

“State in a Smartphone”- Digitalization as a Lever for Increasing Citizens’ Trust

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Abstract

More and more governments around the world are embracing digitalization. For developing countries with an inefficient bureaucracy, low trust in the government, and a high level of corruption, this change has the potential to boost the development of democratic processes. In 2019 Ministry of Digital Transformation of Ukraine launched a new portal, “Diia,” aimed at digitalizing government services. Despite the initial skepticism, the reform was successfully implemented, giving every citizen with a smartphone more inclusive access to government services. Ukraine became the first country in the world to legalize digital internal and international passports. Moreover, after many years of waiting in line and going through slow bureaucratic procedures, citizens got the opportunity to start and lead their businesses digitally and access open data from governmental institutions.

Digitalization of government services is a new understudied field of research that requires continuous revision due to its fast development. This research investigates whether digitalization has the potential to increase citizens’ trust in their government. It provides the definition of digitalization and citizens’ trust and explains the relationship between the two concepts. By analyzing the officially open data and conducting 21 structured interviews, this research explores whether digital reform in Ukraine started in 2019 has a positive effect on citizens’ participation, encourages registration of new businesses, and increases transparency between citizens and the government. This study has the potential to be helpful for other developing countries that consider embracing digital government services. It also contributes to the broader field of study on digitalization reform as one of the goals on the states' agenda.

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INTRODUCTION

Digital technologies are taking more and more space in our daily lives. According to The Digital 2022 – global overview report, an average person worldwide spends more than 6 hours a day online (Kemp 2022). Time and effort are exhaustive resources for every human being, and they can be substantially saved by digitalization. Instead of making lengthy phone calls to get an appointment or going all the way to the grocery store to get food, one can do that by clicking a couple of buttons on their smartphones. Instead of thinking about arriving earlier at the train station to buy tickets, one can easily do that through the train line app. Sending messages to friends, transferring money, and working from home – are just a couple of examples of what digital technologies can do for us in our daily lives.

Digitalization has also touched the sphere of government services. Only fifty years ago, the idea of accessing government services through mobile devices or home computers was nothing but fiction. However, today it has become more of a necessity that many countries implement with more or less success. The new space for citizen participation and the unique relationship between the government and its citizens it creates is an open field that is only starting to be discovered. The main expectation is that incorporating digitalization into government services has the potential to make them more efficient and inclusive.

Unlike businesses that have embraced digitalization and realized the potential for their development relatively fast, for traditional government institutions, this change seems harder to undertake. There is a widespread belief that the digitalization of government services belongs to the reforms of low priority. That means that the digitalization reforms can be effective only in the countries that already belong to the welfare states. Indeed, most of the research carried out in the field concentrates on the high-income countries like Denmark, Canada, and Sweden (Parent et al., 2005; Schou, 2017; Bernhard I. et al., 2008). However, this

does not imply that the reforms of digitalization are happening only in those countries. As with many other modern transformational processes, the topic of digitalization of governmental services in developing economies deserves more attention and should not be marginalized.

According to the UN E-Government Survey 2020, all regions of the world are making significant progress in e-government development (United Nations, 2020). Although Europe remains the most digitalized region of the world with the highest E-Government Development Index (EDGI) – 58 percent, other regions are also making progress. In the African region, 15 countries, or 28%, have a high EDGI rating. Despite the increase of EDGI ranking across the world, the UN claim that many of the digital services remain to be aimed at the younger population, overlooking other vulnerable groups such as migrants and people with low-income (ibid.).

Since the digitalization of the government sphere is a relatively new subject, most of the literature on this topic was written in the last 30 years. Due to the nature of digitalization, it remains an open field of research. Various papers on the digitalization of the state have studied the relationship between citizens and digital government services. Parent researched the relationship between political trust, political self-efficacy, and e-government using the case of Canadian voters (Parent et al., 2005). Schou and Hjelholt have reviewed digitalization strategies in welfare states based on the example of Denmark (Schou, 2017). Bernhard, I. et al. have studied the connection between citizens' satisfaction and the degree of digitalization in Sweden (Bernhard I. et al., 2008). However, new services and updates are introduced every year, which may challenge our understanding of the interaction between the state and its citizens. For this work, it is a challenge as well. There is a high possibility that it might lose its relevance in a couple of years. Nonetheless, the time sensitivity of the topic should not scare one away from carrying out the research on digital government.

This research, in particular, aims to investigate the effect of digital government services on the citizens' trust in the state. It is an attempt to find out whether the digitalization reform indeed increases the willingness of the citizens to trust the state institution. There is no doubt that the digitalization process is inevitable, and sooner or later, most governments in the world will have to find ways of implementing it. This also means the possible change this process can bring in the relationship between the citizens and the government. Despite the idealistic view of digitalization, it has different possible scenarios of development. The first one claims that digitalization can become a new medium that will have a positive impact on the citizens' participation, introduce new ways of political interaction and speed up and increase the quality of the government services. However, there is a second, less optimistic scenario. According to it, digitalization will just become a tool that reflects the current state of the political setting without a unique contribution to the government/citizens' relationships.

CHAPTER 1 – DIGITALIZATION AND CITIZENS' TRUST

Before moving forward to the central part of this work, we need to elaborate on two main concepts of this work digitalization and citizens' trust further. Both are widely used in recent works on political science; however, both are highly predisposed to the concept of stretching. At first, we will take a look at the history and development of digitalization in the government sphere. Also, we will draw a clear border between what can and cannot be called digitalization. After that, we will move to the second vital concept of this research – citizens' trust in the government services. Finally, we will try to outline the connection between the two of them and find out how they change the nature of interactions between government and its citizens.

1.1 What is digitalization?

The term *digitalization* comes from the Latin word *digitus* ("fingers or toes") and literary translates as "*pertaining to fingers*"(Online Etymology Dictionary 2022). Since the term is commonly misused, it is important to draw the distinction between three concepts: *digitization*, *digitalization*, and *digital transformation*. All of these terms are mostly used in the business sphere but can be as well applied to the sphere of public services. The first term digitization simply means a conversion of data of a particular organization from analog to digital format (Gartner, 2015). Digitalization, on the other hand, is the process of adaption of these technologies (Gartner, 2012). Therefore, the process of digitalization cannot happen before digitization. Digital transformation is the highest step of the ladder and means the complete change to digital technologies. Gartner's IT glossary emphasizes the specific popularity of the term while describing the digitalization processes in the public sphere

(Gartner, 2022). When the discussion comes to the impact of technologies on daily lives, people mostly have in mind digital transformation.

