuse become a tool for generating equality by delivering new rights to cyber-citizens (Concha & Naser, 2012, p. 43). This availability of open data may facilitate the development of factors for progress in social, economic and cultural fields. Its value as an element for improving democratic quality has been indicated in the majority of definitions of open data, from the *Open Data Handbook*, the *Open Data Analytical Framework*, the *OMB Memorandum 2013* from the White House, the Dbpedia and the Open Data Institute, among many others.

The development of this area has been linked to the creation of a regulatory framework which legitimizes it and facilitates its evolution and growth. In the international field, different legal developments have been approved to stimulate processes of opening, transparency and citizen participation: in Europe, Directive 2003/98/EC of the European Parliament and Council, of November 17th, 2003, and in Spain, Law 11/2007 on electronic access of citizens to public services. Exceptionally, Latin America, beyond the original Colombian Political and Municipal Organization Code of 1888, has been one of the regions which has advanced the most in this process in recent decades. Guided by the Inter-American model law on access to information (Organization of American States [OAS], 2010), some of its laws such as Mexican law, make up the main rankings and international reports (Orme, 2017), and only some countries such as Venezuela, Cuba and Bolivia lack regulations.

However, having laws on transparency, good governance and access to information does not, per se, guarantee and promote the development of new opportunities for the communication system. The quality of laws, measured by their scope and real potential, as evaluated by Access Info and the Centre for Law and Democracy through successive editions of the *Global Right to Information Rating* (2011-2017), which evaluates 61 indicators, is essential. The right of access, the scope, the application procedures, established exceptions or causes for rejection, the model

for appeals and promotion measures indicate the real possibilities for action in this field.

Open data and e-Governance for development of the 2030 Agenda

In this regard, it is key to establish new relationships between public institutions and citizens: *e-Administration*, *e-Democracy*, *e-Government*, and *e-Governance* (Euskadiko Udalen Elkartea [EUDEL], 2010) based on transparency and access to information as a requirement for governance which, from measures from the 1990s, responds to a growing consensus that the efficiency and legitimacy of public action are based on the quality of the interaction between different levels of government. However, it also depends on interaction between these and business organizations and civil society (Prats Catalá, 2005, p. 130), as citizens become the ultimate reference of all public actions, which is connected with the civilizing agenda proposed by the *2030 Agenda* (Comisión Económica para América Latina y el Caribe [CEPAL], 2018a, p. 5).

In this context, it is essential to evaluate and measure the impact of initiatives to discover how society appropriates them and generates tangible benefits for sustainable and inclusive development. Among others, through the role played by the media in this new informational ecosystem, the level of innovation which can be transferred to society as a whole (Concha & Naser, 2012, p. 78), the force with which they contribute to producing progressive structural changes in processes of technological innovation, digital economy and information society (CEPAL, 2018a, p. 11).

Open Data Impact: When Demand and Supply Meet (2016) created by The GovLab and Omidyar Network categorizes the impact of initiatives through the framework of dimensional taxonomic analysis, based on a classification and proposes a set of recommendations aimed at improving it (Verhulst & Young, 2016). Atz (2014), from the Open Data Monitor, proposes three areas from which the impact of the open data can be analyzed: a) data as a resource (economic, social, political, etc.); b) the emergence of the scientific and the citizen from data (democratic exercise, participation, collective intelligence); and c) monitored citizens (security, monitoring and adaptive systems).

The actions carried out in this line are generating an improvement of efficiency of governance, of transparency, promoting the exchange of information between departments and the commitment and participation of businesses and citizens (Tinati et al., 2012, p. 4). This is the case of the The GovLab project, based in the United States, which promotes the development of studies and projects on the opportunities of new models of governance based on data around the world; and the Open Data Research Network, which analyses the impact of the open data in developing countries.

