BABEȘ-BOLYAI UNIVERSITY OF CLUJ-NAPOCA

FACULTY OF POLITICAL, ADMINISTRATIVE AND COMMUNICATION SCIENCES

DOCTORAL SCHOOL OF PUBLIC ADMINISTRATION AND PUBLIC POLICY

DOCTORAL THESIS

(Abstract)

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Scientific Supervisor:

Associate Professor Raluca Ioana Antonie, PhD

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INNOVATIVE DIGITAL TRANSFORMATION OF PUBLIC ADMINISTRATION IN ROMANIA THROUGH THE DEVELOPMENT AND IMPLEMENTATION OF ARTIFICIAL INTELLIGENCE SOLUTIONS IN THE DIGITAL IDENTITY AND DIGITAL IDENTITY WALLET ECOSYSTEM

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ABSTRACT

Keywords: *Public Administration, Digital Transformation, Digital Identity, Digital Identity Wallet, Artificial Intelligence, Public Policy.*

We are living in an era where **algorithms increasingly influence** —and even **shape**— **our identity, decisions, and life as a whole**, both from a societal and personal perspective. Within this broader context, it is essential to understand that **public administration is** not at the periphery, but rather **at the very heart of the digital revolution**. This research project originates from the **hypothesis that in the age of digital revolution**, where **governance intersects with emerging technologies**, **the promise of Artificial Intelligence (AI) is to serve the citizens, not replace them**.

Thus, our research contributes innovatively through an **interdisciplinary approach** to the continuously evolving field of digital governance, addressing **one of Romania's most urgent strategic needs** in the digital era: ***the development of a coherent, secure, and AI-enhanced ecosystem for digital identity and digital wallets, aimed at delivering public services***.

By simplifying and accelerating many of the daily activities of individuals—through options such as biometric authentication—**AI solutions are becoming** not only indispensable but also **transformative, redefining societal interactions, including the relationship between the state and the citizen.** For digitalization and emerging technologies, the COVID-19 pandemic acted as an accelerator for the acceptance and adoption of digital technologies, forcing a redefinition of societal functioning, where **face-to-face interactions are increasingly replaced by the benefits of being "just a click away."** However, these **benefits come with risks—some visible, others still in a grey area**—whose full extent will become evident as these technologies evolve.

In the course of this digital transformation of contemporary society, **we must ensure that the human factor is not lost from view**, particularly **regarding its role as the guardian of ethical and safe operation of artificial intelligence technologies**, **especially *machine learning* systems**.

In the case of public administration authorities, the digital transformation process refers to the reconfiguration of governmental activities, the delivery of public services, and the interaction with citizens, businesses, and civil society through digital technologies. Thus, digital transformation is, essentially, a paradigm shift in how competent authorities are organized, operate, and deliver public services—through greater transparency, efficiency, real-time responsiveness, and a citizen-centric focus (KYC – *Know Your Citizen*).

Regarding **the general research topic**, the literature has contributed significantly to understanding this digital transformation process. Dunleavy et al. (2006) characterized the **transition to digital governance as a systemic repositioning of public administration based on the integration and provision of digital services through online platforms**. Later, Janssen and Estevez (2013), Bloomberg (2018), Martino (2020), and Manda & Ciornei (2022) emphasized the importance of interoperability and the user-centric approach within digital identity ecosystems. Likewise, Coglianese & Lehr (2017) and Enarsson (2021) highlighted **the importance of algorithmic accountability in automated decision-making processes**, indicating that concerns regarding the control of decisions made by emerging technologies (such as machine learning) are not new. Studies by the OECD (2019), the European Commission (2022), as well as the findings of Misuraca and Viscusi (2020), further contribute to the academic landscape on AI integration in public administration, emphasizing **the need for ethical safeguards and algorithmic transparency**.

In recent years, as these technologies have developed further, numerous concerns and hypotheses have emerged regarding ethical responsibility (Burlacu et al., 2022; Buttazzo, G., 2023), algorithmic transparency, and data confidentiality—topics addressed at the EU level through strategic documents (EU AI Act) and legal instruments (eIDAS 2.0).

Analyzing the concrete case of **Romania's public administration**, it becomes clear that although public authorities have developed several digital service platforms for citizens, they face **systemic challenges related to institutional fragmentation, limited platform interoperability, and disparities in digital literacy across the population**. In this context, our work is critically and constructively engaged in identifying the challenges and opportunities associated with implementing a Digital Identity and Digital Wallet ecosystem with integrated AI solutions in Romania.

Our research integrates multiple facets, culminating in a **public policy proposal for the development and implementation of a Digital Identity and a national digital wallet ecosystem with integrated AI solutions in Romania**. It explores how responsible Romanian authorities can lay the groundwork for modern public services that offer AI-based digital identities, within the context of redefining institutional infrastructure and creating a legal framework appropriate for digital transformation measures.

The **current landscape of Romania's public administration** reveals **divergent trends, including positive achievements in digital transformation, enthusiasm and good intentions without follow-through, as well as digital stagnation or slow progress.** Overall, the *de facto* situation reflects a **lack of overarching vision, with a fragmented and technologically outdated digital infrastructure**. **The systems and platforms currently in place are often not interoperable,**

as they were developed under small-scale projects with disjointed design logic. Despite having launched several digital platforms such as ROeID, Ghiseul.ro, SPV-ANAF, and PCUe, Romania's public administration continues to operate within a fragmented system where interoperability is limited, and the integration of AI solutions is delayed for various reasons. As a result, **the user experience with** these **digital services remains inconsistent and incomplete**. **Although the strategic and legal framework has been outlined at the EU level, Romania lacks a concrete timeline for the development and implementation of an AI-authenticated Digital Wallet that guarantees personalized and cyber-secure access to public services. This dichotomy lies at the core of our research and represents the main reason for selecting this topic, which culminates in a public policy proposal for developing and implementing Romania's national Digital Identity and Wallet Ecosystem (ROeID/RODIW) with integrated Artificial Intelligence solutions.**

Structurally, the thesis is divided into five interconnected chapters, each building upon the previous to provide a comprehensive view of the identified issue, the proposed mitigation solution, and the roadmap for implementation.

Chapter I – Digital Transformation of Public Administration: Implications, Opportunities, and Challenges from a Citizen-Centered Perspective is dedicated to mapping the strategies and legal framework at the European level regarding Digital Identity and AI-driven governance. The analysis balances the benefits and risks associated with implementing AI in public administration, while advocating for an ethical AI model centered on human rights and needs—one in which the citizen is not only a passive user but also a co-creator of public value. At the end of the chapter, several policy recommendations are outlined, which responsible authorities in the field could consider in order to increase trust in digital public services and to empower users in accessing and utilizing digital platforms based on AI solutions. These include:

- Increasing the digital literacy of citizens, the business sector, etc., through continuous training programs for civil servants aimed at acquiring or expanding digital competencies, including those related to innovative technologies such as AI;
- Developing public service digital platforms that are accessible, intuitive, and user-friendly, designed around user needs;
- Establishing public-private partnerships to create centers of excellence in AI, with the aim of closing the gap between Romania and more digitally advanced European states;
- Ensuring ethical standards, a human-friendly approach, and transparency in the decision-making process involving AI-based public services;

- Strengthening data protection systems and developing the cybersecurity infrastructure to enhance cyber resilience;
- Building partnerships with other European states to adapt existing AI solutions to Romania's specific public administration needs.

Chapter II – Dimensions of Digital Identity Implementation in Romania in the Context of Public Administration Digital Transformation analyzes the legislative, technological, and institutional context of the digital transformation process in Romanian public administration. It includes a review of the e-governance tools in place and identifies fundamental structural challenges. It is emphasized that although the digital transformation of Romanian public administration has had a significant impact on the accessibility and efficiency of public services, there remains a need for sustained effort by all responsible institutions to address unmet needs and to design concrete plans with measurable objectives aimed at overcoming existing barriers and challenges. Such transformation can only be ensured through a participatory process that involves citizens, the business environment, civil society, and public institutions alike. In the process of identifying best practice cases, the analysis focused on three EU member states: Estonia, Denmark, and Finland. These countries have demonstrated that integrated digital identity ecosystems can generate significant improvements in public administration workflows, particularly in terms of increasing efficiency.

Chapter III – Quantitative and Qualitative Aspects Regarding Citizens' Perception of the Implementation of Digitalization Measures in Romanian Public Administration focuses on synthesizing the data resulting from the responses of 256 citizens who accessed the questionnaire, as well as from the discussions held with participants in two focus groups. The aim was to identify user expectations, institutional bottlenecks, and the dynamics of trust. Out of the 256 respondents who accessed the questionnaire, 237 met the inclusion criteria by having interacted with a public administration institution in the past two years—regardless of the format of the interaction (in person, online, or hybrid)—and were enrolled in the study. Of these, 9 did not complete the questionnaire, resulting in a total of 228 respondents included in the analysis. The study was experimental, prospective, and non-randomized, with the primary objective of identifying the level of acceptance and use of digitalization within local public administration. This was achieved by using a customized questionnaire tailored for this purpose. The secondary objective was to identify demographic characteristics that may be associated with the level of acceptance and use of digital technologies. The quantification, utilization, and impact assessment of the results obtained from the quantitative research shaped the directions pursued in subsequent chapters of the thesis, particularly the formulation of a

public policy proposal aimed at the innovative digital transformation of Romanian public administration.

