

# Digital Management Of Peruvian Public Entities

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## Abstract

A documentary review was carried out on the production and publication of research papers related to the study of the variable Digital management of public entities. The purpose of the bibliometric analysis proposed in this document is to know the main characteristics of the volume of publications registered in Scopus database during the period 2015-2020 in Latin American countries, achieving the identification of 124 publications in total. The information provided by said platform was organized by means of tables and figures categorizing the information by Year of Publication, Country of Origin, Affiliation and Type of Publication. Once these characteristics were described, a qualitative analysis was used to refer to the position of different authors on the proposed topic. Among the main findings of this research, it is found that Brazil, with 46 publications, is the Latin American country with the highest production. The affiliated institution that made the greatest contribution to the construction of bibliographic material related to the study of digital management of public entities was the National Polytechnic School with 7 published documents, and the type of publication that was most used during the period mentioned above was the conference proceedings, which represent 65% of the total scientific production.

**Keywords:** Digital management, public entities.

## 1. Introduction

The use of information and communication technologies (ICT) is increasingly implemented in organizations in order to optimize their processes through technological tools, thus achieving a digitization of certain procedures to make them more accessible to the target public. The technological factor has had a great advance in recent years, even more in 2020 where measures of social distancing were welcomed and the safest way to interact was using ICT; so, since that time they have sought to digitize the processes as a strategy to improve the service provided. One of the strategies to make possible an efficient digital management is the digitization of documents to reduce costs and improve the attention in the

procedures and ensure transparency in public entities (López Sánchez & Vásquez Paredes, 2020). A clear example of document digitization in public entities is in Peru, which by law 27658 of 2002 art. N° 01 "declared the Peruvian State in the process of modernization in its different instances, dependencies, entities, organizations and procedures, having as main purpose to improve public management and build a democratic, decentralized State at the service of the citizen" which leads the country to be a digital government; so speaking specifically of the municipality of the district of Los Olivos, its digital management is highlighted and how this has a relationship with the optimization of administrative management thanks to easy access to documents and transparency of

processes (López Sánchez & Vásquez Paredes, 2020).

Digital management is also presented as a solution to the bureaucratization of the processes developed by different State Entities, speeding up the time in the cases treated, transparency and easy access to information through digital tools. Therefore, digital management in public entities helps to improve access to information and decision making that would benefit citizens by providing clarity in the processes and reducing response times (Molina Maraví, 2016). The above evidences the importance of knowing the current bibliographic resources about Digital Management in Public Entities registered in Scopus in the period 2015-2020 that allows answering the question: How has been the production and publication of research papers related to the study of the variable Digital Management in State Entities during the period 2015-2020?

**2. General objective**

To analyze the production of high-impact research papers on the variable Digital management of public entities during the period 2015-2020 in Latin America from a bibliometric and bibliographic perspective, with a focus on Peru.

**3. Methodology**

Quantitative analysis of the information provided by Scopus is performed under a bibliometric approach on the scientific production related to the Digital Management of public entities. Also, from a qualitative perspective, examples of some research papers published in the area of study mentioned above are analyzed from a bibliographic approach to describe the position of different authors on the proposed topic.

The search is carried out through the tool provided by Scopus and the parameters referenced in Table 1 are established.

**3.1 Methodological design**

	<b>PHASE</b>	<b>DESCRIPTION</b>	<b>CLASSIFICATION</b>
<b>PHASE 1</b>	DATA GATHERING	Data was collected using the Scopus web page search tool, through which a total of 124 publications were identified.	Published papers whose study variables are related to the digital management of public entities. Research papers published during the period 2015-2020. Limited to Latin American countries. Limited to the area of computer science. Without distinction of type of publication.
<b>PHASE 2</b>			

	CONSTRUCTION OF ANALYSIS MATERIAL	The information identified in the previous phase is organized. The classification will be made by means of graphs, figures and tables based on data provided by Scopus.	Word Co-occurrence. Year of publication Country of origin of the publication. Affiliation. Type of Publication
<b>PHASE 3</b>	DRAFTING OF CONCLUSIONS AND FINAL DOCUMENT	After the analysis carried out in the previous phase, the conclusions are drawn up and the final document is prepared.	

