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THE mOBYWATEL APP AS AN EXAMPLE OF DIGITAL TRANSFORMATION IN PUBLIC ADMINISTRATION IN POLAND AND THE CHANGE IN CITIZEN-STATE RELATIONS IN THE AGE OF THE INFORMATION SOCIETY



ABSTRACT

Digital transformation and the mObywatel app significantly influence the dynamics of citizen-state relationships in the context of public administration in Poland. This research paper aims to explore how the integration of digital technologies reshapes these interactions within the framework of an information society. The study focuses on evaluating the hypothesis that the mObywatel application, as a pivotal example of digital public administration, catalyzes changes in the interactions between citizens and the state. It will examine the role of digital tools in modifying these relationships and assess the broader implications for civic engagement and administrative efficiency. Additionally, the research will investigate the societal reception of digital transformation initiatives, with a particular focus on the digital competencies that facilitate or hinder effective engagement with e-government services. The findings of this study will offer insights into the effectiveness of digital strategies in public administration and provide valuable information on enhancing citizen participation and satisfaction. This contribution will further enrich the literature on digital governance and the evolving dynamics of citizen-state relationships in the digital age.

KEYWORDS: *digitization, public administration, digital society, digital skills, mObywatel*

INTRODUCTION

The European Union, through the enactment of its public policies, aims to enhance the digital environment to effectively address both existing and potential challenges stemming from the advancement of new technologies. Simultaneously, it seeks to provide its citizens with new opportunities and equitable access to these innovations. Meanwhile, the fundamental task of the public sector involves establishing necessary legal and organizational frameworks essential for the functioning of states and fulfilling the basic needs of citizens. The rapid development of new information and communication technologies (ICT) has led to their widespread adoption. On another front, the accelerated development of e-administration, propelled by the pandemic, necessitates that societies possess foundational digital competencies (Włodyka, 2021). The literature highlights both the benefits and the risks associated with the digitization processes within public administration and the implications of e-administration tools (Arnstein, 1975; Bencsik et al., 2024; Kaiser & Gadár, 2023). Mobile applications are used in almost all areas of daily

life, covering, among others, utility applications (such as calendars, calculators, maps), social applications, entertainment, education (including e-learning platforms), business, e-commerce and healthcare (Kwiatek & Skóra, 2025, p. 19). The relevance of the mObywatel App is important for several reasons, including the revolutionary nature of mobile apps as tools for accessing public services and the planned introduction of a European Digital Identity Wallet to improve the use of online services across the European Union (Skóra & Skóra, 2024, p. 487).

Following the operationalization of the research problem, the subsequent directional research hypothesis was formulated: (H1): The mObywatel app, as an exemplar of digital transformation within public administration in Poland, induces changes in the relationships between citizens and the state in the era of the information society. Additional research questions posed include: (RQ1): How does the reality altered by the proliferation of new technologies and the resultant EU policies concerning digitalization and the digital economy impact Polish society? (RQ2): At what stage of digitalization in the four areas recommended by the digital policy of the European Union – 1. digitally skilled population and highly qualified digital specialists; 2. secure, resilient, efficient, and sustainable digital infrastructure; 3. digitalization of enterprises; 4. digitalization of public services – is Poland? (RQ3): Does Polish society demonstrate a sufficient level of digital competencies to utilize e-services provided by mObywatel? (RQ4): Besides normative frameworks, infrastructural requirements, and personal resources, does Polish society exhibit adequate trust in the state that implements new technologies via the mObywatel app?

DIGITAL TRANSFORMATION IN THE LIGHT OF EU PUBLIC POLICIES AND PRACTICES AND THEIR SOCIAL ASPECTS IN POLAND

The European Union's digital transformation, spurred by Information and Communications Technology (ICT) and Artificial Intelligence (AI) advancements, aims to build an inclusive information society. The EU's policies on digital competencies, digitalization, and e-administration cover a wide range of initiatives, legislative acts, and strategies that support the digital economy's

growth, increase digital skills, and improve the efficiency of public administration in member states (European Commission, Digital Agenda for Europe, 2010; eGovernment Action Plan 2016-2020, 2016; European Strategy for Artificial Intelligence, 2018; European Data Strategy, 2020; Digital Decade, 2022; European Parliament, Digital Europe Programme, 2021 and more). Key policies prioritize e-administration, digital skills, and universal high-speed internet. In the European Union, e-governance transcends mere technological advancement; it serves as a strategic tool to advance the goals of European integration and promote good governance practices (Troitiño et al., 2024).

