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EXCELLENCE IN SOCIAL SECURITY

Social security for the digital age

Addressing the new challenges and opportunities
for social security systems

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SOCIAL SECURITY FOR THE DIGITAL AGE

Addressing the new challenges and opportunities for social security systems

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Foreword

Among the ten global key challenges to social security identified by the ISSA, one emerging phenomenon will greatly influence the measures taken by governments and institutions to address them. As a result, a special focus was given to the impact of the emerging digital economy on social security.

This report brings forward the result of this effort. I am indebted to Greta Cartoceti, researcher and co-author of this report, who worked tirelessly over many months in its development. The report greatly benefited from the work of ISSA's Technical Commissions on Pensions and on Employment and the individual cases put forward by members throughout the 2016–2019 triennium as part of the various activities of the ISSA.

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1. Introduction

Digital technologies now permeate all aspects of human activities. They impact our lives in obvious ways, as when we use a GPS enabled device, and in much less obvious ways – as the treatment of the digital trace we leave when accessing the Internet or using a smart phone.

These technologies are creating entirely new economic sectors. For example, the digital platforms instantly match supply and demand for products and services at a very low cost, creating new demands and new opportunities. Yet at the same time, it changes the nature of work by breaking the traditional employer-employee relationship and fragmenting work into a series of tasks.

How can social security fulfil its role in this new environment? How can we best ensure that it supports inclusive growth, promotes social cohesion, stability and resilience?

This report examines how social security institutions can leverage the opportunities and meet the challenges brought about by the emerging digital economy. To do so, it first sets out the role that we expect social security to play; then it examines how the digital economy either supports or impedes social security from playing these roles.

The emergence of the digital economy is not happening in isolation: the phenomena of demographic ageing, the changing of the family structure, climate change and migration are happening at the same time. In looking at the challenges and opportunities generated by the digital economy, we will identify commonalities to help in the development of solutions that also mitigate these risks.

2. The roles of social security

To assess the impact of the digital economy on social security it is useful to review some of the roles it plays in society. While its short-term impact is most evident in cash transfers to individuals, its much less visible long-term impact is even more important.

Social security plays a macroeconomic role of automatic stabilizer by providing income replacement in times of unemployment or inactivity, thus supporting the daily household consumption of goods and services, and, by extension, local and national economic activity and employment. By supporting job matching and equipping workers with the skills needed in the labour market, it increases employment opportunities, reduces unemployment and facilitates structural economic transitions.

It supports the active participation of individuals in work and the community through preventive and rehabilitative health care and the promotion of a healthy lifestyle. In so doing it reduces longer-term dependency, while increasing programmes' contribution income and tax revenue to governments.

It supports families with children through cash benefits and services, offering a better start in life in early childhood and providing support at times of vulnerability. It promotes gender equality and improves the work-life balance. It develops human capital across the life course to empower and foster adaptability, thus increasing individual resilience to navigate life's transitions, to provide for the family unit and to contribute to the community.

Taken together, these roles of social security define a social security that is accessible, sustainable and adequate. A social security that protects the vulnerable without creating undue dependencies by fostering

self-resilience. A social security treating everyone with dignity and respect. On these assumptions, ISSA adopted the concept of “Dynamic Social Security”.

3. Impact of technologies on social security

Digital technologies have already proven their enormous potential in a wide range of contexts, for example in health care, communications, safety at work, job search, contribution collection and exchange of data, just to name a few. Social media, videoconferencing, mobile phones and the Internet of Things can facilitate the timely assistance to people in need, such as elderly people with restricted mobility or people with disabilities. It has fuelled improvements in service quality while decreasing operational costs and improving the integrity of business processes.

3.1. Digital platforms

Nowhere is the impact of the digital economy more relevant to social security than in its effects on the labour market. As further discussed below, new forms of work raise challenges related to the erosion of coverage and adaptability of the labour force. Fortunately, the same technology that creates the challenges also enables new tools and innovative approaches to address them.

3.1.1. What is platform work? How does the digital economy impact labour?

Although a recent phenomenon, digital platforms are a critical factor in the context of the emerging digital economy. By reducing transaction costs, digital platforms provide access to affordable services to an increasing customer base, thus facilitating demand and contributing to growth and competitiveness. They create new employment opportunities and enable the matching of labour demand and supply through real-time information. By promoting flexible working arrangements, they can also contribute to work-life balance. Remarkably, in some contexts – such as in Africa, digital platforms are supporting the transition from informal to formal economy (Hunter, Johnson and Smit, 2019). At the same time, digital platforms may undermine the labour and social protection of workers involved and pose the challenges of fragmentation of work into a series of tasks, raising concerns in terms of the coverage, adequacy and sustainability of social security systems (Schoukens, Barrio and Montebovi, 2018).

In the absence of a common definition of digital platforms, various names have been used to describe platform-mediated labour, including “collaborative economy”, “sharing economy”, “gig economy” and “crowd work”. Consequently, platforms providing services and platforms selling goods are often assimilated despite their significant difference. However, platforms such as commercial retail platforms (e.g. Ebay, Amazon) or platforms providing accommodation (e.g. Airbnb), do not fall within the scope of this study.

For the purpose of this study, platform work requires the participation of three economic actors:

- The worker (i.e. service provider);
- The client (i.e. service user or requester);
- The digital infrastructure that facilitates the matching of demand and supply and exercises a certain degree of control and organization over the peers (Smorto, 2017).

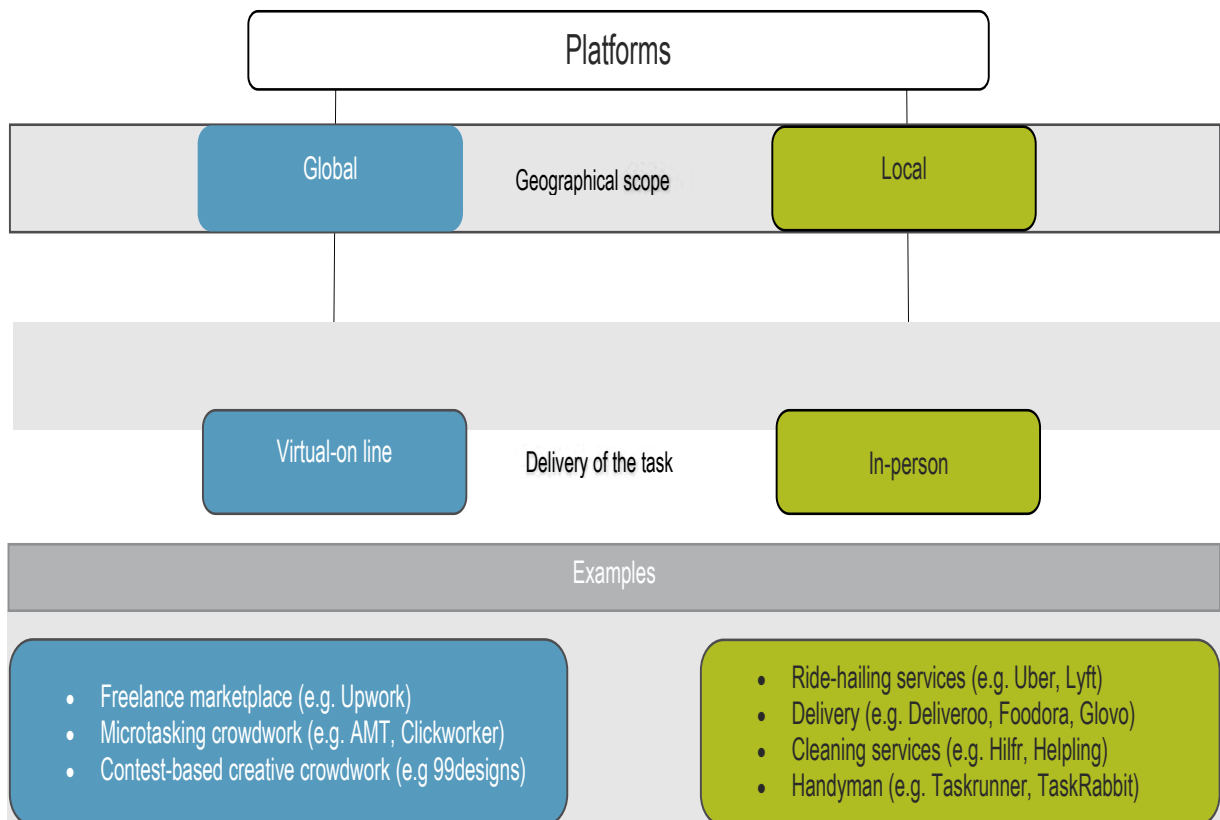
The degree of control that the platform exercises over the peers/worker is an important factor to determine the legal status of the worker. In order to define so, it is necessary to answer first the question: is the worker self-employed or does an employer-employee relationship exist? The answer to this question will determine also the coverage and the type/degree of protection granted to the worker.¹

Platform-mediated labour can be executed either virtually or in-person (see Figure 1).

