DIGITAL INCLUSION

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Introduction

In 2023, the European Commission channeled the funding for European Semester 2024 to deal with the challenges facing European countries in ways that would develop their competitiveness potential. The problems pointed out are the insufficient labor market participation of women, of people with low levels of education, of disabled people – all of which are needed on the labor market. Over 20% of the population in an active age of Europe is economically inactive, including 8 million young people who are neither in employment nor in education (NEETs). These challenges face all European countries, including Bulgaria.

Bulgaria needs to develop its competitiveness by the development of the skills required for the digital and green transition. Beside the obtainment of digital skills needed for better labour market position, digitalization involves the mediation of human relations in all spheres of life by the new digital technologies. People work increasingly often online, they bank online, communicate online, seek health information and obtain electronic prescriptions online, register their children on lists for kindergartens and schools likewise online. In the euphoria of the new technological transformation is easy to forget that digitalization enhances social differentiation and increases the vulnerability of certain social groups that we may define as the socially vulnerable, while digital vulnerability additionally enhances social inequalities. The reverse process, whereby socially vulnerable groups can obtain new skills and hence better possibilities for employment and for benefiting from digitalization requires the implementation of additional efforts, of policies and programs towards the digital vulnerable groups. The aim of this paper is to reveal the excluded from the digitalization, to investigate their scope and the factors for exclusion in order to give ideas for policy which are focused on the digital inclusion of everyone.

Theoretical considerations

Digital inclusion is defined as „the activities necessary to ensure that all individuals and communities, including the most disadvantaged, have access to and use of information and communication technologies" (Reisdorf, Rhinesmith 2020; National Digital Inclusion Alliance, 2017). Digital inclusion is a core component of the concept of social inclusion. Its elaboration has policy implications.

There are voices in the academic literature pointing to the need to go beyond the deficit based approaches to digital inclusion and toward asset-base approaches focusing on the assets that are available within the community that can alleviate digital inequalities Pinkett, 2000; Reisdorf, Rhinesmith 2020).

The digital divide has three analytical levels. The first one, is represented by the access and depends on the development of the technological infrastructure in the country or the settlement, further is important the possession of devices for access. The second level of the digital divide is represented by the skills, needed to use the new technologies. The third level comprises the benefits derived from the online communication. Many authors speak about fourth level that captures specific policies dedicated to reach an extensive digital inclusion, reflects the contribution of the policies for the fair digital transition and for the security of the online content used (van Deursen, van Dijk (2019). The shift in the digital transformation is from the importance of the first level – access – to the development of different, targeted policies directed towards the improving of the digital skills and to the third level – increase of the derived benefits from online activities.

Two perspectives on the impact of digitalization on social inequalities underline reproduction effects, on one side, or the „transformative" effects, on the other. According to the reproduction perspective the arguments can be summarized with the Matthew effect in cases where resources are distributed among individuals according to how much they already have (Mesch, Mano, Tsamir, 2012). In the recently published „Compendium of Digital Sociology" is used the term „evolutionary approach" (Skopek 2023). This article is focused on the field of social inequalities in the context of the digital society and on the digital vulnerable groups.

There are three myths about technologies according to Justin Reich (2023). Myth 1: Technologies undermine the systems of inequality; Myth 2: Open code for use of technologies ensures greater equality; Myth 3: Free access to technologies and Internet eliminates the digital divide. However rural residents and poor people derive fewer benefits from technologies compared with residents in a better urban environment and the wealthy. Social-economic and cultural barriers are the main causes of inequalities in the use of digital technologies.

Social-economic inequalities are essential to deepening the digital divide. The dissemination and use of information technologies (IT) in a country depend on two basic factors: education and income (Mubarak et al 2020). The connection is positive both for income and for education level but is slightly more significant at a higher level of income compared with education and the degree of their stimulating effect on the spread of information and communication technologies (ICT). Income inequalities are the leading factor of digital inequalities. The negative effect of income inequalities is most significant for groups in extreme poverty. In their case, the purchase of digital devices is impossible for family budgets that are entirely spent on food and housing expenses. Possessing smart phone gives limited opportunities to be active in online space. For educational purposes for example people need personal computer.

