Power System Technology
ISSN:1000-3673

Received: 16-01-2025 Revised: 05-02-2025 Accepted: 22-03-2025

Digital Exclusion on the SIAPKerja Platform in the Implementation of Welfare-to-Work Programs in Indonesia

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Abstract: Digitized Welfare-to-Work (WtW) programs have the potential to improve the quality of public services by providing individuals with services tailored to their needs. However, in developing countries such as Indonesia, the implementation of digitized WtW programs requires reassessment, as it may lead to digital exclusion, particularly among individuals with limited access to digital technology. This study will closely examine how digital exclusion occurs and influences the implementation of a fully online welfare-to-work program with the launch of the SIAPKerja platform in the Job-Loss Insurance (JLI) program. In order to investigate the case, this study employs a mixed-method approach combining surveys with program participants and qualitative semi-structured interviews with 37 policymakers and service providers. The results show that the digitization of WtW services through the JLI program has the potential to enhance service efficiency and affordability. The integration of digital technology, particularly through the SIAPKerja platform, allows participants to create professional portfolios, search for jobs, and claim benefits under the JLI program. However, digital exclusion remains a significant challenge in the implementation of the JLI program. Some participants face difficulties accessing the SIAPKerja platform due to geographical barriers, low digital literacy, age-related factors, and socio-economic constraints. Furthermore, limitations in database integration reduce the reliability of the SIAPKerja application, as participant data is only accessible from the National Social Security Administration for Employment (NSSAE) office where they are registered, restricting seamless access to services. To enhance the effectiveness and inclusivity of the JLI program, We recommend the policymakers to create hybrid and user-friendly menus on the SIAPKerja platform to mitigate the risks of digital exclusion. Furthermore, future research should focus on evaluating the effectiveness of integrating national employment databases, examining public-private partnerships in digital infrastructure, and exploring hybrid WtW models to provide valuable insights for optimizing employment services in developing countries.

Power System Technology
ISSN:1000-3673
Received: 16-01-2025 Revised: 05-02-2025 Accepted: 22-03-2025

Keywords: *Digital Exclusion, digital welfare state, Indonesia, welfare-to-work, SIAPKerja Platform.*

1. Introduction

Indonesia has recently entered a new phase in welfare-to-work (WtW) reform. In mid-2020, the Indonesian government launched the Pre-employment card program (PECP) followed by the Job-Loss Insurance (JLI) program a year after. WtW refers to a set of policies and programs designed to aid individuals in transitioning from receiving welfare benefits to becoming employed through several training programs and welfare benefits to help welfare recipients gain employment and self-sufficiency. The implementation policy utilizes digital technology to conduct employment services. The digital transformation of welfare systems has become a significant effort to reduce unemployment in the digital era. The shift towards digital welfare is driven by the promise of increased efficiency, reduced costs, and improved access to services for citizens. However, this transition has its challenges and implications, particularly for those already disadvantaged in society. The digital revolution has transformed how social welfare services are delivered, with a significant shift towards online platforms and digital-first strategies.

The two programs (PECP and JLI) are parts of policy initiatives that utilize digital transformation to promote welfare-to-work (WTW) programs. Initially, these programs are part of the National Economic Recovery Program and are aimed at providing policy support to individuals who are currently unemployed. The use of digital technology in these welfare-to-work programs refers to 'digitalization' in welfare-to-work programs divided into three categories: virtual engagement (remote activation), transactional automation (self-activation), and digital triaging (targeted activation) [1]. These technologies have also given rise to an emergent digital welfare state in the context of public services and welfare provision. As services are increasingly digitalized in the private sector, the risk of excluding vulnerable groups from accessing necessary supporting policies becomes a pressing issue. This vulnerable group can potentially lose their jobs because they cannot keep up with the times caused by the rise of digitalization and robotization. Therefore, the program is called job-loss insurance designed to assist people who have lost their jobs.

Integrating digital technology in implementing programs is a challenge and has become a double-edged sword in the evolving social welfare landscape. In other words, the digitization of services promises increased efficiency and accessibility, but it inadvertently contributes to a phenomenon known as digital exclusion. The gap between those with access to digital technologies and others has emerged as a critical concern in implementing these programs, leading to digital exclusion. Digital exclusion can exacerbate social inequalities and create barriers to accessing essential services, undermining the goals of welfare-to-work initiatives to

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ISSN:1000-3673
Received: 16-01-2025 Revised: 05-02-2025 Accepted: 22-03-2025

empower and support individuals in their transition to employment. In other words, digital exclusion can trigger new social risks such as discrimination, exclusion, and inequality in welfare access, particularly for those without access or skills to digital technologies. Digital exclusion poses significant challenges in welfare provision, particularly in the context of welfare-to-work initiatives. The digital potential divide perpetuates existing inequalities and creates new forms. While experiences of developed countries can act as a benchmark, or best-practice, the under-representation of developing countries in literature represents a missed opportunity to reflect upon such experiences in a different context on developing economies that are typically characterized by insufficient resources and capacity, including financial, technical and administrative [2].

2. Literature review

2.1 Digital Exclusion in Welfare-to-work regime

Digitalization will significantly impact the welfare state, shaping social policies and the politics of welfare state reform, potentially promoting a new paradigm of policy making. The design of digitalized welfare policies can influence the effectiveness of socio-economic reforms on the employment rate. Considine et al. [3] highlight two key trade-offs in digitalization drivers: one between efficiency and inclusion and another between consistency and personalization of service delivery personalization of service delivery. Digitalization welfare-to-work also empirically identified three discrete modes of 'digitalization' in welfare-to-work programs: virtual engagement (remote activation), transactional automation (self-activation), and digital triaging (targeted activation) [1]. Digitalization, according to Sapru and Sapru [4], allows for such features as managing large populations and dealing with geographical remoteness so that services can be delivered in a more accessible and equitable manner. The concept of an emergent digital welfare state has emerged from applying such technologies in public services and welfare provision. While Van Zoonen [5] conceptualizes it as the 'transition to data-driven social policy,' Dencik and Kaun [6] view it as a new regime intricately linked to digital infrastructures that result in new forms of control and support'. However, van Gerven [7] warns that 'it is not just the presence of technologies that makes up a digital welfare state.' For this study, we adopt a broad concept of digital welfare states where governments embrace digital technologies to improve welfare service provision. Researchers have studied how different groups of jobseekers (e.g. Indigenous, homeless, and mothers with low SES position) are impacted by digitalisation [8-11].