In both cases the demand and supply of working activities are matched online or via mobile apps, however the place of execution of tasks and the way services are provided are different.

In the case of “virtual service delivery platforms”, the tasks are generally performed online through platforms connecting businesses, clients and workers globally. The work performed through this type of platform encompasses a wide range of tasks that can be either clerical or repetitive – but normally requiring “some sort of judgment beyond the understanding of artificial intelligence” (De Stefano, 2016) – or creative and intellectual, such as marketing campaigns and proofreading academic contributions. Some of the most important “virtual service delivery platforms” are TaskRabbit, Amazon Mechanical Turk, CrowdFlower, 99Designs, Upwork, etc.

Figure 1. Platform-mediated labour



Source: Authors.

1. In addition to the above mentioned factors, others have to be present: a) paid work has to be organized through an online platform, b) the aim has to be that of carrying out specific tasks or solving specific problems, c) the work has to be outsourced or contracted out, d) jobs have to be broken down into tasks, and e) services have to be provided on demand (EUROFOUND, 2018).

An International Labour Office (ILO) survey of “virtual service delivery platforms” (ILO, 2018c – or “crowd work” according to the ILO) shed light on the numerous types of tasks that “crowd workers” are normally required to perform. Some of them are self-explanatory such as data collection and validation, data classification and categorization (i.e. tagging, booking, pinning, linking, etc.), promotion of products, app testing, market research and reviews, content creation and editing. Other tasks are more complex such as moderation of discussion, review of user-generated content posted to Internet sites, social media platforms or other online outlets to detect violations of national legislations, social norms or the platform’s own guidelines. It may entail artificial intelligence (AI) and machine-learning tasks such as the collection of material that will be used to train machine-learning algorithms; the transcription of media content such as videos, photographs, texts, etc. In principle these type of tasks can be performed anywhere with internet access, however, in practice the digital divide and inappropriate working environment may represent a barrier for workers, as better explained in the following sections.

For “in-person service delivery platforms”, instead, the execution of traditional activities such as transport, cleaning and delivery is channelled through apps managed by firms and carried out in-person, locally (De Stefano, 2016). Examples of this type of platforms are Uber and Lyft (ride-hailing services), Deliveroo, Glovo and Foodora (food delivery), Hilfr and Helpling (cleaning services) or TaskRunner and TaskRabbit (handyman), just to name a few.² These workers are most of the time excluded from essential labour regulations and social protection, such as sick leaves and pension contributions and costs associated with equipment, maintenance and repairs are at their own expense.

A recent study on ten different platforms conducted by EUROFOUND in 2018 shows that “in-person service delivery platforms” (or on-location platform work according to EUROFOUND nomenclature), such as Uber or Lastminute, normally requires a lower level of skills than “virtual service delivery platforms” (or on-line platform work according to EUROFOUND), such as Clickworker or Freelancer (Table 1).

According to the OLI (Online Labour Index),³ the first indicator providing an online gig economy equivalent of conventional labour market statistics, skills performed through labour-mediated platforms can be grouped by country based on the evidence that different regions show a distinct geographic skill pattern (Figure 2). For example, in Southern Europe, United States, Latin America and South Africa the leading crowdwork category is “writing and translation”, while in North Europe and South East Asia it is “creative and multimedia”. Canada, Eastern Europe, Asia and Australia, instead, are the strongest in the field of software development and technology. Although not sufficient information was available for some of the African countries, the map shows that North Africa countries cover almost all tasks considered by the index, i.e. sales and marketing support (Morocco), creative and multimedia (Algeria and Tunisia), professional services (Libya), and software development and technology (Egypt).

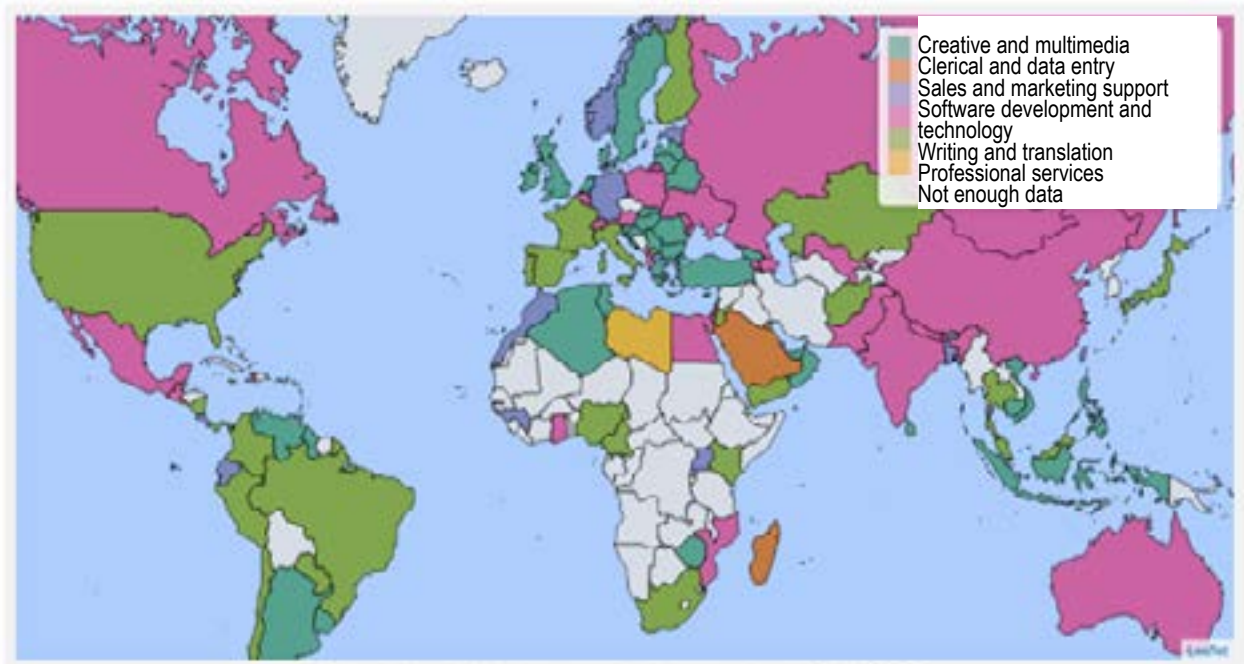
2. For further information, visit the EUROFOUND [platform economy database](#).

3. See [Online Labour Index](#).

Table 1. Most common types of platform work in the EU, 2017

Label	Service classification			Platform classification			Share of platforms in total number of platforms	Share of workers in total number of workers	Examples
	Skills level	Format of service provision	Scale of tasks	Selector	Form of matching	Form of matching			
On-location-client-determined routine work	Low	On-location	Larger	Client	Offer	Offer	13.7%	1.3%	Go.More
On-location-platform-determined routine work	Low	On-location	Larger	Platform	Offer	Offer	31.5%	31.2%	Uber
On-location-client-determined moderately skilled work	Low to medium	On-location	Larger	Client	Offer	Offer	11.3%	10.9%	Oferia
On-location-worker-initiated moderately skilled work	Low to medium	On-location	Larger	Worker	Offer	Offer	4.2%	5.5%	ListMinut
Online moderately skilled click-work	Low to medium	Online	Micro	Platform	Offer	Offer	0.6%	5.3%	Crowdflower
On-location-client-determined higher-skilled work	Medium	On-location	Larger	Client	Offer	Offer	2.4%	3.3%	appJobber
On-location-platform-determined higher-skilled work	Medium	On-location	Larger	Platform	Offer	Offer	1.2%	4.2%	Be My Eyes
Online platform-determined higher-skilled work	Medium	Online	Larger	Platform	Offer	Offer	0.6%	1.9%	Clickworker
Online client-determined specialist work	Medium to high	Online	Larger	Client	Offer	Offer	5.4%	30.3%	Freelancer
Online contestant specialist work	Medium	Online	Larger	Client	Offer	Offer	5.4%	4.6%	99designs

Source: Eurofound (2018).

Figure 2. *Labour-mediated platforms geographic skill patterns*

Source: OLI.

