

Users and Non-Users of E-Government Services

A socioeconomical approach in Hungary

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Author's Declaration

I, the undersigned ...Kornél Máté Dénes..... hereby declare that I am the sole author of this thesis. To the best of my knowledge this thesis contains no material previously published by any other person except where due acknowledgement has been made. This thesis contains no material which has been accepted as part of the requirements of any other academic degree or non-degree program, in English or in any other language.

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Abstract

In recent years, the implementation of electronic government solutions has become widespread globally. With the ongoing revolution in artificial intelligence and big data reshaping not only the public sector but virtually every aspect of our lives, including e-governance, it is crucial to reassess and re-examine the achieved results and solutions. While most research papers and government agencies primarily evaluate their progress in e-governance from a data-based empirical perspective, few studies focus on the social composition of users and non-users of these technological advancements. This oversight poses a risk that policymakers, researchers, and experts will only consider metrics such as the number of executed cases and registered users, neglecting the social and individual effects. E-government solutions may further widen social disparities and impede social equality, potentially leading to the exclusion of a significant group of citizens from both existing e-government services and the ongoing AI and big data revolution.

This descriptive research aims to examine the socioeconomic characteristics of users and nonusers of e-government services in Hungary, using linear regression and other statistical methods based on a representative survey conducted in Hungary in 2024. Ultimately, this case study seeks to stimulate a new discussion focused on the social effects of already implemented electronic solutions in the sphere of public administration.

E-Governance; Hungary; Public Administration; Social Disparities; Government-to-Citizens

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List of Abbreviations

AI	Artificial Intelligence
CAWI	Computer-Assisted Web Interviewing
eID	Electronic Identification Card
eIDAS	Electronic Identification, Authentication, and Trust Services
eSZJA	Electronic Personal Income Taxation
ESZT	Electronic Health Service Space
G2B	Government-to-Business
G2C	Government-to-Citizen
G2G	Government-to-Government
GSA	General Services Administration in the United States
HCSO	Hungarian Central Statistical Office
ICT	Information and Communication Technologies
JSZP	Vehicle Service Platform
MÁK	Hungarian State Treasury
NAV	National Tax and Customs Administration
NISZ	National Infocommunications Service Provider
NPM	New Public Management
SZÜF	Customisable Administrative Interface
WLS	Weighted Least Squares

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Introduction

In today's data-driven society, online solutions and algorithms play increasingly crucial roles in our lives. Utilizing e-commerce or e-business solutions, such as online banking, has become routine for many individuals. Similarly, interaction with public administration, and thus government services, is increasingly shifting towards online platforms, commonly referred to as electronic government (e-government) solutions (Cordelia 2007; Curtin, Sommer, and Vis-Sommer 2003; Ma and Zheng 2019; Sandoval-Almazan, Millan-Vargas, and Cifuentes-Faura 2022).

Governments' interest in information and communication technologies (ICT) is understandable, given the evolving expectations of users and the continuous governmental effort to enhance service quality (Cordelia 2007, p. 265). While the primary goal of e-government is to improve service quality, it also aims to enhance government transparency, service accessibility, and increase case handling capacity and efficiency (Alawneh, Al-Refai, and Batiha 2013, p. 277; Cordelia 2007, p. 266; Jaeger 2003, p. 324).

Despite high expectations for the development and implementation of e-government solutions in the early millennium (Cordelia 2007, p. 266), certain socio-economically disadvantaged citizen groups are lagging behind in their utilization of these solutions, particularly those who are most vulnerable and for whom e-solutions could greatly enhance access to public services. (Taipale 2013, p. 421)

While it is currently fashionable to discuss the effects of Artificial Intelligence (AI) and its transformative potential on public administration and government-citizen relations, the implications of these systems extend beyond mere technological advancement. They are already reshaping the functions of institutions within democracies and, conversely, within non-democratic regimes as well. Notable examples for democracies and its public administration include the implementation of blockchain-based voting techniques (Serdült 2019, p. 185-186), the widespread application of machine learning to ease the workload of the public administration (Sousa et al. 2019; Wirtz, Weyerer, and Geyer 2019) and the automation of decision-making processes, such as aid distribution (Weitzberg et al. 2021). Additionally, it is well covered in the literature that non-democratic regimes often utilize AI for mass surveillance and societal control (Feldstein 2019; Shazeda Ahmed et al. 2018).

While academia and the media extensively debate the negative human rights and discriminatory effects of these emerging AI-driven technologies (Beer 2017) research on the social effects of widely-used e-government systems remains scarce. Existing academic literature in this field

primarily focuses on user experience (Alawneh, Al-Refai, and Batiha 2013; Bournaris et al. 2013; Chan et al. 2021; Nariman 2011), implementation evaluations (De Andrade Soares et al. 2019; Pérez-Morote, Pontones-Rosa, and Núñez-Chicharro 2020) or explores potential avenues for improvement in alignment with the trends triggered by the AI boom.

This research paper aims to address this research gap and initiate an academic discourse to reflect on and evaluate the social effects of already-implemented e-government solutions, before the rapid advancement and widespread adoption of AI-driven solutions exacerbate existing social disparities within e-governance (Taipale 2013). This paper suggests that, paradoxically, the primary beneficiaries of e-government services are typically individuals with higher levels of education, residing in urban areas, and possessing higher incomes. Their access to public administration services far exceeds that of individuals living in more remote settlements, with lower incomes, and facing greater deprivation. These assumptions are even stronger in developing or medium developed countries where socio-economic disparities are heightened due to unequal access to education, lower social mobility, and greater income inequality.

To examine this assumption, the following research question was formulated: What are the primary socio-economic disparities between users and non-users of Hungarian e-government services? To address this research question and understand the socio-economic factors that influence indviduals' preferences for e-government versus face-to-face government administration services, one main and two secondary hypotheses have been formulated.

Main hypothesis (H1): *The amount of time spent daily on the internet is not correlated with individuals' preference for e-government or face-to-face administration services.*

Secondary hypothesis 1 (H2₁): *The amount of time spent daily on the internet is not correlated with individuals' preference for e-government or face-to-face administration services.*

Secondary hypothesis 2 (H2₂): *Complex internet usage is positively associated with egovernment service usage.*

To assess these hypotheses, this paper will employ a descriptive research method, analysing survey data with regression analysis to uncover associations between the preference for face-to-face or online government administration service usage. This technique will allow for a differentiation between users and non-users of e-government services.

To develop the argument, this paper will be structured as follows: initially, it will provide a brief introduction to the concept of e-governance. Subsequently, it will define the specific e-government and online public administration tools employed by the Hungarian bureaucracy in

the case study. Furthermore, it will present Hungarian e-governance adoption in a European context and domestic statistics of usage. Following this, a section will explain the methods used to analyse the data, which will be succeeded by a chapter presenting the findings of the data analysis. Finally, the paper will conclude with a comprehensive discussion of the results.