The administrative and political dimension has been addressed through the models for evaluating maturity of Open Data initiatives, such as that developed by the British Open Data Institute (ODI) in collaboration with the Department for Environment Food and Rural Affairs (2015), the study of the *Open Data Maturity in Europe 2015* (2015) created by the European Union Open Data Portal, the *Open Government Guide*, the *Open Data Readiness Assessment* (ODRA) of the *Open Government Data Toolkit* (World Bank), especially in indicator blocks 5 (*Demand for Open Data*) and 6 (*Civil Engagement and Capabilities for Open Data*), and the *Estudio de la demanda y uso de Gobierno Abierto en España* (Study of demand and use of Open Governance in Spain) (Márquez Fernández et al., 2013) from the Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Información (National Observatory of Telecommunications and the Information Society) (ONTSI).

The need to establish comparative frameworks on the scope and methodologies for implementation of open data policies has been presented by Zuiderwijk and Janssen (2014), noting, for the Dutch case, the diversity of approaches, the need to establish processes for collaboration with other organizations and the initial stage in which this process is found in both the ways that organizations work and in the creation of a true culture of open data. Other studies take an interest in the real effectiveness that the opening of data has on democratic exercise and on citizen participation, without a real culture of use, from approaches such as the effects on marginality and poverty (Gurstein, 2011), and come of the myths associated with the opening of data such as its dissemination immediately bringing benefits, without considering

the existence of the need to convert data into knowledge (Janssen, 2012) applying models which allow the scaling of the DIKW pyramid (Zeleny, 1987).

Digital information based on data for citizen empowerment

The 2030 Agenda underscores the importance of having to improve the use of “enabling technology, in particular information and communication technology” as an essential element for empowerment, specifically of women (CEPAL, 2018a, p. 25), but also of communities globally. Essential in this regard is the role that the media must play through the development of new digital formats and contents which place value upon and optimize the narrative potential of data to bring it closer to citizens, while offering new layers of service (Gértrudix Barrio, Álvarez García et al., 2016, p. 117); even more so if we consider that “access to data portals and the options that these offer citizens facilitate expansion of the media diet and the media repertoire” (Gértrudix Barrio, Gertrudis Casado et al., 2016, p. 542).

The role of the media in establishing the public agenda (McCombs, 2006) has become a predominant focus of research on the theory of Agenda Setting in Latin America (Gallego Ramos, 2017, p. 99), but also on the specific interests of the media as political actors (Califano, 2015, p. 76) and its role in the definition of the political agenda (Rincón, 2004), which highlights the necessary “social plurality and diversity of media, quality of economic conditions and transparency of ownership” (UNESCO, 2020) which may facilitate its capacity for promoting values associated with democracy (Zukernik, 2008, p. 9) and citizen empowerment.

Citizen empowerment is understood as an increase in capacities of individuals beyond simple economic growth, and which enables them to participate and make decisions (Gertrudis Casado et al., 2016). Aligned with theories of human development in relation with the most vulnerable groups, these new information models based on data may promote educational processes and digital literacy which improve development and equality, allowing the individual and collective empowerment demanded in the 21st century through collaborative and participative processes (Narayan, 2002). This empowerment is presented

as a model for improving wellbeing and quality of life, in which the subject becomes the protagonist, responsible for their own conduct through the enhancement of individual, group and community resources, specifically because they have the opportunity, through adequate access to information, to make informed decisions. However, they also represent an opportunity to escape from models which integrate the conception of reality promoted by other media, and to generate both first and second order effects through resonance processes established by the theory of Cultivation Analysis (Gerbner, 1998).

METHODOLOGY

The aim of this study is to characterize the ecosystem of digital content based on open data, related with the Latin American infomediary sector, in the context established by the 2030 Agenda.

To do so, the research answers to the following research questions:

- What informative, formal, ownership and support characteristics do products and services based on open data developed by the Latin American infomediary sector have?
- What is the added value that they seek to offer society? What issues do they address and what relationship do they establish with the thematic agenda?
- Do they promote citizen collaboration and/or participation? How and to what extent?
- What can they contribute to e-Governance from the perspective of quality in the interaction between the government, businesses and civil society with the citizen as ultimate referent?

