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INNOVATION AND DIGITAL TRANSFORMATION IN LOCAL COMMUNITIES

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Abstract

The use of technology is inevitable in a society of knowledge, being implemented including at the level of local governments where has the potential to improve interactions between local authorities and citizens through the simplification of procedures, as well as contributing to open local government. The innovation and digital transformation of government means the further modernisation of public administration, seamless cross-border mobility and enhanced digital interactions. The paper aim is to show that local governments operate in an increasingly open and receptive manner by using innovation and an increasing number of digital tools that facilitate the development of local communities and the improvement of living standards.

Keywords: *information technology, local community, innovation, local government.*

JEL Classification: H70, O36.

1. INTRODUCTION

Local communities are complex, with a population that is increasing rapidly and with the needs constantly evolving. In this context, digitization and connectivity is necessary, and data is emerging as the new and indispensable raw material for understanding what is happening within a local community. The most important thing is the fact that any local community should have a responsive mentality, shifting from “public service” to “services to the public” based on the improvement of their services (Lazard, 2020). Data sharing speeds up the decision-making process of local governments, allow more democratic processes in shaping public policy, improves mobility and living conditions, and optimizes the services offered to citizens.

Citizens are demanding access to data and information based on transparency principle regarding the local budget and how local governments spend their tax money. The efficiency of local governance is conditioned by the direct collaboration between authorities and citizens. Data is an important instrument to measure and evaluate the effectiveness of existing services and to take quick action to improve public facilities. Digitalisation is transforming public services to be more efficient, more effective, and more transparent (Choi, 2016; Cordella and Tempini, 2015; Lindgren et al., 2019; Ranerup and Henriksen, 2019; Wihlborg, Larsson, and Hedstrom, 2016; Wirtz et al., 2019; Yildiz, 2007, Anderson, Hallin, and Ivory, 2022). Adopting an intelligent and innovative approach by local governments to serve local communities will lead to good public services and businesses will not suffer anymore because of inefficiency, functional silos, and lack of communication of local institutions. Digitalization with data sharing can provide personalized public services for business and individual.

At the same time, data sharing has advantages of working as a team, sharing between the various departments improves the efficiency of the staff, reshaping the work of civil servants or public administrators (Buffat, 2015; Cordella and Tempini, 2015; Petrakaki, 2018; Wirtz, Weyerer, and Geyer, 2019, Anderson, Hallin, and Ivory, 2022).

The digital transformation is creating a bridge between local governments, on the one hand, and experts, businesses, and innovators, on the other hand. Data sharing creates opportunities for innovations, breaks down barriers and serves as an outstanding tool for development and innovation (Lazard, 2020). Using the information communication technology (ICT) is accomplished the electronic government (e-government) system and a green economy (Ullah et al., 2022).

The paper aim is to show that local governments operate in an increasingly open and receptive manner by using innovation and an increasing number of digital tools that facilitate the development of local communities and the improvement of living standards.

2. PRACTICAL APPROACH OF DIGITALIZATION

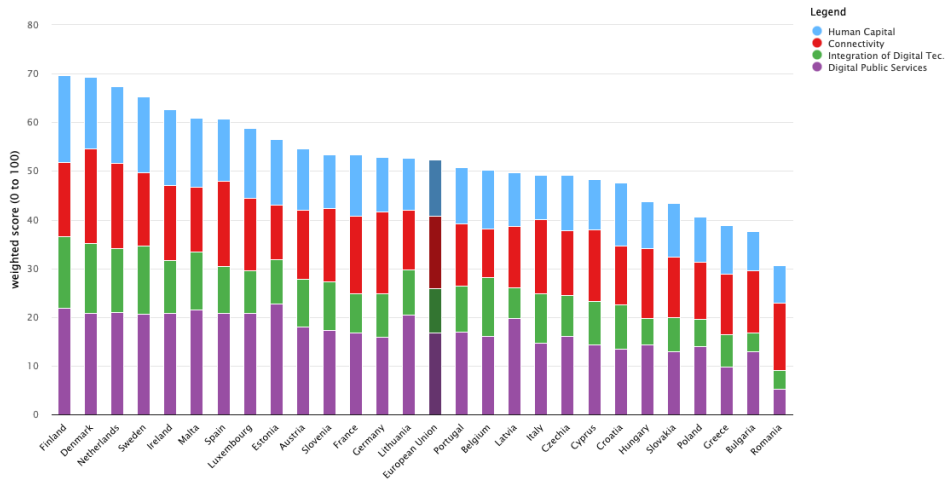
In Europe, the knowledge society is developing more and more, and a special field is the Internet through which the public administration and taxpayers communicate for the performance of their activities, respectively the fulfillment of duties (public services) and not only that. The new economy is built around the Internet and Europe's position largely depends on its content and use. In this sense, in its evolution, Europe initially developed the e-Europe Action Plan (established by Decision 98/253/EC/30.03.1998) for the promotion of the information society that has the following key objectives: i) involvement in the information age and online connection of all citizens, companies and administrations; ii) creating a computer-educated Europe with a managerial culture ready to finance and develop new ideas.