Today it is common to use the term *digitalization* to describe “*the integration of multiple technologies into all aspects of daily life that can be digitalized*” (Gray 2015,1). Parida describes it as “*a fundamental disruptive force*” that was caused by the Fourth Industrial Revolution and the Internet of things (Parida 2018, 23). The reason why digitalization can indeed be called disruptive is an inevitable change it may bring to economic and social life around the world. Security issues, new required technical skills in the job market, inclusivity – this is just a small list of challenges many countries are facing today. This might be the reason why digitalization is so often included in the national and global agenda (Parida 2018, 27).

This study is not focused on the technical implementation of this phenomenon. Mainly it is aimed to investigate the new relationships and ways of life digitalization has to offer. The effects of digitalization today can be found in a variety of spheres, both the ones connected to commerce and business and the ones associated with politics and government. No matter in which sphere digitalization operates, it is expected to create some value for society, industry, and individuals (Parent 2018, 34). Bernhard, I. et al. argue that the process of digitalization is connected to the process of changing the quality of life (Bernhard I. et al. 2018, 59). More services that are common to us and essential for our well-being in society are getting digitalized; we see them in the sphere of education, health, and politics (ibid.). Those spheres are taking advantage of the opportunities offered by digitalization by making services more inclusive, fast, and less costly.

In the political sphere, the process of digitalization is associated with the creation of the *digital government*. (Sundberg 2018, 2). Sundberg provides a brief overview of the approaches to studying digital government that has been happening in the past 30 years. Those approaches

can be broken down into three periods: *the optimistic period*, *the hybrid period*, and the modern, *practical one*. *The optimistic period* is characterized by techno-optimistic debate in e-government and was happening from 1990 until 1997 when the digitalization debate was mainly focused on the usage of internet-based technologies. *The hybrid period* was the time of transition when the initial excitement was fading, but the interest in the mix of social engineering and technocracy was only rising. Today, the studies on digitalization are mainly based on studying digitalization in terms of *policy solutions* (ibid.).

The specific feature of the process of digitalization is the countless window of possibilities it opens. As was already mentioned before, digitalization is accessible not only in highly developed countries but all over the globe. In fact, for many countries, it can serve as an escape from the expenses of the bureaucratic system and a real opportunity to improve the quality of services. For instance, in most of the former Soviet republics, the public administration and public bureaucracy are characterized by a high level of corruption and low effectiveness. Pivoras describes the bureaucracy that was established as the result of Soviet rule as “*pseudo-bureaucracy*” (Pivoras 2008, 123). The centrally planned economy encouraged citizens to put their trust in the individuals rather than rules and institutions. Therefore, the formal procedures can be easily “*set aside as a personal favor*” (Pearce 2001, 75).

However, digitalization has the potential to change it. The most prominent feature of it is that it partially excludes the human factor from the provided services. Digitalization allows citizens to have direct interaction with the government, making it unnecessary to include human mediators in the process. While some former Soviet countries have successfully implemented the bureaucracy reform even without digitalization (for ex., Lithuania and Latvia), many are still struggling to erase the luggage of the past entirely. The challenge is to transfer from the so-called “post-communist culture” (Pivoras 2008, 124) of the public administration to the one that is more similar to Max Weber's understanding of bureaucracy.

Although Max Weber did not live up long enough to have a chance to be introduced to the benefits of digitalization, his ideal vision of the bureaucracy is in line with the features of the digital government. Webers' well-known definition of bureaucracy as "*the highly structured, formalized, and also an impersonal organization.*" (Weber 1922) makes digitalization the next step toward reaching an effective bureaucratic system. Moreover, it can serve as a tool to address what is commonly believed to be the downside of the bureaucracy. Among them is the delay in decision-making, the high reliance on human resources, and the high waste of paper, time, and other resources.

1.2 What is citizens' trust?

Citizens' trust is a complex concept, not just because of the issues with its measurability but also because it is hard to define. Anil Kini and Joobin Choobineh propose three dimensions of trust (Kini & Choobineh 1998, 3). The first dimension is described as "*an assumed reliance on some person or thing*" (ibid.). It is grounded in confidence in a characteristic of a particular person or a thing and mainly functions in the work environment. The second one concerns the trust between individuals that are bonded by a specific relationship or agreement. Moreover, the trustor faith here becomes one of the "*conditions of a relationship.*" (ibid.) Finally, the third dimension of trust simply means "*to place confidence*" in something. (ibid.) Here we talk about the trust in the abilities of institutions or individuals to make the right decision.

Citizens' trust is one of the examples of trust operating in the third dimension. The previously mentioned definition of it overlaps with Parent's statement about trust. He argues that citizens' distrust is usually caused by economic factors when citizens do not believe that money is spent in the correct way (Parent et al. 2005, 721). Consequently, *citizens' trust* can

be measured according to actions taken by citizens. In other words, reciprocation between citizens and government “*is measured against expectations*” (Parent et al. 2005, 722).

Grandison and Sloman see trust as the relationship between *a trustee* and *a trustor*, which allows the first to handle the resources of the second and influence its decision to participate in provided services (Grandison and Sloman 2000, 2). Therefore, citizens’ trust is always asymmetrical and contains some degree of vulnerability. Gerschewski perceives the concept of trust as one of the neighboring and rival concepts of legitimacy (Gerschewski, 6). Among two others are support and loyalty. However, trust should not be mixed up with those concepts.

To overcome the confusion and clearly define the concept of *trust*, we must identify those other neighboring concepts, together with legitimacy itself. Although *legitimacy*, *support*, *loyalty*, and *trust* might have some degree of similarity and characterize the relationship between the citizen and the ones in power, the difference between them is substantial. The difference between support and legitimacy is in the difference in motivations of the government supporters (Gerschewski 2018, 14). In order for a government to be legitimate, it requires to be favored by its citizens. On the other hand, support does not require citizens to be genuine in their attitudes towards government and can be performed simply because of cost-benefit reasons.

Loyalty, on the other hand, requires this sincerity from the citizens. When faced with challenging events, loyalty does not require the justification of the government’s actions. Another distinct characteristic of loyalty that makes it different from other neighboring concepts is that it is rather elite-oriented and is not a mass phenomenon (Gerschewski 2018, 17). True believers in the regime are not as common. Therefore, similarly to trust, loyalty is reactional and the most visible in times of crisis.

Gerschewski outlines a couple of distinct and essential characteristics of citizens' trust. First of all, it is *relational* and requires a degree of vulnerability of the trustor (Gerschewski 2018, 14). Second, it is *instrumental* and “*evaluates the performance and effectiveness of the trustee*” (Gerschewski 2018, 15). Unlike legitimacy, trust is not concerned with the ideological side of the ruling government and evaluates merely its performative side. Finally, trust is *concrete* and almost always aimed at a particular political entity like a political party, military, the President, etc. (Gerschewski 2018, 15).

