INFORMATION TECHNOLOGY SESSION

CITEZENS' ATTITUDES TOWARDS THE USE OF THE eGOVERNMENT PORTAL (eUPRAVA) IN THE REPUBLIC OF SERBIA

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Abstract:

Today's society is characterized by the constant use of modern information and communication technologies. Considering the fact that digital technologies are present in every sphere of human activity, it is necessary for citizens in the 21st century to have developed digital skills and competencies in order to adapt more easily to the global ICT revolution, which has brought significant changes to the everyday lives of both individuals and communities.

The aim of this paper is to present the results of empirical research conducted in February and March 2024 on the attitudes of the citizens of the Republic of Serbia regarding the continued use of the eGovernment portal. This portal was put into use by the competent institutions of the Republic of Serbia in 2010. Starting from the hypothesis that the number of citizens who use this portal is directly proportional to the number of households that have access to the Internet, a computer, a tablet device, a portable computer, and/or a smartphone, the authors analysed to what extent the surveyed citizens are satisfied with this digital tool, and to what extent they use it in daily administrative work.

Although the portal was implemented 13 years ago, the results obtained from the analysis of 144 questionnaires unequivocally show that citizens are not sufficiently informed about the ways in which the portal could be used, i.e. that they lack adequate training to be able to use this digital service with success.

In the final part of the paper, the authors propose several ideas to increase citizens' awareness of the importance of digital literacy of each individual, especially since it is a key factor and prerequisite for successful integration into modern life flows dictated by technological innovations and trends of the 21st century.

Keywords:

eGovernment, Digital literacy, Serbia, Digital technologies, ICT.

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INTRODUCTION

The past twenty years have seen increasingly rapid advances in the field of ICT and government administration. With the emergence of information and communication technologies, their constant development and unstoppable progress, functioning, business and work in all areas of modern life is unconceivable today. In the government bodies of the Republic of Serbia, whose jobs are mostly administrative, ICT has been implemented through the eGovernment portal. Known as electronic government, digital government or online government, eGovernment is used both for the exchange of information, the provision of services and business of state bodies and institutions with natural and legal persons,

as well as for exchange between different branches of the government itself [1]. The eGovernment portal includes the use of ICT in all segments of public administration, with the aim of transforming it into a "service for citizens" [2]. The eGovernment portal enables citizens not to wait in lines and to complete their administrative work related to the government bodies from home, work or any other place, so without any time or place barrier. The only prerequisite that must be met is the existence of an internet connection in order to be able to access the portal. The Office for Information Technologies and Electronic Government implemented the eGovernment portal in the Republic of Serbia in June 2010. In almost fifteen years of existence, this portal has become one of the most popular national portals. It provides citizens of the Republic of Serbia with access to numerous electronic services (over nine hundred) that are available for everyday use [3]. In August 2023, the eGovernment portal reached two million registered users [4].

2. THEORETICAL AND METHODOLOGICAL FRAMEWORK

Analysing the available literature on the theme of electronic administration, it can be inferred that engineers, creators and designers of software solutions face almost the same problems in all parts of the world. Papers published in scientific and professional journals can be classified into three categories. The first category of works focuses on the importance of raising citizens' awareness regarding digital literacy; furthermore, it emphasizes the fact that if countries want to improve their administration, they must invest significant financial resources in order for citizens to continuously improve themselves in the domain of digital literacy, attending various seminars, trainings and workshops. The second category of papers compares the relationship between the financial resources invested in the interface and the software solutions themselves to the satisfaction of citizens as the end users of electronic administration applications. Research has shown that invested financial resources correlate to the greatest extent possible with citizens' satisfaction when it comes to the use of digital technologies that the countries included in the research have implemented. The third part of the papers aimed to analyse the scientific and professional papers published so far that are directly related to the digital literacy of citizens and electronic administration. Therefore, the authors set out to highlight the similarities and differences between different software and design solutions,

which to a large extent can have significant didactic implications for all software engineers and graphic designers who engage in the creation of new solutions.

Developed European and world countries invest a lot of money in their electronic administrations not only to improve and develop new software solutions but also to permanently educate and inform their citizens regarding the use of available electronic applications and tools. In contrast to developed countries, there are also those countries that are still developing and are just creating and implementing their electronic administrations. As we have already stated, the problems faced by both more developed and less developed countries are largely similar.