The EU considers that there are two drivers of digital government, respectively:

- i) digital public services that are seen very important to achieving the digital single market by allowing people to access services, goods and data reliably and quickly across borders. In this context, the e-Government Action Plan 2016–2020 was conceived as part of the Digital Single Market Strategy.
- ii) concerns about European digital sovereignty, especially around emerging technologies.

2030 Digital Compass communicated by European Commission identifies digitalisation of public services as one of four landmark points in the EU's digital decade and sets targets to achieve them. The 2030 policy programme adopted in September 2021 defines digital targets first introduced in the Digital Compass for member states, as well as a governance framework for achieving these goals. More than €150 billion targeting various programmes, including the Recovery and Resilience Facility, has been set aside by the EU for the purposes of digitalisation, a large part of which will be spent on digital government at national and local level (Large and Barasa, 2022). Covid-19 has also accelerated experience with data-driven policy and decision-making with digital technology.

The European Commission has monitored Member States' progress on digital and published annual Digital Economy and Society Index (DESI) reports and the 2021 DESI scores can be seen in Figure 1.

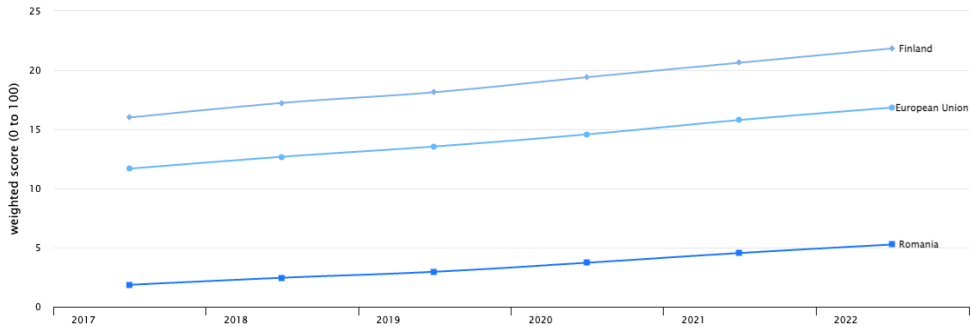


Source: European Commission, 2022

Figure 1. Digital Economy and Society Index, by Main Dimensions of the DESI, in 2021

According to Figure 1, the best positioned is Finland from the perspective of the index score, followed by Denmark, the Netherlands and Sweden. The lowest DESI level is recorded in Romania. Strictly from the perspective of Digital Public Services, Estonia ranks the highest DESI score, and Romania the lowest. The gap is significant for Romania compared with the level of DESI in the other countries of the European Union. Italy, Poland and Greece improved their DESI scores substantially over the last years based on the implementation of sustained investments financed by European Union funds with a reinforced political focus on digital technology (European Commission, 2022).

The DESI 2021 results shows that while most of the Member States are making progress in their digital transformation, the adoption of key digital technologies by businesses, such as artificial intelligence and big data remains low, also among the EU frontrunners (European Commission, 2022). In this sense, we can observe the evolution of the two countries with the highest DESI score (Finland) and with the lowest score (Romania), and as well as the average of the European Union in Figure 2.



Source: European Commission, 2022

Figure 2. Digital Economy and Society Index (DESI) 2021, by Digital Public Services

The gap between the two countries (Finland vs Romania) is very pronounced and reflects the colossal difference in the evolution of the implementation of digital technologies. Of course, progress has been made by Romania, but this gap is kept as a perfect parallel, which means that each of the countries is evolving, but each at its own level. Compared to the average of the European Union, we can see that this gap is accentuated in the case of Romania, but smaller in the case of Finland. Thus, we can conclude that most of the EU states have made significant progress in the digital transformation, rooting the EU media as close as possible to the best performing state, Finland.