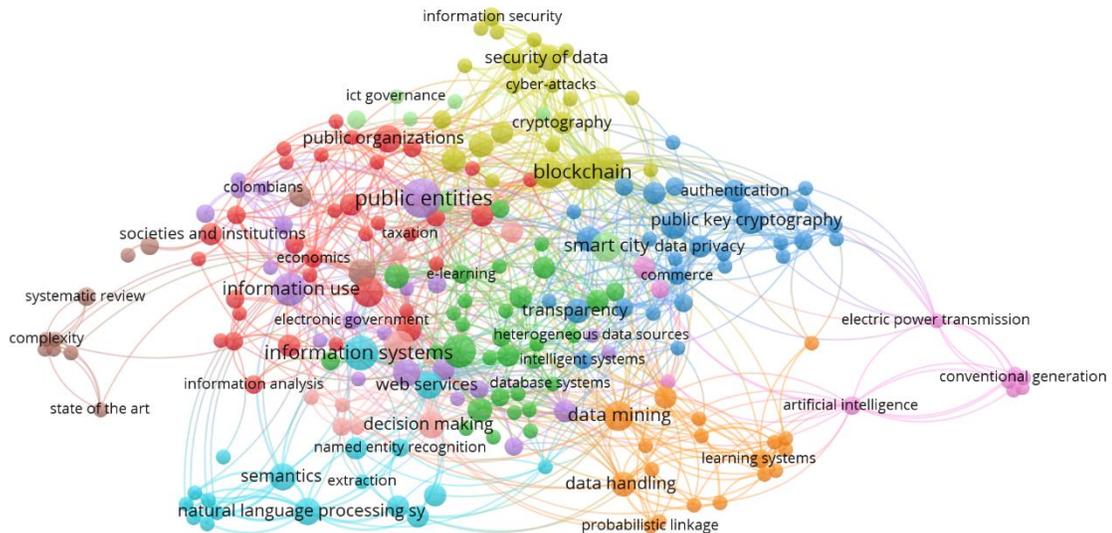
**Table 1.** Methodological design.

**Fuente:** Own elaboration (2021)

**4.1 Co-occurrence of words**

Figure 1 shows the co-occurrence of keywords within the publications identified in the Scopus database.

**4. Results**



**Figure 1.** Co-occurrence of words

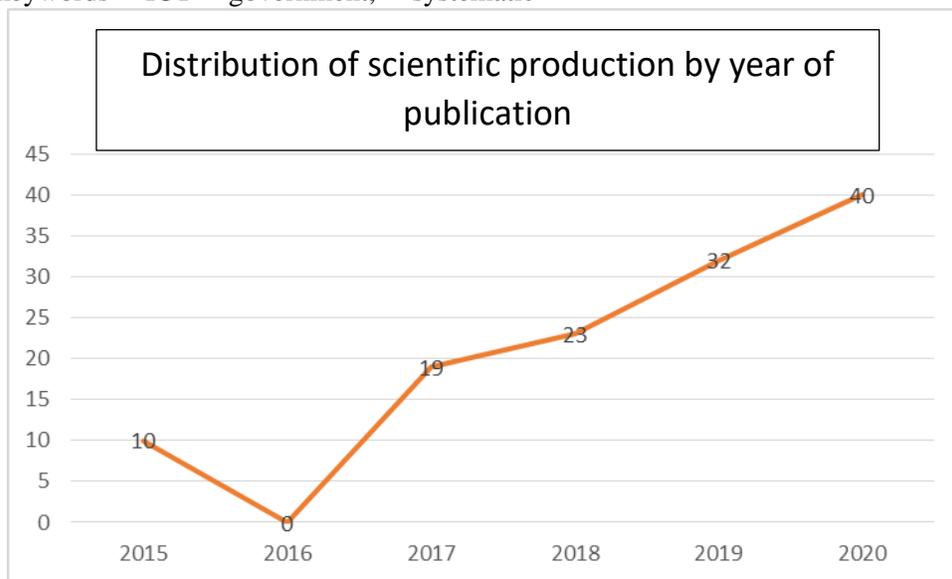
**Source:** Own elaboration (2021); based on data provided by Scopus.

