

Digital divides in online job search: Insights from Europe

Research Article

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Abstract: In a world where everything is increasingly digitalized, and many services are accessed online, including employment opportunities, digital skills have become increasingly important. However, recent technological developments and the uneven distribution of access and skills have deepened existing social inequalities and made the existence of digital divides across age, education, income, and other socio-demographic lines blatant. In this context, this article has analyzed the digital divide in online job searching behavior, focusing on factors that can influence internet job searching in Europe. For this endeavor, we used data from the last wave of the European Quality of Life Survey (2016) and employed binary logistic regression models. We have used both country-level indicators and individual socio-demographic factors. The findings indicate that country-level technological development positively impacts the subjective probability of finding a job using the Internet, while Internet use at the individual level also positively influences this probability. Furthermore, the analysis of socio-demographic characteristics reveals the presence of a digital divide.

Keywords: *Online job search • Digital divide • Labor market • Europe • The digital economy and society index*

1. Introduction

Technological development has brought multiple benefits to the labor market. Expanded access to the Internet has influenced the labor market through the way labor services are provided, how local markets shape labor demand, and how (potential) workers and firms communicate with each other (Autor, 2001; Suvankulov, 2010). The way individuals search for a job using the Internet can vary; they may use dedicated websites to find a job, post resumes on specific websites, search for jobs on employers' websites, and use the Internet to exchange information via e-mail with employers or other employees at those firms (Green et al., 2011). In addition to the uses mentioned above, social media sites (such as Facebook, Twitter, LinkedIn, etc.) now offer new ways for individuals to search for a job by allowing the creation of digital identities or the creation of online communities (Mowbray & Hall, 2020; Sharone, 2017).

Over time, the Internet has become increasingly important in the job search process. Kuhn and Mansour's (2014) research showed that in 2008/2009, the most used online methods for finding a job among young people (24–29 years old) were sending CVs and searching for advertisements for vacant jobs. They also indicate that in the job search process, the Internet was used formally rather than informally (contacting friends or relatives) (Kuhn & Mansour, 2014).

Internet job search has become complementary to other "traditional" job search methods. Kuhn and Skuterud (2000) studied the impact of using the Internet for job search compared to conventional job search methods among unemployed women in the USA in 1998. They found that people using the Internet were more likely to use other traditional job search methods. According to the authors, these results imply that the Internet is used for job search, complementary to conventional methods. A similar conclusion regarding the complementarity of job search methods was also observed by Stevenson (2008) and Suvankulov (2010), who used the same data source in their research. According to Stevenson (2008), as Internet access increases in the US states, the use of traditional job search methods among the

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unemployed increases. At the same time, Suvankulov (2010) showed that among the unemployed in the USA, Germany, and South Korea, the intensity of use of traditional job search methods (represented by the number of methods used) is positively associated with Internet use.

Despite a growing body of literature on the use of the internet for job searching, literature integrating both the country-level digital development and individual characteristics to job-search outcomes is still limited; most studies focus on access or usage rather than outcomes. Moreover, few analyses test cross-level mechanisms, such as whether living in a more digitally developed country amplifies the returns to individual internet use for job search. In this context, the present study contributes to the literature on digital inequalities and labor market outcomes by combining predictors of country-level digital development with individual-level characteristics to better understand online job finding mechanisms.

As job search increasingly shifts to digital channels, the present research also has implications for public policy. Our research emphasizes implications for policymakers on the importance of access, skills, the design of (public) online services, and digitalization for reducing inequalities in labor-market outcomes. Our results imply that broad investments in terms of connectivity, human capital, and digital public services are necessary in order to support more equitable participation in online job searching. In the context of the European Union's Digital Decade, this research is especially relevant, as it aims to enhance digital skills and improve access to digital services for various groups of individuals.

In this article, we examine how technological development can influence finding a job via the Internet in Europe using data from the 2016 European Quality of Life Survey. We have used both country-level indicators and individual-level sociodemographic factors. The literature on this topic informed the research, as exemplified in the following sections.