One of the key messages of the book „Inclusive futures for Europe" (Kirov, Malamin 2022) is that the implications of the development of the digital transformation require in-depth studies of industries, regions, organizations and professions. I will extend this message with the need of more research on occupational classes since they give broader picture of the social structure and its change through the digitalization process. The need to

avoid polarization requires focus on the different occupational groups, their specific needs and barriers in acquiring digital skills. Previous research proves that the socio-economic inequalities between the occupational classes concerning the obtained digital skills are substantial. The lower the socio-economic class, the lower the skill level compared to the upper middle class, with the largest difference observed between the skill levels of the upper middle class and the unskilled workers. The process of digitalization does not affect all classes in the same way. As the level of digitalization in a country increases, inequalities in digital skills between the occupational classes decrease (Stoilova, R., Ilieva-Trichkova,P. 2022).

The investigations of the socio-cultural inequalities include the material and cultural barriers before women, minority groups, elderly or disabled people in the digital domain. Young people from Roma origin, with a lower level of education cannot fully utilize the advantages of digitalization, because of limited digital skills. They use mainly phones not so much for finding well-paying jobs and realizing themselves professionally. Their advantage of the obtained digital skills is mostly visible in the possibility of communicating with relatives and friends through the Internet (Petkova 2023).

Differences between men and women are preserved with regard to the benefits of digitalization. The reasons are gender segregation in education and on the labour market. The career chances of an education in STEM and of working in ICT sector remain unequal for men and women. Obstacles preventing women to become entrepreneurs in the digital domain are lower expectations for good results, avoidance of financial risks involved in drawing loans and expanding the activity (Stoilova, R. 2023). Women may agree to work as developers for a lower pay and perform more services to clients. Men often look for better-paid work as developers with a smaller part dedicated to services provided to clients. This makes rational to select more women for developer positions, which require more services to clients and lower pay compared to other private firms in the ICT sector. This is an example for a gender condition that prevents women to work in ICT sector. Possible gender discrimination in ICT (Bertogg 2022) is another reason for the low share of women both as employees and as entrepreneurs.

The reason for the development of a Digital Equity Framework is the understanding that the access to information is a social right, including information, which is online accessible. It has five elements: infrastructure, affordability, digital skills, policy and content[2]. Infrastructure refers to the technical components that enable computers and other devices to connect and access internet services. Affordable costs of devices and services represent a barrier for those with limited income and resources. Digital skills refer to the knowledge of and training on digital tools and devices that people need in order to participate in a digital society. Policy refers to the rules and regulations that govern how the internet is built and used. Content refers to whether there are relevant resources and articles on the internet that motivate people to use it.

European Civil Action Service (ECAS) focuses on five areas in which it consults with various stakeholders in order to ensure a wider inclusion of everyone in the digital transformation. These areas are: digital democracy; digital economy; digital security; digital

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[2] Connect Humanity (2023), State of Digital Inequity: Civil Society Perspectives on Barriers to Progress in our Digitizing World. Published January 25th, 2023.This report is made available under a Creative Commons 4.0 International license (CC BY 4.0).For more information visit www.connecthumanity.fund

rights and digital education[3]. In 2022 Guidelines for digital inclusion have been developed in three groups of indicators, which include measures divided into – building an appropriate digital infrastructure, creating an ecosystem that supports for social inclusion and conducting campaigns to explain the importance of digital inclusion.[4]

1. The indicators for digital access are aimed at providing the necessary resources, guaranteeing the security of use and ensuring a design that is easy to use for different types of users. Within this first group of indicators is the understanding of the internet access as a public good that should be available to everyone. There is a need for a regular checking of the web sites of public institutions for the availability of online services. A prepared employee is required to assist visitors to the web sites of public institutions – for example elderly visitors or disabled people. Public electronic services must have a mobile version that is compatible with both phones and desktop users. Individual pages in e-government must have a single entry point. The protection of personal data must be a primary objective.