Technological change brings great transformative potential to organizing and delivering public services. Recent technological advances can enable faster decision-making and reduce complexity for citizens while allowing businesses, job seekers, and governments to provide real-time services and support to service providers and users. A commonly used term is E-Government, which describes a digital process connecting citizens with their government to

Power System Technology
ISSN:1000-3673
Received: 16-01-2025 Revised: 05-02-2025 Accepted: 22-03-2025

access information and services government agencies offer. E-government implementations take various forms, from simple websites with contact information to integrated and interactive services [12,13]. E-Government represents a paradigm shift in how governments interact with citizens and deliver public services. E-Government involves providing information about government services, policies, and procedures through digital platforms such as websites. This allows citizens to access relevant information conveniently and quickly and facilitates online transactions and interactions between citizens and government agencies, which refers to virtual engagement (remote activation). Integrated E-Government systems streamline processes and improve efficiency by connecting different government agencies and systems. Automation of administrative tasks can reduce paperwork and processing times, leading to faster and more responsive services for citizens refers to transactional automation (self-activation). E-Government initiatives should prioritize accessibility and inclusivity to ensure that all citizens, regardless of technological proficiency or socio-economic status, can access and benefit from online government services. By harnessing the power of technology, governments can improve transparency, efficiency, and accessibility in delivering public services, ultimately enhancing citizen satisfaction and participation in governance processes which refers to digital triaging (targeted activation).

Thus, digitalized welfare-to-work identifies two major trade-offs among digitalization drivers, one between efficiency and inclusion and another between consistency and personalization of service delivery. Digitization also involves passing some of the burdens of work to the service user, such as self-enrolment in a service. As argued by Whelan [14], digital technologies are indeed "designed and deployed to enlist the client into the welfare administration labour process." Such a burden transfer can introduce challenges for vulnerable users, hence making some segments of the community comparatively worse-off and accidentally exacerbating the existing exclusions facing them. For instance, Mutula and Mostert [15], Walker et al. [16], Casey [17], and van Gerven [7] provide evidence of a digital divide faced by specific groups of service users, including service users who are less comfortable with using digital technology; users who experience a disability-related barrier to using technology; or users who experience a communication barrier such as speaking a different language from the one in which the information is presented.

Earlier literature on the digital divide focused mainly on the haves and have-nots of digital technology. More recently, attention has shifted to the multiple dimensions that create inequalities in the uses and benefits of technology. How existing social exclusion, such as income, education, region, gender, and age, is reinforced by digital exclusion? Digital exclusion refers to the situation where people cannot participate in society due to either a lack of access or an inability to use digital technologies [11]. Historically, sections of society being excluded from dominant means of communication is not a new phenomenon. In the late 15th century, text production in a single fixed print format heralded a move from aural to visual

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ISSN:1000-3673
Received: 16-01-2025 Revised: 05-02-2025 Accepted: 22-03-2025

communication. In the late 20th century, similar parallels have been made with the Internet. This has also been called a ‘‘disruptive technology,’’ which has escalated an information revolution [18] and contains within itself the power to effect change [19]. McLuhan [20] suggested prevailing modes of technological communication, analog and digital. Problems arise when massive changes in dominant delivery modes exclude certain groups. As this article will suggest, barriers to access remain in developing countries with large areas, and links are being made between existing categories of social exclusion and new digital exclusions [21].

This new trend raises some problems in the implementation of the program. Developing countries with large areas have several issues, including barriers to access and links between existing categories of social exclusion and new digital exclusions [21]. Digital exclusion refers to the situation where people cannot participate in society due to either a lack of access or an inability to use digital technologies [11]. Digital technologies are indeed “designed and deployed to enlist the client into the welfare administration labor process.” Such a burden transfer can introduce challenges for vulnerable users, making some community segments comparatively worse off and accidentally exacerbating the existing exclusions facing them [14]. With digitalization, such fallible human actors may be removed or significantly curtailed within service-allocation decisions and can be replaced or limited by consistent, rational digital algorithms [22,23]. This promises equitable outcomes for all users and simultaneously reduces the risk of corruption, particularly in the form of bribery, bias and discrimination [24,25]. This more direct communication between government and service users may also increase government transparency [26,27].

Access to the internet is the main aspect of participation in the digital world. DiMaggio et al. [28] coined the term digital inequalities to describe this multidimensional digital divide, subdividing it into usage, skills, social support, and self-perception. Exclusion from digital participation can lead to various forms of disadvantage and marginalization. In societies where many aspects of everyday life are mediated by digital technologies, exclusion from internet participation can result in being left out of essential services, educational opportunities, economic activities, and social interactions. Those who rely on these services are more vulnerable and digitally disadvantaged as digital skills are related to higher education, income, and geographic area [29]. Moreover, individuals who feel excluded from digital realms may also experience a sense of social isolation and disconnection from broader societal trends and developments. Addressing digital inequalities requires multifaceted approaches that go beyond simply increasing access to the internet. It involves promoting digital literacy and skills development, fostering inclusive digital communities and support networks, and addressing broader socio-economic barriers that contribute to digital exclusion. By recognizing and addressing these dimensions of digital inequalities, societies can work towards creating more equitable and inclusive digital environments for all individuals.

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While the gap in internet use between emerging and advanced economies has narrowed in recent years, there are still regions in the world, especially within developing countries, where significant numbers of older citizens do not use the internet [30,31]. In an increasingly digital landscape, digital exclusion has the potential to be a major barrier to social participation. This article is concerned about the location of responsibility for supporting those members of society, already marginalized and disempowered, to effectively operate in digital environments. There is an apparent lack of awareness of the potential implications of digital exclusion which raises concern. Addressing social inequity and disempowerment is fundamental to human services and it is possible that the significance of digital inequity may not yet be fully realized. In rural areas, vulnerable groups are particularly disadvantaged when it comes to internet access and usage. Compared to their urban counterparts, rural vulnerable groups have significantly lower odds of having internet access and are less likely to use technology for communication, financial transactions, health information, and media consumption. Moreover, they tend to have more negative perceptions of technology, often viewing it as too complicated or difficult to learn. These findings underscore the urgency for targeted interventions to reduce technology inequality and improve digital technology access and adoption in developing nation.