2. Literature review

2.1 The digital divide in Internet job search

In recent decades, researchers have analyzed what has been referred to in scientific literature as the “digital divide” in different contexts (Hosszu & Rughiniș, 2020; Ivan & Cutler, 2021; Karaoglu et al., 2021; Lythreathis et al., 2022; Zamfir et al., 2024). Some authors define it as

the gap between people with access to information and communication technology to perform certain activities and those without (Lievens et al., 2002; Suvankulov, 2010). Accordingly, the digital divide/gap in the use of the Internet to search for jobs has been studied, giving special attention to differences between individuals on specific socio-demographic characteristics such as race, ethnicity, gender, age, education, income, or residence area (Green et al., 2011; Kuhn & Mansour, 2014; Kuhn & Skuterud, 2000; Stevenson, 2008; Suvankulov, 2010). Much research has shown that differential access to the Internet can explain the gap in using the Internet to search for a job (Kuhn & Mansour, 2014; Kuhn & Skuterud, 2000; Stevenson, 2008). In this respect, Kuhn and Mansour's (2014) research is representative, indicating that home Internet access is the most important predictor of using the Internet to search for a job. Thus, inequalities in the use of the Internet to search for a job can be explained almost entirely by disparities in Internet access. Moreover, recent studies indicate that online job search disparities can be explained by the levels of digital skills (De Marco et al., 2025; Dumont et al., 2024; Karaoglu et al., 2021).

The relationship between Internet use and occupational status has been examined in several studies, including Kuhn and Skuterud (2000) and Stevenson (2008). Kuhn and Skuterud (2000) analyzed data on Internet use in the USA in 1998 (Internet and Computer Use Supplement to the Current Population Survey). They found that the use of the Internet for job search is more common among the unemployed than among other occupational groups and is among the most widely used job search methods. According to the same study, people outside the labor market are less likely to use the Internet to search for a job than those already in the labor market (employed or unemployed) (Kuhn & Skuterud, 2000). In contrast to the results of Kuhn and Skuterud (2000), Stevenson's (2008) study showed that the majority of people who use the Internet to search for job information are, in fact, already employed. Of these, those who use the Internet to a greater extent are more likely to change jobs. Other research from the UK that analyzed data from 2006 to 2008 confirms Stevenson's (2008) findings that employed people are more likely to use the Internet to find a job than unemployed or inactive individuals in the labor market (Green et al., 2011).

Belonging to a particular racial or ethnic group may influence the likelihood of searching for a job online. Results by Kuhn and Skuterud (2000) indicate that Hispanic and African American employees use the Internet less to search for jobs than white employees. However, when Internet access is considered, African Americans

and Hispanics are more likely than whites to use the Internet to find employment (Karaoglu et al., 2021; Kuhn & Skuterud, 2000). Thus, disparities in Internet use for job search along ethnic or racial lines can be explained by “differential access to technology” (Kuhn & Skuterud, 2000, p. 10). Similar results were reached by Stevenson (2008), Kuhn and Mansour (2014), and Suvankulov (2010), who showed that African Americans are less likely than whites to use the Internet to search for a job when Internet access is not taken into account, and there is a higher likelihood that African Americans are more likely to search for a job via the Internet when Internet access is taken into account.

Immigrants from a given country use the Internet less to search for jobs. In this respect, research by Suvankulov (2010) has shown that unemployed immigrants are less likely to use the Internet to find employment in Germany and the USA.

Kuhn and Skuterud (2000) have shown that men are more likely to use the Internet to find a job than women, even when Internet access is considered. In addition, Suvankulov (2010) found that unemployed women in South Korea were more likely to use the Internet to search for a job than unemployed men between 1999 and 2006. Similarly, De Marco et al. (2025) revealed that women were more likely to have online job search skills than their male counterparts. However, other research showed no significant differences between women and men in using the Internet to search for a job (Green et al., 2011).

If age is taken as a control variable, evidence from the literature shows that younger people are more likely to use the Internet to find a job than older people. Stevenson (2008) found that the probability of using the Internet to find a job decreases with age among both employed and non-employed individuals. Other research using data from the UK (Green et al., 2011), the USA (Kuhn & Skuterud, 2000; Suvankulov, 2010), Germany, and Korea (Suvankulov, 2010) has shown that using the Internet to find a job is more common among younger people than among older people. This pattern is also confirmed by studies from recent years (De Marco et al., 2025; Dillahun et al., 2021). According to Stevenson (2008) and De Marco et al. (2025), these differences can be explained by the lower willingness to find a job, change employers, or enter the labor market, as well as lower levels of digital skills among older individuals.

