Digitalization of Public Administration and Its Impact on Institutional Transparency, Administrative Efficiency, and Citizen Trust: An Empirical Study on the Perceptions of Future Legal Professionals

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Abstract

The adoption of EU Regulation 679/2016 on the protection of personal data has redefined the relationship between citizens and digital public administration, imposing a new legal and administrative framework for analysis. Against this backdrop, the present study examines the perceptions of young Romanian legal professionals regarding the digitalization of public administration and its correlation with personal data protection standards established by the aforementioned regulation. The research draws on a structured questionnaire administered to a sample of 141 law students, examining their awareness of data protection rights, their use of public digital platforms, their assessment of digitalization-related risks, and their attitudes toward the transparency of public institutions. The findings reveal that the overwhelming majority of respondents (97.1%) view digitalization as a viable alternative to traditional administrative processes, while simultaneously acknowledging substantial barriers to its effective implementation, namely inadequate technological infrastructure (39.3%) and insufficient digital competencies among civil servants (29.3%). Respondents further express notable concerns regarding personal data security (55.4%) and growing digital inequality (78.6%), reflecting a growing awareness of fundamental rights in the digital environment. This research contributes to a deeper understanding of the intersection between administrative law, digital law, and the protection of fundamental citizens' rights, offering evidence-based insights relevant to both academic debate and public policy design in the Romanian and European context.

Keywords: *public administration digitalization; GDPR; data protection; digital competencies; citizen trust*

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1. Introduction

The digitalization of public administration represents one of the most significant transformations of contemporary governance, fundamentally reshaping the relationship between the state and its citizens. Within the European Union, this process is governed by a robust normative architecture, including Regulation (EU) 679/2016 on the General Data Protection Regulation[*], Directive (EU) 2022/2555 on measures for a high common level of cybersecurity across the Union (NIS2)[†], and Regulation (EU) 910/2014 on electronic identification and trust services (eIDAS)[‡]. Together, these instruments establish a comprehensive legal framework within which public administrations must operate as they transition to digital service delivery.

Romania's e-Government trajectory has evolved considerably since the adoption of the first national e-Government strategy in 2001, advancing through successive reform cycles driven by European Digital Agenda objectives and, most recently, by the EU Digital Decade Policy Programme 2030[§]. Despite measurable progress, significant implementation gaps persist, particularly in relation to technological infrastructure, digital competency of civil servants, and citizen awareness of data protection rights.

The present study seeks to contribute to this debate by examining the perceptions of future legal professionals — law students enrolled at a Romanian university — regarding the digitalization of public administration, its impact on transparency and administrative efficiency, and its correlation with personal data protection standards under EU Regulation 679/2016. The research is grounded in an empirical survey administered to 141 respondents and addresses sixteen dimensions of the citizen-administration digital interface. The study is structured as follows: Section 2 presents the theoretical framework; Section 3 details the research methodology and

[*] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data (GDPR), OJ L 119, 4.5.2016, pp. 1–88.

[†] Directive (EU) 2022/2555 of the European Parliament and of the Council of 14 December 2022 on measures for a high common level of cybersecurity across the Union (NIS2 Directive), OJ L 333, 27.12.2022, pp. 80–152.

[‡] Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market (eIDAS Regulation), OJ L 257, 28.8.2014, pp. 73–114.

[§] European Commission, Communication on 'Europe's Digital Decade: digital targets for 2030', COM(2021) 118 final, Brussels, 9 March 2021; Decision (EU) 2022/2481 establishing the Digital Decade Policy Programme 2030, OJ L 323, 19.12.2022, pp. 4–26.

sample profile; Sections 4 through 7 analyze the principal empirical findings; Section 8 formulates evidence-based policy recommendations; and Section 9 provides the concluding remarks.