By its very nature, platform-mediated labour often consists of a series of paid micro tasks and no income is earned during idle time between tasks. Since the idle period is not paid, for many platform-mediated workers this can result in inadequate income, below a comparable minimum wage. Interestingly, some countries are developing a “profile intermediation” tool to reduce idle time, consisting of a peer-to-peer digital assistant to allocate tasks from workers with high ratings to those with lower ratings due to lack of self-promotion skills (Hunter, Johnson, and Smit, 2019). This is an innovative attempt aimed at reducing idle time by mitigating a barrier. However, further investigation is needed to better understand this practice.

Unsurprisingly, most often, platform work is a side job, which complements the main source of income deriving from standard employment or other non-standard forms (ILO, 2018c). The exception is in Africa where a survey on the rise of African digital platforms in Ghana, Kenya, Nigeria, Rwanda, South Africa, United Republic of Tanzania, Uganda and Zambia revealed that for the majority of African platform workers, the income generated through the platform is either essential for meeting basic needs or an important budget component (Hunter, Johnson and Dunn, 2018).

In other countries, the evidence that some on-demand tasks result in comparatively high wages may not fully account for the actual costs to workers (e.g. Uber).

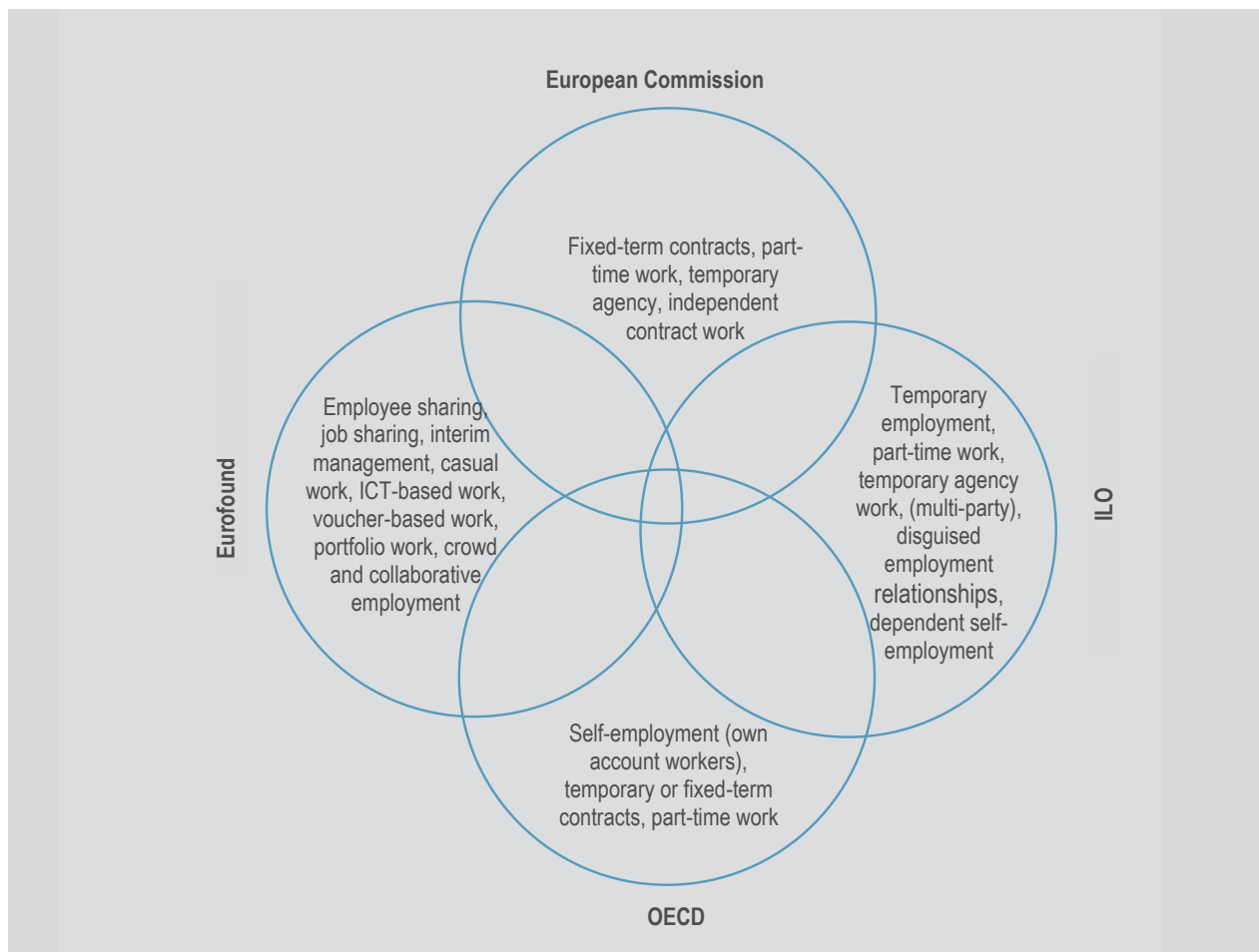
3.1.2. New forms of employment relationship

In the last few years, the rise of platforms has been gaining more and more attention from academics, governments, international organizations and civil society. The debate is polarized between supporters who have faith in the potential of technologies and detractors who fear major job displacements and serious threats to working conditions.

The phenomenon of digital platforms is still in its infancy; however, it grows at a rapid pace. Although precise data is scarce, it is estimated that the overall share of the adult population active in platform work is currently about 1 per cent but the sector itself is estimated to be growing by 25 per cent a year. The drivers of this rapid growth is that the digital platform better meets constant fluctuations of demand efficiently and at a low cost. In addition, they are scalable, flexible and adaptable to various markets and allow the platform owner to maximize profits by selecting the most advantageous jurisdiction for tax purposes.

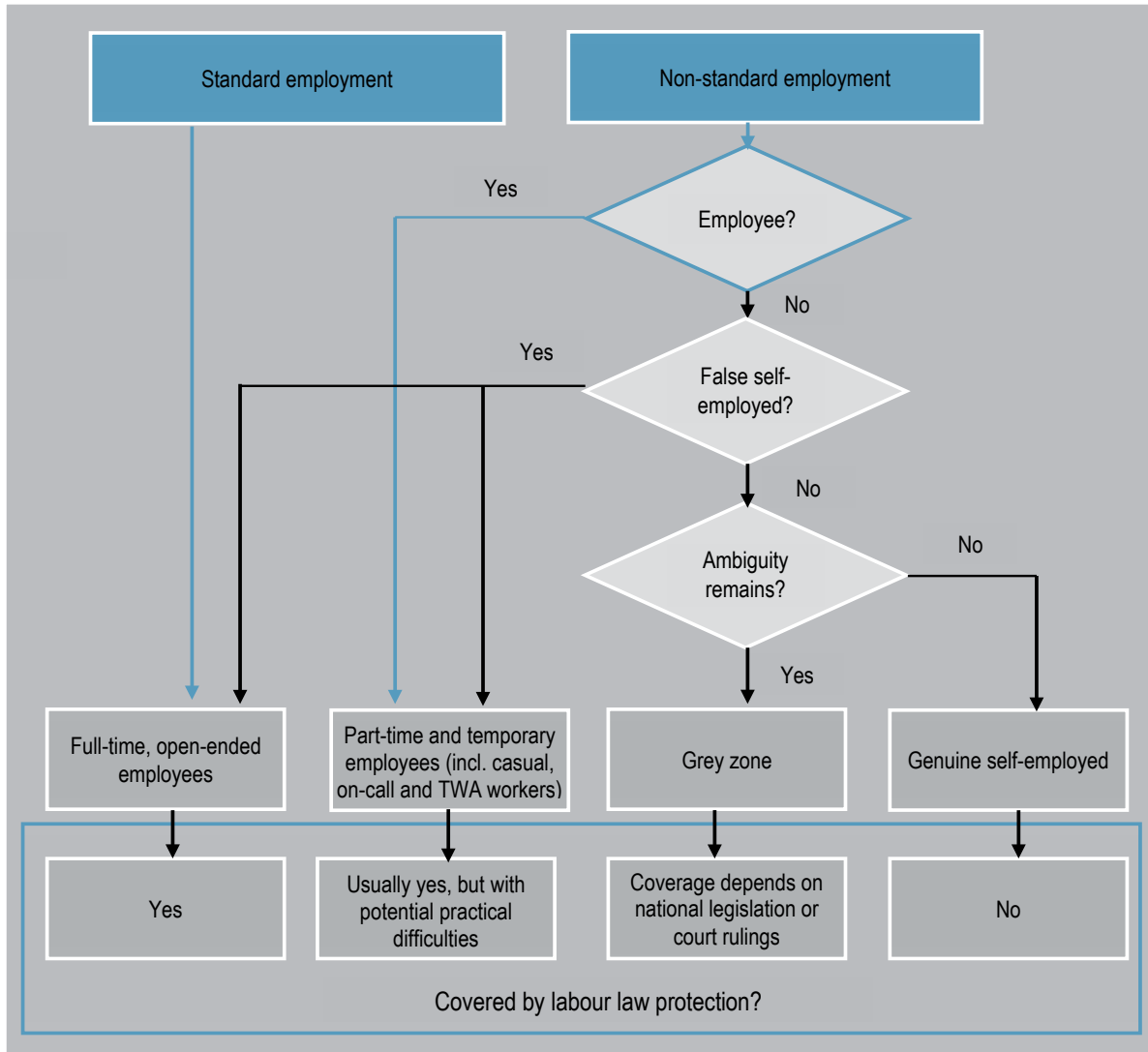
This of course is all dependent on having a flexible labour force. That need is increasingly met by deploying flexible contractual arrangements. In fact, while the Organisation for Economic Co-operation and Development (OECD) estimate that traditional forms of employment will remain the most prevalent form of work across advanced countries, it estimates that non-standard work already represents over one-third of total employment in OECD countries (OECD, 2019). As illustrated in Figure 3, this category includes fixed-term contract, part-time work, temporary agency labour, disguised employment relationships and dependent self-employment, voucher-based contracts and zero hours contracts, which have all increased in popularity with the rise of digital platforms. This entails serious consequences in terms of labour and social protection of platform workers, who are generally considered self-employed and consequently do not enjoy the same level of protection as employees (Figure 4).