According to the digital compass, the European Commission has set a goal for at least 80% of EU citizens to possess at least basic digital skills by 2030. Based on data from the Digital Economy and Society Index, Poland ranks 24th out of 27 EU Member States in the 2022 edition of DESI. However, between 2017 and 2022, Poland's aggregate DESI score grew slightly more than the EU average, signaling that Poland is catching up with the rest of the EU. Despite this progress, persistent gaps remain regarding human capital, where Poland ranks 24th, scoring below average in all the indicators. Only 43% of individuals between 16 and 74 years possess at least basic digital skills (54% in the EU) and 57% have at least basic digital content creation skills (66% in the EU). The proportion of ICT specialists in the workforce in Poland is slightly lower than the EU average (*Digital Economy and Society Index (DESI) 2022 Poland*, 2022). The digital profile of Polish society, according to the latest data from the Report on the State of the Digital Decade (2023 Report on the State of the Digital Decade, 2023, pp. 3-4), also shows a slow pace of digitization in some Central European countries, with recommendations for Poland to include digital skills training at all levels of education.

The use of e-administration is steadily developing in Poland, based, among other things, on the number of digital identity profiles created by Poles, the so-called *trusted profiles*, which are necessary for the realization of many e-services in e-administration, including confirming one's digital identity. In 2017, a million Poles had a trusted profile, a year later – 2 million. In 2019, 3 million people used this government e-service. From 2020, i.e., the period of the COVID-19 pandemic, the trusted profile recorded huge increases. At the beginning of the year, the number of profiles reached 5 million, and by the

end of the year, this number had grown to 8 million active accounts. The latest data provided by the Chancellery of the Prime Minister records 14 million accounts (*14 million trusted profiles! – Ministry of Digitization – Portal Gov. pl*, 2024). A similar scale of increased use is shown in this area by the mObywatel app, where between June 2022 and June 2024, the number of users on smartphones (with iOS and Android systems) increased from 7.9 million to 14,461,833 (mObywatel – number of installed apps – Open Data).

As the above indicates, e-administration in Poland is evolving and trying to keep up with technological progress. The implementation of digital and electronic solutions in public administration is progressing gradually, although the pace of development may vary depending on specific areas and institutions. The government and other public institutions are taking steps to further streamline e-administration by investing in new technologies, providing training for administrative staff, and creating more accessible and intuitive platforms for citizens (E. M. Włodyka, 2024, p.131).

MÓBYWATEL AS AN EXAMPLE OF IMPLEMENTATION AND SOCIAL CHANGE IN POLISH E-GOVERNMENT

The definition of e-administration varies among institutions such as the European Union, the United Nations, the Organisation for Economic Co-operation and Development (OECD), Polish legislation, and academic literature. In terms of solutions for public administration in Poland, European Union regulations seem relevant as they adapt public administration to EU standards. In EU policy, electronic administration is defined as the use of information and communication technologies in public administration combined with organizational changes and new skills aimed at improving public services and democratic processes while enhancing support for public policy (European Commission, 2003). Citing only one of the doctrinal approaches to administration, where public administration is the activity of the state that achieves its goals and is neither legislation nor judiciary (Błaś et al., 2003; Cieslak & Wierzbowski, 1997; Izdebski, 2000; Sześciło et al., 2014), e-administration can be broadly defined as the use of ICT in public administration activities.

Attempts are being made to combine the classical Weberian administration model with technological progress, as evidenced by the creation and implementation of the mObywatel app in Poland. This raises the question of whether the pace of implementing e-administration, not only in Poland, is compatible with the measurable level of digital competencies of a given society.