Research has shown that using the Internet to find a job is positively associated with education. Kuhn and Skuterud’s (2000) study of 1998 data in the USA showed that the use of the Internet in job search was lower among individuals with a high school education or less than those

with tertiary education. Analyzing data from the same source, Stevenson (2008) and Suvankulov (2010) came to the same conclusion that education is positively correlated with Internet use for job search. On the other hand, looking at more recent work using more recent data, research by Kuhn and Mansour (2014), which looked at 2008/2009 US data among young people, and research studies by Green et al. (2011), which looked at LFS data from 2006 to 2009 (among several age groups), and Karaoglu et al. (2021), which used survey data from 2015, show that this has not changed; people with higher education tend to use the Internet to find a job to a greater extent.

Like education, an individual’s income can influence the likelihood of searching for a job online. Suvankulov (2010) analyzed data from the USA and Germany and found that unemployed people in higher-income households are more likely to use the Internet to search for jobs. Looking at employed individuals, Stevenson (2008) observed that the higher the income, the lower the probability of looking for a job. Similar findings were revealed by Karaoglu et al. (2021) and De Marco et al. (2025), who observed that higher-income individuals are less likely to use the Internet to search for a job. This result may show that higher-income people are more likely to have a job according to their qualifications (Stevenson, 2008).

Residence area also influences a person’s likelihood of searching for a job using the Internet. Belonging to an area with less access to the Internet may reduce the probability of using the Internet to search for a job. For example, research by Green et al. (2011) showed that people in London were more likely to use the Internet to search for work than people living in other parts of the UK. The authors argue that this result may be influenced by the widespread availability of Internet access and the frequency of Internet job vacancies published outside London. Similarly, Suvankulov (2010) found that people in US metropolitan areas were more likely to use the Internet to search for jobs than people in other areas.

2.2 Effects of the Internet on job search

One of the positive effects, influenced by the development of Internet-based job search methods, is a decrease in the duration of unemployment. Results of Suvankulov’s (2010) research among unemployed people in the USA, Germany, and South Korea indicate that Internet use increases the probability of reemployment within the first 12 months after the survey. Kuhn and Mansour (2014) found that in the USA, among young people in the years 2008/2009, those who used the Internet to search for a job had their

unemployment duration reduced by about 25% compared to those who did not. Similarly, recent studies have shown that adding additional skills to the online profile using online professional platforms lowers the unemployment spell gap (Baird et al., 2024). The authors claim that this is facilitated by the development of more and more dedicated job-finding websites by private firms or government organizations and by the spread of infrastructure for connecting to the Internet (Kuhn & Mansour, 2014).

Another positive effect of using the Internet for job searches is a decreased likelihood of leaving the labor market. Beard et al. (2012) examined data from the US Bureau of Labor Statistics, using regression analysis, they showed that “access to the Internet at home or in other public places reduces the probability of an individual dropping out of the labor market, due to discouragement about job prospects, by about 50% relative to individuals who do not use the Internet” (Beard et al., 2012, p. 270).

Another positive effect is occupational mobility due to access to information. Suvankulov (2010) showed that using the Internet to search for a job positively correlates with occupational and inter-industry mobility in the USA and South Korea. He acknowledges that the Internet contributes to individuals’ awareness of new job opportunities in other occupations and industries.

Sharone (2017) studied the effects on individuals caused by social media networks such as Facebook or LinkedIn for job search. He conducted in-depth interviews with individuals who use these social networks to find jobs and participated in workshops designed to teach potential employees how to use them to acquire jobs. The results show that social networks increase individuals’ exposure, but this exposure can have two effects. On the one hand, this exposure increases the visibility of potential employees to potential employers and facilitates engagement in networking practices (Sharone, 2017). On the other hand, exposure can lead to vulnerabilities in how information is shared on the Internet, with the author noting that in the social-mediated job market, “one cannot customize the extent or nature of information disclosed according to audience, context, or established level of trust” (Sharone, 2017, p. 24). Moreover, sites such as Facebook or LinkedIn generate disciplinary pressures to conform to a particular pattern of presenting oneself as a potential candidate, and sometimes disciplinary pressures on presenting one’s privacy on the Internet. Furthermore, the author believes that using these types of sites can produce new forms of stratification based on age and the images posted on these sites. On the other hand, according to Sharone (2017), social media sites may disadvantage

individuals who pursue two or more types of careers or who do not have a conventional career trajectory.

