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Digital Public Administration for Sustainable Development

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Abstract
The aim of our research is to highlight the main features and mechanisms of the digitalization of a public administration that would allow the promotion of a sustainable development and a more inclusive society. The proliferation of information and communication technologies in all fields along with the reporting of both economic and social benefits give us hope that these technologies will also find a role in the transformation, efficiency, or progress of public administration. The main research method was the bibliographic study, both descriptive and analytical. Through specialized software tools we highlighted the relationships and correlations between various concepts. The results obtained are encouraging and have highlighted the future courses of action, both theoretical approaches and the exchange of good practices.

Keywords: digital public administration, sustainable development, bibliographic study

1. Introduction

New Public Management Is Dead — Long Live Digital Era Governance was the title of an article published more than a decade and a half ago. The authors argued that the wave of "new public management" (NPM) in organizational change in the public sector was based on disaggregation, competition, and stimulation and that although its effects may still work in some countries, this wave was large. part blocked or reversed in some key "top" countries. This reduction can be explained by the fact that it mainly reflects the cumulation of indirect adverse effects on citizens' ability to solve social problems, as NPM has radically increased institutional and political complexity. It is believed that a number of connected and technology-focused changes will be critical in the coming period and the focus will be on reintegration, needs-based holism and digitization changes (Dunleavy et al., 2006).
Digital transformation is currently seen as the key driver of change in governments when the goals are to increase transparency, accountability, and efficiency, given that e-government can facilitate integrated policies and public services to promote sustainable and inclusive growth, social development, and environmental protection. E-government could thus contribute to the efficient management of resources and, consequently, to the improvement of the use of natural resources in order to avoid the deterioration of their use in the future (Castro & Lopes, 2021).
The European Commission considers that digital public administrations are needed today to ensure fast and high quality services for companies and citizens in Europe. This would

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involve an increase in funding programs and initiatives aimed at modernizing public administrations. The approach could be coordinated to facilitate user focus and cross-border interoperability.

1. Life and travel

For citizens are the following groups of services:

- Travel (for example, documents required to travel in Europe);
- Work and retirement (e.g., unemployment and benefits);
- Vehicles (e.g., registration);
- Residence formalities (for example, elections abroad);
- Education and youth (e.g., researchers);
- Health (for example, medical treatment abroad);
- Family (e.g., Couples);
- Consumers (e.g., shopping).

2. With regard to business, service groups refer to:

- Running a business (for example, developing a business);
- Taxation (for example, business tax);
- Selling in the EU (e.g., public contracts);
- Human resources (for example, employment contracts);
- Product requirements (e.g., standards);
- Financing and financing (e.g., accounting);
- Customer treatment (e.g., data protection) (European Commission, 2020)

It is believed that since the wave of the Fourth Industrial Revolution penetrated all dimensions of our society, information technologies have led the era of the Fourth Industrial Revolution. Information technologies such as big data, blockchain, Internet of Things (IoT), mobile and cloud technologies, artificial intelligence (AI) have tried to change the paradigms of economics, work, social culture, politics and even public services (Seo & Myeong, 2020).

The aim of our research is to highlight the main features and mechanisms of the digitalization of a public administration (Burlacu et al., 2021) that would allow the promotion of a sustainable development and a more inclusive society (Profiroiu et al., 2020). The proliferation of information and communication technologies in all fields along with the reporting of both economic and social benefits (Radulescu et al., 2018) give us hope that these technologies will also find a role in the transformation, efficiency, or progress of public administration (Sarbu et al., 2021).

2. Area Under Study

Recent research suggests that sustainability and sustainable development are concepts that are increasingly used in the field of public administration. In this respect, sustainability could play a significant contributing role if long-term planning, intergenerational equity, risk reduction and resource conservation are considered in administrative planning. The research followed the link between the principles of sustainable development and the principles of public administration. Some of the findings

of these studies argue that, for example, the concept of sustainable development on a broad basis shares foundations related to the principles of public administration and that large-scale sustainable development would require a healthy, growing economy subject to structural transformation and a higher standard of living, an economy in which benefits can be distributed equitably, protection of human rights, civil and democratic society, etc. can be ensured. Wide support would enable the citizen to participate in risk management which would allow governments to improve performance by including the knowledge of time and space available to citizen-consumers in government decision-making. (Leuenberger, 2006).

There are researchers who argue that sustainable development is an important new perspective on politics and public administration that has emerged largely outside the United States, and that this concept would seek to explicitly analyze the future consequences of current behavior. Symptoms of unsustainability are thought to be manifested everywhere, from greenhouse gases, climate change, ozone depletion, atmospheric acidification, toxic pollution, deforestation, extinction of biological species, desertification, land degradation, depletion of non-renewable resources, solid waste pollution or urban air pollution (Bartle & Leuenberger, 2006).