3. E-GOVERNMENT AT THE LOCAL LEVEL

Local governments and public institutions are the ones that interact directly with citizens and, thus, are challenged to use digital technologies for a variety of purposes, such as dissemination of public information based on their plans and objectives, daily operations, and public services offerings. Digital platforms can be used for paying taxes and fees, can facilitate communication and consultation, enabling a wide range of stakeholders to interact with and participate in local governance and contribute to decision-making either directly or indirectly.

Using digital technologies helps local governments streamline operations and reduce their administrative burden, facilitate remote interaction and promote transparency with the public, generate more efficient internal communication and collaboration, increase overall efficiency in a way that is friendly to the environment, and mitigate corruption (United Nations, 2020, 2022).

United Nations (2020) developed Local Online Services Index (LOSI) based on 80 indicators relating to four criteria: technology, content provision, services provision, and participation and engagement (Table 1).

Table 1. Local Online Services Index (LOSI)

Technology	Content provision	Services provision	Participation and engagement
<ul style="list-style-type: none"> - Mobile device accessibility, - Browser compatibility, - Ease of portal finding, - Internal search mechanism, - Navigability, - Portal loading speed, - Foreign language support, - Internal advanced search mechanism, - Customization of displays features, - Alignment with accessibility standards, - Alignment with display standards, - Alignment with markup validation standards 	<ul style="list-style-type: none"> - Names and contacts of heads of department - Contact details - Information about provided services - Municipality information - Health information - Education information - Environmental information - Organization structure - Sports and culture information - Links for government agencies - Social welfare information - Budget-related information - Procurement announcements - Open data provision - Evidence of portal content update - Facilitation of free internet access - Evidence of smart cities initiatives - Privacy policy - Statistical data and studies - Online user support - Procurement results - Open data policy - Open data metadata - Information on online services use 	<ul style="list-style-type: none"> - Portal authentication, - Online fees payment, - Municipality responsiveness e-mail, - Online vacancies, - e-Procurement service, - Personal data accessibility, - Online building permit, - Quality of e-mail response, - Daily of e-mail response, - Report of any form of discrimination, - Personal data updating, - e-Payment, - Police online declaration, - Online business license, - Online environment-related permit, - Address change notification, - Online birth certificate, - Online marriage certificate, - Online death certificate, - Online residentship, - Online vehicle registration, - Online drivers license, - Online land title registration. 	<ul style="list-style-type: none"> - Social networking features - Feedback/complaint submission - Online deliberation processes - Information on the public meeting of the municipality council - Reporting of occurrence in public spaces - Participatory land use plan - Announcement of upcoming e-participation activities - Participatory budgeting - Feedback about consultation processes - Real time communication - e-Voting

Technology	Content provision	Services provision	Participation and engagement
	<ul style="list-style-type: none"> - Third parties partnership information - Evidence of emerging technologies use 		

Source: United Nations (2020)

According to United Nations (2020), LOSI indicators were applied over 100 cities in 2020 based on geographical location and population distribution, respectively 29 in Asia, 32 in Africa, 21 in Europe, 16 in the Americas, and 2 in Oceania. The results show a good position of Europe, which has the highest proportion of leading cities as a share of the regional total. European cities also dominate in Participation and engagement. Regarding technology, leading cities in Europe are Madrid and London (Rank 2). In content provision the highest-ranked cities are Madrid, Paris, and London (Rank 1). Madrid is the highest-ranked city (Rank 1) on Services provision and Participation and engagement. On the last subcategory (Participation and engagement) another leading city with Rank 1 is also Paris. However, Madrid has been ranked first in content provision, services provision, and participation and engagement and second in the technology category; London ranks high in content provision, where it is tied for the top spot, and in technology, where it ranks second, and it has lower performance in the services provision category, where it ranks nineteenth, and in the participation and engagement category, where it ranks fifteenth; Paris ranks tenth in technology and eighth in services provision, but ranks first in participation and engagement; Lisbon does not rank very high in terms of technology and content provision, but it is on the top four in the participation and engagement category.