The research is based on the interpretive perspective, under an empirical-inductive model (Bermejo Berros, 2014), and a mixed qualitative-quantitative paradigm (West & Turner, 2005).

Analysis sample

Based on a selective and systematic documentary search, an initial convenience sample made up of 35 case studies has been selected,

of which five were discarded due to access errors or insufficiency of elements for answering the research questions, obtaining a final sample made up of 30 cases to be studied.⁴ The elements of the sample are

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- ⁴ La data cuenta/Data counts (Costa Rica); Métricas de guerra, by IDL Reporteros + Convoca (Peru); Iniciativa Latinoamericana por los Datos Abiertos (ILDA), by Open Data for Development (OD4D- Latinoamérica); Centro de Estudios en Libertad de Expresión y Acceso a la Información, by Infotecarios (Latin America); Hackathon, Repositorios de Datos Abiertos-Open Data (second part), by the University of Palermo (Argentina); La investigación a partir de las historias. Manual para periodistas de investigación, by Mark Lee Hunter (author) Ediciones Unesco-Uruguay; Manual de Periodismo de Datos Iberoamericano, proyecto de Poderopedia and the School of Journalism of Alberto Hurtado University (Chile); Manual de Acceso a la información pública, by the Fundación para la Libertad de Prensa (Ecuador); La Ruta del Dinero, Hackatón regional-Latinoamérica; ¿Sabes cuánto gana tu rector?, by Escuela de datos (Peru); #Novotoaciegas Conozca a los candidatos, by La Nación (Costa Rica); InfoAmazonia Mapas y Datos (Brazil); Plataforma On TRACK (Empoderar), by Programa de Alianzas Rurales y del Proyecto de Infraestructura Urbana de la Ciudad de La Paz (Bolivia); Programa Barrios y Comunidades de Verdad; ¿A quién elegimos el domingo?, by Blog Infobae (Argentina); HacksLabs Open News, Open Journalism, Open Data, Data Journalism, Dataviz, DataJ, Tools, de HacksLabs (Argentina); Manual de Periodismo de Datos, by Various authors for the Open Knowledge Foundation; OpenData Latinoamérica; Proyecto Censo, de La Nación (Argentina); Hackatons.org (Chile); Democracia em Rede, by Gabinete digital (Brazil); Atlas Político Estadão Dados (Brazil); Encuesta Nacional de Discriminación y Exclusión Social desde la Percepción de Mujeres, by Observatorio de Género-Coordinadora de la mujer, Bolivia; Estrategias y proyectos de innovación, TIC y desarrollo: OpenData como proceso y proyecto: reflexiones y el caso de Ecuador, by Christian A. Estay Niculcar (Ecuador); Dat.ar Repositorio no oficial de datos públicos abiertos de la República Argentina, by the Open Knowledge Foundation, Argentina; Centro de Apertura de Datos de Datamx, de Codeando México A.C.; ChileCompra Datosabiertos; Mapa de medios de Chile y Colombia, by Fundación Poderopedia; Postdata.club Periodismo de datos (Cuba);

online digital content which exploit informative open data, related with the Latin American infomediary sector. The selection is justified by the products being in line with the Sustainable Development Goals for Latin America and the Caribbean established by the 2030 Agenda, in particular those aimed at facilitating citizen empowerment, citizen participation and governance through information from open data, with notable transnational significance and cooperation in the Latin American context and, in some cases, even internationally.

Research techniques and tools

Content analysis has been used as a technique (Krippendorff, 1990; Wimmer & Dominick, 1996). Firstly, the selected units were observed for the systematic collection of information. To do so, the DEPUC analysis model was used (Description, Participation, Use and Characteristics) (Álvarez García et al., 2014) through the information collection template (pp. 669-670) adapting its use to the questions which guide this study, with the insertion of a field related with the specific objective of the 2030 Agenda with which the observed digital content is identified, linked or related.

RESULTS

Below, the results are presented, organized into sections based on the research questions posed by the research. In the presentation of the data details, the first value is the number of cases and the second is the percentage of the total analyzed.