2. Theoretical Framework: e-Government, GDPR, and Digital Governance

The academic theorization of e-Government has proceeded along several distinct lines. Layne and Lee's foundational model identifies four developmental stages: cataloguing, transaction, vertical integration, and horizontal integration (Layne & Lee, 2001, pp. 122–136). More recent scholarship has extended this framework to encompass open government, algorithmic governance, and data-driven public administration, reflecting the increasing complexity of digital public service ecosystems (Janssen & Estevez, 2013)

The General Data Protection Regulation constitutes the cornerstone of the European data protection architecture, establishing a rights-based framework applicable to all processing activities carried out by public authorities. Key provisions directly relevant to public administration include the right of access (Article 15), the right to rectification (Article 16), the right to erasure (Article 17), and the principle of transparency (Article 5(1)(a)) (Voigt & von dem Bussche, 2017). These normative requirements create an obligation for public institutions to implement data protection by design and by default (Article 25), a principle that carries significant implications for the architecture of digital administrative services (Kuner et al., 2020).

The European Commission's DigComp 2.2 framework identifies five core digital competency areas: information and data literacy, communication and collaboration, digital content creation, safety, and problem-solving (Vuorikari et al., 2022). Deficiencies in these competencies among civil servants represent a structural obstacle to effective digital public service delivery, as confirmed by multiple national and European-level assessments, including the annual Digital Economy and Society Index (DESI) reports (European Commission, 2023).

The concept of institutional trust in digital governance has been theorized by numerous scholars as both a precondition and an outcome of successful e-Government implementation. Bélanger and Carter argue that online trust in public institutions is mediated by perceptions of system quality, information quality, and institutional reliability (Bélanger & Carter, 2008, pp. 165–176). This theoretical nexus between digitalization and trust informs the present study's empirical design.

3. Research Methodology and Sample Profile

The present research employs a quantitative methodology based on a structured, self-administered questionnaire distributed online via Google Forms between March and April 2026*. The instrument comprised 16 items organized across six thematic dimensions: (i) socio-demographic profile; (ii) digital competency self-assessment; (iii) platform usage frequency and priority domains; (iv) GDPR rights awareness; (v) perceptions of transparency, efficiency, and citizen trust; and (vi) cybersecurity concerns and digital inclusion. All response scales were ordinal, with four or five fixed-choice options per item, designed to facilitate quantitative frequency analysis.

The questionnaire was administered to students enrolled in law programmes at a Romanian university. Following data cleaning and verification against the platform export, 141 valid responses were retained for analysis. The sample profile is detailed in Table 1 below.

Table 1. Sample Distribution by Socio-Demographic Variables (N = 141)

Variable	Category	N	%
Age	18–20 years	29	20.6%
	21–23 years	42	29.8%
	Over 24 years	68	48.2%
Year of study	Year I–II (Bachelor's)	86	61.0%
	Year III–IV (terminal)	45	31.9%
Place of origin	Rural	59	41.8%
	Urban – small/medium city	45	31.9%
	Urban – large city / county seat	35	24.8%
GDPR preparation level	General knowledge (other courses)	65	46.1%
	Minimal / personal interest	43	30.5%
	Specific GDPR courses attended	22	15.6%
	No prior study of the domain	9	6.4%

* The questionnaire comprised 16 structured items and was reviewed by academic peers prior to distribution. Data were exported in CSV format; N = 141 valid responses were retained after cleaning.

Digital experience	Intermediate user	83	58.9%
	Advanced user	49	34.8%
	Occasional / beginner user	7	5.0%

The sample is predominantly mature, with 48.2% of respondents aged over 24 years. The high proportion of students from rural areas (41.8%) is particularly relevant for the analysis of digital inclusion concerns. With respect to GDPR preparation, 46.1% report general data protection knowledge acquired through other legal courses, reflecting the interdisciplinary penetration of EU data protection law in Romanian legal education. In terms of digital experience, the majority (58.9%) self-identify as intermediate users, with a substantial proportion (34.8%) qualifying as advanced users.

