Modernising Access to Social Protection

STRATEGIES, TECHNOLOGIES AND DATA ADVANCES IN OECD COUNTRIES

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Foreword

In the face of long-term megatrends like population ageing, labour market transformations and climate change, OECD countries' social protection systems are well-prepared in some ways but unprepared in others. The welfare state that developed post-World War II in most OECD countries has matured and offers the core foundation for challenges ahead. Yet the coverage of social protection remains incomplete in many countries, and disadvantaged groups often struggle to receive the support they need.

Recent crises, including the COVID-19 pandemic and rising costs of living, have highlighted the crucial role of social programmes that are responsive to evolving needs. Social protection systems must make more efficient use of constrained public finances and ensure that the right benefits and services reach those who need them.

This report – ***Modernising access to social protection: Strategies, technologies and data advances*** – forms part of the OECD's *Future of Social Protection* programme of work, overseen by the OECD Employment, Labour and Social Affairs Committee. The report assesses how OECD countries use new technologies, as well as new data sources, to identify people in need and to improve the delivery of social benefits and services. This and other projects under the *Future of Social Protection* programme of work will serve as inputs to the 2025 OECD Social Policy Ministerial.

Among other key findings, this report illustrates how OECD countries are working to improve the take-up of benefits and services by linking data across agencies and using this information to simplify enrolment processes. Automatic enrolment enabled by improved individual- and household-level data, in particular, has the potential to expand the reach of social protection, as well as make it more responsive to evolving needs. As the digitalisation of social protection progresses, governments must ensure that this transformation is inclusive, for example by maintaining in-person service provision, and by being cautious, fair, human-centred and transparent when using automated decision-making technologies and artificial intelligence.

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Chapter 1 in this report was authored by Valerie Frey; Chapter 2 by Valerie Frey and Raphaela Hyee; Chapter 3 by Valerie Frey, Raphaela Hyee and Pablo Minondo Canto; and Chapters 4 and 5 by Dorothy Adams. Sarah Kups made substantial contributions to Chapter 4 and Maja Gustafsson made substantial contributions to Chapter 5. A companion paper on the accessibility and value of social safety nets will be published to accompany this report.

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Executive summary

Many OECD countries face challenges in identifying households in need of social benefits and services, enrolling them in the appropriate programmes, and delivering the support they need. Complex entitlement rules, information gaps and cumbersome application procedures have led to high rates of non-take-up in key social programmes, even when these programmes are well-designed and adequately funded. Well-executed advances in digital technologies and data can go a long way towards making social protection more accessible for everyone who needs it.

The take-up of social benefits is incomplete across OECD countries

The share of statutorily-eligible individuals and households who do not receive social benefits – the non-take-up rate – is significant for some countries and for some benefits. In Belgium, for example, 37% to 51% of eligible working-age people do not take up social assistance, and in the United States, around 20% of eligible families do not benefit from the Earned Income Tax Credit. These are sizeable gaps, with potentially large financial implications for households. Importantly, people with low resources are the least likely to respond to simple behavioural interventions encouraging them to enrol in social programmes.

Governments are investing in national strategies to identify and reach those in need

Data-informed, national strategies against poverty and social exclusion aim to identify people in need, often with the explicit target of increasing the reach of social protection. At least 29 of the 38 OECD countries have such frameworks in place. Most countries, including Ireland and Spain, identify groups and regions in need of social programmes based on probabilistic estimates of survey and administrative data. Once coverage gaps are identified, the policy response casts a wide net, including better communication and investment in new programmes. Public outreach and communication campaigns frequently target a particular benefit, a specific disadvantaged group or a geographic area. This approach is particularly useful for reaching people whose personal data may not be known by the public authorities, such as undocumented residents, informal workers or people experiencing homelessness.

A few countries, including Belgium, Chile, Estonia and France, increasingly link administrative data across sources to enable the identification of social benefit eligibility at the individual level. Data linking usually happens across different agencies or through a social registry.

Countries are leveraging advances in technology and data to improve coverage and delivery

Linked administrative databases can be used to measure non-take-up; help close information gaps (e.g. eligible households can be encouraged to apply); and lower the administrative burden on users

(e.g. by pre-filling information from administrative sources). In a handful of programmes, including child benefits, linked data are even being used to enrol users automatically.

Most claims for benefits and services can now be made online in many OECD countries. While this presents barriers for some users, it should also enable agencies to focus human resources on people who find it difficult to access automated systems, like people with complex needs or with limited access to (or familiarity with) digital resources.

Governments are only at the beginning of digital transformation in social protection. Advanced uses of technology and data are less common in social programmes than, for example, in the healthcare sector. While government agencies are increasingly making use of administrative data, they are yet to exploit it in a systematic way.

Artificial intelligence is infrequently used – for now

Many uses of advanced technologies, in particular artificial intelligence (AI), continue to be small, ad hoc test cases to determine feasibility and scope for deployment. Countries are proceeding with caution, implementing and evaluating small scale projects to manage risks.

In social protection, AI is most often used to interface with clients via chatbots and for automating back-office processes. A few countries report using AI to facilitate fraud detection. Apart from these examples, the use of AI in social protection remains limited; so far other types of automated decision-making (with human involvement) remain more common. One reason for this is that significant challenges exist with the use of AI, and countries are proceeding with caution. Several high-profile cases highlight risks such as discrimination and exclusion and have threatened public trust and confidence in governments' use of technology and data. Countries can work on identifying measures to address these risks, for example by applying the OECD Principles on Artificial Intelligence.

Modernising social protection – with guard rails

Leveraging advances in technology and data does not come without challenges and risks, particularly in the realm of data governance. Challenges include ensuring sufficient cross-governmental collaboration and data protection and privacy. There are also risks associated with discriminatory biases built into automated processes and decision-making, which have the potential to reinforce or create new sources of exclusion and disadvantage. These challenges require risk mitigation, with instruments like legal and regulatory frameworks.

Main recommendations of the report

- **Strengthen national strategies to identify people in need and integrate them into social programmes.** Linking data from different sources is useful for estimating non-take-up, identifying potential beneficiaries and informing people of their entitlements. At the same time, continuing to identify groups in need via de-identified data can help to inform outreach campaigns.
- **Explore the feasibility of automatic payment of social benefits.** Automatic enrolment using personally-identified, linked administrative data can increase the take-up of benefits, as it relieves recipients from the burden of applying.
- **Apply lessons from behavioural research to the digital transformation.** In randomised control trials, treatments of simplified information and support in programme applications usually have positive effects on applications and eventual enrolment. Sending prompts or clear information about likely eligibility – for example, based on linked administrative data – can also help increase

enrolment, though governments still face challenges reaching people disconnected from the state (e.g. those who do not file tax returns).

- **Ensure an inclusive digital transformation.** The digitalisation of services can save costs and simplify access for some users, but maintaining low-barrier, in-person support is essential for disadvantaged people who may lack the means to access services digitally. Good practices include combining digital offers with call centre and in-person options and providing training, intermediation and/or subsidies for devices. The digitalisation of social protection should follow much of the same guidance of digitalisation of governance more broadly: countries should prevent data breaches and manage them when they do occur, including through protective security frameworks, staff training, and data loss prevention tools. These efforts should be supported by a public office, such as a privacy or information commissioner. When using automated decision-making tools, including AI, governments must have appropriate accountability frameworks and transparent procedures in place to prevent and address discrimination and/or biases in automated systems.

1 Modernising access to social protection for the challenges ahead

Valerie Frey

This chapter presents the motivation and findings of the report *Modernising Access to Social Protection: Strategies, Technologies and Data Advances in OECD Countries.* Many OECD countries face challenges in identifying everyone in need of social programmes, enrolling them in the appropriate programmes, and delivering the support they need. Complex entitlement rules, cumbersome application processes and information gaps have led to high rates of non-take up in key social programmes even when they are statutorily well-designed and adequately funded. This chapter presents an overview of coverage gaps and the challenge of non-take-up in OECD countries, and discusses how ongoing advances in digital technologies and data are helping to make social protection more accessible to those who need it.

Key findings of the report

Many OECD countries face challenges in identifying households in need of social benefits and services, enrolling them in the appropriate programmes, and delivering the support they need. Complex entitlement rules, information gaps and cumbersome application processes can lead to high rates of non-take-up in key social programmes even when these programmes are well-designed and adequately funded. Well-executed advances in digital technologies and data can go a long way towards making social protection more accessible for everyone who needs it.

Social programme coverage gaps and non-take-up are problematic across OECD countries

- Government and academic research illustrate gaps in coverage and take-up of social programmes. In France, for example, around 34% of households eligible for the minimum income benefit, *Revenu de solidarité active* (RSA), do not receive it each quarter, and in the United States, around 20% of eligible families do not benefit from the Earned Income Tax Credit – the country's largest poverty alleviation programme for families with children. These are sizeable gaps in take-up, with potentially large financial implications for households. Importantly, people with low resources are the least likely to respond to simple behavioural interventions encouraging them to enrol in social programmes (Chapter 2).

OECD governments are investing in national strategies to identify and reach those in need

- Data-informed, national strategies against poverty or social exclusion aim to increase the reach of social protection for vulnerable groups. These strategies often include an explicit target of minimising non-take-up among likely potential beneficiaries (Chapter 3).
- National strategies take a range of approaches. Many countries, including Ireland and Spain, apply what might be considered a more traditional approach to identifying vulnerable groups and regions in need of social programmes, based on probabilistic estimates of (usually de-identified) survey and administrative data. Once coverage gaps are identified, the policy response casts a wide net, including better communication and investment in new programmes. Public outreach and communication campaigns frequently target a particular benefit, a specific disadvantaged group or geographic area. This approach is particularly useful for reaching people whose personal data may not be known by the state, such as undocumented residents, informal workers or people experiencing homelessness (Chapter 3).
- A few countries, including Belgium, Chile, Estonia and France, are increasingly linking administrative data to enable the identification of social benefit eligibility at the individual level. Spain is also taking a step in this direction with the roll-out of its Digital Social Card. Data linking usually happens with a unique personal identifier across different agencies or through a social registry (Chapter 3).

Countries are leveraging advances in technology and data to improve coverage and delivery

- Better data and the smarter use of data sit at the heart of governments' increased reliance on technology to improve policies and services. Particularly noteworthy are linked administrative databases, shared across agencies, which can 1) be used to measure non-take-up; 2) help close information gaps (e.g. eligible households can be directly encouraged to apply) and 3) lower the administrative burden on users (e.g. by pre-filling information from administrative sources). In a handful of programmes, such as child benefits in a few countries, linked data are being used to enrol users automatically into programmes (Chapters 3 and 4).

- Digitalised benefit systems are changing the nature of the relationship between the state and individuals. Most services are now available online. While this presents barriers for some users, it should also enable agencies to focus human resources on people who find it difficult to access automated systems – often people with complex needs, or those with limited access to (or familiarity with) digital resources, such as older people.
- In some ways, OECD governments are only at the beginning of digital transformation in social protection. Advanced uses of technology and data are less common in the public sector than in the private sector, and less common in social policy than, for example, in the healthcare sector. While government agencies are increasingly making use of administrative data, they are yet to exploit, in a systematic way, the value of data from sources outside government to understand and shape social policy and services.
- Many uses of advanced technology, including intelligence (AI), continue to be small, ad hoc test cases to determine feasibility, functionality and scope for deployment. Countries are thinking carefully about how to take advantage of new technologies and proceeding with caution, implementing and evaluating small-scale projects before determining whether to take them to scale. Several countries, however, are implementing comprehensive change programmes that involve modernising their technology platforms, changing operating models and ensuring the necessary cultural shifts to revolutionise how public services are provided.
- The use of AI in social protection remains limited, apart from the use of AI-powered chatbots that provide information to clients, automating back-office processes, and fraud detection. Thus far, other methods remain more common in automated decision-making and data analytics. Several countries are exploring the scope of AI for the future of social protection, including for assessing eligibility for social programmes, providing information to users, adjusting benefits, and monitoring benefit delivery (Chapter 4).

Modernising social protection – with guard rails

- Leveraging advances in technology and data comes with challenges and risks. Challenges include ensuring the foundations that underpin and enable technological improvements are in place, that there is sufficient cross-governmental collaboration, and that people's privacy is protected when using their data. Governments must also manage the risks associated with discriminatory biases being built into automated processes and decision making, which have the potential to reinforce or create new sources of exclusion and disadvantage.
- These challenges require risk mitigation with instruments like legal and regulatory frameworks. Governments are also going beyond these instruments, implementing initiatives that improve their overall interactions with individuals and communities, enhance public trust and confidence, and modernise the way they do business. This includes offering services through multiple channels, involving service users in design, achieving incremental improvements through agile working methods, and encouraging innovative technology and data cultures (Chapter 6).

1.1. The need for accessible and responsive social protection systems

In the face of major sociodemographic, labour market and climate-related megatrends, social protection systems in OECD countries are well prepared in some ways, but less prepared in others. OECD countries spend more on social protection than most countries in the world, with relatively high coverage, and social protection is generally designed to support people through their entire life course. This has resulted in relatively low poverty rates in the OECD in global perspective, ranging from 6-7% of the population (in

Czechia, Denmark and Finland) to 18-21% (in the United States and Costa Rica) (OECD, 2024[1]), as well as relatively high life expectancy (80.3 years at birth) on average across OECD countries (OECD, 2023[2]).

At the same time, OECD countries face longstanding structural challenges that contribute to gaps in social protection. These include strained government budgets, the continued exclusion of some groups (such as many non-standard and undocumented workers) from statutory access to social protection, and – in many cases – poor accessibility to, and delivery of, social benefits and services among those who are eligible.

Gaps in social protection coverage weaken the ability of governments to provide timely and well-targeted support to people in need, including those experiencing income instability, persistent poverty or social exclusion. These challenges also hinder governments' ability to adjust support to changing macroeconomic conditions; for example, providing work incentives and activation support is more important, and effective, in tight labour markets. The experience of the COVID-19 pandemic shows that broadly accessible social protection programmes can be insufficiently responsive to needs on the ground, and responsive programmes can be inaccessible.

This report explores how governments can better identify people who may need support, and how to use technology and improved data collection, analysis and linking to ensure that social programmes (services and benefits) are adequately accessible and responsive.

This report focuses on three primary challenges in social protection systems, within the broader goal of improving social protection coverage:

- The identification of the population (potentially) in need of benefits or services, using probabilistic estimates derived from surveys or administrative data held by government (Chapters 2, 3);
- Improving the take-up of social protection, i.e. the enrolment of beneficiaries to receive services and benefits for which they are eligible (Chapters 2, 3, 4);
- Improving the delivery of services and benefits, i.e. facilitating the observed coverage and transfer of social benefits and/or services to eligible beneficiaries, with a particular focus on new sources of data and the use of digital tools (Chapter 4).

These policy findings accompany a discussion of the measurement and causes of non-take-up of social programmes (Chapter 2). The report concludes with a discussion of the risks and benefits of new digital and data approaches to improve access to social protection, including artificial intelligence (Chapter 5).

1.2. Coverage gaps persist in social protection

Many people in OECD countries are not receiving the social benefits or services they need. The reasons are layered and sometimes overlapping:

- Gaps in social protection coverage can emerge from the stringency of *de jure eligibility criteria*. People who do not meet certain income, age, residency, family size, or (prior) contribution thresholds, for example, may not be eligible for specific benefits or services.
- People who are eligible by statutory socio-economic rules may be excluded (or see their benefits or services reduced or suspended) because they do not meet the *behavioural conditions* required to receive a service or a benefit. For example, in most countries, unemployed workers seeking unemployment benefits or a space in public childcare are required to demonstrate that they are looking for a job. Minimum income cash transfers are sometimes conditional on parents ensuring their child's regular school attendance or participation in regular health check-ups. While sanctions are a design feature of many targeted social protection programmes, and are often important for meeting policy objectives, behavioural requirements that are overly harsh or poorly aligned with potential recipient groups may unduly harm coverage.

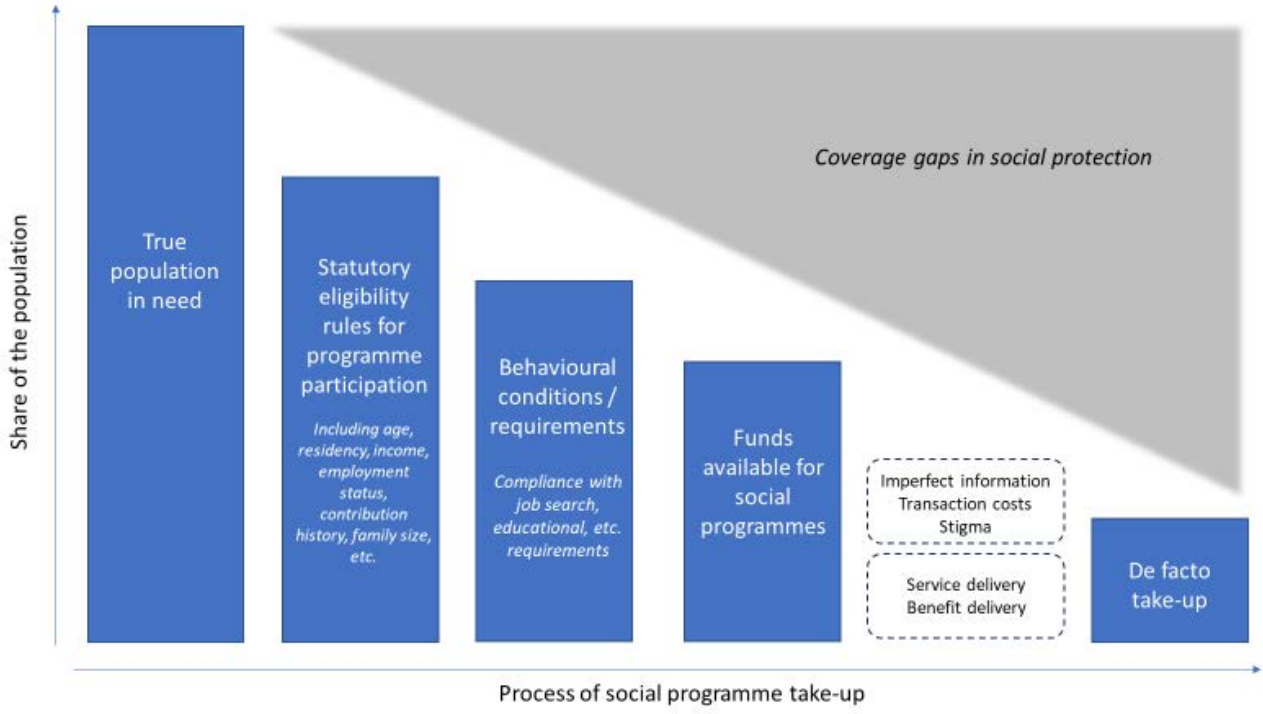
- Not all social programmes in OECD countries are rights-based, and a *lack of adequate funding* may mean that individuals cannot access the benefit or service despite being eligible. They may be encouraged to re-apply later or be waitlisted, as is the case in some means-tested social housing programmes or childcare programmes.
- Finally, even when potential beneficiaries are eligible, they meet conditionality requirements, *and* funding is sufficient, people may not apply for programmes or re-enroll in them. Barriers to *take-up* include unclear or complex information, "hassle costs" around applying, stigma around receiving a public benefit or service, and low expected benefits (Chapter 2).

Poorly designed programme applications and benefit/service delivery can reduce coverage by making it harder for people to take up benefits or services. Applications and renewals may be unwieldy, time-intensive, and require a high degree of knowledge. Claiming benefits may involve in-person appointments that require time off from work or may be difficult to reach by claimants with mobility constraints. On-line claims may similarly be inaccessible for those who lack online access or digital skills.

These compounding, structural barriers are outlined in Figure 1.1. This simple illustration shows how the share of the population covered by social protection decreases at various stages due to statutory eligibility rules, behavioural conditions, adequacy of funding, and enrollment processes. Even in more universalistic programmes – i.e. programmes available to everyone within a given jurisdiction – potential beneficiaries can be missed.

Figure 1.1. Social protection coverage gaps emerge due to eligibility criteria, budget constraints, barriers to enrolment and ineffective service delivery

Stylised model of barriers to social programme enrolment contributing to coverage gaps in the population in need



Source: OECD Secretariat, 2024.

Descriptive evidence illustrates some of the challenges around social protection coverage. Cross-national estimates suggest that in many OECD countries, only half of all jobseekers receive unemployment support

(Figure 1.2), and fewer than four in ten young children are enrolled in formal early childhood education and care (Figure 1.3), even as care obligations represent a significant barrier to parents' (particularly mothers') labour force participation.