The operation of the mObywatel app and system has been regulated by the Act of 17 February 2005 on the Computerization of the Activities of Entities Performing Public Tasks (*Ustawa z dnia 17 lutego 2005 r. O informatyzacji działalności podmiotów realizujących zadania publiczne*, Dz.U. 2005 nr 64 poz. 565). A law specifically dedicated to the app appeared in 2023 (*Ustawa z dnia 26 maja 2023 r. O aplikacji mObywatel*, Dz.U. 2023 poz. 1234). The rationale for this law reflects a focus on societal needs, noting the increasing necessity and perceived importance of possessing digital documents. The law defines the app mObywatel as software for mobile devices that provides services rendered by public and private entities (Art. 2 Sec. 1). It also specifies in Art. 1 the range of services available in the mObywatel app, including the functioning of the mObywatel document, mObywatel profile, user certificates of the app, and electronic signatures verified using a user's certificate. Furthermore, Art. 3 Sec. 1 lists services available to citizens that allow them as users to:

1) Retrieve from public registries, non-public registries, or information technology systems of public or private entities, data:

- a. Personal data of the user necessary for the provision of the service,
- b. Concerning the legal status of the user or rights entitled to the user,
- c. Enabling the identification of an item associated with the user,
- d. Pertaining to the legal status of a minor or rights entitled to such minor;

2) Store, present, or submit for verification, using a mobile device, a mobile document containing the user's application data;

3) Transfer the data referred to in item 1, or the mobile document, by the user to another person or entity;

4) Utilize the mObywatel document;

5) Utilize the mObywatel profile;

6) Use a mobile device to manage one of the authentication factors of the trusted profile as referred to in Art. 3 Sec. 14 of the Act of 17 February 2005 on the Computerization of the Activities of Entities Performing Public Tasks.

The app continues to expand the range of services offered, currently possessing a broad spectrum, with the exception being a narrow area of public administration activities, such as not authorizing border crossing (Art. 7 Sec. 5). Upcoming enhancements for citizens include ePayment services (electronic payments related to services provided to the user already stated in the law as upcoming), Local Documents (e.g., resident cards) for Local Government Units, eDelivery, mAccident, and Chatbot – a virtual assistant informing about state services based on artificial intelligence (*mObywatel 2.0 – Mobile App and Service for Citizens*). Recently, services have also been available not only to adults but also to children (eStudent ID, and soon a personal ID for minors). As well, the scope of data and the list of public registers and ICT systems of public entities from which a user of the mObywatel application may download data is regulated by the Regulation of the Council of Ministers of 12.07.2023 on the scope of data and the list of public registers and ICT systems of public entities from which a user of the mObywatel application may download data (*Regulation of the Council of Ministers of 12.07.2023 on the scope of data and the list of public registers and ICT systems of public entities from which a user of the mObywatel application may download data (Journal of Laws, item 1342)*), issued on the basis of the mObywatel Act.

Importantly, the use of the app is free and voluntary (Art. 4 Sec.8). However, there arises a question about the phenomenon of social exclusion when people with insufficient digital competencies or a lack of hardware resources may have limited access to public administration services (e.g., due to the lack of paper forms of services or limited availability of physical officials to perform a public service)^[1]. In the context of state-citizen and society relations in light of the gradual increase in the digitalisation of public administration, the example of the adoption of the law of 4 April 2019 on the digital accessibility of public entities' websites and mobile applications could be a good example of overcoming the deepening phenomenon of exclusion of this kind (*Act of 19 July 2019 on ensuring accessibility for persons with special needs (Journal of Laws, item 1696)*).

An analysis of the current state of e-government research has shown that, although the body of international and Polish literature on e-government is extensive, the very functioning of the mCitizen application as an example of e-services is already a scientifically less researched phenomenon.

An example is the study Eysymontt (Eysymontt, 2022) or monograph edited by Kwiatek and Skóra (Kwiatek & Skóra, 2025), which is the first and only position on the market comprehensively discussing the regulations governing the operation of the mObywatel application and the services made available in it. It presents the basic institutions and legal mechanisms of the application. The literature also supports the thesis in the field of e-government, which accentuates an important factor in the digital transformation of recent years, which was the pandemic (Lipowicz i in., 2023).

It is essential to emphasize that changes in society brought about by the development of new technologies affect not only adults. These changes also significantly impact minors who are at a much higher risk of exposure to cyber threats, including digital identity theft (Ciućkowska, 2024, p. 305). The protection of privacy in the digital world has been the subject of extensive discussions and the implementation of legal regulations over recent decades, which is also crucial in the context of the application under study, as it includes access to digital identity documents such as the e-ID. In this context, literature proposals become significant, advocating for granting children over the age of 13 the legal standing to initiate legal actions against their parents or guardians for the infringement of personal rights under family law (Ciućkowska, 2024, p. 316).

