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Digital Competences as a Precondition for an Inclusive Digital Economy - Is There a Gender Gap Among Persons with Disabilities in Serbia?



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ABSTRACT

Digital labor platforms provide lower-barrier access to employment and income generation, having a great potential to create almost equal opportunities for persons with different forms of disabilities to engage in the labor market while contributing to their inclusive employment. Moreover, working from remote locations allows persons with disabilities to work from home, adjust the volume and pace of the work to their specific needs, create flexible work models, and apply adapted technologies for different forms of disabilities. However, to be able to

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provide adequate services to their distant employers or start an entrepreneurial venture, remote workers must possess a sufficient level of digital competencies, skills and knowledge. Accordingly, the paper seeks to investigate the perceived level of digital competencies of persons with disabilities in Serbia, focusing on gender-related issues. The results obtained are intended to serve as a starting point in identifying the gap between the perceived competencies and competencies required for starting an entrepreneurial venture or finding a job through freelance platforms. The paper's main contribution reflects the fact that the digital competencies of persons with disabilities in Serbia in the context of their self-employment are a topic insufficiently explored in the literature.

KEY WORDS: *digital labor platforms, digital entrepreneurship, digital competencies, inclusive digital economy, persons with disabilities*

Introduction

The nature of employment arrangements is in flux (gigeconomydata.org). Digital technologies and globalization alter the rules of the game in the labor market (Chinoracky & Ćorejova, 2019) by putting pressure on employers to respond quickly to perpetual market changes. One of the most prominent transformations in that regard is, by no doubt, the emergence of the gig or platform economy and digital labor platforms as one of its critical components (ILO, 2018). The expansion of digital labor platforms such as Freelancer, Upwork, Fiverr, etc., and the tendency of contemporary businesses to outsource some parts of their business operations to remote workers, create significant employment opportunities for interested individuals worldwide (Lazić et al., 2021). The COVID-19 pandemic accelerated the trend by making remote work a dominant way of performing business in "the world's largest work-from-home experiment" (Banjo et al. 2020), which is, according to some authors (Marsh et al., 2022), a change that will not be reversed.

While digital labor platforms are a product of digital transformation, globalization and technological progress, engagement on these platforms resembles many long-term employment arrangements with digital technologies as a medium of interaction (ILO, 2018). Nevertheless, to be able to provide adequate services to their distant employers, remote workers must possess the necessary infrastructure (Internet access and a computer) and a sufficient level of digital competencies, skills and knowledge (Ivanović et al., 2021, Radonić et al., 2021, Simović & Domazet, 2021).

Along with the virtual labor market, digital technologies and globalization created a huge potential in the area of digital entrepreneurship (Shamaki et al., 2022). As per Startup Genome (Startup Genome, 2022), the global digital startup economy generated 3.8 trillion USD in revenues in 2021. A digital startup requires technical infrastructure (computers, servers, Internet access), financial resources (owned or borrowed), and digital competencies necessary to design and develop a digital business (Simović et al., 2022).

One of the clear advantages of remote work and digital entrepreneurship is their potential to provide almost equal opportunities for persons without and with different forms of disabilities (physical, sensor and/or intellectual) to engage in the labor market, contributing in that way to their inclusive employment. Working from remote locations allows persons with disabilities to work from home, adjust the volume and pace of the work to their specific needs, create flexible work models, and apply adapted technologies for different forms of disabilities. Moreover, Europe and US data imply that persons with disabilities are more likely to be self-employed than persons without disabilities (Kitching, 2014).

Following the contemporary trends in the labor market, the need to make the digital economy inclusive for persons with disabilities was recognized in a report co-published by the Global Business and Disability Network, which operates under the International Labor Organization, and the ONCE Foundation from Spain (ILO & Fundación ONCE, 2021). The report emphasized the importance of developing digital competencies among persons with disabilities as an intermediary that has the potential to provide them with direct access to employers and flexible work engagements through digital labor platforms. In addition, Burstrom et al. (2000) implied that countries with a higher level of flexibility in the labor market create more employment opportunities for persons with disabilities, while according to Masiero (2021), digital labor is a carrier of economic opportunities for disadvantaged and marginalized individuals.