2. The indicators for the formation of a supporting eco-system include providing services, educational initiatives, conducting communication campaigns. The services are intended for users from different geographical areas and regions, with different place of residents and with different social background, for whom it is necessary to ensure both the access and the skills to use the digital platforms. Digital education needs a holistic approach to include other areas such as additional knowledge in finance, civil rights, cyber security, internet consumer security in e-shopping.

3. The indicators for the communication initiatives should be target oriented. The formulation of the messages to the various vulnerable groups has to be done through the information channels usually used and in the language they understand.

European comparison

Differences between European countries are measured by the Digital Economy and Society Index (DESI) (Figure 1). There is an increase of the Index after the Covid 19 pandemic comparing the scores of 2021 with 2018. Bulgaria is characterized with a high scoring on human capital indicator concerning the representation of women in STEM disciplines and among ICT specialist. However Bulgaria is at the bottom of the average DESI score in the share of people taking online courses 9.19%. The EU average score is 20.9%. Central European countries have scores between 13.45% for Poland and 19.79% for Czech Republic. Estonia has the score of 34.56%[5]. The low scores of the participation in on line courses points to the underestimation of the opportunities offered by the digital transformation to raise own skills in order to be prepared for the risks occurring from the digital and climate transformations.

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[3] https://ecas.org/projects/digital-transformation/, last visit 05.08.2024
[4] Civil Society Digital Transformation Agenda & Digital Inclusion Guidelines Page 20 of 23
[5] https://digital-decade-desi.digital-strategy.ec.europa.eu/, 2021

**Figure 1. Digital Economy and Society Index (DESI)
in the European Union countries for 2021**
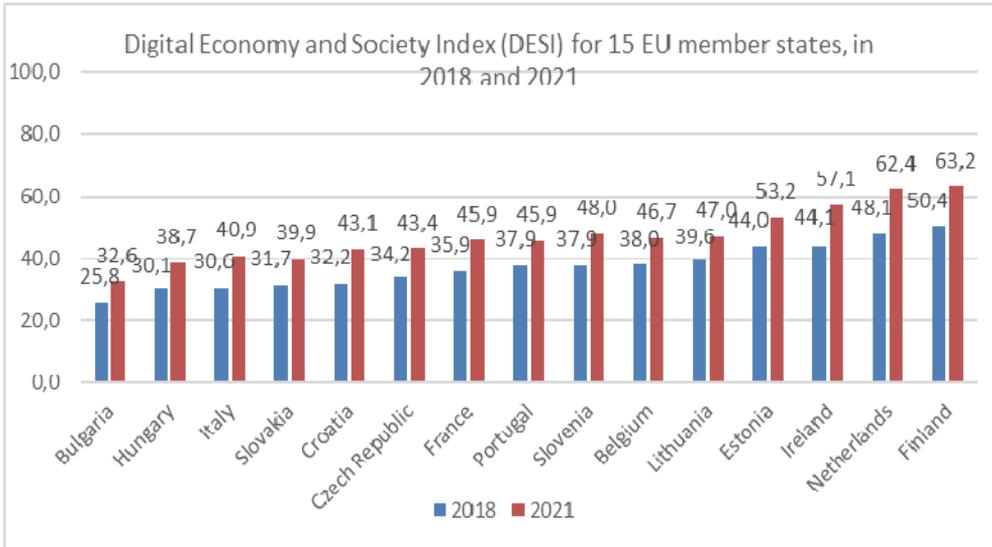
Another tool for the EU comparison is the e-Government Benchmark. It measures how digitalization and particularly electronic government supports people in different life stages[6]. The indicator „Career" – captures electronic services offered to people when becoming unemployed. „Family" is dedicated to services that occur mainly for young people like marriages, birth and how to become respective documents. Additional life events captured by the e-Government Benchmark indicators – are „Studying", „Business start-up", „Regular business operations", „Moving", „Health", „Transport", „Starting a small claims procedure". Bulgaria takes highest positions, being above the EU average in three indicators – regular business operations 85%, moving 78%, and transport 67% – of the services are online. All other services are below the EU average. At the bottom are services in justice – 27%, health – 49% and studying 50% - of services are online.