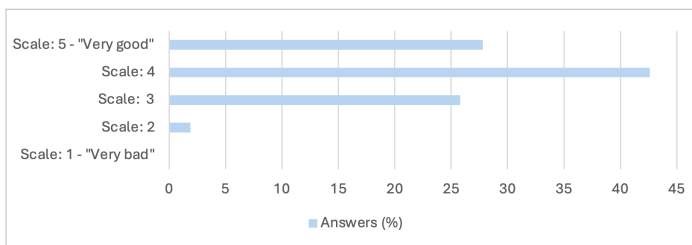
RESEARCH RESULTS

The survey was conducted in October-November 2024 as a pilot tool for quantitative research by researchers from the Faculty of Humanities at Koszalin University of Technology. The use of the CAWI method (Computer Assisted Web Interview: surveys conducted online where respondents fill out questionnaires via the internet, here through a dedicated website) allowed for the avoidance of the Hawthorne effect (a phenomenon where human behavior changes due to the awareness of being observed by others, which can distort study results) as corrupting outcomes. Moreover, randomization of questions helped eliminate the order effect (a phenomenon that occurs when the order of questions in a survey influences subsequent responses from respondents). The survey sample comprised 54 individuals, with the majority (66.7%) being women, predominantly young (75.9% of respondents aged between

18 and 24 years). The remaining percentage of participants ranged from 25 to 64 years of age. Unfortunately, responses from the oldest target group, those over 65, were not obtained, indicating a lack of broad representativeness of the study. However, given its classification as a pilot study, this phenomenon is acceptable in verifying the research hypothesis. Greater representativeness of responses was achieved in terms of the education level of respondents: in the group with basic education (1 person), in the group with professorial titles and doctoral degrees (1 person), as well as in the group with higher bachelor's education (12 people) and higher master's education (7 people). An exception was the group with vocational education (0). Most respondents had secondary education (33 people). The data obtained on age correlate with the declared professional activity: 64.8% of respondents are students or pupils, followed numerically by people working in the public sector (13%) and the private sector (9.3%).

When asked to self-assess their level of digital competencies (without dividing them into areas), a high rating of 4 was obtained with the highest percentage of responses (42.6%). Interestingly, on the Likert scale, subjective ratings of levels 3 and 5 each accounted for the same percentage (27.8%; where a rating of 1 indicated *very poor digital competencies* and 5 – *very good digital competencies*). Notably, no one in the anonymously given response, without the participation of surveyors (which allowed for the avoidance of the Hawthorne effect; (see: Figure 1).

Figure 1. *How would you rate your level of digital competencies?*

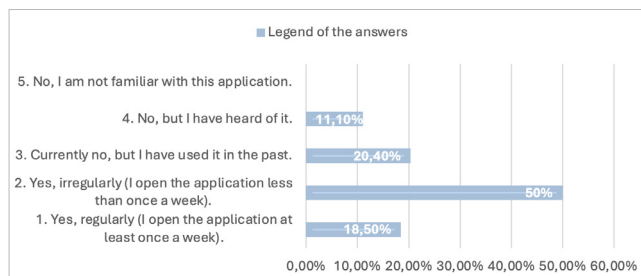


Source: Own development.

70.13% of respondents positively assess their digital competencies, with 68% currently using the mObywatel app. Of these, 50% use the mObywatel app irregularly (less frequently than once a week), and 18.5% regularly open the app at least once a week. As can be seen, the level of digital competencies

subjectively assessed by the respondents correlates with the fact of current app usage (see: Figure 2).

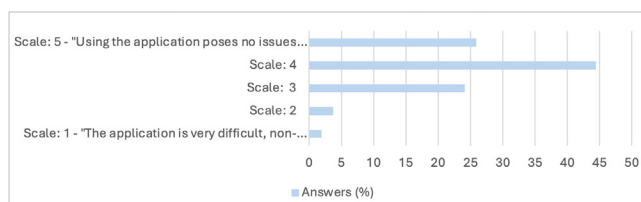
Figure 2. *Do you use the mObywatel application?*



Source: Own development.

Respondents rated the ease of use of the mObywatel app with an average score of 3.87 out of 5, where the scale was defined as follows: 1 – *the app is very difficult, non-intuitive, unclear to me*, and 5 – *using the app poses no problems for me; it is intuitive and user-friendly* (see: Figure 3).

