

THE IMPACT OF IMPROVEMENT THE DEGREE OF DIGITIZATION OF FINANCIAL AND BUSINESS ACTIVITIES ON SOCIO-ECONOMIC STRUCTURES IN ROMANIA

Oana Ramona Glont*

Romanian Court of Accounts, Timișoara, Romania

Abstract

This research paper proposes to analyze the impact of the digitization process on the socio-economic structures in Romania. Digitization is an essential factor in terms of controlling the gross domestic product indicator, of investments channelled through public policies, so that their economic efficiency is maximized, and of increasing consumption in the current economic context, taking into account the current geopolitical challenges. As it is known, the Covid 19 Pandemic had an important role in accelerating the digitization process in all fields. In this state, a number of companies with a high digitalization index have been identified, but in addition to the effects of digitalization, there are also recent events that have caused negative effects in the digitalization process, specifically in the banking field.

The main objective of the works proposes to highlight the fact that in countries where there is a qualified, healthy workforce and able to adapt to new technologies and the demands of the global market, the digitalization phenomenon contributes to the development of investments, of human capital, which is essential for economic growth and long-term stability. In order to achieve the main objective, that of identifying and highlighting the impact on the e-government development activity that has the effect of increasing the efficiency of the government administration, two stages were considered: one stage refers to the formation of clusters subject to further analysis and the algorithm k -means, and the second involves identifying the public impact that the digitization of services has on increasing the efficiency of governments.

Keywords

digitization of companies, digitization index, environmental, social and de governance, sustainable development

JEL Classification

L86, M10, M15, M21, M49

* Corresponding author, **Oana Ramona Glont** – [oanaramona.glont@gmail.com](mailto: oanaramona.glont@gmail.com)

Introduction

The objective of approaching this topic is to identify and highlight the impact that the development of e-government has on increasing the efficiency of government administration. The importance of approaching this topic derives from the desire to respond to the challenges related to the use of the most effective public policies taking into account the economic context, current social and political and public sector vulnerabilities and potential unintended consequences. The purpose of the research is to organize the collected data and make a robust investigation of authors, institutions, countries sample, indicators and methodologies applied to measure public sector performance at the macroeconomic level.

Contemporary concerns for measuring the performance of the public sector, in the current economic context, at the national level, presuppose the need to mention the multidimensional reality of the economy, thus resorting to a series of positive effects and negative contextual situations generated by migration, pandemic, crises, the structure of the Euro- Atlantic, the quality of public governance, climate change, wars, pandemics.

As is known, the phenomenon of digitization is related to the civilization of our days, which includes in its entirety the population, associations, civilizations, bodies, society and all socio-economic structures. As mentioned by Hosznofsky and Junge (2019) and Lichtenthaler (2021) in their works, digitalization as a whole greatly influences companies and institutions in all sectors of activity.

At all levels, and in all states, politicians decide - through their proposals, the directions of development in the IT field, the development of Internet access in as many areas as possible, including disadvantaged ones, the prioritization of investments, the structuring of digitization at the level of structures and departments. According to the studies, the states cataloged developed from the point of view of digitalization, having an advanced level of digitalization, were found to have obtained significant economic, social and political advantages over time.

1. Review of the scientific literature

According to the works published over time, it is found that digitization significantly influences the main variables in the economy - such as productivity, potential production, gross domestic product and inflation. Thus, in the current context of the current economy and the geopolitical influences that mark the world, the digitization phenomenon has evolved at an accelerated pace, the dynamic being largely influenced by the Covid 19 Pandemic whose effects have led to an increase in the demand for digital platforms, software, hardware and services.

The phenomenon of digitization of the public sector represents an irreversible process that influences all sectors of the economy as a whole.

As mentioned by Doran et al. (2023) in his work, the pandemic crisis has accelerated the digitization process and it is quite difficult to make a clear distinction between government and electronic government.

E-governance actually represents the digitization of public services, and the efficiency of public institutions depends on its development (Hodzic et al., 2021). The quality of

services provided to the citizens of a state, the management of any problem that may arise depends on the existence of a good infrastructure and well-trained employees.

The importance of e-government has been studied by many authors over time (Adjei-Bamfo et al., 2019; Ullah et al. et al., 2021; United Nations, n.d.; Dhaoui, 2022). Adjei-Bamfo et al. (2019) mentioned in his work the importance of digital services in the public administration, on which economic development depends to a large extent by increasing consumption and production. Similarly, Ullah et al. (2021), referred to the role and importance of e-government, especially in a period of crisis, such as that generated by the COVID-19 pandemic.