4. CONCLUSION

The member states of the European Union follow an intense digitization program at the level of local governments established by European Strategies and Decisions of the competent institutions, of course with different developments depending on the economic status of each of them. However, we cannot fail to notice that innovation and digital development at the level of local governments involve a series of challenges that they must face, in general, and that can be barriers to slowdown them (from digital development), such as: inadequate information and communication technology infrastructure, weak bandwidth, low Internet speed, threats to privacy and security, the lack of skilled workers and managing bureaucratic processes, and the digital divide that arises from broad socioeconomic inequalities.

References

- 1) Andersson, C., Hallin, A., Ivory, C. (2022). Unpacking the digitalisation of public services: Configuring work during automation in local government. *Government Information Quarterly* 39 (2022) 101662, <https://doi.org/10.1016/j.giq.2021.101662>.
- 2) Buffat, A. (2015). Street-Level Bureaucracy and E-Government. *Public Management Review*, 17(1), pp. 149–161. <https://doi.org/10.1080/14719037.2013.771699>.
- 3) Choi, I. (2016). *Digital era governance: IT corporations, the state, and e-Government*. Taylor & Francis.
- 4) Cordella, A., Tempini, N. (2015). E-government and organizational change: Reappraising the role of ICT and bureaucracy in public service delivery. *Government Information Quarterly*, 32(3), pp. 279–286.
- 5) European Commission (2022). *Digital Economy and Society Index (DESI) 2022*. [online] Available at: https://digital-agenda-data.eu/charts/desi-components#chart={%22indicator%22:%22desi%22,%22breakdown-group%22:%22desi%22,%22unit-measure%22:%22pc_desi%22,%22time-period%22:%22022%22}. [Accessed 5.01.2023].
- 6) Large, O., Barasa, H. (2022). *Digital Government in Europe: In Pursuit of Cross-Border Functionality*. Tony Blair Institute for Global Change. [online] Available at: <https://institute.global/policy/digital-government-europe-pursuit-cross-border-functionality> [Accessed 7.01.2023].
- 7) Lazard, J.-M. (2020). *Communities at the Heart of the Digital Transformation*. [online] Available at: <https://www.opendatasoft.com/en/blog/communities-at-the-heart-of-the-digital-transformation/> [Accessed 7.01.2023].
- 8) Lindgren, I., Madsen, C.Ø., Hofmann, S., Melin, U. (2019). Close encounters of the digital kind: A research agenda for the digitalization of public services. *Government Information Quarterly*, 36(3), pp. 427–436.
- 9) Petrakaki, D. (2018). Re-locating accountability through technology: From bureaucratic to electronic ways of governing public sector work. *International Journal of Public Sector Management*, 31(1), pp. 31–45.
- 10) Ranerup, A., Henriksen, H. Z. (2019). Value positions viewed through the lens of automated decision-making: The case of social services. *Government Information Quarterly*, 36(4), 101377.
- 11) Ullah, A., Pinglu, C., Ullah, S, Hussain Qaisar, Z, Qian, N. (2022). The dynamic nexus of E-Government, and sustainable development: Moderating role of multi-dimensional regional integration index in Belt and Road partner countries. *Technology in Society*, 68 (2022) 101903. <https://doi.org/10.1016/j.techsoc.2022.101903>
- 12) United Nations (2020). *United Nations e-Government Survey 2020. Digital Government in the Decade of Action for Sustainable Development*. United Nations: New York. [online] Available at: [https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2020-Survey/2020%20UN%20E-Government%20Survey%20\(Full%20Report\).pdf](https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2020-Survey/2020%20UN%20E-Government%20Survey%20(Full%20Report).pdf) [Accessed 9.01.2023].

- 13) United Nations (2022). e-Government at Local Level. [online] Available at: <https://publicadministration.un.org/egovkb/en-us/About/E-Government-at-Local-Level> [Accessed 3.01.2023].
- 14) Yildiz, M. (2007). E-government research: Reviewing the literature, limitations, and ways forward. *Government Information Quarterly*, 24(3), pp. 646–665.
- 15) Wihlborg, E., Larsson, H., Hedstrom, K. (2016). "The computer says no!"—A case study on automated decision-making in public authorities. In *Paper presented at the 2016 49th Hawaii International Conference on System Sciences (HICSS)*.
- 16) Wirtz, B. W., Weyerer, J. C., Geyer, C. (2019). Artificial Intelligence and the Public Sector—Applications and Challenges. *International Journal of Public Administration*, 42(7), pp. 596–615.