Figure 3. *How do you rate the ease of use of the mObywatel application?*



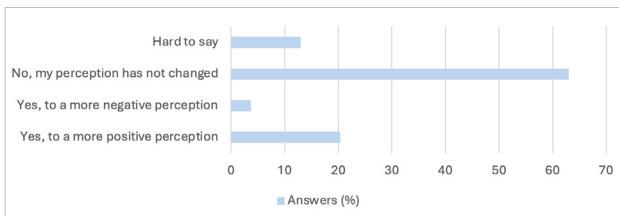
Source: Own development.

This result correlates with the answer to a subsequent question about experiencing difficulties using the mObywatel app due to a lack of digital skills or equipment. Here, nearly 65% of respondents never experienced the mentioned difficulties, 16.7% sometimes faced such difficulties, and for no one was it a frequent experience.

The concept of e-administration represents a paradigm shift towards digitization, automation, and optimization of government processes and services for the benefit of users, citizens, and business entities. This benefit is considered

in the context of the rational management of public administration such as streamlining bureaucratic procedures and increasing operational efficiency or the accessibility of public services for citizens. The app itself is a flagship project of Polish e-administration, developed to a broader extent than in most EU countries (eGovernment Benchmark 2023, 2023). Society has adopted it positively, using it willingly and regularly. However, does the operation of the app influence a positive and better perception of the state in the eyes of citizens? It turns out that in the vast majority, as much as 63% of responses, it does not, leaving 13% of them undecided. This is a commendation for the idea of the app itself; the smallest percentage (3.7%) felt that the app had influenced a more negative perception of the state as an institution overseeing the app (see: Figure 4).

Figure 4. *Has mObywatel changed your perception of the state as an institution?*

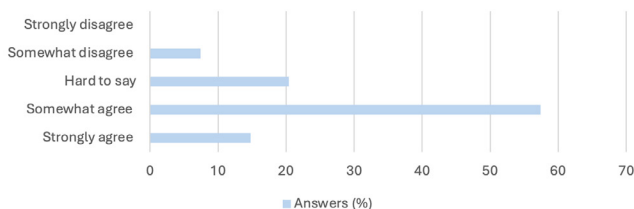


Source: Own development.

With the advent of new technologies, a new model of monetization has emerged that does not rely on natural resources but on data. This model operates on the Internet through the exchange of user data, digital content, and the resulting databases, generally without the excessive costs associated with traditional raw material-based models. Under such conditions, it is necessary to redefine both the goals of public interest and seek new instruments for its protection, with the establishment of rules for new responsibilities for digital content shared online (Chałubińska-Jentkiewicz, 2024). Indeed, the threats stemming from the operation of public administration in cyberspace are an undisputed phenomenon (Bencsik et al., 2024; Czuryk, 2021; Kaczmarek, 2020; Ubowska & Królikowski, 2022) and the risk of sensitive data leaks is not limited to the private sector (E. Włodyka, 2022). Given this, do respondents feel safe using apps with such frequency? As it appears, despite the rationality of risks associated with the implementation of e-administration, few respondents express concerns (only 7.4%), none decidedly. However, a significant

majority feel relatively safe (57.4%) and 14.8% decidedly so. Operationalizing the scope and nature of this security would require in-depth research. What does it stem from? Is it due to a high, subjective self-assessment of digital competencies? Or do skills in the area of cybersecurity, increasingly mandatory in e-administration, stem from state preparation (see: Figure 5).

Figure 5. Do you feel secure when using the mObywatel application?



Source: Own development.

Respondents were also asked an open-ended question, providing space for their reflections related to the subject of the study. Participants were invited to suggest what other digital services should be introduced to better meet the needs of citizens using the mObywatel app, or what changes or improvements they would like to see. Among the responses given by nearly one-quarter of the respondents, notable are those praising the level of accessibility of e-administration through the app (*It's good as it is, I don't have any new ideas*) or indicating expectations for its development and expansion of the catalog of e-services: (*verification of the authenticity of a vehicle registration document before/during purchase; More efficient functioning of the app on mobile devices; checking information regarding health insurance with the National Health Fund*).