One more element that is worth mentioning is the overall propensity to trust in society. Yang believes that it “*is an individual disposition that is learned from experience and independent of any rational considerations*” (Yang 2006, 580). However, Yang is skeptical about this kind of trust having a causal effect on citizens' trust in institutions. (ibid.) The results of his research show that the propensity to trust has a positive impact on the trust in citizens but has a very limited, if any, effect on the trust in political institutions (Yang 2006, 591). Considering that the propensity to trust is another complicated matter that needs to be studied separately, this paper will not focus on it.

It is important to point out that trust in the business sphere would be different from the trust in the state sphere since it would still operate in the setting of political legitimacy. Moreover, the trust between citizens in the business sphere differs in nature from the trust between citizens and the state. Unlike the second one, the first is mutually vulnerable since the citizens are situated in the position of equals. Citizens' trust in the state is a more sensitive matter. It touches on the question of rights, representation, and safety of the state and goes beyond the simple calculation of profits.

After outlining the main characteristic of the concept of *trust*, it becomes less abstract. Studying the trust of the government is less complicated than, for instance, studying loyalty or

legitimacy. Trust is, first of all, the evaluation by the citizens of government (trustee) of abilities to provide services offered to a trustor. This evaluation defines whether the trustors (citizens) would perform particular actions expected from them by the state. These actions can be the citizens' participation in the spheres of government and business and their willingness to respect the rule of law and invest in the state's economy.

1.3 The connection between citizens' trust and digitalization

When talking about digitalization, it is important not to forget that we first talk about the tool aimed to perform a particular role. There are various views on what that role could be. Some of the researchers concentrate on the new relationships it builds; others go further and claim the new type of citizenship formed by digitalization processes. For instance, Jannick and Hjelholt investigate the new concept of *digital citizenship* as an ideal of governance promoted by public officials (Jannick and Hjelholt, 2017). As the base of their work, they used the case of the digitalization of e-services in Denmark from 2002 until 2015. Jannick and Hjelholt see three components for constructing the digital citizen: “a digital citizen that is constructed as an efficient and economic agent” (*citizens as a business*); “that is part of a more or less homogenous collective of ‘Danes,’ each able and expected to utilize digital technologies on a daily basis” (*citizens as sameness*); “and that is highly individualized with particular needs and expectations” (*citizens as individuality*).

Jannick and Hjelholt quite well describe the innovations brought by the digitalization of the e-government; however, it is hard to see how their definition of digital citizen much differs from the classical understanding of citizenship. All listed components are rather made more accessible and visible by digitalization. For instance, such quality the homogeneity and solidarity with compatriots described as *citizens as sameness* is a traditional trait of a citizen in

a nation-state; *citizens as the business* are just the description of economic freedoms in the free trade state, and seeing *citizens as individuality* is an essential quality of a democratic political system. Therefore, I would be more careful talking about the transformation of an understanding of the whole concept of citizenship in the digitalized society and would rather talk about the change of relations and shortcuts for more inclusive citizenship it allows one to practice.

As it was mentioned before, digitalization has the potential to improve the existing processes between the state and its citizens. This includes the increase in transparency of government, higher citizen participation, a better relationship between people and the state, and leveling up citizens' trust. Digitalization as a cure for the distrust of citizens of their government is not a new topic for the research. For instance, in 2005, Parent, Vandebeek & Gemino conducted a survey on the connection between citizens' trust and digitalization. They found out that focusing on "Web-based" courses of action might not be an efficient way to gain citizens' trust; instead, they recommended focusing on more traditional improvements, such as efficiency in service delivery and better bureaucratic procedures (Parent, Vandebeek & Gemino 2005, 733). Despite being outdated, this work shows the need for constant revisiting and studying the new practices of digitalization over the years.

Bernhard, I. et al. attempted to find out whether there is an association between citizen satisfaction and the degree of digitalization of government services (Bernhard 2018, 60). This research is one of the few ones in the field that draws the correlation between digitalization and citizens' satisfaction. Bernhard I. et al. mainly focus on the impact of digitalization on the local level of municipalities (ibid.). They characterize it in three different dimensions. The first dimension concerns the depiction of life in the municipality that potentially can build a positive image of their community among citizens. The second dimension is connected to the evaluation of the performance of government services, such as public safety records or the response to

citizens' complaints. The third-dimension concerns citizens' satisfaction with the transparency of the government and the influence they have on its policies (ibid.).

This research will attempt to find out whether there is a connection between the degree of digitalization and citizens' trust in the government. As the case study, it will use the recent digitalization reform in Ukraine in 2020. One might question the relevance of this study, considering the recent events of the Russian Invasion that created not just massive destructions for Ukrainian citizens but also endangered lives and access to nutrition for countries dependent on Ukrainian export. It might seem like those events overshadow the issues of digitalization and government effectiveness, but the recent implementation of digitalization during the time of war proves the opposite. Digitalization is a new powerful tool for citizen and government interaction; therefore, studying it is equally important to study other major shifts happening in our society.

CHAPTER 2 - RESEARCH DESIGN AND CASE STUDY

This chapter will introduce three hypotheses that will be tested throughout the research. Based on the definition of the citizens' trust, this research defines three indicators that will help to check whether digitalization increases citizens' trust. Among them are citizens' participation, citizens' business initiative, and the transparency between citizens and their government. This chapter will as well further elaborate on the case of Ukraine, chosen for this research.

2.1 Case study

In 2019 Ministry of Digital Transformation of Ukraine launched a news portal, "Diia" ("Action"), dedicated to digitalizing most of the government services. In just two years, Ukraine implemented the first in the world e-passport, launched a support program in the times of COVID-19 "E-support," developed a fast system of childbirth registration and offered many other services. All of them became accessible to every Ukrainian citizen through the smartphone app that is available for free downloading at the Google PlayMarket and AppleStore. Ukraine is a unique case of not only how digital services can be successfully implemented in a developing country but also how those services can be a powerful mobilization tool in the time of military aggression of the neighboring country or other exceptional circumstances.

By January 2022, around 15 million users have joined "Diia" ("Action") (Diia-Open Data, 2022). More than 5 million people have applied to the most popular citizen support service, "*E-Support*," launched to encourage citizens to receive two doses of COVID-19 vaccination. Initially, the service was designed for receiving financial help that could be spent on movie theaters, books, sports, and other cultural activities. Currently, this service offers to

donate this money to the needs of the Armed Forces of Ukraine. According to the information of the Ministry of Digital Transformation of Ukraine, on February 28, more than 1,5 milliard of hryvnias were transferred for the needs of the Ukrainian army (Diia-Open Data, 2022). The precise number of those who used the services will be known only after the end of the Russian-Ukrainian war. In addition to an app with government services, Ukraine actively promotes other services such as personal transport registration, registration for financial help, pensions for the elderly, and business management. All of them create a larger system of digital government services that only continues to grow and develop.