Chapter 1 – Defining E-Governance

The theory of use technological advancements to improve the citizens-government interactions for a better and more citizen centric public administration can be traced back to the 1960s (Milward, H. B. & Snyder, O. 1996 cited from Jaeger 2003, p. 323.). These theories originated in democratic countries where service quality and a citizen-centric point of view became widespread due to a shift in perspectives on the ideal public administration service delivery. As a result of development and the rise of neoliberalism in the 1980s, New Public Management (NPM) was first formed in Western democracies (Cordelia 2007, p. 267; Snellen 2002, p. 183) primarily to incorporate market practices into the public sector, aiming for cost savings, improved efficiency, and accessibility. NPM introduced techniques such as performance measurement, competition, customer focus, and decentralization, all aimed at achieving these goals. During this period, there was also a growing emphasis on good governance, a concept that gained popularity (Pollitt 1998). The theory of good governance is grounded in principles such as transparency, accountability, participation, and the rule of law. Good governance entails the effective and ethical management of public affairs to ensure the well-being of citizens and consequently the proper functioning of society (Morrell 2009).

to ensure the principles of good governance, the provision of e-government services, as outlined by Técsy (2005), necessitates several prerequisites. These include adequate infrastructure, such as a computer network, broadband internet, and high-capacity servers. Additionally, an integrated and interconnected institutional system with central databases is essential. Furthermore, a robust legal framework must be in place to regulate and monitor e-government activities. Security systems, including security policies, firewalls, virus protection, and archiving mechanisms, are necessary to safeguard sensitive data. Portals serve as gateways for accessing e-government services. Finally, both citizens and businesses must have access to the internet and possess electronic identification.

From a technical standpoint the advancements in the 1990s, specifically the spread of ICT and the World Wide Web made it possible to introduce new solutions from an administrative point of view (Alawneh, Al-Refai, and Batiha 2013, p. 277; Cordelia 2007 p. 265; Jaeger 2003, p.

324; Snellen 2002, p. 184). Properly implemented e-government initiatives have the potential to improve existing government services, promote accountability, streamline service delivery processes for increased accuracy, minimize administrative costs, and alleviate the burden of repetitive tasks on government employees. Moreover, e-government platforms offer avenues for expanded citizen-government interaction through email, online forums, virtual meetings, and facilitate various transactions, including online voting (Chan et al. 2021, p. 874; Jaeger 2003, p. 324).

E-government activities can be divided into three main fields: interactions among governmental sectors, businesses, and citizens. Government-to-government (G2G) initiatives are crucial for enhancing efficiency and intra-governmental communication. These initiatives optimize transactional processes, increasing speed and consistency, thereby reducing employee workload and boosting productivity (Cordelia 2007, p. 268; Jaeger 2003, p. 324) Additionally, G2G interactions and systems play a crucial role in information sharing among governmental departments and within the public administration (Cordelia 2007, p. 268; Jaeger 2003, p. 324; Roy 2003, p. 5; Snellen 2002).

Similarly, government-to-business (G2B) initiatives, which involve the sale of government goods and procurement of services, provide mutual benefits for both businesses and governments. For businesses, G2B interactions improve transparency regarding government collaboration opportunities, resulting in cost savings and increased transaction efficiency. Meanwhile, governments benefit from reduced costs and enhanced efficiency in public procurements, leading to intensified competition and, consequently, cost savings for the budget and ultimately for taxpayers (Jaeger 2003, p. 324).

While e-government brings clear benefits for businesses and governments, citizens stand to gain the most from such initiatives. G2C interactions advance citizen involvement and engagement with the government, thereby enriching public participation. These interactions enable citizens to stay informed about government laws, regulations, policies, and services. For citizens, e-government provides a vast amount of information and services, spanning research materials, government forms and services, public policy information, employment and business opportunities, voting information, tax filing, license registration or renewal, fine payments, and submission of comments to government officials (Jaeger 2003; Noveck 2003)

Various philosophical perspectives underpin the concept of e-government. Some view egovernment as the application of e-commerce tools and techniques to governmental operations, emphasizing practical efficiencies and cost reductions. This perspective highlights benefits like online procurement and tax filing (Jaeger 2003, p. 324). Others see e-government as a means to improve democratic participation and mitigate political discrimination. This viewpoint prioritizes initiatives aimed at elevating interaction between government and other actors but especially citizens to new levels (Jaeger 2003, p. 328; Serdült 2019, p. 186).

However, it is also worth briefly mentioning the ongoing AI revolution's effect on the egovernment sector. Recent cutting-edge developments are constantly transforming all three aforementioned initiatives, providing an even more efficient, transparent, and complexly datadriven e-government.

A notable example of a cutting-edge G2G initiative is the adoption of blockchain technology for secure and transparent record-keeping and transaction processing. For instance, the government of Estonia has implemented blockchain-based systems for managing government registries and records (Semenzin, Rozas, and Hassan 2022).

Similarly, in G2B initiatives, the adoption of AI and machine learning algorithms is optimizing procurement decision-making and supplier management. For instance, the United States General Services Administration (GSA) has implemented AI-powered procurement co-pilot, assisting government officials in analysing vast amounts of data to identify cost-saving opportunities, mitigate risks, and enhance supplier diversity (Schmelzer 2020).

Furthermore, G2C initiatives harness cutting-edge technologies to improve even further citizen engagement and service delivery. AI-driven virtual assistants, such as chatbots, are currently revolutionizing citizen interactions with government agencies. These chatbots are using natural language processing algorithms to deliver instant responses to citizen queries and guide users through various government processes, developing accessibility and convenience (Adnan, Hamdan, and Alareeni 2021; Lin, Huang, and Yang 2023).

On the contrary, while these advancements carry great opportunities to transform governance and public administration, they also carry risks. The exact same idealistic optimism around AI and its use in e-government solutions could be identified among scholars and decision-makers regarding the potential of e-government systems in the late 1990s and early 2000s. However, this research sheds light on the "dark sides" of the technological boom in the government sector. Therefore, the paper posits that there has been a widening technological gap between socioeconomically vulnerable groups. These deprived groups usually end up being the "nonusers" of e-government solutions solutions, while those becoming "users": are often the better situated social groups of the society. Conclusively, this phenomenon leads to further exclusion of these vulnerable groups, leaving them more marginalized during the rapid spread of AI. Even though these parts of society could benefit the most from technological advancements. To test this aforementioned assumption, this research paper will specifically focus on (G2C) initiatives relations and explore the specific social characteristics of users and non-users in Hungary.

Chapter 2 – E-Governance in Hungary

2.1 Early Years

The adoption of e-governance solutions in Hungary began to gain space in the early 2000s. Prior to the country's accession to the European Union in 2004, the government primarily focused on implementing reforms to meet EU standards in economic, regulatory, and public administration domains. However, as e-government services advanced globally but especially among the Western countries, Hungary also began to develop its own solutions.

Initially, the focus was on G2G solutions, emphasizing digitalization and the development of new IT systems for government agencies. This transition aimed to modernize bureaucratic processes inherited from the paper-based and administratively heavy public administration legacy of the communist era.