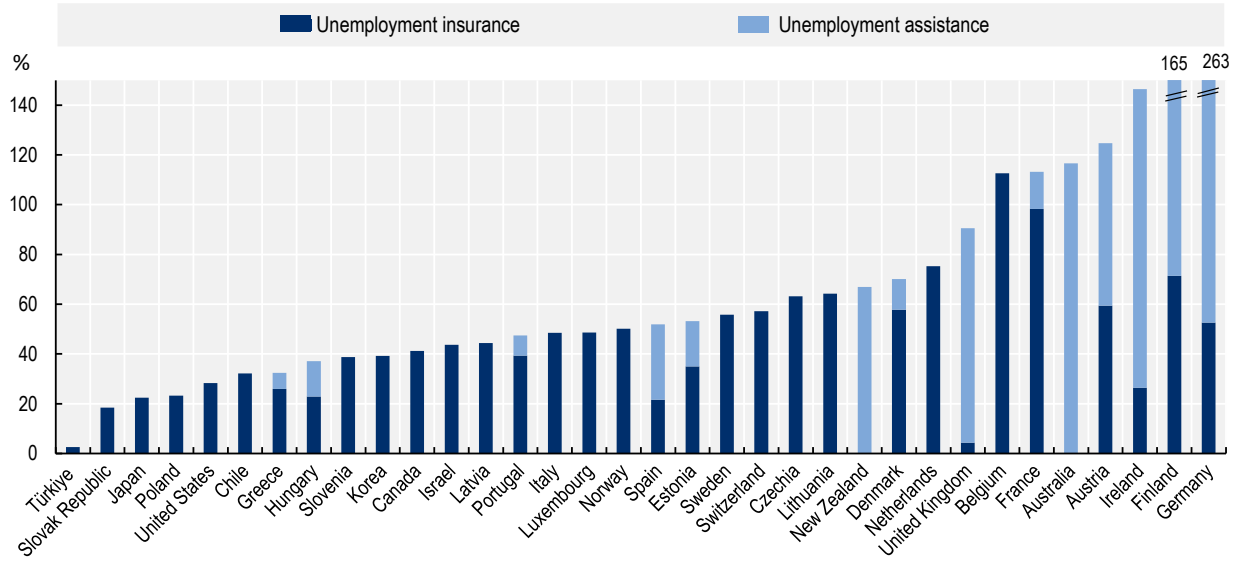
1.2.1. The coverage of unemployment benefits

In most OECD countries, a significant share of unemployed workers do not receive unemployment benefits. Figure 1.2 shows *pseudo-coverage* rates of unemployment insurance and unemployment assistance payments, defined as the recipients of unemployment insurance and assistance from administrative data (numerator) as a share of the unemployed (jobless, available for work and actively looking for a job in the denominator) from labour force surveys. These pseudo-coverage rates are an approximation because recipients of unemployment benefits are not necessarily unemployed according to the International Labour Organization (ILO) definition. For example, they may not be actively looking for a job (e.g. discouraged workers), or they may not be available for work because they are waiting to be recalled by a former employer. This also explains why the pseudo coverage rates can exceed 100% (OECD, 2018[3]).

Pseudo-coverage rates range from below 30% in Türkiye, the Slovak Republic, Japan, Poland and the United States to 80% and over in the United Kingdom, Belgium, France, Australia, Austria, Ireland, Finland and Germany. Contribution-based unemployment insurance programmes can be inaccessible for labour market entrants and for those with patchy employment histories, as well as for the long-term unemployed as they are typically time-limited. Indeed, countries that only provide means-tested job-seeker assistance (e.g. Australia), as well as those that combine insurance-based benefits with means-tested support, such as the United Kingdom, Finland or Germany, reach higher coverage (Figure 1.2). However, Belgium also achieves a high coverage rate with an exclusively contribution-based system, although unemployment benefits are not time limited in Belgium.

Figure 1.2. Unemployment benefit coverage is low in some countries

Recipient numbers of unemployment insurance and assistance payments from administrative sources, in percentage of ILO unemployed workers, 2018



Note: The numerator is the number of beneficiaries of unemployment insurance and assistance benefits from administrative sources. The denominator is the number of ILO unemployed workers (jobless, available for work and actively looking for a job). These rates are commonly referred to as "pseudo" coverage rates as the population in the numerator and denominator may not fully overlap. For instance, in some countries, significant numbers of people who are not ILO unemployed may be able to claim benefits categorised under the unemployment heading in SOCR data provided by countries. As a result, pseudo-coverage rates can exceed 100% (e.g. Australia, Austria, Belgium, Finland, France, Germany, and Ireland). On the other hand, some unemployed are not entitled or do not claim unemployment benefits.
Source: OECD SOCR Database (http://oe.cd/socr); see www.oecd.org/social/recipients.htm for full notes.

1.2.2. Availability of public childcare

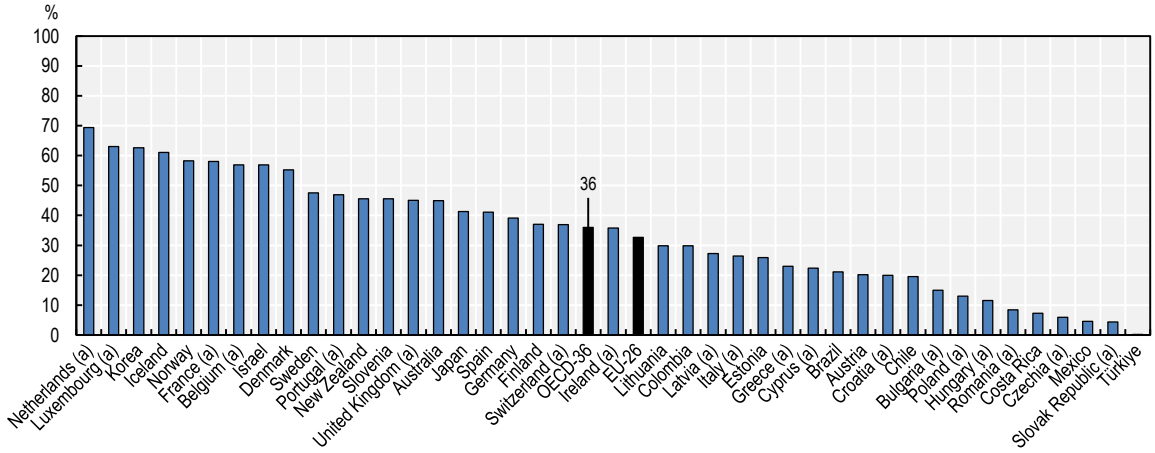
The availability of public childcare also illustrates the challenge of providing sufficient coverage to reach economic and societal goals like full employment and gender equality. A good supply of high-quality, affordable childcare is crucial to enable parents to engage in labour markets – especially mothers, who tend to shoulder higher unpaid care obligations. On average across 27 EU countries, 26% of inactive women aged 25-to 54 years report that their main reason for *not seeking work* is to care for children or adults with disability;[1] among men, 4% point to care obligations as the main reason for inactivity. In the same sample, 26% of women (and 6% of men) *working part-time* report that they work part-time to care for children or adults with a disability (Eurostat, 2022[4]).

Yet fewer than four in ten young children (under the age of three) are enrolled in formal early childhood education and care (ECEC) across OECD countries. Figure 1.3 includes children in both public and private childcare; looking only at public provision would produce even lower estimates of participation. These gaps happen even as some countries (e.g. Germany) offer a legal entitlement to parents to receive a childcare space.

To note, these are imprecise estimates of unmet demand. Not every parent wants their child under age three in formal childcare, and the value of enrollment would unlikely reach 100% even if there were adequate supply.

Figure 1.3. Fewer than four in ten young children are enrolled in early childhood education and care

Percent of children enrolled in early childhood education and care services (ISCED 0 and other registered ECEC services), 0- to 2-year-olds, 2020 or latest available



Notes:
a. Data for Belgium, Czechia, France, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, the Netherlands, Poland, Portugal, the Slovak Republic, and the United Kingdom are OECD estimates for 2020 based on information from EU-SILC. Data refer to children using centre-based services (e.g. nurseries or day care centres and pre-schools, both public and private), organised family day care, and care services provided by (paid) professional childminders, regardless of whether or not the service is registered or ISCED-recognised.
Data generally include children enrolled in early childhood education services (ISCED 2011 level 0) and other registered ECEC services (ECEC services outside the scope of ISCED 0, because they are not in adherence with all ISCED 2011 criteria). Data for Costa Rica, Iceland and the United Kingdom refers to 2018, for Japan to 2019. Potential mismatches between the enrolment data and the coverage of the population data (in terms of geographic coverage and/or the reference dates used) may affect enrolment rates. For details on the ISCED 2011 level 0 criteria and how services are mapped and classified, see *OECD Education at a Glance 2022*, Indicator B2 (www.oecd.org/education/education-at-a-glance-19991487.htm). For Japan, data refer to children using centre-based services (e.g. nurseries or daycare centres and pre-schools, both public and private), organised family day care, and care services provided by (paid) professional childminders, regardless of whether or not the service is registered or ISCED-recognised.
Source: OECD Family Database, Indicator PF3.2 (www.oecd.org/els/family/database.htm).

1.3. Barriers to take-up persist

This report focuses on *improving the identification of groups in need, the take-up of social programmes by potential beneficiaries* (given statutory rules of benefit eligibility), and *how modernising social protection systems can improve access to benefits and services*.

The formidable issues of gaps in social protection related to *de jure* exclusion and insufficient funding are not analysed here. While these will continue to present significant challenges in the years ahead, there is much that OECD governments can do now to improve coverage for people who *should* already be enrolled in social programmes, based on eligibility criteria.

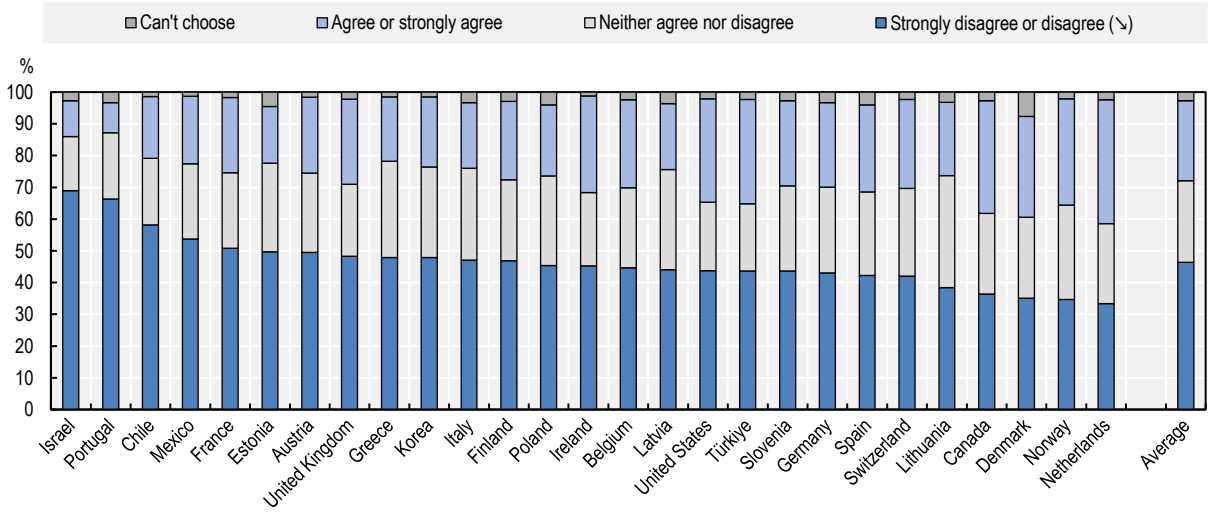
In France, for example, around 34% of households eligible for the national minimum income benefit, *Revenu de solidarité active* (RSA), do not receive it each quarter. In the United States, around 20% of eligible families do not benefit from the Earned Income Tax Credit, the country's largest poverty alleviation programme for families with children; this is driven by non-filers and by not claiming (via additional documents) among those who do file. These are sizeable gaps with potentially large financial implications for households. Unclear or complex information, high hassle costs, stigma around receiving a public benefit

or service, and low expected benefits are well-recognised barriers to social programme take-up (Chapter 2).

These low take-up rates, and the well-recognised barriers to take-up, correspond with public perceptions of access to social protection. Across OECD countries there is widely-held skepticism around the ease of applying for – and obtaining – public benefits. On average across 27 OECD countries in the 2022 OECD Risks that Matter (RTM) survey, nearly half of respondents (46%) do not think that they could easily receive benefits in time of need. Even in the most optimistic country – the Netherlands – only 39% of respondents say that they could easily receive public benefits if needed (Figure 1.4). Skepticism is even higher among those who feel economically vulnerable (Figure 2.7 in (OECD, 2023[5])).

Figure 1.4. Fewer than half feel they could easily receive public benefits if they needed them

Proportion of respondents who agree or disagree with the statement: "I feel that I could easily receive public benefits if I needed them", by country, 2022

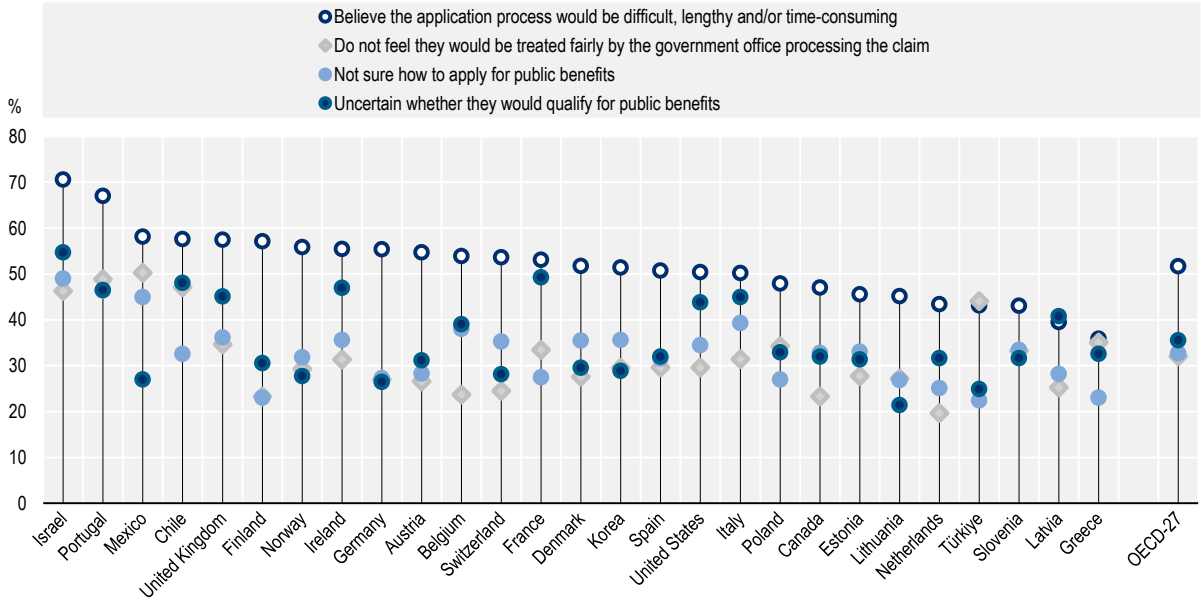


Note: Data are sorted by the variable marked with an arrow (↘) in the direction of the arrow. Average refers to the unweighted average of the 27 OECD countries for which data are available. Respondents were asked: "To what degree do you agree or disagree with the following statement? If you currently are receiving services or benefits, please answer these questions according to your experience. If you are not receiving them, please answer according to what you think your experience would be if you needed them: I feel I could easily receive public benefits if I needed them". Respondents could choose between: "Strongly disagree"; "Disagree"; "Neither agree nor disagree"; Agree"; "Strongly agree"; "Can't choose". Data present the share of respondents who report "strongly agree" or "agree", and "strongly disagree" or "disagree", respectively. RTM data include respondents aged 18-64.
Source: (OECD, 2023[5]), *Main Findings from the 2022 OECD Risks that Matter Survey*, https://doi.org/10.1787/70aea928-en.

Related to these concerns around accessibility, people are also pessimistic about the ease of *applying* for social programmes. 52% of respondents to RTM 2022 say they believe the application process for public benefits would be difficult and lengthy (Figure 1.5). 36% are uncertain that they would qualify for benefits, 33% are not sure how to apply, and 32% feel they would not be treated fairly by the government office processing their claim, on average across countries. These concerns correspond closely with barriers to take-up identified in the extensive literature on this topic (Chapter 2).

Figure 1.5. Many find it difficult to apply for and access benefits

Share of respondents indicating the selected response to perceptions of public benefit accessibility, 2022



Note: Respondents were asked whether they strongly disagree, disagree, neither agree nor disagree, agree, strongly agree, or can't choose with the following statements, bearing in mind their own experience with accessing benefits or services or their expectation if they have never accessed benefits or services: a.) "I feel I could easily receive public benefits if I needed them." b.) "I am confident I would quality for public benefits;" "I know how to apply for public benefits;" "I think the application process for benefits would be simple and quick;" "I feel I would be treated fairly by the government office processing my claim."
Source: (OECD, 2023[5]), *Main Findings from the 2022 OECD Risks that Matter Survey*, https://doi.org/10.1787/70aea928-en.

To note, the subset of respondents who feel they could not receive benefits in time of need also perceives application processes as far more difficult than other respondents. Around three-in-four of those who doubt they could easily access benefits also doubt that the application process for benefits would be quick and easy, and over half (53%) doubt that their benefit claims would be fairly processed by the government office (Annex Table 1.A.1).

1.4. The path forward: Modernising access to social protection

Significant coverage gaps persist in key social programmes in many countries. At the same time, many governments are collecting new and better data, analysing data in more sophisticated ways, linking data across different sources with unique personal identifiers, and digitalising access to social protection with the goal of improving take-up and service and benefit delivery. The following recommendations emerge from this report.

1.4.1. Strengthen national strategies to identify people in need and integrate them into social programmes

An important foundation of any effort to improve social protection coverage and delivery is the identification of those who need – and are likely eligible for – social programmes. At least 29 OECD countries have implemented national frameworks to expand the coverage of benefits and services through better identification of potential beneficiaries (Chapter 3).

OECD governments should pursue a two-pronged approach that enables both the identification of groups in need and facilitates the identification of those not taking up benefits for which they are likely eligible:

- Linked data from different sources – e.g. on income earned and benefits received – are useful for estimating non-take-up (Chapter 2), identifying potential beneficiaries, informing people of their entitlements, and sometimes even automatically enrolling users into programmes. Belgium, Estonia and France, among others, are making good efforts in this space (Chapters 2-4). However, linking administrative data sources requires appropriate legal frameworks, cross-agency collaboration and data processing capabilities that not all countries possess. This is a capacity that should be strengthened.
- Probabilistic estimates of need – based on survey and administrative data – therefore remain very useful for identifying vulnerable groups and regions that can be targeted by outreach campaigns. Most OECD countries, including Ireland and Spain, apply this approach (Chapter 3).

1.4.2. Explore the feasibility of automatic enrolment in social programmes

Automatic enrolment in social programmes – using personally-identified, linked administrative data – is an exceptionally promising new tool for increasing the take-up of benefits. It relieves recipients from the burden of finding the appropriate information about benefit eligibility and applying to receive the benefit.

Automatic enrolment can also make income support benefits more responsive to evolving needs. Recent crises, such as the COVID-19 pandemic, have shown that income support needs can emerge suddenly, and overwhelm benefit infrastructures based on careful assessments of current incomes or prior contribution histories. High frequency data on income that is linked to the agencies administering benefits can also enable close-to-real-time benefit adjustments according to claimants' fluctuating income. This can reduce the frequency of over- and underpayments, and link income support more closely to labour supply. Low-income households are typically liquidity-constrained and may not respond to work incentives if benefit pay-outs are too far in the future, especially if taking up work/increasing working hours is associated with costs, such as transport or childcare (Hyee and Immervoll, 2022[6]).

However, to date, automatic enrollment is limited to benefits with very simple entitlement criteria, such as the birth of a child in Estonia, Norway and the Slovak Republic (Chapter 4). Social registries, too – which combine administrative data with information provided by individuals using a personal identifier (Chapter 3-4) – have the potential to offer similar solutions, though at the moment they are mostly used for informing users about benefits for which they might be eligible, based on linked administrative data.

1.4.3. Apply lessons from behavioural research to the digital transformation

The four well-identified barriers to programme take-up are insufficient, unclear or complex information; "hassle costs" (cumbersome application procedures); stigma; and low expected benefits. In randomised control trials (RCTs), treatment interventions of simplified information and support in programme applications usually have positive effects on applications and eventual enrolment, at least among people who are already connected to the state in some way (e.g. through tax returns) (Chapter 2).

Automatic enrolment based on linked data would resolve many of these barriers to take up, but most countries have not yet implemented these approaches. Sending prompts or clear information about likely eligibility – for example, based on linked administrative data – can also help.

To reduce "hassle" and save time for clients and civil servants, OECD countries should continue to develop websites, portals and applications to simplify programme application and renewal processes to make it easier for people to learn about, apply for and interact with government services.

At the same time, simply "going online" is not sufficient to improve social programme take-up. Modern communication technology can present challenges even for those well-versed in it, and even higher

barriers for those without regular access to (or familiarity with) mobile phones or computers, such as older people. The digital transformation of social service/benefit enrolment and delivery must be accompanied by handrails (Chapter 5).

Governments should continue to trial carefully the use of artificial intelligence (AI). At the moment AI is principally used either to provide automated support (e.g. chatbots) to answer users' questions; to automate back-office processes (e.g. processing large amounts of data from traditional databases and unstructured text and images from scanned paper media); and occasionally, to detect fraud (Box 1.1).

1.4.4. Ensure an inclusive digital transformation of social protection

Maintaining low-barrier in-person support is particularly important for the most disadvantaged who may lack the means to access services digitally. Access to (and the use of) digital infrastructure and tools is uneven, and the digital divide is even starker when viewed from the lens of age, gender, poverty and location. Across the OECD, for example, 22% of 55-74 year-olds state that they do not use the internet, and in Mexico and Türkiye the rate is over 50% (Chapter 4).