Twizeyimana and Andersson (2019) did research on e-government from the perspective of streamlining services provided to citizens and transitioning to a different lifestyle. When at the level of a nation there is frustration or reluctance to everything that means everything, even in the case of digitization due to lack of concern or information, then the development of digitization and artificial intelligence would suffer.

2. Research methodology

The data used to carry out the empirical analyzes were taken and processed from official statistics, recognized worldwide, such as: World Bank for World Governance Indicators, United Nations Surveys about e-Government. The research methodology presents the characteristics of a mix, by combining several conceptual models with empirical analysis carried out using the specific recourse to statistical and econometric tools: k means and econometric analysis to identify the impact that digitization has on public services. In order to have a brief perspective on the current situation, it was analyzed at the European level, using the EU member states as a sample. Variables used in the econometric analysis carried out were: the effectiveness of the government, the online services index, the human capital index, the telecommunications infrastructure index for the period 2001-2021.

In this sense, it was found that Europe offers investors the opportunity to have an attractive environment for the investments they develop within companies, both in the private and public fields. This can be explained by the many advantages that a European market can offer its investors: in addition to investments in infrastructure, the high level of human capital, there is also the facility to remove political barriers regarding the free movement of capital.

3. Results and discussions

Our study proposes to highlight the impact of digitization in the development and economic growth of Romania compared to European countries. The quality of public services offered to citizens at the country level is directly influenced by the efficiency of all political decision-makers and decision-makers, the legislation in force, the quality of life, the implemented public policies and the commitments assumed by the leaders. It was thus found, following the research, that at the level of the EU member states, two countries, namely Romania and Bulgaria, due to the periods of economic crisis (2008) and pandemic crisis (2020), were not on a positive trend of streamlining political decisions. The transition to digitization, offering citizens better and more efficient

services, modern and with more accurate results, is a complex process that depends on several analyzed indicators. Of the 15 countries analyzed, six of them have the highest e-government development index globally, countries with very high incomes, among which we mention Denmark, Finland, Sweden, Estonia, the Netherlands and Malta. Positive values were also found in Sweden and the Netherlands according to - Fig no. 1 Low values of the two digitization indices are also observed in public services, for the countries: Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Poland, Portugal, Romania and Slovakia. At the opposite pole we find Germany, which has neglected the importance of governance in ensuring efficient public services in an era of digitization.

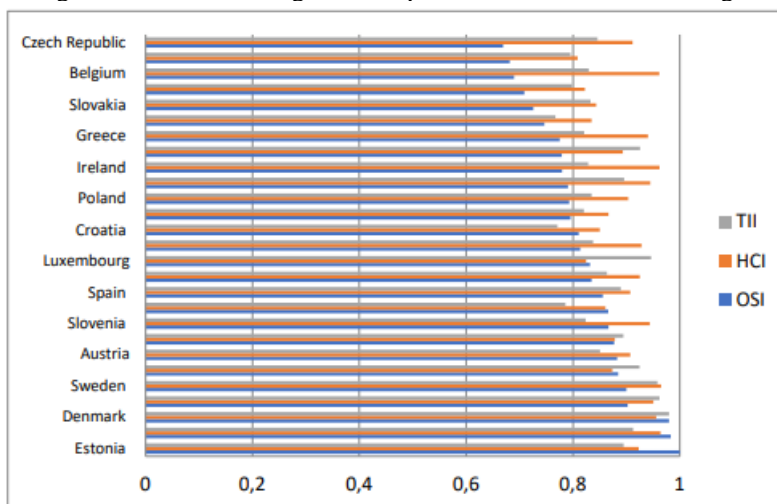


Figure no.1: The evolution of IDGE dimensions in the member states of the European Union

Source: author's processing where:

IDGE - Electronic Government Development Index

IIT- Telecommunications Infrastructure Index

HCI- Human Capital Index

According to the figure above, it can be seen that all EU member states exceed the 80% threshold in the use of digital services in public institutions using the human capital index variable, among them we mention Sweden, Finland, Ireland, Belgium, Denmark and the Netherlands, and Slovakia, Hungary, Luxembourg, Bulgaria and Romania, but to a lesser extent.