Upon joining the EU in 2004, Hungary had access to subsidies dedicated to promoting digitalization across the public sector. This presented an unprecedented opportunity to improve the quality of government services, not only in Hungary but also in other post-communist new member states. From an e-governance perspective, a significant milestone occurred in 2005 when Hungary introduced the "central administration portal¹" a standardized web portal enabling citizens to access that time limited public administration services online via their "client getaway²" registration and authentication (Orbán 2023). Additionally, it is worth mentioning that in the same year, the government regulated³ the type and location of public information that had to be published online to enhance transparency through the use of the internet (Orbán 2023, p. 37).

While these developments marked progress in transitioning to digital governance, Hungary's egovernance journey faced various challenges and opportunities that shaped its trajectory. The challenging years of the 2008 economic crisis and subsequent austerity measures slowed down digitalization projects due to a lack of resources.

¹ (Központi) Ügyintézési Portál in Hungarian – the author.

² Ügyfélkapu in Hungarian – the author

³ Government Decree 305/2005 (XII. 25.)

2.2 The Mid 2010's

The political landscape shifted significantly in 2010 when the FIDESZ-KDNP party coalition came into power with a two-thirds majority in the National Assembly (Scheppele 2015). Their political agenda aimed to substantially restructure not only Hungary's constitutional system but also the government structure and public administration. As a result, a new territorial-based public administrative framework, known as the "government window system⁴" in 2011 (Kovács and Hajnal 2017, pp. 72-76) further delaying digitalization efforts.

Despite these challenges, e-government reforms and the implementation of new G2B and G2C solutions began in the early 2010s. However, the forehead mentioned administrative restructuring and changes to a vast majority of regulatory frameworks, including the adoption of a new constitution, slowed Hungary's digitalization compared to some other post-communist countries like Estonia or Lithuania. Following their reelection in 2014, the focus on e-governance and reducing bureaucratic red tape intensified (Czékmann 2020, p. 70). A series of reforms were introduced in the form of a massive legislative package⁵, simplifying procedures, shortening procedural times, and redefining the status of civil servants. These reforms, coupled with a widening budgetary room for maneuver and EU funds, facilitated the expansion and development of digitalization. Landmark achievements included the introduction of the electronic personal income taxation portal "eSZJA," which streamlined the process of declaring personal income taxes. Additionally, the launch of the AVDH, an Electronic Identification, Authentication, and Trust Services (eIDAS) system, enabled citizens to sign documents online using an authentication service. The introduction of the Electronic Identification Card (eID) in 2016 further simplified access to e-government services for citizens.

From 2015 onwards, the range of services provided by the public administration on the "central administration portal" accessible via the "client getaway" registration under the magyarorszag.hu⁶ domain expanded significantly, covering various aspects of citizens' lives, including vehicle registration, judicial processes, and other administrative proceedings. This expansion led to a significant increase in the number of cases handled and submitted online. Improvements and adjustments were made to existing systems between 2016 and 2019,

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⁴ Kormányablak rendszer in Hungarian – the author.

⁵ The whole package contained the following laws and government decrees: amending Government Decree 441/2015 (XII. 28.) on the reduction of administrative bureaucracy. Act CLXXXVI of 2015 on the amendments to the Act on the reduction of administrative bureaucracy. (Amended by Act CXXVII of 2016 amending certain Acts concerning the reduction of administrative bureaucracy). Furthermore, Government Decree 378/2016 (XII. 2.) on the succession of certain central offices and ministerial back-office institutions operating as budgetary bodies in connection with the review of their legal succession and the takeover of certain public tasks.

⁶ Meaning 'hungary.hu' – the author

including the introduction of cloud-based storage for citizens to receive official notifications, letters, and documents from relevant public sector agencies. Moreover, in 2022, the "client getaway" was upgraded under the name of "client getaway plus," introducing a new two-step authorization process. This upgrade not only improved security but also marked a milestone in the development of e-services.

2.3 Recent Developments

Jumping back a bit in time, the outbreak of COVID-19 and subsequent lockdowns significantly increased the usage of these systems, particularly from a quantitative standpoint. Additionally, it highlighted the importance of digitalization in healthcare. Consequently, efforts were made to introduce an electronic vaccination certificate and develop a system for cloud-based prescriptions. Furthermore, additional functions were integrated when the government consolidated services into a unified healthcare application and system called the "Electronic Health Service Space⁷" (ESZT).

While the outbreak of COVID19 and the lockdown even further boomed the usage of these systems from a quantified point of view. Moreover, it also shed light on the importance of digitalisation in the healthcare, so developments were made to introduce the electronic vaccination certificate and also to develop a system where prescriptions could be made via the cloud, and even more functions were added when the government integrated the services into the already mentioned ESZT system. The end of COVID-19, global supply chain crises, and significant geopolitical events, combined with the Hungarian government's irresponsible economic policies, have caused high inflation. Moreover, political clashes between the EU and Hungary lead to frozen EU funds. This has hindered development and deepened the economic crisis, setting back digitalization and e-government infrastructure improvements from 2022 to 2024. The only milestones worth mentioning during these years are the adoption of the National Digital Citizenship Strategy⁸ in 2022 and the establishment of the Digital Hungary Agency⁹, which is responsible for improving e-governance and e-citizenship projects and overall digitalization.

As of 2024, the Hungarian e-government infrastructure supports 4,600 public administration case types available online for citizens via the "central administration portal" (magyarorszag.hu) (Nemzeti Infokommunikációs Szolgáltató, 2023). Furthermore, it is also

⁷ Elektronikus Egészségügyi Szolgáltatási Tér in Hungarian – the author.

⁸ Nemzeti Digitális Állampolgársági Stratégia in Hungarian – the author.

⁹ Digitális Magyarország Ügynökség in Hungarian – the author.

important to mention that in 2024 the government launched the "digital citizenship¹⁰" initiative providing a new application for citizens to store their relevant official documents and use relevant e-services (Nemzeti Digitális Állampolgársági Program, 2022). However, this application is still under test run when this research is written.

These digitalized services serve as the backbone of the Hungarian e-governance system, particularly in facilitating G2C interactions. However, the system itself is far more intricate, encompassing G2G and G2B initiatives as well. Yet, providing a detailed introduction to these systems and their evolution over the years is beyond the scope of this research paper.

Chapter 3 – Technical Overview of Hungarian Government-to-Citizen E-Government Services

First of all, the provision of e-government services, as outlined by Técsy (2005, p. 86), necessitates several prerequisites. before it could be implemented. These include adequate infrastructure, such as a computer network, broadband internet, and high-capacity servers. Additionally, an integrated and interconnected institutional system with central databases is essential. Furthermore, a robust legal framework must be in place to govern e-government activities. Security systems, including security policies, firewalls, virus protection, and archiving mechanisms, are necessary to safeguard sensitive data. Portals serve as gateways for accessing e-government services. Finally, both citizens and businesses must have access to the internet and possess electronic identification.