As for the qualitative research (focus groups), starting from subsection 3.3, this component aimed to explore in depth the behavior of potential users of digitized public services, whether referring to individual citizens, the business community, or civil society (associations, NGOs, etc.). On one hand, the research outlined the user profile from the perspective of digital literacy, implementation of digital solutions, and acceptance of the digital transformation process within public administration. On the other hand, it assessed the potential for adopting new information technologies associated with public administration, including digital identity solutions and AI-based technologies. By aggregating the results of these discussions, several key themes were identified, which revealed common trends in participants' behavior and perceptions. For each of these themes, specific recommendations were formulated that may be leveraged by decision-makers within the institutions involved in Romania's digital transformation process.

In **Chapter IV – Toward an Innovative Digital Transformation of Romanian Public Administration Through the Operationalization of the Digital Identity Ecosystem and Digital Wallet with Integrated Artificial Intelligence Solutions**, following the documentation reviewed, we concluded that there is currently no comprehensive assessment of the evolutionary leaps within the digital transformation process. Therefore, in Subchapter 4.1, we considered it useful to propose a paradigm shift in how certain public services are delivered by Romanian public administration—moving from the traditional, bureaucratic version toward a digitized model, and further advancing to the next level by applying Artificial Intelligence (AI) solutions. By conceptualizing **four stages in the pathway toward Innovative Digital Governance**, namely:

I. The traditional bureaucratic processes of public administration,

II. The current digitalization-centered approach, the integration of transformational changes, and

III. The final stage of delivering public services enhanced by AI-based solutions,

we identified specific features that mark each phase.

The digital transformation process, as schematically presented in the tables of Subchapter 4.1, provides **a comprehensive view of the transformational shift from a bureaucratic public administration model to one based on AI-enhanced services**. This evolution is traced across various domains of interest and key components of the public administration system.

Considering that the **quantitative and qualitative research findings** presented in Chapter III highlighted a significant concern among respondents regarding **personal data protection** and the

likelihood of errors in AI decision-making algorithms, we deemed it imperative in Subchapter 4.2 to conduct an in-depth analysis of the most important **potential risks** posed by uncontrolled or poorly governed AI within the eID and eWallet ecosystem. This includes the anticipated impact of such risks, as well as the actions and solutions necessary to mitigate them. This cross-sectional risk mapping constitutes part of the **added value of this research**, particularly given that AI solutions are inherently complex systems—both in terms of prototyping, development, and learning processes, as well as in implementation and, most importantly, in the interaction phase between the AI system and legitimate users. Errors may occur at any of these stages, and such failures can have **societal-level consequences**, particularly in the form of systemic inequities.

Furthermore, based on the analysis conducted on the European context concerning the targets of the **Digital Decade 2030**, we identified best practice examples from the most advanced EU member states in terms of digital transformation. The mapping of these successful initiatives served as both a starting point and a source of inspiration for our research. This is particularly relevant considering that the model proposed in **Chapter 4, Subchapter 4.3**—a **Digital Identity Wallet** linked to a **Unique Digital Identity**, with integrated **Artificial Intelligence technology** as the foundation of an innovative digital transformation in Romania's public administration—is directly inspired by Estonia's success story in this field. The model was further shaped and **adapted to the specific characteristics of Romanian public administration**.

Chapter V – Public Policy Proposal for the Development and Implementation of a National Ecosystem for Digital Identity and Digital Identity Wallet with Integrated Artificial Intelligence Solutions in Romania, the final chapter of this thesis builds, on the basis of the research findings presented in the previous four chapters, a public policy proposal aimed at the development of the **RO-eID / RO-DIW ecosystem**, with integrated Artificial Intelligence solutions. This proposal is grounded in an **ethical, human-centered approach to AI**, and addresses the core issue identified: the fact that **Romania does not yet have a unified Digital Identity** accompanied by a **digital wallet ecosystem** and integrated AI solutions capable of delivering **interoperable, secure, and user-centered public digital services**. In response to this critical need, the proposed public policy aims to support the development and implementation of a **national Digital Identity and Digital Wallet (e-Wallet) ecosystem in Romania**, built on strong **cybersecurity principles** and **integrated AI solutions**. The system is designed to enable **citizens, the business community, and civil society** to access **interoperable and trustworthy public digital services**, in full alignment with **EU standards and Romania's national digital transformation objectives**.

Using the **SMART methodology**, several specific objectives were identified:

- **SO1** – The establishment of a **National AI Oversight Authority focused on ethical governance** *(Implementation deadline: Q4 2025)*;
- **SO2** – The **integration of ROeID** with **90% of public service platforms** *(Implementation deadline: Q4 2026)*;
- **SO3** – The **launch of a national eWallet system – RODIW** with **5 million users** *(Implementation deadline: Q2 2027)*.

Among the three options/scenarios analyzed, we evaluated **Option 3**—the **implementation of an end-to-end Digital Identity** and the creation of a national Digital Wallet framework with integrated AI solutions that ensure **scalability and sustainability**—as the most advantageous. This option was found to be superior particularly in terms of the **estimated return on investment**, calculated at approximately **€230 million** over five years through cost savings and indirect revenue, compared to a total estimated budget of **€300 million**. The **return on investment (ROI)** in this case is **75%**, calculated using the **McKinsey Global Institute model**.

In accordance with the recommendations outlined in **Government Decision no. 523/2016**, the **Standard Cost Model (SCM)** was applied for projecting the reduction of administrative burden. Therefore, **Option 3**, as identified in our analysis, aligns most strongly with the root causes of the problem, directly contributing to the achievement of both the **specific SMART objectives** and the overarching strategic goals.

The **added value** of this public policy proposal lies in its originality and its broader implications, which go beyond administrative efficiency to impact **governance legitimacy**, **digital rights**, **economic competitiveness**, and **societal resilience**.

The **theoretical significance** and **practical value** of this research are defined by the comprehensive approach it takes in analyzing both the **quantitative and qualitative dimensions** of the complex process of digital transformation in public administration, as well as by outlining the strategic directions for the design of a **national ecosystem model (prototype)** for **Digital Identity and Digital Wallet (ROeID/RODIW)** with integrated **Artificial Intelligence solutions**.

The **added value** of the research lies in its timely response to a pressing issue: the fact that **Romania lacks a unified Digital Identity** and a corresponding **digital wallet ecosystem** with integrated AI solutions capable of delivering **interoperable, secure, and user-centered public digital services**. These services must also comply with **EU standards** and align with the country's **national digital transformation objectives**. This gap is addressed through a **policy proposal** aimed at the **development and implementation** of a **secure national Digital Identity and Digital Wallet ecosystem (ROeID/RODIW)** in Romania, enhanced by **Artificial Intelligence** technologies.

The **novel contributions** proposed in this thesis, as part of the scientific endeavor undertaken, refer in particular—but are not limited—to the following elements:

(1) The **Digital Identity Model with Integrated AI Solutions (ROeID-AI)**, specifically through the prototyping of such a model based on Artificial Intelligence. This model involves transforming the current eID platform into a fully AI-driven digital ecosystem, specifically adapted to the context, needs, and obligations of Romania as an EU Member State. The main proposed components include:

- *AI-powered* ***authentication and transaction validation*** *(biometric),*
- *AI-based* ***identity risk scoring*** *(IASRI – Identity AI Scoring Risk Index),*
- ***User recognition through AI****,*
- ***Multi-platform identity management****, and*
- ***Interoperability with Digital Wallets of other EU Member States (EU-eWallets)****.*

(2) The **conceptual model of a Digital Wallet with Integrated AI Solutions**, which on the one hand incorporates key AI functionalities and characteristics, and on the other hand, integrates with the broader digital ecosystem composed of both public and private institutional platforms. Importantly, it ensures **cross-border interoperability** with other Smart Digital Wallets at the EU level. The digital ecosystem of **(RO)IDW-AI** thus involves integration with public platforms (such as ANAF-SPV, CNAS, e-Invoice, SEAP, REVISAL, etc.), with private platforms via **API protocols** (banking services, private insurance providers, utility service platforms), and requires compliance with **eIDAS 2.0 regulations** on digital identity, as well as full **functional interoperability** with digital wallets of other EU Member States.

(3) The **public policy proposal for the development and implementation of a national Digital Identity and Digital Wallet ecosystem (ROeID/RO-DIW) in Romania** with integrated AI solutions. This proposal includes an analysis of **administrative implementation costs** using the **Standard Cost Model**, along with an **impact assessment** across economic, social, environmental, and administrative dimensions.

The **main research question** of this thesis is: ***"How could Romania develop and implement a unique, original model for the establishment of a Digital Identity ecosystem based on Artificial Intelligence solutions—addressing, on the one hand, Romania's obligations to align with European standards on digital governance, and on the other hand, the needs and expectations of its citizens and business sector?"***

Additional **sub-questions** addressed throughout this thesis include:

- *Is Romania truly prepared for the digitalization revolution, both from the perspective of citizens and that of public sector employees?*
- *Is Romania ready for the new industrial revolution driven by Artificial Intelligence?*
- *Who are the target users of digital public services in Romania?*
- *What is the current status of digital infrastructure and the provision of digital public services in the country?*
- *What are the perceived benefits, risks, and expectations among end users with regard to digital public services and the integration of AI solutions?*
- *Which implementation models are most suitable for AI-based Digital Identity systems in public administration?*
- *What is the institutional, technical, financial, and ethical context that can ensure the viability of these models?*

The answers provided by **citizens, representatives of the business sector, and civil society** in response to the survey, as well as during the focus group discussions, have helped to **crystallize several key insights** addressing these research questions.