Figure 3. *Flexible contractual arrangements*



Source: Aloisi and Gramano(2019).

Figure 4. Worker classification and implications in terms of labour and social protection



Source: OECD Employment Outlook (2019).

In addition, the rise of platforms generates uncertainty in the application and enforcement of labour and social security laws as the traditional notions of employer and worker are blurred.

Over the last decade, several disputes have been filed before national and supranational courts worldwide, mainly to assess whether the legal status ascribed to platform workers was coherent with the way in which tasks were executed. The issue at stake is important given the consequence attached to being classified as employee rather than self-employed in term of labour and social protection.

Platforms workers are generally considered self-employed and consequently do not enjoy the same level of protection as employees. However, this classification does not always reflect the reality, given the economic dependency of those workers towards the platform and the general lack of bargaining power, which places the latter in a similar position to subordinated employees. Moreover, in the absence of a common notion of “employee”, disputes with similar legal ground have been settled differently, even within the same country. Generally, the primacy of facts prevails on the formal aspects of the agreement

(i.e. *nomen iuris*). In other words, when a platform worker – formally contracted as a self-employed by the platform – claims to be a bogus self-employed, the courts carry out a test to assess such factors as the degree of control over the working schedule, the source and interval of payments, equipment used, workplace, etc. Where tribunals found that the self-employment status was used to conceal an employment relationship (to avoid regulations and the payment of taxes and social security contributions), platforms had been recognized as employers and their workers were considered entitled to full coverage. Some countries have adapted their legislation to include atypical workers (and platform workers) within the traditional categories of self-employed and employees (see Box 1).

In a few cases, the national legal framework already has a third category, which is used to cover platform workers meeting certain legal requirements (see Box 2). However, the option of a third category targeting platform-based labour has been criticized by those who believe that the proliferation of legal categories may result in uncertainty and potential circumvention of mandatory regulation, legal arbitrage and “jurisdiction shopping” (De Stefano and Aloisi, 2018).

In this scenario, it is therefore essential that policies and regulations minimize the risk of workers’ misclassification, harmonize relevant legislations and reduce opportunities to circumvent workers’ protection.

Box 1. Brazil, Indonesia, Malaysia and Uruguay

Effective implementation of coordination between different stakeholders and coverage extension to platform workers (previously working informally) have been experimented, for example, in Uruguay, where since 2017 drivers of transport platforms (e.g. Uber or Cabify) are mandated to register as a small business with both the local authority to get the licence and the Uruguayan social security institution, the Social Insurance Bank (*Banco de Previsión Social* – BPS). Therefore, the platform pays the withheld taxes to the local authority as well as to the tax authority, while the driver pays contributions to the BPS thus obtaining social security coverage.

In Rio de Janeiro, Brazil, since May 2018 digital platforms managed by transport companies (such as Uber, 99, Lyft and Cabify) are obliged to pay 1 per cent tax for each ride taken through the app. In addition, platforms drivers are required to register themselves and their vehicles with the Municipal Department of Transportation, therefore ensuring that minimum standards for safety, comfort, hygiene and quality in the provision of services are met. Currently, the Ministry of Economy is preparing a decree introducing the requirement for the registration of platforms drivers as individual *micro-entrepreneurs* at the National Social Security Institute (INSS). In return, they will benefit from a lower tax rate of 5 per cent of the minimum wage and social protection (i.e. sickness, maternity, disability and pension).

In Indonesia, since 2017 the BPJS Ketenagakerjaan (National Social Security Administering Body for Employment) has started a tripartite collaboration with GO-JEK, a ride-hailing on-demand service provider operating in 50 cities, and the Bank Mandiri with a view to provide informal workers in the sector with work injury and death benefits by simplifying the registration and the contribution collection mechanism. In particular, the partner-drivers are required to register online through a special website developed by BPJS Employment and GO-JEK. Every month a contribution of 16,800 Indonesian rupiah (1.18 US dollars) is automatically withdrawn from their GO-JEK balance accounts to cover the Work accident guarantee (JKK) and the Death insurance (JKM). Since the implementation of this partnership, the BPJS estimates that an average of 7,000 GO-JEK drivers have registered on a monthly basis.

In Malaysia, a similar solution has been adopted by the Social Security Organisation (PERKESO) in collaboration with the ride hailing GRABCAR app. Since November 2018, the drivers are mandatorily requested to register and contribute to PERKESO in order to obtain/renew the Public Service Vehicle licence and to be authorized to provide the service. The contribution is between 157.20 and 592.80 Malaysian ringgits per year, and the coverage depends on the plan the partner-driver opts for.

Box 2. The third category in Canada, Italy and Spain

In Canada, the concept of dependent contractor was established by law in the 1970s as a third category with the purpose of including own-account workers in a position of economic dependence within the definition of employee and, consequently, within the scope of labour protection and collective bargaining. The law defines dependent contractor a person “who performs work or services for another person for compensation or reward on such terms and conditions that the dependent contractor is in a position of economic dependence upon, and under an obligation to perform duties for, that person more closely resembling the relationship of an employee than that of an independent contractor”. This option could also apply to platform workers, whose position is generally of economic dependence – although the legal requirement of a single contractor may represent an obstacle to this end.

In Italy, the genesis of the third category of *lavoratore parasubordinato* (quasi-subordinated worker) dates back to 1973 and it was created to provide some sort of protection to a certain groups of precarious independent workers who neither benefited from the autonomy status normally enjoyed by self-employed persons nor from the protection provided to employees. This legal category has been recently adopted in some instances for platform workers.

In 2007, Spain introduced a new category (TRADE – *Trabajador Autónomo Economicamente Dependiente*) to provide workers deriving at least 75 per cent of their income from a single contractor with some legal protection, such as minimum wage, annual leave, severance pay for unjustified termination, family and sick leaves, and the right to collective bargaining. In light of two recent cases brought before the national courts involving Glovo and Deliveroo’s riders, the possibility to apply TRADE to platform workers is now being considered.

Source: Cherry and Aloisi (2017).

3.1.3. Occupational safety and health

In addition, implications for occupational safety and health must be considered in the context of digital platforms. Platform workers may be working in environments that are inadequate (poorly equipped, polluted, noisy, etc.) and without adequate breaks, leading to repetitive strain injuries and work-related stress. Similarly, on-demand or offline workers, such as drivers or construction workers often lack knowledge of the relevant regulations, including those on health and safety, safety equipment, certification and materials. Online and offline workers are exposed to stress due to the precarious nature of their job, the unpredictability of their working schedule, the instant rating system of clients and employers over which they have no control but that may determine their continued employment, and the lack of income when unable to work in the event of sickness, maternity, paternity, or injury, or while looking for new tasks (EU-OSHA, 2019).

3.1.4. Digital platform and collective rights

The individualization and fragmentation of work deprive platform workers of a collective voice. Therefore, they have few opportunities to share useful information and common concerns. This creates an information asymmetry between the worker and the platform. Some attempts have been made to correct this imbalance. For example, the “Fair Crowd Work” initiative, launched in 2016 by three of the largest industrial trade unions in Europe – namely IG Metall, Ver.Di and Unionen – together with platforms and large German enterprises, aims at collecting and sharing information on issues related to platform work such as workers’ rights, working conditions, etc. The introduction of a right to lifelong learning could

equip workers with broader skills needed to perform different tasks and jobs and thereby prevent job loss. In this regard, a few initiatives worldwide have revealed that unionizing platform workers is also possible, yet it requires trade unions to adopt new strategies and innovative approaches (Johnston and Land-Kazlauskas, 2018; Avogaro, 2019).