This figure shows public entities as the most used keyword in the documents related to the variable under study, which is also the central theme itself, when investigating the digital innovations used in the administrative management of state organizations and their influence on the benefit of the citizen as well as being the most successful mechanism to avoid the bureaucratization of processes and slowness in its stages. There are also keywords such as information systems, web services, cryptography, procedural natural language, informative and semantic analysis, which are digital tools used to make information intelligible to all citizens who request it, this is provided through transparent database systems that ensure the security and privacy of personal data of citizens. On the other hand, the keywords ICT government, systematic

reviews, city, intelligent systems and economies are found, which evidences the role of digital management in the transition to a government that uses information and communication technologies as a strategy to accelerate its administrative processes and also help its economy by adapting to document digitalization, reducing paper consumption and being increasingly directed to sustainability and improving the service provided to citizens.

**4.2 Distribution of scientific production by year of publication.**

Figure 2 shows the scientific production distributed according to the year of publication, taking into account the period from 2015 to 2020.



**Figure 2.** Distribution of scientific production by year of publication.

**Source:** Own elaboration (2021); based on data provided by Scopus.

Figure 2 shows 2020 as the year with the highest scientific production related to the topic under study with a total of 40 papers

among which is "Towards a catalog of good practices for ICT governance in the context of Brazilian smart cities" (Reis et al., 2020) ICT

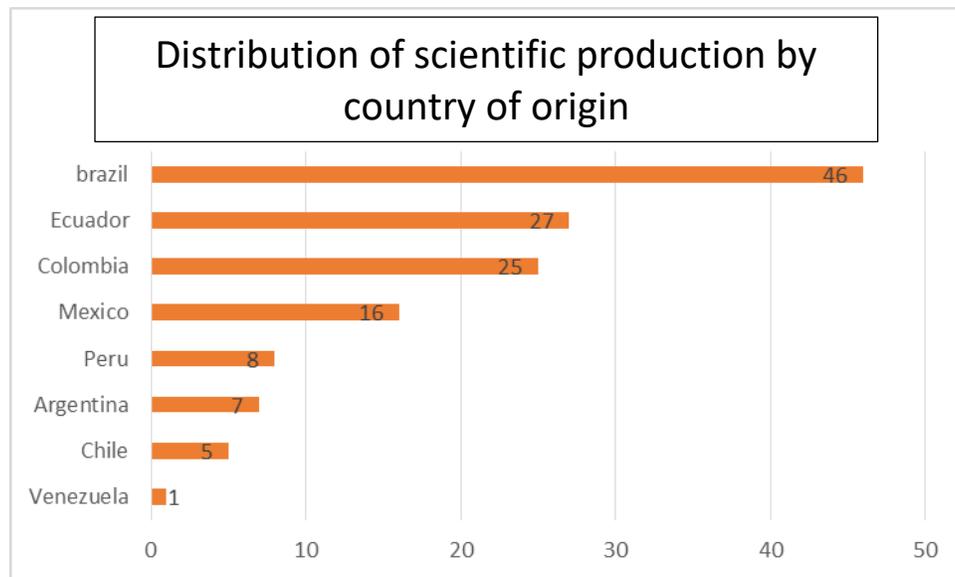
governance refers to the effective investment and use of ICT to guide organizations to achieve their strategic objectives. This study aims to identify good practices implemented by governments regarding the use of information and communication technologies for the development of smart cities by presenting the background and motivations for the use of ICT for the optimization of administrative processes of state organizations. In 2016, there were no documents concerning the Digital Management of Public Entities, even so, it is observed in the graph that since 2017 there is an increase in the production of studies with the researched topic having in 2020, being the year with more documents registered as mentioned above, double the number of documents registered in 2017.

The second year with more publications related to the variables under study was 2019

with 32 documents in total where "Challenges in the implementation of e-government for public institutions in Peru" (Ayquipa et al., 2019) is identified where research is conducted on the implementation of e-government in Peru, for the issuance of electronic payment receipts. It is carried out in the State entity Hospital Regional Guillermo Diaz de la Vega. This study addresses the challenges faced by the institution to carry out the implementation of the project, such as: economic aspect, network coverage, technological infrastructure and software development, digital literacy, variations of formats of ballot and electronic invoices.