Previous research has primarily concentrated on the digitalization of government services in welfare states, such as Denmark or Sweden (Parent et al., 2005; Schou, 2017). Ukrainian political settings are quite different from theirs. Ukraine is a former Soviet Union country that has been independent since 1991. Like many other former USSR countries, Ukraine has high rates of corruption, a weak rule of law, and low GDP per capita. According to Transparency International, Ukraine ranks 122 out of 180 in the Corruption Perception Index, placing it among the most corrupted countries around the world (Transparency International, 2021). Although a various number of anti-corruption initiatives have been implemented since 2014, corruption continues to operate both on the high and low levels.

Moreover, the Ukrainian government has a very low percentage of trust among its citizens. For instance, the data of the public survey held in the August of 2021 shows that only 2.4% of Ukrainian citizens trust the Ukrainian Parliament, Verkhovna Rada (The Razumkov Centre, 2021). The trust in other government structures is also extremely low; 38% of the Ukrainians do not trust the government officials (ibid.). Such low levels of trust complicate the development of the state, prevent the investors from entering the country and discourage citizens from participating in political life. However, despite the political setting and low expectations, the digitalization reform was successfully implemented and integrated into the

everyday lives of Ukrainian citizens. According to the United Nations Development Program, from 2020 to 2021, at least 6 out of 10 Ukrainians have used digital government services at least once (UNDP, 2021). Among them are many representatives of the vulnerable groups, such as internal migrants, veterans of Anti-Terroristic Operation, single parents, and people with disabilities (ibid.). Unfortunately, due to the war in Ukraine, the number of citizens that belong to those groups is only increasing.

Such innovations not just simplify the access of citizens to government services but also change the understanding of relationships between government and its citizens. Even though the Russian Invasion that is happening right now, as the author writes these lines, will significantly slow down the boost of the economy and the opening of new businesses in Ukraine, digitalization continues to develop even faster during wartime. Currently, more than 11 services are available in the app. Among them are the ones that existed before the war, such as E-passport, COVID-19 vaccination certificate, and private entrepreneur tax payment, together with new services introduced after February 24, 2022: registration of destroyed property and Army donations. Therefore, digitalization of government services, in this case, serves two functions: it not just simplifies the inefficient government procedures but also helps to use the ones that otherwise would simply be not accessible.

2.2 Research design

After defining digitalization and citizens' trust and discussing the case of Ukraine, we move to the main part of the study to find out whether the connection between the two is present. It is expected that the greater degree of digitalization of the government will have a positive impact on the citizens' trust. For that, it should tackle very specific issues that increase distrust, such as a low level of citizen participation in political life, a low level of transparency

between government and citizens, and the unwillingness to register a business in the country. All those are the citizens' actions that they undertake based on their evaluation of the government's trustworthiness. Therefore, the three hypotheses will be tested in the process of his research:

H1: The digitalization services increase citizens' participation in the political life

The first hypothesis explores whether digitalization of the government services tackles the issue of the low level of citizens' participation in political life. Although not enough time has passed since digital services were launched to check citizens' participation in the election, other spheres of political life are also available for participation. Any action requires a particular amount of effort. Dealing with government structures in person may stop many citizens from participating in political life. Since digitalization overcomes the issue of time and allows to access government services through a smartphone or personal computer at home, it is expected that more citizens would be encouraged to use this opportunity. Moreover, digitalization opens new windows for participation, such as public surveys and a simplified procedure of donations for the needs of the war.

H2: The digitalization services encourage the registration of new businesses

The second hypothesis looks at the way digitalization influences the willingness of citizens to register new businesses and pay taxes. Although the operation of the large enterprise and attracting investments is a topic large enough for another research, this research can still

track the individual decision of the citizens to legally perform their business activity and pay taxes to the state. The *Diia* service of Ukraine has made it possible to register yourself as an individual entrepreneur in under 10 minutes, compared with the old procedures that could take weeks, if not months. Despite the fact that the time of bureaucratic procedures is usually not the essential decision factor, when it comes to opening a new business, it is still a factor that can stop many potential entrepreneurs and small businesses from registering their business officially. Therefore, it is expected that digital government services encourage this process.

H3: The digitalization creates a greater degree of transparency between citizens and the government

The third hypothesis checks whether there is a positive correlation between the degree of digitalization and the degree of transparency in society. *Diia Data* makes it possible to track government spending and make sure that the taxes are distributed in a fairway. Moreover, since the beginning of the war in Ukraine, people are trusting the service to transfer donations to the army and register the damaged property. This is beneficial for building the space of trust and transparency between the government and its citizens. By checking this hypothesis, we will find out if it is really the case.

The research will use the official data of the Ministry of Digital Transformation of Ukraine, the Ministry of Justice, and the results of the surveys conducted by the *Ukrainian Centre for Economic and Political Studies named after Olexander Razumkov*. The Razumkov Centre is a non-governmental think tank that conducts research on public policy in various spheres in Ukraine. Especially valuable for the aim of the research is the data on trust in public

institutions and politicians, which is conducted every two months and can enable one to track the development of political trust over the years.

Additionally, throughout the study, 21 interviews were conducted with the citizens of Ukraine that are actively using the e-service “*Diia* .” The interviews were structured in the form of questions and statements with which participants could either agree or disagree. The groups are divided by age, considering the specific age-oriented services and by the type of services they are using. The structure of the interview was mostly oriented toward getting their opinion on the effectiveness of an app and the change in their interaction with the government. Moreover, they were asked to evaluate how the implementation of digital governmental services has influenced their trust in the state institutions.

Due to the complexity of an issue, the testing of each hypothesis contains two steps. The first step analyzes the existing data on citizen trust and the implementation of digital government services. The second one is based on citizens’ opinions, collected through the structured interview. Based on the results of the first part, supported by the public opinion from the second, this research will draw a conclusion about the effect of digital government services on citizens’ trust.

If at least one of the hypotheses proves to be true, we can confirm that digitalization is beneficial for building up the citizens’ trust in the government. However, if none of the statements would prove to be true, we can say that digitalization, despite being a convenient tool, does not really affect the citizens’ trust in the government. Nonetheless, studying the effects of digitalization on the interaction between government and its citizens can be a beneficial step towards a better understanding of the digital transformation of our societies.