If there is doubt why we raise the issue of digital inclusion an argument could be given with the improved opportunities for digital democracy for men and women. The comparison between individuals who use seldom or often internet show an decrease in the distrust that political system allows people to have influence on politics on the site of people who use often internet. The increase is for the middle position – the belief that political system allows people to have some influence on politics – the increase is with 13 points for men and 14 points for women who often use internet compared to those who seldom use internet (Figure 2).

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[6] https://digital-strategy.ec.europa.eu/en/library/egovernment-benchmark - 2023

Figure 2: Political system allows people to have influence on politics according to gender and frequency of internet use
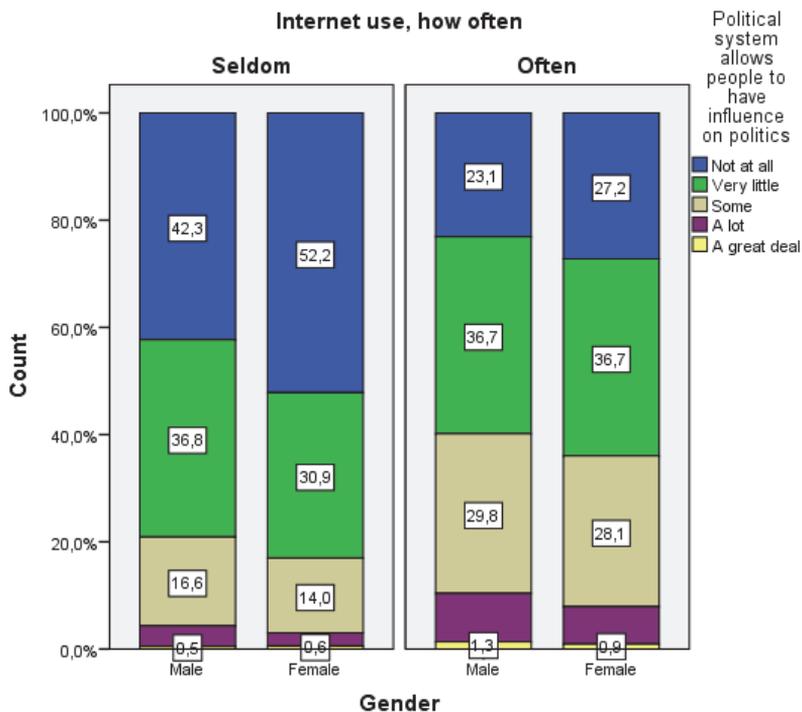
Source: European Social Survey, wave 10, 2022, Statistical analysis Kaloyan Haralampiev:

Seldom: Chi-square = 94.06, p = 0.000, Cramer's V = 0.102, N = 8982
Often: Chi-square = 151.65, p = 0.000, Cramer's V = 0.060, N = 41 666

Data and methodology employed

This paper is focused on the social groups excluded from the digital society – because of lack of access to internet, of a device to be connected or of digital skills. The questionnaire developed by the European Civil Action Service (ECAS) dedicated to the digital democracy domain have been applied in a nationally representative survey on „Digital Inclusion and Participation", conducted on February 22 – 29, 2024 by the research agency „Nasoka" jointly with the research team of the project „Digital divide and social inequalities", funded by the National Science Fund, 2021-2025. The results allow to identify the three levels of the digital vulnerability: 1) Lack of possibility for Internet access; 2) Lack of digital skills (including awareness of shortcomings in digital skills; of the motivation to overcome shortcomings and to improve digital skills); 3) Missing opportunities for online use. These factors correspond to the three levels of the digital divide in the society described above – access, digital skills, derived benefits.

Results for Bulgaria

The share of people actively using internet, albeit with varying frequency, amounts to 82.4%. Those who we define as digital excluded in Bulgaria amount according to the survey to 13%. This figure includes – 7.8% of the respondents, who had no device for online access and 5.2% of the respondents, who stated they never used Internet. The prevailing attitude is that the right of free access to high-speed internet and the necessary infrastructure for it should be guaranteed for everyone in the European Union – supported by the majority of respondents – 79%. This means a commitment by the nation-state to ensure internet access and skills for every citizen. The interrelation between „technology and democracy" is becoming more pressing issue for Bulgarian citizens similar to other EU member states.