The **empirical interaction with end users**—namely the questionnaire respondents and focus group participants—adds significant value to this research, as outlined below:

- ✓ A **survey on citizens' perceptions** regarding the implementation of digitalization and Artificial Intelligence (AI) solutions in Romanian public administration, which targeted a total of **256 respondents** who had interacted with public administration institutions in the past two years and were also users of digital public service platforms (such as **ROeID, Ghiseul.ro, SPV-ANAF**);
- ✓ Two **focus groups**, in which the **perceptions of users** of digital public service platforms—both individual citizens and representatives of the business sector and civil society (NGOs, associations, etc.)—were evaluated with respect to **AI-integrated digital services**, **institutional trust**, and the **effectiveness of current digital tools**.

The responses gathered from citizens, business representatives, and civil society stakeholders — via both the survey and the guided discussions in the focus groups—helped **crystallize answers to several core questions**, such as:

- Is Romania truly prepared for the digitalization revolution, both from the perspective of its citizens and its public sector employees?
- Is the country ready for the new industrial revolution driven by Artificial Intelligence?
- Who are the intended beneficiaries of Romania’s digital public services?

Although the initial research hypothesis may have suggested that **age** or **area of origin** would serve as key predictors, the analysis revealed that the most significant influencing factors were instead **gender**, **educational level**, and **professional status**.

We observed a **positive correlation** between educational level—particularly among those with **secondary and university-level education**—and the overall acceptance of digital public services. Interestingly, subjects situated at the margins of the educational spectrum (those with **minimal secondary education** and those with **postgraduate degrees**) recorded weaker correlations. This could be interpreted as a phenomenon where individuals "know either too little or too much" to align with the mainstream adoption trends.

Equally noteworthy is the finding that a **high predictive coefficient** was associated with **entrepreneurs and freelancers**, which appears to confirm this group's openness to and reliance on technological tools that offer them both **independence** and **operational efficiency**.

We also observed a **negative association between age and total score** in the multiple regression model—older subjects tended to have lower overall scores. The influences of gender, educational level, and professional status remained consistent with those observed in the simpler regression model.

A novel component introduced in this research—given the theme of the doctoral thesis—was the **application of machine learning predictive models**, which, as discussed in earlier theoretical sections, were used to evaluate the **total questionnaire score**. These models emphasized **predictive performance** over inferential interpretation. The machine learning models **validated the previously obtained results**, thereby confirming the **predictive value of the total score**.

Consequently, the **quantification, utilization, and impact** of the findings from this quantitative research helped define the directions pursued in the subsequent chapters, particularly in shaping the **public policy proposal** aimed at the **innovative digital transformation of public administration in Romania**.

Regarding the **qualitative research** (focus groups), the aggregation of insights gathered from the two group discussions allowed us to identify several **core themes** that revealed common patterns in participants' behaviors and perceptions. These themes include:

- **Digital skills and access to digital services**,
- **Ease of use and trust in digital public services**,
- **Level of trust and acceptance of Digital Identity**, and
- **Level of trust and acceptance of Artificial Intelligence**.

For each of these thematic areas, we formulated **specific recommendations**, which may serve as a foundation for **decision-makers and coordinators** of Romania's digitalization process—namely the **Authority for Digitalization of Romania (ADR)** and the **Ministry of Research, Innovation and Digitalization (MCID)**.

At the same time, considering that the focus groups included **representatives from companies** (both limited liability and joint-stock), the results of these discussions and the recommendations derived from them may also be of interest to the **private sector**, especially as some of the proposals directly target this group. Throughout the thesis, several recommendations have been made that address the **private sector as a potential beneficiary** of support measures from public authorities—such as employee training programs, process digitalization incentives, and the encouragement of participation in international research initiatives within **regulatory sandbox environments**.

The **results of the interdisciplinary research** carried out in Chapter III represent a **distinct element of novelty**, which may also be leveraged from the perspective of **behavioral sociology**.

The **methodology employed in the development of this thesis** is a **mixed-methods approach**, grounded in both **direct and indirect observation**, detailed analysis, and the integrative synthesis of existing literature in the research domain. It also includes an **applied component** involving **qualitative and quantitative statistical analyses**—exploratory, confirmatory, and predictive—in order to provide a comprehensive **360-degree perspective** for the substantiation and validation of the research hypotheses.

All these components position the present research at the **intersection of theoretical inquiry and applied policy development**, addressing both the needs of academic literature and those of practitioners.

From an academic standpoint, the thesis embraces a **deeply interdisciplinary approach**, bridging **public administration** with multiple related fields and subfields, including: **European studies, EU law, economics, finance, public management, behavioral sociology and statistics** (as reflected in the research presented in Chapter III), as well as **cybersecurity and digital ethics**.

The **limitations of our research** were both **theoretical and practical in nature**, as outlined below:

a) On the one hand, the **novelty of the research topic**—namely, the "development and implementation of a national Digital Identity and Digital Wallet ecosystem (ROeID/RO-DIW) in Romania, with integrated Artificial Intelligence solutions"—posed a challenge in itself, as, to the best of our knowledge, this subject has not been previously addressed in a similar manner

within the existing academic literature or in strategic documents at either the European or national levels.

b) On the other hand, with regard to the **selective quantitative research**, the statistical analysis was limited by the **relatively small number of respondents** included in the study (228), which must be considered when interpreting the findings in relation to the general population. These results should therefore be contextualized alongside other scientific data and research available in the literature.

Another limitation was related to the **distribution method of the questionnaire**, which was disseminated through the author's formal and informal networks using a Google Forms link, in order to access as diverse a sample as possible. While this method was convenient and technologically relevant, it also introduced an **inherent bias**, as all respondents had internet access and were digital users.

An additional limitation stems from the fact that the questionnaire was **entirely designed by the author**, without the involvement of **specialized market research consultants**. This was one of the reasons why multiple **statistical consistency tests** were performed, including **exploratory and confirmatory factor analyses** (Bayesian), after which a number of questions were eliminated and the structure and domains of the final questionnaire used in the statistical analysis were refined.

The **quantification, utilization, and impact** of the research results lay the foundation for defining the public policy proposal, in conjunction with the **exploratory methodological approaches** employed in the other components of this thesis:

1. A **review of the specialized literature** and a **comparative policy analysis** in the reference domain, based on a comparison with other EU Member States that are leaders in implementing digital technologies and AI solutions in public administration (e.g., **Estonia, Denmark, Finland, the Netherlands**), as well as with states that have adopted digital agendas aimed at reducing digital divides (**Germany, France, and Italy**);
2. The **empirical statistical data** collected from the **citizen questionnaire**;
3. **Participatory methods**, derived from the interactions in the **two focus groups**;
4. The use of **policy design tools**, including **impact assessments**, **problem tree analysis**, **SWOT analysis**, and the **design of a strategic roadmap**.

The results of my entire research process on the central topic of this thesis have reinforced my conviction that **Romania is currently at a critical turning point** in its adoption of emerging technologies. These technologies may provide a **viable solution for overcoming excessive**

institutional fragmentation—a condition in which various institutional actors operate with low coordination, often competing for resources and leadership—and for addressing **barriers to inclusion** and vulnerabilities associated with **analog or hybrid governance models**.

In this context, the **public policy proposal** advanced in this thesis emerges as a concrete response to these concerns. It envisions the **implementation of an interoperable, intelligent, and cyber-secure infrastructure**, with strong **personal data protection mechanisms**, all embedded within an **ethically responsible governance framework**.

The implications of such a transformation go well beyond administrative efficiency. They profoundly affect **governance legitimacy**, **economic competitiveness**, and the **resilience of society as a whole**.

Main Final Conclusions and Recommendations

Following the research efforts carried out throughout the five chapters of this thesis, several final conclusions have emerged, along with corresponding recommendations:

- The **innovative digital transformation of public services based on AI-driven solutions** has the potential to reshape governance as a whole, moving toward a **participatory digital model**. The degree to which these solutions are adopted depends significantly on **users' perception, accessibility, and trust**.
- The **paradigm shift** from a traditional, bureaucratic public administration to **digitally delivered public services** must be accompanied by **scalable initiatives**, tailored to each specific objective. Priority areas within these initiatives include **digital infrastructure development**, **training campaigns** aimed at increasing digital competencies among both the general population and public sector employees, and **cybersecurity-focused projects**.
- In order to achieve the targets, set under the **Digital Decade 2030**, Romania must translate its **legislative framework and political agenda** into **concrete actions and measures** that support the modernization of digital infrastructure, investment in human capital, and the promotion of research and innovation in collaboration with the private sector.
- With regard to the implementation of **Digital Identity (eID)** and the **European Digital Identity Wallet (EUDIW)**, although Romania has established a technically robust foundation aligned with EU requirements (eIDAS 2.0), the potential of **ROeID remains underutilized** due to challenges related to **accessibility, user trust**, and **integration with public administration digital services**.