In 2023, Mohamed and Shengnan conducted an interesting pilot study on a sample of 224 Sri Lankan citizens. The primary aspect of their research was related to the analysis of results related to the state of electronic administration in developing countries. The empirical research they conducted dealt with a platform implemented by the Sri Lankan state. Citizens, as the end users of electronic administration, rated whether and to what extent the platform meets the design requirements, as well as the needs of the users themselves. As the authors emphasized, in all previously conducted e-governance research, there was a noticeable lack of understanding of the procedures for conducting e-governance evaluation, and the feedback and suggestions they received from their research can be taken into account when implementing new functions in prototypes, in order to eliminate existing shortcomings [5]. Although this research is not statistically representative, any feedback can mean something to engineers and graphic designers and improve some future software solutions.

In 2022, Huda, Kurniasari and Ruroh did a systematic literature review in which they summarized the factors influencing the evolution of eGovernment by analysing scientific articles published in the period from 2018 to 2020 (a total of 18 scientific articles). Analysing scientific journals, they concluded that developing countries, compared to developed ones, are far more present in the analysed papers. They point out that the main factors in the evaluation of electronic administration are user satisfaction with the information provided, the quality of the system itself, the quality of the service provided, and the ease of use, accessibility, security and privacy, efficiency, design and content of the electronic service [6].

Pérez-Morote, Pontones-Rosa & Núñez-Chicharro carried out a longitudinal study in the period from 2010 to 2018. In their work, they analysed data extracted from 27 European countries, and as a result they found that the use of e-government services is influenced by various factors: the offer that citizens have in their countries, trust in e-government and differences in income and level of education, etc. They especially pointed out that the financial resources that each state would invest in electronic administration can directly help in raising citizens' awareness regarding the importance of using electronic administration, since the goal of electronic administration is to make public institutions both more accessible and more transparent to citizens [7].

Ma and Zheng conducted an empirical study in which they examined the relationship between supply and demand, that is, the relationship between the objective performance provided by the electoral administration in relation to the satisfaction shown by 28,000 citizens across 32 European countries. The conducted study indicates a direct connection between electronic administration and citizen satisfaction, although the respondents were mostly satisfied with the fact that they can perform certain activities online [8].

Therefore, by analysing and interpreting previous works on electronic administration, published in scientific journals of foreign publishers, we concluded that the conducted tests are different, as well as the methods and models that were implemented in them. In most of the works, motivational factors of citizens for using digital tools and their satisfaction with electronic administrations were examined. Through a considerable number of empirical studies, the authors equally deal with other aspects of electronic administration, such as the design, interface and flexibility of the software solutions themselves, that is, how easy they are to use at different ages.

3. METHODOLOGY

The research was carried out in February and March 2024, and convenience sampling was used, where 144 respondents took part in it. The youngest respondent was 18 years old, while the oldest was more than 66 years old. As a basic research task, we set the analysis of the views of the citizens of the Republic of Serbia regarding the use of the eGovernment portal. Our main hypotheses were that the citizens were satisfied with the eGovernment portal, that they were familiar with its functionalities and that they used the portal during their daily administrative work with state bodies.

Starting from the hypothesis that the number of citizens who use the eGovernment portal is directly proportional to the number of households that own a computer and an Internet connection, the authors analysed to what extent the surveyed citizens are satisfied with the eGovernment portal and to what extent they use it in their daily administrative tasks. Also, the authors believe that every survey is at the same time raising the awareness and information of citizens about the area of research. Based on the data that is publicly available in the open database of the Republic Institute of Statistics of the Republic of Serbia, Table 1 shows a representation of households that own a computer and an Internet connection.

Table 1. Households that own a computer, internet connection [9].