The main obstacles that limit individuals' access are ranged differently depending on the social class (Figure 3). For working class people the main obstacle is – lack of trust expressed in the attitude – „In my view it is not secure, I am afraid of abuses in a digital environment" – 19%; lack of confidence in one abilities – „I am afraid to make mistakes, I lack the necessary skills" – 18%; and „I am not using internet at all" – 18%. Lower middle class gives highest priority on the obstacles for internet access – I am afraid to make mistakes, I lack the necessary skills – 28%; and I am not using internet at all – 18%; lack of trust in my view it is not secure, I am afraid of abuses in a digital environment – 22%. Middle class people give answers in the following order – I am afraid to make mistakes, I lack the necessary skills – 25%; Age – I am too old for internet – 16%; I am not interested in e-finance, missing motivation – 10%. Leading obstacle for Bulgarian respondents from different classes is the fear of mistakes and the lack of digital skills.

Figure 3: Main obstacles that limit individuals' access depending on social class
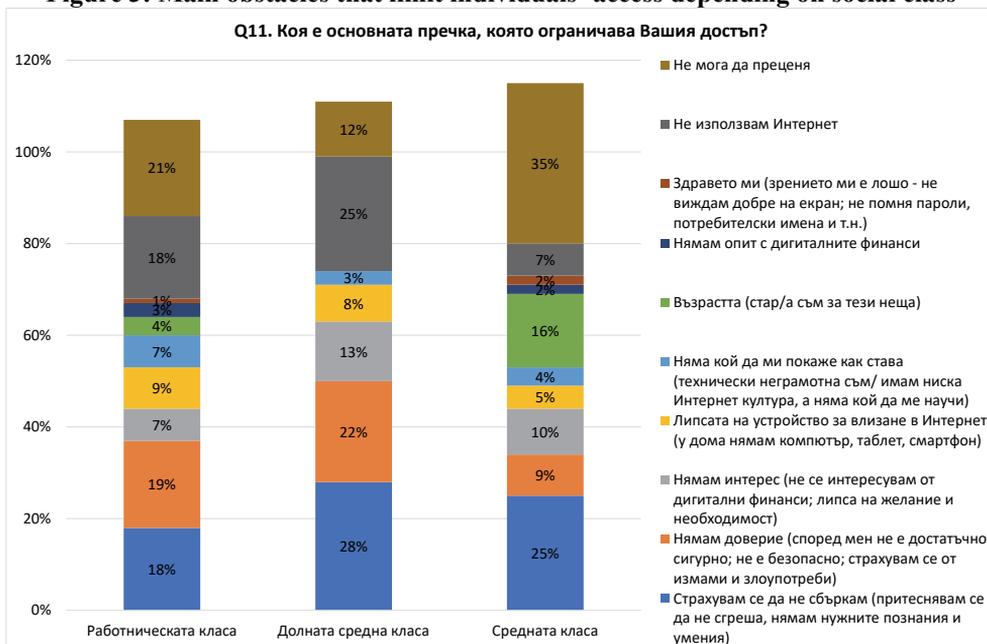

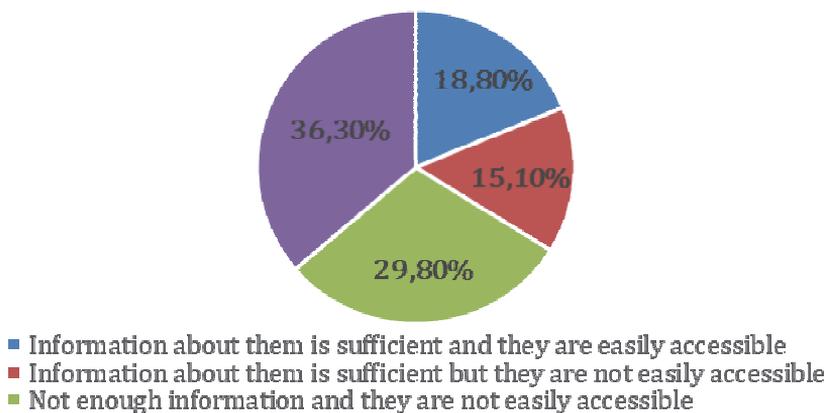*Source*: „Digital divide and social inequalities", Research Agency (RA) „Nasoka", 2024, N 1052.