Given the context, the paper seeks to examine the concept of self-employment through digital technologies among persons with disabilities by (1) assessing the perceived level of general digital and digital entrepreneurial competencies of persons with disabilities in Serbia and their awareness of the potential of the freelance platforms; and (2) establishing whether there are any gender-related differences in that regard. Results obtained in this paper are intended to serve as a starting point in identifying

the gap between the possessed and competencies required for starting an entrepreneurial venture or finding a job using freelance platforms.

The paper is organized as follows. After the introductory remarks, Section 2 introduces the theoretical framework aimed at providing a deeper understanding of the research problem. Section 3 explains the research methodology and design, while Section 4 provides a sample description. Results and discussion are presented in Section 5. Section 6 concludes the paper and provides policy recommendations and recommendations for future research in the field.

Theoretical Background

As per official statistics (World Bank, 2022), persons with disabilities represent 15.0% of the global population and, consequently, the world's largest minority. In the EU, it is estimated that around 87 million persons face some form of disability (European Commission, 2021), of which only 50.8% are employed (compared to the employment rate of 75.0% of the population without disabilities). In Serbia, that number is estimated to be around 700,000 (Mamula Nikolić et al., 2019), while the employment rate of persons with disabilities is estimated at 13.0%, compared to the 42.5% employment rate in the total population. The share of women in the total population of persons with disabilities in Serbia is substantially higher than men (58.2% compared to 41.8%) (Marković, 2014). Moreover, as a consequence of their access to education, justice, economic opportunities, social relations, political participation, and the opportunities of gaining control over their own lives, women with disabilities are in a worse position compared to men and women without disabilities, as well as men with disabilities (Krstić & Beker, 2017).

In addition to the employment divide, persons with disabilities face difficulties in accessing and using digital technologies due to their unfavorable socio-economic status, which severely negatively impacts their online economic inclusion. According to the United Nations (UN) report on Disability and Development (2019), the digital divide between persons with and without disabilities on the global level reaches 30.0% for internet use, as many technologies remain unaffordable and unavailable for persons with disabilities. Kadijevich et al. (2020) provide information on the digital divide between persons with and without disabilities in Serbia. The digital divide was noticed in mobile phones, computers, the internet and e-

government use. Besides the divide related to basic access to digital technologies or the "first-level" digital divide, Kim and Hwang (2018) argue about the "second-level" digital divide. The authors state that attention should also be paid to the "type or level of digital use" as it impacts persons with disabilities' chances of using digital technologies to find employment and increase personal income.

Promoting inclusive economic growth, which would empower persons with disabilities to have full access to the job market, is particularly emphasized in the UN's 2030 Agenda for Sustainable Development (un.org) and European Pillar of Social Rights (ec.europa.eu). Literature suggests that high and tenacious unemployment rates among persons with disabilities stem from workplace bias (Pinilla-Roncario, Gallardo, 2022), employers' concern about interviewing persons with disabilities (Huang, Chen, 2015), challenges in utilizing public transportation while commuting to the office spaces (ILO, OECD, 2018), or the discomfort in revealing their disability status (Zyskowski et al., 2015). Therefore, working from remote locations using digital technologies is commonly perceived as an alternative to working in office premises and a chance for persons with disabilities to gain employment and generate income. Due to limited mobility, persons with temporary or permanent physical disabilities find the chance to work from home as an advantage. Likewise, persons with limitations in cognitive functioning perceive the absence of social interaction in work-from-home arrangements as a relief, as they feel that their limited social skills would negatively impact their chances of completing work tasks (ILO, 2018).