The involvement of all parties in the regulation of digital platforms is desirable to counterbalance the information asymmetry characterizing employment relationships in the digital era (De Stefano, 2018; Aloisi and Gramano, 2019a).

3.2. Robotization and/or automation

It is commonly feared that automation and robotization will cause major job displacement in the future, especially in sectors that involve routine and repetitive tasks. However, recent studies are much less pessimistic (OECD, 2019) showing that only 14 per cent of jobs could be fully automated in the next 15–20 years while 32 per cent more will be only affected by automation. According to the World Economic Forum (WEF, 2018), while these phenomena will cause 75 million job displacements, 133 million new roles will be created.

Occupations at lower risk of automation correspond to those where high-level cognitive skills and complex social interactions are required, such as teaching and legal professionals, ICT professionals, business and administration professionals, and health, science and engineering professionals. The opposite scenario is expected for occupations characterized by low-skilled and repetitive tasks, such as drivers, food processing, agricultural labourers, and machine operators that are more likely to be replaced by machines or automatized (OECD, 2018b).

However, the complexity of the phenomenon suggests that precise predictions are difficult to make. In making the business case for automation and robotization, the return on the important capital outlay must be balanced with the labour cost it seeks to reduce. Thus, the cost of low skilled labour is an important factor. The lower the cost of labour, the deeper the “digital trap” for those workers which, perversely, also protects their job from automation. Beyond the cost aspect, where strong social, empathy and interpersonal competences are required – the health care sector is a good example – the role of humans is more difficult to replace by a machine. Finally, there are many tasks that simply do not lend themselves to robotization however simple they appear to be. For example, sweeping the floor is simple enough, however, the same worker will dust the furniture, empty the garbage, clean a whiteboard, etc. Nonetheless, the divide between high-skilled and low-skilled workers may increase with the middle being most affected. Bridging this gap requires to have either the technical skills and/or social and interpersonal skills. These can only be addressed through investments in human capital development to enhance these competencies and mitigate those risks, as further discussed below.

3.2.1. Artificial intelligence (AI)

AI enables enormous advancements in manufacturing, distribution, high-tech tools, health care and behavioural analysis. Based on mathematical algorithms, AI is quite simply the advanced statistical treatment of data to identify patterns. AI application can range from low-intelligence scenarios such as rule-based automation to higher-end intelligence capable of non-deterministic and evolving decision-making. However, AI systems do not make decisions unless they are allowed to do so by humans. In instances where there is very little tolerance for misdiagnosis, AI provides advice that is then assessed by

a human. Such is the case in the diagnosis of potentially lethal health conditions. In all cases, the option to delegate the decision to the machine is exercised by humans.

The defining advantage of AI is the ability to process and analyse a very large quantity of data instantly and to identify patterns, linkages, and causality relationships between events that only emerge in this context.⁴ However, it lacks critical and ethical judgement criteria and intuition capabilities, which are usually based on long time experience, broad contextual information and on non-linear reasoning. This is the unique and irreplaceable human advantage.

AI can only solve specific problems. Therefore, when it is applied to a broader context, AI might not be feasible, especially where the existing data is limited. Furthermore, AI does not consider contextual elements other than those included in the datasets for model training.

While AI was initially based on logic-based techniques, it has evolved to use techniques leveraging big data, such as Machine Learning. Machine Learning allows AI applications to become progressively more accurate in predicting outcomes by autonomously learning from previous outcomes. This allows the identification of interventions that have been successful in similar circumstances in the past (van Leent, forthcoming).

New applications and business opportunities have been developed as a result of the explosion of data sources, the development of interoperability mechanisms and big data management techniques (OECD, 2017a; 2018a).

More recently, advanced Machine Learning algorithms is behind new applications such as natural-language processing (Gartner, 2018).

A common mistake with AI is to focus on its role in automation rather than on the role in augmenting human decision-making capacity. The juxtaposition of the capacity of AI to extract statistically relevant information from vast amount of data with human contextual intelligence, judgment and empathy unleashes the true value of this tool.

The critical success factors are thus the availability of quality data and of skilled staff.

Other factors constitute challenges for AI application. Among these, security and data protection figure prominently. Complex legal, cultural and technical concerns must be taken into account and addressed (OECD, 2017a).

Looking to the future, AI will improve communication with humans by improving natural-language processing through contextual interpretation, allow for a deeper and broader integration with Internet of Things (IoT) applications (such as home movement detection sensors for long-term care), and for further improvements of autonomous agents (bots) and intelligent devices.

3.2.2. Human capital development in a changing world of work

In the context of the emerging digital economy, many jobs will change. The 2018 Future of Jobs report of the World Economic Forum forecasts a need of up-skilling and re-skilling for 54 per cent of the global workforce by 2022 (WEF, 2018). Additionally, the World Bank forecast that a large share of children who entered primary school in 2018 will work in occupations that do not yet exist (World Bank, 2019).

4. For further reading on AI, see ISSA Technical Commission on ITC Report *Applying emerging technologies in social security*.

The competencies needed by future generation of workers such as curiosity, creativity, interpersonal skills and empathy – the qualities that are unique to humans – are for the most part acquired in early childhood. They are further nurtured in primary and secondary school (World Bank, 2019). Fostering curiosity and a desire to learn is especially important to support adaptability to a changing environment.

Post-secondary school programmes are equally important, as the labour market requires advanced cognitive skills, critical thinking and internet literacy. Even relatively low-skilled jobs will require the ability to use digital tools, in addition to high-cognitive and social skills to access to the labour market. Similarly, adults need to acquire new skills and constantly update them in order to prevent prolonged out-of-work periods.

Providing a good start in life and access to education in the formative years yield life-long dividends, is proven to reduce inequalities, and facilitates participation in the labour market. In this regard, significant investments in education and supportive family programmes are one of the best levers to ensure that end.

Examples of initiatives in this regard include China where, since January 2017, workers affiliated with unemployment insurance (UI) schemes for at least three years are entitled to a lump-sum skills upgrading subsidy of 1,000–2,000 Chinese Yuan (approx.142–284 US dollars) once the recognized skills attestation, such as a professional qualification certificate or vocational skills grading certificate, is obtained. Similarly, Gambia, where the Women Initiative Gambia (W.I.G) has recently launched skills training and capacity building programmes⁵ for young women in tailoring and weaving (making luxury accessories and home wear from waste materials such as plastic and rubber), is expected to empower thousands of young women, especially in rural communities.

In Singapore since 2015, the SkillsFuture Mid-Career Enhanced Subsidy⁶ covering up to 90 per cent of the course fee for over 8,000 designated courses in accredited institutions is paid to Singaporeans aged 40 or older to encourage mid-career up-skill and reskill. In 2019, China, Hong Kong Special Administrative Region, has further improved an IT Scheme for People with Visual Impairment⁷ to enhance access to information technology particularly to those who require the usage of high-performance IT for the purpose of studies or employment with financial difficulty.

Finally, with a view to harnessing the skills of migrants, the German government in collaboration with Turkish authorities and local partner organizations introduced training for refugees and the local population⁸ in 2016, which has enabled 25,000 people (more than half of whom are women) to acquire skills for manual trades and to put this knowledge into practice in small and medium-sized enterprises.

3.3. The use of data in the digital economy

Social security institutions could not function without access to personal data. They are the repository of vast quantity of personal information accumulated as part of their day-to-day operations. That same information can be used to generate value-added services, improve programme design and even predict the benefits one may claim in the future. It is in this context that the issue of data privacy is examined.

5. thepoint.gm/africa/gambia/article/ataya-attire-empowering-young-women-in-the-gambia.

6. www.skillsfuture.sg/enhancedsubsidy#whatisit.

7. www.opengovasia.com/hong-kong-introduces-it-subsidies-for-disabled.

8. www.giz.de/en/mediacenter/74911.html.

There is a clear correlation between the amount of information available, the ability to assess requirements and the possibility of delivering tailored services. This added convenience must be weighed against the risk of misuse of the data gathered. In that balance, the advantage to the individual must clearly outweigh the risk.

To fully take advantage of this opportunity, Social security institutions must ensure that the data is adequately protected and develop a convincing value proposition demonstrating the benefit for the user. There are plenty of examples in the private sector where this business case is made and which could be recycled in the world of social security to provide customised and predictive services.