Over 40% of the respondents of all social classes do not belief that their rights are sufficiently protected online (Figure 4). Differences are observed only in the positive answer – the belief that the rights are sufficiently protected is shared by 25% of the upper middle class, by 12% and 11% respectively of the working a and lower middle class and by only 4% of the middle class. The necessity for increasing the trust in online communication in parallel with the security measures are pressing for the country. The initiative in this respect should be targeted at lower social classes if their online connectivity is intended to be improved.

Figure 4: Do you think your rights are sufficiently protected online?
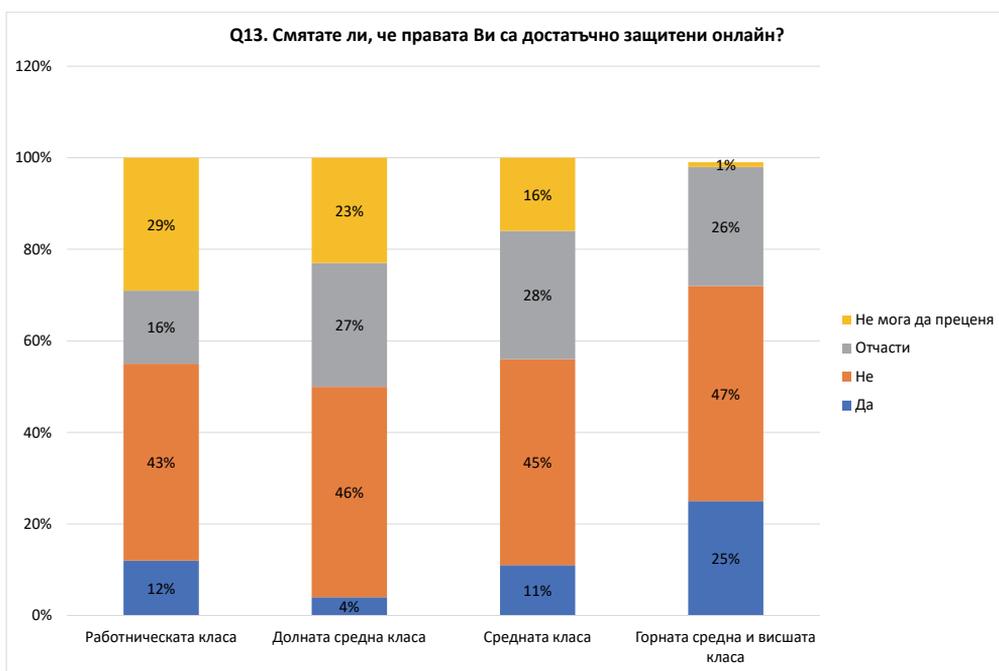
Negative opinions prevail concerning the initiatives for digital education in Bulgaria and their accessibility to vulnerable groups (one third of the respondents give negative opinion, more than one third have no position on this matter) (Figure 5). Only 18.8% give a positive reply. There is a significant shortcoming of missing knowledge of existing opportunities for the skill development to vulnerable groups.

**Figure 5: Are initiatives for digital education in Bulgaria accessible
to vulnerable groups?**

- Information about them is sufficient and they are easily accessible
- Information about them is sufficient but they are not easily accessible
- Not enough information and they are not easily accessible

Source: „Digital divide and social inequalities", RA „Nasoka", 2024, N 1052.

The obstacles to improving individual digital skills expressed by high costs or missing motivation differ between age groups, social groups with different material standard of living, occupational class and region. The use of the online services of the electronic government in Bulgaria is concentrated in one third of the respondents – 35.4%. 49% of respondents indicated that they had not sought online information from official state institutions, for instance: information on public services, taxation and social security rights, legal procedures, information about parliamentary representatives or policies. Additional 15.9% don't know about such opportunities. The following groups had not at all used online services provided by the e-government: 89% of the Roma; 87% of the identifying themselves as poor; 86% of respondents with low education levels;76% of people over the age of 60 ; 73% of Turks; 70% of rural residents. The data indicate that substantial share of vulnerable social groups do not at all take advantage of online services provided by e-government in Bulgaria. This analysis is complementary to the e Benchmark with the provided electronic services. If they are not accessible for substantial parts of the social deprived groups this makes deeper the existing social inequalities through the process of digitalization.