CHAPTER 3 – RESEARCH RESULTS

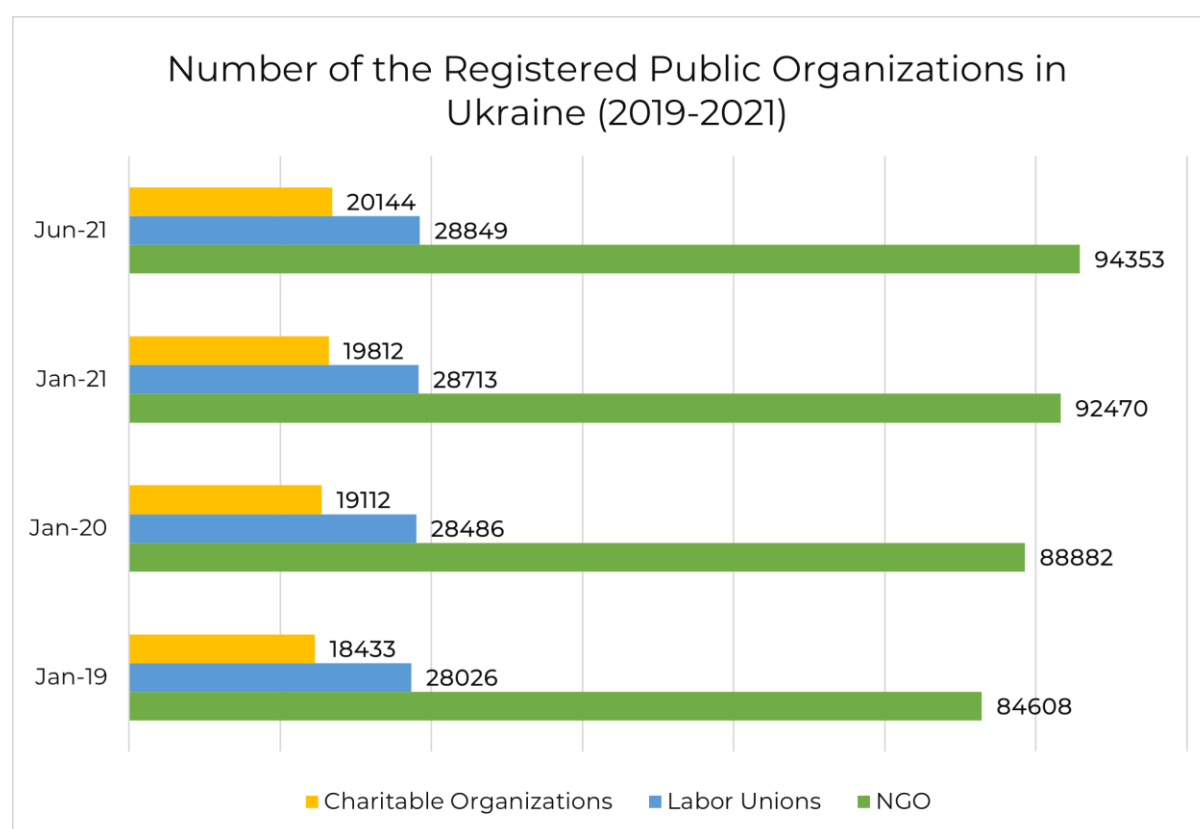
Three hypotheses were tested during this research. The first stage performed an analysis of the open data of leading Ukrainian think tanks. The second stage analyzed the responses of the 21 structured interviews held in the Spring of 2022. This chapter will discuss the results based on the two steps of the research. It will also elaborate on research limitations and provide suggestions for further studies. For convenience, the chapter will be divided into several parts based on the element of the citizens' trust that was tested.

3.1 Digitalization & Citizens' Participation

This part of the research has investigated the connection between citizens' participation and the digitalization of government services. Citizens can participate in the political life of the country in a direct and indirect way (Nabatchi, 2011). Under indirect participation, one means the traditional democracy, the forms of participation such as voting or support of various advocacy groups (ibid.). By direct participation, one understands the personal engagement of the individual in the life of the state (ibid.). As was already mentioned before, the launch of the digital government services has happened only in 2020, so the time period is not long enough to track indirect citizen participation through voting. However, it is possible to track the change in the direct participation in the last few years.

There are a variety of forms the citizen participation can take: political parties, volunteering or religious organizations, labor unions, etc. The creation and popularity of these forms of participation are crucial for building citizens' trust and straightening up civil society. Before moving to the results of the survey, we should take a look at the official data on the registered NGOs in Ukraine in 2019-2021. According to the data of the Center of Societal

Studies, 4,285 new NGOs were registered in Ukraine in 2020. In 2021 the number was increased again by 5,471 (Center of Societal Studies, 2021).



Graph 1. *The number of the Registered Public Organizations in Ukraine (2019-2021).* Source: Center of Societal Studies

One of the parts of the interview was aimed at finding out whether the connection between the citizens' participation and digitalization is really present. Respondents were asked whether they feel like their participation has increased since the digital government services were introduced and whether they agree with the list of the statements about citizen participation. The responses of the interview show that most of the citizens' do not see the big impact of digitalization on their participation in the political life of the country. Only 9 out of 21 participants think that their participation level has increased as a result of the introduction of digital services. Other 12 claim that their participation remained on the same level as it was before the launch of the *Diia*.

All the respondents who believe that their participation has not changed after the launch of *Diia* have also agreed with the statement, "*Government is corrupt, and there is nothing one can do about it* ."This points out the general disbelief in their ability to influence the government decisions present among some Ukrainian citizens. However, they believe the change is also present. 18 out of the 21 respondents are convinced that corruption in the government structures is possible to overcome.

Another way for the citizens to participate through the *Diia* app is by taking part in national surveys. Participation in the surveys is voluntary and open for all the users of *Diia* older than 14 years old. Some of the surveys are available only to the special category of the citizens, such as gender, age, or place of registration. This initiative cannot be perceived as an alternative to the official voting procedure since it does not state in the legal framework of voting or referendum. Nonetheless, the results of the surveys are perceived as the form of public discussion or electronic consultation with citizens.

The surveys that were offered so far vary in their topic, the sphere of influence, and degree of seriousness. Before the start of the war, the app has introduced questions that are mostly concerned with the satisfaction with the app's performance and particular services it offers. The most recent survey deals with the serious question of whether Ukrainians should be allowed to bear arms. Ukrainians can choose between three options: "*Yes, for special needs,*" "*Yes, for the self-defense,*" and "*No, I am against it* ."The survey will be open until June 1, 2022. As of May 28, 2022, the three days after launching, 1 million people have participated in the survey. Among them, 66% believe that Ukrainians should have the right to freely carry weapons for self-defense. This is an example of a new form of digital democracy that has only started to develop in Ukraine.