Informative characteristics of products and services based on open data

The first question asked what are the informative, formal, ownership and support characteristics of the products and services based on open data developed by the Latin American infomediary sector.

Escuela de datos-School of data en español, by the Open Knowledge Foundation, P2PU, Tactical Technology Collective and collaborators in Argentina, Bolivia, Costa Rica, Ecuador, El Salvador, Spain, Guatemala, Mexico, Peru and Paraguay; and Latinno, by the Berlin Social Science Center: WZB, Open Society Foundation-Latinoamérica.

From an informative perspective, among the cases selected in the sample, initiatives aimed at explaining, orienting, facilitating or promoting the use of open data were prominent (19; 63.3%); without dismissing the publication of journalistic products based on this type of source (6; 20%); or the creation of digital media specifically characterized by working with open data (5; 16.7%).

The qualitative analysis of the content of these initiatives, journalistic products and digital media presents an overview in which research is predominant (14; 46.7%), a function which is present in all categories of cases analyzed. This is followed by standard websites (11; 36.7%), reporting (3; 10%) and data aggregators (2; 6.7%), the latter being an exclusive format of the initiatives.

In terms of the predominant agents in the public availability of these contents and services, they are social, non-governmental and non-business in nature (23; 76.7%): they are mainly financed by non-governmental, professional and academic institutions or associations, and even by private individuals, notable among which are projects of citizen movements, associations and foundations (13; 43.3%) and alternative, university or small sized media (9; 30%). Private business is present (5; 16.7%) through products in mass journalistic media, and governments (2; 6.7%) supporting or financing specific programs.

With regard to the support they receive, 63.3% of the support comes from non-governmental professional and academic institutions/associations. Notable among these is support from international institutions and organizations such as the International Center for Journalists (5; 26.31%), Open Knowledge (4; 21.05%) and Open Society Foundations (3; 15.79%). From the governmental field (6; 20%), the support mainly from international institutions, such as the World Bank and the UN, must be highlighted.

In terms of the geopolitical sphere, a clear trend toward equilibrium is detected between national initiatives, products or services (15; 50%) and those which are transnational (14; 46.7%), in addition to those which are interregional (8; 26.7%) and international (6; 20%). The existence of local projects is also noted (in the analyzed sample 1; 3.3%). Many countries are active in focusing on open data, with presence in the analyzed content exceeding 16% in all cases.

Added value for society

The second question asked what added value these products and services seek to offer society, what issues they address and what relationship they establish with the thematic agenda. The selected cases form the context of the Sustainable Development Goals defined by the 2030 Agenda, mostly showing the relevance of the use and reuse of open data for promoting and consolidating “Peace, Justice and Solid Institutions” (27; 90%), promoting Latin American citizen empowerment as the basis for active citizens and robust governance, placing the emphasis on transparency and the right to access information (6; 20%). To achieve these objectives, it is an essential requirement to place the informative focus on the achievement of other goals such as ensuring quality education (3; 10%) which ends the digital and informational divide, gender equality (2; 6.7%), infrastructure and citizen services which guarantee health, wellbeing and cities and settlements which are “inclusive, safe, durable and sustainable” (4; 13.3 %), and respect for the Environment (3; 10%).

From the perspective of the issues addressed in these contents and services, with regard to the aforementioned 2030 Agenda, notable predominant issues are those related with social development (rights and freedoms) and citizen empowerment (17; 56.7%), dedication to issues linked with practice and methodologies related with the use of informative data (7; 23.3%), followed by economic (2; 6.7%) and environmental data (1; 3.3%). The monographic dedication of 10% of the studied cases to issues related with the democratic exercise of citizens is relevant: elections, candidates and results, which demonstrates the importance of the transparency of democratic processes and possibilities which the use and exploitation of open data offer for this purpose.

The target population identified are mostly journalists and communicators (25; 83.3%), followed by the general population (17; 56.7%), citizen groups or collectives (12; 40%), activists (14; 46.7%), NGOs (9; 30%), different administrations (9; 30%) and developers (8; 26.7%).