Key recommendations include:

- **Increasing digital literacy** by establishing educational programs aimed at the general public for acquiring or enhancing digital competencies, as well as continuous training programs for public officials focused on emerging digital technologies such as AI;
- **Developing digital platforms for public services** that are **accessible, intuitive, and user-centered**;
- **Adopting a national strategy** for the integration of **AI** into public sector digital platforms and building **partnerships with research institutes and technical universities**;
- **Promoting public-private partnerships** to establish **AI centers of excellence**, with the goal of bridging existing gaps between Romania and more digitally advanced EU countries;
- **Strengthening data protection systems**, developing **cybersecurity infrastructure**, and enhancing overall **cyber resilience**;
- **International prospecting for partnerships with other European states** to adapt and implement existing AI solutions in accordance with the specific and currently unmet needs of Romania's public administration institutions.
- Starting from the premise that **AI-based solutions** represent **the future of digital governance**, and a **human-centered approach** must be the **foundation for fostering trust**, **administrative efficiency**, and the **empowerment of citizens, the business community, and civil society** in utilizing AI-enhanced digital public services.
- At the same time, the **systemic risks** of implementing AI solutions **without human oversight** in public administration must not be overlooked. These risks become especially relevant as **AI systems grow increasingly autonomous**, particularly in **machine learning applications** such as facial recognition, behavioral profiling, or credit scoring. Numerous examples of these risks have already emerged within the EU, and **Romania should seek to prevent rather than replicate** such outcomes.
- In the specific case of Romania—where **digital literacy remains a serious concern** for certain population groups and **trust in institutions is relatively low**—the **uncritical adoption of machine learning systems** could result in serious consequences for users of AI-powered platforms and applications, such as:
  - ✓ ***Denial of rights*** *without accessible redress mechanisms,*

- ✓ ***Erroneous exclusion*** *from services due to flawed algorithmic scoring,*
- ✓ ***Surveillance*** *under the guise of fraud prevention.*

- Specifically, we stress the **imperative need** for the **ROeID–RODIW ecosystem with integrated AI** to be governed by the **Human-in-the-Loop (HITL)** principle. Every **automated decision** must be **transparent, inclusive, auditable**, and subject to **justification, appeal, and reversal mechanisms**. AI should be used to **support public administration personnel**, not replace them. The implementation of **ethical, human-oriented AI solutions** must be not only a **technological innovation** but also a **societal advancement**.

Therefore, the strategic recommendations for the implementation of the ROeID–RODIW ecosystem are as follows:

1. **Institutionalizing a National Authority for Artificial Intelligence (ASIA)**;
2. **Legally operationalizing a national digital wallet** based on **Artificial Intelligence**;
3. **Redesigning ROeID** to serve as a **gateway for both national and European identity**;
4. **Integrating AI solutions** into the **public decision-making process**;
5. **Promoting safe, ethical, and human-supervised AI**, alongside **nationwide digital literacy initiatives**.

Final Considerations

The **paradigm shifts** from a traditional public administration—characterized by a high degree of bureaucracy—to a public administration model that delivers **digitized public services** through **emerging technologies** must be accompanied by **scalable initiatives tailored to each strategic objective**.

At the same time, the **expectations of citizens**, civil society representatives, and the business community—who interact with public administration—are for the state to provide **modern public services**, aligned with **European and international standards**, and adapted to the **realities and technological advancements** of the present context. This includes services that are **digitally delivered**, and integrated with technologies such as **Artificial Intelligence, machine learning, natural language processing (NLP), augmented reality**, and others.

The **inability of Romanian public administration** to perform in this regard directly contributes to the **erosion of citizens' trust** in administrative decisions and in the state as a service provider. This is not merely a question of technological updates, but rather an opportunity to **redesign the entire framework** for how public services are organized and delivered in Romania. It is also a

chance to **(re)build public trust** and to advance **alongside other EU Member States** on the path toward Europe's **digital future**.

In essence, what is needed is an **innovative, higher-level digital transformation**. And when we speak of such an advanced transformation of public services, **we cannot ignore the integration of AI-based solutions**, which hold the potential to reshape governance itself into a **participatory digital model**.

Romania must address **unmet needs** related to **deficiencies in digital competencies** and challenges regarding the **user-centeredness of digital public service platforms**. AI-based solutions represent the **future of digital governance**, and a **human-centered orientation** must remain the foundation of trust, **administrative efficiency**, and the **empowerment of citizens, the business community, and civil society** in the use of AI-driven public services.

The **innovative digital transformation of public services**, based on **AI-driven solutions**, holds the potential to fundamentally reshape governance into a **participatory digital model**. However, the **degree of adoption** of such solutions depends largely on **users' perception, accessibility, and trust**.

We thus observe that, with the right **policies, investments, and cooperative frameworks**, Romania has the capacity to build a **national digital identity** and a **digital wallet ecosystem** with **integrated Artificial Intelligence solutions**—ones that are **secure, efficient, ethical**, and **accessible to all categories of users**. What matters most is the **architecture of control, trust, and accountability** that is constructed around these ecosystems.

Naturally, the **rate of adoption** of these solutions depends on the **perception, accessibility, and trust** of end users—**citizens, companies, and civil society** (including NGOs and professional associations)—in the **state's ability to make decisions that fairly represent their interests**, especially amid the challenges brought by the ongoing technological revolution.

In this context, we argue that Romania is facing a **redefinition of the digital social contract** between the state and its citizens—a contract grounded in **rights and responsibilities, trust, and the ethical and democratic management of emerging technologies**. When used ethically and in the interest of individuals and society as a whole, these technologies can serve as **powerful instruments** for simplifying and ingeniously transforming **life events**. However, if governed by **illegitimate interests** contrary to human dignity, such technologies could be transformed into tools of **total surveillance, control, discrimination, and social exclusion**—features akin to those of a **digital dictatorship**.

REFERENCE LIST

1. Books (including manuals and guides)

- Ailioaie, S., Hera, O., & Kertesz, S. (2001). *Ghidul de e-Democrație și Guvernare Electronică*. ASER Bucharest.
- Bărbulescu, I.G. (2021). *Guvernarea digitală în România: provocări și soluții*, Universitatea Națională de Studii Politice și Administrație Publică (SNSPA), București.
- Constantin, M. & Ciornei, I. (2022). *Digitalizarea administrației publice românești. Între necesitate și realitate*, Revista Transilvană de Științe Administrative, nr. 2(51), Editura Accent, Cluj-Napoca.
- Radu, Bogdan. (2022). *Securitate cibernetică și transformare digitală în administrația publică din România*, Cluj-Napoca: Revista Transilvană de Științe Administrative, nr. 65E, Universitatea Babeș-Bolyai, Cluj-Napoca.

2. Studies, Articles, and Surveys

- Aboukadri S., Ouaddah A. & Mezrioui A. (2024). Învățarea automată în sistemele de gestionare a identității și accesului: sinteză și aprofundare. *Revista internațională de cercetare în securitate digitală,* Universitatea Mohammed V, Rabat, Maroc.
- Avram, A. (2020). Digitalizarea serviciilor în state membre ale Uniunii Europene. *Revista de Economie Mondială*, 12(1), 49–68. București: Academia Română.
- Băesu, V. (2021). Digitalizarea administrației publice din România. *Analele Universității Ovidius, Seria Științe Economice*, 21(2), 22–28. Constanța: Universitatea Ovidius din Constanța. University of Ovidius+1ResearchGate+1.
- Burlacu, S., Bran, F., Gomboș, C. & Mocanu, V. (2022). Transformarea digitală în administrația publică: paradigme, specificități și evoluții în România. În *Lucrările Conferinței Internaționale de Administrație și Management Public, ediția a 18-a* (pp. 113–124). București: Academia de Studii Economice din București.
- Cioantă-Păcuraru, I. (2024). Aspecte privind impactul transformării digitale în sectorul serviciilor medicale. Romanian Journal of Information Technology and Automatic Control, Vol. 34, No. 2, 127-144, 2024.
- Dunleavy, P., Margetts, H., Bastow, S. & Tinkler, J. (2006). Noul management public este depășit – trăiască guvernanța în era digitală. *Revista de Cercetare în Administrația Publică și Teorie*, 16(3), 467–494. Oxford: Editura Universității Oxford. https://doi.org/10.1093/jopart/mui057.
- Enarsson, T., Enqvist, L. & Naarttijärvi, M. (2021). Abordarea omului în buclă – perspective juridice asupra deciziilor hibride om/algoritm în trei contexte. *Dreptul tehnologiei informației și comunicațiilor*, 31(1). Londra: Editura Taylor & Francis.
- Guckelberger, A. (2019). *Guvernarea electronică: Semnificație și delimitare*. În *Manual de drept al administrației electronice*. Heidelberg: Editura Springer.