To provide a better understanding how the e-services are operating in Hungarian it is necessary to briefly describe them from a G2C point of view. The different government portals connecting citizens to the relevant government agencies (G2G) could be categorized by the following, the mission and tasks of the operating institution or public administration naturally determine the functions and nature of the portal. Or it is also possible to categorize by the governmental level of the host operator therefore in Hungary to state or local government level (Orbán 2023, p. 33).

This research only focusing on the "central administration portal" what is the main – but not only – and most extensive webpage where citizens are able to access relevant administrative services.

The "central administration portal's" main aim is to enable citizens and organisations to interact with public administrations via the Internet (Orbán 2023, p. 39). Originally the portal was

¹⁰ Digitális Állampolgárság in Hungarian – the author.

introduced in 2005 as this research already briefly mentioned it. However, in 2018 the whole interface was renewed and the central government introduced the "Customisable Administrative Interface¹¹" (SZÜF) what is available to both natural and non-natural persons. The portal is public, its information interface is accessible to everyone. Nevertheless, the interface can be customised for the logged in users (e.g. calendar, favourite cases etc) (Orbán 2023, p. 39).

The public interface offers customers a variety of navigation options. News items draw attention to current or priority topics. There are also a number of ways to access information tools to help you manage your affairs. The customer can choose from a selection of priority issues or browse the content. For an easier overview, the cases/services are grouped into categories and groups. In addition to navigation, a free text search helps to find the relevant case or application.

Relevant case descriptions must be prepared by the respective government or public administration agencies using the SZÜF webpage interface, based on predefined principles. It is expected that these case studies provide comprehensive, clear, concise, and easy-to-read information. The goal is for users without legal or administrative knowledge or experience to understand the information provided (Orbán 2023, p. 34).

The homepage features up-to-date news and information on electronic public services. The left navigation bar provides access to different menu items such as Profile, Repository, Authentication, Registration, News, Help, and Operational Information.

The "Case Management" section provides all essential information and case descriptions for each case. There are three different channels for managing a case: electronic, telephone, and face-to-face. Clients can choose the option that best suits their needs for the selected case. Appointments can be booked for face-to-face interactions. Electronic case management typically requires user identification, except for certain cases like checking the validity of documents or status checks.

Therefore, when users chose the electronic case management, they can use the following electronic identification services:

- Electronic identification service via an identity card containing a storage element.
- Client Gateway
- Client Gateway+ (two-factor identification, introduced on 04.06.2022).
- Partial-code telephone identification.
- Identification by video technology (introduced on 01.02.2021).

¹¹ Személyre Szabható Ügyintézési Felület (SZÜF) in Hungarian – the author

The public administration cases that can be handled electronically on the SZÜF interface can be divided into several categories. These include cases that use an external link redirecting to another interface, such as Web Help, the Hungarian State Treasury¹² (MÁK), the National Tax and Customs Administration¹³ (NAV), the National Health Insurance Fund Management, government offices, and utility providers. Additionally, there are cases using the JAVA form, which provides information on the installation of JAVA and the form itself. Other cases involve the use of iFORM pre-packaged online forms or the launchers of pre-packaged small applications, such as e-Paper.

In summary, Hungarian e-government services are designed to efficiently connect citizens with public administrations through various portals categorized by governmental levels and institutional types. This research focuses on the central administration portal, the SZÜF, which was revamped in 2018 to enhance user interaction. The portal provides a user-friendly interface, multiple navigation options, and various electronic identification methods to ensure secure access. It supports a wide range of public administration cases, making government services more accessible and efficient. The next subchapter will quantitatively assess the performance of these e-government systems in 2022 and 2023, providing insights into their effectiveness and impact.

Chapter 4 – Government-to-Citizen E-Government Systems' Performance from a Quantified Point of View

4.1 Hungary in European Perspective

Moreover, to contextualize Hungary's position, this paper utilizes Eurostat statistics to present the European state-of-the-art in e-government service usage. By comparing Hungary's usage rates with those of other European countries, it becomes clear where Hungary stands in the broader context of digital public services. This comparative analysis helps to highlight strengths and areas for improvement, providing a comprehensive view of Hungary's e-government performance.

Examining the data, Figure 1 shows that Hungary is above the EU average in terms of citizens' interaction with public authorities online. While the EU average is approximately 55%, in Hungary, around 72% of citizens interacted with public authorities online at least once in the last 12 months in 2023. However, Figure 2 reveals that Hungary is slightly below the EU

¹² Magyar Államkincstár in Hungarian – the author.

¹³ Nemzeti Adó- és Vámhivatal in Hungarian – the author.

average in issuing certificates or documents via e-services. The EU average for this metric is around 18%, whereas Hungary's rate is roughly 15%. Consequently, although Hungarian citizens are engaging with public authorities online, a significantly smaller proportion are utilizing these services for more complex tasks, such as document or certificate issuance. It is important to note that measuring the success of implemented systems cannot be fully achieved by only assessing document or certificate issuance, as these represent just a fraction of the available e-government services for citizens.

Online interaction of citizens with public authorities in the last 12 months as a percentage of the total population



Interaction with public authorities (last 12 months)

Source: isoc_ciegi_ac

Figure 1: Online interaction of citizens with public authorities in the last 12 months as a percentage of the total population. Source: Eurostat (2023), Digital economy and Society Statistics - Households and individuals. data retrieved from link (last accessed 19.05.2024).

Requested official documents or certificates by citizens online in the last 12 months as a percentage of the total population



Figure 2: Requested official documents or certificates by citizens online in the last 12 months as a percentage of the total population. Source: Eurostat (2023), Digital Economy and Society Statistics - Households and individuals. Data retrieved from *link* (last accessed 19.05.2024).

4.2 Domestic Evaluation and Monitoring

The IT support for electronic public administration services is the responsibility of the National Infocommunications Service Provider (NISZ). The evaluation and monitoring of service performance, however, fall under the purview of the Ministry of Interior¹⁴ and the Cabinet Office of the Prime Minister¹⁵, depending on the case. Cases requiring an official public register are managed by the Ministry of Interior, while all other cases, including the development of new digital citizenship initiatives, are overseen by the Cabinet Office of the Prime Minister. These specific very recent developments aim to enable citizens to use a unified mobile application to access various public services and store their official IDs, such as driving licenses and personal identification cards in the application.

Unfortunately, the Cabinet Office of the Prime Minister does not publish any evaluation or monitoring data on the cases available via the magyarorszag.hu portal, making it impossible to track service usage or submission numbers. Conversely, the Ministry of Interior publishes quarterly monitoring reports, detailing the number of cases submitted by citizens for services requiring an official public registry. These reports break down the data by case types, allowing for the quantifiable tracking of service usage evolution. Additionally, the Hungarian Central Statistical Office¹⁶ (HCSO) publishes statistics on the proportion of users utilizing e-services. Although these statistics provide insights into the popularity and widespread use of e-services, they do not offer detailed information. Nevertheless, this data has been instrumental in evaluating the survey data collected for this research.

The data provided by the HCSO offers a comprehensive view of the use of e-government portals in Hungary over time. Table 1 presents the percentage of the population aged 16-74 who engaged with various e-government services from 2006 to 2023 also showing the average change in usage to the previous showed year.