Despite scarce evidence regarding persons with disabilities' involvement in work practices through digital technologies, studies (ILO & Fundacion ONCE, 2021; Zyskowski et al., 2015) reveal the benefits of platform work for this population segment. These include overcoming workplace discrimination due to disability status, the chance of setting flexible work schedules, a greater supply of jobs due to the global geographical scope of digital platforms and the possibility of using personal adaptive technologies. Moreover, digital labor platforms' potential for employment opportunities is related to their fast-paced growth. For instance, ILO data shows that since 2010, the number of digital platforms has quintupled (ilo.org). Accordingly, the opportunities for platform work in Serbia are growing. Based on year-over-year online freelancer revenue growth, Serbia ranked among the top 10 countries in the world in 2019 (payoneer.com). Likewise, based on Oxford Online Labor Index 2020,

Serbia made it to the top 15 countries in the world with 1.3% of the online freelance workforce (onlinelabourobservatory.org).

In Serbia, governmental bodies and non-governmental organizations have recognized the need to encourage persons with disabilities to engage in the digital economy. In that regard, several IT retraining initiatives were developed to assist people with disabilities in finding employment in the IT sector. For instance, the training program developed by the Serbian Office for IT and eGovernment, UNDP and Youth with disabilities forum offers training in the basics of web programming for persons with disabilities in order to enhance their prospects for obtaining employment in the field of IT (undp.org). Another program, supported by UN Women in Serbia and European Union, offers free training in the field of visual communications and digital marketing for women with disabilities, with the aim of their employment and self-employment in the creative industries (izkruga.org). This program recognizes the potential of digital labor platforms and empowers women to search for employment as freelancers. Other free software programs in the field of graphic design for persons with disabilities, also funded by the EU, encompass an introduction to working on freelance platforms (izkruga.org).

As digital labor platforms provide lower barrier access to employment and income generation for all, the paper investigates the perception of persons with disabilities regarding their engagement in digital platform work. However, to obtain employment via digital labor platforms, persons with disabilities need to possess at least basic digital competencies. Due to the unfavorable educational background of persons with disabilities in Serbia, where only 3.2% possess an academic degree, and 32.8% haven't completed primary education (Marković, 2014), it can be assumed that only low-skilled job offers could match their competencies. As evidence on the digital competencies of persons with disabilities in Serbia is scarce, the paper aims to provide data on this issue, as it could serve as a starting point in researching the opportunity for digital labor market inclusion of persons with disabilities.

Research Methodology

The data on digital competencies of persons with disabilities were collected during March and April 2022 via a questionnaire in which the respondents assessed various statements on a four-point Likert scale: (1) I

do not have the ability / I am not able to perform the activity independently; (2) I have very modest abilities/knowledge that is insufficient to perform the activity independently; (3) I have a certain level of ability/knowledge, but still insufficient to perform the activity independently; (4) I have sufficient abilities / I can perform the activity independently.

The questionnaire consists of four parts. The first part incorporates ten questions aimed at identifying the basic socio-economic characteristics of the respondents, such as gender, age, place of residence, level of education, health problems, working ability, occupation, employment status, and salary level.

The second part is dedicated to measuring the general digital competencies of the respondents. It is developed based on the methodology used in the Digital Competencies Development System – Contents of the Self-Assessment Tool (2018), essentially based on the DigComp 2.1 framework. Although the DigComp 2.1 framework contains questions for self-assessment of the level of digital competencies and a practical task (real-life scenario) used for validating the answers to self-assessment questions, due to the specificity of the target group, this study contains only questions for self-assessment. There are 34 such questions, and they are grouped into five categories. Each of the five categories includes the following abilities:

1. *Information and data literacy* – Browsing, searching and filtering data, information and digital content; Evaluating data, information and digital content; Managing data, information and digital content.
2. *Communication and collaboration* – Interacting through digital technologies; Sharing through digital technologies; Engaging in citizenship through digital technologies; Collaborating through digital technologies; Netiquette; Managing digital identity.
3. *Digital content creation* – Developing digital content; Integrating and re-elaborating digital content; Copyright and licensing.
4. *Safety* – Protecting devices; Protecting personal data and privacy.
5. *Problem-solving* – Solving technical problems; Identifying needs and technological responses; Creatively using digital technologies; Identifying digital competence gaps.

In the third part, the respondents were asked whether they had previously started any digital entrepreneurial venture or intended to engage in digital entrepreneurship. Those who gave an affirmative answer received

12 questions about their digital entrepreneurial competencies. Finally, in the fourth part, the respondents were asked whether they knew what freelance platforms are and how they work – those who answered affirmatively received additional four questions about their knowledge of freelance platforms. The questions in the third and fourth parts are also based on DigComp 2.1 framework.