3. Methodology

To observe how individuals used the Internet to find a job, we analyzed data from the latest European Quality of Life Survey 2016 by the European Foundation for the Improvement of Living and Working Conditions (2018). The survey included approximately 37,000 respondents from 33 countries, and the samples in each country were representative of the population aged 18 and over.

To examine the influence of technological development on job search behavior using the Internet, we conducted two binary logistic regression models with the dependent variable: finding a job using the Internet. Binary logistic regression is a method used to predict two-category independent variables or outcomes. Compared to linear regression, which predicts a continuous numerical outcome, logistic regression predicts the likelihood of a predictor to pertain to a specific category (usually coded as 0 or 1). Binary logistic regression can handle both continuous and categorical predictors. The results can be read using the exponentiated coefficients or odds ratio, which indicate how the odds of the outcome change when an independent variable increases by one unit, controlling for other variables (Nick & Campbell, 2007). We opted to use binary logistic regression instead of other regression models because our dependent variable is dichotomous, meaning it has two possible outcomes: 1 for those who found a job using the Internet and 0 for those who did not. Additionally, we chose binary logistic regression because it can effectively handle a combination of categorical and continuous predictors.

We applied the analysis to data collected from individuals from 28 European countries (European Union countries and the United Kingdom). According to the survey findings, on average, 8% of individuals found their job online, with the share varying significantly among EU countries, ranging from 3% in Portugal to 16% in Sweden (European Foundation for the Improvement of Living and Working Conditions, 2018).

To observe the impact of digitization on job search behavior, the Digital economy and society index for 2016 (DESI) was introduced in the first model, calculated as the sum of the weighted averages of 5 dimensions (on a scale from 1 to 100): connectivity (25%), human capital (25%), internet use (15%), digital technology integration (20%) and digital public services (15%) (European Commission, 2021).

In the second model, the scores calculated for each of the five dimensions were introduced to see the impact of digitization on Internet job search behavior. We will present the methodology for each dimension shortly, as provided by the European Commission (2016, 2021). The connectivity dimension refers to the deployment of Internet (broadband) infrastructure and its quality, and it includes the weighted average of four sub-dimensions: fixed broadband take-up (25%), fixed broadband coverage (25%), mobile broadband (35%), and broadband price index (15%). The human capital dimension of DESI refers to the skills needed to keep up with the opportunities offered by the digital society, and it is calculated as the sum of the weighted average of two sub-dimensions: Internet user skills (50%) and Advanced Skills and Development (50%). The Internet use dimension refers to the variety of activities that citizens use the Internet to do online. This dimension is calculated as the weighted average of three subdimensions: Internet use (25%), online activities (50%), and transactions (25%). The dimension of digital technology integration refers to the digitization of the business sector and the development of online commerce, and it is calculated as the weighted average of two sub-dimensions: business digitization (60%) and digital commerce (e-Commerce) (40%). The last dimension – digitization of public services – is centered on the idea of e-government and is based entirely on this sub-dimension (i.e., E-government). It is calculated using indicators such as the percentage of people who have used the Internet to interact with the government, the extent to which government websites offer transactional services, the extent to which government websites offer connected services, and the government's commitment to open data.

At the individual level, a variable on Internet use for non-work-related purposes was also introduced in the model as a binary dummy variable. The value 1 was for individuals who used the Internet daily or almost daily, and the value 0 for the rest of the responses (At least once a week/Once to three times a month/Rarely/Never). At the same time, in order to observe the digital divide among people who found a job using the Internet, several individual socio-demographic characteristics, such as immigration status, gender, subjective income, residence area, presence of partner, parental status, age, perceived health, and education, were introduced as dummy variables in the models.