Territory Period	REPUBLIC OF SERBIA		Belgrade region		Region of Vojvodina		The region of Šumadija and Western Serbia		Region of Southern and Eastern Serbia	
in 2014	62.8	63.2	70	70.6	65.9	66.3	59.1	58.7	53.9	56.1
in 2015	63.8	64.4	71.6	73.9	67.9	67	59.3	60.1	55.2	55.8
in 2016	64.7	65.8	73.1	75.9	68.7	67.7	60.2	62.5	55.7	56.5
in 2017	68	68.1	77.5	77.8	68.7	66.2	67.7	67.5	60.2	63.3
in 2018	72.9	72.1	82.2	81.1	70.7	69.3	70.2	69.7	68.1	65.3
in 2019	80.1	73.1	89.7	85.4	81.6	72.8	75.6	66.7	72.2	66.3
in 2020	81	74.3	94.1	91.5	75.3	66.8	77.5	68.6	77.3	71.2
in 2021	81.5	76.7	92.9	94.7	77.8	72.2	79.2	69.1	76.1	70.9
in 2022	83.2	77	93	93.7	81.9	73.5	80.7	70.8	76.6	69.9
in 2023	85.6	75.9	93.1	88.1	84.6	72.4	83.3	75.6	80.3	65.8
Indicator	1	2	1	2	1	2	1	2	1	2
1 - Households with an Internet connection, by region [%]										
2 - Households that own a computer, by region [%]										

This study employed survey methodology to investigate the research question. The survey consisted of a total of seven closed-ended questions. For research purposes, the instrument used was an anonymous questionnaire that was created on the Google forms page, and the survey link was distributed to the citizens via email or the generated QR code of the survey, so they accessed the questionnaire by scanning it. The questions were created by the authors of the paper.

4. RESEARCH RESULTS

All respondents were adults in various age groups. Most of the citizens were between 26 and 35 years old, as well as those between 46 and 55 years old. We are not surprised by the fact that the fewest respondents are between 18 and 25 years old, since the younger population is not sufficiently informed about this digital tool. A detailed view of the surveyed citizens is shown in Graph 1.

A total of 101 respondents were female, while the males were represented by 43 respondents. The surveyed respondents had different professional qualifications (Graph 2), namely: primary education - 3 respondents, secondary school education - 22 respondents, basic vocational studies - 9 respondents, basic academic studies - 43 respondents, master's academic/vocational studies - 35 respondents and doctoral studies - 32 respondents.

The region of the Republic of Serbia with the largest number of respondents is Belgrade (74.4%), followed by Šumadija and Western Serbia (15.3%), Southern and Eastern Serbia (5.6%), and Vojvodina (4.9%), with the lowest percentage of participants in our study. Using a five-point Likert scale, research participants assessed their digital literacy. A total of 3.5% of respondents assessed their literacy as insufficient (1), while 6.3% of them assessed their knowledge as sufficient (2). A far greater number of respondents, a total of 25.7%, rated themselves as good (3), while very good (4) made up 35.4% of the respondents. Finally, almost a third of the respondents rated their digital competencies as excellent (5), which makes a total of 29.2% of the respondents.

When it comes to the electronic devices that they use every day in performing various jobs and activities, our respondents listed the mobile phone (99.3%) as the mostly used, followed by the computer and portable laptop (83.3%). The analysis of the survey showed that our respondents use tablet devices the least (11.8%).

A total of 63.2% of respondents have created an account on eGovernment so far, but as many as 42.9% of them declared that they do not use their account. Out of a total of three ways to access the eGovernment portal, the largest number of respondents access it using a username and password (68.1%), followed by a qualified electronic certificate that they have on their ID card (18.7%), while the smallest percentage of respondents (14.3%) access their account using the ConsentID mobile app.
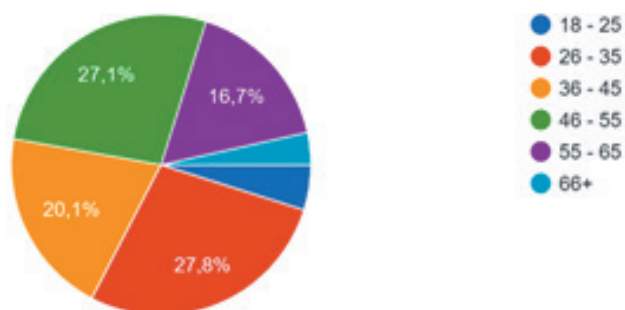
Graph 1. Age of respondents.
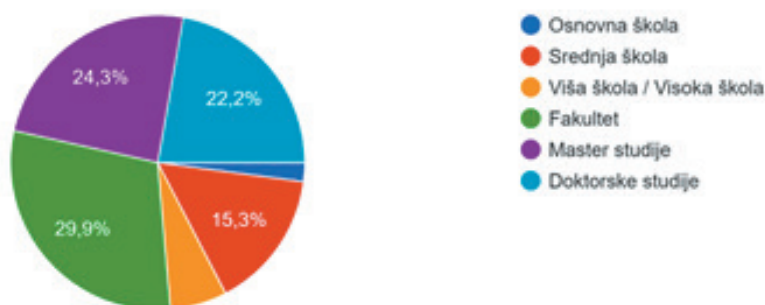
Graph 2. Professional education of the respondents.