Models for collaboration and participation

The third question asked whether these contents and services promoted citizen collaboration and/or participation, and if so, how and to what extent.

Direct collaboration –either through user registration for the collection and opening of data, crowdsourcing forms or modification categorizing, labelling or checking content– is predominant in the cases studied (13; 43.3%) and fundamentally in cases characterized as initiatives. It is followed in significance by the resource of citizen participation through requests or suggestions (7; 23.3%); and comments on content, whether direct or through references or recommendations from social networks (5; 16.7%). Options are not implemented for participation or collaboration in 5 (16.7%) of the cases analyzed, among which there are journalistic initiatives and products, but none characterized as media.

To complete the understanding of how the relationship is produced between the journalistic initiatives, media and products and the participation of citizens in general, the models of exploitation identified in the analysis carried out should be mentioned: *hackathon* or similar initiatives for collection, opening and publication of data (3; 10%); catalogue or web directory of resources related with the open data (7; 23.3%); search engines and interactive digital content (research reports, journalistic products) based on data (16; 53.3%); and digital books or manuals available online (4; 13.3%).

Contribution to e-Governance

The fourth and final question asks how they can contribute to e-Governance from the perspective of quality in the interaction of government, businesses and civil society with the citizen as ultimate referent.

The analysis carried out reveal the extent to which these cases facilitate the verification and replicability of information and content they present, in the sense of them facilitating or not facilitating interoperability, reuse and release of data. Therefore, it allows it to be established whether as information products they are not only interpretative and final, but themselves form new data susceptible to

being interpreted, validated and compared, thereby collaborating in the promotion of informative transparency and the culture of reuse of data.

The organization models of the data identified are, from highest to lowest extent of access: tools or search engines for recovery and reuse of data (5; 16.7%); lists of hyperlinks to datasets or documentation related with the information (13; 43.3%); final products for presentation and viewing of data (36.7%); without any organization of data (1; 3.3%).

With regard to the analyzed sample, cases which allow the reuse of data are predominant (15; 50%), whether they are spreadsheets or other directly reusable data formats. Indirect recovery and reuse, essentially through the integration of data in HTML or PDF formats, have similar percentages (7; 23.3%) to those of contents and services in formats which do not allow the recovery of data (8; 26.7%) because they consist of mere references, because they do not have viable options or because they directly do not offer any access to them. The data publishing license used has similar proportions: open licenses (14; 46.7%) Creative Commons, OpenDataCommons or licenses with declared or inferred limitations or conditions; copyright (10; 33.3%); undeclared (6; 20%).

Particularly significant is the relationship of the categories of contents and services analyzed with the options for receipt, recovery and reuse of data by users, through organization models, of formats and publishing licenses for them. In journalistic products, no purposeful intention is perceived toward offering citizens options for access and reuse of data: it is only observed in half of this type of cases analyzed (3 of 6; 50%), in those which continue to have contents which are final, presenting or interpreting data without offering possibilities for consulting or processing them by recipients (3 of 6; 50%). In terms of those categorized as media, the trend is clear, as in all of them the role of citizens is reserved to options for the re-dissemination of content through social networks, although without the possibility of reusing the data (5 of 5; 100%). It is in the case of initiatives which shows a clear trend toward offering possibilities of access and reuse of data by citizens (12 of 19; 63.1%), over other models, formats and options which are more restrictive in this sense (7 of 19; 36.9%).

CONCLUSIONS AND DISCUSSION

Analysis of the ecosystem of Latin American informative digital content based on data reveals that there is a clear predisposition toward implementing initiatives intended to explain, orient, facilitate or promote the use of open data, mainly for undertaking research, characterized by their social character and mainly financed by non-governmental spheres. From the perspective of geopolitical origin, the activity of some countries such as Argentina and Chile is notable, both in initiatives of a national nature and in interregional and international initiatives. Comparing these results with the regional data of portals catalogued by the international Open Data Inception project, in the context of the sample used, no relationship is found between the number of open data portals available in a country and the informative production activity.