It is important not to overemphasise digital interfaces at the expense of in-person presence, especially considering that people with limited digital access are also key priority groups for social protection measures. The people who are least connected to state institutions – such as people living in situations of homelessness, non-citizens, or workers who do not file income taxes – are already the least likely to take up social programmes, even when prompted about eligibility. The informational, psychological, "hassle" and other barriers are simply too high (Chapter 2).

This reinforces the continued need for targeted offers (to inform about benefits and assist the application process), as well as individualised, personal outreach, for example by community groups or social workers who can help with applications (Castell et al., 2022[7]; Finkelstein and Notowidigdo, 2019[8]).

To address this challenge, governments should include explicit provisions in their digital social protection strategies to promote digital inclusion for those more likely to miss out. Good practices include combining digital offers with call centre and in-person options (and using these measures as an opportunity to transition those who are interested to digital services), working on language and communication improvements, creating intuitive user interfaces, and providing training, intermediation and/or subsidies for devices. The digitalisation of social protection can take lessons from the OECD Recommendation on Digital Government Strategies, which offers general recommendations on the development and implementation of digital strategies that bring governments closer to all citizens.

Box 1.1. Artificial intelligence and the future of social protection

Advances in data and technology have improved the accessibility and coverage of social protection in OECD countries. In practice, the most significant advances in recent years centre around linking data across administrative sources to improve enrolment in social programmes. By linking datasets across personal identifiers – for example, by linking tax records with income benefits – governments have been able to streamline application and renewal processes, inform potential beneficiaries of their eligibility for benefits, and (in limited cases) automatically enrol users in programmes.

Data linking across government, combined with longstanding algorithms that determine statutory benefit eligibility, has the potential to transform social protection coverage. It can remove sizeable burdens of time, energy and knowledge around eligibility verification and enrolment. More OECD countries should invest in data governance that enables linked data and more efficient enrolment processes.

Social affairs ministries are using AI for chatbots, back-office processes and (rarely) fraud detection

Despite its potential as a transformative technology, artificial intelligence (AI) has – as of early 2024 – been little used by social affairs ministries. In short, governments are proceeding with caution to manage the potential risks. The most common use of AI in social protection is **chatbots and virtual assistants** that provide support to individuals. Countries as diverse as Australia, Austria, Belgium, Finland, Korea and Norway – among others – use AI-powered chatbots for customer support such as answering questions and providing copies of administrative documents (Chapter 4).

AI has also been used to **automate back-office processes** in social affairs agencies, such as through natural language processing of free-text comments on employment records (Canada), document recognition (Finland), and voice recognition to support call centres (Austria), among others.

In some cases, such as in Korea and the United Kingdom, AI is being used for **fraud detection** and finding anomalies in benefit claims, which are then reviewed by a human civil servant (Chapter 4).

Looking ahead: How will AI be used in social protection?

AI has the potential to transform the identification and enrolment of social programme users, enhance user support, and improve the efficiency and timeliness of benefit and service delivery in response to changing needs (both at the macro and household level). The most likely uses – in the short run – appear to be the following:

- As in the private sector, AI will likely increasingly be used to automate routine tasks, including data entry and document processing – thereby saving time for civil servants.
- AI could carry out predictive analytics in big data, for example by identifying recurring risks and vulnerabilities to target social programme interventions to individuals or communities. Depending on the data available, this could usefully take a preventative approach.
- AI could speed up the automation of benefit decisions based on longstanding, pre-defined statutory eligibility rules – which should then be reviewed by human civil servants.
- Social ministries are likely to continue to advance the current uses mentioned above: chatbots, automating back-office processes, and improving fraud detection.

Significant opportunities come with significant risks and challenges when deploying AI in social protection. Governments are proceeding with caution to ensure that the correct legal, regulatory and accountability frameworks are in place; that investments have been made in modern infrastructure; to involve service users in design; to develop an appropriately skilled workplace; and, importantly, mitigate the risks of further entrenching bias, discrimination and exclusion through the use of AI (Chapter 5).

1.4.5. Use personal data safely and respectfully

As countries increasingly collect, link and share data, they must take steps to mitigate the risks involved. Unintended data breaches harm not only the individual(s) involved but also damage public trust and confidence. Governments are finding themselves managing data breaches more frequently, which again can result in substantial consequences for victims as well as erode public confidence in government agencies. OECD member countries, and an estimated 71% of countries around the world, have laws in place to protect (sensitive) data and privacy (OECD, 2023[9]). Countries should continue to explore and adopt measures to both prevent and manage data breaches from occurring and design protocol for managing them when they do, including protective security frameworks, staff training, data loss prevention tools, access controls and guidance for handling personal information security breaches. These efforts should be supported by a public office, such as a privacy or information commissioner.

While critically important, complex laws, regulations, rules and conventions can cause confusion, making it challenging for agencies to act safely and effectively. A few countries have taken steps to create simple guidance to help agencies, as well as non-government service providers, navigate regulatory frameworks and other measures to ensure the safer use of people's personal information. New Zealand, for example, has developed such guidelines (Chapter 5).

Greater use of online services, digital tools and digitalised processes in social protection creates the risk of reinforcing or creating new sources of exclusion and disadvantage. Increased digitalisation can exclude those individuals who have limited access and/or ability to engage with digital services which is a particular challenge when people with limited digital access are also key priority groups for social protection measures. This risk of exclusion extends to linked datasets that governments increasingly use to determine eligibility for services and benefits. Canada, for example, reports facing challenges regarding its ability to include indigenous populations in their linked databases that provide the foundation for benefit eligibility.

1.4.6. Accountability frameworks and procedures to avoid embedding disadvantage

Several high-profile cases have highlighted the risk of discrimination, stigmatisation and exclusion resulting from the use of predictive models and automated decision-support tools in governance. Already disadvantaged groups, such as racial and ethnic minorities, seem more likely to be impacted than others. Errors and biases in models and automated systems can be hard to detect, which is a serious issue given they can, for example, make someone appear ineligible for a benefit for which they are legally entitled.

Governments must have in place appropriate accountability frameworks and transparent procedures to prevent and address such errors and/or biases in automated systems. Without them, technology and data-driven innovations risk disempowering and disengaging people and eroding public trust and confidence in governments' use of advanced technology and data solutions.

Governments must additionally commit to transparency, "explainability," and meaningful human involvement, particularly when automated decisions can potentially significantly impact people's lives. Transparency involves disclosing when automated systems are being used (e.g. to make a prediction, recommendation or decision, with disclosure being proportionate to the importance of the interaction). "Explainability" is the idea that an automated system or algorithm and its output can be explained in a way that "makes sense" to users, enabling those who have been adversely affected by an output to understand and challenge it. There should always be a degree of human involvement in automated decision-making (see for example Principle 1.2(b) of the OECD's AI principles).

The right to review an automated decision or output is an important feature of an accountability framework. Those negatively impacted by automated decision-making (which includes a person missing out on a benefit for which they may be legally entitled to) should be able to appeal a decision and know how to do that. Some people may not be aware or have the resources to address an issue. Complaint processes should account for this with public agencies ensuring that marginalised and excluded groups are supported in making any application for a review of a decision. Staff need to be able to explain how a decision was reached and provide information about how that decision can be reviewed which requires them to be appropriately trained and for there to be adequate complaint processes in place.

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Annex 1.A. Many individuals feel they cannot access benefits easily in times of need

Annex Table 1.A.1. People who do not think they could easily access public benefits typically also think that the application process is complex

Proportion of respondents who report perceived difficulties in accessing public benefits, among respondents who disagree or strongly disagree with the statement "I believe I could access public benefits if I needed them", by country, 2022

Country	Do not feel confident they would qualify for public benefits (%)	Would not know how to apply for public benefits (%)	Do not think the application process for benefits would be simple and quick (%)	Do not feel they would be treated fairly by the government office processing my claim (%)
Austria	52	39	77	43
Belgium	65	58	82	41
Canada	64	56	76	45
Chile	69	44	80	66
Denmark	48	55	82	51
Estonia	49	48	69	44
Finland	48	32	82	40
France	74	38	77	54
Germany	49	42	85	46
Greece	47	34	57	58
Ireland	74	51	77	52
Israel	67	58	83	59
Italy	67	59	77	54
Korea	43	55	75	46
Latvia	65	42	65	43
Lithuania	37	42	78	51
Mexico	41	60	83	72
Netherlands	56	38	74	40
Norway	46	52	82	57
Poland	55	44	79	63
Portugal	64	57	86	66
Slovenia	52	49	68	57
Spain	61	50	80	55
Switzerland	53	50	83	44
Türkiye	42	38	77	78
United Kingdom	75	57	81	56
United States	78	56	82	53
Average	**57**	**48**	**77**	**53**

Note: Average refers to the unweighted average of the 27 OECD countries for which data are available. Respondents were asked: "To what degree do you agree or disagree with the following statement? If you currently are receiving services or benefits please answer these questions according to your experience. If you are not receiving them, please answer according to what you think your experience would be if you needed them: I feel I could easily receive public benefits if I needed them/I am confident I would qualify for public benefits/I know how to apply for public benefits/I think the application process for benefits would be simple and quick/I feel I would be treated fairly by the government office processing my claim". Respondents could choose between: "Strongly disagree"; "Disagree"; "Neither agree nor disagree"; "Agree"; "Strongly agree"; "Can't choose". Data present the share of respondents who report "strongly disagree" or "disagree", out of those who report that they could not easily receive public benefits if they needed them. RTM data include respondents aged 18-64.
Source: (OECD, 2023[5]), *Main Findings from the 2022 OECD Risks that Matter Survey*, https://doi.org/10.1787/70aea928-en.

Notes

[1] These two groups – adults with disability and children – are aggregated within one survey response and it is not possible to disentangle results for them separately.

2 Non-take-up and the digital transformation of social programmes in OECD countries

Valerie Frey and Raphaela Hyee

Across OECD countries, valuable social benefits and services are not captured by people who are eligible for them. Non-take-up can have serious financial implications for households and limits the effectiveness of social protection systems. This chapter discusses different methods for measuring non-take-up of social programmes, highlights findings on non-take-up from OECD countries, and discusses four key barriers to take-up The chapter concludes by connecting lessons from randomised control trials (RCTs) on programme take-up to the ongoing digital transformation of social protection.

Key findings

Even when programmes are designed to provide adequate support to those in need, non-take-up remains a barrier to effective social protection coverage. Non-take-up refers to people who do not receive a social benefit or service for which they are otherwise eligible according to statutory rules and conditions.

- Take-up rates illustrate the share of de jure entitled individuals or households who enrol in a specific programme. Estimates of social programme take-up often apply microsimulation models (of statutory benefit entitlement) to programme enrolment reported in representative survey data. Researchers have also started estimating non-take-up for specific programmes based on linked administrative data, e.g. from a revenue agency.
- Non-take-up is a problem across countries. Belgium, for example, estimates non-take-up to be between 37% and 51% for working-age social assistance programme, while in France, around 34% of households eligible for the minimum income benefit, *Revenu de solidarité active* (RSA), do not receive it each quarter. Not every country publishes take-up rates, but the governments of Belgium and France have made intensive, high-profile efforts to study and address the issue of non-take-up.
- The four primary barriers to programme take-up are (i) insufficient, unclear or complex information, (ii) "hassle costs" (cumbersome application procedures), (iii) stigma, and (iv) low expected benefits. In randomised control trials (RCTs), treatment interventions testing simple information and support with programme applications – to reduce hassle costs – usually have positive effects on applications and eventual enrolment.
- These findings on information clarity and simplified procedures align well with some aspects of the ongoing digitalisation of service/benefit applications and delivery. For many users, web-based interfaces are likely quicker and easier to use than traditional, in-office, and paper-based approaches, and in some cases have proven to increase the number of applications.
- The successful behavioural interventions that have been found in RCTs are most effective among people who are already in contact with the government for other reasons, e.g. through tax filings or enrolment in other benefits. The groups most in need – such as those with very low income, informal workers, older people, and people speaking a different first language than official government communication – have proven very difficult to reach with simple behavioural interventions. This suggests that efforts to digitalise access to social protection should be accompanied by live client support, to help reach people who may face challenges with electronic applications, renewals and service delivery.
- The findings in this chapter also point to the utility of linked data, detailed further in Chapters 3 and 4. Linked administrative data and social registries can go a long way towards identifying people enrolled in one programme who are likely to be eligible for another, and can support users' programme take-up by pre-filling applications or even automatically enrolling them.

2.1. The challenge of incomplete take-up of social protection

In the face of major economic, social and climate-related megatrends in OECD countries, social protection remains a critical tool for reducing poverty, smoothing consumption, and promoting social mobility (OECD, forthcoming[1]). Yet very few – if any – OECD countries reach everyone in need of social benefits and services. Coverage gaps emerge from a variety of factors, including the stringency of eligibility criteria and the adequacy of public funding to cover all eligible potential beneficiaries (see Chapter 1).

Even when programmes are adequately funded and designed to reach those in need, however, non-take-up remains a barrier to effective social protection coverage. Non-take-up refers to people who do not receive a benefit or service for which they are otherwise eligible according to statutory rules and conditions.

Potential beneficiaries may not apply for (or re-enrol) in programmes because they are not aware of them, or because information about the programme is difficult to understand. The claims process may involve high "hassle costs" (cumbersome application procedures, means-tests, or behavioural requirements), stigma around receiving a public benefit or service, or low expected benefit payments or low service value (Section 2.4). The compounding barriers to coverage are illustrated in Chapter 1 in this report (Figure 1.1).

This chapter begins by discussing the measurement of non-take-up of social programmes (Section 2.2). It then presents a short review of national studies of social programme non-take-up in OECD countries (Section 2.3) and discusses the main barriers to take-up identified in the literature (Section 2.4). The chapter concludes by applying lessons from behavioural studies on non-take-up to the ongoing digital transformation of social protection. This chapter helps to illustrate the sizeable gaps that remain in supporting vulnerable people in OECD countries and motivates continued efforts to improve access to social protection.

2.2. Measuring take-up of social programmes

Quantitative indicators of social protection coverage often present programme enrolment as a share of some definition of the population potentially in need.[1] The denominator measuring the population in need – for example by poverty rates or household size – is often quite broad, and easy to estimate from available survey or administrative data. Such indicators combine information on *de jure* accessibility (who is eligible based on rules) and *de facto* take-up (who actually enrols) in programmes.

These types of measurements of programme coverage offer broad insights into how well social programmes are reaching a population in need. This can support within-country prioritisation of needs and funding across geographic areas or population groups (Chapter 3), as well as cross-national comparisons and over-time benchmarking of reach.

In the United States, for example, the coverage of the income benefit Temporary Assistance to Needy Families (TANF) is sometimes presented as the "TANF-to-Poverty Ratio." In 2020, the TANF-to-Poverty Ratio was 21 – meaning that 21 out of every 100 families in poverty received TANF cash assistance nationwide (Shrivastava and Thompson, 2022[2]). In Latvia, an OECD review of affordable housing estimates that only about 23% of households meeting relevant income and household size criteria actually receive housing benefits (OECD, 2020[3])

Estimates focused on take-up, in contrast, attempt to focus measurement on the share of *eligible* individuals or households who enrol in a specific programme. While indicators of programme coverage measure recipients as a share of a population *potentially in need* of a benefit or service, take-up rates measure recipients of a specific programme as a share of a population ostensibly *entitled* to the programme or service. For instance, many minimum income benefits (MIBs) in OECD countries provide benefits below the poverty line (OECD, 2023[4]). Estimates of the take-up rate of such a MIB would therefore zoom in on households with incomes low enough to fulfil the means-test of the benefit, as well as all other possible

eligibility criteria, and disregard other households who would still be considered "poor" according to other commonly-used poverty thresholds.

When estimating take-up for targeted social programmes, determining *de jure* eligibility is critical. Research on take-up of social programmes often uses microsimulation models to determine whether a specific household in a representative survey dataset fulfils the statutory requirements of a programme (such as citizenship, age, income or family structure) (Marc et al., 2022[5]). Researchers have also started estimating non-take-up for specific programmes based on linked administrative data; see, for example, estimates of take-up of the French minimum pension based on linked tax data (Meinzel, 2022[6]). In Latin American OECD countries like Chile and Costa Rica, social registries are increasingly used to help capture new potential beneficiaries and can be used as a linked data source to measure take-up.

Few data sources contain all relevant information on benefit eligibility, however, which complicates take-up estimates. For example, data on assets are often incomplete in survey data, and might not be available in administrative or social registry data. Datasets can also rarely be used to identify whether behavioural conditions like job search or school enrolment have been fulfilled, apart from perhaps detailed administrative records on sanctions (e.g. from linked public programmes). These factors can contribute to measurement error in estimates of take-up.

2.3. Non-take-up is a problem across OECD countries

Putting aside the empirical challenges in measuring non-take-up, existing studies of non-take-up provide useful evidence of the extent of programme participation among people who are likely to be *de jure* eligible for social programmes. Governments are increasingly investing in producing these estimates. Academic and public research has found high rates of non-take-up in social programmes across OECD countries.

Belgium in particular is prioritizing research on non-take-up in social programmes. There are two primary projects on non-take-up: the BELMOD project, which applies microsimulation to linked administrative data from the labour market and social protection "data warehouse" that includes information on wages and the number of beneficiaries of specific social benefits (CCC, 2023[7]), and the TAKE project. The TAKE project runs a dedicated survey to explore estimates of non-take-up of public programmes and reasons for it.

TAKE estimates non-take-up to be between 37% and 51% for the working-age social assistance benefit, between 42% and 59% for the social assistance benefit for the elderly, and 65% and over for the heating allowance (Goedemé , T. et al., 2022[8]).[2] (For an elaboration on the BELMOD and TAKE projects vis-à-vis Belgium's national strategies to identify people living in vulnerable situations, see Chapter 3.)

The government of **France** has also prioritised the study of benefit non-take-up. Government researchers have estimated take-up rates for major social programmes in France and conducted a comparative review of other European countries (Box 2.1).

Around a third (34%) of French households eligible for the minimum income benefit, *Revenu de solidarité active* (RSA), do not receive it each quarter, and around 20% do not receive it for three consecutive quarters. On average, this amounts to a loss of EUR 330 per month per household. Non-take-up is highest among households that are not already enrolled in other benefits (such as housing assistance, family benefits or the in-work benefit *"prime d'activite"*) and among couples without children, young people, homeowners, people living in rural areas or in the Paris metropolitan area. These rates are very similar to estimates from ten years ago, which suggested 36% of potential beneficiaries were not taking up the RSA (Hannafi et al., 2022[9]).

Looking at the minimum retirement pension in France, only 50% of the 646 800 single people aged 65 and older[3] actually receive the old-age minimum pension (Meinzel, 2022[6]). Non-recipients would benefit from EUR 205 per month on average. The research finds a significant gender gap in non-take-up, with a non-

take-up rate of 52% for elderly women and 44% for elderly men. This study used a novel methodological approach, matching microdata from the inter-regime sample of retirees (EIR) of the *Direction de la Recherche, des Études, de l'Evaluation et des Statistiques* (DREES) with microdata from tax declarations (Meinzel, 2022[6]).

In **Germany**, the working-age minimum income benefit (*Arbeitslosengeld II*, or Unemployment Benefit II, in contrast to the contribution-based unemployment insurance scheme, Unemployment Benefit I) was estimated to have a non-take-up rate of 56% in 2014 (Harnisch, 2019[10]). In a more recent analysis, using linked survey and administrative take-up, Bruckmeier, Riphahn and Wiemers (2020[11]) estimate the benefit to have a non-take-up rate of 35 – 37%.

In the **United Kingdom**, the nearly-universal Child Benefit had a take-up rate of 93% in 2016-17, a small but significant decrease from previous years. The take-up rate for the Child Tax Credit was estimated at 83%, and the Working Tax Credit caseload take-up rate was estimated at 65% (HM Revenue and Customs, 2018[12]). The Working Tax Credits have since been incorporated into the Universal Credit, which is still being rolled out and for which take-up rates are not yet estimated.

In the **United States**, the Earned Income Tax Credit (EITC) is the largest poverty alleviation programme for families with children, providing on average nearly 2 500 USD (2018) per family annually through the income tax system. The IRS estimates that only about 80% of eligible families actually received the EITC from 2011-17, with rates lower among low-income households (Linos et al., 2022[13]). Take-up of the US Supplemental Nutrition Assistance Program (SNAP) is similar: an estimated 82% of all eligible individuals participated in 2019, with lower rates among the elderly (U.S. Department of Agriculture, 2023[14]).

Box 2.1. National approaches to estimating non-take-up

Researchers at the *Direction de la Recherche, des Études, de l'Evaluation et des Statistiques* (DREES) in France conducted a review of non-take-up of minimum income benefits in the United Kingdom and selected European Union countries (Marc et al., 2022[5]). One of the interesting contributions of this work is an overview of different "data production models" used by different countries to estimate non-take-up. Most countries rely on linked administrative data or survey data plus microsimulation to estimate take-up rates, but who performs this analysis varies across countries. Prioritisation of non-take-up studies – and who conducts them – is relevant for national strategies to identify people living in vulnerable situations (Chapter 3).

Centralised "official" estimates in the United Kingdom, and "academic" estimates in Germany

In the United Kingdom, most studies of non-take-up are carried out by the Department of Work and Pensions (DWP) and His Majesty's Revenue and Customs (HMRC), the agency responsible for the collection of taxes. With these estimates produced by ministerial statistical offices, the United Kingdom is unusual for having official figures on non-take-up.