4. Results

A country's technological development impacts job search behavior. The first model (Table 1) shows a positive

association between the DESI and finding a job online. Thus, individuals in countries with a higher level of digitization (overall) are more likely to have found a job via the Internet.

A closer look at the dimensions from which the DESI is calculated shows that some have a positive impact on the likelihood of finding a job via the Internet (Model 2).

The connectivity dimension (which refers to the development of the Internet infrastructure and its quality) positively impacts the likelihood of finding a job via the Internet. Thus, individuals from countries with better Internet infrastructure are more likely to acquire a job via the Internet than those from countries with poorer Internet infrastructure. Developing a country's Internet infrastructure facilitates individuals' access to online job search channels such as government websites, specialized websites, or online communities on social media sites. Thus, as other authors have noted, Internet access plays an important role in explaining job search behavior via the Internet (Kuhn & Mansour, 2014; Kuhn & Skuterud, 2000; Stevenson, 2008).

The human capital dimension, which includes indicators on digital skills development, positively impacts finding a job through online platforms. Thus, individuals in countries with more developed digital skills are more likely to find a job via the Internet than individuals in countries with less developed digital skills. Thus, a higher emphasis on developing digital skills within a country's education system influences the likelihood of using the Internet to find a job. Our findings are in accordance with other research, such as that carried out by Karaoglu et al. (2021). It has been shown that at the individual level, a higher level of digital skills increases the likelihood of an individual using the Internet to find a job.

The dimension of digital technology integration, which refers to the digitalization of the business sector and the development of online commerce, also positively influences the likelihood of finding a job via the Internet. Individuals in countries where digital technology is more integrated into business are more likely to have found a job online. This result can be explained by the fact that integrating digital technology within firms facilitates, alongside labor processes, the recruitment process and communication with potential staff through various platforms and digital tools. Therefore, incorporating digital technology within companies can encourage potential employees by facilitating an easy online recruitment application process.

The dimension of Internet use, which refers to the variety of activities that citizens carry out using the Internet in a given country, does not significantly influence the individual's probability of using the Internet to

		Model 1		Model 2	
		Exp (B)	Sig.	Exp (B)	Sig.
Immigration (Ref. Non-immigrant)	Immigrant	1.248***	0.001	1.269***	0.001
Gender (Ref. = female)	Male	1.095*	0.066	1.094*	0.070
Subjective income (Ref. Coping with the monthly needs very easy/easy/fairly easy)	Coping with the monthly needs with difficulty/hard/very hard	1.382***	0.000	1.420***	0.000
Residence area (Ref. Rural)	Urban	1.147**	0.041	1.168**	0.021
Partner (Ref. Doesn't have a partner)	Has a partner	0.802***	0.000	0.789***	0.000
Parental status (Ref. Doesn't have children)	Has children	0.773***	0.000	0.768***	0.000
Age (Ref. 65 years old and over)	18–24 years old	46.287***	0.000	46.657***	0.000
	25–34 years old	30.514***	0.000	30.776***	0.000
	35–49 years old	19.481***	0.000	19.885***	0.000
	50–64 years old	11.215***	0.000	11.294***	0.000
Subjective health (Ref. Fair/Bad/Very bad)	Very good/Good	0.883*	0.059	0.915	0.181
Education (Ref. Less than lower secondary level-ISCED 2 and below)	Upper secondary and post-secondary (ISCED 3–4)	1.672***	0.000	1.714***	0.000
	Tertiary (ISCED 5 and over)	2.593***	0.000	2.703***	0.000
Internet use (Ref. At least once a week or less)	Daily	1.304***	0.011	1.241**	0.039
Digital economy and society index (1–100)		1.054***	0.000		
	Connectivity			1.040***	0.000
	Human capital			1.017**	0.044
	Use of Internet			1.001	0.883
	Integration of digital technologies			1.028***	0.000
	Public digital services			0.980***	0.000
Constant		0.000***	0.000	0.000***	0.000
Model notes:		Cox & Snell <i>R</i> square = 0.061		Cox & Snell <i>R</i> square = 0.064	
		Nagelkerke <i>R</i> square = 0.141		Nagelkerke <i>R</i> square = 0.149	
		Chi-square = 1520.660, Sig = 0.000		Chi-square = 1608.860, Sig = 0.000	
		<i>N</i> in model = 22,141 (total = 30,809)		<i>N</i> in model = 22,141 (total = 30,809)	
		Df = 15		Df = 19	

Table 1. Binary logistic regression for finding a job using the Internet as the dependent variable.Source: EQLS 2016. Author's calculations. Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

find a job. Thus, how Internet users use the online environment to perform various activities does not influence the likelihood of finding a job online in this model.