In this context, we recall the current global trends regarding the digitization process of banking services that may have negative implications on financial stability, as a result of increasing the speed of withdrawal in a high proportion of funding sources (eng. bank-run), increasing the risk of contagion. The digital environment favors ease of withdrawals and transfer of deposits through online banking platforms according to the studies

carried out (Report on financial stability, 2023). The banking sector in Romania ranks favorably in relation to the other European countries in perspective liquid assets in the portfolio. In the situation of materialization of the financing risk (including as a result of new digitalization challenges), domestic banks have a consistent volume at their disposal of liquid assets to meet withdrawals of funding sources and avoids the risk of banks running out of resources. In the banking field, the annual increase in operating expenses a continued (+9.9 percent), as a result of the increases wages associated with the inflationary environment and investments in digitization, partially offset by the continuation reducing the number of banking units.

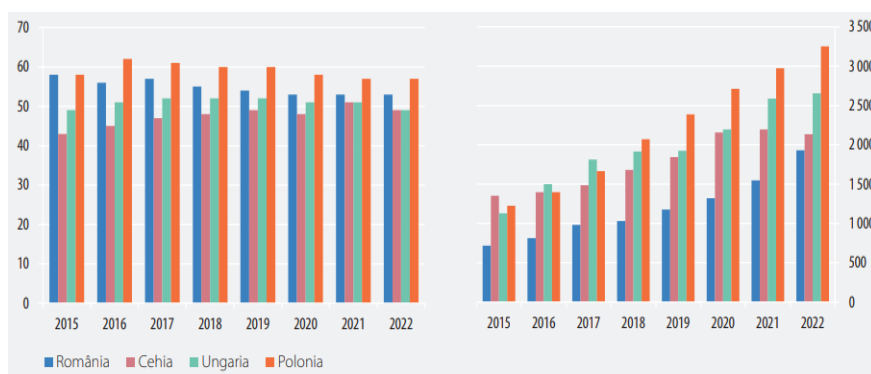


Figure no. 2: Evolution of the number of ATMs and POS at regional level

Source: NBR, ECB, World Bank, Central Bank of Poland, Central Bank of Hungary

Improving operational efficiency must be achieved, in perspective macroprudential, without affecting financial inclusion and access to finance. Although the number of ATMs per 100,000 inhabitants is comparable to that of other countries in the region, the national specifics (the high percentage of the population from the rural environment, who use especially cash for making payments) requires a gradual transition towards digital payment solutions, while maintaining an adequate presence in the territory.

Simultaneously with the decrease in recent years in the number of ATMs registered locally, there is an accelerated increase in the number of POS (mainly used in the environment urban), a trend also recorded at the level of countries in the region. The national specifics (the high percentage of the rural population, who use especially cash for making payments) requires a gradual transition to digital payment solutions, while maintaining an adequate presence in the territory. The funding risk for Romanian banks is low, considering the base of deposits attracted from the population and non-financial companies, which has proven to be stable even in the face of significant shocks. However, recent events have shown that the current global trends regarding the digitization process

banking services can have negative implications on financial stability, as a result of increasing the speed of withdrawal in a high proportion of funding sources (bank-run), amplifying the risk of contagion. The digital environment favors the ease of withdrawals and transfer of deposits through online banking platforms.

Romania continued the process of real convergence, the gap with the states in the region, in terms of GDP per capita, decreasing in recent years. However, economic convergence must be accompanied by the structural transition of the economy towards a growth model based more on activities with high added value, with a high degree of technology and knowledge, and which supports the alignment with environmental objectives and digitization. The problems in the American banking sector in the first part of 2023 appeared in the context of the digitalization of financial services, but also the development of unsustainable and inadequate business models from the point of view of management the risks.

The impact of digitization exists at the level of all sectors of the socio-economic structures, as it is also confirmed by Natalia et al. (2021) who substantiated these findings when he suggested in his paper that in the context of the COVID-19 pandemic, the digitization of the health system of medical institutions and their management benefited from various facilities having positive effects on the system. At the level of the health system, Țăran et al. (2022) examined health, digitization and COVID-19 in the European Union Member States and argued that the digitization of health systems is imperative to be a priority, especially during a pandemic with a significant potential to get high quality medical services. Analyzing the level of integration of information and communication technology in health systems, Luca et al. (2021) identified that many European countries still need digital medical services

Conclusions

The results generated by the analysis carried out on the sample of member countries of the European Union based on variables used, are consistent with the economic and social environment of the sample countries. May precisely, countries with strong public institutions are grouped in terms of government efficiency, political stability, rule of law, corruption and developed society in terms of education, health and digitization. Conversely, countries with weak public institutions and those where the system of health or public education still needs improvement at this time. The limitation of research regarding the impact of digitization on economic structures is due to the lack of possibility to generalize the results due to the interest shown by the population at the state level.