In Germany, estimates of non-take-up are calculated principally by two research institutes, *the Institut für Arbeitsmarkt- und Berufsforschung* (IAB, the research centre of the Federal Employment Agency) and the *Deutsches Institut für Wirtschaftsforschung* (DIW, funded publicly). Estimates often combine IAB's microsimulation model (which estimates benefit eligibility) with the German Socio-economic Panel (SOEP) managed by DIW. The resulting estimates of non-take-up are considered more academic, and not "official".

Decentralised estimates in the Netherlands produced by a private organisation

In the Netherlands, where regional and local authorities are in charge of most social benefits and services, non-take-up is also measured locally. DREES reports that many municipalities contract

analytical work to Kenniscentrum voor Werk en Inkomen en Zorg (KWIZ), a private organisation that applies proprietary software to municipal administrative data to estimate non-take-up of social programmes.

Increasing focus on non-take-up in Finland and Belgium

DREES writes that research on non-take-up in Belgium and Finland is "sporadic and recent, which makes it more difficult to [define their] data production model". Nevertheless, in both countries, government agencies that collect social benefit data increasingly collaborate with academic researchers, most notably in Belgium as part of the significant BELMOD and TAKE projects.

Source: (Marc et al., 2022[5]); *Sécurité sociale Belgium*, "Take Project" (https://socialsecurity.belgium.be/fr/sociale-rechten-toekennen/take-project); BELMOD and TAKE projects elaborated with inputs from Belgium in Chapter 3 in this report.

2.4. Barriers to take-up among those who are eligible

Four main barriers have been consistently identified in the literature as deterring eligible people from taking up benefits: (i) unclear, complex or insufficient information about the programme; (ii) "hassle costs" (the cost of applying for the benefit or service), (iii) social stigma associated with programme enrolment, and (iv) low expected value of the benefit or service.

Importantly, these barriers can persist after enrolment, restricting clients' use and renewal of social programmes. Poorer and less-educated people face many barriers to using services for which they may already be inscribed, such as irregular access to the internet, a lack of transportation to visit programme offices, a lack of time to meet conditions for programme maintenance, and weaker communication skills when dealing with providers.

2.4.1. Programme awareness and information complexity

To apply for a social programme, potential claimants have to be aware of its existence, its basic entitlement rules, and how to put in a claim. These can be high barrier for people with complex needs, limited time, and/or limited educational and economic resources. The OECD Risks that Matter (RTM) Survey – a representative survey conducted in 27 OECD countries – finds that 36% of respondents, on average, are uncertain whether they would qualify for benefits, and 33% are not sure how to apply (OECD, 2023[15]).

Among those who *are* aware, information complexity in enrolment can present challenges. All individuals have a finite amount of cognitive resources when making decisions, and high amounts of information can impair understanding (Datta and Mullainathan, 2014[16]). These cognitive limits can be particularly harmful when potential programme clients must participate in detailed processes and applications in order to receive welfare-improving benefits or services.

As (Datta and Mullainathan, 2014[16]) write, "without realizing [it], we often design programmes assuming that people have unbounded cognitive capacity. We assume that they can think through complex problems effortlessly and quickly arrive at the correct choice. We often assume unbounded self-control, which leads us to expect people will always […] do what they intend to do. These assumptions are often unstated, implicit, or even unconscious, but they show up" in programme design.

To participate in social programmes, individuals need to pay attention to various rules and processes. This focus exacts a mental cost, and experimental evidence has found that poverty actually impedes cognitive function (Mani et al., 2013[17]). An individual's preoccupation with budgets and financial decision-making – which poor individuals do daily – consumes mental resources. Decision fatigue, in turn, leaves less energy for other tasks and leads to poorer decision-making.

All individuals who are eligible for programmes face costs in learning about a programme, but these costs are often the highest for those individuals with the greatest need (Finkelstein and Notowidigdo, 2019[18]). In thinking about intersecting disadvantage, this means not only people living in situations of poverty, but those who may be in frail health, speak a different first language from official government communication (often only in one language), or have physical or mental disability – among other potential conditions.

The importance of clear information for social programme take-up is by now well documented (Heckman and Smith, 2003[19]; Bhargava and Manoli, 2015[20]). Insufficient information about a programme's benefits, its application process, its interaction with other benefits, and a client's likely eligibility can discourage programme participation.

For vulnerable individuals, the cost of learning about a programme often falls to an agent, such as a family member, a caregiver, or a social worker. Since an agent bears the costs of learning about (and perhaps applying to) a programme from which another person benefits, the agent may be less incentivised to apply time and energy to the process.

Intricate policy designs can also lead to non-take-up as recipients can be unsure about their entitlement or miscalculate amounts (Hyee and Immervoll, 2022[21]). Uncertainty about benefit levels can also lead to a fear of back payments, which can be problematic especially for poor and liquidity-constrained individuals. For instance, for the Earned Income Tax Credit (EITC) in the United States, it has been shown that few recipients opt for an early pay-out of their tax credit because they (possibly mistakenly) fear overpayments (Nichols and Rothstein, 2015[22]). Back-payments can also result from insufficient responsiveness of the benefit, e.g. if the benefit is not automatically adjusted to a changing income situation (Eurofund, forthcoming[23]).

Lessons from the Earned Income Tax Credit

A randomised field experiment carried out by Bhargava and Manoli (2015[20]) and the US Internal Revenue Service illustrates the important role of clear information in take-up of the US Earned Income Tax Credit (EITC). To test whether different information treatments influence EITC take-up among those who are eligible, researchers randomly assigned different mailings to over 35 000 individuals in California who filed their taxes but failed to claim their EITC. The researchers found that receiving the text-dense, standard reminder letter (control group) encouraged 14% of contacted non-respondents to take up the EITC. However, a simpler layout, with less repetitive information, improved take-up to 23%. Providing benefit information also significantly improved take-up, relative to the standard reminder notice, while language intended to lower programme stigma and lower perceptions of time costs had no effect (Bhargava and Manoli, 2015[20]).

To note, (Bhargava and Manoli, 2015[20]) ran these randomised treatments within a sample of people who had *already filed* taxes. This is presumably a group with at least basic skills in using an online tax-filing system or liaising with an accountant. Simple information treatments also show positive but much smaller effects on take-up of refundable tax credits in RCTs with a larger sample, including people who had not filed a tax return before (Guyton et al., 2017[24]; Goldin et al., 2022[25]). Linos et al (2022[13]) finds no effect of randomised information treatments on take-up of the EITC among people who had never filed before, though they did find the information treatments improved people's engagement with government via click-through rates to government websites.

These RCTs offer evidence that clear information can help improve participation and offer good examples of how to test different reminders of enrolment. Yet they also illustrate the difficulty of reaching people who are not already in "the system," such people who have not already filed taxes or who are not receiving other benefits or services.

2.4.2. "Hassle costs"

So-called "hassle costs" (Bertrand, Mullainathan and Shafir, 2006[26]) are an important deterrent to programme take-up (Currie, 2006[27]; Ko and Moffitt, 2022[28]). Barriers to take-up are necessarily higher in targeted programmes than in universal ones. Because targeted programmes are intended to reach a select group of beneficiaries, service and benefit providers need to confirm that statutory eligibility requirements are fulfilled. This can, however, imply significant time and energy costs as potential beneficiaries attempt to comply with enrolment (and re-enrolment) procedures and conditions.

The factors complicating enrolment and persistence can include the "hassle" of finding transportation to apply for benefits; the length and complexity of the application form(s); providing the necessary supplemental documents; the operating hours of the benefit office; communicating with benefit providers; and the processes for maintaining eligibility (Ko and Moffitt, 2022[28]; Currie, 2006[27]; Bertrand, Mullainathan and Shafir, 2006[26]). The claims process requires time, money, and energy on the part of applicants. Potential recipients who do not want to or cannot fulfil behavioural requirements, such as job search requirements, may also not apply for a programme or service.

In social programmes where benefits can be applied for and managed online – as is the case in many OECD countries (see Chapter 4) – the hassle of take-up can include many of the annoyances of modern life. Complex password requirements, changing user interfaces, unreliable internet access, multi-step application and renewal processes, scanning papers into electronic versions, and difficulty reaching a human service provider, among others, may accumulate to depress applications, enrolment and re-enrolment.

When asked about the ease of applying for public benefits, respondents to the OECD's 27-country RTM Survey identify hassle costs as the biggest challenge: 51% of 27 000 respondents say they believe the application process for public benefits would be difficult and lengthy (OECD, 2023[15]).

Lessons from nutritional assistance, health insurance, and housing and income benefits

A key federal welfare programme in the United States, the Supplemental Nutrition Assistance Program (SNAP), has been evaluated for take-up outcomes among elderly people (a group with low take-up) in a randomised control trial in the state of Pennsylvania. The sample was drawn from elderly individuals who were not enrolled in SNAP but were enrolled in Medicaid (means-tested public health insurance). Treatment groups were exposed to information about their eligibility, or to eligibility information *plus* phone-based application assistance from "Benefits Data Plus," a non-profit community organisation. The "status quo" control group – receiving no additional information about SNAP – had a take-up rate of 6% over nine months. 11% of the information-only treatment group, and 18% of the information plus assistance treatment group, enrolled in the same time (Finkelstein and Notowidigdo, 2019[18]). Those who applied in response to the SNAP treatment interventions had higher net income and better health status than the average enrolee in the control group (Finkelstein and Notowidigdo, 2019[18]). These outcomes reinforce the idea that a lack of information and administrative costs hinder programme enrolment, particularly for individuals in greater need.

An RCT in France found that in-person visits – which could be viewed as time-intensive – actually helped to improve take-up because the meeting reduced transaction costs in applications. Job seekers who were randomly selected to attend a meeting with a social worker to learn about a range of potential benefits were 31% more likely to take up any new benefit, relative to those in the control group. Treated job seekers were particularly likely to take up housing and income benefits because the social worker could directly help them with their application. In contrast, in a related RCT, job seekers were exposed to a treatment of an online simulator which provided information; this treatment had no significant effect on take-up (Castell et al., 2022[29]).

Using observational data, (Bitler, Currie and Scholz, 2003[30]) find that the United States' Special Supplemental Nutrition Program for Women and Children (WIC) also appears to suffer from high transaction costs. WIC provides supplemental food and nutrition education to low-income mothers and children up to age five. States with stricter eligibility rules have lower participation, and requirements of more frequent visits to WIC offices have reduced participation. (Currie, 2006[27]) also attributes a large gap in take-up rates between children's low enrolment in the means-tested US State Children's Health Insurance Program ("SCHIP", now "CHIP") and mothers' higher enrolment in the federal Medicaid programme to the difficulty of the application process. Hospitals have an incentive to get eligible pregnant women signed up for Medicaid, because they are legally required to provide service to women in childbirth even if they cannot pay. Consequently, most U.S. hospitals have set up Medicaid enrolment offices on-site in order to help patients complete applications and obtain the necessary documents, while CHIP counts on parents living in poverty to apply directly for their children.

2.4.3. Social stigma

One longstanding explanation for incomplete programme take-up is social stigma. Claiming social benefits may be associated with feelings of shame, which can be exacerbated by the labelling of the benefit itself (as a last-resort benefit for those worst off), or the claims procedure or benefit delivery (especially in small communities). Early literature on take-up suggested stigma was a major cost of participation in means-tested programmes (see, for example, Moffit (1983[31])).

While stigma likely does induce a cost to benefit receipt, reviews of experimental and observational programme evaluations suggest that transaction costs and complex or insufficient information seem to deter participation much more than stigma does (see, for instance, (Bhargava and Manoli, 2015[20]; Castell et al., 2022[29]; Currie, 2006[27]; Ewoudou, Tsimpo and Wodon, 2009[32]; Remler and Glied, 2003[33]). Even universal (presumably less stigmatised) social programmes have sizeable non-participation challenges, suggesting that stigma is not the main deterrent to means-tested programme participation (Currie, 2006[27]).

At the same time, stigma is difficult to study in academic research. Most surveys use proxies for stigma that are difficult to interpret, which may help explain the weak results (Remler and Glied, 2003[33]). RCT treatments that simulate stigma cannot truly replicate real-world feelings of shame or disrespect.

Another potential associated barrier to take-up is distrust, though this is perhaps even more difficult to measure. (Linos et al., 2022[13]) write "[distrust…] may be a particular challenge for EITC outreach. Outreach messages often include promises of free cash that can be hard to distinguish from scams to which families are frequently exposed."

2.4.4. Low expected benefits

Finally, potential programme users are unlikely to initiate enrolment procedures if they believe programme benefits (level and expected duration) will not outweigh the costs – the sum of psychological frictions, transaction costs and stigma noted above. Take-up of social benefits has been consistently shown to increase with benefit amounts and durations (Janssens and Van Mechelen, 2017[34]; Ko and Moffitt, 2022[28]).

For example, benefit levels have been positively associated with unemployment benefit take-up rates in the United States (Anderson and Meyer, 1997[35]; OECD, 2023[36]), along with other factors. Rozema and Ziebarth (2017[37]) exploit cross-state and time variation in cigarette taxes to examine the importance of benefit levels for non-take up of SNAP. While the price of cigarettes does not affect benefit eligibility, it does affect smoking households' budget constraints because demand for tobacco is inelastic, at least in the short term. They find that a one dollar (USD) increase in cigarette taxes raises SNAP take-up by eligible smoking households by 3.2 percentage points while leaving take-up of non-smoking households unaffected.

Looking at take-up rates for the working-age social assistance benefit in Germany, Bruckmeier and Wiemers (2011[38]) find that a marginal EUR 100 increase in the benefit level increases take-up by 5.8 – 7.6%. They also find that households whose income satisfies the means-test over the course of an entire year have an around 10 percentage point higher take-up rate than those who have a shorter low-income spell, underlining the importance of the duration-adjusted value of benefits. Similarly, Whelan (2009[39]) shows that an increase in calculated benefits of CAN 100 increases the propensity of eligible households to claim social assistance in Canada by between 5.2 and 6.8 percentage points. In France, the take-up of unemployment benefits is higher for jobseekers with higher benefit entitlements and longer maximum benefit durations: those with long working histories who are dismissed from open-ended contracts (Eurofund, forthcoming[23]).

The fact that households with higher expected benefit entitlements are more likely to take up the benefits is also indicated by the fact that the share of overall expenditure taken up (the share of the sum of all statutory entitlements) is usually higher than claimant take-up (the share of eligible households that claim the benefit (Ko and Moffitt, 2022[28]; Fuchs et al., 2020[40]).

2.5. Connecting lessons on take-up to the digital transformation of social protection

The remainder of this report presents a stocktaking of OECD governments' strategies to identify groups in vulnerable situations in need of social protection (Chapter 3); collect, curate and link data across different sources; and apply technology to facilitate beneficiaries' applications, renewals and providers' outreach to beneficiaries (Chapter 4). The findings of this chapter offer some lessons for social protection systems attempting to modernise for the challenges ahead.

Throughout the literature, the people who are least connected to state institutions – such as people living in situations of homelessness, non-citizens, or workers who do not file income taxes – are also the least likely to take up social programmes, even when prompted. This holds if they are reached through communication tools like postcards or weblinks sent through text messages. The information, psychological, "hassle" and other barriers are high. This suggests the need for governments to continue to produce probabilistic, survey-based estimates of groups or regions in need (Chapter 3) to support targeted information campaigns.

At the same time, clear information is probably not a sufficient intervention for individuals with the greatest need. There is often also a need for individualised, personal outreach, for example by community groups who can help with applications (as in (Finkelstein and Notowidigdo, 2019[18]) and (Castell et al., 2022[29])).

Lessons from behavioural research illustrate that programme application and renewal processes must be simplified, and not only by "going online." Modern communication technology presents hassles even for those well-versed in it, and even higher barriers for those without regular access to mobile phones or computers. The digital transformation of social service/benefit enrolment and delivery must be accompanied by handrails, including live human resources to support people who may face challenges with electronic applications and service delivery (see more in Chapter 5).

The findings in this chapter also illustrate the value of data linked across agencies or ministries to identify beneficiaries in one programme who likely have eligibility in another (explored further in Chapters 3 and 4). People who are already "in the system" are the ones most likely to apply for and eventually take up other programmes for which they are eligible.

Automatic enrolment in social programmes – using personally-identified linked data – is another promising tool for solving the take-up challenge, at least among people known to the state. While data governance structures and technical capacity are not in place for this yet in many OECD countries, it is an area of emerging interest.

Finally, improving enrolment (and re-enrolment) processes, including by targeted outreach, is unlikely to be successful if benefit amounts and the services provided are not adequate to meet the needs of the target population. Though connected to broader questions of financing, benefit levels and service quality and quantity cannot be discounted when considering how to improve take-up.

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Whelan, S. (2009), "The take-up of means-tested income support", *Empirical Economics*, Vol. 39/3, pp. 847-875, https://doi.org/10.1007/s00181-009-0329-z. [39]

Notes

[1] For a discussion of government efforts to identify populations at need, see Chapter 3.

[2] The report presents a range which illustrates findings of the more "strict" model (which attempts to include the income of cohabitating ascendants and descendants in the means test) and a more "lenient" model (which does not consider additional income sources).

[3] As well as other people meeting other sufficient conditions, e.g. related to disability.

3 National frameworks to identify potential beneficiaries and integrate them into social protection

Valerie Frey, Raphaela Hyee and Pablo Minondo Canto

This chapter presents case studies of national strategies to expand the coverage of social benefits and services in six OECD countries: Ireland, Spain, Chile, Belgium, France and Estonia. It provides an overview of the approaches countries are taking to identify those in need of benefits and services, including the type of data they employ. It also discusses ways countries are using linked administrative data and social registries to ease the bureaucratic burden on claimants of social benefits and services to increase take-up.

Key findings

At least 29 OECD countries have implemented national strategies to expand the coverage of social benefits and services through better identification of potential beneficiaries. This chapter presents a descriptive overview of the mechanisms (governance frameworks, data, and analytical tools) that six OECD countries – Belgium, Chile, France, Estonia, Ireland and Spain – are using to identify individuals in need of social benefits and/or services. These countries were selected to illustrate a diversity of approaches.

- National data-informed strategies against poverty or social exclusion aim to increase the reach of social protection for vulnerable groups. They often include an explicit target of minimising non-take-up among likely potential beneficiaries. However, the availability of administrative and survey data to identify vulnerable population groups varies across countries.
- These strategies take a range of approaches. Some countries, like Ireland and Spain, have taken what might be considered a more traditional approach to identifying vulnerable groups and regions in need of social programmes, based on probabilistic estimates of (usually de-identified) survey and administrative data. Once coverage gaps are identified, the policy response casts a wide net, including better communication and investment in new programmes. Public outreach and communication campaigns frequently target a particular benefit, a specific disadvantaged group or geographic area.
- Belgium, Chile, Estonia and France are increasingly linking different data sources to enable the analysis of social benefit eligibility at the individual level, and Spain is taking a step in this direction with the continued roll-out of its Digital Social Card. While these data-linking systems still risk missing people who live largely or completely outside of the social protection system – e.g. undocumented residents or people experiencing homelessness – they can help to increase social protection coverage.
- Data linking can 1) be used to measure non-take-up; 2) help close information gaps (e.g. eligible households can be contacted directly and encouraged to apply) and 3) lower the administrative burden on claimants (e.g. by pre-filling information from administrative sources). In a few cases, eligible individuals or households can even be auto-enrolled into social benefits. These individual-level interventions are sometimes combined with broader outreach to specific groups or regions, as in the case of the “zero non-take-up territories” strategy in France.

While governments are increasingly investing in improving social protection coverage and reducing non-take-up, only a few careful evaluations exist on the causal effects of these interventions. Embedding evaluation strategies into programmes to improve take-up of social benefits and services is key to understanding outcomes and improving cost-effectiveness.

3.1. A diversity of approaches to reach people in need

A critical foundation of any government effort to improve social protection coverage and delivery is the identification of those who need – and are likely eligible for – benefits, based on pre-defined eligibility criteria. In other words, among people who should be covered by social protection schemes, who has been missed? OECD governments have addressed this identification challenge with different approaches and degrees of intensity.

This chapter explores the distinct national strategies of six OECD countries: Belgium, Chile, Estonia, France, Ireland, and Spain. The strategies are relatively advanced and rely on sophisticated, national-

level, cross-government data collection and analysis. They aim to: 1) identify vulnerable individuals and groups using novel data and technology; and 2) integrate those who are not already covered by adequate social services and benefits into the relevant social programmes for which they are likely eligible.

The six case studies set out in this chapter were selected following a desk review of national strategies to expand the reach of social protection. Of the at least 29 OECD countries with dedicated national frameworks to expand social protection and reduce non-take-up, these six countries were selected to illustrate diverse approaches.

These national frameworks were often developed following intensive consultation with stakeholders and an identification of priority issues and marginalised groups. They seek to further integration across ministries and levels of government and often take a “step-wise” approach to database/registry development, linkages across agencies, and then facilitating the enrollment of potential beneficiaries.

The six national strategies vary in their approach. Ireland, for example, has invested heavily in the more traditional, probabilistic approach that many OECD countries use to identify vulnerable groups and regions that are inadequately covered by social programmes and benefits: the use of de-identified survey and administrative data to analyse gaps and identify priority groups for social protection outreach. This is similar to the approach of Spain (Section 3.3) and other OECD countries such as New Zealand and Australia (Chapter 4). With this approach, targeted groups (e.g. young people) or geographic areas (e.g. disadvantaged regions or communities) can be identified as a priority for outreach for existing or new benefits. Lithuania, for example, links survey and administrative data to create a ranked index of municipalities on outcomes like poverty in a given year (Chapter 4).