The study of the literature also revealed a series of studies that discuss the impact of the digital transformation of governance mechanisms in terms of tools to promote sustainable development and more inclusive societies, in the spirit of the United Nations 2030 Agenda. pursuing inclusion, trust in software infrastructures and enforcement mechanisms of more transparent and accountable public institutions. The findings of the study suggest that digitization has not yet proved as revolutionary as what happened in the late 19th century when wired telegraphy or the advent of household appliances, electricity, water, and gas networks radically transformed the way life relative to gender. Digitization is seen as opening the opportunity to "make government better" and, with proper planning, could contribute to achieving the sustainable development agenda, which is seen as crucial in the years to come. However, it is concluded that digitalisation is a global phenomenon and a simple transfer of e-government solutions from developed to developing countries may be inadequate. because the different institutional, cultural and administrative contexts should be taken into account (Barbosa, 2017).

Starting from the recent trend in which the administration is the one that empowers citizens to create public value on their own, through socio-technical systems that bring data, services, technologies and people together to meet changing social needs, some research has explored how the challenge public governance for sustainable development could give rise to a new "trend" as a successor to bureaucratic, consumerist and participatory paradigms. Researchers called these systems "platforms," and called the "trend" a "platform paradigm." The research methodology was based on the analysis of the research literature. The analysis highlighted three entities - administration, citizens, and politicians - and fifteen types of relationships within different governance paradigms: administered, governed and regulated under the bureaucratic paradigm; serves, hires, transforms and legitimizes under the consumerist paradigm; reveals, monitors and participates in the participatory paradigm; and empower, learn, coordinate, create and collaborate within the platform paradigm (Janowski et al., 2018).

3. Methodology

The main method used in our research is the bibliometric study. Bibliometrics is recognized as the statistical analysis of written publications, such as books or articles. The proliferation of information and communication technologies together with the electronic transformation of publications has led to a frequent use of bibliometric methods. Bibliometrics is currently used to obtain quantitative analyzes of academic literature. Research shows that the study of bibliometric networks, such as co-authoring, bibliographic coupling, and citation networks, has a long history in the field of bibliometrics, with early papers dating from the 1960s and 1970s (Perianes-Rodriguez et al., 2016). Studies show that the most studied types of bibliometric networks are based on citation, co-citation, bibliographic linking, co-occurrence of keywords, and co-authoring networks, and three popular, graph-based, and distance-based visualization approaches are distinguished. based on chronology. Today there are a multitude of software tools that can be used to view bibliometric networks. Recent research, however, has focused specifically on two of these software tools: VOSviewer and CitNetExplorer (van Eck & Waltman, 2014). Considering the discussions, the techniques used by these tools to build, analyze, and visualize bibliometric networks and tutorials that demonstrate step by step how these types of tools can be used as well as the level of limitations and the correct use of bibliometric views of the network we chose to we use the first software, VOSviewer. VOSviewer is a computer program developed for creating, viewing, and exploring bibliometric maps of science, which can be used to analyze several types of network bibliometric data, such as citation relationships between publications or journals or collaborative relationships between researchers and the emergence of relationships. among scientific terms (Eck & Waltman, 2016).

4. Findings

For the bibliometric analysis, we first searched in the Web os science databases articles that debated as a subject the digitalization of the public administration in correlation with the sustainable development. We identified 52 references that were introduced in the analysis software. The obtained image is presented in figure 1.

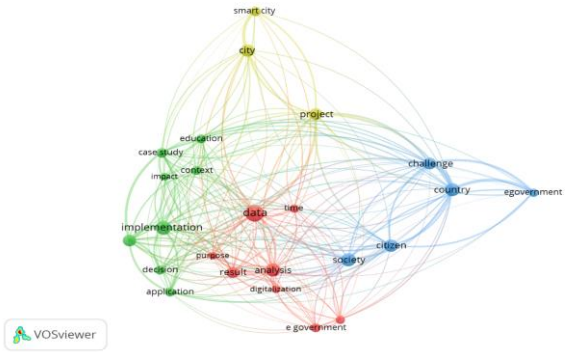

Figure 1. The relationship between digitalization of public administration and sustainable development in the literature available in Web of Science databases

The analysis of the relations between the concepts can give us a relative image on the phenomenon. The use of the software revealed the appearance of four cloisters highlighted in different colors. The blue cluster relates the concept of e-government to the challenges, citizens, and society, which revolve around the concept of country which can indicate important specificities of nations with major implications in the process of digitalization of public administration. A special cluster consists of the concepts of smart city, projects, and cities. This relationship unequivocally highlights the researchers' concentration on single projects, successful case studies or good practices derived from the implementation of successful projects. Sustainable development in direct relation with the digitalization of public administration is partially found in current research. The relatively small number of articles identified in Web of Science databases may suggest that this type of approach is still in its infancy, with a focus on immediate impact topics such as implementations. decisions, impact. case studies and education, which is highlighted in the green cluster.
To test these assumptions we used the same search techniques with the same concepts in the Scopus databases. A search in the Scopus databases of the same topics, regarding the digitization of the public administration in correlation with the sustainable development led to the highlighting of 72 articles. An analysis of the domains in which they were published can be found in figure 2.