Table 1 illustrates consistent growth across all service types since 2006, when the HCSO began tracking these statistics. On average, approximately 70% of the population aged 16 to 74 used some form of e-services at least occasionally during 2023. This finding aligns with the data obtained from the survey conducted for this research. Additionally, it is evident that a significant portion of the population does not utilize these services, underscoring the importance of this study in understanding both users and non-users to facilitate better future development of these services.

¹⁴ Belügyminisztérium in Hungarian – the author.

¹⁵ Miniszterelnöki Kabinetiroda in Hungarian – the author.

¹⁶ Központi Statisztikai Hivatal (KSH) in Hungarian - the author

Use of e-government portals by level of e-governance [%]						
	Purpose of use	Electronic contact with public offices	Finding information on public office websites	Download forms	Submit completed forms	Average change for all the categories compared to the previously shown year's data
2006	Percentage of population aged 16-74	14.4	11.6	9.8	4.5	_
2011	Percentage of population aged 16-74	37.7	36.4	25.2	17.6	+205.9
2021	Percentage of population aged 16-74	72.6	72.1	66.8	66.3	+158.10
2023	Percentage of population aged 16-74	75.6	73.2	70.3	57.9	-0.45

Table 1: Use of e-government portals by level of e-governance in the percentage of the population aged 16-74 and the percentage of total yearly internet users from 2006 to 2023. Source: Hungarian Central Statistical Office (2023), Use of e-government portals by level of e-governancet. Data retrieved from <u>link</u> (last accessed 12.05.2024).

Taking a look into the 2023 monitoring report of the Ministry of Interior evaluating the performance of the "web assistant¹⁷" a basically subsystem of the "central administration portal" but connected to the official public registry what is managed by the Ministry.

As it is presented on figure 3 the number of applications submitted and cases initiated between 2021 and 2023 are constantly decreased. One explanation behind the numbers could be the disappearance of the COVID19 lead back citizens to use face-to-face public administration instead of its online counterparts. The report also mentions that because during the COVID19 the validity of official documents were extended to ease pressure on the public administration and to compel with the emergency regulations. Furthermore, the war in Ukraine also risen the workload of the Hungarian public administration with a significant increase in the cases it needed to handle. As it is presented on figure 3 in 2023, nearly 1.5 million additional cases were started in the electronic cases introduced in previous years, of which almost 1 million applications were submitted. The most frequently used types of cases in 2023 among those already electronic in previous years are document validity checks, certain self-employed cases, information on personal data stored in the register of personal data change of vehicle ownership,

¹⁷ Webes ügysegéd in Hungarian – the author

document status queries, temporary withdrawal of a vehicle, and a certificate of good conduct

check (Belügyminisztérium 2023, p. 6).

Number of cases initiated and applications submitted through the web assistant between 2021 and 2023



Created with Datawrapper

Figure 3: The number of cases initiated and applications submitted through the online assistant from 2021 to 2023. Source: Ministry of Interior, Deputy State Secretariat for the Management of Registers (2023), Statisztikák from <u>link</u> (last accessed 12.05.2024).

It is also important to highlight the scale of some e-services. According to the Ministry of Interior, the most used e-service was the Vehicle Service Platform¹⁸ (JSZP). This service helps customers access essential data about a vehicle's lifecycle via the central administration portal. In 2023, the number of successful queries reached 18,113,241, representing a 25.4% increase compared to the previous year's 14,442,182 queries (Belügyminisztérium 2023, p. 4). Moreover, there are additional, albeit less popular, services provided by the Ministry of Interior. However, a detailed analysis of the performance of these services is beyond the scope of this research paper.

In conclusion, the data provided by the HCSO and the Ministry of Interior highlight the significant growth and adoption of e-government services in Hungary over the past two decades. From 2006 to 2023, there has been a marked increase in the percentage of the population engaging with various e-government portals, reflecting improvements in digital literacy, service delivery, and public awareness. The JSZP stands out as the most used e-service, demonstrating a substantial increase in user engagement. While the COVID-19 pandemic initially boosted the use of online public administration services handled by the Ministry of

¹⁸ Jármű Szolgáltatási Platform in Hungarian – the author.

Interior, a subsequent decline suggests a return to traditional face-to-face interactions and the normalization in the number of cases.

Chapter 5 – Methodology

5.1 Methodology of the Survey

The survey research was conducted on 300 Hungarian citizens using a Computer-Assisted Web Interviewing (CAWI) technique by a company¹⁹ specializing in such surveys. Data collection took place from May 1 to May 3, 2024, among adult Hungarian citizens. The survey results are representative of gender, age, education, settlement type, and region of residence. Detailed social characteristics of the respondents are presented in Table 2. The results were provided in .sav files, and all data analyses were performed using SPSS statistics software.

The survey contained 18 questions (Q1-Q18), measuring basic social characteristics of the respondents such as household size and income, age, level of education, and settlement type of residence. It also assessed the respondents' internet usage characteristics, and their satisfaction and trust in public administrative services both online and in person. The sections measuring user experience in e-government portals were designed using a methodology similar to that employed by the European Commission, Information Society and Media Directorate-General, to survey user experience of e-government services across Europe in 2008 (European Commission, Deloitte Consulting, and Indigov 2008, pp. 270-288). However, the questionnaire was designed to include more questions than those used in the aforementioned research framework. Consequently, it can be used for future research to explore further patterns between user experience and the socioeconomic characteristics of users in Hungary.

Sample characteristics of the survey						
Gender						
	Frequency	Percent	Valid Percent	Cumulative Percent		
Male	145	48.4	48.4	48.4		
Female	155	51.6	51.6	100.0		
Total	300	100.0	100.0			
Age category						
18-34	91	30.4	30.4	30.4		
35-49	101	33.8	33.8	64.2		
50+	107	35.8	35.8	100.0		
Total	300	100.0	100.0			

¹⁹ NRC marketingkutató és tanácsadó Kft.

Education					
	Primary	109	36.2	36.2	36.2
	Secondary	116	38.6	38.6	74.8
	Tertiary	76	25.2	25.2	100.0
	Total	300	100.0	100.0	
		Settle	ement type		
	Budapest	61	20.3	20.3	20.3
	Town	157	52.5	52.5	72.8
	Village	82	27.2	27.2	100.0
	Total	300	100.0	100.0	
		Region	of residence		
	Mid	102	33.9	33.9	33.9
	West	88	29.2	29.2	63.1
	East	111	36.9	36.9	100.0
	Total	300	100.0	100.0	

Table 2: Data characteristics of the survey sample.