2.2 Digitalised Welfare-to-work programs in Indonesia

The trend of digitalizing welfare programs is significant in various countries, aiming to achieve efficient service delivery while harmonizing socio-economic aims. Digitalized WtW have the potential to bring significant benefits, including bridging the digital divide, supporting sustainable development goals, and enhancing social welfare. There are three distinct approaches to digitalization: virtual engagement, transactional automation, and digital triaging. The digitalization of WtW programs can result in more accessible and efficient service delivery, ensuring the ethical implementation of welfare technology that supports well-being and contributes to sustainable development. In Indonesia, welfare policies continue to evolve by utilizing digital advancements, including implementing cash transfers and virtual cash programs. Integrating digital technologies into welfare programs is a transformative process with significant implications for policy design, public sector capacity, and monetary policy. Using digital technology in various WtW policies, assistance can be distributed quickly and efficiently to beneficiaries in each region. With digital technology across multiple WtW policies, aid can be distributed rapidly and efficiently to beneficiaries in each area. The government can use digital technology to monitor welfare programs more effectively. Electronic data can be analysed to understand spending patterns and adjust programs based on community needs and changing circumstances.

Digitization also involves passing some of *the burdens of work to the service user*, such as self-enrolment in a service. As argued by Whelan [14], digital technologies are indeed “designed

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and deployed to enlist the client into the welfare administration labour process." Such a burden transfer can introduce challenges for vulnerable users, hence making some segments of the community comparatively worse-off and accidentally exacerbating the existing exclusions facing them. For instance, Mutula and Mostert [15], Walker et al. [16], Casey [17], and van Gerven [7] provide evidence of a digital divide faced by specific groups of service users, including service users who are less comfortable with using digital technology; users who experience a disability-related barrier to using technology; or users who experience a communication barrier such as speaking a different language from the one in which the information is presented.

Considine et al. [3] further elaborate on frontline discretion as corresponding to five modes of interactions at the frontline. In the technology-free mode where citizens encounter the state face-to-face 'through' advisors, frontline workers are influential as they, in Lipsky's [32] words, 'hold the keys to a dimension of citizenship.' In the technology-assisted one, frontline workers remain the gatekeepers to services, only that their discretion is made more visible than the previous interaction mode thanks to digitalization in the form of information management systems and computerized assessment protocols. Interacting with the government in a technology-facilitated mode allows citizens to use technology to access some aspects of the service. At the same time, interactions with their case manager still constitute a significant part of service delivery. With technology-mediated interactions, citizens are empowered to access almost all aspects of the service (job-matching, training, etc.) digitally, with service staff providing troubleshooting support when problems arise with the software. With this mode, service staff may continue to provide guidance, but this will be communicated digitally through web chats administered remotely. Finally, the provision of services in the technology-generated mode moves from being digitally mediated to being fully automated, according to which all offers and demands that citizens receive are determined entirely by algorithms, without any interventions by human intermediaries.

In 2020, The Indonesian government utilized digitalization to implement a WtW policy in the initial phase of employment. One of the models used in WtW policy to assist employs the following strategies: passive labour market policy (PLMP) and active labour market policy (ALMP). The government has introduced several policy initiatives to help jobseekers to find job. These include the Program Kartu Prakerja or Pre-Employment Card Program (PECP) and the Jaminan Kehilangan Pekerjaan or Job-Loss Insurance (JLI) program. The Pre-Employment Card Program (PECP) is a government initiative to equip individuals with the necessary qualifications and capabilities to secure gainful employment and pursue successful careers while receiving welfare benefits. Job Loss Insurance (JLI) is a government program that helps workers who have lost their jobs to gain employment in the formal sector by providing access to training and labour market information. In the face of these challenges, incorporating digital technology into the PECP and JLI programs represents a substantial change in the approach to

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government-led employment initiatives. These initiatives utilize end-to-end digital technology to ensure effective implementation and provide policy support to unemployed individuals to improve accessibility, efficiency, and effectiveness in addressing unemployment.

The PECP moves away from ALMP 'independent interventions' by making training services a condition of income support receipt. The PECP program may need to improve, notably if it lacks a comprehensive job placement scheme. Job placement is a critical component of any employment-focused program, as it ensures that participants can transition from training or education to meaningful employment opportunities. With a job placement scheme, participants may be able to secure employment even after completing training programs or are vulnerable to losing their jobs. This could undermine the effectiveness of The PECP program in achieving its primary objective of improving participants' employability and facilitating their transition into the workforce. In other words, participants may receive training or education in fields with limited demand for labour, leading to a mismatch between their skills and available job opportunities. Furthermore, after the beneficiary gets a job, they will likely lose their job due to a mismatch between the job placement scheme and mismatched skills.

In 2021, a new program was launched by the Ministry of Manpower, namely the Job Loss Insurance (JLI) Program, to protect workers when they lose their jobs. JLI was first implemented in February 2022. The basis of the JLI program is Law Number 40 of 2004, which concerns the National Employment Guarantee System (SJSN). Then, it was strengthened by the Law No. 20 of 2020 concerning Job Creation, which provides the legal basis of the program. The JLI program has a duration of 6 months and is given to notable participants who experience Termination of Employment (PHK). JLI participants obtained cash benefits, access to job market information, and job training. These benefits can be obtained through a single platform, SIAPKerja. This platform brings together all stakeholders in implementing the JLI Program, such as the Manpower Office, Counselors, NSSAE, BLK, Companies/Business Entities, and JLI participants. The conditions for participation are that apart from being laid off, as proven by a letter of layoff, NSSAE participants have a minimum contribution period of 12 months in the last 24 months and have paid contributions for 6 consecutive months before the layoff occurs. Through the SIAPKerja account designed by the Ministry of Manpower, participants can register following several predetermined conditions. Likewise, counsellors tasked with providing counselling and companies or business entities as providers of job vacancies are connected to the SIAPKerja account.

Integrating digital technology into the PECP and JLI programs marks a significant shift in government-led employment initiatives. This integration aims to enhance accessibility, efficiency, and effectiveness in addressing unemployment, as stated by Ginting & Herdiyana in 2020. Digital transformation offers potential benefits for promoting growth and improving well-being, as it can significantly improve accessibility and facilitate employment information.