Another example of the new opportunity for citizens' participation is the recently launched service *UNITED 24*, which is available in *Diia* as well. The service works as "*the main venue for collecting charitable donations in support of Ukraine*" (United24, 2022). The funds are automatically transferred to the account of the National Bank of Ukraine. Citizens have an opportunity to pick among three spheres the money would be used: "*Defense and Demining*," "*Medical Aid*," and "*Rebuild Ukraine* ." According to the official report, \$43,6 million are collected as of May 28, 2022 (National Bank of Ukraine, 2022).

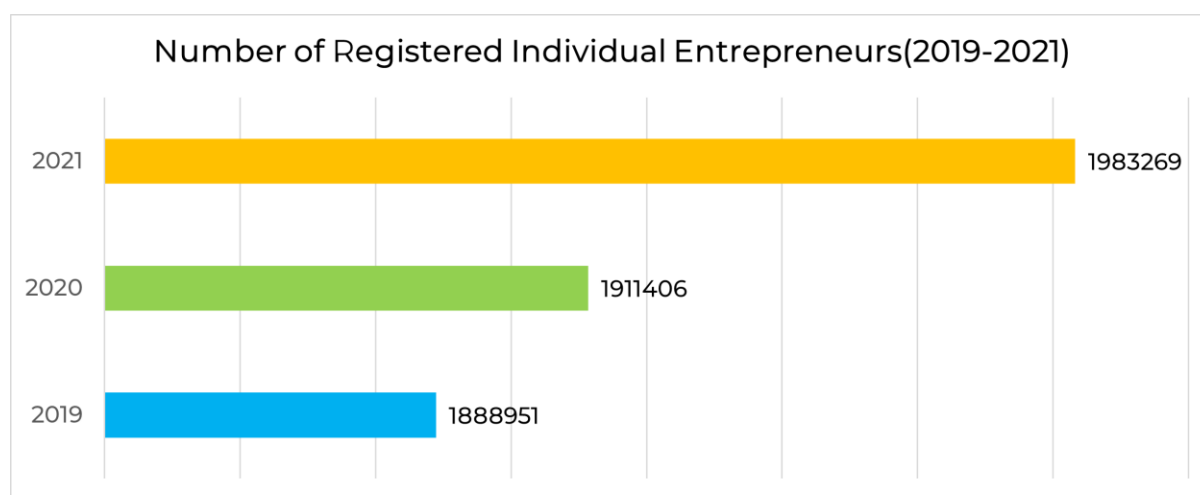
The new forms of citizens' participation opened by digital transformation show that the new space of public interaction is unfolding right in front of our eyes. Although it is too early to claim the effect of digitalization on the increase in citizens' participation, it is clear that we are dealing with a sphere that needs to be explored further.

3.2 Digitalization & Business

The complexity of the procedure of registering new businesses is only one of the many other difficulties that can stop people from registering their businesses. Among other important factors are the economic conditions of the country and a just system of taxation. Even though it is easy to imagine that for big businesses, the procedure and registration of the document is not the hardest dilemma, for small individual entrepreneurs, it can significantly change whether they want to perform their business activities officially. The procedure today has become extremely easy. Every person that has reached the age of 18 can open their own business in a matter of hours and start paying taxes. *Diia* App has excluded the necessity to go through a large amount of paperwork every month and wait in line for it to be submitted.

For sure such changes makes the one expects that more and more people will be encouraged to become an individual entrepreneur. The graph below presents the data on a

number of new individual entrepreneurs (called *ФОП*, an abbreviation for Ukrainian “Individual Entrepreneur”) from 2018 to 2021 (Open Data Bot, 2022). We can observe a significant rise in 2021. The number of individual registered entrepreneurs has increased by around 80,000 people. Most of the registered have opened a business in retail or the IT-sphere (ibid.).



Graph 2. The number of Registered Individual Entrepreneurs (2019-2021). Data provided by the Opendatabot

More registered businesses mean more taxpayers and the improvement of the relationships between government and entrepreneurs. This data shows only part of the picture. Despite this, the increase in the number of registered individual entrepreneurs’ illegal businesses, or "shadow businesses," continues to be a great problem in the Ukrainian economy. According to the Ministry of the Economy of Ukraine, due to the COVID-19 pandemics, the level of the shadow economy in 2020 has increased to 32% of the official GDP of the country. The increase was followed by a decrease in 2021 when illegal business activity dropped to 31%. Nonetheless, the unregistered business continues to flourish in Ukraine; however, more years should pass to make the results of the digital reform more visible.

On March 28, the service renewed its functioning during the state of war. Just on the first day of relaunching, 1048 new businesses were opened. This shows the willingness of people to support the functioning of the government even in a state of uncertainty. However, this willingness should be supported by the data from the survey held for this research. The section of the interview dedicated to business investigates whether people have used the services of *Diia* for registering their businesses or are ready to do so if they would want to open one. Moreover, the people who own businesses were asked whether they are using digital government services for tax-paying purposes.

Despite the fast procedure, 2 out of the 21 participants have expressed their preference for the traditional way of business registration. Surprisingly both of them belonged to the youngest age category, 18-25 years old; one of them already owns a business. All business owners participating in the interview have claimed to use digital services for paying their taxes. Among other participants, 18 out of 21 would be ready to use the services of *Diia* if they desired to open their businesses.

Overall, the impression of the digital government services in the business sphere is positive; however, it is hard to see whether this one particular sphere directly increases the trust of citizens in their government. What is clear is that the procedure of registering to be an individual entrepreneur has become more simple and more transparent. All 21 out of 21 respondents have agreed that the reform of digitalization decreases the number of bribes aimed to get documents and services faster. Registration through an app eliminates the human factor and does not encourage public officials to use their position for personal benefit. Moreover, interviewed citizens claim that government services have become more accessible. All of the respondents believe that they can get access to state services easier than two years ago.

The digital relationship between the state and businesses is only starting to develop. On the May 26 Ministry of the Digital Transformation of Ukraine launched a new service, *E-declaration*. It enables entrepreneurs to submit official permits online in under three minutes. This procedure replaces 374 kinds of various paper documents. Also, it elevates the human factor completely since the document does not require a revision from a government official (Diia 2022).

3.3 Digitalization & Transparency

The last hypothesis that talks about digitalization and transparency For the first stage of analyses of the effect of digitalization on transparency, we analyzed the data from a survey on trust in the government institutions by the *Ukrainian Centre for Economic and Political Studies named after Olexander Razumkov*, the leading public policy think tank of Ukraine. In this survey, citizens are asked to rate the level of their trust for particular institutions by choosing between five options: "*Fully distrust*," "*More likely distrust than trust*," "*More likely to trust than distrust*," "*Fully trust*" and "*Hard to answer* ."Usually, the surveys are held every couple of months, and the date and frequency vary according to big political changes or processes unfolding in society.