The extent of development of digital public services has a negative influence on the likelihood of using the Internet to find a job. Thus, individuals in countries with more developed digital public services are less likely to search for a job online. This result, which may seem paradoxical at first glance, could be attributed to the fact that

digital public services in a given country are not necessarily utilized by the entire population. As a result, even if these services are developed, their usage may be limited to a small segment of the population. On the other hand, this result may be influenced by how this dimension is calculated: the dimension of digital public services does not integrate online services to support employment in the labor market. Instead, it considers the democratic process of governance and data transparency.

At the individual level, the frequency of using the Internet for non-work-related purposes can influence a person's likelihood of finding a job online. Thus, individuals who use the Internet daily are more likely to find a job online than individuals who use the Internet less frequently. This result may correlate with a higher level of digital literacy among people who use the Internet frequently for non-work-related purposes than those who use it less frequently.

Regarding the digital divide in using the Internet to find a job in these two models, the significant influence of sociodemographic variables on the individual's likelihood of using the Internet to find a job is obvious. The results of the present study, in contrast to the research results of Suvankulov (2010), showed that immigrants are more likely than natives to have used the Internet to find a job. This result may be associated with technological development in recent years. It may also be related to lower social capital among immigrants in host countries, which prompts them to use online solutions to find a job.

Regarding gender, both models show that men were more likely than women to find a job via the Internet. These results align with the research results of Kuhn and Skuterud (2000). Income is another variable that may influence the probability of using the Internet to find a job. Because the income variable accumulated too many non-responses, we opted for the subjective income, an individual income evaluation regarding monthly needs. The results indicate that people who meet their monthly needs with difficulty, hardly, or very hard, are more likely to have found a job through the Internet than people who meet their monthly needs easily or quite easily. These results indicate that, in general, jobs found online by individuals in the sample do not offer wages that meet monthly needs, and in this sense, these may be precarious jobs.

Education is another factor that can impact online job search behavior. Individuals with a higher level of education are more likely to use the Internet to find a job. Specifically, individuals with upper secondary and post-secondary or tertiary education are two to three times more likely than individuals with lower secondary education or less to have found a job via the Internet. These results may be linked to a higher level of digital literacy among individuals with upper secondary or post-secondary and tertiary education. These results are in line with other research on this topic, such as studies by Kuhn and Skuterud (2000), Stevenson (2008), Suvankulov (2010), Green et al. (2011), and Kuhn and Mansour (2014).

The residential area may also be a factor that can impact the likelihood of finding a job online. The two models show an association between the urban area of

residence and the possibility of finding a job via the Internet. This result can be explained by a more developed Internet infrastructure in urban areas than in rural ones, which correlates with a lower digital skill level in rural areas. These results are consistent with Suvankulov (2010) and Green et al. (2011).

Family structure may influence the probability of seeking and finding a job online. The two models show that the presence of a partner and the presence of children negatively affect the likelihood of having a job acquired via the Internet. Thus, individuals with a partner and children in the household are less likely than those who do not have a partner or children to have found a job via the Internet. These results may be correlated with the fact that individuals at the ages at which they are usually married and have children tend to be employed in stable jobs or not interested in changing careers or entering the labor market.

The previous results can also be correlated with the influence of age. According to both models, the older an individual gets, the less likely he is to find a job online. Thus, it can be inferred from the table that people aged 64 and under are more likely to find a job online than those aged 65 and over. Furthermore, the likelihood decreases with increasing age, with the highest likelihood of using the Internet to find a job being registered among youth (18–24 and 25–34 years old). This result may be explained by the fact that individuals in the 35–49 and 50–64 age groups already tend to have stable jobs or a lower willingness to change jobs/enter the labor market. At the same time, these results may also be correlated with certain life events (such as starting a family, having children, etc.) and lower levels of digital skills. At the same time, the lower likelihood of having an Internet-acquired job at ages over 65 also correlates with retirement age. These findings align with other results from the literature (Green et al., 2011; Kuhn & Skuterud, 2000; Stevenson, 2008; Suvankulov, 2010).