Thus, based on this analysis it was identified that an increase in the level of technology led to significant improvements of digitization, all technological indicators having a similar positive impact on digitization indicators, a positive effect that was passed on by determining a increases in economic efficiency. Finally, the results reveal that there is a notable contribution of technological progress in the field of digitization, which induces a positive cumulative effect on the economic efficiency in certain countries of the EU-27 taking into account Artificial Intelligence.

According to the CNSM Report, (2022) it is found that the opportunities for sustainable growth of bank financing in the context of maintaining financial stability and identifying development measures starting from the main growth vectors of financial intermediation are: (i) absorption capacity greater use of European funds, (ii) acceleration of the digitization process of services financial, (iii) the existence of an industrial policy to support access to finance of competitive firms and (iv) the level of financial education of entrepreneurs and managers of non-financial companies.

Following the research carried out, it was proven that E-governance has registered significant increases in most of the analyzed states, but the interest shown by the population differs. The resulting long-term estimates showed significant positive influences of telecommunication infrastructure development on government efficiency. The human capital index has a positive impact with a double effect on the intensity of government efficiency for digitized states compared to those where the digitization of public services is still in the process of development at the level of socio-economic structures.

References

- [1] Adjei-Bamfo, P., Maloreh-Nyamekye, T., și Ahenkan, A. (2019). The role of e-government in sustainable public procurement in developing countries: A systematic literature review. *Resources, Conservation and Recycling*, 142, 189–203. <https://doi.org/10.1016/j.resconrec.2018.12.001>
- [2] Dhaoui, I. (2022). E-Government for Sustainable Development: Evidence from MENA Countries. *Journal of Knowledge Economy*, 13, 2070–2099. <https://doi.org/10.1007/s13132-021-00791-0>
- [3] Doran, N. M., Puiu, S., Bădîrcea, R. M., Pirtea, M. G., Doran, M. D., Ciobanu, G., Mihit, L. D. (2023). E-Government Development—A Key Factor in Government Administration Effectiveness in the European Union. *Electronics*, 12(3), 641. <https://doi.org/10.3390/electronics1203064>
- [4] Hossnofsky, V. and Junge, S., 2019. Does the market reward digitalization efforts? Evidence from securities analysts' investment recommendations. *Journal of Business Economics*, [e-journal] 89(8/9), pp.965-994, doi.org/10.1007/s11573-019-00949
- [5] Hodzic, S., Ravselj, D., și Alibegovic, D. J. (2021). E-Government Effectiveness and Efficiency in EU-28 and COVID-19. *Central European Public Administration Review*, 19, 159–180. <https://doi.org/10.17573/cepar.2021.1.0>
- [6] Luca, M.M., Mustea, L., Taran, A., Stefea, P. & Vatavu, S. (2021). Challenges on Radical Health Redesign to Reconfigure the Level of e-Health Adoption in EU Countries. *Frontiers in Public Health*, 9, 728287. DOI: 10.3389/fpubh.2021.728287
- [7] Nataliia, V., Barzylowych, A., Zabolotna, A., Boiko, M. & Rybchych, I. (2021). Healthcare facilities management in digitalization context. *International Journal of Health Sciences*, 5(3), 429–440. DOI:10.53730/ijhs.v5n3.1773
- [8] Ullah, A., Pinglu, C., Ullah, S., Abbas, H. S. M., și Khan, S. (2021). The Role of E-Governance in Combating COVID-19 and Promoting Sustainable Development: A Comparative Study of China and Pakistan. *Chinese Political Science Review*, 6, 86–118. <https://doi.org/10.1007/s41111-020-00167>

- [9] Țăran, A.M., Mustea, L., Vătavu, S., Lobonț, O.R. & Luca, M.M. (2022). Challenges and Drawbacks of the EU Medical System Generated by the COVID-19 Pandemic in the Field of Health Systems' Digitalization. *International Journal of Environmental Research and Public Health*, 19(9), 4950. DOI: 10.3390/ijerph19094950.
- [10] Twizeyimana, J.D., și Andersson, A. (2019). The public value of E-Government– A literature review. *Government Information Quarterly*, 36, 167-178. <https://doi.org/10.1016/j.giq.2019.01.001>
- [11] Financial Stability Report December 2023, available at: <https://www.bnr.ro/PublicationDocuments.aspx?icid=19966>
- [12] Raport CNSM, 2022, available at : <http://www.cnsmro.ro/res/ups/Raport-CNSM-privind-intermedierea-financiara-2022.pdf>.
- [13] Sections of this article were taken from the doctoral thesis authored by Mihit Lavinia, 2023, on the topic of Measuring the Performance of the Public Sector: International experience.