Since citizens' trust in government institutions goes beyond the government services together with trust for government officials, we also observed the changes in trust in the Parliament of Ukraine and the Ukrainian President. We looked at the data from February 2019 until the August of 2021, following that the Since the Ministry of the Digital Transformation of Ukraine has launched the *Diia* app only in the February of 2020. The data on the following graphs represents the change in the balance between trust and distrust until 2020. The author

intentionally did not use the data of the recent survey that was held only after the full-scaled Russian Invasion that significantly increased the trust in the government institutions.

	Feb-19	Mar-19	Oct-19	Nov-19	Jul-20	Nov-20	Mar-21	Aug-21
Don't Trust	41.1	43.5	8	9.3	20.1	30.4	29.8	28.7
More distrust than trust	29.8	25.9	13.9	15.5	28.9	29.8	31.7	28.9
Hard to answer	5.7	7.1	8.1	7	6.7	6	6.1	6.2
Partially trust	18.3	18.6	50.4	47.8	34.5	25.7	25.6	27.5
Fully trust	5.1	4.8	19.5	20.4	9.9	8.2	6.8	8.7
Balance of Trust/Distrust	-47.5	-46	48	43.4	-4.6	-26.3	-29.1	-21.4

Table 1. *The Level of Trust in the President (2019-2021). Source: The Razumkov Centre*

	Feb-19	Mar-19	Oct-19	Nov-19	Jul-20	Nov-20	Mar-21	Aug-21
Don't Trust	45.4	46.9	8	13	31.7	35.4	34.1	34.6
More distrust than trust	36.6	34.7	13.9	31.7	43.4	40.7	43.4	40.5
Hard to answer	5.3	6.1	8.1	11.5	6.4	6.5	5.4	6.1
Partially trust	11.6	11.1	50.4	38.2	16.6	15.8	25.6	16.3
Fully trust	1.1	1.3	19.5	5.5	2	1.5	6.8	2.4
Balance of Trust/Distrust	-69.3	-69.2	9.3	-1	-56.5	-58.8	-29.1	-56.4

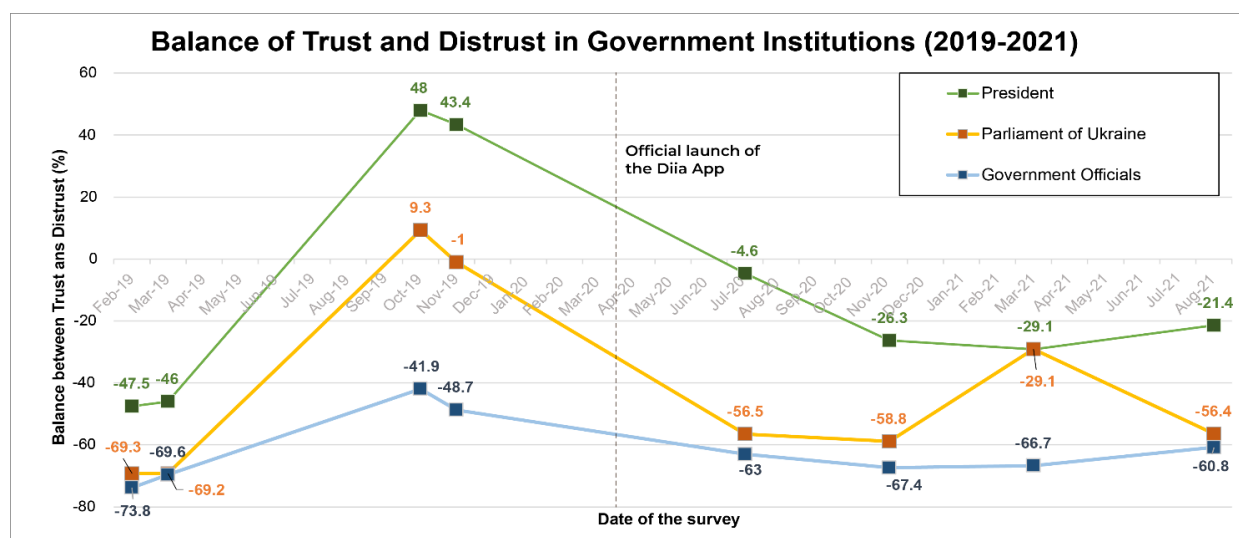
Table 2. *The Level of Trust in the Parliament (2019-2021). Source: The Razumkov Centre*

	Feb-19	Mar-19	Oct-19	Nov-19	Jul-20	Nov-20	Mar-21	Aug-21
Don't Trust	46.1	45.5	17.3	23.7	36.5	40.1	36.8	38.3
More distrust than trust	36.8	35	45.4	44.8	41.2	39.3	42.9	37.4
Hard to answer	8.1	8.7	16.5	11.6	7.5	8.5	7.3	9.4
Partially trust	7.7	9.8	19.3	17	13.3	9.9	11.5	11.8
Fully trust	1.4	1.1	1.5	2.8	1.4	2.1	1.5	3.1
Balance of Trust/Distrust	-73.8	-69.6	-41.9	-48.7	-63	-67.4	-66.7	-60.8

Table 3. *The Level of Trust in the Government Officials (2019-2021). Source: The Razumkov Centre*

Graph 1 shows the significant drop in trust that happened after the date of the official launch of the *Diia* App. Obviously, such change was caused by other external factors that are not connected to digitalization. For instance, the President of Ukraine, Volodymyr Zelenskyy, had a high level of trust among citizens right after his victory in the Presidential Election; however, with time lost this trust due to the corruption scandals in his close surrounding. Similarly, the trust in the Ukrainian Parliament has been decreasing since the party "Servant of the People," associated with the President, has held the majority. However, the balance of trust

and distrust in the public officials has never even reached a positive value and remains incredibly low even after the introduction the digital government services.



Graph 3. Balance of Trust and Distrust in Government Institutions (2019-2021). Data provided by The Razumkov Centre.

It is obvious that the first part of the data analysis does not show the full picture of the effect of digitalization on the transparency of the government. Therefore, the additional data from the interviews conducted in this research needs to be analyzed. Before the interview, 20 people were registered through the online survey in order to share their thoughts on digitalization and government performance. Part of the interview was dedicated to transparency has contained a series of statements that can be answered with either "yes" or "no". The creation of those questions was an attempt to build an interview in a way that helped to get to the bottom of the issue. For instance, some of the statements are, "Government is corrupt, and there is nothing one can do about it."; "Digitalization helps to keep government accountable"; "Government has become more transparent over the last two years."; etc.