Health status is another factor that may influence the probability of finding a job using the Internet. According to the first model in Table 1, individuals who perceive their health to be better or very good are less likely to find a job using the Internet than individuals with poorer health status. This may correlate with a higher need for people with health conditions to find a job, as well as a greater diversity of jobs on online platforms that are also suitable for people with certain health conditions or disabilities.

5. Conclusion and discussion

In this article, we examined how technological development can influence job finding using the Internet in

Europe. We used the 2016 European Quality of Life Survey data and applied two binary logistic regression models. The research has shown that technological development at the country level positively impacts the subjective probability of finding a job using the Internet, while Internet use at the individual level also positively influences this probability. Moreover, higher scores in terms of connectivity, human capital, and integration of digital technologies at the country level increase the probability of finding a job online at the individual level. On the other hand, the analysis also showed a digital divide in the use of the Internet to find a job along the lines of gender, age, family structure, residence area, income, and immigration status.

Our article contributes to the body of literature on digital inequalities and labor market outcomes by combining country-level digital development predictors and individual-level Internet use into a framework for predicting online job search. It shows how national contexts in terms of digital development contribute to individual opportunities on the labor market.

Policymakers can use the findings of current research. For example, our findings indicate the existence of a digital divide in online job search by age, gender, and education. We recommend developing programs such as digital training courses to target low-income individuals, older adults, and other vulnerable population groups. Moreover, there is also a rural-urban digital divide in online job search. In this context, we recommend implementing educational and professional training programs to improve Internet access, skills, and awareness regarding online job opportunities in rural areas. Hence, we recommend measures that are embedded in a broader place-sensitive digital inclusion agenda that integrates skills, connectivity, and service design, and is supported by targeted financing (for example, European Social Fund + and Cohesion Policy funds). These measures can contribute to both economic performance and social progress (Davidescu et al., 2024). Moreover, public digital services are associated with a lower probability of finding a job online. This result may be linked to issues related to the design of digital public employment services, as well as a failure to meet the specific needs of different job seekers. Therefore, we recommend enhancing digital employment services to align with a diverse pool of users and their expectations and needs, focusing on accessible, user-centered, and hybrid channels (self-service portals combined with assisted traditional support). Within the EU's Digital Decade objectives on skills, connectivity, and digital public services, and the targeted use of EU and national funds to implement them can ensure that digitalization promotes

equal access to job opportunities for all populations and regions, rather than creating disparities. Specifically, a focus on basic/advanced digital skills, good connectivity in lagging areas, and access and usability of public employment e-services are complementary forces that can narrow the digital divides.

Our study is not without limitations. Firstly, our study uses cross-sectional data, capturing the information only at one point in time. Henceforth, we cannot conclude the evolutions and trends in job search behavior or technological development over time. Future research based on longitudinal data is needed to assess temporal patterns in technological development and online job-searching behavior. Another limitation arises from using data from the European Quality of Life Survey 2016, which only captures pre-pandemic trends. Hence, it does not capture the rapid acceleration of platform intermediation, remote recruitment, and recent changes in digital public services. As a result, our results must be interpreted as a baseline structure of digital inequalities rather than a precise description of current levels. Therefore, to account for this limitation, we plan to replicate and extend the current analysis with the forthcoming EQLS study in 2026. Other statistical techniques can be used, such as Decision Trees or Random Forests, as well as multi-level models, which open the possibility to include more country-level indicators for characterizing labor markets in countries covered in the survey. Moreover, although we controlled several country-level and individual-level variables, our research does not include information about the quality of online job platforms in a country, as well as users' experiences using platforms and social-media channels for job searching. Future research may cover these limitations by including qualitative analyses comprising interviews, focus groups with specific communities, platforms/profiles content analysis on the presentation of self (profiles on LinkedIn and other social media platforms), and digital ethnography on job-searching groups (Facebook groups and Reddit communities).

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Author contributions

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Conflict of interest statement

The authors state no conflict of interest.

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