Considering this paper's scope and objectives, two research questions were raised:

1. What is the level of perceived digital competencies of women with disabilities in Serbia?
2. Are there any differences in perceived digital competencies between women and men with disabilities in Serbia?

The statistical analysis involved descriptive statistics, independent samples t-test, and reliability analysis. The data is analyzed using SPSS v 23, and the probability level is set at $p < 0.05$.

Sample Description

The sample consists of 245 Serbian residents, members of one of the twelve member organizations of the National organization of persons with disabilities of Serbia (NOOIS) and/or the Sports association of persons with disabilities Belgrade (SOSIB). The summary of sample characteristics is presented in Table 1.

Table 1. Summary of Sample Characteristics

| Gender | | Vocation | |
|---------------|---------------|---------------------------------|-------|
| Male | Female | Administrative officers | 20.0% |
| 53.1% | 46.9% | Experts and artists | 16.0% |
| Age | | Service and trade | 12.0% |
| | | Other professions | 38.0% |
| | | Unwilling to answer | 14.0% |
| | | Work status | |
| Less than 18 | 2.0% | Employed | 18.4% |
| 18-29 | 12.4% | Unemployed, searching for a job | 18.4% |
| 30-39 | 20.4% | Unemployed, student | 6.1% |
| 40-49 | 36.7% | Retired | 57.1% |
| 50-59 | 20.4% | | |
| 60 and more | 8.1% | Monthly incomes | |

| Gender | | Vocation | |
|---|-------|--|-------|
| Health problems that represent challenges to functionality | | Regular monthly income | 77.6% |
| Difficulties with walking or climbing | 71.4% | No income | 12.2% |
| Other problems | 28.6% | Other | 10.2% |
| Education level | | Level of monthly incomes | |
| Primary school | 6.1% | Up to 20.000 RSD | 18.4% |
| Secondary school | 67.5% | 20.000-40.000 RSD | 38.8% |
| Faculty | 20.4% | 40.000-60.000 RSD | 12.2% |
| PhD | 2.0% | 60.000-80.000 RSD | 10.2% |
| Other (incomplete high school, still student) | 4.0% | More than 100.000 RSD | 2.0% |
| | | Unwilling to answer/no monthly incomes | 18.4% |

Source: Authors' research

The sample distribution by gender indicates an almost equal representation of men (53.1%) and women (46.9%). Considering the age distribution, the largest percentage of respondents is aged between 40 and 44. Most of them live in Belgrade municipality. The dominant share of respondents graduated from high school (67.3%) and the faculty (20%). Considering health problems that represent challenges to functionality, the vast majority of the respondents face difficulties with walking or climbing (71.4%). The sample distribution by vocation reveals that most respondents are administrative officers (20.0%) or experts and artists (16.0%). The sample distribution by work status indicates that the most significant number of respondents belongs to the category of a retired person (57.1%). Most respondents have regular monthly incomes (77.6%), while 12.2% have no income. In addition, 36.7% of the respondents have a steady monthly income between 30.000 RSD and 60.000 RSD, while only 2.0% earn more than 100.000 RSD per month.

Results and Discussion

The respondents assessed 34 statements about their general digital competencies, 12 statements about their digital entrepreneurial competencies, and 4 statements related to their awareness of the potential of the freelance platforms. Table 2 presents descriptive statistics on the general

digital competencies of persons with disabilities in Serbia divided into five groups.