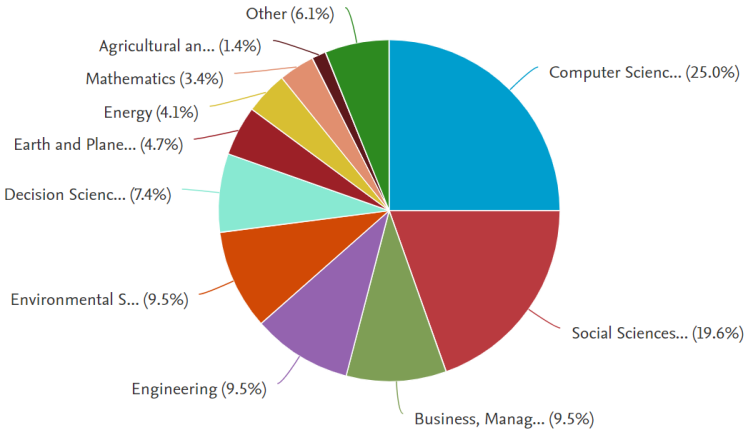

Figure 2. The share of the fields of publications in Scopus that treat the digitalization of public administration in correlation with sustainable development

The diagram in Figure 2 reflects, perhaps not surprisingly, the fact that the predominant areas in disseminating research results on the digitization of public administration related to sustainable development are computer science and social sciences.

5. Results and Discussion

Perhaps the importance of bibliometric analysis is given by the highlighting of scientometric indicators. Thus, from the analysis of the articles found in the Scopus

databases, we find the citation of works in this field accumulates over the years but also recent ones can accumulate a significant number of citations if they deal with topics of stringent interest. One of the most cited papers was published four years ago and deals with the Implementation of Sustainable Development Goals with Digital Governance - as the Aspiration-Capacity Gap (Janowski, 2016).

A research that stands out in the main flow of scientific papers found in both databases (Web of Science and Scopus) considers that the provision of public services through specific ICT solutions would involve the integration of e-services technologies in European sustainable development policy (Ursacescu, 2009). It can be an eloquent example of the evolution of the relationship between technology and public administration in the context of the challenges of sustainable development policies.

However, recent research shows that institutions themselves are not actors and it would be recommended to discuss the adaptation activities of those social groups that relate technologies to institutions. In research, four types of digitization management in Russia are exposed for example. These are a demonstration of the effect of exaptation, when an institution imports animate initial functions, and acquires additional functions associated with the reproduction of power-property relations. It is argued that if in the West Internet technologies are organically linked to institutions that expand the opportunities for democratic participation of citizens (electronic collection of signatures in appeals to authorities, electronic reporting by authorities, electronic voting in elections, etc.), in The social rating system created in the People's Republic of China has developed institutions that limit such opportunities. The authors consider that to improve the management of the development of computerization in Russia, it is advisable, first, to change the rooted view of ICT as an absolute good, which ensures the well-being of society and is considered only a tool data processing which - like any tool - can be used both for the benefit of society and to its detriment. It is considered that IT technologies by themselves do not make decisions but only create additional opportunities for their preparation / execution / control and could multiply the consequences - both positive and negative, which would involve finding a balance between centralized management and decentralized civilian control (Lukashov et al., 2021).

Research dealing with the digitalization of society, including in the economic sphere, shows the relevance of the development of digital platforms in sustainable economic development by presenting examples of digital platforms successfully implemented in the economy. This considers the role of the state in the development and implementation of digital platforms in public administration. The idea of this research is to demonstrate how the transformation and evaluation of the digital platform into a decision-making monitoring system could serve as a tool for sustainable development (Stepanova et al., 2020).

6. Conclusion

We agree that more and more scientists, especially in universities, feel uncomfortable due to the gradual increase in the measures used to quantify their scientific output, considering that such a quantification could suggest that scientific progress may be numbered or quantitatively measurable scientific significance. Thus, universities

become arenas for free intellectual pursuit and begin to resemble more and more factories, which is not desirable. When asked if science can be measured, some researchers answer shield not arguing that although a number of Scientometric indices have been developed in order to do exactly this, there is no easy way to quantify, for example, which of two published papers recently will have a greater influence in setting future research agendas, generating innovation and a number of citations in the scientific literature (Giske, 2008).
The growing trend for e-government and the distribution of e-services is challenging for researchers who have sought to understand whether previous research on e-government systems focused on promoting successful public governance and regulatory management believes that the introduction of technologies in public administration can be a tool for sustainable development. Research has generated information on the benefits of e-government for sustainable development, finding that the proper use of sustainable online services and citizen participation are key components of sustainable development (Nica, 2015).
More and more research consider that the current situation is determined by social, economic, environmental uncertainties and the proliferation of information and communication technologies that can cause instability of development and form a new stage of social development, which is conventionally called digital civilization. It is considered that the ambiguity of the interpretation of this term is reflected in its derivatives, which is fully linked to the concept of digital economy and the development of digital infrastructure, the transition to networking principles, personalization of the Internet are factors that could change ethical principles and foundations. socio-cultural interaction. The issue of individual and collective cultural practices and patterns of behavior based on a new hierarchy of values would thus acquire special relevance in social and humanitarian knowledge (Astafyeva et al., 2018).

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