The answers to the interview show that, in most cases, citizens have a positive image of digitalization on transparency. 16 out of 20 respondents believe that the government has become more transparent over the last two years, despite being skeptical about the particular

state institutions. Only 3 out of 20 respondents have agreed with the statement about the inability of digitalization to solve the issue of corruption in the country. Most of the respondents have also had a positive image of the effects of the digital reform on the governments' accountability to their citizens. 19 out of 21 respondents agreed with the statement: *"Digitalization encourages the government to be accountable to its citizens."*

3.4 Other findings

Along with the findings that specifically concern the hypotheses of the research are other relevant aspects. One of them is the security issue. As with any innovation, there is a change in the presence of skepticism towards the storing of personal documents in the smartphone. Despite the fact that the assurance of the Ukrainian government in the safety of the data and a functioning system of identification, this type of relationship is new for the citizens and the government. Surprisingly, none of the people interviewed for the research seemed to feel uncomfortable with storing their personal documents on their smartphones. Every participant has answered negatively to the statement, *"I don't feel comfortable when my personal documents are stored in a smartphone ."* However, two of the respondents did not think that digital services are more secure than traditional ones.

Together with the questions that are directly concerned with the topic of digitalization and citizens' trust, the more general questions about the relevance of the reform itself were asked. 6 of the 21 participants agreed that digitalization is an improvement of the public sphere; however, it should be implemented only after other more necessary reforms despite the fact that none of the participants agreed with the statement about the ineffectiveness of digitalization. Respondents of an interview claim to use *Diia* quite often. 9 out of 21 respondents use an app use *Diia* at least once a month; eight respondents use it every week and four couple times a week.

Most of the respondents started to use *Diia* right after it was launched in 2020. The most popular digital service in *Diia* is an electronic passport and ID number. All respondents claim to use them at least once. Among other popular services are electronic certificates of vaccination and eSupport, the registration for receiving financial aid from the government. However, only six respondents have used the public survey already discussed in the previous sections. Most of the respondents are satisfied with the provided services.

One of the other aspects that are worth mentioning is the inclusivity of an app. There is the fear that digital services could be less available for people above the age of 60. Therefore, only younger people can benefit from the digital reform. Respondents of an interview do not share this worry. All of the participants disagreed with the statement, "*Digitalization is only effective for young people* ."As of January 3, the number of citizens that use *Diia* has reached 17.5 million. It continues to grow. The Minister of the Digital Transformation, Mykhailo Fedorov, claims that the number of users increases by 50,000-70,000 people every day. (Fedorov, 2022).

The initial goal of the Ministry of the Digital Transformation of Ukraine is to make 100% of government services available online, in the digital form. Part of the goal is as well to make them available to every citizen and enable access to the internet for 95% of the citizens. The realization of the plan would require resources, considering the significant destruction of infrastructure in some regions of Ukraine. However, the government attempts to keep citizens online even during the war. A good example of this would be the city of Irpin, that have been under the Russian Occupation for several weeks and has lost 24 tower cells, leaving the city disconnected (Simonite, 2022). With the help of Starlink terminals provided by SpaceX, the city was back online after the liberation by the Ukrainian Armed Forces. This practice can be used not only for the recovery of the city's connection but for providing Wi-Fi access all across Ukraine.

3.5 Limitations and the Further Research

The question of the effect of a citizens' trust on digitalization is a complex one. This research attempted to shed light on one of the displays of this issue. However, a more substantial empirical study is needed in order to claim the connection between the implementation of digital services and citizens' trust in the government. One of the most significant limitations of the study is the inability to involve in the interview process people that are older than 60 years old. This would enable us to evaluate the accessibility and inclusivity of an app for the seniors.

Another limitation is the current state of events in modern Ukraine. Russian Invasion will for the sure impact the direction and pace of the reforms in Ukraine. This can already be seen through the adaption of the *Diia* to the current events. A series of new services they were not in mind before the war are now being developed and launched.¹ Therefore, new research needs to be done in the years that will follow.

Another possible field for future research on digitalization and trust is the practices of other countries. As was already discussed in the main part, most of the existing research deal with the practices of digitalization in the welfare states. The story of the success of e-governance in Estonia is well-known to people interested in digital reforms. Similarly, the Finnish automatized system of taxation became a part of everyday life for its citizens. However, the experience of developing countries can also be valuable for a better understanding of digitalization processes. For instance, the platform of government microservices in Moldova was especially helpful during the Ukrainian refugee crisis. Future works can explore this topic further.

¹ For instance, an opportunity to register a damaged property to get compensation or donations for the army.

CONCLUSION

This research was an attempt to find out more about the effect of digitalization on citizens' trust. Throughout the research, three hypotheses were tested. The first one stated that digitalization services increase citizens' participation in political life. The second one assumed that digital government services encourage citizens to register their businesses. The last one proposed that digitalization creates a greater degree of government transparency. The hypotheses were tested by analyzing the combination of the available official data and the responses from the structured interviews.

Analyses have shown that the participation in the political life among citizens of Ukraine has indeed grown. However, it is too early to claim that this growth has happened as a consequence of digital reform. The other external factors could play a larger role in encouraging citizens to participate in the life of the government. This can be supported by the responses of the interview. Only 6 out of 21 participants have ever participated in the government surveys, and only nine claims that their participation has increased after the launch of *the Diia* app. Therefore, this hypothesis has not proven to be true.

A similar conclusion can be made about the second hypothesis as well. Although the digital reform sure simplified the procedure of registration and accountancy for potential and present entrepreneurs, it would be problematic to claim that it encourages citizens to register more businesses.

The last hypothesis proved to be true. Digitalization does have a positive effect on the perception of government transparency by its citizens. Most of the respondents have claimed that in the last two years, the government services have become more transparent. 19 out of 21 participants have also agreed that digitalization decreases the number of bribes for more simplified access to government services. Since the level of trust in the institution of

government officials (bureaucracy as a whole) is extremely low, digitalization is a way out for the government to increase citizens' trust in the state.

Considering that one of the proposed hypotheses has proven to be true, we can claim that digitalization does increase citizens' trust in their government. Especially it is effective in making more citizens believe in the transparency of the government. However, the research has also shown other benefits of the digital reform, other than increasing the citizens' trust. One of them is the increase in time efficiency, a decrease in the small bribes, and the simplification of bureaucratic procedures.

This result is encouraging for other developing countries with a low level of trust in the government and corrupted bureaucratic institutions. Digital reform has a true potential to be not only “a lever” for raising citizens’ trust in the government institutions but also to making citizens feel more comfortable with their government. As stated on the official website of an app: *"We create a digital state, in the center of which is Human."*

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