Table 2. Descriptive statistics on general digital competencies of persons with disabilities in Serbia

| General digital competencies | | N | M | SD | 1 | 2 | 3 | 4 |
|-------------------------------------|--------|----------|----------|-----------|----------|----------|----------|----------|
| Information and data literacy | Female | 115 | 3.42 | 0.80 | 4% | 9% | 17% | 70% |
| | Male | 130 | 3.60 | 0.65 | 0% | 8% | 19% | 73% |
| Communication and collaboration | Female | 115 | 3.42 | 0.76 | 4% | 4% | 17% | 74% |
| | Male | 130 | 3.46 | 0.77 | 4% | 12% | 15% | 69% |
| Digital content creation | Female | 115 | 3.14 | 0.83 | 4% | 13% | 22% | 61% |
| | Male | 130 | 3.08 | 0.87 | 8% | 12% | 38% | 42% |
| Safety | Female | 115 | 3.15 | 0.90 | 4% | 22% | 13% | 61% |
| | Male | 130 | 3.29 | 0.87 | 8% | 8% | 19% | 65% |
| Problem-solving | Female | 115 | 3.25 | 0.78 | 4% | 9% | 26% | 61% |
| | Male | 130 | 3.31 | 0.92 | 8% | 8% | 23% | 62% |

N – Number of respondents; M – Mean; SD – Standard deviation

1 – No ability / not able to perform the activity independently; 2 – Very modest abilities/knowledge that is insufficient to carry out the activity independently; 3 – Certain level of ability/knowledge, but still insufficient to perform the activity independently; 4 – Sufficient abilities / can do the activity independently

Source: Authors' research

Based on the results presented, most of the surveyed women with disabilities assessed their general digital competencies at a high level. Specifically, 70.0% of the female respondents stated that they possess sufficient abilities related to information and data literacy. They can independently browse, search and filter data, information and digital content, as well as evaluate and manage data, information and digital content. Regarding communication and collaboration, 74.0% of the female respondents stated that they could independently interact and collaborate through digital technologies, share digital content, and manage their digital identity. As far as digital content creation is concerned, 61.0% stated that they could independently develop, integrate, and re-elaborate digital

content. Regarding safety, 61.0% stated that they have sufficient abilities to protect their devices, personal data, and privacy. Finally, 61.0% claimed they possess enough technical problem-solving competencies. They can independently solve technical problems, identify needs and technological responses, creatively use digital technologies, and identify gaps in their digital competencies.

The independent samples t-test was used to investigate whether there are statistically significant differences in perceived general digital competencies of women and men with disabilities in Serbia (Table 3). Considering there are two types of the t-test depending on whether the variances of the two groups (women and men) are assumed equal, Levene's test for equality of variances was conducted. Levene's test tests the hypothesis that the variances in different groups are equal, i.e., the difference between the variances is zero. It does a one-way ANOVA on deviations, i.e., the absolute value of the difference between each score and its group's mean. The results of Levene's test are not statistically significant, indicating that the t-test with equal variances assumed needs to be performed.

Table 3. Independent Samples t-test

| Entrepreneurial competencies and knowledge of freelance platforms | | Levene's Test for Equality of Variances | | t-test for Equality of Means | |
|---|-------------------------|---|------|------------------------------|-----------------|
| | | F | Sig. | t | Sig. (2-tailed) |
| Information and data literacy | Equal variances assumed | 1.46 | 0.23 | 1.89 | 0.06 |
| Communication and collaboration | Equal variances assumed | 0.02 | 0.89 | 0.38 | 0.70 |
| Digital content creation | Equal variances assumed | 0.01 | 0.92 | -0.62 | 0.53 |
| Safety | Equal variances assumed | 1.70 | 0.19 | 1.21 | 0.23 |
| Problem -solving | Equal variances assumed | 3.45 | 0.06 | 0.62 | 0.54 |

The results are significant at the 0.05 level

Source: Authors' research

The results of the t-test are not statistically significant for any of the five groups meaning that there are no significant differences in mean values of the perceived general digital competencies between women and men with disabilities in Serbia. They both perceived to have a relatively high level of general digital competencies and sufficient abilities related to information and data literacy, communication and collaboration, digital content creation, safety, and problem-solving.

Table 4 presents descriptive statistics for self-assessment of digital entrepreneurial competencies and knowledge/use of freelance platforms.