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By accessing information about employment programs, jobseekers become more informed about their career paths, explore diverse opportunities, and ultimately contribute to their personal and professional development. Both the PECP and the JLI program play complementary roles in supporting individuals' employment prospects and welfare. The PECP focuses on building skills and enhancing employability to secure future employment. At the same time, the JLI program provides immediate financial assistance and support to individuals who experience job loss, ensuring their welfare and economic stability during unemployment. Together, these programs contribute to a comprehensive approach to guaranteeing employment and promoting the welfare of individuals in the workforce. The incorporation of digital technology into the PECP and JLI programs signifies a significant shift in the approach to government-led employment initiatives. The primary goal is to enhance accessibility, efficiency, and effectiveness in addressing unemployment, as noted by Ginting and Herdiyana in 2020. The digital transformation offers potential benefits for promoting growth and improving well-being. It can have a significant impact by enhancing accessibility and facilitating the widespread dissemination of employment information. With improved access to information on employment programs, individuals can make more informed decisions about their career paths, explore diverse opportunities, and ultimately contribute to their personal and professional development. The PECP and the JLI program work together to support individuals' employment prospects and welfare. While the PECP focuses on building skills and enhancing employability to secure future employment, the JLI program provides immediate financial assistance and support to individuals who experience job loss, ensuring their welfare and economic stability during unemployment. Together, these programs contribute to a comprehensive approach to guaranteeing employment and promoting the welfare of individuals in the workforce.

3. Methodology

This study was conducted over two years, utilizing semi-structured interviews and Focus Group Discussions (FGD) with policymakers and providers (digital platform owners and training providers) for data collection. A total 39 number of informants and participants in this research were from policymakers and providers. To supported data from this study, and we use an online survey with program participants. We deployed mixed methods for collecting and analysing data. To ensure greater validity of the research, data collection and analysis in this study followed a well-structured interviews [33]. Interviews were undertaken in English or Bahasa Indonesian, depending on interviewee preferences. In the latter case, interviews were transcribed and translated by a research team member fluent in both languages. Each interview lasted between 45 to 60 minutes. Subsequently, these data were coded and analyzed using pattern matching and content analysis. In this section, we provide a comprehensive review of key issues that are raised in research-to-date on digitalization in the welfare-to-work program.

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ISSN:1000-3673
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Then comes the discussion of the research findings, followed by policy implications and some concluding observations.

4. Findings and Discussions

4.1 Digitalised WTW in Indonesia: Job Loss Insurance Program

The Job Loss Insurance (JLI) program carries the concept of digitalization in its implementation. This can be seen in the preparation of an online ready-to-work application or portal. Through the application or portal, people can arrange their portfolio to get the desired job and can claim benefits from the job loss guarantee program. Registration procedures, procedures for claiming and implementing JLI program by beneficiaries are all carried out 100% digitally, referring to Government Regulation Number 37 of 2021 of the Implementation of the JLI Program and Minister of Manpower Regulation (Permenaker) Number 7 of 2021 of Procedures for Registration and Recomposition of JLI Program Contributions, as well as Permenaker Number 15 of 2021 concerning Procedures for Providing JLI Benefits. This research argues that the ALMP mechanism in JLI cannot be thoroughly carried out digitally. In contrast to the Pre-Employment Card program, where training is carried out entirely online (including registration and providing incentives), the ALMP design requires intervention, assistance and direct communication in both the counseling and worker training processes. JLI in the ALMP framework combines digital and conventional services to connect workers, their skills, and the job market.

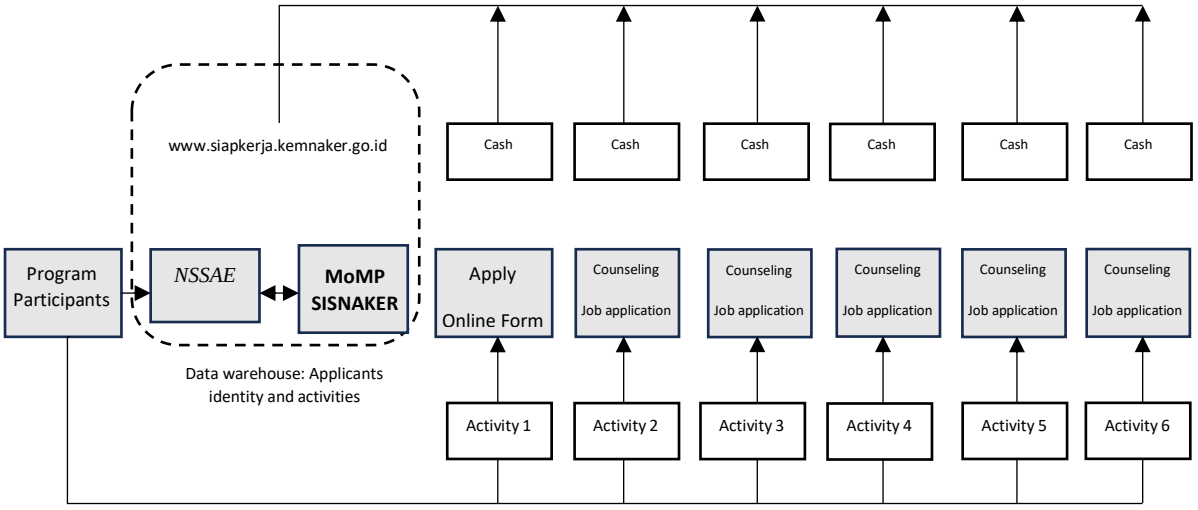

Figure 1. Procedure of JLI Program.

Figure 1 shows that digitalization has occurred starting from the registration process. Applicants must open an SIAPkerja account at jasakerja.kemnaker.go.id and complete information related to personal data in the SIAPkerja account. The applicant is registered as a JLI participant if the Job Loss Guarantee badge appears. In the claim procedure, JLI

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ISSN:1000-3673
Received: 16-01-2025 Revised: 05-02-2025 Accepted: 22-03-2025

participants make a report if they are laid off. The requirements for applying for a layoff include termination letter, having a commitment to work again, having been reported as inactive by the company to NSSAE, not currently working again in the wage-earning sector (PU), submitting no later than 3 months after being laid off. Steps to report a layoff include: 1) Log in to the siapkerja.kemnaker.go.id account, 2) Make sure the profile and biodata are complete, 3) Make sure the prospective beneficiary has all the requirements (have a letter of proof of layoff and a certificate of readiness to work again) and fill out the layoff report form in your ready-to-work account, 4) Immediately submit a benefits claim to start getting JLI benefits.