A national inclusion strategy based on de-identified data has some advantages. It can reduce issues of data privacy and consent around the use of (potential) beneficiaries’ personal information (Chapter 5). It can also provide reliable information on systemic inequalities between groups or geographical areas (e.g. lack of access to the internet) to help mitigate unequal enrollment in key social programmes.

This approach can go a long way towards identifying people who are not yet in the social protection system, but many of the usual barriers to non-take-up remain, even when governments understand better which groups suffer from low coverage. A lack of information, complex information, transaction costs and social stigma can still deter potential beneficiaries from applying (and renewing enrollment) in programmes for which they are eligible (Chapter 2).

Other countries are advancing social protection frameworks using digitalised approaches to 1) identify potential beneficiaries and 2) facilitate their enrollment in social programmes using linked datasets and social registries. This entails linking different microdata sources to enable individuals that are eligible for social benefits to be identified. Governments can then notify households about their eligibility for social programmes and simplify the application process (e.g. pre-fill information from administrative registries in claims forms, or suggest claiming an additional benefit with similar entitlement criteria). In some cases individuals or households can even be auto-enrolled into programmes.

While systems based on linked administrative data still risk missing people who live largely or completely outside the social protection system (e.g. those experiencing homelessness), they can facilitate the enrolment of individuals and households into benefits for which they are eligible. They can also enable analysis of the prevalence of non-take-up which can be used to identify priority geographic areas or groups in need of broader outreach.

The following sections present these case studies with an overview of how and when the framework was developed; how the relevant ministries identify target populations; the policy objectives in terms of programme enrollment and service/benefit delivery; and what evaluations have taken place or are planned.

3.2. The Irish Roadmap for social inclusion

Ireland's *Roadmap for Social Inclusion* came into effect in 2020 and has three objectives: reducing poverty, preventing the risk of poverty, and making Ireland a leading country in social inclusion in the European Union by 2025 (Government of Ireland, 2020[1]). The strategy encompasses seven policy areas, with several focus areas, or "commitments" embedded within each policy area, as well as the creation of new social benefits (see Section 3.2.2).

- **Employment:** improving employment opportunities for the long-term unemployed and for marginalised social groups, increasing efforts to reduce non-take-up of social benefits to aid the transition from welfare to work through better communication (see Section 3.2.2).
- **Working conditions and families**: strengthening regulations of employment conditions, ensuring a fair minimum wage in line with Ireland's socio-economic context, and supporting low-income families through free access to quality services, including education and healthcare.
- **The elderly**: linking pensions to wages and inflation rates,[1] establishing a pension rates commission, and providing long-term care support.
- **Family and child support**: increasing payments for families and introducing novel family support schemes, e.g. the development of an *Early Learning and Care programme* in local areas with a high incidence of children at risk of or living in poverty, and waiving fees to see to General practitioners for children between the ages of six and twelve.[2]
- **People with disabilities:** reorganising the structure of disability-linked welfare transfers. This includes maintaining certain benefit concessions (for instance, travelling passes) if taking up work and facilitating the retention of the medical card by increasing earning thresholds.
- **Inclusive communities:** maintaining all Ireland-specific protection schemes and services after Brexit, specifically, ensuring reciprocal welfare benefit entitlements between northern and the Republic of Ireland, the Island travel free schemes,[3] and healthcare and education access after Brexit (Government of Ireland, 2020, p. 65[1]).

3.2.1. Identification of the target population: targets and indicators in the Roadmap for Social Inclusion Plan

The Roadmap for Social Inclusion was designed following an open consultation process between public authorities, people experiencing poverty and social exclusion, and organisations working with these groups (Government of Ireland, 2020[1]). The strategy has a number of targets and performance indicators based on European Union (EU) metrics as well as national metrics. Table 1 lists **some quantitative EU targets and indicators** characterising the target population and the progress toward their achievement. These are drawn from the EU Statistics on Income and Living Conditions (EU-SILC) survey. Table 2 follows suit with national targets that are drawn from Ireland's Central Statistics Office (CSO). The roadmap also includes broader targets (such as income distribution, housing quality, or education), that are not listed.

Table 3.1. Some EU targets, indicators, and progress: Rodmap for Social Inclusion 2020-25

Target	Indicator	Progress as of 2021
Reducing the number of people at risk of poverty and social exclusion; becoming a top five EU country by 2025: reduction from 21.1% in 2018 to 16.7% in 2025.	Proportion of people at risk of poverty and social exclusion (AROPE)*.	Ireland has improved its ranking from 17th in 2018 to 14th in 2021.
Reducing income poverty: becoming a top five EU country and/or improving the classification within the top five countries by 2025.	Proportion at people at risk of poverty before and after receiving social transfers; proportion of people at risk of poverty in 2017; the rate of employed people at risk of poverty; the AROPE rate for people under 18 and people with disabilities.	As of 2021, Ireland is among the top five countries in one of five measures of poverty: the in-work at risk of poverty rate.
Improving living conditions: becoming a top five EU country and/or improving the classification within the top 5 countries by 2025.	Increasing the share of the population reporting good and very good health; reducing the share of the population that has unmet healthcare needs due to high costs; reducing the share of the population living in households that have low work intensity; increasing the share of children that receive formal childcare; reducing the share of the population experiencing material deprivation.	As of 2021, Ireland is among the top five countries in two of five measures of living conditions: The share of the population who report their health as either good or very good and the share of children receiving formal childcare.

Note:
* The at risk of poverty or social exclusion (AROPE) indicator is the share of individuals who are in at least one of three situations (Eurostat, 2021[2]): 1) severe material and social deprivation based on seven items essential for adequate living (e.g. not being able to pay unforeseen expenses); 2) at risk of poverty (income below the poverty threshold of 60% of the national equivalised income) and 3) living in a low work intensity household (working-age household members work for a combined of 20% or less of their potential working hours over the year).
Source: (Government of Ireland, 2020[1]), *Roadmap for Social Inclusion 2020 - 2025* and (Government of Ireland, 2023[3]), *Mid-term Review of the Roadmap for Social Inclusion 2020-2025.*

Table 3.2. Some national targets, indicators, and progress: Roadmap for Social Inclusion 2020-25

Target	Indicator	Progress as of 2021
Reducing the consistent poverty rate* to 2% or below by 2025	Share of the population experiencing consistent poverty	As of 2022, the consistent poverty rate has dropped from 5.6% to 5.3% in 2018.
Reducing child poverty	Lifting over 70.000 children out of consistent poverty	As of 2022, the consistent poverty rate has dropped from 7.7% to 7.5% in 2018. The achievement of the goal of lifting 70 000 children out of consistent poverty is still in progress.
Increase the employability of people with disabilities	Employment rate of people with disabilities in the national census**	The achievement of the target is still in progress. New measures will be added to the target.

Notes:
*Consistent poverty rate is defined as people at risk of poverty and experiencing enforced deprivation. At risk of poverty: an income (after social transfers) below 60% of the median nominal income (CSO, 2022[4]). Enforced deprivation is defined as lacking at least two of eleven items, including lacking the capacity to afford new clothing or not being able to afford meat, chicken, fish, or the vegetarian alternative every two days (CSO, 2023[5])
**Covering an array of disabilities ranging from blindness and deafness to physical intellectual, as well as emotional disabilities (CSO, 2016[6]).
Source: (Government of Ireland, 2020[1]), *Roadmap for Social Inclusion 2020 - 2025* and (Government of Ireland, 2023[3]), *Mid-term Review of the Roadmap for Social Inclusion 2020-2025.*

3.2.2. Delivery of social benefits

The Roadmap for Social Inclusion envisions the creation of new social programmes as well as the continued delivery of existing benefits. Table 3 illustrates **the most relevant novel benefits** to be delivered

under each policy area, the most relevant existing benefits to be continued, and their implementation status as of 2023.

Table 3.3. A snapshot of the most relevant new benefits and the continuation of programmes considered under the Roadmap for Social Inclusion

Policy area	New programmes/continuation of existent ones	Implementation status
Employment	1) Develop a "Further Education and Training Strategy" for the 2020-25 period that includes specific benefits to support people experiencing social exclusion in access to training and education; 2) Adding an extra two weeks of paid parents' leave (a specific leave for both parents, on top of maternity, adoptive, paternity, and parental leave) in 2019; extend the leave to seven weeks in 2020, 2021, and 2022.*	1) Achieved; 2) The second target was achieved and expanded; as of 2022, the goal is to expand the paid parents' leave to nine weeks by August 2024.
Working conditions and families	Continue dedicating budget funds to programmes that seek the reduction of child poverty and poverty among low-income families.	The target was achieved, and funds are still being delivered.
Family and child support	1) Develop a programme for the delivery of Early Learning and Care in areas with high shares of children at risk of; 2) Scrap General practitioners fees for children between the ages six and twelve.	The achievement of both targets is still in progress.
Support for people with disabilities	Develop a proposal to simplify the long-term disability payment system.	In progress.
Inclusive communities	Ensuring access to welfare benefits, education, and healthcare and maintaining the Island's free travel scheme post Brexit.	Achieved.
Universal access to quality services	Develop a pilot meal programme in early learning and care settings with the aim of tackling food poverty among children.	In progress.

Note:
* In Ireland, five types of parental benefits exist: maternity leave, adoptive leave, paternity leave, parental leave, and parent's leave. Maternity leave targets female employees and is up to 26 weeks long; adoptive leave targets adoptive parents and is up to 24 weeks long. Paternity leave targets the fathers of children under six months and is two weeks long; parental leave targets parents of children under 12 and is 26 weeks long; parent's leave targets parents of children under two and adoptive parents within the first two years of adoption and it is seven weeks long (Citizens information, 2023[7]).
Source: (Government of Ireland, 2020[1]), *Roadmap for Social Inclusion 2020 - 2025* and (Government of Ireland, 2023[3]), *Mid-term Review of the Roadmap for Social Inclusion 2020-2025*.

The Roadmap for Social Inclusion also includes the development of two outreach campaigns (Government of Ireland, 2020[1]): 1) a campaign to raise awareness of social benefits when taking up employment and 2) a campaign to communicate the existence of in-work income support transfers for low-income families. Both of these campaigns are yet to be delivered. As of 2023, a midterm review of the Roadmap for Social Inclusion was conducted. Progress made toward the achievement of EU and national targets are outlined in Table 1 and 2.

3.3. The Spanish National Strategy to Prevent and Combat Poverty and Social Exclusion

The *Estrategia Nacional de Prevención y Lucha contra la Pobreza y la Exclusión Social 2019-23* (National Strategy to Prevent and Combat Poverty and Social Exclusion) aims to strengthen social protection, ensure that social services respond to citizen's needs, and support population groups experiencing poverty and social exclusion (Government of Spain, 2019[8]). It has four target areas (Government of Spain, 2019[8]):

- **Poverty reduction:** prevent and reduce poverty, in particular among children, adolescents at risk of social exclusion and adolescents living in families experiencing poverty.
- **Investment in citizens:** improve education, training, and employment policies to increase the employability of individuals and support individuals with difficulties accessing the labor market. This includes the development of active employment policies that strengthen co-operation between social service providers and employers and facilitate labor mobility.
- **Social protection over the life cycle:** Provide vulnerable individuals with access to tailored health and social services that are not only palliative, but also preventive, including health policies to support children and their families, and social services that offer housing support and as well as social and health supports for the elderly, as well as those living with a disability or health problems.
- **Prevention and reduction of poverty and social exclusion:** Improve the efficacy and efficiency of the policies proposed in the strategy through co-ordination and co-operation between all relevant stakeholders. This includes ensuring territorial co-operation (autonomous regions are in charge of education and healthcare), co-operation and target alignment with the European Union and creating an innovative social service system that allows for social innovation and transparency.

Complementary strategies include the National Strategy against Homelessness 2023-30, the Spanish strategy on disability 2022-30, and the National Strategy for the Inclusion, Equality, and Participation of the Roma community 2021-30.

In addition to the national strategy to combat poverty and social exclusion, the Spanish Government, with support from EU funds, also funds a project run by a network of European NGOs, the *Red Europea de Lucha contra la Pobreza y la Exclusión Social* (EAPN), that seeks to identify the reasons for non-take-up of the new national Minimum Income Benefit (see below), and to conduct outreach and support campaigns (EAPN, 2022[9]). The project focuses on areas with high incidences of poverty. It will survey a sample of households in each of the target areas to learn more about the level of information of the new Minimum Income Benefit, whether sampled households ever applied for the benefit, about their trust in institutions and their digital skills. This survey information will be linked to administrative data on the local number of benefit claims and approvals. This should enable the analysis of reasons for non-take-up, and the impact of interventions on the knowledge and acceptance of the benefit. Moreover, the project seeks to deliver communication campaigns and to directly support potential beneficiaries who are not taking up the benefit in the application procedure.

3.3.1. Identification of target individuals

Using 2017 survey data,[4] the strategy identifies the two population groups that are most at-risk of poverty[5] and hence most in need of social protection**: children and adolescents under 18 and young people aged 18-29** – almost a third of children and young adults (28%) live in poverty, compared to about 20% of those aged between 30 and 64, and 15% of those over 65 (Government of Spain, 2019[8]).

Among **children and adolescents under 18**, those whose parents were born outside the European Union have the highest poverty risk (65%, compared to 22% for children born to parents born in Spain). Young children (under four years old) of Spanish residents born outside the EU are even more likely to live in poverty (74%). Children living in single parent households or in large families (with three or more children)

also have an elevated poverty risk (40%). Looked after children is an additional special target group of the strategy.

Young people aged 18 to 29 are more likely than other age groups to report that they have difficulties to make ends meet: 58% compared to 51% for those aged 50 to 64, and 48% for those over 65 (Government of Spain, 2019[8]). Young people who only completed compulsory education are more likely to live in poverty (44%) than those who have attained an upper secondary degree (26%) or post-secondary education (16%). Young people are more likely to live in poverty than older age groups for any given level of education, work intensity, or housing status (owning vs. renting a property). Young people living in poverty are more likely than their peers to perceive their health as poor; this effect is stronger than among older age groups.

3.3.2. Policy objectives

Based on the identified target population, the strategy has 13 objectives divided over the four main target areas. While the strategy includes a total of 85 policy commitments, the commitments most relevant to the expansion of social protection are:

- **Poverty reduction:** the strategy seeks to improve income security. Spain introduced a **new national Minimum Income Benefit (MIB)**, the *Ingreso Mínimo Vital* (IMV) in 2020, against the backdrop of the COVID-19 emergency. It provides a common minimum income floor across Spain, with benefit amounts depending on household size and composition. Before the introduction of this new national benefit, social assistance benefits provided by the autonomous regions differed significantly in generosity and accessibility, and there is still considerable variation in social service delivery across regions (OECD, 2022[10]; OECD, 2023[11]). To increase take-up of the benefit, the Spanish Government has initiated several active outreach campaigns, e.g. an information bus touring municipalities across the country (AIREF, 2023[12]). Using administrative data from late 2022, the *Autoridad Independiente de Responsabilidad Fiscal* (AIREF), the Independent Fiscal Accountability Authority, estimated that around 35% of all eligible households were benefiting from the new minimum income benefit.
- Furthermore, **the minimum wage**, which is indexed to inflation, has been increased five times since the strategy was implemented (La Moncloa, 2023[13]). However, despite these increases, real minimum wages fell by over 6 percentage points between January 2021 to September 2022, compared to 1.5 percentage points across the OECD on average, 4 percentage points in Greece, 0.2 percentage points in Portugal, or a slight increase of 1.5 percentage points in France (OECD, 2022[14]).
- **Investment in citizens**: the strategy proposes the creation of new scholarships and educational supports that guarantee that individuals from low-income households can afford their education, from the primary to the tertiary level. The strategy also seeks to improve employment opportunities for vulnerable groups (including Roma people and people with disabilities) through better co-operation between social service providers and employment services, as well as the incorporation of vulnerable groups in the design of active labour market policies (Government of Spain, 2019[8]).
- **Social protection over the life cycle**: the strategy includes a policy target to create affordable school canteens, as well as a policy target of enhancing the Social Services Users Information System, a databank for social workers, that keeps track of all interventions / contacts clients have with social workers, as well as client characteristics. Moreover, one of the targets is to increase public housing supply, provide rent support through transfers for vulnerable households and introduce direct subsidies to acquire a property.
- **Efficacy and efficiency**: Encourage active participation of officials from the federal government as well as from the autonomous regions in all European forums and working spaces that deal with

poverty reduction. Include civil society organisations in the design of poverty prevention policies by creating and strengthening dialogue platforms between civil society organisations and public authorities, e.g. the Commission for Civil Dialogue with the Third Sector. Create statistical tools that can detect situations of vulnerability and help to co-ordinate support policies across public agencies.

A key statistical tool is the *Tarjeta Social Universal* (Universal Social Card). Created in 2018, it was further developed and ultimately renamed *Tarjeta Social Digital* (TSD, or Digital Social Card) in 2021 (Ministry of Inclusion, Social Security and Migration, 2023[15]). The card collects information on all public benefits and services citizens are receiving, either at the federal-, autonomous region- or the local level. For individuals receiving a household level benefit – such as the MIB *Ingreso Mínimo Vital* – the card also contains information on other members of the household. Service providers at the three government levels feed the databank with administrative data on benefit and service receipt, and the information is accessible to both citizens and public authorities. This allows institutions at all levels of government to see what other support any claimant is receiving. The TSD also allows the production of aggregate data on benefit receipt for different needs groups (e.g. the unemployed, people with disabilities etc.), which can support the co-ordination of social benefits and services across levels of government. As of 2023, the TSD is still being rolled out across autonomous regions and municipalities. Once roll-out is completed, the TSD should be able to support the enrolment, and even automatic enrolment, of individuals into specific programmes.

The card is accessible online or through a mobile app using a personal identification number, or in the offices of the social security or national tax agencies (Ministry of Inclusion, Social Security and Migration, 2023[15]).

3.3.3. Evaluation

An evaluation of the strategy is planned at the end of the implementation period in 2024. The evaluation will benchmark quantitative indicators, including the at risk of poverty rate and the AROPE indicator against the policy targets outlined in the strategy. It will also look at the cost effectiveness of the strategy's policy measures. This benchmarking exercise will be complemented with qualitative methods such as expert interviews and workshops to assess the impact of social integration efforts.

3.4. The Chilean Social Information Registry

Chile's *Registro de Información Social (RIS) (*Social Information Registry) is an overarching registry of socio-economic and administrative data on individuals and households managed by the Ministry of Social Development and Family (MDSF) (MDSF, 2023[16]), with an estimated coverage of 98% of the population of Chile. Administrative information comes from governmental institutions and public and private social service providers, e.g. the Ministry of Education, the Chilean Pension Supervisor System, the Institute for Agricultural Development, and the Ministry of Housing and Urbanism (MDSF, 2023[16]). Its objective is supporting relevant institutions in the identification of citizens who are eligible for social benefits and to facilitate the delivery of such benefits. It is also used for research purposes (MDSF, 2023[16]).

The RIS was created in 2004, as a subset of a larger database called the Integrated System for Social Information (Fuchs, Medina and Silva, 2014[17]). Within the RIS, two tools have a particular focus on expanding the reach of social protection: the *Registro Social de Hogares*[6] (RSH, Social Household Registry) and the *Red de Protección Social*[7] (RPS, Social Protection Network).

- The *Registro Social de Hogares* is a centralised database containing socio-economic data on households with the purpose of determining their eligibility to social benefits. It contains both self-reported data (by households) on different socio-economic conditions as well as administrative data provided by several ministries and other government agencies. These data form the base for

the calculation of the *Socio-economic Qualification*, a socio-economic indicator at the household level, that determines the eligibility of each household for specific social benefits (Section 3.4.2).

- The *Red de Protección Social* is an information platform for (potential) beneficiaries. Using a unique personal identifier, service users can log onto this platform online, and see individualised service and benefit offers for eight situations of need. The platform can suggest personalised services to users thanks to personal administrative data from the *Registro Social de Hogares,* the National Health Insurance Fund which keeps track of the usage of medical services and contains patient information, and the Civil Registry and Identification service, containing personal information such as marital status, address, or age (Section 3.4.1).

3.4.1. Identification of target individuals within the Registro de Información Social

Created in 2016, the Registro Social de Hogares merges socio-economic data from administrative registries with self-reported data. Enrollment in the *Registro Social de Hogares* is voluntary – individuals who want to participate complete a form containing questions like household characteristics, income, education, housing, health, and level of independence (e.g. among seniors) in the household. This can be done electronically using a personal identification number provided by the Civil Registry (*ClaveÚnica*), or in person. Offices of the *Registro Social de Hogares* exist in all Chilean municipalities, and individuals can also register at an office of *Chile Atiende* (a government service that contributes to the management and delivery of social benefits). Outreach workers may also visit the household, this tends to happen in remote communities (e.g. island communities) by municipal workers trying to help local residents access national benefits.