In recent times, data security has become a policy priority for many international institutions. At the European Union (EU) level, the General Data Protection Regulation (GDPR)⁹ entered into force in May 2018 with the aim of ensuring “a consistent and high level of protection of natural persons and [removing] the obstacles to flows of personal data within the Union”. The GDPR considers the protection of individuals in relation to the processing of personal data as a fundamental right, yet a right that must be balanced against other fundamental rights, such as collective interest.

3.3.1. Ensuring the ethical use of data in the digital economy era

Data processing must respect the principles of lawfulness, fairness and transparency and is subject to consent at the time of collection. While “inferential analytics”¹⁰ remains largely unregulated (Aloisi and Gramano, 2019a; Wachter, Mittelstadt and Russell, 2018), substantive improvements in data security are expected in the domain of AI applications. This is notably “the right not to be subject to a decision based solely on automated processing” concerning the person’s performance at work, economic situation, health, personal preferences, interests, reliability, which may curb far-reaching automation processes. In this context, given the high costs of compliance related to the implementation of data security regulation, it is conceivable that the EU regulation could become a global benchmark in the area of AI and the processing of data.¹¹

Similarly, at the international level, the OECD has recently adopted the Recommendation on Artificial Intelligence¹² – the first intergovernmental standard on AI enhancing innovation, trust, respect of human rights and democratic values with respect to AI-specific issues. Among others, it promotes principles of transparency, robustness, security and safety to avoid unreasonable safety risks and ensure traceability. Additionally, it points out the importance of building capacity and strengthening international cooperation with a view of boosting a human-centric approach to trustworthy AI. Although not legally binding, the OECD recommendations are highly influential on national legislation. Hence, the “Recommendation” on AI represent an important step towards the awareness of data security implications on people’s lives.

Considering the relevance of these topics, the International Social Security Association (ISSA) has developed ISSA Guidelines on Information and Communication Technology (ISSA, 2016c), providing a high-level reference point for the management of information security and privacy in social security

9. Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) OJ L 119, 4.5.2016.

10. Intended as the identification of connections between seemingly unrelated events.

11. For instance, the United States have started discussing the possibility of adopting a version of [GDPR](#).

12. [OECD/LEGAL/0449](#).

institutions. The Guidelines include a section on Data Security and Privacy, which highlights the importance of designing an adequate framework to protect data and reduce security risks in accordance with the legal and regulatory environment as well as the need to implement a global system for the protection of privacy and personal data in line with requirements related to international data exchange.

In addition, the ISSA advocates for a progressive harmonization of standards that may bring about more effective service delivery and robust AI systems worldwide. In this perspective, the section on Digital Governance included in the ISSA Guidelines on Good Governance (ISSA, 2019b) encourages social security institutions to create digital governance framework promoting the harmonization of rules and standards among the members and ensure the integrity, privacy and protection of data. To this end, ICT capabilities and internet-based technologies need to be adapted to meet users and respond to personal circumstances. In order to do so, the section suggests that the implementation of a participative model based on mutual understanding and virtuous cooperation between the various functional areas of the institutions is required to meet the business needs and facilitate interoperability and exchange of information between units and programmes.

3.4. Formalization and funding: Two key aspects to ensure sustainable social security systems

To perform its role, the financial health of the social security system must be maintained. In a rapidly changing world of work, the design and the implementation of social security programmes must adapt to labour market trends and address social protection gaps to ensure the delivery of sustainable and adequate benefits.

Together with major changes in the labour market, new needs arise. Consequently, social security institutions are expected to adjust and evaluate the design of social security programmes, including their contribution collection and service delivery mechanisms. In other words, to meet the needs of workers in non-standard employment and their families and to avoid the erosion of their financial foundations, social security programmes need to adapt with a view of extending and ensuring effective coverage to the most vulnerable in the labour market, including atypical workers, platforms workers and informal workers. To do so, they must address primarily issues such as formalization, contribution collection, service delivery and funding (i.e. discontinuity of employment and tax erosion).

In this perspective, digital platforms represent an opportunity for formalization. In fact, although in developed countries platform work is more likely to be perceived as a threat to traditional, secure and protected forms of work, a different finding has been pointed out in a recent research conducted by i2i and FiDA on African Digital Platforms (Hunter, Johnson and Smit, 2019) revealing that digital platforms in Africa are “bringing informal activities into the realm of the formal economy”. In other words, despite the digital divide in low-income and middle-income countries, positive developments in terms of coverage and employment opportunities are expected in the years to come.

3.4.1. Formalization and contribution collection

Technologies and digitalization positively impact social security administrations by simplifying registration and contribution collection procedures, and by reducing fraud and error. At the same time, benefit delivery has become timelier and more efficient, thereby increasing people’s trust in social security institutions and overall compliance.

Lack of information, complex registration procedures, geographical barriers and costs of compliance may represent obstacles to the formalization of informal workers. Therefore, rising awareness through registration campaigns and facilitating access to administrative procedures by virtue of technologies deployment and digitalization may help in enhancing social protection. Apps and mobile phones ease and accelerate information exchange between the institution and its members as well as between institutions themselves (ISSA, 2016b). Moreover, technologies reduce the need of supporting documents and mitigate the risk of time-consuming queues in local offices. Simplifying procedures while improving service quality is a key factor for increasing registration rates and, therefore, formalization. However, registration is only the first step, which needs to be followed by an adequate system of contribution collection as well as an efficient system of service delivery.

The new forms of work entail the completion of administrative tasks that were traditionally the remit of the employer, such as the collection of contributions, the remittance to the institution or the tax authority, the maintenance of records and meeting reporting requirements. This highlights the importance of easy-to-use, self-reporting tools with a strong emphasis on integrity-by-design features.

As shown in the following boxes, a wide range of solutions have been elaborated and adopted in different countries as a response to mitigate the loss of the administrative support formerly provided by the employer (Freudenberg, ISSA TC-Pension and DRV-Bund, forthcoming; OECD, 2019; ESIP, 2019) (see Boxes 3 and 4).

Box 3. Formalization through digital platforms: Lessons from international experience

Contributions collection through platforms (acting as unique contributions collector) has been successfully introduced in some countries on a voluntary basis, such as Singapore where some platforms transfer voluntarily contributions to social insurance institutions; or in France, where platform workers may authorize platforms to make income or turnover declarations and to transfer contributions to social insurance agencies on their behalf. In other countries, such as Switzerland, platforms may automatically transfer social contributions and taxes to the respective public bodies.

Box 4. Private initiatives may facilitate the extension of social protection coverage

In Italy, DocServizi is a cooperative of freelancers that provides to its affiliates a wide range of services and benefits, including sickness, maternity and unemployment benefits upon payment of a subscription fee and a withdrawal from the monthly turnover of its affiliates. In Denmark, the first ever collective agreement between a platform and a local branch of Uniglobal saw the light of day in September 2018. It considers the platform's workers as employees and provides them, among others, with contributions to pension savings and paid sick leaves.

Private insurance companies may also support this process by offering products specifically tailored on platforms workers' needs or through agreement with digital platforms. In this sense, the Axa-Uber partnership represents a pilot experience providing Uber drivers across Europe with parental leaves, sickness and injury compensation and a childbirth allowance. Despite the limited scope of this option – compared with the broader impact of a comprehensive social protection, it shows a gradually rising awareness of private stakeholders towards the importance of social protection.

3.4.2. Addressing discontinuity of work and contributory base erosion

As already pointed out, formalization of difficult-to-cover groups represents a priority for all social security systems as it increases social protection coverage while reducing risks of default. However, in order to guarantee the sustainability of social security systems, an adequate funding strategy must be put in place. Nowadays, the latter has become a major challenge due to the discontinuity of careers and tax erosion. These two factors will be further discussed below, together with a few examples of successful solutions adopted by some countries worldwide.

Discontinuity can have a significant impact on contribution collection and on tax revenue, with consequent implications on the sustainability of schemes. Mitigating the discontinuity requires the ability to maintain coverage on a continuous basis. This in turn necessitates the ability to track and manage the transactions, assess and collect contribution payments for and accumulate the social security credits/eligibility.

Furthermore, timely and adequate investments on ICT may benefit both social security administrations and users. In fact, on the one hand, advanced technologies facilitate data management and accelerate procedures, while reducing errors. On the other hand, user-friendly interface increases users' compliance and lowers administrative burdens (ISSA, 2019a).

Innovative approaches have been adopted by institutions, governments, social partners and various stakeholders worldwide in order to find appropriate solutions to such complex scenario. Among others, many legislative reforms, parametric adjustments and operational improvements have been shown to be effective. In the EU, a Proposal for a Council Recommendation on Access to Social Protection for Workers and the Self-employed¹³ with the view to providing social protection on a mandatory basis to all workers regardless of employment status is currently under discussion. Other innovative approaches are also outlined below, bearing in mind that there is no one-size-fits-all solution and that different contexts require adapted approaches.