- Floridi, L., Cowls, J., Beltrametti, M., Chatila, R., Chazerand, P., Dignum, V., & Vayena, E. (2018). *AI4People – Un cadru etic pentru o societate bazată pe inteligență artificială: oportunități, riscuri, principii și recomandări*. *Revista pentru etica tehnologiei informației*, 30(4), 693–704. https://doi.org/10.1007/s11023-018-9482-5.
- Janssen, M. & Estevez, E. (2013). *Guvernare suplă și guvernanță bazată pe platforme – mai mult cu mai puține resurse*. *Revista guvernamentală de informații publice*, 30(Supliment 1), S1–S8. https://doi.org/10.1016/j.giq.2012.11.003.
- Lissi. (2022). *e-IDAS și portofelul digital european: context, stadiul actual și de ce va schimba lumea*. Preluat de la https://lissi-id.medium.com/eidas-and-the-european-digital-identity-wallet-contextstatus-quo-and-why-it-will-change-the-2a7527f863b3.
- Manda, C. (2021). *Digitalizarea administrației publice din România – între nevoile și aspirațiile unei societăți moderne a secolului XXI*. În *Lucrările Conferinței Internaționale „Smart Cities" – ediția a 9-a*. București: Editura Universul Academic.
- Manda, C. (2023). *Digitalizarea administrației publice din România – între nevoile și aspirațiile unei societăți moderne a secolului XXI*. În *Lucrările Conferinței Internaționale „Smart Cities"*, pp. 41–61.
- Martino, M. (2020). *Trecerea de la e-guvernare la guvernare digitală*. Medium. https://martinomich.medium.com/shifting-from-e-government-to-digital-government-9390beda2ca6.
- Mirona, P. & Barbu, A. (2024). *Percepția cetățenilor asupra serviciilor publice digitale: Studiu de caz în rândul cetățenilor români*. *Științe Administrative*, 14, 259. https://doi.org/10.3390/admsci14100259.
- Oliveira, E. (2023). *Inteligența artificială în serviciul public: Beneficii, riscuri și perspective de viitor*. Apolitical. https://apolitical.co/solution-articles/en/artificial-intelligence-in-public-service-benefits-risks-and-what-to-expect-in-the-future.
- Petcu, I., RADU, A.F. (2024). *The education system, the way to fight fake news (Sistemul de învățământ, modalitatea de a lupta împotriva știrilor false).*Proceedings of the 5th International Conference on Machine Intelligence & Security for Smart Cities (TRUST) - June 2024, Pro Universitaria Publishing House vol. 1, 37-44.
- Parycek, P., Schmid, V. & Novak, A. S. (2023). *Inteligența artificială și automatizarea în procedurile administrative: Potențial, limite și condiții de aplicare*. *Revista Economiei Bazate pe Cunoaștere*, 15(2), 1–26. https://doi.org/10.1007/s13132-023-01433-3.
- Popescu, M., Barbu, A., Moiceanu, G., Militaru, G. & Simion, P. (2023). *Percepția cetățenilor asupra serviciilor publice digitale: Studiu de caz în rândul cetățenilor români*. În *Managementul inovației în organizații în era digitală*, 14(10), 259. https://doi.org/10.3390/admsci14100259.
- Radu, A. F., Petcu, I. & Barbu, D. (2022). *Confidențialitate și securitate – provocări legate de viitoarea identitate digitală a UE*. *Jurnalul Român de Securitate Cibernetică (ROCYS)*, 4(2), 39–52.

- Radu, A. F. & Petcu, I. (2021). *Aspecte intrinseci ale consolidării e-guvernării la nivelul Uniunii Europene. Studiu de caz: România*. *Revista Română de Tehnologia Informației și Control Automat*, 31(4), 83–96.
- Radu, A. F. & Petcu, I. (2020). *Conturarea viitorului: Între oportunitățile și provocările celei de-a patra și viitoarei a cincea revoluții industriale*. În *Lucrările Conferinței Științifice Internaționale eLearning and Software for Education, ediția a 16-a*, București, 23–24 aprilie 2020, pp. 96–97.
- Saqib, S., Altamimi, S., Alkayyal, N., Alshehri, E. & Alabbad, D. (2023). *Transformarea digitală și provocările legate de securitatea cibernetică pentru reziliența afacerilor: probleme și recomandări*. *Revista Sensors (Basel)*, 23(15). https://doi.org/10.3390/s23156666.
- Vrabie, C. (2024). *Smart-optimism: Dezvăluirea rezilienței primăriilor din România în furnizarea de servicii online*. ArXiv preprint, 2410. https://doi.org/10.48550/arXiv.2410.15189.
- Wirtz, B. W. (2019). *Modele de afaceri digitale*. Cham: Editura Springer Nature. https://doi.org/10.1007/978-3-030-13005-3.
- Zillner, S., Anicic, D., Hepp, M., et al. (2021). *Spre ecosisteme cloud de încredere în Europa: Principii de proiectare și arhitectura GAIA-X*. *Standardele computerelor și interfețe*, 77. https://doi.org/10.1016/j.csi.2021.103537.

3. Legislation & Strategic/Policy Documents

3.1. European Legislation & Strategic/Policy Documents

- Comisia Europeană (2021). *Busola pentru dimensiunea digitală 2030: modelul european pentru deceniul digital* (COM/2021/118 final). Bruxelles: Comisia Europeană.
- Comisia Europeană (2020). *Cartea albă privind inteligența artificială – O abordare europeană orientată spre excelență și încredere*. Bruxelles: Comisia Europeană.
- Comisia Europeană (2021). *Deceniul digital al Europei – Strategia digitală a UE și Strategia de securitate cibernetică pentru deceniul digital*. Bruxelles: Comisia Europeană.
- Comisia Europeană (2024): *Digital Decade Country Reports 2024 (Estonia, Denmark, Finland, Netherland, France, Italy, Romania*.
- Comisia Europeană (2023). *Declarația europeană privind drepturile și principiile digitale pentru deceniul digital* (2023/C 23/01). Bruxelles: Comisia Europeană.
- Consiliul Uniunii Europene & Parlamentul European. (2014). *Regulamentul (UE) nr. 910/2014 privind identificarea electronică și serviciile de încredere pentru tranzacțiile electronice pe piața internă (eIDAS)*. Jurnalul Oficial al Uniunii Europene, L 257.
- Consiliul Uniunii Europene & Parlamentul European. (2024). *Regulamentul (UE) 2024/1183 de modificare a Regulamentului (UE) nr. 910/2014 în ceea ce privește instituirea cadrului european pentru identitatea digitală*. Jurnalul Oficial al Uniunii Europene, L 119.

- Consiliul Uniunii Europene & Parlamentul European. (2024). *Regulamentul (UE) 2024/1689 privind inteligența artificială (Actul privind inteligența artificială – AI Act)*. Jurnalul Oficial al Uniunii Europene, L 139.
- Consiliul Uniunii Europene & Parlamentul European. (2020). *Regulamentul (UE) 2018/1724 privind crearea unei piețe unice pentru serviciile digitale (Digital Services Act)*. Jurnalul Oficial al Uniunii Europene, L 295.
- Uniunea Europeană. (2016). *Directiva (UE) 2016/1148 privind măsuri pentru un nivel comun ridicat de securitate a rețelelor și a sistemelor informatice în Uniune (Directiva NIS)*. Jurnalul Oficial al Uniunii Europene, L 194.
- Uniunea Europeană. (2022). *Directiva (UE) 2022/2555 (Directiva NIS 2) privind măsuri pentru un nivel comun ridicat de securitate cibernetică în Uniune*. Jurnalul Oficial al UE, L 333.
- Uniunea Europeană. (2018). *Regulamentul general privind protecția datelor (Regulamentul GDPR – UE 2016/679)*. Jurnalul Oficial al Uniunii Europene, L 119.
- Uniunea Europeană. (2021). *Programul Europa Digitală (Digital Europe Program), Regulamentul (UE) 2021/694*. Bruxelles: Parlamentul European și Consiliul.
- Uniunea Europeană. (2024). *Regulamentul (UE) 2021/694 privind măsuri pentru consolidarea solidarității și a capacităților Uniunii în fața amenințărilor cibernetice (Cyber Solidarity Act)*. Bruxelles: Parlamentul European și Consiliul.
- Uniunea Europeană. (Tratat actualizat 2012). *Tratatul privind Uniunea Europeană (TUE) și Protocolul nr. 2 privind aplicarea principiilor subsidiarității și proporționalității*. Consolidat în Jurnalul Oficial C 326/13 din 26.10.2012.
- Comisia Europeană. (2023). *Modelul de cost al infrastructurii publice digitale europene și indexul de eficiență al e-Estonia*. Date extrapolate din surse ale DG Connect și Banca Mondială.
- Comisia Europeană. (2015). *Comunicare A Comisiei Către Parlamentul European, Consiliu, Comitetul Economic Și Social European Și Comitetul Regiunilor "O strategie privind piața unică digitală pentru Europa*"

3.2. National Legislation & Strategic/Policy Documents

- Guvernul României. (2024). *Strategia Națională pentru dezvoltarea și susținerea digitalizării prin intermediul Centrelor de Inovare Digitală din România 2024–2027*. București: Secretariatul General al Guvernului. https://sgg.gov.ro/1/wp-content/uploads/2024/09/HG-68.pdf.
- *Legea 214/2024 privind utilizarea semnăturii electronice, a mărcii temporale și prestarea serviciilor de încredere bazate pe acestea*
- *Legea nr. 242/2022 privind schimbul de date între sisteme informatice și crearea Platformei naționale de interoperabilitate*
- *Legea nr. 362/2018 privind asigurarea unui nivel comun ridicat de securitate a rețelelor și sistemelor informatice*

- ADR, MCID. (2024). *Planul național de acțiune privind deceniul digital pentru România*. Preluat de la https://www.mcid.gov.ro/wp-content/uploads/2024/04/Plan-national-de-actiune-roadmap-pentru-publicare.pdf.
- Guvernul României & Banca Mondială. (2022). *Modelul standard de cost – Studii privind costurile administrative din România* (Anexă PNRR). București: Secretariatul General al Guvernului și World Bank Group.