#### 4.3 Distribution of scientific production by country of origin.

Figure 3 shows the distribution of scientific production according to the nationality of the authors.



**Figure 3.** Distribution of scientific production by country of origin.

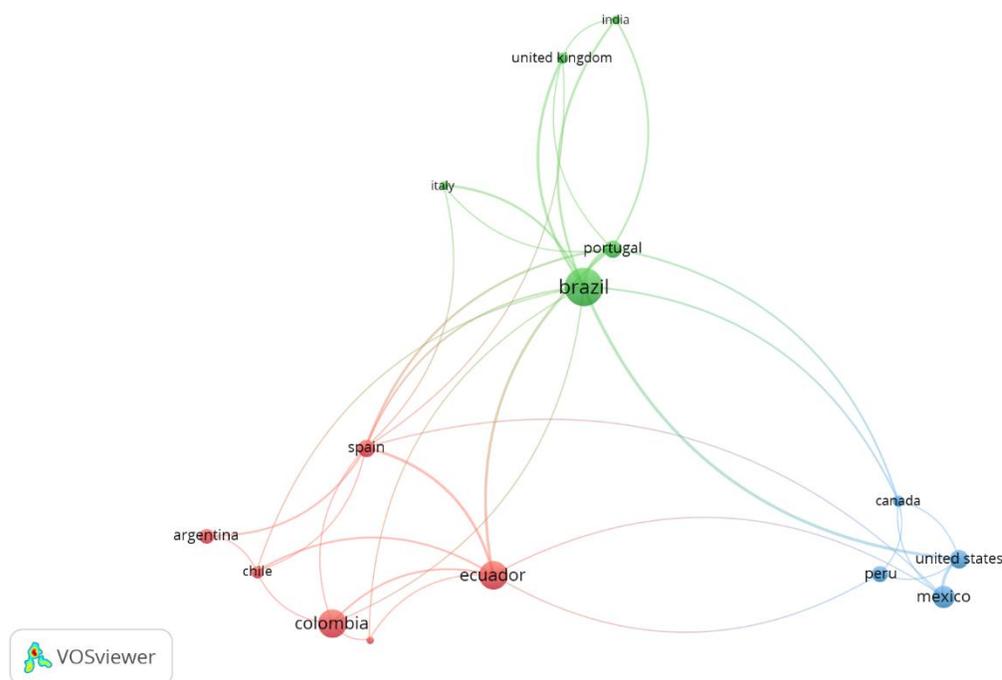
**Source:** Own elaboration (2021); based on data provided by Scopus.

Figure 3 shows Brazil as the Latin American country with more publications in relation to

the topic under study, with a total of 46, among which is "A capacity model for

interoperability in public administration" (Almeida et al., 2020). This study was applied to a government agency of information technology, which allowed to perform a diagnosis of interoperability to identify the strengths of the organization and how to prioritize actions for better performance. This study allowed to determine the different barriers that affect organizational performance and a stratified analysis of potential interoperability. In second place is Ecuador with 27 documents, followed by Colombia with 25, Mexico with 16 and Peru with 18 publications registered in Scopus about digital management in public entities.

At this point, it is worth noting that the production of scientific publications, when classified by country of origin, presents a special characteristic, which is the collaboration between authors with different affiliations to both public and private institutions, and these institutions may be from the same country or from different nationalities, so that the production of an article with co-authorship of different authors from different countries of origin allows each of the countries to add up as a unit in the general publications. This is best explained in Figure 4, which shows the flow of collaborative work from different countries.