During the COVID-19 pandemic Chile tried to facilitate access and expand the reach of social benefits through digital tools like the RSH. Over the past three years, about 75% of new enrolments were done online. To simply access the RSH, in May 2020, the requirement of having the personal identifier provided by the Civil Registry was removed (MDSF, 2020[18]). Through this measure, the national ID (RUT) was sufficient to digitally enrol in the registry and apply for the Family Emergency Income (one of the benefits provided during the pandemic). Moreover, once individuals enrolled in the *Registro Social de Hogares*, a public-private partnership allowed access to the webpage from which the Emergency Family Income needed to be requested without consuming any mobile data (MDSF, 2020[18]).

Administrative data used in the RSH (MDSF, 2019[19]) come from the Internal Tax Service (SII), the Superintendence of Pensions (SdP), the Unemployment Fund (AFC), the National Health Fund (FONASA), the Superintendence of Health (SdS), the Civil Registry and Identification service (SRCeI), and the Ministry of Education (MINEDUC), among others. Most dministrative information is automatically monthly; beneficiaries only have to report substantive changes in the socio-economic condition or family status that may impinge on benefit entitlement to the relevant municipal unit (in person or online). When administrative data does not align with self-reported information, however, the household can be contacted on-line or in-person.

The *Red de Protección Social* *was* established in 2021 as an information platform about social services and benefits available in eight specific situations of need: requiring a costly medical treatment, being unemployed and having difficulties finding employment, being a victim of a violent crime, experiencing difficulties finding housing, having difficulties accessing higher education, suffering from gender-based violence, having a disability, and requiring care for dependency or being a caregiver (Chile Atiende, 2023[20]).

It links cross-registry administrative data from the *Registro de Información Social*, the *Registro Social de Hogares*, the National Health Fund and the Civil Registry and Identification Service to identify social services and benefits available to specific households across 20 institutions in each of the eight situations of need (Chile Atiende, 2023[20]). The objective is to inform individuals about the benefits and services they are eligible for and how to request them. Without a personal identifier, individuals can still navigate through

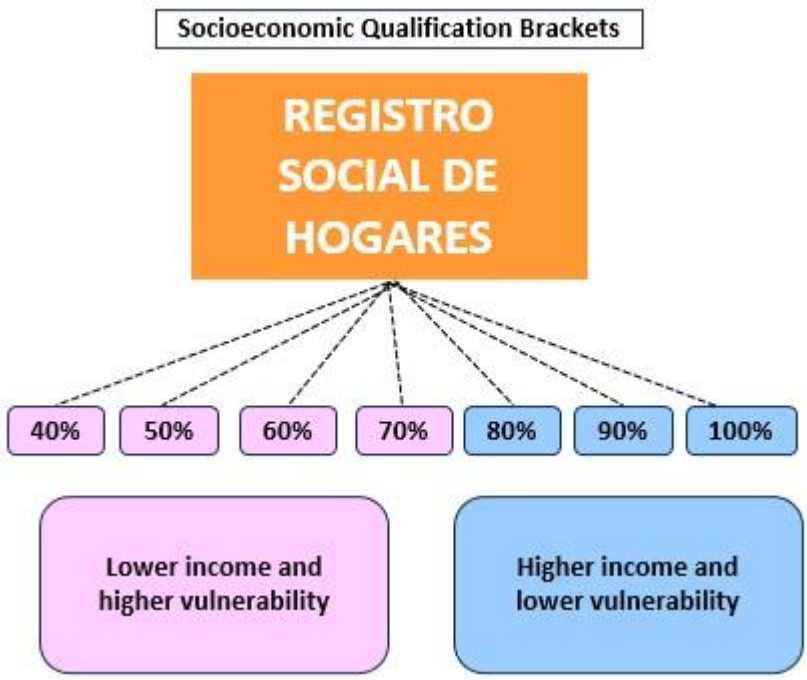
the existing programmes and benefits. Furthermore, they can also benefit from the platform in person in a branch of *Chile Atiende,* or through call centres and social media.

Coverage of RSH is high. As of 2023, the Ministry of Social Development and Family estimates that over 8.9 million households (about 86% of the Chilean population) is registered in the *Registro Social de Hogares* (MDSF, 2023[21]). Expert interviews with MDSF suggest that the missing 14% is principally residents without a national identification number (e.g. undocumented migrants), households living in remote communities (e.g. island communities), high-income households who have little need to apply for benefits, and newborns who have to be registered by their parents for most benefits.

3.4.2. Indicators used to identify vulnerable households in the Registro Social de Hogares

In order to identify vulnerable groups and assess their eligibility to social benefits, *the Registro Social de Hogares* uses a socio-economic ranking system. This ranking system classifies every household that is registered in *the Registro Social de Hogares* in one of seven income groups, ranging from the 40% with the lowest income and hence most vulnerable to the top decile with the highest income considered least vulnerable. The ranking follows a descendant logic and thus, households situated in the lowest 40% are entitled to a wider array of benefits than those in higher groups (Figure 3.1).

Figure 3.1. The socio-economic ranking system within the *Registro Social de Hogares*



Source: (MDSF, 2019[22]), *Cálculo de la Calificación Socioeconómica*.

To determine the group for each household, the ranking considers three variables: household income, the necessity index, and the means test.

- Household income is the sum of all income from employment, pensions, and capital from every household member over 18 over the last 12 months for which data is available. This information is obtained from linking administrative data and/or self-reported data (MDSF, 2019[22]).

- The necessity index builds on the income information and adjusts household income to account for household size and other characteristics, such as age or disabilities. It also accounts for economies of scale in consumption, depending on age and disability status of each household member.[8] Having calculated the necessity index, a first classification of each household is made in the ranking by dividing the income variable by the necessity index score.
- The means test is the last step for classifying a household in the socio-economic ranking. The means test is meant to correct assessment errors stemming from a lack of accurate income information. It determines whether a household's income corresponds to the household's observed lifestyle. It considers five "means of value": the value of public and private health contributions paid by household members, enrollment of household members in private schools or universities, vehicle ownership, property ownership, and whether (adult) members of the household have parents with high income not living in the household. If the household has two means of value, the household will automatically be placed in the 61-70% group of the socio-economic ranking; if it has three or more, it will be placed in the 81-90% tranche (MDSF, 2019[22]).

Based on the classification on the socio-economic ranking, households are entitled to different benefits; ranging from housing, health, agriculture, education and youth to tourism benefits.

3.4.3. Delivery of social benefits to target groups

Once a household is in the RSH, there are a few ways to access benefits. The application or renewal process depends on the programme. In many cases, households must apply for any benefits they should be entitled to. The application process varies depending on the benefit, but it can either be done online using the personal identification number or in person in a branch office of the relevant agency or *Chile Atiende*. For some benefits with simple entitlement criteria, households are automatically enrolled – e.g. *the bono por logro escolar*, an educational benefit for high performing students from low-income households, as the RSH contains both information on family income and on school results.

For benefits that are provided outside the jurisdiction of the *Registro Social de Hogares*, the application process varies, and individuals can find information on the requirements and the application process on the *Red de Protección Social*.

3.4.4. Evaluations

In 2018, the Ministry of Social Development and Family identified four areas where the *Registro Social de Hogares* could be strengthened (MDSF, 2018[23]): First, strengthening the digital capacity of the registry. The pandemic hastened these efforts (see above) and now the vast majority of enrollments happen online. There are plans for an "*ecosistema digital*", a single window for claimants containing all relevant information regarding benefit eligibility and the claims process.

Second, preserving the legitimacy and transparency of the registry. Efforts should be made to improve the quality of the administrative data that feeds into the *Registro Social de Hogares*, the quality of self-reported information, the quality of information contained in the application forms submitted, the capacity of the registry to accurately determine the socio-economic status of households, and the correct usage of the information contained in the registry by social service providers. MDSF reports that they are undertaking extensive efforts to clean the data and identify fictitious or mistaken information (e.g. one person or single parent households without any income, that are suspected to in fact live with other adults, and only report living separately to maximise benefit entitlement). The lack of in-person contact during the COVID-19 pandemic has exacerbated this problem. To address it, MDSF has stepped up efforts to carry out targeted as well as random in-person checks.

Third, in 2016 a public platform was created that enabled citizens to navigate through their profile in the *Registro Social de Hogares*, but it did not provide information on individual social benefits receipt or entitlement. This was addressed by the creation of the *Red de Protección Social*.

Fourth, the information on the socio-economic characterisation of households contained in the *Registro Social de Hogares* should be further used to guide the design of social policy and social benefit delivery. That is, the data in the registry should be used to co-ordinate social programmes, avoid duplicities, and address delivery gaps, but also to provide more comprehensive and tailored social benefits so that households benefit from the support that best fits their needs.

3.5. The Belgian Federal Plan to Combat Poverty and Reduce Inequalities

Belgium's *Plan Fédéral de Lutte contre la Pauvreté et de Réduction des Inégalités* (Federal Plan to combat poverty and reduce inequalities) came into effect in 2022. The strategy is based on four policy pillars: 1) prevention and early detection of poverty; 2) supporting sustainable employment and access to social protection; 3) supporting social mobility and social inclusion and 4) contributing to the European Social Agenda by promoting solidarity (SPP Intégration sociale, 2022[24]).

Within the first policy pillar of prevention and early detection of poverty, the plan outlines a series of policy objectives to prevent non-take-up of social benefits (Section 3.5.2), building on the findings of three research projects (Section 3.5.1).

3.5.1. Examining the extent and causes of non-take-up in Belgium

The national plan draws on the results of three research projects: 1) the *proposition d'actions transversales pour un plan de lutte contre le non-recours aux droits sociaux* (Proposition of cross-sectional actions for a plan to combat non-take up of social rights); 2) the BELMOD project and 3) the closely related TAKE project to examine the extent and causes non-take-up in Belgium.

- The *Proposition d'actions transversales pour un plan de lutte contre le non-recours aux droits sociaux* was a research project conducted by Belgium's Federal Ministries for Social Integration (*SPP Intégration sociale*), and Social Security (*SPF Sécurité Sociale*) from 2019 to 2021. Its aim was to investigate the causes of benefit non-take-up in Belgium, and to provide strategic recommendations to prevent it (SPP Intégration sociale, 2021[25]). The project included workshops as well as consultations with relevant stakeholders, including social security agencies.
- The micro-simulation BELMOD Project was funded by the European Commission and managed by the Federal Ministry for Social Insurance between 2019 and 2022. It extended a pre-existing micro-simulation model into the BELMOD model (Federal Public Service Social Security, 2023[26]). Managed by the Crossroads Bank for Social Security (CBSS), BELMOD is based on linked administrative data from the "data warehouse Labour Market and Social Protection", that includes information on wages and the number of beneficiaries for specific social benefits (CCC, 2023[27]). This enables the model to measure non-take-up by imputing the statutory eligibility of households to social benefits and comparing them to the actual recipient numbers.
- The TAKE project augmented the BELMOD micro-simulation model with survey data on the socio-economic characteristics of households and their knowledge of and attitude toward the four benefits that were the subject of the study (TAKE, 2023[28]). It was funded by the Belgian Science Office (BELSPO) and conducted by the Ministry of Social Security, the University of Antwerp, the University of Liège, and the Federal Planning Bureau, between 2015 and 2022. TAKE focused on four benefits: the social integration allowance (the working-age social assistance programme), the income guarantee for the elderly (the social assistance programme for those above retirement age), the increased reimbursement of healthcare (a refund for out-of-pocket

healthcare costs for low-income individuals), and the heating allowance (an allowance supporting low-income households using specific types of fuel to heat their home) (Goedemé , T. et al., 2022[29]).

The TAKE project designed a survey aimed at 10 000 randomly selected low-income households identified from administrative micro-data. 2 000 households completed the survey through in-person interviews that included questions on knowledge about social benefits, and reasons for non-take-up. Survey information also enabled more accurate estimates of benefit entitlements than administrative data alone, e.g. through data on informal employment. TAKE estimated non-take-up to be between 37% and 51%[9] for the working-age social assistance programme, between 42% and 59% for the social assistance benefit for the elderly, 65% and over for the heating allowance, and around 40-50% for working-age people for the reimbursement for healthcare, and 17%-32% for those over 65. The main reasons for non-take-up are a lack of information about social benefits, the high number of different benefits, the administrative burden of claiming benefits, and psychological and behavioural barriers, including the social stigma associated with benefit receipt (Goedemé , T. et al., 2022[29]).

3.5.2. Delivery of social benefits and prevention of non-take-up

Building on the findings and proposals made by the Proposition *d'actions transversales pour un plan de lutte contre le non-recours aux droits sociaux*, the BELMOD, and the TAKE projects, Belgium's federal plan ultimately has eight policy targets to combat the non-take-up of social benefits:

- **Information and communication:** This entails developing a website with information on existing social benefits that is accessible (in content and language) for vulnerable population groups; creating a learning network where institutions and organisations share best practices on non-take-up; developing a federal communication campaign that informs individuals (particularly vulnerable groups) on the social benefits that are available and that promotes the *my.belgium.be* website (an online resource that informs on the existing benefits at the federal level); and creating an information system that centralises data from social services providers and partner institutions (e.g. mutual insurance companies). The aim is to utilise this system to proactively reach out to and inform citizens about the existing social benefits and the assistance they can receive if they apply (SPP Intégration sociale, 2021[25]).
- **Incorporate nudging elements** to maximise take-up of benefits. This could include, for example, sending friendly text reminders when scheduling medical checks (which are an eligibility requirement for some benefits, e.g. the income allowance for the elderly).
- **Awareness and training** of public servants. This includes developing awareness and training courses for social workers on poverty, social exclusion, and causes of non-take-up (SPP Intégration sociale, 2021[25]).
- **Automatisation of benefit enrolment.** Like an increasing number of OECD countries, Belgium is exploring possibilities of automatic benefit enrolment based on administrative data.
    - Belgium is exploring the possibility of using administrative data on earnings from the Ministry of Finance and/or the national health and disability insurance agency to determine individual eligibility for social benefits, including disability benefits (the income replacement allowance and the integration allowance) (SPP Intégration sociale, 2021[25]). This would enable the automatic payment of benefits. As of 2023, the National Institute for Health and Disability Insurance uses data from the Crossroads Bank for Social Security and the Ministry of Finance to identify low-income households that might be eligible for the increased reimbursement of healthcare costs. The National Institute for Health and Disability Insurance shares the data with health insurance funds, who then proactively identifies and reaches out to these households to encourage them to put in a claim for the benefit.

- Not-for-profit health insurers (mutualities) should also directly inform users of their potential eligibility for social benefits – in particular the social integration allowance and the income guarantee for the elderly – and encourage them to check if they meet the criteria and apply. This would be possible given that they carry out an income test for beneficiaries of the increased reimbursement for healthcare costs (Federal Public Service Social Security, 2022[30]).
- The Crossroads Bank Social Security (CBSS) created a "buffer" database containing quarterly registry information on the receipt of the most important social benefits provided by different social security institutions, including the Ministries for Social Integration and Social Insurance, as well as the Federal Pensions Service, as well as age, postcode and household composition (Federal Public Service Social Security, 2022[30]). This database is used to automatically assign the (lower) social tariff for gas and electricity: energy suppliers communicate customer information to the Federal Public Service Economy every quarter. The Federal Public Service uses this information – name, address, date of birth – to identify energy customers in the national register, and assigns each contract a social security number. These social security numbers are then communicated to the CBSS, which uses them to identify those individuals and households that receive benefits that give raise entitlement to the reduced social tariffs for gas and electricity. The Federal Public Service then informs the energy providers of the entitlement to lower tariffs.
- The BELMOD project has suggested to expand the information contained in the "buffer database" with other markers of vulnerability, e.g. being in a collective debt settlement or long-term unemployed, possibly also an indicator of household income. This could enable the automatisation of some benefits at the municipal level, e.g. some cities offer a municipality pass to individuals in collective debt settlements or debt mediation.

- **Simplification of the claims process**: Harmonise the existing legislative frameworks for income tests for different benefits under one framework. Currently, some means tests take into account gross taxable income, while others take into account all income (including e.g. other social benefits) to assess benefit eligibility. This makes it more difficult to understand for claimants if they would be eligible to other benefits (Federal Public Service Social Security, 2022[30]).
- **Monitoring non-take-up**: Link socio-economic household data from the EU statistics on income and living conditions survey (EU-SILC, e.g. savings or benefit receipt) and administrative data contained in the BELMOD model (from the Crossroads Bank of Social Security, e.g. earnings) to more effectively monitor non-take-up (Federal Public Service Social Security, 2022[30]).

3.6. Two national strategies in France

There are two national strategies to prevent non-take-up of benefits and expand the reach of social protection in France. The *Stratégie Nationale de Prévention et de Lutte contre la Pauvreté* (National Strategy for the Prevention and Fight Against Poverty) and S*olidarité à la* Source (Solidarity at the Source) reforms are programmatic policies to prevent non-take-up. These entail extensive data linking across social protection agencies, targeted outreach to (potential) individual beneficiaries based on information gathered in administrative databases, and also the novel strategy of bringing everyone into the social protection system through targeted "zero non-take-up territories" through intensive community outreach.

3.6.1. National Strategy for the Prevention and Fight Against Poverty

The *Stratégie nationale de prévention et de lutte contre la pauvreté* was in place between 2018 and 2022. It was divided into five thematic areas (children and education, health, social rights, housing, and

employment) and included 35 policy targets, including the prevention and reduction of benefit non-take-up (Ministry of Solidarity and Health, 2018[31]).

To combat the non-take-up of social benefits, the strategy proposed to **simplify benefit access by strengthening data exchanges** across public agencies, specifically information on the monthly incomes of employees. Currently, ***the Caisse nationale des allocations familiales*** (CNAF, National Fund for Family Allocations), that administers a number of family and social benefits, does not have access to this data. The strategy includes the goal to grant regulatory access for CNAF. Data mining techniques should then be able to identify individuals and households who could be entitled to social benefits from the linked administrative data. These households could then be contacted by text message, e-mail or telephone to encourage them to claim the benefit (France Stratégie, 2022[32]).

A data mining model has been developed for two benefits: the *Prime d'activité* (an in-work benefit for low-wage workers) and the *Allocation de soutien familial* (a lone parent benefit). For the *Prime d'activité,* 9.7% of the identified and contacted potential beneficiaries requested the benefit in 2019; in 2020 this percentage dropped to 7.5% and to 5.5% in 2021, as many potential beneficiaries had already been contacted in previous years (France Stratégie, 2022[32]). For the *Allocation de soutien familial,* as of November 2021, nearly 49 000 people had been contacted by phone, and 10 800 through text message. Available data suggests that around 6.8% of those contacted by phone have claimed the benefit.[10]

The plan also included a target to automatically collect and exchange data to assess the ongoing individual eligibility for recipients of the *Prime d'activité* (an in-work benefit for low-wage workers) and the *Revenue de solidarité active* (the social assistance benefit) by 2023. This should simplify the claims process, and improve the responsiveness of the benefit, as income data will be automatically updated, and hence potential beneficiaries will not have to declare their income every quarter (France Stratégie, 2022[32]).

The plan also envisaged the creation of local contact points to inform individuals about available benefits (*accueils sociaux inconditionnels*). In 2021, 95% of *collectivités départementales* (departmental collectivities) had a *lieu d' accueil inconditionnel* that was reachable within a 30-minute distance.

The plan also includes the **creation of "zero non-take-up territories"** – local communities where governmental and non-governmental agencies reinforce efforts to prevent non-take-up. This includes door to door campaigns, active outreach, and tailored support in the application process. By 2022, three "zero non-take-up territories" experiments had been conducted in the Corsican city of Bastia, in the 10th district of Paris, and in the municipality Vénissieux in Lyon (France Stratégie, 2022[32]):

In Bastia, the outreach selected three housing blocks that were the target of an information campaign by post, phone and door to door contact. Eligible individuals who requested it were supported in the application process. The Vénissieux outreach established a "rights ambassador" to identify potentially vulnerable individuals in specific neighborhoods and social centres, and a "rights co-ordinator" who was supposed to link identified individuals with the agencies delivering social benefits. Neither targeted programme has been evaluated. In the 10th district of Paris, 1 376 people were contacted and 47 received an assessment to determine their eligibility for specific social benefits. Two individuals who did not take up benefits were supported by the French Red Cross.

The plan also proposed the creation of a digital space where citizens could securely store relevant information that might be asked for accessing social benefits. As of 2022, its development was still underway.

3.6.2. The at-source solidarity reform

The "at-source solidarity" reform, initiated in 2023, seeks to **improve the delivery of the benefits administered by the *Caisse nationale des allocations familiales*** (CNAF) by 2027. The CNAF administers a total of 19 family, housing, and social inclusion benefits (CNAF, 2023[33]). The reform seeks

to 1) harmonise the means tests to assess the eligibility for the different benefits (currently, some benefits use only labour income for the means-test, while others use all taxable income, including e.g. property income); 2) improve the reliability of the income information used for means-tests and automating the retrieval of income information from administrative data for continuing claims; 3) automate means tests; 4) pre-fill claims forms with income information to simplify the claims process for claimants; 5) create a single application form for all benefits. Automatically retrieved data includes data on student status and grants from the Ministry of Higher Education, Research and Innovation (Mesri) and other educational bodies, the national statistical office, tax data as well as data on self-employed workers, as well as data on maintenance payments. These data will pre-populate claimant forms to lessen the administrative burden on claimants, but claimants will still be able to modify the pre-filled data, e.g. in case of changes that take place after the pre-filled data have been acquired (e.g. changes in employment status, birth of a child etc.).