Table 4. Descriptive statistics on digital entrepreneurial competencies and knowledge/use of freelance platforms

| Entrepreneurial competencies and knowledge of freelance platforms | | N | M | SD | 1 | 2 | 3 | 4 |
|--|--------|----------|----------|-----------|----------|----------|----------|----------|
| Entrepreneurial competencies | Female | 45 | 3.23 | 0.37 | 0% | 0% | 67% | 33% |
| | Male | 80 | 3.26 | 0.86 | 6% | 19% | 13% | 63% |
| Freelance platforms | Female | 40 | 3.06 | 0.81 | 0% | 25% | 38% | 38% |
| | Male | 55 | 3.36 | 0.58 | 0% | 9% | 36% | 55% |

N – Number of respondents; M – Mean; SD – Standard deviation

1 – No ability / not able to perform the activity independently; 2 – Very modest abilities/knowledge that is insufficient to carry out the activity independently; 3 – Certain level of ability/knowledge, but still insufficient to perform the activity independently; 4 – Sufficient abilities / can do the activity independently

Source: Authors' research

The results indicate that most female respondents (67.0%) perceive to possess a certain level of digital entrepreneurial competencies, but those competencies are still insufficient for independently engaging in digital entrepreneurship. Only 33.0% of the female respondents stated they have sufficient abilities to engage in digital entrepreneurship. However, as far as male respondents are concerned, 63.0% of them stated they have adequate competencies to engage in digital entrepreneurship. To test whether the differences in perceived entrepreneurial competencies between women and men are statistically significant, the independent samples t-test was conducted (Table 5).

Table 5. Independent Samples t-test

| Entrepreneurial competencies and knowledge of freelance platforms | | Levene's Test for Equality of Variances | | t-test for Equality of Means | |
|---|-----------------------------|---|-------------|------------------------------|-----------------|
| | | F | Sig. | t | Sig. (2-tailed) |
| Entrepreneurial competencies | Equal variances not assumed | 20.85 | 0.00 | 0.27 | 0.79 |
| Freelance platforms | Equal variances not assumed | 7.45 | 0.01 | 2.10 | 0.04 |

The results are significant at the 0.05 level

Source: Authors' research

Since the results of Levene's test for equality of variances are statistically significant ($p=0.00$), the independent samples t-test with equal variances not assumed is used. The results of the t-test are not statistically significant, indicating that the mean difference in perceived digital entrepreneurial competencies between female and male respondents is not statistically significant. Even if the difference between the mean values of the two groups seems to be high due to the relatively small sample size and large variances of the two groups (especially for the group of male respondents), the difference in means is not statistically significant. The result indicates that it is not possible to conclude that men with disabilities, on average, perceive to possess a higher level of digital entrepreneurial competencies than women with disabilities in Serbia.

Regarding knowledge of freelance platforms, the results presented in Table 4 indicate that 38.0% of the female respondents perceive to have sufficient abilities to find a job using freelance platforms. On the other hand, a significantly higher percentage of male respondents (55.0%) perceive to possess that ability. The results of the t-test (Table 5) suggest that the mean difference in knowledge of freelance platforms is statistically significant ($p=0.04$), which means that men with disabilities, on average, perceive to have a better understanding of freelance platforms than women with disabilities in Serbia. This result is obtained using the independent samples t-test with equal variances not assumed since the result of Levene's test for equality of variances is statistically significant ($p=0.01$).

Cronbach's Alpha was used to measure the reliability of the statements about the digital competencies of persons with disabilities. Reliability means that a respondent should get the same result if he/she fills out a

questionnaire under the same conditions at two different time points. Furthermore, two respondents with identical characteristics should get the same results. Table 6 shows the Cronbach's Alpha coefficients for each construct (five groups of general digital competencies, digital entrepreneurial competencies, and knowledge of freelance platforms) and the number of items (statements in the questionnaire) that comprise each construct.

Table 6. Reliability analysis

| Competencies | Number of Items | Cronbach's Alpha |
|---------------------------------|------------------------|-------------------------|
| Information and data literacy | 6 | 0.925 |
| Communication and collaboration | 12 | 0.968 |
| Digital content creation | 6 | 0.932 |
| Safety | 4 | 0.923 |
| Problem-solving | 6 | 0.932 |
| Entrepreneurial competencies | 12 | 0.948 |
| Freelance platforms | 4 | 0.785 |

Source: Authors' research

According to Field (2009), values of this coefficient above 0.7 are considered acceptable. Since the values of all Cronbach's Alpha coefficients are much above the defined threshold, it can be concluded that all measuring instruments have good reliability.