Some countries have already adjusted contributory programmes to reflect the more fragmented work histories of an increasing share of workers by relaxing the threshold for eligibility (OECD, 2019; Freudenberg, ISSA TC-Pension and DRV-Bund, 2019) (see Box 5).

Box 5. Examples of parametric adjustments to address new social needs

Belgium lowered the minimum thresholds for mandatory social insurance programmes to facilitate the coverage of platform workers and reduce the mismatch between the levels of contributions required for full coverage and the effective ability of those workers to achieve such levels.

In France, the qualification period for unemployment benefits is very short (88 days in a 28-month reference period) and workers may cumulate unused benefit entitlements for future out-of-work periods.

In Denmark, workers' eligibility for unemployment benefits is calculated over a three-year period of taxable income regardless of employment status (i.e. being self-employed does not disqualify the worker from the benefit).

13. eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52018DC0132&from=EN

Other solutions may envisage the deferral of contributions during economic crises or an interruption in contribution periods as well as the use of broad income bands for the determination of contribution levels. Other approaches involve providing temporary income support to self-employed workers. This can take the form of a top-up to the level of regular social assistance or in the form of a zero-interest loan. The latter is in place in the Netherlands, where self-employed workers have access to interest-free loans to bridge temporary low-income periods (OECD, 2019; 2018c).

International experience shows that voluntary schemes can also play a significant role in complementing mandatory schemes. However, there is a risk of adverse selection, as the workers with the highest risks have the biggest incentives to join, making the system more expensive for the average worker and consequently making risk pooling difficult. Consequently, extending coverage through mandatory schemes including workers with lower contributory capacities has proven to be more effective in terms of coverage and adequacy as it allows for risk pooling, thereby promoting financial sustainability of social security systems. This may require government subsidies or the introduction of differentiated contributory categories.

From the employers' perspective, risk pooling in the form of an insurance against unexpected or cyclical shock may also be desirable in the context of automation and "platformization". Given that several sectors will be affected by job displacement in the future and that the contributions paid by the employer to finance out-of-work support are generally detached from layoff decisions and to the social costs that these layoffs entail, such a link might better reflect the full cost of substitution of workers by artificial intelligence or robots (see Box 6).

Box 6. The United State's unemployment insurance "experience rating" mechanism

The United States has introduced an "experience rating" of unemployment insurance mechanism (already applied for disability and work injury) which ascribes a greater share of the social cost of displacement to those who are responsible for it with positive consequences in terms of a reduction of the overall contribution burdens and increases in employment.

Source: OECD (2019).

3.4.3. Portability to facilitate labour market mobility, and the transferability of rights

Portability is an essential driver for the extension of social protection coverage. It facilitates geographical and economic mobility thus enhancing the freedom of movement of workers and allows a better allocation of labour and facilitates access to the labour market for those who have to migrate due to causes of force majeure. In 2017, about 258 million people around the world were living outside their country of birth, and about half of all these migrants were living in OECD countries (OECD, 2018c). In this regard, a renewed impetus and promising steps have been taken to increase protection for migrant workers and their families through bilateral and multilateral agreements. The effective implementation of portability of accrued social security contributions is an important step towards ensuring better protection (ISSA, 2016a). In fact, a multifaceted and fragmented labour market with frequent employees' turnovers, career interruptions and multi-employer jobs requires that eligibility be maintained throughout the entire career.

Box 7. Facilitating portability of rights and benefits enhances labour market mobility

In Austria, all employees receive their employer's contributions on an individual account, which is independent of the employer and transferable across jobs. Accordingly, transition to self-employment interrupts employer contributions but at the same time entitlements loss is prevented.

In France, a different but noteworthy solution to facilitate mobility in employment is enabling independent platform workers to be insured voluntarily in the general scheme if already insured in the latter as employee.

Ideally, the sum-total of the work history would follow the individual rather than the employer and would therefore be portable. A critical enabler is identity management and information exchange (Ruggia-Frick, 2016). The technologies fuelling the emerging digital economy enable these developments and it is an ISSA priority to promote portability through the exchange of information between institutions. Some countries have taken steps in that direction and participate in the development of the ISSA standard for information exchange.

Considering the above, it becomes evident how sustainable and effective social security systems depend greatly on the successful implementation of formalization and funding strategies. An increase in registrations rates implies an increase in contribution collection and, hence, more sustainable financing if the fundamental design of the system is sound. However, these factors alone are not enough to achieve universal social protection. Appropriate tax policies are also pivotal to this end, as better explained in the following section.

3.4.4. Towards a sustainable taxation policy in the digital economy

In the context of digitalization, potential tax-base erosion is increasing while the movement of data – and profits – knows no borders. Therefore, ensuring proper taxation has become indispensable to guarantee inclusive growth and wealth redistribution. According to OECD estimates, the proportion of global corporate tax revenue loss related to digitalization is 4–10 per cent. In order to close the loopholes that allow multinational firms and digital platforms to shift profits to jurisdictions where tax policies are more convenient, an effective system of data exchange and horizontal coordination must be implemented. In this respect, some countries have already implemented innovative solutions that aim at exchanging relevant information between platforms, platform workers and tax authorities, local administrations and social security administrations. The tax challenge arising from digitalization is a global issue, which has also been addressed at the 14th G20 Summit (in Osaka in 2019) with the purpose of finding a common strategy to close the existing loopholes (see Box 8). At the 2019 G7 meeting (in Biarritz in 2019), France and United States reached an agreement on digital taxes according to which France's digital tax will apply until a new international digital levy currently being drawn up by the OECD is in place.

Box 8. The G20 “digital tax” initiative

The G20 has recently discussed the possibility to introduce a digital tax by 2020 that would make it difficult for global tech giants to reduce their corporate taxes by channelling sales via countries with “light-touch” tax regimes. To this end, two pillars will be added to the tax code: the first prescribes the application of the tax regulation of the country where goods and services are effectively sold and the second envisages the introduction of a global minimum tax rate to close potential loopholes (White and Strupczewski, 2019).

4. Megatrends and digital economy: What impact on social security?

The emergence of the digital economy is not happening in isolation. Other profound changes such as demographic ageing, changing family structures, migration and climate change raise challenges that must be taken into consideration simultaneously. Fortunately, the digital economy offers a toolset that could address some of these risks. These factors will be examined in the following sections.

4.1. Demographic changes

Life expectancy continues to increase globally, with large variations across regions. While in 2015, there were 28 people aged 65+ for every 100 people of working age, this ratio is projected to double by 2050 (OECD, 2019). Birth rates have fallen significantly in all regions. The resulting demographic ageing is a major concern for pension systems albeit to different extents. In countries with comprehensive and mature systems of social protection the challenge is to maintain a good balance between sustainability and adequacy. In countries facing problems such as structural barriers to development, high levels of informality, low contributory capacity, poverty and insufficient fiscal space, the priority is to design and implement social protection floors as part of a more elaborate and coordinated system and with a view to supporting the transition from the informal to the formal economy and to create more robust social insurance systems.

4.1.1. Sustainability

Longer life expectancy has long been viewed from a pension sustainability perspective requiring adjustments to some or all of the three available levers: increased contributions, reduced benefits, or the postponing of retirement. To address this problem, tightening eligibility conditions for a full pension is a policy option that has been implemented in several countries often in combination with the increase of the retirement age. However, austerity policies on their own have been shown insufficient – if not detrimental – when not combined with legislative reforms targeting specific groups and addressing specific needs based on long-term projections and inclusive policy strategies (ILO, 2017).

The digital economy is challenging the traditional model of the accrual of pension credits: in some cases, the potential contributor simply loses coverage by virtue of not having a recognized status or having a “virtual” employer. In other cases, the earnings from individual tasks performed do not amount to enough income to meet the threshold required for vesting in a pension scheme. Yet, in other cases, it may be difficult to track and consolidate the information related to an individual.

4.1.2. Health and long-term care

Despite increasing life expectancy, the number of years of healthy living increases at a somewhat slower pace. The nature of diseases has changed with a substantial increase in noncommunicable diseases (NCD), which portends a substantial increase in long-term care spending in the future (AAI, 2017). Most jurisdictions currently use the health system as the gateway to address chronic conditions that would be best addressed outside of the hospital context. The latter is equipped to deal with acute conditions with specialized services. At some point in the life of most people, long-term care services become a necessity, requiring both adequate facilities and trained staff. The latter is emerging as a major challenge.