4. Digitalization as a Viable Alternative: General Perceptions

The first dimension of the survey examined the overall perception of digitalization as a viable alternative to traditional administrative processes. An overwhelming majority of respondents — 97.1% (n=133) — affirmed that digitalization represents a viable alternative, with only one respondent (0.7%) explicitly disagreeing and three (2.2%) indicating no opinion*. This near-consensus is particularly significant given that the sample includes students from rural areas who may have had more limited exposure to functional digital public services.

Regarding the priority domain for digitalization in Romania, respondents identified the submission of documentation (petitions, applications, files) as the most urgent priority (58.2%, n=82), followed by access to public interest information (20.6%, n=29), payment of taxes and duties (16.3%, n=23), and the issuance of civil status and identity documents (4.3%, n=6). These findings suggest that burdensome documentary procedures remain the principal friction point in citizen-administration interaction.

* Q8: "Do you consider digitalization to be a viable alternative?" Yes (n=133, 97.1%), No opinion (n=3, 2.2%), No (n=1, 0.7%).

Table 2. Priority Domains for Digitalization of Public Administration

Priority domain	N	%
Submission of documentation (petitions, applications, files)	82	58.2%
Access to public interest information	29	20.6%
Payment of taxes and duties	23	16.3%
Issuance of civil status / identity documents	6	4.3%
Other / No answer	1	0.7%
Total	141	100%

5. Administrative Efficiency, Barriers, and the Risk of Digital Bureaucracy

Regarding the actual simplification of citizen-state interaction, 47.5% of respondents (n=66) consider that digitalization simplifies interaction "to some extent," while 43.3% (n=61) believe it does so "considerably." However, a noteworthy 5.7% (n=8) hold the contrary view, stating that digitalization has in fact created a new form of "digital bureaucracy," while 2.9% (n=4) reported no formed opinion*. This finding corroborates theoretical observations — notably by Janssen and Estevez — regarding the risk of replicating bureaucratic inefficiencies in digital environments when institutional reform does not accompany technological investment (Janssen & Estevez, 2013).

The primary barriers identified by respondents are presented in Table 3. Inadequate or outdated technological infrastructure emerges as the leading obstacle (39.3%, n=55), followed by insufficient digital competencies among civil servants (29.3%, n=41), systemic resistance to change (22.1%, n=31), and an inadequate or unclear legislative framework (9.3%, n=13). The preponderance of infrastructure and human capital deficiencies over legislative barriers suggests that Romania's digitalization challenges are principally operational rather than normative in nature.

* Q12: "Do you consider that digitalization genuinely simplifies interaction with the state?" To some extent (n=66, 47.5%), Considerably (n=61, 43.3%), Created digital bureaucracy (n=8, 5.7%), No opinion (n=4, 2.9%).

Table 3. Principal Obstacles to the Digitalization of Public Administration (N = 140)

Obstacle	N	%
Inadequate / outdated technological infrastructure	55	39.3%
Insufficient digital competencies of civil servants	41	29.3%
Systemic resistance to change (institutional mentality)	31	22.1%
Inadequate or unclear legislative framework	13	9.3%
Total	140	100%

The predominance of infrastructure-related barriers is consistent with Romania's positioning in the 2023 DESI report, which ranked Romania last among EU member states in the dimension of public digital services, with a score of 34.2 against an EU average of 68.1*. The civil servant competency deficit further aligns with findings from OECD assessments indicating that Romania's public workforce training frameworks remain insufficiently aligned with DigComp 2.2 standards (European Commission, 2023).

6. Institutional Transparency and Citizen Trust in the Digital Context

A central dimension of the survey addressed the relationship between digitalization, institutional transparency, and citizen trust. Regarding the transparency of public institutions in the use of personal data, 57.1% of respondents (n=80) consider institutions transparent "to a large extent," while 29.3% (n=41) find them "not particularly" transparent, and 13.6% (n=19) consider them "completely" transparent†. These findings suggest a majority perception of partial institutional transparency, with a significant dissatisfied minority — nearly three in ten respondents — whose concerns merit institutional attention.