Conclusion and Policy Recommendations

The research presented in this paper was designed to identify the perceived levels of general digital and digital entrepreneurial competencies of persons with disabilities in Serbia and their awareness of the potential of digital labor platforms, with a special emphasis on gender-related issues. The results obtained aim to serve as a starting point in researching the opportunity for digital labor market inclusion of persons with disabilities in Serbia.

The overall conclusion of the research presented in this paper is that persons with disabilities in Serbia perceive that their general digital competencies are at a relatively high level. This could be the result of the efforts of the Serbian National Employment Service (NES) in providing training opportunities for unemployed persons with disabilities, as almost

half of the opportunities available were designated for training in the field of informatics, IT, and electronic business. Anyhow, research results indicate that some respondents still face issues in independently navigating the internet and reaching official websites or using the applications of state authorities. It was also noticed that respondents have difficulties assessing the reliability of information online and distinguishing which personal data should be visible on the internet. This prevents them from accessing information of public importance, making them susceptible to manipulation and personal data misuse.

A significant percentage of respondents face challenges in managing folders and files, storing and sharing folders online, as well as digital communication and digital content creation. This means that a non-negligible percentage of respondents face difficulties in the independent use of software for processing text and graphic content and creating presentations, as well as in the use of software for conference calls and online meetings. This significantly lowers their chances of obtaining employment, as basic general digital competencies are insufficient to maintain a competitive position in the labor market.

Therefore, it is necessary that competent institutions in Serbia continue providing training in the domain of basic general digital competencies with an increase in coverage, i.e., the number of training opportunities available for participants, with equal geographical and gender representation.

A lower level of perceived general digital competencies was also noticed regarding more complex tasks, such as the use of content creation software or the use of advanced technologies, for instance, virtual reality and 3D printers. Accordingly, it implies that training organized by the NES should also provide participants with knowledge on the use of more advanced software.

Unlike general digital competencies, respondents didn't show much confidence regarding digital entrepreneurial competencies and the knowledge of freelance platforms and the employment chances they provide. In most cases, respondents didn't show interest in starting their digital entrepreneurial venture, nor were they aware of the online platform work concept and the employment opportunities they offer. Since the primary focus of this research was to identify the gap areas for competence building through training programs, the research results point to the necessity of developing and continuously conducting training programs aiming at digital entrepreneurship and digital labor platforms, with a

particular focus on women with disabilities, due to identified competency gap in this regard. Training should also include guidelines on opportunities for self-employment and obtaining employment without the mediation of the NES, that is, through direct contact with the employer.

NES training should offer specialized knowledge aligned with the digital labor market's needs, enabling participants to apply for jobs offered on online labor platforms. It already makes part of the retraining programs initiated by several non-governmental organizations in Serbia, including creative writing workshops for people with disabilities and software training for obtaining employment in creative industries. The programs implemented by the NES should include an introduction to the work on digital labor platforms and emphasize their role in starting a digital entrepreneurial venture.

Studies on digital competencies and the engagement of persons with disabilities in digital labor platforms are scarce. To the best of our knowledge, no similar research was conducted in Serbia. Apart from contributing to the body of literature, this paper might initiate a dialogue in academic circles on more inclusive and fairer digital platform work for those who are already excluded from the traditional labor market. Moreover, this paper could contribute to evidence-based policymaking in the sphere of digitalization, digital inclusion, and employment, as it offers first-hand information on the digital competencies of persons with disabilities and their intentions for self-employment in the digital economy.

Nevertheless, one of the most prominent limitations of this research is the fact that it was based on self-assessment of the specified competence levels. More realistic insight into the actual levels of specified competencies could be provided by organizing the research based on knowledge and ability questions which would measure the actual levels of specified competencies. Future research should be directed toward this goal on a larger sample of respondents.

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