5.2 Methodology of data analysis

5.2.1 Main Hypothesis 1 (H1) and Secondary Second Hypothesis (H22)

The first and main hypothesis of the research is: (H1) *The preference for e-government versus face-to-face administration services is positively associated with age, gender, education level, income group, settlement type, proximity to government services and time spent on the internet.* To test H1 the dependent variable in this analysis is the preferred method for handling administrative procedures, measured by Q14 in the survey which output is a dummy variable where respondents can either chose face-to-face or online. Therefore, the dependent variable is the previously mentioned dummy variable. The independent variables include a range of demographic and subjective factors: highest education level completed, daily internet usage, age, type of settlement (rural or urban), income group (low, medium and high), distance to the nearest government window. For the control of the results subjective perspective on the government and public administration other variables also included. Such as satisfaction with administrative services, trust in the administration, and satisfaction with online administrative services. To ensure representativity the whole model is weighted by weighted least squares (WLS) method by education, age, gender, settlement type and region of residence.

In the regression model complex internet usage was included to test the second secondary hypothesis as well. H2₂ states that: *Complex internet usage is positively associated with e-government service usage*. To assess complex internet usage, the study employed Q16 from the

survey, which comprises four subcategories capturing respondents' internet usage habits. These subcategories were recoded into a new variable measuring complex internet usage among the respondents. A higher score on this variable indicates more frequent internet use for a wider range of activities.

Analytical Approach and Regression Equation

A multiple linear regression analysis was employed to examine the relationship between the dependent variable and the set of independent variables. Furthermore, a binary logistic regression was applied too for robustness check.

The regression equation for the main hypothesis test is formulated as follows:

 Y_{prefer_e-gov}

$$= \beta_{0} + \beta_{1}education + \beta_{2}time_spent_int + \beta_{3}age$$

+ $\beta_{4}urbn_rrl + \beta_{5}income_grp + \beta_{6}dist._gov_window$
+ $\beta_{7}satist_adm_serv + \beta_{8}trust_in_gov$
+ $\beta_{9}satist_online_adm_serv + \beta_{10}gender$
+ $\beta_{11}int_usg_complex + \epsilon$

Where:

- $prefer_e gov$ is preferred method for administrative procedures.
- *education* is highest education level completed.
- *time_spent_int* is the amount of time spent on the internet daily.
- *age* is age.
- *urbn_rrl* is urban or rural.
- *income_grp* is income group.
- *dist._gov_window* is distance to the nearest government window.
- *satist_adm_serv* is satisfaction with administrative services.
- *trust_in_gov* is trust in the administration.
- *satist_online_adm_serv* is satisfaction with online administrative services.
- *gender* is gender.
- *int_usg_complex* is internet usage complexity.

5.2.2 Secondary Hypothesis 1 (H21)

The hypothesis (H2₁) states that "*The amount of time spent daily on the internet is not correlated with individuals' preference for e-government or face-to-face administration services.*"

In the survey Q9 is measuring the respondents' spent time daily on the internet and for the preference to face-to-face or online administrative services was measured by the same Q14 used in testing H1 as well. To test this hypothesis, an independent samples t-test was employed, comparing the mean preference scores for e-government versus face-to-face administration services between two groups: those who spend less than 3 hours daily on the internet and those who spend more than 3 hours.

The two groups were formed by calculating the sample median and mean of the respondents' answers to Q9. Respondents were grouped based on their daily internet usage:

- Group 1 (coded 0 in the variable) consists of individuals who spend less than 3 hours daily on the internet.
- Group 2 (coded 1 in the variables) consists of individuals who spend more than 3 hours daily on the internet.

Statistical Test and Equation

The t-test equation used looks the following:

$$\mathbf{t} = \frac{\overline{X_1} - \overline{X_2}}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

Where:

- S_1X_1 and S_2X_2 are the mean preference scores of Group 1 and Group 2, respectively.
- S_1^2 and S_2^2 are the variances of the two groups.
- n_1 and n_2 are the sample sizes of the two groups.

Chapter 6 – Data Analysis

6.1 Main Hypothesis and Secondary Hypothesis 2 test

Hypothesis 1: *The preference for e-government versus face-to-face administration services is positively associated with age, gender, education level, income group, settlement type, proximity to government services and time spent on the internet.*

6.1.1	Correl	lation	Anal	lysis
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Factors Influencing Pr	eference of	f Individuals	for Face	-to-Face vs. E	2-Government
Administration Services	: Regressio	n Results			
Model	В	Std. Error	Beta	t	Sig.
(Constant)	-0.402	0.204		-1.969	0.050
Education	0.181	0.039	0.282	4.599	<.001
Internet Usage	0.015	0.007	0.136	2.103	0.037
Complexity Score					
Income Groups	0.056	0.062	0.056	0.903	0.368
Urban/Rural Dummy	0.108	0.083	0.096	1.309	0.192
Overall Satisfaction with	0.056	0.032	0.151	1.722	0.086
Administrative Services					
Overall Trust in	-0.002	0.033	-0.004	-0.047	0.963
Administration					
Satisfaction with Online	-0.057	0.020	-0.210	-2.880	0.004
Administrative Services					
Age	0.001	0.002	0.020	0.318	0.751
Time Spent Online	0.036	0.023	0.094	1.546	0.123
Gender	-0.113	0.058	-0.113	-1.966	0.050
Distance from Closest	0.008	0.018	0.035	0.471	0.638
Government Window					
		ANOVA			
Model	Sum of	df	Mean	F	Sig.
	Squares		Squares		
Regression	14.438	11	1.313	5.953	<.001
Residual	54.472	247	0.220		
Total	68.910	258			

Table 3: Factors Influencing Preference of Individuals for Face-to-Face vs. E-Government Administration Services: A Regression Analysis. The table presents the results of a regression analysis examining various factors that influence individuals' preferences for face-to-face versus e-government administration services. Key variables include highest educational level, average daily internet usage, age, type of settlement (rural or urban), distance to the nearest government office, overall satisfaction with administrative services, overall trust in administration, satisfaction with online administrative services, income groups, gender and internet usage complexity. ANOVA is also included. Significant predictors are highlighted.

6.1.2 Discussion of Results

Looking at the Regression results (table 3) education exhibits one of the strongest, albeit still moderately strong, associations ($\beta = 0.282$, t = 4.599, p < .001) with citizens' preferences for e-government services. The regression results indicate that individuals with higher levels of education are more likely using e-government services compared to those with lower educational attainment, with a statistically significant effect. This shows that people with higher

education are overall more confident in using complex online services and it's the same with egovernment services.

Conversely, satisfaction with online services shows a negative association with preferences (β = -0.210, t = -2.880, p = 0.004), suggesting that citizens who use e-services less frequently express higher satisfaction. This phenomenon may arise because frequent users often engage e-services for more complex tasks, potentially leading to greater dissatisfaction compared to those using them for simpler functions. This result could also lead to that conclusion Hungarian e-government service platforms are not user-friendly causing dissatisfaction in more frequent users.

Gender also displays a negative association with preferences, indicating that female citizens are less likely choosing online services compared to males. This highlights a gender gap in usage patterns ($\beta = -0.113$, t = -1.966, p = 0.050), though the significance level is only marginally below the conventional threshold (p < 0.05). The reason behind this association would need more investigation but probably it has an association with the bigger portion of elderly women in the Hungarian age tree.

Moreover, the other independent and variables such as income groups, overall satisfaction with administrative services, overall trust in administration, age, time spent online, and distance from the closest government window do not show a significant connection on influence citizens' preferences for e-government services because their p-values are not statistically significant (p > 0.05), indicating a lack of an associative connection on e-service preferences.