4. Webography

- Fundația R pentru Calcul Statistic, Echipa de bază R. (2024). R: Limbaj și mediu pentru calcul statistic. Viena: Fundația R pentru Calcul Statistic. https://www.R-project.org.
- Jack, A. (2022). Opt țări stabilesc principii pentru viitorul identității digitale. Global Government Forum. https://www.globalgovernmentforum.com/eight-countries-set-out-principles-for-the-future-of-digital-id.
- Serviciul de Cercetare al Parlamentului European. (2022). Actul privind inteligența artificială și mecanismele de testare reglementate (regulatory sandboxes). Bruxelles: Parlamentul European. https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/733544/EPRS_BRI(2022)733544_EN.pdf.
- National Collaborating Centre for Methods and Tools (n.d.) https://www.nccmt.ca/uploads/media/media/0001/03/deba36658861bcb2ddcc885e4ddc10aefbb3326.pdf

5. Websites

- Comisia Europeană. (2024). *Portal oficial al Comisiei Europene*. Preluat de la https://commission.europa.eu/index_ro.
- EUR-Lex. (2024). *Acces direct la Jurnalul Oficial al Uniunii Europene*. Preluat de la https://eur-lex.europa.eu/oj/direct-access.html.
- CEEOL (2022). Transformarea Digitală.https://www.ceeol.com/search/viewpdf?id=1310123
- Juniper Research. (2023). *Statistici despre piața platformelor de date ale clienților, 2023–2028*. Preluat de la https://www.juniperresearch.com/resources/infographics/customer-data-platforms-market-statistics-2023-2028.

BIBLIOGRAPHY

1. Books (including manuals and guides)

- Chelcea, S. (2001). *Metodologia cercetării sociologice. Metode cantitative și calitative*. București: Editura Economică.
- Costello, A. B. & Osborne, J. W. (2005). *Cele mai bune practici în analiza factorială exploratorie: Patru recomandări pentru maximizarea rezultatelor analizei*. Practical Assessment, Research & Evaluation.
- Fabrigar, L. R. & Wegener, D. T. (2012). *Analiza factorială exploratorie*. Oxford: Oxford University Press.
- Mora, C. & Țiclău, T. (2013). *Leadership în sectorul public*. București: Editura Tritonic.
- Șandor, S. D. (2014). *Metode și tehnici de cercetare în științele sociale (Suport de curs)*. Cluj-Napoca: Universitatea Babeș-Bolyai, Facultatea de Științe Politice, Administrative și ale Comunicării.

2. Studies, Articles, and Surveys

- **Andrusko, J., Scerba, T. & Janda, I.** (2020). *Noua strategie digitală a UE pentru următorii cinci ani – va deveni Europa un actor digital de încredere?* Technology Newsflash [online]. Preluat de la https://www.whitecase.com/publications/alert/eus-new-digital-strategy-nextfive-years-will-europe-become-trusted-digital (accesat la 11 aprilie 2024).
- **Anghel, M. & Neagoe, A.** (2015). *Nivelul de digitalizare al guvernării electronice din România*. *Revista Română de Informatică și Automatică*, 25(4), 19–26.
- **Berger, C. & Kolain, M.** (2021). *Dreptul digital: greu de înțeles „by design" și cel mult parțial automatizabil?* Berlin: Centrul de competență pentru IT public.
- **Bloomberg, J.** (2018). *Digitizare, digitalizare și transformare digitală: nu le confundați!* Forbes. Preluat de la https://www.forbes.com/sites/jasonbloomberg/2018/04/29/digitization-digitalization-and-digital-transformation-confuse-them-at-your-peril.
- **Buttazzo, G.** (2023). *Ascensiunea inteligenței artificiale generale: riscuri și oportunități*. *Frontiers în Inteligență Artificială*, 6. https://www.frontiersin.org/articles/10.3389/frai.2023.1226990/full.
- Comisia Europeană. (2020). *Conturarea viitorului digital al Europei*. Preluat de la https://ec.europa.eu/info/sites/default/files/communication-shaping-europes-digital-future-feb2020_en_4.pdf
- **Cristescu, A.** (2005). *Dimensiuni practice ale conceptului de e-guvernare în România și Japonia*. În *Conferința Internațională – Administrația publică la începutul celui de-al III-lea mileniu*. București: SNSPA.
- **Dieffenbacher, S. S.** (2024). *Digitizare vs digitalizare: diferențe, definiții și exemple*. Preluat de la https://digitalleadership.com/blog/digitization-vs-digitalization/

- **Digital Economy and Society Index – DESI.** (2020). *Indicele economiei și societății digitale*. Comisia Europeană. Preluat de la https://digital-strategy.ec.europa.eu/en/library/digital-economy-and-society-index-desi-2020.
- **Duggal, N.** (2023). *Avantajele și dezavantajele inteligenței artificiale*. Simplilearn. https://www.simplilearn.com/advantages-and-disadvantages-of-artificial-intelligence-article.
- **Eubanks, V.** (2018). *Automatizarea inegalității: Cum instrumentele tehnologice moderne clasifică, controlează și sancționează persoanele vulnerabile*. New York: St. Martin's Press.
- **Floridi, L., Cowls, J., Beltrametti, M., et al.** (2018). *AI4People – Un cadru etic pentru o societate bazată pe inteligență artificială: oportunități, riscuri, principii și recomandări*. *Minds and Machines*, 28, 689–707. https://doi.org/10.1007/s11023-018-9482-5.
- **Hogan, J., Howlett, M. & Murphy, M.** (2022). *Reconsiderarea pandemiei COVID-19 ca moment de reformă: COVID-19 ca accelerator de politici*. *Policy and Society*, 41(1), 40–52.
- **Houy, C., Hamberg, M. & Fettke, P.** (2019). *Automatizarea proceselor robotizate în administrația publică*. În M. Räckers (Ed.), *Digitalizarea statului și administrației*. Bonn.
- **Manda, C. C.** (2021). *Digitalizarea administrației publice din România – între nevoile și aspirațiile unei societăți moderne a secolului XXI*. *Smart Cities Journal*, 9, 46–58.
- **Merkle, E. C., Fitzsimmons, E., Uanhoro, J. & Goodrich, B.** (2021). *Modelarea structurală bayesiană eficientă în Stan*. *Journal of Statistical Software*, 100(6), 1–22. https://doi.org/10.18637/jss.v100.i06.
- **Munoz, A. V.** (2024). *De la birocratizare la smartocrație: inteligența artificială în guvernanța modernă*.
- **Nixon, G. P. & Koutrakou, N. V.** (Eds.). (2007). *E-guvernarea în Europa: repornirea statului*. Londra: Routledge.
- Pariso, P. & Marino, A. (2020). *De la diviziunea digitală la e-guvernare: reingineria proceselor și birocrației în furnizarea serviciilor publice*. *Guvernare electronică – revistă internațională*, 16(3). https://doi.org/10.1504/EG.2020.108495.
- Parycek, P., Schmid, V. & Novak, A. S. (2024). *Inteligența artificială și automatizarea în procedurile administrative: potențial, limite și condiții cadru*. *Revista Economiei Bazate pe Cunoaștere*, 15, 8390–8415. https://link.springer.com/article/10.1007/s13132-023-01433-3.
- Petcu, I., Barbu, D. C., Anghel, M., Golea, G. D. & Radu, A. (2020). *Conturarea viitorului: între oportunități și provocări ale celei de-a patra și viitoarei a cincea revoluții industriale*. În *The 16th International Scientific Conference eLSE 2020*, 3, 91–97. https://www.elseconference.eu/.
- Piatek, R. (2024). *BayesFM: Inferență bayesiană pentru modelarea factorială* (versiunea 0.1.7) [Pachet R]. Fundația R pentru Calcul Statistic. https://CRAN.R-project.org/package=BayesFM.

- Pripoaie, R., Schin, G. C. & Matic, A. E. (2024). *Analiză exploratorie post-pandemie a nivelului de digitalizare a administrației publice din România în comparație cu cele mai dezvoltate state digital din Uniunea Europeană*. *Sustainability*, 16, 4652. https://doi.org/10.3390/su16094652.
- Radu, A. F. & Petcu, I. (2021). *Aspecte intrinseci ale consolidării e-guvernării la nivelul Uniunii Europene. Studiu de caz: România*. *Revista Română de Tehnologia Informației și Control Automat*, 31(4), 83–96. https://rria.ici.ro/documents/97/art._Radu_Petcu.pdf
- Radu, A. F., Petcu, I., Barbu, D. C. & Golea, D. G. (2020). *Conturarea viitorului: între oportunități și provocări ale celei de-a patra și a viitoarei a cincea revoluții industriale*. În *Proceedings of the 16th International Scientific Conference eLearning and Software for Education*, București, 23–24 aprilie 2020, 96–97. https://www.elseconference.eu/.
- Revelle, W. (2024). *Psych: Proceduri pentru cercetare psihologică și psihometrică* (versiunea 2.4.12) [Pachet R]. Universitatea Northwestern. https://CRAN.R-project.org/package=psych.
- Sabbagh, K., Friedrich, R., El-Darwiche, B., Singh, M., Ganediwalla, S. & Katz, R. (2012). *Maximizarea impactului digitalizării*. În *Raportul Global privind Tehnologia Informației 2012* (cap. 1.11, pp. 121–134). Geneva: Forumul Economic Mondial. https://business.columbia.edu/sites/default/files-efs/imce-uploads/CITI/Articles/GITR_Chapter1.11_2012.pdf.
- Savic, D. (2019). *De la digitizare, prin digitalizare, spre transformarea digitală*. Preluat la 10 februarie 2024 de la https://www.researchgate.net/publication/335865781.
- Scherer, S., Schneider, C. & Wimmer, M. A. (2008). *Studiu privind e-participarea în programele de inovare guvernamentală: lecții dintr-un sondaj*. În Hampe, F. et al. (Eds.), *Colaborare electronică: depășirea barierelor prin interacțiune multi-canal*. Conferința e-Bled. https://www.bledconference.org/.
- Sfetcu, N. (2021). *Introducere în inteligența artificială*. București: MultiMedia Publishing. ISBN: 978-606-033-391-3.
- Sfetcu, N. (2024). *Apărarea împotriva atacurilor cibernetice prin învățare automată*. *Cunoaștere Științifică*, 3(2). https://www.cunoasterea.ro/apararea-impotriva-atacurilor-cibernetice-prin-invatarea-automata.
- Steiner, M. D. & Grieder, S. G. (2020). *EFAtools: Un pachet R pentru analiza factorială exploratorie*. *Jurnalul de Software Open Source*, 5(53), 2521. https://doi.org/10.21105/joss.02521.
- Taiyun, W. & Simko, V. (2024). *Corrplot: Vizualizarea unei matrici de corelație* (versiunea 0.95) [Pachet R]. https://github.com/taiyun/corrplot.
- Torok, L. (2024). *Relația dintre dezvoltarea digitală și creșterea economică în Uniunea Europeană*. https://mpra.ub.uni-muenchen.de/118345/.