CONCLUSIONS

Social research reveals various levels of data granularity. Data can characterize individual entities, typically collected through surveys, which can complicate comparisons with studies in similar areas. This study does not generate a complementary database of detailed data; it is merely a pilot study and can serve as a prelude to more in-depth analysis of both quantitative and qualitative research. Furthermore, a deeper statistical analysis of the obtained

results could explore potential correlations between demographic data (such as age, education, etc.) and other responses, avoiding logical inference errors. Nevertheless, based on the research process conducted, the following conclusions (CNS) were drawn in response to the research questions posed:

(CNS1): The reality in which Polish society lives is undergoing transformations due to the proliferation of new technologies. Regulations directly affecting Polish citizens result from the implementation of EU public policies concerning digitization, including the public sector. National-level implementation of e-administration tools is also regulated. In Poland, the leading tool is the mObywatel app, which allows for the use of e-services extensively.

(CNS2): In the four areas recommended by EU digitization policies (digitally skilled population and highly qualified digital experts; safe, resilient, efficient, and sustainable digital infrastructure; digitization of businesses; digitization of public services), Poland performs better in the area of digitization of public services than in having a digitally skilled population. However, in the overall assessment, it ranks among the last four among EU countries.

(CNS3): Based on the pilot sample studied, it can be stated that Polish society exhibits a sufficient level of digital competencies to utilize e-services through mObywatel. The level of digital competencies subjectively assessed by respondents correlates with the fact of current use of the app.

(CNS4): Alongside normative frameworks, infrastructural requirements, and human resources, Polish society demonstrates sufficient trust in the state implementing new technologies through the mObywatel app. The app itself is a flagship project of Polish e-administration, meeting its doctrinal conditions. Society has embraced it positively, willingly, and regularly uses it (also more eagerly than other Polish e-administration tools like ePUAP). However, its implementation has not impacted a positive and better image of the state in the eyes of citizens.

The directional research hypothesis posed (H1) was: The mObywatel app, as an example of digital transformation of public administration in Poland, causes changes in the citizen-state relationship in the era of the information society. The conducted research procedure partially verified the hypothesis:

- a. The mObywatel app is a very good example of the digital transformation of public administration in Poland. It exemplifies the implementation

- of e-administration tools in Poland, consistent with EU public digitization policies. Citizens use the app universally and willingly.
- b. The mObywatel app does not cause significant changes in the citizen-state relationship in the era of the information society. As shown, the ubiquity of new technologies has become so widespread and so broadly implemented in the private sector that their application in the form of e-services in the public sector is not seen as innovative but is perceived by citizens as a standardization of public services. It is seen as an obvious element in the functioning of public administration and does not unambiguously improve the perception of the state in the era of the information society.

The discrepancy between the EU's indexing of Poland in 24th place in terms of digital competencies possessed by society and society's expectation of the presence of e-administration widely represented in the public sector (e.g., through expanding the catalog of e-services in the mObywatel app) stems from the subjective good assessment of their digital competencies by the respondents. This was a deliberate assumption of the researchers – to measure the compatibility of the assessment of digital competencies commonly indexed at the EU statistical level with the self-assessment of the respondents.

The authors also developed additional recommendations and proposals for in-depth research:

- a. The development of e-administration encompasses not only infrastructure or technology but also people – both those who manage the technology and those who use it. The human aspect (competencies, the level of acceptance by officials and society) in the implementation of e-administration cannot be overlooked.
- b. In-depth research would be required to operationalize the scope and nature of the sense of security demonstrated by respondents in this study (in using e-administration services in the form of the mObywatel app). What does it stem from? Is it due to high, subjective self-assessment of digital competencies? Does proficiency in cybersecurity, increasingly mandatory in e-administration, stem from state preparation?

- c. Additionally, social changes resulting from the implementation of new technologies (especially in terms of digital identity documents like the e-ID in the mObywatel app) concerning minors, who are at risk of digital identity theft, should be considered.
- d. With the development of artificial intelligence systems, there also arises a question about the principles of its implementation in the area of public administration function, maintaining its basic functions and services to the citizen according to Weber's definition of public administration.
- e. Does the mObywatel app, as part of the Polish state's digitization policy, pave the way to replace traditional forms of public administration services?
- f. How does the digitization of public administration facilitate access to public services, and to what extent does the level of digital competencies of part of society cause digital exclusion and even limit access to public services through direct contact and paper documentation?

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ENDNOTES

- [1] It is noteworthy, limited in this article intentionally for editorial reasons, to deepen the topic under discussion with a thread on the issue of ‘social exclusion’ due to the lack of sufficient digital competences or tools, as well as a thread on virtual risks, especially with regard to young people, the reasons for the lack of a representative sample of older people in the survey and considerations on what can be done to counteract this.