Turning to the ANOVA section of table 3 shows that there is a significant effect of the independent variables on the dependent variable. The regression model accounts for a substantial portion of the variance in the dependent variable, as evidenced by the significant F-statistic (F= 5.953, p < .001). The regression model's sum of squares is 14.438, with 11 degrees of freedom, resulting in a mean squares value of 1.313. This suggests that the model explains a significant amount of the variance (14.43%) in the dependent variable beyond what would be expected by chance. The residual sum of squares is 54.472, with 247 degrees of freedom, indicating the unexplained variance in the dependent variable. Overall, the model appears to be a good fit for the data, with the independent variables collectively explaining a significant amount of the variation in the dependent variables.

6.1.3 Secondary Second Hypothesis Test

The secondary hypothesis 2 was formulated as follows: "Complex internet usage is positively associated with e-government service usage." For H22, the regression model shows that the

Internet Complexity Score has a weak association with the preference for e-government services ($\beta = 0.136$, t = 2.103) and a lower significance level (p = 0.037) compared to education. This indicates that while internet usage complexity has some influence, it is not as strongly associated with the preference for e-government services as education level is. Additionally, it implies that individuals with lower education levels also use the internet for various activities, such as online banking, shopping, and social media, demonstrating that complex internet usage is not exclusively linked to higher education levels.

6.1.4 Findings

In conclusion, the regression analysis provides some support for the hypothesis (H1) that "*the preference for e-government versus face-to-face administration services is positively associated with age, gender, education level, income group, settlement type, proximity to government services and time spent on the internet.*" However, the other independent variables do not show significant associations with the dependent variable, suggesting that these socio-economic and subjective satisfaction factors do not have a substantial influence on the preference for online or face-to-face services.

Moreover, it is important to note that satisfaction with administrative services showed a negative association with the preferred method for administrative procedures. This indicates that individuals who prefer to use online administrative services tend to be more dissatisfied with them. This counterintuitive finding suggests that frequent users of online services may encounter more complex tasks, leading to higher dissatisfaction levels.

Regarding the the secondary hypothesis 2 (H2₂), the complexity of internet usage showed a weak but significant association with the preferred method of administrative services. However, education emerged as a much stronger influencer of the use of e-government services, thereby not fully supporting the secondary hypothesis.

6.2 Secondary Hypothesis 1 test

Secondary Firth Hypothesis stated that: *The amount of time spent daily on the internet is not correlated with individuals' preference for e-government or face-to-face administration services.*

Influence of Daily In	ternet Usage on Prefer	ence for Face-to-Face	vs. E-Government
Administration Servi	ices: Independent Sam	ples T-Test Results	
Statistic	Lower Internet Usage	Higher Internet Usage	Notes
Ν	172	128	
Mean	1.43	1.55	
Std. Deviation	0.496	0.500	
Std. Error Mean	0.038	0.044	
Levene's Test	F = 0.531	Sig. = 0.467	Variances assumed equal
t-Test for Equality of Means			
Equal variances assumed	t = -2.060	df = 298	p (one-sided) = 0.020, p (two-sided) = 0.040
Mean Difference	-0.120	Std. Error Difference = 0.058	95% CI: -0.234 to - 0.005
Effect Sizes			
Cohen's d	0.498		Medium effect size
Hedges' correction	0.499		Medium effect size
Glass's delta	0.500		Medium effect size

Table 4: the results of an independent samples t-test examining the influence of daily internet usage on preference for e-government versus face-to-face administration services.

6.2.1 Discussion of Results

Starting with the group statistics the mean preference score for administrative service modes is higher for the higher internet usage group (Mean = 1.55), indicating a stronger preference for e-governance services compared to the lower internet usage group (Mean = 1.43). This suggests that individuals who use the internet more frequently tend to prefer handling their administrative tasks online rather than face-to-face. The Levene's test for equality of variances shows that the variances between the two groups are equal (F = 0.531, p = 0.467). This indicates that the assumption of equal variances is met, allowing us to use the results of the t-test for equality of means confidently.

As for the t-test results reveal a statistically significant difference between the two groups (t = -2.060, p = 0.040). This means that the higher internet usage group has a significantly bigger preference for e-governance services compared to the lower internet usage group. The negative t-value indicates that the mean preference score is higher for the higher internet usage group, supporting the hypothesis that increased internet usage is associated with a greater preference for e-governance services.

The effect size, measured by Cohen's d, is 0.498. This suggests a medium effect size, indicating a moderate practical significance of the difference in preferences based on internet usage. A medium effect size implies that the difference in preference for e-governance services between the two groups is noticeable and meaningful in a practical sense, reflecting the impact of internet usage on citizens' administrative service preferences.

For individuals who spend less than 3 hours on the internet daily, the mean preference score is 1.43. In contrast, those who spend more than 3 hours on the internet daily have a mean preference score of 1.55. These mean scores indicate a slight difference: individuals who are more frequent internet users tend to have a higher preference for e-government services compared to those who spend less time online. The standard deviations for both groups are relatively similar (0.496 for the under 3 hours group and 0.500 for the over 3 hours group), suggesting consistent association in preferences within each group.

6.2.2 Findings

The findings from the independent sample t-test analysis provide medium strength evidence that the amount of time spent daily on the internet significantly influences individuals' preferences for e-government versus face-to-face administration services. Therefore, the original hypothesis has to be rejected. Those who spend more than 3 hours daily on the internet show a statistically significant higher preference for e-government services compared to those who spend less time online. Despite the small effect size, the difference is noticeable, highlighting the role of time spend on the internet in shaping preferences for e-government services. The confidence interval and effect size measures both reinforce the reliability and practical significance of these findings.

Conclusions

This research paper briefly introduced the concept of e-government, illustrated how e-services have improved in Hungary over the last decades, and compared this progress within the European context. Additionally, the research presented a comprehensive overview of Hungarian e-government services from the perspective of the G2C initiative.

To investigate the differences between users and non-users of e-government services in Hungary, a research question was formulated: *What are the primary socio-economic disparities between users and non-users of Hungarian e-government services*? To better understand this issue, a main hypothesis and two secondary hypotheses were proposed. However, during the analysis of the survey data, the main hypothesis and the secondary hypothesis 2 showed weak

support, while secondary hypothesis 1 was weakly rejected, failing to meet the original assumptions of the research.

Nevertheless, the linear regression analysis demonstrated that education and internet usage complexity have a positive correlation with the preference for using e-government services. This suggests that personal capabilities positively influence the willingness to use e-government services. In contrast, gender and satisfaction with online services have a negative correlation, indicating that users who prefer face-to-face interactions tend to have higher satisfaction with those services. Furthermore, the research revealed that women are more inclined to use face-to-face services than men. However, further investigation is needed to determine the exact reason for this phenomenon.