The nexus between digitalization and citizen trust is further evidenced by responses to Questions 13 and 14 of the survey instrument. With respect to the influence of an institution's degree of digitalization on respondent trust, 52.9% (n=74) report a substantial positive influence and 24.3% (n=34) report a very strong positive influence. Only 5.0% (n=7) report no influence whatsoever. Furthermore, when asked whether a stronger online presence of public institutions would increase

* Romania scored 34.2 on 'Digital Public Services' vs. EU average 68.1

† Q10: Transparency of public institutions in use of personal data: To a large extent (n=80, 57.1%), Not particularly (n=41, 29.3%), Completely (n=19, 13.6%).

citizen trust in the state more broadly, 86.4% responded affirmatively (48.9% "to some extent" and 37.4% "considerably").

Table 4. Digitalization as a Predictor of Citizen Trust (Questions 13 & 14, N = 141)

Response	Q13: Institution trust (n)	Q13 (%)	Q14: Online presence (n)	Q14 (%)
Very much / Considerably	34	24.3%	52	37.4%
To a large extent / Some extent	74	52.9%	68	48.9%
Little influence expected	25	17.9%	17	12.2%
Not at all / Don't know	7	5.0%	2	1.4%
Total	140	100%	139	100%

These findings confirm the theoretical proposition advanced by Bélanger and Carter that e-Government adoption and institutional trust are mutually reinforcing, and that online service quality functions as a significant predictor of broader governmental legitimacy in the eyes of citizens (Bélanger & Carter, 2008).

7. GDPR Awareness, Data Protection Concerns, and Digital Inclusion

In terms of self-assessed GDPR rights awareness, the majority of respondents (62.9%, n=88) rate their knowledge as "satisfactory," while 17.1% (n=24) assess it as "very good." A combined 20.0% (n=28) rate their knowledge as "weak" or "none at all," indicating persistent literacy gaps even within a legally trained population (European Commission, 2023). This finding reinforces the case for integrating data protection law as a compulsory subject in Romanian law school curricula.

Regarding data protection concerns, 46.0% (n=64) of respondents are "somewhat concerned" about the manner in which the Romanian government handles personal data in digitalization processes, and 9.4% (n=13) are "very concerned." Combined, 55.4% express measurable concern — a figure broadly consistent with EU-level Eurobarometer surveys on institutional data trust*. Conversely, 30.9% are not particularly concerned, and 13.7% report no concern whatsoever, suggesting that a

* Special Eurobarometer 543, 'Europeans and data protection' (2023), European Commission; European Union Agency for Fundamental Rights, Fundamental Rights Report 2023, FRA, Vienna.

significant share of future legal professionals maintains relatively high levels of institutional data trust.

The issue of digital inclusion generates particularly pronounced concern. A combined 78.6% of respondents express worry about growing digital inequality because of administrative digitalization: 47.9% (n=67) are concerned to some extent, and 30.7% (n=43) are convinced it will constitute a significant problem. Only 19.3% (n=27) believe digital inequality will not represent a challenge, and 2.1% (n=3) expressed no opinion. These results underscore the social equity dimension of digitalization, which carries the risk of exacerbating existing socio-economic inequalities if not accompanied by targeted digital literacy and inclusion programmes.

Table 5. Data Protection Concerns and Digital Inclusion Risk (N = 141)

Item	Response	N	%
Concern re: data protection (Q9)	Somewhat concerned	64	46.0%
	Not very concerned	43	30.9%
	Not at all concerned	19	13.7%
	Very concerned	13	9.4%
Digital inequality risk (Q15)	To some extent	67	47.9%
	Certainly yes	43	30.7%
	Will not be a problem	27	19.3%
	Don't know	3	2.1%

With respect to the risk of relational distancing between civil servants and citizens, a plurality of respondents (49.3%, n=69) do not believe digitalization will lead to greater distance, while 32.9% (n=46) consider it a partial risk and 14.3% (n=20) regard it as a considerable risk*. The combined 47.2% who express concern about relational distancing signals the need to preserve human interaction channels alongside digital services, particularly for vulnerable population groups.