- Vevera, A. V., Barbu, D. C., Neagu, G. & Ciupercă, E. (2020). *Proiectul NI4OS-Europe – Suport pentru inițiativa națională Open Science Cloud*. *Revista Română de Informatică și Automatică*, 30(2), 81–94. http://rria.ici.ro.
- Wanckel, C. (2023). *Un instrument digital pentru evaluarea impactului durabilității în guvernul federal german: o perspectivă neo-instituțională*. *Revista Internațională de Științe Administrative*, 89(2), 301–423. https://doi.org/10.1177/00208523231163388.
- Wimmer, M. A. (2002). *O perspectivă europeană asupra guvernării electronice integrate: Proiectul e-GOV*. *Revista de Cercetare în Comerț Electronic și Aplicații*, 1(1), 92–102.
- Wirtz, B. W., Weyerer, J. C. & Geyer, C. (2019). *Inteligența artificială și sectorul public – Aplicații și provocări*. *Revista Internațională de Administrație Publică*, 42(7), 596–615. https://doi.org/10.1080/01900692.2018.1498103.
- Zalnieriute, M., Moses, L. B. & Williams, G. (2019). *Statul de drept și automatizarea deciziilor guvernamentale*. *Revista Modernă de Drept*, 82(3), 425–457. https://doi.org/10.1111/1468-2230.12441.
- Zandi, M., Koropeckye, S., Singh, V. & Matsiras, P. (2016). *Impactul plăților electronice asupra creșterii economice*. *Moody's Analytics*.

  https://usa.visa.com/dam/VCOM/download/corporate/media/moodys-economy-white-paper-feb-2016.pdf.

3. Legislation & Strategic/Policy Documents

3.1. European Legislation & Strategic/Policy Documents

- Comisia Europeană. (2020). *Modelarea viitorului digital al Europei*. Comunicare către Parlamentul European, Consiliu, Comitetul Economic și Social European și Comitetul Regiunilor. Bruxelles, 19.2.2020, COM(2020) 67 final. Preluat de la https://eur-lex.europa.eu/legalcontent/en/TXT/?uri=CELEX%3A52020DC0067.
- Comisia Europeană. (2021–2023). *Obiectivele deceniului digital și proiecțiile de cost asociate*. Bruxelles: Direcția Generală pentru Rețele de Comunicare, Conținut și Tehnologie.
- Comisia Europeană. (2022). *Proiect-pilot privind portofelul european de identitate digitală. Costuri aferente implementării eFactura și ANAF-SPV în România*. Bruxelles: DG Connect.
- Comisia Europeană. (2022). *Declarația europeană privind drepturile și principiile digitale pentru deceniul digital*. Bruxelles. Preluat de la https://digital-strategy.ec.europa.eu/en/library/european-declaration-digital-rights-and-principles.
- Consiliul Uniunii Europene & Parlamentul European. (2014). *Regulamentul (UE) nr. 910/2014 privind identificarea electronică și serviciile de încredere pentru tranzacțiile electronice pe piața internă și de abrogare a Directivei 1999/93/CE*. Jurnalul Oficial al Uniunii Europene, L 257. https://eur-lex.europa.eu.
- Consiliul Uniunii Europene & Parlamentul European. (2016). *Regulamentul (UE) 2016/679 privind protecția persoanelor fizice în ceea ce privește prelucrarea datelor cu caracter*

personal și libera circulație a acestor date (Regulamentul general privind protecția datelor – GDPR). Jurnalul Oficial al Uniunii Europene, L 119. https://eur-lex.europa.eu/eli/reg/2016/679/oj.

- Consiliul Uniunii Europene & Parlamentul European. (2021). *Propunere de regulament privind modificarea Regulamentului (UE) nr. 910/2014 în vederea instituirii cadrului european pentru identitatea digitală*. COM(2021) 281 final. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0281.
- Consiliul Uniunii Europene & Parlamentul European. (2022). *Decizia (UE) 2022/2481 din 14 decembrie 2022 privind instituirea Programului de politică pentru deceniul digital 2030*. Jurnalul Oficial al Uniunii Europene, L 323/1.
- Curtea de Conturi Europeană. (2018–2023). *Rapoarte privind eficiența cheltuielilor pentru TIC în statele membre ale UE*. Luxemburg: ECA Publications. https://www.eca.europa.eu.
- Organizația pentru Cooperare și Dezvoltare Economică (OECD). (2021, 2022). *Indicele guvernării digitale și estimări de eficiență a costurilor*. Paris: OECD Publishing. https://www.oecd.org/governance/digital-government/.
- Parlamentul European & Consiliul Uniunii Europene. (2021). *Programul Europa Digitală. Ghiduri privind alocările naționale de finanțare*. Bruxelles: Comisia Europeană.

3.2. National Legislation & Strategic/Policy Documents

- Curtea de Conturi a României. (2018–2023). *Rapoarte de audit privind investițiile digitale realizate în cadrul instituțiilor publice*. București: Publicațiile Curții de Conturi. https://www.curteadeconturi.ro/
- Guvernul României. (2005). *Hotărârea nr. 775/2005 pentru aprobarea Regulamentului privind procedurile de elaborare, monitorizare și evaluare a politicilor publice la nivel central*. Monitorul Oficial al României, nr. 653 din 25 iulie 2005.
- Guvernul României. (2016). *Hotărârea nr. 523/2016 pentru modificarea și completarea Regulamentului privind procedurile de elaborare, monitorizare și evaluare a politicilor publice la nivel central, aprobat prin Hotărârea nr. 775/2005*. Monitorul Oficial al României, nr. 596 din 5 august 2016.
- SGG (2024). *Memorandumul privind aprobarea Planului Național Acțiune Deceniul Digital 2030.*
- Ministerul Investițiilor și Proiectelor Europene. (2021). *Planul Național de Redresare și Reziliență – Componenta C7: Digitalizarea serviciilor publice*. București. Preluat de la https://mfe.gov.ro/pnrr/.

4. Webography

- Adevarul.ro. (2023, 28 mai). *ROeID – o aplicație digitală pentru România*. Preluat de la https://adevarul.ro/stiri-interne/evenimente/roeid-aplicatia-care-digitalizeaza-romania-taxe-2270969.html [accesat 22.07.2024].

- ADR, MCID. (2024). *Planul național de acțiune privind deceniul digital pentru România*. Preluat de la https://www.mcid.gov.ro/wp-content/uploads/2024/04/Plan-national-de-actiune-roadmap-pentru-publicare.pdf.
- Artificial Intelligence Act (AI Act). (2024). *Regulamentul (UE) 2024/1689 privind inteligența artificială*. Preluat de la https://artificialintelligenceact.eu.
- Comisia Europeană. (2019). *Fișe informative privind guvernarea electronică. Raport aniversar*. Preluat de la https://joinup.ec.europa.eu/sites/default/files/custom-page/attachment/2019-03/10egov_anniv_report.pdf.
- Comisia Europeană. (2020). *Cartea albă privind inteligența artificială: O abordare europeană pentru excelență și încredere*. Preluat de la

  https://ec.europa.eu/info/sites/default/files/commission-white-paper-artificial-intelligence-feb2020_en.pdf.
- Comisia Europeană. (2022). *Digitalizarea și vulnerabilitatea socială*. Bruxelles: Serviciul de Cercetare al Parlamentului European.
- Comisia Europeană. (2022). *Fișă informativă privind administrația publică digitală 2022 – România*. Preluat de la https://joinup.ec.europa.eu/collection/nifo-national-interoperability-framework-observatory/digital-publicadministration-factsheets-2022.
- Comisia Europeană. (2022). *Indicele economiei și societății digitale (DESI) 2022 – România*. Preluat de la https://digitalstrategy.ec.europa.eu/en/library/digital-economy-and-society-index-desi-2022.
- Comisia Europeană. (2024). *Declarația europeană privind drepturile și principiile digitale*. Preluat de la https://digital-strategy.ec.europa.eu/en/library/european-declaration-digital-rights-and-principles.
- Curtea de Conturi Europeană. (2020). *Raport privind eficiența cheltuielilor TIC în statele membre ale Uniunii Europene*. Luxemburg. Preluat de la https://www.eca.europa.eu.
- Departamentul pentru Afaceri Economice și Sociale al Națiunilor Unite. (2020). *Studiul ONU privind guvernarea electronică 2020*. Preluat de la https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2020.
- DigitalExpert.ro. (2024). *ROeID – simplificarea accesului online la serviciile publice din România*. Preluat de la https://digitalexpert.ro/roeid-simplificarea-accesului-online-la-serviciile-publice-din-romania/ [accesat 22.04.2024].
- Emerging Europe. (2023, 23 octombrie). *Este timpul să accelerăm digitalizarea în Europa Centrală și de Est, în special în guvernare electronică*. Preluat de la https://emerging-europe.com/news/its-time-to-speed-up-digitalisation-in-cee-especially-egovernment/ [accesat 03.04.2024].