Conclusively, this thesis serves as a valuable starting point for decision-makers to reassess their views on e-governance, particularly regarding G2C initiatives. Developing such systems is a complex task, but the user interface should be accessible and easily understandable for citizens. Common interfaces that internet users encounter daily, such as e-commerce or e-banking, could serve as good references for enhancing government e-services. Additionally, policymakers should focus on educating citizens to improve their digital skills and knowledge about new technologies, enabling them to keep pace with technological advancements. This thesis also provides a foundation for identifying the initial barriers dividing users and non-users in Hungary and can stimulate dialogue on how these systems should be developed. However, as a descriptive case study, it has limitations in covering every aspect of the socio-economic characteristics of users and non-users in general.

All in all, raising awareness about digitalization and its consequences on individuals, especially in an era increasingly shaped by AI technologies, is crucial. Without adequate preparation, these advancements could create distinct "winners" and "losers" in society, leading to increased inequality, further polarization and social tension. As humanity was not prepared for the consequences of globalization, we need to be more cautious and take appropriate actions before the AI revolution exacerbates these issues.

Appendix

The Survey

Question 1: How old are you now? Please enter the number of years you have been alive!

Question 2: What is your highest completed level of education?

- 1) 8 years of primary education or less
- 2) 2. completed vocational training, vocational school
- 3) 3. completed secondary school (upper secondary school, vocational upper secondary school, technical school, higher education)
- 4) 4. completed college, university

Question 3: Which settlement do you live in? Please include the postcode of your place of residence.

Question 4: How would you describe your current life situation?

- 1) Student
- 2) Unemployed
- 3) Publicly employed/public worker
- 4) Retired
- 5) Household
- 6) Employed
- 7) Self-employed/self-employed

If answer is 6) or 7) Question 4/a: How would you describe your work?

- 1) Trainee or skilled worker
- 2) Office worker
- 3) manager, executive, managerial person
- 4) Self-employed, business owner (with less than 10 employees)
- 5) self-employed, business owner (with more than 10 employees)
- 6) self-employed professional (e.g. architect, doctor, lawyer, teacher)
- 7) government official, civil servant
- 8) other, please specify:.....

Question 5: Does your work require you to contact government bodies (municipality, government window, etc...) on a weekly basis to deal with work-related matters?

- 1) Yes
- 2) No

Question 6: How many people live in your household?

A household includes members of your family or people who live with you on a regular basis.

1) _____

Question 7: What is your household's monthly net income in HUF?

The household includes members of your family or persons who live with you on a regular basis.

- 1) Below HUF 145 000 net
- 2) Between HUF 145 000 and HUF 400 000 net
- 3) Between HUF 400 001 and HUF 650 000 net
- 4) Between HUF 650 001 and HUF 850 000 net
- 5) Between HUF 850 001 and HUF 1 300 000 net
- 6) Net above HUF 1 300 000
- 7) Do not know / do not wish to answer

Question 8: Is there a mobile government window/government window bus in your place of residence?

- 1) Yes, and I use it
- 2) Yes, but I do not use it
- 3) There is no such service
- 4) I have never heard of the mobile window/government window bus service

Question 9: On an average day, how much time do you spend on the interned?

- 1) More than 3 hours a day
- 2) Between 2 and 3 hours per day
- 3) between 1 and 2 hours per day
- 4) between 30 and 60 minutes per day
- 5) between 15 and 30 minutes per day
- 6) Less than 15 minutes per day
- 7) I use the Internet only occasionally (not every day)

Question 10: Overall, how satisfied are you with the administrative services provided by the public administration? (0 - I am totally dissatisfied; 5 - I am totally satisfied)

$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	5

Question 11: Overall, how satisfied are you with the quality of online service provided by the public administrations in general? (0 - I am totally dissatisfied; 5 - I am totally satisfied)

0	1	2	3	4	5	
	a. I do	not knov	v becaus	e I have i	never use	ed the e-services

Question 12: Overall, how much do you trust the public administration? (0 - I do not trust at all; 5 - I totally trust)

0	1	2	3	4	5	

Question 13: Do you currently have a live 'client getaway' registration?

- 1) Yes
- 2) No
- 3) I do not know what a 'client getaway' is

If the answer is 2): Question 13/a: Why don't you have a live 'client getaway' registration?

- 1) I never needed it
- 2) I had it, but I have not renewed it
- 3) Other reason, please specify:.....

Question 14: Which method do you prefer if you have to deal with an administrative matter?

- 1) in person, live
- 2) online

If the answer is 1): Question 14/a: Why do you prefer to do it in person? (Multiple choice)

- 1) Because I am unsure how to use the online interface
- 2) Because I feel more confident when I can talk to an administrator in person
- 3) Because I am often not sure exactly what I want
- 4) Because I usually can't find relevant information online
- 5) Because I do not trust online government services
- 6) Because I do not have the right device or internet connection at home to use it
- 7) Other, namely:....

If the answer is 2): Question 14/b: Why do you prefer online? (Multiple choice)

- 1) The government window is too far away from me / difficult to reach
- 2) Waiting times are too long in person

- 3) Because government offices' opening hours are not compatible with my work/life
- 4) Because I can do my business at any time
- 5) Other, please specify:.....

Question 15: How far is the nearest 'government window' from you?

- 1) Less than 1 km
- 2) Between 1 and 2 km
- 3) Between 2 and 4 km
- 4) Between 4 and 6 km
- 5) Between 6 and 8 km
- 6) between 8 and 10 km
- 7) More than 10 km

Question 16: How often, during the past 3 months, did you use the Internet for each of the following purposes?

	Not once	At least once but not every month	At least once a month but not every week	At least once a week but not everyday	Every day or almost every day
To buy personal consumer goods or services (e.g., books, household goods, clothes, foodstuffs)					
To make travel or holiday bookings (for example: accommodation, trips, train or airline tickets)					
To administer a bank account (i.e., to undertake Internet banking)					
To participate in social networks (for example: Facebook)					

Question 17: To what **extent** do you agree or disagree with the following statements about the use of public services via client getaway (ügyfélkapu)?

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree	Don't know	Not applicable
The service I was looking for was easy to find							
The service I was looking for was easy to access							
The service I was looking for was easy to use							

The service was				
trustworthy: I was				
not worried about				
privacy or security				
issues				
I could rely on				
having sufficient				
information and				
online help to make				
use of the service				
I was kept informed				
about follow-up				
actions and the				
progress of service				
The service was				
delivered in a				
reasonable time				

Question 18: For the following purposes how frequently are you using the relevant/mentioned online government services?

	Have never heard of it	Not once	At least once a year but not every month	At least once a month but not every week	At least once a week but not everyday	Every day or almost every day	Not applicable	I prefer to handle such cases in face-to- face
Filling tax declaration								
Using the 'tárhely szolgáltatás' services								
Signing docuements with the AVDH signature								
Issuing certificates via ügyfélkapu (birth certificate etc)								
Reserving appointments for face-to-face case management								
Using the "e- paper" services								
Using the 'iForm' form- filler application								
Administrating in connection with any kind of property (e.g.: car, real estate etc.)								

Using the				
'Webes				
ügysegéd'				

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