Digital technologies have already brought about significant advancements to health and long-term care management. Remote health monitoring is now a reality, and customized and just-in-time assistance has been made possible through digital applications connecting patients with pools of specialized doctors, 24/7. At the same time, advances in AI are supporting medical professionals and contributing to faster and more accurate diagnosis.

In the context of an increasing proportion of “older old”, part of the response is to facilitate ageing in one’s own dwelling and community. Homecare and the concept of “ageing in place” facilitate healthy and active ageing, improves life quality and physical health and can reduce the pressure for health services (WHO, 2017). However, turning this into reality will require an unprecedented degree of coordination between levels of governments, institutions and service delivery agents so that the services provided are adapted to the needs of the individual. Digital technology, particularly remote monitoring technologies, can play a huge role to facilitate ageing in place. Automation in the home setting can support adapted living and mobile technologies can mitigate geographical distance with loved ones and provide instant access to services when in need.

4.2. Climate change and shocks

4.2.1. A planetary issue

Climate change is the planetary issue of our times and social security has a role to play in mitigating some of its anticipated impacts.

The most predictable effect of global warming is the climate-induced displacement of the population. Most of the world population live, as can be expected, close to water. As ice melts and water rises, large migration will follow. In 2017, about 258 million people around the world were living outside their country of birth, accounting for 3.4 per cent of the world’s total population. Future forecasts on climate change-induced migration vary from 25 million to 1 billion environmental migrants by 2050, with 200 million being the most widely cited estimate (IOM, 2018). Accordingly, social security policies need to adapt by reducing vesting requirements and waiting periods and simplifying contributions calculation and collection. Therefore, portability should be guaranteed in order to facilitate resettlements and avoid contributions loss (ISSA, 2016a).

Box 9. Cities at risk from sea level and temperature rises

Scientific projections foresee extreme events in most regions, including catastrophic storms and flooding as well as heat waves and droughts. This will make some cities unliveable and, thus, make massive migrations inevitable. This is the case of major cities such as Miami, where 3.3 million residents could face devastating flooding by 2100. Similarly, New Orleans' more than 13 million people are expected to be exposed to a six foot sea-level rise from 2010 to 2100. Chicago could experience another fatal heat wave. While temperatures in Dubai, Abu Dhabi and Shanghai could become unbearable after 2070.

Sources: Bendix (2019); WRI (2019).

4.2.2. Business continuity

Shocks can take many different forms: war, mass migration, epidemics, financial crisis, etc. Appropriate contingency plans are needed to ensure services continue in the event of a force majeure that would otherwise undermine the normal provision of public services; and to respond to the vulnerable population, including migrant workers and informal workers who are more likely to be excluded from social security coverage. The provision of social security benefits must be continued in times of crisis so that it can maintain its role as an automatic stabilizer and a driver of social cohesion, and in maintaining household incomes in times of uncertainty and instability. Unemployment protection and public employment programmes if adequately combined with conditional and unconditional cash transfers may alleviate households from poverty and deprivation, while supporting their consumption. Concomitantly, sustainable short- and long-term social security policies are necessary to respond to the impact of shocks, which include portability across jobs and countries, partial and temporary unemployment schemes, short-term policies can provide for flexibility in design and contribution payment, allowing for delayed and partial payments or temporary reductions in contribution rates.

4.3. The changing family structure

4.3.1. Multiple factors

Changes in family structure are due to several reasons, including demographic changes, and modifications in traditional family and marriage patterns. However, at a macro level, new trends in labour market and in care work also play a critical role in shaping society and households' habits. To ensure effective coverage extension strategies and safeguard adequacy of benefit levels, social security systems must account for a growing number of working women (with only 50 per cent of women in comparison to 75 per cent of men at work),¹⁴ later marriage and childbirth patterns, increased numbers of divorces and a growing prevalence of single-parent households. This also requires appropriate investments in care infrastructures and the promotion of shared responsibility for caring (ISSA, 2017).

14. www.ilo.org/infostories/en-GB/Stories/Employment/barriers-women#global-gap

The digital economy may play a positive role in this regard. Digitalization and platform work enable people to work remotely, from home, with positive implications on work-life balance. Oftentimes, the autonomous character of digital work allows for flexible working arrangements and therefore makes access to the labour market possible for individuals previously excluded due to caring responsibilities and physical impairment. It can also result in the blurring between professional life and private life.

4.3.2. Gender equality

Furthermore, issues of discrimination have been pointed out in several studies. According to a recent survey of online workers in developing countries conducted by the ILO (Uma and Furrer, 2017), digitalization does not solve traditional inequalities within the labour market such as gender inequality and work-related harassment. On the one hand, a higher percentage of women than men tend to “prefer to work at home”; on the other hand, this often entails a double burden and lower pay, as women tend to fulfil caring duties and, at the same time, are constantly searching for new gig tasks (i.e. women generally spend about 25.8 hours working on platforms in a week, 20 hours of which is paid work and 5.8 hours considered unpaid work). Therefore, an important step forward in terms of increasing social protection and ensuring decent working conditions for digital workers can be made by addressing these issues and adapting current labour and social security legislations accordingly.

5. Conclusions

To stay relevant, social security must keep up with social, economic and cultural changes including those related to the emerging digital economy. The latter raises two major risks to the sustainability and adequacy of social security systems that must be mitigated: the increasing coverage gaps and the erosion of the funding base.

In this regard, the ISSA has identified six priority areas of action:

Legal certainty and harmonization of employment status. The hybrid nature of platform-mediated labour exposes digital workers to the risk of misclassification. Consequently, there is a need to clarify their legal status to harmonize relevant legislations and to reduce opportunities to circumvent workers’ protection. Legal frameworks should be adapted so that all workers are entitled to full social protection regardless of their employment status and the financial models should be adapted to new forms of work. To this end, a higher degree of cooperation between national and local administrations – including social security institutions, tax authorities and private stakeholders – is a key success factor.

Ensuring the sustainable financing of social security systems. A solid financial base is essential to the sustainable delivery of adequate services. In this regard, social security institutions need to ensure that their contribution assessment and collection model remain relevant. Clarity around the employment status is needed and should be regulated and implemented taking into account the new forms of work and the erosion of the traditional payroll. Actuarial valuations of social security systems should carefully monitor the changing pattern of contribution to inform the development of new measures. (ISSA, 2016d). This must be carried out in parallel with a strategic coverage extension plan to bridge emerging gaps and reach out to difficult-to-cover population groups (ISSA, 2012).

Eventually, where digital employers can select low tax jurisdiction or evade altogether their fiscal responsibility, it is important that new approaches be developed. The recent G20 two-pillar initiative as well as the 2019 G7 agreement on an international digital levy are important steps in the right direction.

Data protection. Personal data and data analytics have become one of the most valued commodities. As repository of vast quantity of data, social security institutions have the duty to protect this information against cyber threats and breach of privacy. As a consequence, a balance has to be sought between protection of privacy and the provision of tailored services. With this in mind, it is therefore important that the sharing of personal information be governed by transparent rules, subject to explicit consent and generate tangible service quality benefits to the users.

People-centric coordination. Social security institutions each provide an element of response to the needs of the individual. For example, unemployment is linked to training and disability is linked to rehabilitation. Those linkages should be viewed from the recipient's perspective rather than from the institutional perspective.

The needs identified can then be met in the most efficient way, taking a long-term perspective in the development of human capital, individual resilience and protection of the investment. This approach will improve the effectiveness and responsiveness of the services provided and generate better outcomes. It is also a necessity in light of the evolving needs of the older-old (aged 80+).

Human capital development. In order to facilitate adaptability and mobility of the workforce between jobs/sectors and to avoid long-term unemployment, re-skilling and up-skilling programmes must be made available throughout the entire career. As for future generations of workers, investments in the education system is pivotal to equip youth with critical and analytical thinking, ethical judgment, empathy, curiosity, creativity and social skills that are essential to make the best of digital tools, including AI. These attributes are for the most part developed early in life and built in primary and secondary school – when children develop cognitive and social skills, and adaptability. Human capital development should be considered a priority in any long-term strategy.

Portability. In light of the fragmentation of work and in order to facilitate the free movement of workers and the continuity of coverage, it is important that social security institutions and governments cooperate to ensure portability of rights and benefits across scheme and across borders. The portability will also become an essential feature in a world of eventual mass-migration caused by climate change. To this end, social security institutions should share its ICT resources with other programmes in the national jurisdiction with a view to fostering interoperability and facilitate the development and implementation of single registries and other tools required for the effective coordination of social protection schemes. Additionally, bilateral and multilateral agreements favour migrant workers mobility by strengthening interoperability and information exchange.

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