- European Interoperability Framework. (2017). *Strategia de implementare a cadrului european de interoperabilitate*. Bruxelles: Comisia Europeană. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52017DC0134.
- European Parliamentary Research Service. (2022). *Artificial Intelligence Act and regulatory sandboxes*. Bruxelles. https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/733544/EPRS_BRI(2022)733544_EN.pdf.
- European Parliamentary Research Service. (2024). *Digitalizarea și vulnerabilitatea socială*. Bruxelles: Serviciul de Cercetare al Parlamentului European.
- European Union Monitor. (2021). *Busola digitală 2030: Calea europeană pentru deceniul digital*. COM(2021) 118.

  https://www.eumonitor.eu/9353000/1/j9vvik7m1c3gyxp/vlgzpb7ivmr4.
- Global Government Forum. (2022). *Confidențialitate, securitate, încredere, transparență: Cum facilităm partajarea datelor în sectorul public*. https://www.globalgovernmentforum.com [accesat 21.11.2024].
- Jacobsen, F. H. (2022). *Viziune pentru serviciile publice*. Bruxelles: Comisia Europeană. https://digital-strategy.ec.europa.eu/en/news/vision-public-services.
- McKinsey Global Institute. (2019). *Identitatea digitală – o cheie pentru creștere incluzivă*. https://www.mckinsey.com.
- Națiunile Unite. (2020). *Impactul tehnologiilor digitale asupra dezvoltării globale*. Preluat de la https://www.un.org/en/pdfs/digitalimpact2020.pdf
- OECD. (2021). *Indicele guvernării digitale*. Paris: OECD Publishing. https://www.oecd.org/governance/digital-government-index.htm.
- OECD. (2022). *Estimări privind eficiența costurilor digitale în administrațiile publice*. Paris: OECD Publishing. https://www.oecd.org.
- Parlamentul European. (2022). *Regulamentul privind guvernanța datelor – Data Governance Act (UE 2018/1724)*.

  https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020PC0767.
- ResearchGate. (2023). *Percepția cetățenilor asupra serviciilor publice digitale: Studiu de caz în rândul cetățenilor români*.

  https://www.researchgate.net/publication/384903425_Citizens%27_Perception_of_Digital_Public_Services_A_Case_Study_among_Romanian_Citizens [accesat 02.11.2024].
- Strategia europeană pentru Piața Unică Digitală. (n.d.). https://ec.europa.eu/digital-single-market/en [accesat 15.01.2024].
- The International Trade Administration. (2024). *Ghid comercial privind economia digitală în România*.

https://www.trade.gov/country-commercial-guides/romania-digital-economy?navcard=36376 [accesat 02.10.2024].

- Tradesilvania. (2022). *Tehnologia blockchain în sectorul public – descentralizarea serviciilor publice*. https://tradesilvania.com/blog/tehnologia-blockchain-in-sectorul-public-descentralizarea-serviciilor-publice/.
- Uniunea Europeană. (2018–2023). *Rapoarte ale Curții de Conturi Europene privind eficiența cheltuielilor TIC*. https://www.eca.europa.eu.
- Uniunea Europeană. (2022). *Busola digitală 2030: Calea europeană pentru deceniul digital*. COM(2021) 118 final. https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52021DC0118.
- Uniunea Europeană. (2022). *eIDAS 2 – Realizarea viziunii unui portofel digital european unic de identitate*. https://www.thalesgroup.com/en/markets/digital-identity-and-security/government/identity/eidas-regulations.
- Uniunea Europeană. (2022). *Regulamentul privind serviciile digitale – Digital Services Act (2020/0361 COD)*. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020PC0825.
- Universitatea Națiunilor Unite. (2020). *Studiul ONU privind guvernarea electronică 2020 (ediție completă)*. https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2020-Survey/2020%20UN%20E-Government%20Survey%20(Full%20Report).pdf.
- Vision for Public Services. (n.d.). *Viziune pentru serviciile publice digitale în UE*. https://digital-strategy.ec.europa.eu/en/news/vision-public-services [accesat 12.01.2024].
- www.adr.gov.ro. (2024). *Propunere de politică publică în domeniul e-guvernării*. https://www.adr.gov.ro/wp-content/uploads/2024/03/Livrabil-A12_Propunere-de-politica-publica-in-domeniul-e-guvernarii.pdf [accesat 21.04.2024].
- www.ceeol.com. (2024). *Articol academic despre transformarea digitală*. https://www.ceeol.com/search/article-detail?id=1257939 [accesat 03.10.2024].
- https://digital-strategy.ec.europa.eu/en/policies/european-approach-artificial-intelligence [accesat 02.11.2024].
- https://digital-strategy.ec.europa.eu/en/library/egovernment-benchmark-2022 [accesat 02.11.2024].
- https://ecs-org.eu/learn-more-about-the-digital-economy-and-society-index-desi/?utm_source=chatgpt.com [accesat 02.10.2023].
- www.neontri.com. (2024). *Blog – transformare digitală în administrație*. https://neontri.com/blog [accesat 14.12.2024].

- www.nets.eu. (2024). *Accelerarea adoptării identității digitale în România*. https://www.nets.eu/solutions/digitisation-services/Documents/Nets-Accelerating-digital-ID-adoption-in-Romania.pdf [accesat 21.11.2024].
- https://legislatie.just.ro/Public/DetaliiDocumentAfis/250235 [accesat 02.02.2025] – *Strategia de securitate cibernetică a României, 2022–2027.*

5. Websites

- Comisia Europeană
  - ✓ Comisia Europeană. (n.d.). *Deceniul digital al Europei – Ținte și priorități 2030*. Preluat de la https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_ro.
  - ✓ Comisia Europeană. (n.d.). *Realizarea deceniului digital european*. Preluat de la https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/story-von-der-leyen-commission/realising-europes-digital-decade_en?prefLang=ro.
- eGovernance Academy (Estonia)
  - ✓ eGovernance Academy. (n.d.). *Rapoarte privind platforma X-Road, sistemul ID-card și modelul de cost per cetățean*. Tallinn: e-Governance Academy Foundation.
- Eufordigital
  - ✓ Eufordigital. (n.d.). *Strategia digitală a UE*. Preluat de la https://eufordigital.eu/ro/discover-eu/eu-digital-strategy/.
  - ✓ Eufordigital. (n.d.). *Alte proiecte europene digitale*. Preluat de la https://eufordigital.eu/ro/other-projects/.
  - ✓ Eufordigital. (n.d.). *Deceniul digital european – politici UE*. Preluat de la https://digital-strategy.ec.europa.eu/ro/policies/europes-digital-decade
- EUR-Lex
  - ✓ EUR-Lex. (n.d.). *Acces direct la Jurnalul Oficial al Uniunii Europene*. Preluat de la https://eur-lex.europa.eu/oj/direct-access.html.
- Juniper Research
  - ✓ Juniper Research. (n.d.). *Portal principal*. Preluat de la https://www.juniperresearch.com/.
  - ✓ Juniper Research. (2023). *Premiile FDA Fintech & Payments 2023 – Câștigători*. Preluat de la https://www.juniperresearch.com/press/fda-fintech-payments-awards-2023-winners/.
  - ✓ Juniper Research. (2023). *Platforme de date ale clienților – statistici 2023–2028*. Preluat de la https://www.juniperresearch.com/resources/infographics/customer-data-platforms-market-statistics-2023-2028/.
- McKinsey Global Institute (2019)

- ✓ McKinsey Global Institute. (2019). *Identitatea digitală: o cheie pentru creștere incluzivă*. Preluat de la https://www.mckinsey.com.

- RoeID
  - ✓ RoeID. (n.d.). *Aplicația ROeID pentru cetățeni*. Preluat de la https://www.roeid.ro/cetateni.
  - ✓ RoeID. (n.d.). *ROeID – pentru administrațiile publice*. Preluat de la https://www.roeid.ro/administra%C8%9Bii-publice.
  - ✓ RoeID. (n.d.). *Glosar de termeni ROeID*. Preluat de la https://www.roeid.ro/glosar-termeni.
- Smart Cities and Regional Development Journal
  - ✓ Smart Cities and Regional Development Journal. (n.d.). *Numărul curent*. Preluat de la https://www.scrd.eu/index.php/scrd/issue/view/45.
  - ✓ Smart Cities and Regional Development Journal. (n.d.). *Arhiva numerelor anterioare*. Preluat de la https://www.scrd.eu/index.php/scrd/issue/archive
- World Bank – GovTech Case Studies
  - ✓ World Bank. (n.d.). *Studii de caz GovTech – modele de cost pentru Estonia, Letonia și India*. Washington, DC: Banca Mondială.