Once beneficiaries have registered and followed all benefit-claiming procedures, the application will be verified, and participants will immediately receive program benefits. The first is cash benefits. Where participants must have a bank account, they must take part in counselling and job training with a minimum of 80% attendance, or they must attach proof of having applied to at least 5 companies or having been interviewed once by the company they are applying for. Consultation services were provided to JLI participants regarding information on the world of work needed to make career plans. Before conducting counselling, participants must carry out a self-assessment first to get an idea of their potential. Lastly, job training is an activity to improve and develop work competency, productivity, discipline, attitude, and work ethic (reskilling & upskilling) to help JLI participants get jobs. Job training benefits are given to JLI participants who have received recommendations from job introducers or inter-work officers at counselling sessions. Training methods are divided into 3: webinar, offline, and blended. There are 2 types of job training: reskilling (job training for JLI participants who will switch to new jobs in new fields) and upskilling (job training for JLI participants who will develop and improve their competencies according to their previous jobs).

Regarding WtW, digitalization has had a significant impact on the current change process in the operational model of public employment services and how WtW services are delivered. In this context, digitalization reflects two main technological domains: “remotization” and “automation”. In the JLI context, remotization is related to implementing technology-mediated provision of service elements starting from the registration process for service recipients. Meanwhile, automation concerns data on workers, job seekers, and the job market. The actual numbers of job seekers, active workers, job losses, and the number of companies or jobs are dynamic numbers. As a result, no accurate data can be used for decision-making. The labour market in Indonesia is still relatively passive because government intervention is still limited due to data constraints – assuming the absence of data that can be used to map problems and potential, training needed by the workforce and can be absorbed in the labour market, and other data that required within the WtW framework. A service in which the government provides direct job search assistance and involves directly matching job seekers with existing vacancies. This service requires the government to monitor job seekers’ efforts to find work.

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In its implementation, there seem to be technical problems accompanying the digitalization of JLI. These problems include 'errors' in the application system. In implementing program digitalization, the Ministry of Manpower has a one-data policy, and every program run by the ministry is expected to be cantered in one data bank so that data management is easier. This policy is indeed perfect for avoiding data manipulation or falsification. However, our findings show that the one data policy has consequences for the large amount of infrastructure that must be prepared to support the idea of one data. High data traffic can result in system errors or internet downtime. This problem is encountered in the digitalization of JLI. One example of this case is the appearance of the notification "waiting for company confirmation" on the account of a JLI participant who is carrying out the JLI claim process, even though the company has confirmed it at the same time as the process of issuing a layoff letter. The notification on the participant's account creates a wait between the participant making the claim and National Social Security Agency for Employment (NSSAE), which is tasked with distributing cash benefits. As a result, participants were late in receiving benefits from JLI; some even missed the 3-month deadline for reporting layoffs.

In addition, there is still the problem of the participant database not being integrated that makes the SiapKerja application unreliable. In the current system, participant's data will only appear from the NSSAE office where the participant is registered. Thus, if a participant wanted to claim outside the area will be problematic. Centralized response system is one alternative solution when this data integration problem occurs. However, this centralization solution led to another potential problem of the speed of action since one office have handle problems from all over Indonesia. This overwhelms ICT operators in resolving every existing complaint and results in longer handling of problems.

From the user's perspective, there are some confusing questions within the system. For instance, in the process of submitting a JLI claim, participants will be asked to fill in several forms in the application. Our findings show that many participants do not understand the difference between leaving work because resign or because they are laid off. In several cases, participants mistakenly chose the answer option when they should have chosen the layoff option and then mistakenly chose the resign option. That selection affects the system to automatically reject JLI applications. The system does not allow them to rerun the process once it rejected. Thus, digitalization of JLI might make it easier for participants who are digitally literate, but not for participants unfamiliar with this, for example, participants who are old and/or need to become more familiar with the internet. Our findings show that participants who experience difficulties in the online claims process often use NSSAE and the Manpower Office as the front line to assist them. However, since there is formal obligation for both offices to serve this need, sometimes the program participants meet the officers that also do not familiar with the system.

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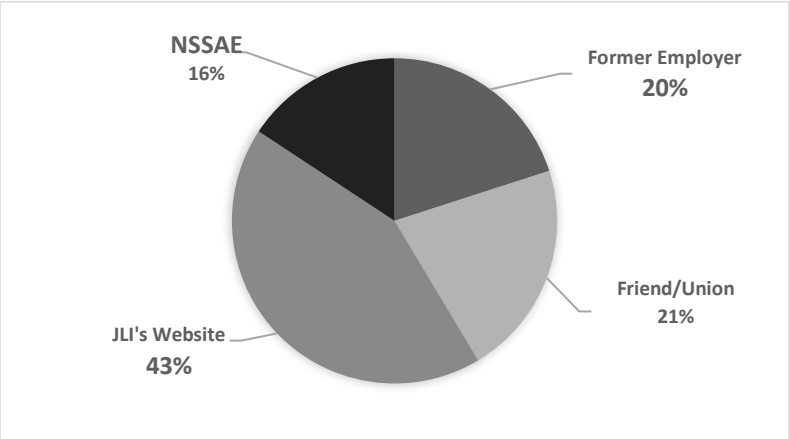

Figure 2. How JLI Participants obtain Information

Other issue we found is regarding the program dissemination especially to potential beneficiaries. Figure 2 indicates that information regarding the existence and procedures for implementing the JLI program still needs to be improved. The picture above shows that from the survey conducted by this research, 57% of information about the program's existence was not obtained from official JLI sources. Program dissemination relies on the JLI website and does not use various online media. Based on questions regarding respondents' knowledge of information about JLI, it shows that the majority of respondents, namely 47%, knew information about JLI through companies that provide information directly. Meanwhile, the minority of respondents answered that they knew information about JLI through the JLI website/social media, namely 12.8%. The remaining respondents found out about this information through the NSSAE website/social media, 25.6%, and friends/family/worker unions, 12.8%. From this data, the company or place where the respondent works is the primary source of information, as well as the NSSAE website/social media. Participants and government stakeholders such as the Manpower Office, BLK (Job Training Center), and Labor Unions are not yet aware of the JLI program.