**Figure 4.** Co-citations between countries.

**Source:** Own elaboration (2021); based on data provided by Scopus.

Figure 4 shows Brazil as the country with the greatest collaboration and production of scientific material in Latin America, with documents in affiliation with authors from countries outside Latin America, mainly

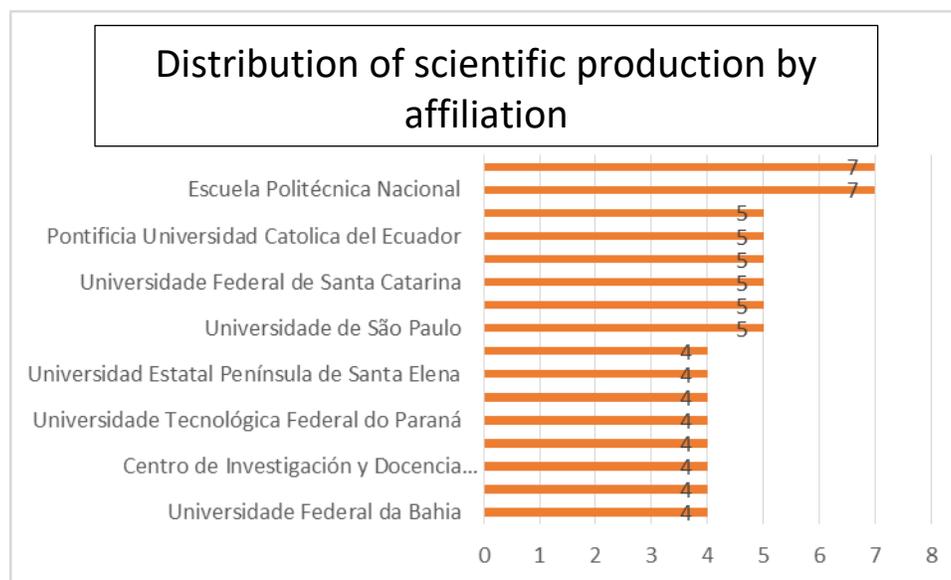
Portugal, India, Italy and the United Kingdom, which shows the participation of authors that provide a broader perspective on the topic under study, since they are not strictly Latin American. Ecuador is also found with

collaborations to affiliated countries such as Spain, United States and Canada mainly. Among these publications is "Blockchain analysis applied to a process for the national public data system of Ecuador" (Toapanta et al., 2022). In this research, the implementation of a Blockchain model as a digital management tool for the national public data system was analyzed. The main objective is to perform an analysis of the Blockchain to apply it to a process in the National System of Public Data of Ecuador and determine how effective and suitable its application would be; which concluded that the application of a Blockchain system in the national system of public data would benefit public entities and citizens; as it

will help participants greater data security and greater efficiency in the procedures requested by citizens and other public entities. This would help to provide administrative processes carried out by some state organizations with transparency in the development of procedures and agility in the resolution of problems presented by citizens.

#### 4.4 Distribution of scientific production by affiliated institution.

Figure 5 shows how the production of scientific publications is distributed according to the affiliated institution through which the different research methodologies are carried out.



**Figure 5.** Distribution of scientific production by affiliation.

**Source:** Own elaboration (2021); based on data provided by Scopus.

The National Polytechnic School and the Pontifical Catholic University of Ecuador are the institutions with the highest number of publications having registered 7 documents each, in the documents registered by the Pontifical University of Ecuador is identified "Study of the maturity of information security in public entities of Ecuador" (Patiño & Yoo,

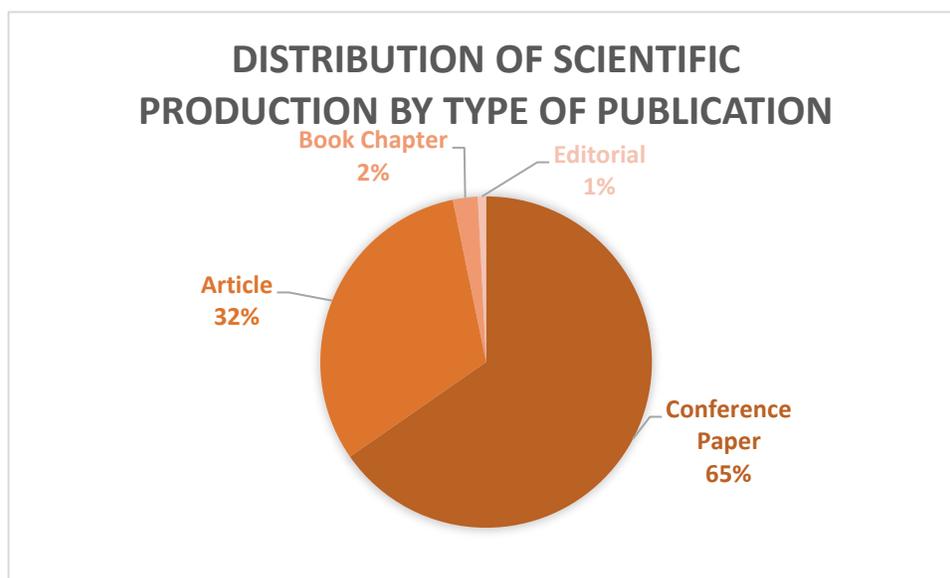
2018). This study analyzes the maturity of the Information Security Management Systems of the Public Sector of Ecuador by means of 5 factors which are: organizational internal control, information security policy, information security culture and technical activities for information security and new technologies, the results of this research were