* Q16: Digitalization leading to distancing between civil servants and citizens: No (n=69, 49.3%), To some extent (n=46, 32.9%), Considerably (n=20, 14.3%), Not sure (n=5, 3.6%)

8. Policy Recommendations

Based on the empirical findings presented above, the following six evidence-based recommendations are advanced for consideration in the design and implementation of Romanian digital governance policy:

1. Priority investment in digital infrastructure: Targeted public funding should be allocated to modernizing the technological infrastructure of public institutions, with urgency at the local and regional levels where obsolescence is most acute, in alignment with the EU Digital Decade 2030 targets.
2. Mandatory continuous digital training for civil servants: Professional development programmes aligned with the DigComp 2.2 framework should be institutionalized as a prerequisite for career advancement in the Romanian civil service, with mandatory periodic retraining requirements.
3. Integration of data protection law as a compulsory subject in legal education: Given the GDPR awareness gaps identified even among law students (20.0% with weak or no knowledge), data protection law should be formally constituted as a compulsory course in all Romanian law faculties, with applied components addressing public administration contexts.
4. National digital inclusion strategy: Comprehensive digital literacy programmes targeting rural populations, the elderly, and socio-economically disadvantaged groups should be developed in partnership with civil society organizations, in direct response to the digital inequality concerns expressed by 78.6% of respondents.
5. Mandatory preservation of hybrid service delivery: Public institutions should be legally required to maintain both digital and in-person service channels, ensuring universal access and preserving the human dimension of administrative relations, consistent with the relational concerns expressed by 47.2% of respondents.
6. Full implementation of NIS2 and proactive GDPR transparency: Romanian public authorities should accelerate full transposition and implementation of NIS2 cybersecurity obligations, complemented by clear, accessible public communication regarding data processing practices, in order to address the trust deficit and data protection concerns documented in this study.

9. Conclusions

The present study has examined the perceptions of 141 Romanian law students regarding the digitalization of public administration, with particular reference to GDPR compliance, institutional transparency, administrative efficiency, and citizen trust. The research confirms that future legal professionals hold a strongly positive view of digitalization as a governance instrument: 97.1% regard it as a viable alternative to traditional administrative processes, and 86.4% believe a stronger institutional online presence would increase citizen trust. These findings are consistent with broader European trends indicating a generational shift in expectations regarding public service delivery.

Three overarching conclusions emerge from the empirical data. First, digitalization is perceived as both a driver and a significant predictor of institutional trust, establishing a measurable positive feedback loop between e-Government quality and citizens' confidence in public institutions. Second, data protection remains an area of qualified concern: 55.4% of respondents express reservations about governmental data handling, pointing to a gap between the normative requirements of EU Regulation 679/2016 and perceived institutional practice. Third, the digital divide represents a significant social risk, with 78.6% of respondents concerned about inequality implications — a finding that demands urgent and integrated policy attention.

The principal obstacles identified — inadequate infrastructure (39.3%) and civil servant competency deficits (29.3%) — are predominantly operational rather than legislative in character, suggesting that Romania's digitalization challenge requires targeted investment in infrastructure and human capital rather than primarily normative reform.

These findings contribute to the broader academic and policy debate on e-Government in post-communist EU member states, offering empirical evidence from the perspective of emerging legal professionals who will shape public administration practice in Romania and at the European level in the coming decades. Future research should extend the sample to include civil servants and senior citizens, in order to map the full spectrum of perceptions across the citizen-administration interface.

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