Our findings also suggest the areas of improvement in this digitalised WtW program covers are registration service process, verification, and job search or vacancy information. This process can be optimized simultaneously, along with increasing work information on the SIAPkerja platform. Regarding counselling and training, it can be carried out using a hybrid method, combining online and offline mechanisms, so that the essence of ALMP, where face-to-face meetings, especially training with highly technical skills, can be implemented optimally. This differentiates JLI from Pre-Employment Cards where all services are provided digitally.

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Received: 16-01-2025 Revised: 05-02-2025 Accepted: 22-03-2025

4.2 Digital Exclusion in JLI Program

Efforts to digitize WtW services through JLI programs offer the potential for positive transformation in providing more efficient and affordable services. However, there are challenges to society's human resources, especially in digital literacy and unequal access to technology. Threfore, special attention is required to ensure that all participants can enjoy the benefits of digitalization participants can enjoy without leaving anyone behind. Several issues are related to the potential for digital exclusion from this program, as outlined below.

First, some participants experienced difficulties fulfilling the JLI membership requirements. To obtain a layoff certificate, participants working for a business entity or employee outside the administrative area of the participant's domicile will find it difficult to get a layoff letter. The JLI program cannot be implemented because he must handle administrative requirements. To become a JLI participant, a worker must have the status of being laid off from his former job and not a resignation. Likewise, JLI registration is no later than three months after receiving the layoff letter which required to be uploaded in the portal. Suppose data automation is running well and there is good interoperability within the system, it be able to find out the layoff status of participants automatically. Apart from that, the status of layoffs should be treated fairly (zero-sum). When there is a dispute over layoffs, participants can still access the program, perhaps with benefit limitations up to their full term.

When participants have successfully registered, there are still many participants who have difficulty accessing the SIAPKerja portal. This was not only caused by the participants' technological inadequacy but also because the quality of the cellphone devices, including the participants' memory capacity, needed to be improved. Apart from that, there are technical problems with the SIAPKerja portal, which requires a lengthy procedure to confirm the status of participants who have been laid off. In addition, job market information services are not optimal, and the number of available counsellors is still limited. The number of counsellors is not proportional to the number of workers affected by layoffs. Apart from that, the counsellors selected come from job introductions at the Regency/City Manpower Office, which impacts the occurrence of double roles that burden the counsellors.

One of our informants from local government officer uses an online platform in the form of WhatsApp social media to provide information to the program participants. This can be done by creating a WhatsApp group with JLI participants. The aim is to provide one-stop information to participants and several agencies related to employment. The participants found that this initiative is quite helpful. Given the difficulties in SIAPkerja platform that not all participants can adapt quickly, such as looking for work, primarily through digital platforms. Interestingly, our informants also said that the younger generation is indeed capable of using technology but needs sharp analysis to be able to measure their own capacity between the experience they already have and the types of jobs available on the SIAPkerja account.

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The second obstacle comes from, among other things, the large number of fields that must be filled in by JLI participants on their SIAPKerja account. The details that participants need to fill in make the filling and account creation time take a long time. One of our interviews showed that the large number of fields to fill in was indeed a hassle for applicants. The representative of the Ministry of Manpower admitted that the problem with the large number of entries was caused by the large number of questions "submitted" from various divisions within the ministry. The aim is to capture and build an employment database. Similar to the previous problem, workers cannot access a large number of entries in this digital application evenly.

There are groups of workers who find it challenging to access digital-based technology. Several local interviews show that groups of workers over 40 years of age, workers with relatively low education, and female workers are groups that have difficulty accessing digital technology. An interesting finding came from the interview, which showed that cigarette factory workers, most women, had difficulty registering themselves on the SIAPKerja account. So, the company management finally assisted in the registration. This shows that the company management is still providing responsibility even though the status of the workers has been laid off. At the exact location, it also indicates that the role of NSSAE is not only to pay cash benefits but also to be the party that responds to participants' complaint reports. This shows that there are additional main tasks and functions in this body.

Marginalized groups are threatened with difficulties in accessing JLI. The digitalization process of the JLI program aims to make it easier for people to access it; whilst not all workers feel that this digital facility makes things easier. Our data from several cities/districts, such as Malang City, Palembang, Belitung, Batam, and Yogyakarta, shows that there are at least two large groups of workers who have difficulty accessing JLI, including groups of workers with low digital literacy and minimal internet infrastructure. Then some groups are at risk of having difficulty accessing JLI, namely the group of workers with disabilities, especially blind people.

Another group that is digitally marginalized is a group with low digital literacy. This group is not dominated by age, but rather by education. The cigarette workers, in Malang City, who are dominated by female high school graduates with an age range of over 30 years, the majority experience difficulties in registering for JLI. Likewise in the case of Batam and Belitung, the difficulty in registering is dominated by oil palm plantation workers who only have elementary and middle school graduates, with an age range of over 30 years. They find it difficult when registering for JLI, such as creating a username and password, providing lots of digital documents, uploading them, and even the complaint process. This group has low digital literacy because they are unfamiliar with digital technology. Because of this condition, workers end up being assisted by other people in registering for JLI, such as company HRD, who has an initiative to help register JLI for their workers collectively. Cases in all cities show that when carrying out a complaint and protest process on the application, NSSAE in each city will help

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make complaints on the SIAPKerja apps. Even though NSSAE does not have full access to the SIAPKerja platform, what this party does is only register its complaint with the application's helpdesk facility.

Furthermore, there are significant number of groups with minimal internet infrastructure. This group usually lives in the outermost, remote and disadvantaged areas, although it is possible that other areas still experience this. The JLI digitization process requires workers to access it using the internet, making it difficult for workers who live in this area to access it. For example in Belitung regency, palm oil plantation workers have difficulties because their digital knowledge is minimal, and where they live there is still internet with limited internet connection. To solve internet problems, NSSAE usually tries to help solve the problem. Workers will come to the NSSAE office asking to be helped to register and use the internet facilities. NSSAE usually helps workers who have difficulty accessing the internet, then assists them in registering and other processes.