that information security in public entities were more mature when implementing information and telecommunication technologies that helps to give stability to this system is the international parameters of information management. The affiliations with the highest number of published documents are the Federal University of Santa Catarina, the University of Sao Paulo, the Technological University of Paraná, the

Federal University of Bahia and the Peninsula State University of Santa Elena with a total of 5 documents registered in Scopus in relation to Digital Management in Public Entities.

#### 4.5 Type of publication

Figure 6 shows how the bibliographic production is distributed according to the type of publication chosen by the authors.



**Figure 6.** Type of publication

**Source:** Own elaboration (2021); based on data provided by Scopus.

Conference Articles, as shown in Figure 6, represent 65% of the total number of documents identified through Phase 1 of the Methodological Design, followed by journal articles with 32% of the total scientific production related to Digital Management and Public Entities, within these is "Information and communication technologies and technological services in public entities of the coffee triangle in Colombia" (Gómez et al., 2018) where the application of information and communication technologies in 39 Public Entities of the coffee triangle of Colombia was studied, revealing that there is no significant application of information and communication

technologies in the administrative processes of these organizations so it is concluded the important role of universities in helping state entities to make ICT adoption processes effective.

In third place is a book chapter with 2% of the total number of registered documents, where "Financing and resourcing of digital government strategies" is identified (Sandoval-Almazán, et al., 2017). This chapter presents a series of recommendations and strategies on how government entities can manage the difficult task of financing and resourcing digital government projects and

services throughout this cycle, by recognizing ICT as a fundamental tool in government entities for the provision of services. Thus, this book chapter recommends several strategies to facilitate better implementation of digital government initiatives for financing and resourcing in the public sector. And in third place is the publishing house with 1% of the documents related to the variables Digital Management and Public Entities.

## 5. Conclusions

Thanks to the bibliometric analysis proposed in this research, it can be determined that Brazil is the Latin American country with the largest number of bibliographic records in Scopus database during the period between 2015 and 2020 with a total of 46 documents. The scientific production related to the Digital Management of Public entities has presented a significant growth during the above-mentioned period, going from 19 publications in 2017 to 40 units in 2020, i.e., it was possible to double the creation of bibliographic records in a period of 3 years, which indicates the importance of the implementation of information and communication technologies (ICT) in public entities thus helping the transition in the digitization of their processes.

The main contribution of digital management in state organizations is to facilitate access to information by citizens through databases that allow them to know the status of their request, in addition to having optimized security systems thanks to the use of ICTs protecting the data handled by the different entities. Digital management has helped to debureaucratize the administrative processes that were given in some public entities, which caused delays in response times and thanks to the implementation of digital tools these procedures are much easier and faster preventing the accumulation of processes. One of the changes that has been made in Latin

America, and specifically in Peru, is the digitization of documents which allows to have all the information in a more secure way and with unlimited storage, thus having more secure information, which also helps to reduce the use of paper, thus helping to conserve resources and making the procedures more sustainable and with less public expenditure. Therefore, it is important to know, through bibliographic resources, the different measures adopted by Public Entities to adapt their processes to information and communication technologies and to recognize the need to digitalize most of the administrative processes so that citizens can have access to them from anywhere. For this reason, it is necessary to carry out studies such as the one presented in this document to offer the reader different perspectives through bibliographic resources on digital management in public entities and the implementation of ICT as a strategy to improve both access to information and information protection in state organizations.

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