The reform envisages a step-wise implementation with a set timeline (CNAF, 2023[33]): In a first step, the improvement of the reliability of income data and the automatic retrieval of income information for the means-test will be implemented for the housing benefit only. Then, the means-test for the *Prime d'activité* (an in-work benefit for low-income workers) should be implemented automatically for all recipients of housing benefits. As a next step, it is planned to automatically implement the means-test for *the Prime d'activité* as well as the *Revenue de solidarité active* for recipients of all benefits administered by CNAF to determine their entitlement. By 2025, the plan is to automatically implement means tests for the *Prime d'activité*, the *Revenue de solidarité active*, and housing allowances for all individuals who are in the CNAF database (including all families receiving the general family benefit). By 2027, the goal is to have a single application form for all benefits administered by CNAF for all individuals, including for claimants who are not already in CNAF's database.

The reform also includes **experimental "zero non-take-up territories"** to be implemented between 2023 and 2026. The initiative involves 39 local authorities who will work with key actors in social service delivery over a period of three years to prevent non-take-up. The strategy focuses on two benefits: the in-work benefit *Prime d'activité* and the social assistance benefit *Revenue de solidarité active* but other social benefits might be included (Ministry of Solidarity and Family, 2023[34]). As of 2023, the reform highlights five broad objectives of this experiment (Ministry of Solidarity and Family, 2023[34]):

- Support vulnerable individuals who might not receive assistance by providing information and tailored help.
- Enhance co-ordination between public institutions and key players in the efforts to prevent non-take-up of benefits and reduce poverty.
- Strengthen practices to prevent non-take-up within the purview of social work, e.g. through the aller-vers, that is, by proactively reaching out to individuals who might not be using social benefits.
- Involve the target population in the creation and experimentation of tools to combat non-take-up.

3.7. Estonia's proactive government service approach

The objective of creating event-based and seamless public services – including social protection – has been put at the forefront of the Estonia's Digital Agenda 2030 Strategy (NORTAL, 2023[35]). This strategy emphasises the use of digital technology in the design of social and economic policies (Ministry of Economic Affairs and Communications, 2021[36]).

The Estonia 2035 strategy advocates for the creation of a person-centred social service network: in short, individuals should be able to access social services digitally and in an automated manner, without bureaucratic and time-consuming procedures.

3.7.1. Policy priorities

The automation of service delivery focuses on access to social benefits and services in 14 specific life situations (RIA, 2022[37]): Marriage, having a child, acquiring a drivers' licence, being the victim of a crime, taking up vocational training, the death of a loved one, divorce, childcare, traffic accidents, retirement, acquiring a vehicle, unemployment, incapacity to work, school enrolment. It includes five policy priorities: skills and the labor market, sustainability of the nation, health, and social protection, the economy and climate, space and mobility, and state administration (Government of the Republic of Estonia, 2020[38]).

As of 2023, only family benefits and marriage services are being proactively (automatically) delivered. The automation of other benefits is still underway. Upon the birth of a child, the Population Register is crossed with data from the Tax and Customs Board to identify the parents' income and working status (OPSI, 2020[39]). Further multi-registry data is crossed through an algorithm in order to assess parents' eligibility for family benefits (NORTAL, 2022[40]). The parents then receive an email containing information on their benefit entitlement and on how those benefits were calculated (NORTAL, 2022[40]). If the parents want to claim these benefits, they are asked additional information, e.g. bank account data.

For marriage, couples can submit a marriage application online through the e-population register, allowing couples to do submit any documentation (e.g. proof of non-consanguinity, age etc.) without visiting a civil registry office (Piirmets, 2023[41]). Submissions are evaluated within 30 days (Piirmets, 2023[41]).

3.7.2. Evaluations

In October 2022, NORTAL (a key partner in the development of online proactive services) assessed that there is a 91% customer satisfaction with the proactive parental family benefit service, there has been a 88% reduction in direct monthly interactions between public officials and beneficiaries, and 99.99% of registered new-borns' files are automatically analysed to assess parent's eligibility for parental family benefits (NORTAL, 2022[40]).

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Notes

[1] The roadmap proposes a "smoothed earnings system" that links pension payments to average wages but increases them in line with inflation in years when average wages increase by less than inflation (Government of Ireland, 2020[1]).

[2] In Ireland, General practitioner (GP) visit cards were cost free for all kids under the age of five until 2023; recently, this was expanded to kids between the ages of six and seven. Older children might access GPs through private healthcare plans.

[3] Through the free travel scheme, people aged 66 and over can access all public and certain private transport services in Ireland free of charge (Government of Ireland, 2019[42]). People with a disability and people with carers might access the scheme at a younger age.

[4] Data come from the survey on living conditions conducted by the National Institute of Statistics, the Active Population Survey, the National Health Survey, and the EU Survey on Income and Living Conditions (EU-SILC).

[5] The risk of poverty is defined as living in a household with an equivalised income below 60% of the national median equivalised income.

[6] Registro Social de Hogares - Social House Registry: https://registrosocial.gob.cl/.

[7] Red de Protección Social -Social Protection Network: www.reddeproteccion.cl/.

[8] E.g. each adult household member receives a weight of 0.7, a child aged 6 to 14 with a moderate disability a weight of 0.48, while an adult with the same level of disability but aged 60 to 74 would be assigned a coefficient of 0.79 (MDSF, 2019[22]).

[9] The large interval is due to the fact that some local welfare offices take the means of a claimant's parents or children (in addition to a spouse or partner) into account when they live in the same household, while others do not. The lower point estimate of 37% pertains to a "stricter" model where parents' and children's incomes are taken into account and therefore a smaller share of the population is eligible for social assistance, whereas the 51% is an upper bound where parent and child incomes are disregarded, and therefore more households are eligible.

[10] No data is available for those contacted through text message.

4 Leveraging technology and data advances to improve social programme coverage and service delivery

Dorothy Adams

This chapter explores the different approaches OECD countries are taking with advanced digital technologies and data to help improve the take up of social protection programmes and to make service provision more efficient. Technologies like websites, portals and apps are now commonly used to make it easier for people to learn about, apply for, and interact with government services. Advances in data collection and use sit at the heart of governments' increased reliance on technology. Government agencies are progressively linking their administrative databases to assess benefit eligibility automatically, adjust benefits and, in some cases, automatically enrol service users into social programmes. So far, deployment of more advanced technologies like AI and ground-breaking uses of data tend to be small-scale, ad hoc projects to determine feasibility and scope of deployment. This is related to the significant risks and challenges associated with the use of advanced technologies and data in social protection, which are discussed in Chapter 5 of this report.

Key Findings

OECD countries are leveraging rapid advances in technology and data to improve the design, delivery and coverage of social protection programmes. This chapter explores the different approaches countries are taking, and to what effect. The literature and countries' responses to the OECD's questionnaire: *Harnessing Technology and Data to Improve Social Protection Coverage and Social Service Delivery* (OECD, 2023[1]), hereafter known as the OECD Questionnaire, offer clear and consistent themes:

- Many OECD countries are moving in a similar and progressive direction, relying increasingly on technology and data to enhance the customer experience of public services, improve efficiency (for example, pre-filling application forms) and to ensure groups in vulnerable situations are aware of, and accessing, the benefits and services for which they are eligible.
- Digitalised welfare systems are starting to change the nature of the bureaucratic encounter between the state and individuals. More services are now available online, enabling welfare agencies to focus resources on people with needs that are not suited to automated systems, such as service users with complex needs who require multiple and intensive social protection services.
- Better and smarter use of data sits at the heart of governments' increased reliance on digital technologies to improve social protection. For example, countries are increasingly linking administrative data to measure non-take-up, make information more readily available, and lower the administrative burden on claimants, for example, by automatically assessing eligibility for benefits and services and/or to adjusting benefits where there has been a change in circumstances. In their most advanced form, data linkages are used to enable automatic enrolment of service users into benefit programmes. At least three countries now grant child benefits automatically upon the birth of a baby (Estonia, Norway and the Slovak Republic), and Canada grants some minimum pension benefits automatically.
- While greater use is being made of government data, government agencies are yet to exploit, in a systematic way, the value of data from non-governmental sources to understand and shape social policy and services.
- Despite progress in the government sector, advanced uses of technology and data are less common in the public sector than in the private sector, and less common again in the social sector. Reasons for this include ethical and legal concerns – not least of all related to privacy – and scepticism about whether computer-driven systems are appropriate in the sphere of public policy and administration, and social policy in particular.
- There is a gap between the examples of leading-edge uses of advanced technology and data in the literature and those provided by countries via the OECD questionnaire. This suggests that many advanced uses of technology, and AI particularly, continue to be small, ad hoc test cases to determine feasibility, functionality and scope of deployment. Countries are thinking carefully about how to take advantage of new technologies and proceeding with caution, implementing and monitoring small scale projects before determining whether to take them to scale. Several countries however provided examples of comprehensive change programmes that involve modernising their technology platforms, changing operating models and ensuring the necessary cultural shifts to revolutionise how public services are provided.

The use of AI in social protection remains limited, and – thus far – other statistical methods remain more common in automated decision-making and data analytics. One exception is the use of AI-powered chatbots, which many countries are now implementing.

4.1. Introduction

The ability of a country to care for its people and respond to their needs over the life course depends on its ability to identify those who are in need, enrol them in tailored benefits and services that work, and follow up to cater to evolving circumstances. This requires having in place a modern and well-functioning national social protection system.

Understanding the demand for social protection and better co-ordination and monitoring of the supply of social protection programmes and operational decision-making requires the collection, processing, storing, flow (within the social protection sector and between the social protection and other sectors) and use of data. Governments also need to be able to monitor programme impacts and track and adequately plan expenditure. These actions require dynamic and real-time data and information exchange if the goal of universal social protection coverage is to be achieved (Chirchir and Barca, 2020[2]).

Across different levels of government in OECD countries, advances in data and technology are being leveraged to improve the design, delivery and coverage of social protection programmes. This chapter first explores what advanced technologies countries are adopting to increase the uptake of social protection such as automatic assessment, enrolment, and adjustment of benefits, and what they have learned from their experiences to date.

Second, the chapter outlines how countries are improving social protection design and delivery through the better use of data including use of new data sources. Advances in technology go hand in hand with advances in data collection and use. Finally, the chapter describes how some countries are taking advantage of massive strides in AI technologies while managing the challenges of doing so. While adoption of AI techniques in the public sector remains limited, advocates argue that AI could radically improve the efficiency and quality of public service delivery (see Chapter 1 of this report and (Verhagen, forthcoming[3])), in areas such as education, healthcare and social protection.

While technology and data advances have delivered and continue to promise significant strides in productivity, services for the previously excluded, and entirely new offerings, they also raise complex, contemporary ethical issues. The challenges associated with increased use of technology and data in social protection and the steps governments are taking to ensure their safe, ethical and equitable use are discussed in Chapter 6. Concerns include digital advances posing risks to numerous professions, threatening privacy, and making people increasingly dependent on automated processes that they find opaque and unaccountable (OECD, 2023[4]; Griffiths, 2021[5]). There are implications for human rights and human agency. Furthermore, digital technologies potentially widen socio-economic inequalities by disproportionally benefiting some people over others, typically those who are already disadvantaged.

4.2. Advanced technology use

Definitions of technology vary, from very narrow to broad and encompassing. Simply put, technology is the application of scientific knowledge for practical purposes, to solve problems and make people's lives easier and more productive. Technology also refers to the resulting tangible (hardware) and intangible (software) products, systems, services and infrastructure.

The focus of this report is the use of digital technology in the field of social protection. Digital technology is the creation and practical use of digital or computerised devices, methods and systems that help to create, store, analyse and share information; it can also refer to the use of algorithms or applications to analyse and, ideally, solve a problem. Digital technologies are dynamic and constantly evolving and have had a profound impact on how people live their lives, with most people using some form of technology every day, to communicate, to learn and to work.

Most businesses use digital technology to manage operations and processes and to enhance the customer experience. Governments worldwide are also taking advantage of the digital wave to improve public services for individuals. Recognising that today's technology is not only a strategic driver for improving public sector efficiency but that it can also support policy effectiveness and create more open, transparent, innovative, participatory and trustworthy governments, the OECD's Recommendation in Digital Government Strategies aims to support digital government strategies that bring governments closer to citizens and businesses (OECD, 2014[6]).

Expectations of public services have changed, and people increasingly want (or expect) from government the same level of service that they receive in the private sector, such as streamlined transactions, increased transparency, new ways of approaching problems, and more personalised interactions. At the same time, *demand* for social protection is increasing. The Global Financial Crisis and COVID-19 resulted in more (and new) people demanding social support. These shocks – in combination with longer-term megatrends like population ageing and shifts away from dependent employment – have squeezed government resources. Governments are therefore understandably looking for innovative and cost-effective digital solutions to improve the efficiency and effectiveness of public services as well as service user satisfaction.

4.2.1. Websites, portals and apps to help individuals learn about and apply for benefits

Perhaps the most common technology employed by governments in social protection is the use of websites, portals and applications to make it easier for people to learn about, apply for, and interact with government services. In Canada for example, where advancements in service digitalisation have accelerated in the past five years, secure on-line service portals which allow Canadians to access a variety of social protection programmes have been created, including tools such as My Service Canada, Digital Government and Service NL, Service ON, the City of Toronto's Service and Benefit Finder Tool and CRA My Account.

Japan has implemented Mynaportal which provides individuals with information about services they can receive by using their My Number Card (an identification card). Individuals can, via Mynaportal view records of medical treatments, medications, and medical expenses paid at clinics. The portal is also linked to an online service where individuals can check their public pension records and estimates of future pension amounts. It is also possible to register a bank account for the receipt of public allowances, simplifying emergency allowance application processes.

Türkiye's Ministry of Family and Social Services provides a simple information sheet on its website, that is regularly updated and includes information on available benefits, including who can apply, how much you would receive, what documents are required to apply and the benefit payment schedule. When someone visits a social assistance office, a government officer can quickly check what benefits they are entitled to using the centralised Integrated Social Assistance Service Information System. Most applications can be made via e-Devlet, which makes all information stored visible to residents.

The United States reports using a variety of digital tools and different data sources to improve the coverage and delivery of social protection programmes at various levels of government – federal, state, and local. The website "Benefits.gov" is the official benefits website of the United States federal government (Box 4.1). It serves as a one-stop shop for citizens seeking benefits and resources. Prior to Benefits.gov, citizens looking for government benefit information had to search through a complicated maze of web pages hosted by different agencies; there was no easy-to-use, single source of benefit information to help citizens understand what benefit programmes they may be eligible for, or how to apply. Today, millions of citizens as well as businesses and Federal and state government entities have easy, online access to information from across multiple Federal agencies.

At the state level, First 5 South Carolina (First Five SC) responds to a the United States Government priority for early childhood (parent knowledge building) and a common eligibility system connects families with South Carolina's public services for young children (Box 4.2). A centralised website checks eligibility for over 40 services and allows families to apply online. Service categories include early childcare and early education; health and safety; special needs and early intervention; food and nutrition; and parenting and family support.

Box 4.1. Web-based technology to improve access to social protection and services in the United States

Benefits.gov

Benefits.gov (formerly GovBenefits.gov) was launched in April 2002 as part of the Office of Management and Budget's E-Government Strategy plan. The site was one of 24 initiatives designed to make government services more streamlined and accessible to the public. Benefits.gov was charged with creating a website to simplify the benefits search process and provide greater transparency to citizen users, while reducing redundancy across government.

Each of the Benefits.gov partners entered a memorandum of understanding with the Department of Labor (DOL) agreeing to provide governance, benefit information, and funding to support the programme. Benefits.gov shares monthly data on key performance indicators for each of the Federal partner agencies and their portfolio of benefits on the site. This data includes top benefit views, citizen feedback comments and trends, top referrals, usage by state and top views by agency. Benefits.gov implemented an annual content review cycle consisting of monthly data calls to programme owners, which ensures the quality and accuracy of content through timely reviews of state and federal information.

The Benefits.gov content strategy focuses on a combination of translating legal-speak to plain language and informing the end user of what to expect and what they will need when making an application, to ensure a better-informed applicant before referring them to the agency website to complete the forms. Benefits.gov manages the complexity of content reviews by following an established data call process to review and update benefit programme content to maintain accuracy. Benefits.gov can publish content updates to the site within hours of a request when immediate changes are needed and manages ad hoc content updates throughout the year.

Benefits.gov leverages metrics and customer satisfaction data to better understand customer needs and where to continue to evolve and directly meet those needs. The overall Benefits.gov score in the last year was 63 out of 100, which is aligned with government's overall score, according to American Customer Satisfaction Index (ACSI).

Four key goals of the programme guide the strategic plan and are evaluated annually. One key goal is to *Inform Citizens*, which includes raising awareness of the site and activities like content curation, publishing, and outreach services via Benefits.gov, its sister sites (GovLoans and SSABest), newsletter campaigns and social media channels to help disseminate information to potential beneficiaries and drive traffic to agency resources. As a result of outreach efforts and campaigns in FY2022, the programme saw 64% growth in social media and 14% growth in email subscriptions to benefit programme content.

First Five SC

The US state of South Carolina has a mixed service delivery system for early childhood, with over 60 programmes and services at 10 public agencies. It was difficult for families to learn about programmes available for parents and young children, as well as to enrol and participate. A statewide needs

assessment and gap analysis showed that a technology solution would help meet the needs of families to find information in a centralised manner, learn about potential eligibility for programmes, and apply.

Ten agencies participate in First Five SC. Partner agencies can offer their services using contact information provided by families via the eligibility screener. Data that are provided by families may be retrieved by partner agencies either through a secure link or through data integration with a web service. Families must provide consent for both levels of information sharing. While individual agencies can retrieve data from First Five SC, data cannot be shared between partner agencies.

The data submitted via First Five SC and shared with agencies are subject to relevant data governance structures and kept in accordance with state and federal requirements for data security. During testing, potential users and the SC Family Voice Council were asked about perceptions and family beliefs about security and their views were reflected in the final two-step consent process (i.e., for the eligibility screener and for the application process).

Source: (OECD, 2023[1]).

4.2.2. Automated assessment, enrolment and adjustment of benefits

Automated systems in social protection in OECD countries include assessing eligibility for benefits and services, determining benefit levels, and adjusting benefits where there has been a change in an individual's circumstances. This can lessen the frequency of over- and underpayments, and link income support more closely to labour supply. Low-income households are typically liquidity constrained and may not respond to work incentives if benefit pay-outs are too far in the future, especially if taking up work/increasing working hours is associated with costs (such as transport or childcare (Hyee and Immervoll, 2022[7])).

Automated systems can also enable governments to adjust support quickly in response to changing macroeconomic conditions; for example, providing work incentives and activation support is more important and effective, in tight labour markets. The experience of the COVID-19 pandemic shows that broadly accessible social protection programmes can be insufficiently responsive to needs on the ground, and responsive programmes can be inaccessible.

The New Zealand Government uses automated decision-making to adjust financial assistance for a client due to a change in personal circumstances and to grant benefits in some, limited cases such as the granting of the Winter Energy Payment which is universally available to people receiving certain benefits and pensions and does not require an application form.

Automatic enrolment of service users into benefit programmes for which they are entitled, without the need for an application, is less common. Automatic enrolment is however increasingly used in granting of child benefits to new parents – perhaps related to the ease of identifying new children at birth in hospitals. In the Slovak Republic a new childbirth allowance is provided proactively on the birth of a child without any participation by the family in the process. In Norway too, a child support benefit is automatically paid to all those eligible giving birth in a Norwegian hospital. Estonia is using technology and linked information to make e-offers for family benefits, avoiding the need for families to have to apply. Once the birth of a child is registered in the Population Register a benefits offer can be found in the self-service portal of the Social Insurance Board within a week (see Proactive Family Benefits (Observatory of Public Service Innovation, 2020[8])).

Box 4.2. What is an automated system?

Automated systems can automate part or all of an administrative decision-making process e.g., they can execute a decision, or recommend a decision, or provide preliminary assessments and/or automate aspects of a fact-finding process which may influence subsequent decisions. They range from traditional rules-based systems (e.g., a system which calculates a rate of benefit payment in accordance with a formula set out in legislation) through to more specialised systems which use automated tools to predict and decide. The key feature of such systems is the use of pre-set logical parameters to perform actions, or make decisions, without the direct involvement by a human being at the time of decision (Commonwealth Ombudsman, 2019[9]).

The European Law Institute (ELI), when developing Model Rules to supplement European legislation on AI, defined an "Algorithmic Decision-Making System" as a computational process, including one derived from machine learning, statistics, or other data processing or artificial intelligence techniques, that makes a decision, or supports human decision-making used by a public authority (European Law Institute, 2022[10]).

While use of automated decision-making by public authorities is rapidly increasing, fully automated decision-making resulting in a decision that may have a significant impact on a person's life is not permitted in a number of countries or at least requires additional safeguards to be enshrined in legislation. For example, Article 22 of the EU's GDPR enshrines a right not to subject an individual to a decision "based solely on automated processing" which has a legal or similarly significant effect on that individual (Sebastião Barros Vale and Gabriela Zanfir-Fortuna, 2022[11]). Arguably, Article 22 would require meaningful human involvement in many social protection processes and decisions in EU countries.