The majority international support received is significant, either from non-governmental or intergovernmental institutions, such as the UN or the World Bank, whose importance as an intermediary has been shown in the works by Van Schalkwyk et al. (2015), Davies (2014) and Rojas et al. (2014), among others. According to the calculation of average coverage of each objective of the 2030 Agenda, in the 14 countries of Latin America and the Caribbean which have metrics on the indicators proposed by the United Nations for measuring sustainable development, the targets related with goal 16.10 “Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements” have only been achieved in 36% (CEPAL, 2018b), which maintains access to information as an outstanding challenge for sustainable development and democratic governance to achieve, and places it on a third level with regard to priority in objectives in public agendas.

This situation is answered in the thematic treatment carried out by the analyzed cases, where a clear priority relationship with goal 16 of the 2030 Agenda is clearly observed: “Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels” (CEPAL, 2018a). In the Latin American ecosystem of digital

content based on open data, a reaction is therefore established with the assumption of a thematic agenda model aligned with promoting the empowerment of its recipients, as a basis for active Latin American citizens and robust governance in the region. This focus is consistent with both the aspects and objectives of the 2030 Agenda such as the Malmö Declaration (European Union, 2009) when proposing how growing access to public information in an effective and understandable way may empower citizens.

When relating these dominant issues with the target populations they intend to reach, a clear set of characteristic features is observed. Initiatives are aimed at broad, heterogeneous populations, and their contents and services have the predominant objective of making citizens participate in the informative practice, training them and raising their awareness of the practice and requirement of access to information and the transparency of public institutions. Predominant in digital media aimed at journalists and communicators is an orientation toward professional practice in general, and data journalism (with a specific mention to their opening) in particular. In terms of the journalistic products analyzed, in addition to political, social or economic information of general interest, the inclusion of issues related with transparency and citizen participation are detected for improvement of democratic quality, in a set of content intended as a whole for the general public, although often also open to activists and organizations and in some cases even explicitly to the governmental sector, which would be consistent with the efficiency models indicated by Tinati et al. (2012), but without a critical review of the real contribution of these initiatives yet being perceived, along the lines proposed by Janssen (2012).

The exploitation models of these contents and services unequivocally show the consideration given to the audience, which is considered an essential agent in a two-way process which is understood to varying degrees: from events such as the *hackathon* for collection, opening and data publication (Fumega, 2014; González-Zapata & Heeks, 2015), to the interactive consultation with catalogues, directories, search engines, research, reports or manuals. An extensive set of possibilities

for citizens, but also *with* citizens, through targeted direct collaboration processes in purposeful implementation of forms with great diversity, but concentrated in the collection, opening, public availability and re-dissemination of data and informative products based on them: crowdsourcing for categorizing, labelling and verification of content; related requests and suggestions; and comments and recommendations through social networks.

The contributions which the ecosystem of Latin American informative digital content based on data may make toward e-Governance are numerous and of various different types. From what has been observed on digital media dedicated to bringing the world of open data to citizens and journalistic products of mass media, the role reserved for the audience is to re-disseminate and comment on the content published and completed by broadcasters. Paradoxically, the search for opening and informative transparency declared in these cases contrasts with the absence of options for work by citizens with data on which the presented results are based and which would facilitate their verification and replicability, generating resonance and cultivation with both first and second order effects (Gerbner, 1998). The path toward quality in e-Governance has been established by the numerous specific initiatives implemented in this field, clearly aimed at facilitating and naturalizing the release, interoperability and reuse of data: interaction of government, businesses and civil society with citizens, found in the informative transparency which open data extends as an optimal instrument which grows from and for citizen empowerment, and takes on the holistic character which, as Gurin and Manley (2015) indicate, is essential for the real impact of these initiatives. Particularly because none of the elements have separately shown (La Rosa Barrolleta & Sandoval Martín, 2016), until now, the capacity for establishing changes which substantiate a consolidated and effective promotion.

FUNDING ACKNOWLEDGEMENTS

This work was supported by Project S2018 / EMT-4344, funded by the Community of Madrid and the European Regional Development Fund.

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