People with disabilities also part of group who are at risk of difficulty accessing JLI. The enaction of Law no. 8 of 2016 concerning Persons with Disabilities, one of the articles of which requires the acceptance of a minimum of 2% of workers with disabilities in the state company sector, and a minimum of 1% of workers with disabilities in the private sector, demands a job market that is friendlier to this group. So JLI digitalization must take into account the existence of disability groups. This can be done by ensuring the SIAPKerja application is easily accessible to all people with disabilities, such as the blind, deaf and other types of disabilities. If groups with disabilities can easily access this program, it will be the same as providing the greatest opportunity for this group to be empowered. However, on the other hand, if this program cannot reach this group, the JLI program will increasingly result in workers with disabilities losing their rights.

There are also obstacles in terms of technology, such as not all cellphones can support the registration process. This has implications for disbursement of funds that are not commensurate with the number of workers laid off. Based on the results of the FGD that was carried out, several findings were obtained. First, there are obstacles in accessing JLI claims by participants due to the need for more knowledge about digitalization of systems on devices such as computers, laptops and smartphones by potential JLI beneficiaries. When a worker registers for a SIAPKerja account, it turns out they encounter problems accessing it. This relates to the accessibility of digital technology in applications. For the record, the entire program series, starting from when participants register, uploading personal data and so on is carried out online. Even the counselling process is carried out without direct face-to-face contact. Counsellors and workers will use the tele conference application to conduct a counselling series. Not all workers can independently prepare and change documents from physical to digital, upload them in the SIAPKerja field. Participants cannot independently access digital-based applications.

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If we examine the findings above further, several vital arguments can be drawn. For example, the data above shows that several groups could only register after other parties' assistance. This means that there are symptoms that there are groups of workers who are not yet able to access JLI independently. At a certain point, this condition will make them a helpless group that always needs help from other parties. Suppose the JLI program is still challenging to access for groups of workers who live in remote areas or difficult to access for workers with disabilities. In that case, JLI needs to be an inclusive program for all workers to avoid marginalization problems.

In general, e-government aims to increase the frequency of interaction between citizens and the government [12,13]. Citizens can access public services, and their benefits can be felt effectively and efficiently in the context of JLI, where there are direct benefits, whether subsidies, training, or access to employment; digitalization is needed to help individuals who have lost their jobs and find work easily. It is hoped that the benefits of JLI will be felt directly for the survival of job seekers. Regarding ALMP, digitalization has had a significant impact on the current change process in the operational model of public employment services and how ALMP services are delivered. In this context, digitalization reflects two main technological domains: "remotization" and "automation". Remotization is borrowed from economics and business studies. Remotization is usually related to the service economy and refers to the implementation of Internet-based technology-mediated provision of service elements disaggregated based on geographic proximity to the service object. In the context of public employment services, remotization refers to the possibility of creating alternatives to physical interactions between social workers and clients through a digital layer that directs clients to online services [34].

Meanwhile, automation refers to recent advances in data and analytics that enable the generation of knowledge and intelligence from data to support decision-making. In the context of public employment services, this primarily refers to the application of data-driven optimization tools designed to anticipate client needs and policy recommendations for workers. However, in practice, ALMPs cover several different types of interventions, and the same level of digitalization cannot be achieved for each.

In this regard, there are three important things in the context of digitalization: JLI and ALMP designs. In the JLI context, remotization concerns the registration process for service recipients. This process is the most basic, simple, and easiest to optimize. The problem is that the digitalization of JLI has not been running optimally because the capabilities of service recipients still need to be improved. This means that the design of registration services, which are no longer face-to-face, still requires assistance from both NSSAE and the Manpower local department. Automation, regarding data on workers, job seekers, and the job market. Although data related to this matter is increasingly integrated and monitored in Indonesia, it still needs

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ISSN:1000-3673
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to be improved. The actual numbers of job seekers, active workers, job losses, and the number of companies or jobs are dynamic. As a result, no real data that can be used for decision-making. The labour market in Indonesia is still relatively passive because government intervention is still limited due to data constraints - assuming the absence of data that can be used to map problems and potential, training needed by the workforce and can be absorbed in the labour market, and other data that required within the ALMP framework. A service in which the government provides direct job search assistance and involves directly matching job seekers with existing vacancies. This service requires the government to monitor job seekers' efforts to find work. The ALMP mechanism in JLI's case cannot be fully implemented. In contrast to the Pre-Employment Card program, where training is carried out completely online (including registration and providing incentives), the ALMP design requires intervention, assistance, and direct communication in both the counselling and participants' training processes.

Regarding digitalization, things that can be optimized are more in the registration service process, verification, and job search or vacancy information. This process can be optimized simultaneously, along with increasing work information on the SIAPkerja platform. Regarding counselling and training, it can be carried out using mixed methods, combining online and offline mechanisms, so that the essence of ALMP, where face-to-face meetings, especially training with highly technical skills, can be implemented optimally. This differentiates JLI from the Pre-Employment Card, where all services are provided digitally.

5. Conclusion

The digitalization of welfare-to-work programs in Indonesia holds great promise for improving service delivery, increasing access to opportunities, and enhancing outcomes for jobseekers. JLI program is one example on how the WtW policy conducted digitally in Indonesia. Despite the promise of digitalization to improve WtW programs in Indonesia, the investigation found that digital exclusion exists in implementing digital WtW policies due to geographical and socio-economic conditions. Therefore, addressing digital exclusion in developing countries such as Indonesia is crucial to ensure that the digitalization of WtW reaches and benefits everyone, especially the most marginalized and vulnerable. So, it is very important for the government and all collaborators who focus on utilizing the SIAPkerja account to innovate and create user-friendly menus on the platform with the hope that participants can immediately get jobs according to their potential and experience.

References

[1] Ball, S., Mcgann, M., Nguyen, P. & Considine, M. 2023. Emerging modes of digitalisation in the delivery of welfare-to-work: Implications for street-level discretion. *Social policy & administration*.

Power System Technology
ISSN:1000-3673
Received: 16-01-2025 Revised: 05-02-2025 Accepted: 22-03-2025

[2] Niño-Zarazúa, M. & Torm, N. 2022. Active Labour Market Policies in Asia and the Pacific: A Review of the Literature. Bangkok: United Nations ESCAP, Social Development Division.