The first way of logging onto the portal allows citizens to use a very small number of services, i.e. of a limited number of services, while the other two methods provide access to all services of the eGovernment portal. These results do not surprise us, since the first method requires the least amount of time to achieve the desired goal, while the second requires going to the police station in person, filling out documents and waiting in line. Finally, other public services (such as the Public Company Post of Serbia) have bureaucratic procedures that must be fully followed in order for the user to receive a qualified digital certificate.

Although based on the method of access to the portal, it can be concluded how familiar the citizens are with its functionalities, when asked if they are familiar with all the services that the eGovernment portal provides, only 30.6% of those surveyed gave an affirmative answer. In the last six months, only 61.5% of those surveyed accessed their account on the eGovernment portal. Table 2 shows the results of the surveyed citizens.

5. DISCUSSION

The largest number of the surveyed citizens are in the age group between 26 and 55, which is 75% of respondents. From a generational point of view, this group of surveyed citizens did not have compulsory subjects in ICT during their compulsory primary and secondary education, and are completely self-educated, so they became digitally literate independently throughout their lives. Also, respondents older than 56 belong to this group, and there were 20.2% of them. 82.7% of the respondents have a higher education degree, and we propose that it is highly improbable that during their daily work duties and responsibilities this percentage of respondents does not use some segment that does not

include the use of computers, smartphones and various applications, especially considering the fact that ICT is implemented in almost every area of business.

74.3% of respondents are based in the Belgrade region. Table 1 shows that in the city of Belgrade there is a higher percentage of households that own a computer and an Internet connection than in the rest of Serbia. Consequently, the level of digital literacy of the surveyed citizens is at a higher level in Belgrade, compared to the rest of Serbia. The results of our research indicate that the average value of the self-assessment of digital literacy of respondents who live in Belgrade is (3.9) and is higher than respondents who come from other cities and regions of our country (3.8).

A total of 63.2% of surveyed citizens have an account on the eGovernment portal, but only 42.9% of respondents use their account. Logging into the portal is possible in three ways, and the largest number of surveyed citizens, 68.1% of them, access their account using a username and password. This means that their access to the services provided by the portal is limited, because with this method of logging in, citizens cannot use all the services offered by the portal. Only 31.9% of the respondents who stated that they have created an account on the eGovernment portal have access to all the services of the portal, because they access it using a qualified certificate or the ConsentID mobile application. The largest number of respondents, or 69.4% of those surveyed are not familiar with the functionalities of the eGovernment portal, which is the biggest problem. In order to use the portal to its full capacity and with all the advantages it provides, it is necessary to work on raising awareness among citizens about the use of modern ICT in every domain of human activity.

Table 2. Survey questions and results.

Claim	SAMPLE	%
I have created an account on eGovernment portal.	91	63,2
I have created an eGovernment account, but I never use it.	39	42,9
I log into the eGovernment portal using a username and password.	62	68,1
I sign into the eGovernment portal using the qualified electronic certificate that I have on my identity card.	17	18,7
I sign into the eGovernment portal using ConsentID.	13	14,3
I am familiar with all the functionalities that eGovernment portal has.	44	30,6
In the last 6 months, I have accessed my account on eGovernment portal.	56	61,5

Analysing the results obtained by surveying the citizens of the Republic of Serbia, Scheme 1 best shows how the connection between eGovernment and users is established. What represents a basic shortcoming and something that the state authorities of the Republic of Serbia must constantly work on is the fact that citizens are not sufficiently familiar with the possibilities that the eGovernment portal provides. A radical change is needed that would contribute to better information of citizens about the services that exist in the framework of the eGovernment portal. The promotion of the eGovernment portal is planned through public administration reforms in the Republic of Serbia until 2030, with the goal to improve the efficiency of public administration and create quality public policies in accordance with European standards, ensuring a high level of services for citizens and economic entities, as well as strengthening the professionalism of public administration to support economic stability and improve the standard of living of citizens [10].