Cost of educational courses is an obstacle for 12% of the age groups beside the group 50 – 59 years old, where 17% of the respondents find the cost as an obstacle. This is a group in their late careers, where the additional learning is most needed and the employers could hesitate to invest for additional qualification. Cost as an obstacle for improving digital skills is mentioned by working class 17%, lower middle class 15% and less by middle class 7%. Costs are raised as an obstacle for improving digital skills less in the regions with the poorest population like North West – 4% and North East 1%. The most frequent answer in both regions is „I don't need to improve my digital skills" – North West - 59%, North East 34%. For comparison cost as an obstacle is mentioned by 10% in North

Central, South East – 18%, South Central – 16%, South West – 15%. „I don't need to improve my digital skills" – North Central -43%, South East – 35%, South Central – 34%, South West -43%. When working on strategies for digital inclusion both motivation and costs should be taken into account.

Electronic participation in civic and political activities is exercised by small proportion of the respondents. 8% of respondents indicate they have used electronic participation devices for designing policies at national and local level (public consultation, budgeting, electronic petitions, including for new housing construction). The readiness to vote online however is high – 46% have no concerns about exercising their vote online. Regarding political participation in an online environment in terms of online voting, the following social groups would have difficulties: 65% of the poor, 62% of low-educated, 60% of people aged over 60 years, 50% of the Roma, 47% of rural residents, 46% of Turks.

Conclusions and Policy recommendations

Vulnerable groups are those with limited access to internet, with no devices and experience lack of digital skills. Socio-cultural barriers for not using internet are identified on the side of older respondents and minority groups. This is in accordance to the available statistical data and to previous research.Ssocial groups of elderly people, minorities, those living in rural environment, with low education, households with limited income and resources are often without online access. E-government is not only a means for make public administration more effective. It is also a tool for optimizing the communication between administration, citizens and businesses through the use of e-services (Konstantinov 2023). That is why these public e-services should be made accessible for everyone. The understanding, that digital inclusion is social right and public good, has the support of the majority of Bulgarian respondents. Presented results point to significant shortcoming of missing knowledge of existing opportunities for the skill development to vulnerable groups. Respondents from different classes and especially working class and low middle class share the fear of mistakes and the lack of digital skills.

Women face obstacles in to enter the ICT sector, which contribute to their limited presence there, but their inclusion in ICT has its advantages. They change the style of leadership in the organizations, stimulate communication between different management levels and work for diversity of the teams. Women on manager positions in ICT sector rely on sharing and cooperation between employees from different generations. That is why the participation of women in this sector should be stimulated. The recommendations is addressed in several directions: to the government, to universities and high schools, and to companies and employer's organizations.

It is not sufficient to detect the digital excluded social groups, it is needed to investigate strategies and policy measures, which are able to overcome this actual exclusion for different population groups. Among the factors for the social support to digital excluded groups has been investigated „support networks", that rely on the „strength of the relationships between individuals" (Asmar, A.,Van Audenhove, L.,Marien 2020). The authors developed a typology of six patterns of help seeking and the characteristics, associated with them: the support deprived – people with low level of digital skills, who acknowledge that they need help but are in the incapacity to find help because of the situation of precarity or social exclusion; community supported – mostly people from the life category 51-70 years old, who visit computer classes and take courses; supported through substitution – do not directly engage with digital media but rely on someone from

the close family circle to accomplish specific tasks for them; network supported – this type demonstrates the importance of social embededdness to draw support; vicarious learners – do not explicitly ask for help but learn by emulating others, learning by doing; self supported – are more likely to learn new things, when help is needed they look for solutions online. This typology helps find solutions to different population groups and social contexts. This typology and similar demonstrate the asset based approach and can account policy makers for initiatives worldwide struggling with the issue of digital exclusion.

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