[3] Considine, M., Mcgann, M., Ball, S. & Nguyen, P. 2022. Can Robots Understand Welfare? Exploring Machine Bureaucracies in Welfare-to-Work. *Journal of Social Policy*, 51, 519-534.

[4] Sapru, R. K. & Sapru, Y. 2014. Good Governance Through E-Governance with Special Reference to India. *The Indian Journal of Public Administration*, 60, 313-331

[5] Van Zoonen, L. 2020. Data governance and citizen participation in the digital welfare state. *Data & Policy*, 2

[6] Dencik, L. & Kaun, A. 2020. Datafication and the Welfare State. *Global perspectives (Oakland, Calif.)*, 1

[7] Van Gerven, M. 2022. Studying social policy in the digital age. *In:* Nelson, K., Yerkes, M. A. & Nieuwenhuis, R. (eds.) *Social policy in changing European societies : research agendas for the 21st century.* Edward Elgar Publishing.

[8] Fowkes, L. 2020. Seeing people in the computer: The role of information technology in remote employment services. *The Australian journal of social issues*, 55, 13-26.

[9] Soldatic, K. & Fitts, M. 2020. Sorting yourself out of the system: everyday processes of elusive social sorting in Australia's disability social security regime for Indigenous Australians. *Disability & society*, 35, 347-365.

[10] Goedhart, N. S., Broerse, J. E. W., Kattouw, R. & Dedding, C. 2019. Just having a computer doesn't make sense': The digital divide from the perspective of mothers with a low socio-economic position. *New media & society*, 21, 2347-2365.

[11] PARK, S. & HUMPHRY, J. 2019. Exclusion by design: intersections of social, digital and data exclusion. *Information, communication & society*, 22, 934-953.

[12] Rorissa, A., Demissie, D. and Pardo, T. (2011), "Benchmarking e-Government: a comparison of frameworks for computing e-Government index and ranking", Government Information Quarterly, Vol. 28 No. 3, pp. 354-362.

[13] Myeong, S., Kwon, Y. and Seo, H. (2014), "Sustainable E-governance: the relationship among trust, digital divide, and E-government", Sustainability, Vol. 6 No. 9, pp. 6049-6069

[14] Whelan, A. 2020. "Ask for More Time": Big Data Chronopolitics in the Australian Welfare Bureaucracy. *Critical sociology*, 46, 867-880.

Power System Technology
ISSN:1000-3673
Received: 16-01-2025 Revised: 05-02-2025 Accepted: 22-03-2025

[15] Mutula, S. M. & Mostert, J. 2010. Challenges and opportunities of e-government in South Africa. *Electronic library*, 28, 38-53.

[16] Walker, H., Di Sisto, L. & Mcbain, D. 2008. Drivers and barriers to environmental supply chain management practices: Lessons from the public and private sectors. *Journal of purchasing and supply management*, 14, 69-85.

[17] Casey, S. J. 2022. Towards digital dole parole: A review of digital self-service initiatives in Australian employment services. *The Australian journal of social issues*, 57, 111-124.

[18] Webster, F. (2006). Theories of the information society, (3rd ed.). London, UK: Routledge.

[19] Anderson, T., & Elloumi, F. (Eds.). (2004). Theory and practice of online learning. Athabasca, Canada: Athabasca University Press

[20] McLuhan, M. (1962). The Gutenberg galaxy: The making of typographic man. Toronto, Canada: University of Toronto Press.

[21] Watling, S., & Crawford, K. (2010). Digital exclusion: Implications for human services practitioners. *Journal of Technology in Human Services*, *28*(4), 205-216.

[22] Bovens, M. & Zouridis, S. 2002. From Street-Level to System-Level Bureaucracies: How Information and Communication Technology Is Transforming Administrative Discretion and Constitutional Control. Blackwell Publishing, Inc.

[23] Busch, P. A. & Eikebrokk, T. R. 2019. Digitizing Discretionary Practices in Public Service Provision : An Empirical Study of Public Service Workers' Attitudes. IEEE.

[24] Rustiarini, N. W. 2019. The role of e-government in reducing corruption: A systematic review. *Jurnal Perspektif Pembiayaan dan Pembangunan Daerah*, 7, 269-286.

[25] Santiso, C. 2022. Govtech against corruption: What are the integrity dividends of government digitalization? *Data & Policy*, 4, e39.

[26] OECD 2016. Digital Government Strategies for Transforming Public Services in the Welfare Areas. Paris: OECD.

[27] Henman, P. W. F. 2022. Digital Social Policy: Past, Present, Future. *J. Soc. Pol*, 51, 535-550.

[28] DiMaggio, P., & Hargittai, E. (2001). From the 'digital divide' to 'digital inequality': Studying internet use as penetration increases. Princeton: Center for Arts and Cultural Policy Studies, 4(1), 4–2.

Power System Technology
ISSN:1000-3673
Received: 16-01-2025 Revised: 05-02-2025 Accepted: 22-03-2025

[29] Van Deursen, A. J., & Helsper, E. J. (2015). The third-level digital divide: Who benefits most from being online? In Communication and information technologies annual (pp. 29–52). Bingley, UK: Emerald Group Publishing.

[30] Pew Research Center. (2018). Social Media Use Continues to Rise in Developing Countries but Plateaus Across Developed Ones. http://www.pewglobal.org/2018/06/19/2-smartphone-ownership-on-the-risein-emerging-economies/

[31] Seifert, A. (2020). The digital exclusion of older adults during the COVID-19 pandemic. *Journal of gerontological social work*, *63*(6-7), 674-676.

[32] Lipsky, M. 2010. *Street-level bureaucracy : dilemmas of the individual in public services*, New York, Russell Sage Foundation.

[33] Drew, C. J., Hardman, M. L. & Hosp, J. L. 2008. *Designing and conducting research in education*, Los Angeles, Calif., Los Angeles, Calif. : SAGE Publications.

[34] Scarano, G. and Colfer, B. (2022), "Linking active labour market policies to digitalisation–a review between remote and automated possibilities", International Journal of Sociology and Social Policy, Vol. 42 No. 13/14, pp. 98-112. https://doi.org/10.1108/IJSSP-02-2022-0050