Analysing the current circumstances and plans for future progress, Palević points out that the eGovernment portal promises a prosperous future in the Republic of Serbia [11]. Although the eGovernment portal is rich in various options and functionalities as a central place for providing administrative services to both citizens and businesses [12], the Republic of Serbia should reach its full potential in the field of electronic administration in the coming years [13]. Reforming the public administration is a process that requires time, because it is a complex long-term process of transforming state, public and local institutions into an efficient, responsible, transparent and reliable administration, which actively involves citizens in decision-making processes, and adapts its systems to the new demands of citizens and the economy, as well as technological development, the flow of information and the development of democratic principles [14]. Therefore, our state authorities should use the results obtained in various research conducted in our country and in the world, not only to improve the functionality of the platform itself, but also to influence the educational programs to raise the citizens' digital literacy level.

6. CONCLUSION

A fast-paced lifestyle and lack of time portray the life of a modern man in the 21st century. In order for the citizens of the Republic of Serbia to be able to perform digitally all administrative tasks at public state bodies, the eGovernment portal was created, with the main goal of saving citizens time and shortening a large number of bureaucratic procedures. The Republic of Serbia, as a developing country, is certainly not at the bottom of the list of countries that have done little in terms of creating digital software solutions when it comes to administrative administration. However, the analysis of the results obtained in this study leads to the conclusion that a lot of investment is still needed both for the needs of developing new software solutions and for the needs of informing and educating citizens, especially those of middle and older age citizens who during regular classes in the education system did not attend ICT classes.

Analysing the results of previous studies and the results obtained in this work, the conclusion is unambiguously drawn that good public administration is a step towards progress, especially for developing countries. By investing the state in the eGovernment portal, citizens would have much more accessible information and services that can help them save time and money.
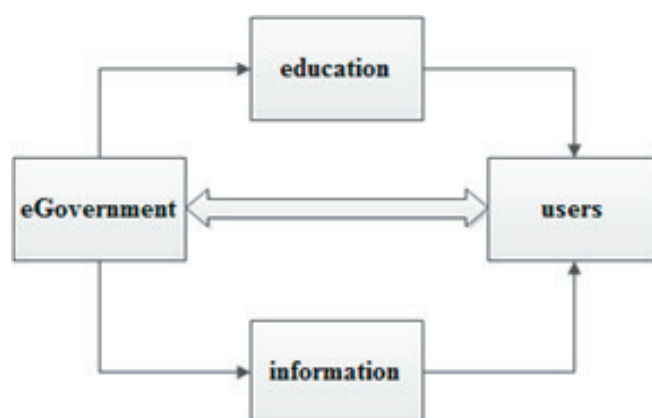
Scheme 1. Relationship between eGovernment and users.

Work on the promotion of this portal must be imperative for public state bodies in order to raise awareness among citizens about the possibilities that the portal itself provides. By creating short videos in the form of commercials, which would be broadcast on television with a national frequency, a large number of citizens could receive the basic information necessary to use the platform. Also, the organization of promotional workshops would be especially meaningful for citizens who come from those areas that are developing, and who do not have an Internet connection in their households. Finally, promotion could be organized through various portals and platforms, which today represent a very powerful tool for providing information.

Therefore, by organizing educational workshops and seminars, and by creating video tutorials and similar actions, the level of digital literacy of middle-aged and elderly citizens could be raised so that they could easily use the portal itself. Bearing in mind the European path that Serbia is also following, it is realistic to expect that most of the administrative work performed by the competent state authorities will eventually become fully digital, and it is important to establish a good system of providing user support to all those who are part of the system in time, so how to citizens as end users, as well as to all those employed in public administration at the competent authorities of the Republic of Serbia.

The results obtained in this research can be used for timely planning of promotional activities that would be of multiple benefits to citizens. With timely actions and good planning, the eGovernment portal can achieve even better results in terms of the number of both active and satisfied users.

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