Canada's Old Age Security Act was amended in 2012 to include an automatic enrolment regime that eliminates the need for many seniors to apply for Old Age Security (OAS) benefits, which reduces the burden for seniors to complete applications (Box 4.3). Prior to the change, all seniors had to submit an initial application for OAS benefits and provide all the necessary income and marital status information to determine eligibility for the means-tested Guaranteed Income Supplement (GIS). Now, seniors are automatically enrolled for the OAS pension where there is sufficient data (e.g. age and income tax data) to determine their eligibility. The latest available data show that close to half of all new OAS pensioners receive their pension without the need to fill in an application form. Furthermore, the initiative helped to generate efficiencies in the processing of OAS and GIS benefits.

Box 4.3. Auto-enrolment for the Old Age Security pension and the Guaranteed Income Supplement in Canada

The Old Age Security (OAS) programme is the first pillar of the Canada's retirement income system and is funded out of general tax revenues. It is a non-contributory, residence-based programme that ensures a minimum income for seniors. These benefits serve as a foundation upon which seniors can add income from other sources such as employer-sponsored pension plans and personal savings and investments.

The benefits under the OAS programme include the basic OAS pension, which is paid to all persons aged 65 or over who meet the legal status and residence requirements, the Guaranteed Income Supplement (GIS) for low-income seniors who are recipients of the OAS pension, and Allowances for low-income Canadians aged 60 to 64 who are the spouses or common-law partners of GIS recipients, or who are widows or widowers.

Ensuring take-up of OAS benefits is a top priority for the Government of Canada. The current take-up rate for the OAS pension is estimated to be 96.8%, while take-up for the GIS is estimated to be 92.2% (figure available only for tax-filers). Clearly there remains some seniors who are eligible for the GIS but do not receive it.

In 2012, the *Old Age Security Act* was amended to include an automatic enrolment regime that eliminates the need for many seniors to apply for OAS benefits. This initiative, which started in 2013, reduces the burden for seniors of completing paper applications. The department automatically enrols seniors for the OAS pension where there is sufficient data to determine their eligibility. The latest available data show that close to half of all new OAS pensioners receive their pension without the need to fill in an application.

Over the years, automatic enrolment has been expanded to include the GIS. This measure ensures that all new pensioners who are automatically enrolled for the OAS pension will be assessed every year to determine their entitlement to the GIS.

Individuals who turn 64 may be selected for automatic enrolment for the OAS pension (and the GIS) without having to complete an initial application. These clients receive a letter notifying them that they will be enrolled for both the OAS pension and the GIS without the need to apply and will receive benefits automatically, if eligible, the month after they turn 65. Once automatically enrolled, clients will be automatically considered for the GIS each year, in July, provided they file their income tax return on time.

For the remaining half of new OAS pensioners, the government does not have sufficient information for automatic enrolment. For these individuals, there remains the need for an application. However, to help reduce their administrative burden, seniors now only need to file one application for both the OAS pension and the GIS.

Source: (OECD, 2023[1]).

Automatic enrolment can also make income support benefits more responsive to evolving needs. Recent crises, such as the COVID-19 pandemic, have shown that income support needs can emerge suddenly, and overwhelm benefit infrastructures based on careful assessments of current incomes or prior contribution histories. High frequency data on income that is linked to the agencies administering benefits can also enable close-to-real-time benefit adjustments according to claimants' fluctuating income. By way of example, during COVID-19 those who were registered in Türkiye's Integrated Social Assistance Service Information System received a cash benefit automatically, without needing to apply for it.

In response to the energy crisis the City of Vienna created three energy support measures. One measure – the energy cost allowance did not require an application. Data were retrieved from internal data sources and linked with data from co-operation partners such as the labour market service and housing assistance. These linked data were then entered into the City of Vienna's system and benefits were paid automatically. Once someone's data were in the system, further payments such as the energy bonus could also be paid automatically if their circumstances (income, number of people in the household, etc.) did not change. If circumstances did change, letters including passwords were sent to households who were asked to re-enter their data.

France has a comprehensive, staged reform programme underway to improve the delivery of benefits administered by *Caisse nationale des allocations familiales* (CNAF, National Fund for Family Allocations) by 2027. The CNAF administers a total of 19 family, housing, and social inclusion benefits (CNAF, 2023[12]). The reform seeks to, amongst other things automate the retrieval of income information from administrative data for continuing claims; automate means testing; pre-fill claims forms with income information to simplify the claims process for claimants; and create a single application form for all benefits. The first step, in 2023 was to improve the reliability of income data and the automatic retrieval of income information for means-

testing for the housing benefit. Once this has occurred means-testing for the Prime d'activité (an in-work benefit for low-income workers) should occur automatically for all recipients of housing benefits (to check their entitlement to the *Prime d'activité*). Automatic implementation of the means-test for *the Prime d'activité* as well as the Social Assistance benefit *Revenue de solidarité active* for recipients of all benefits administered by CNAF to determine their entitlement will follow. The aim is that by 2027 there will be a single application form for all benefits administered by CNAF, including for claimants who are not already in CNAF's database.

In Korea, National Tax Service and social insurance assessments data are linked to facilitate the periodic and consistent determination of income/earnings, including through a shortened income declaration cycle for applicable income tax filings. Furthermore, to ensure a more accurate assessment of the incomes of dependent contractors and platform workers, reporting obligations have been strengthened for businesses who contracted with them, as well as for labour matching platforms (OECD, 2023[13]).

4.2.3. Raising awareness of benefits and services

Digital tools and modern communication channels (e.g., social media and text messaging) – often coupled with new insights from behavioural science – are being increasingly used to improve public awareness of the availability of a service or benefit, as well as to improve the customer experience. Examples include advising job seekers of vacancies via text messaging, public awareness campaigns carried out online, and electronic access to benefit information and receipt through user-friendly mobile applications.

To improve the awareness of and access to OAS-related benefits (see Box 4.3). Canada has created an interactive OAS Benefits Estimator which makes it easier for citizens to get personalised information about benefits they are entitled to. The Benefits Estimator, which can be used to determine eligibility and entitlement for the OAS pension, the GIS and the Allowance for the Survivor is an easy-to-use, anonymous, self-service online tool. It does not collect or store any personal data. In fewer than ten minutes, users can obtain a customised estimate of the benefit amount to which they are entitled. Since its launch in November 2022, version 1 has provided an average of 48 000 estimates a month on Canada.ca. User research validated the value of the tool, finding an 85% success rate, in contrast to the 35% success rate for the existing OAS payment tables on Canada.ca (OECD, 2023[1]).

4.2.4. Technology can enable faster and more flexible responses including during crises

While not without challenges, digital technology has gone a long way towards making OECD governments' responses to crises faster, more agile and more flexible. Many countries turned to digital solutions for the "new" problems the COVID-19 pandemic created. This included using existing technology in different ways, adapting it quickly and rolling it out at scale in very short timeframes. For example, as part of their national vaccination, lockdowns and contact tracing programmes Australia like many countries integrated COVID-19 digital vaccination certificates with check-in apps (Box 4.4). An app, which had the advantage of being technology people were already familiar with, provided an easy, voluntary way for individuals to show their vaccination status and enabled businesses and organisations to verify vaccination status quickly and securely, creating a seamless experience for Australians.

At a supranational level, the EU Digital COVID-19 Certificate (EUDCC) was created to facilitate travel within the EU during COVID-19 and was viewed as a crucial element in Europe's response to the pandemic. The EUDCC was available to all EU citizens as well as to travellers from outside of the EU. It was launched in July 2021, and by December 2022, member states had issued more than 2 billion EUDCCs. With 51 non-EU countries and territories connected to the system in addition to the 27 member states, the EUDCC was viewed as a global standard for COVID-19 certification (European Commission, 2021[14]).

Box 4.4. Integration of COVID-19 digital vaccination certificates with check-in apps in Australia

From August 2021, Australian Governments were tackling COVID-19 through a national vaccination program, lockdowns and contact tracing. Australians needed a simple and easy way to demonstrate they had been vaccinated when entering a public venue. Australia Data and Digital Ministers drove intergovernmental action to successfully roll out a national solution integrating Commonwealth COVID-19 digital vaccination certificates with state-based check-in apps. This included establishing data sharing agreements between the Commonwealth and each jurisdiction to protect the privacy and data security of citizens.

The solution provided people with an easy, voluntary way to show their COVID-19 vaccination status using familiar technology. When using a mobile device, individuals were able to share their COVID-19 digital certificate with a state or territory check-in app from their Medicare Online Account (MOA) through myGov or the Medicare Express Plus mobile app or by using an Individual Healthcare Identifier (IHI) member service (via myGov). Citizens had to consent to adding their digital certificate to a check-in app.

The technology implementation enabled integration of the COVID-19 digital certificate with eight different state and territory check-in apps, each with a slightly different user experience in line with jurisdictional requirements. The solution implemented was able to be scaled to handle the surges in traffic which were experienced when each jurisdiction went live.

Over 13 million individuals shared their COVID-19 digital certificate with a check-in app over 39 million times. Re-sharing occurred as individuals received COVID-19 booster vaccinations and refreshed their proof of vaccination. As there are no longer public health orders in place, the transfer of encrypted vaccination data between Services Australia and each jurisdiction has been disabled as their Agreement expired. By the end of May 2023, all states and territories had turned off their check-in apps.

The solution, which reused secure Commonwealth infrastructure was based on five key principles:

1. Will not impact critical business systems.
2. Minimises the impact of and opportunity for fraud.
3. Performs at scale.
4. Is inclusive in design.
5. Creates a simple, helpful, respectful and transparent experience.

Source: (OECD, 2023[1]).

While governments were already making much greater use of web-based technology before COVID-19, the pandemic drove a dramatic and rapid transformation in web-based services when in-person services shut down and the need for online pathways to social benefits skyrocketed. By way of example, in the US, GetCalFresh.org, a website that helps Californians apply for food assistance, initially started in 2013 as a project in San Francisco County (one of 58 counties in the state) and by 2019 became available state-wide. COVID-19 drove up applications for assistance via GetCalFresh.org significantly; since launching state-wide GetCalFresh.org has assisted with ~50% of all applications for food assistance benefits in California, and ~75% of all online applications (Box 4.5).

Box 4.5. GetCalFresh.org in California, USA

GetCalFresh.org began as a partnership between Code for America (a civic tech non-profit organisation), the San Francisco-Marin Food Bank and the San Francisco municipal government, to help people submit applications to the federally funded Supplemental Nutrition Assistance Program (SNAP). At the time, California residents in need of food assistance were forced to navigate complex, hard to access, and ineffective online systems. These systems yielded relatively few and low-quality applications, contributing significantly to the need for California to increase its SNAP participation rate. For a single unemployed individual with zero income to apply for food assistance benefits, they would need to answer over 100 questions across 50 different screens, taking on average 30-45 minutes to complete. This reality of cognitive burden and bureaucratic obstacles for applicants drove Code for America to design and build an online application experience that now takes about 10 minutes to complete and is available state-wide.

For GetCalFresh.org to serve clients across California in applying for and maintaining food assistance benefits, it consistently collects and shares data from numerous different partners in various levels of government and in civil society. County governments receive applicant data from GetCalFresh.org for the purpose of determining benefit eligibility. They also share aggregate data with on-the-ground organisations so that they can track and report their outreach efforts.

To ensure the safety of client information GetCalFresh.org limits the information they ask for to that which is strictly necessary. For the information that is collected, access is limited, and data are retained for a fixed period, after which all personally identifying information is removed. This data are stored securely using best practices of modern cloud architecture.

Today, GetCalFresh.org is maintained and operated by Code for America in partnership with the California Department of Social Services (CDSS), and since 2020 has helped at least 4 million people access over USD 6.5 billion in benefits.

Note: The findings reported here were performed with the permission of the California Department of Social Services. The opinions and conclusions expressed herein are solely those of the authors and should not be considered as representing the policy of the collaborating agency or of any agency of the California Government.
Source: (OECD, 2023[1]).

4.2.5. "Digital by design": A digital overhaul of social protection in the United Kingdom

While digital technologies are an increasingly critical aspect of the delivery of social protection in many countries, the United Kingdom is the first country to have designed its single working-age benefit – Universal Credit – to be fundamentally "digital by design". Intended to simplify the benefit system and to incentivise paid employment and higher earnings among working-age people both in and out of work, the Universal Credit is the flagship welfare policy of the Conservative Government, and standard bearer of its digital transformation strategy. It replaces six means-tested "legacy" benefits and tax credits, integrating elements for adults, housing costs and children, together with any supplements for disability and childcare costs into a single award paid monthly in arrears into one bank account per individual or couple (Griffiths, 2021[5]).

The Universal Credit has attracted both proponents and critics. Proponents highlight the greater efficiency and effectiveness of digitalisation evidenced by its performance in the wake of the huge surge in claims during COVID-19. Following the lockdown in the United Kingdom in March 2020, an unprecedented 3.7 million people applied for the Universal Credit, around seven times the usual volume (Department of Work & Pensions (DWP), 2020[15]). More than nine out of ten eligible claims, together with around 1 million

Universal Credit advance payments, were paid in full and on time (Department of Work & Pensions (DWP), 2020[15]). By December 2020, 5.9 million people were in receipt of the Universal Credit (Department of Work & Pensions, 2021[16]) compared with 1.9 million in March 2020. That the system was able "to work at great volume through [an] unprecedented claims spike" while achieving operational performance levels apparently in excess of pre-COVID rates was attributed by some to the benefit's automated features (Griffiths, 2021[5]).

Critics of the Universal Credit point to the "digital divide" between people with the skills and resources to access digital technologies, and those without, the erosion of citizen's social rights, greater administrative burden and compliance costs for claimants, and frequently gendered effects. For example, because the UC is paid into one bank account it can make it easier for one person in the household to control the finances potentially increasing the risk of financial and other forms of domestic abuse.

Some commentators believe the potential for greater administrative burden on claimants is not well enough understood and that research and policy interest about digitalisation in the UC, and in welfare systems more generally, would benefit from a broadening out to include questions of administrative burdens, together with exploration of their wider effects and impacts on claimants (Griffiths, 2021[5]). Concerns about the increasing digital divide as more interactions with government agencies go online is not unique to the United Kingdom's UC and is discussed in more detail in Chapter 5.

4.3. Making better use of new and existing data

Underpinning many advanced technology uses is new data or at least data that have not been traditionally used for social policy purposes. The ever-growing digital footprint of people globally, such as digital recordings of people's online activities, has created many new sources of data, of previously unimaginable volume, in a variety of formats. Some of these data are structured, e.g. records from credit card companies, credit agencies and hospitals. Other data are semi- or unstructured and can come from the ever-increasing number of sensors that record individuals' locations, workout activities and sleep patterns, social media posts and internet searches, pictures and videos, satellite data, and others. These data are often referred to as big data.

While a government programme database, such as a social registry, is not typically considered big data, governments are increasingly generating large volumes of data that have the characteristics of big data. They are using this data together with data from non-traditional sources for activities such as fraud detection, tax evasion, national security and law enforcement. Examples of big data use in social services is not yet common. Italian researchers have suggested that more geographically disaggregated poverty measures could be created based on combining official statistics with mobile phone data (Marchetti et al., 2015[17]). In Costa Rica, satellite-based poverty estimates are being used to target social worker outreach campaigns. This section explores how OECD countries are using and enhancing their data holdings to improve services for individuals.

As mentioned above, advances in technology go hand in hand with advances in data collection and use. Improving the uptake of social protection fundamentally depends on being able to measure coverage and understand where the gaps are. This requires good-quality data from multiple sources. New data and smarter uses of data are steadily emerging that complement and extend the use of more traditional forms of microdata, such as survey data (e.g. from labour force surveys (LFSs) and administrative data (e.g., tax records and social security numbers). Novel data types, such as satellite imagery, mobile phone data and web and social media data, are being used, for example, in some countries to target outreach and determine eligibility for benefits and services.

Governments are progressively making more use of integrated digitised administrative databases, as well as non-government data, to better integrate services, reduce administrative burden, and to create tailored service packages for individuals. Both individual-level, identifiable data (for operational decisions) and

de-identified data (for better evidence-based policy making for example) offer enormous potential for improved social protection coverage and more effective i.e., integrated, and targeted service delivery. This section first describes innovations in data collection, creation and linking before outlining novel ways in which these data are being used.

4.3.1. Traditional and evolving forms of survey data

Population surveys have long been a powerful tool for identifying the needs of different population groups, exploring issues such as people's experiences of government services, and for measuring the impact of government investment in public services. Government agencies use the results of these types of surveys to identify how and where they should be using public resources and to assess how different groups in the community are experiencing existing policies, to assess programme outcomes relative to targets.

An example of a population survey conducted in many OECD countries is the labour force survey (LFS), a national household survey. LFSs are the main source of headline indicators of the labour market for short-term monitoring as well as more structural information on the number and characteristics of the employed, their jobs and working conditions, the job search activities of those without work, etc. A further example are general social surveys (GSS). Whereas LFSs are generally conducted regularly (typically quarterly), GSSs may only be conducted once every few years. A GSS is a personal interview survey that collects information on a wide range of demographic characteristics of respondents and members of their household; behavioural items such as civic participation and voting; personal psychological evaluations, including measures of happiness, well-being and life satisfaction; and can include attitudinal questions on public issues such as abortion, crime and punishment, race relations, gender roles, and spending priorities. These tend to have repeated questions over time and often ad hoc modules.

Survey questionnaires administered by national statistical offices (NSOs) are generally still completed face-to-face (using computer-assisted questionnaires) or over the telephone. Globally, survey response rates using these traditional methods have been declining and statistical offices have been exploring other options for collecting information. Online surveys have become a popular data collection method as they are inexpensive (relatively) and are easy to create, disseminate, and gather responses to. However, not having access to the internet can be a barrier for some respondents, representativeness is harder to ensure, and some topics may not always lend themselves to online survey questions.

In recent years statistical agencies have been modifying surveys to cover a broader range of social risks and needs. In France, the *Survey on the Living Environment and Safety* combined face-to-face interviews with a self-administered module on serious violence to elicit particularly sensitive information. Some surveys such as the OECD's Risks that Matter (RTM) Survey, the Eurobarometer and the European Social Survey investigate respondents' worries about personal and national risks. The RTM collects representative data for 27 countries on people's perceptions of the main social and economic risks they face and how well they think public social protection addresses those risks. The Eurobarometer also conducts special rounds to investigate current attitudes, such as the recent survey of *EU challenges and priorities in 2023*. Other like polls have a more international focus, including the Lloyd's Register Foundation World Risk Poll, the Pew Research Center Global Attitudes & Trends survey, and World Values Survey.

Some official national surveys also collect data on individuals' perceptions of government and society. For instance, in Mexico, the *Encuesta Nacional de Calidad e Impacto Gubernamental* asks respondents about their confidence in a range of actors, including public services, government officials, and private individuals such as neighbours. Similarly, the *Encuesta de Percepción Ciudadana* in Colombia asks respondents if they think that public bodies treat individuals equally and without preferences.

New survey data can help to build a more comprehensive understanding of the outcomes of particular population groups and of specific risks about which little was previously known. In Mexico, for example,

efforts to prevent, address, punish and eradicate violence against women make considerable reference to statistics on intimate partner violence based on a specialised, ongoing survey on violence (National Institute of Statistics and Geography (INEGI), 2022[18]).

A survey of the homeless population in France revealed that almost a quarter of individuals making use of services for the homeless had formerly been in out-of-home care (Frechon and Marpsat, 2016[19]). This finding influenced measures in a new child protection law introduced in 2022, which amongst other things guarantees extended care support to all care leavers up to the age of 21. Extended care was previously reserved to a third of the care leaver population and rarely up to the age of 21; the objective is to prevent so-called "dry exits" from child welfare services at age 18 and reduce homeless numbers. The law also provides for a "right to return" to care up to the age of 21 if initially refused at age 18 (OECD, 2022[20]).

More is also being done to cover hard-to-reach populations in surveys. For example, annual homeless counts are now being conducted in many cities by interviewers (volunteer or paid) who may walk city streets at night to talk with people without housing. Even these intensive efforts however may underestimate the homeless population in a systematically biased way – women, for example, are much more likely to experience homelessness without "sleeping rough" and may therefore be undercounted (OECD, forthcoming[21]). Better information about particularly hard-to-reach populations who may not exist in other data sources can help to improve the reach and retention of social protection programmes and services for those individuals in the most vulnerable situations.

Due to the inherent challenges of surveys, statistical agencies are increasingly augmenting or even replacing surveys with administrative data. For example, several European countries gather income and some demographic information for the EU Statistics on Income and Living Conditions through registers rather than survey questions. Portugal's National Statistical Office studied the feasibility of replacing questions in the 2021 population and housing census with administrative data-based measurements. They identified 12 out of the 27 mandatory variables for which administrative data could be an acceptable replacement in the medium to long term. The Norwegian Statistical Office has access to one hundred registries for statistical purposes and is developing indicators relying on geographic information system data to gauge distances to emergency services from homes and workplaces.

4.3.2. Improving and expanding the use of linked data

Government agencies are increasing linking their administrative databases across ministries, agencies and levels of government. This is done for a range of operational, research and policy purposes, typically with strict rules and procedures in place to safeguard the security and privacy of people's information. Linked data can contribute to breaking down topic silos, enhancing co-operation across departments and improving access to benefits and services. Identifiable information about a person can help with operational decisions such as ensuring someone is receiving their full and correct benefit entitlements or to make the service user experience better. The "Transforming the Collection of Student Information" project in Australia for example enables prefilling of student information into some welfare claims, using a data linkage with the Department of Education. Prefilled data supports the agency to accurately assess customer circumstances, supporting efficiency and accuracy of payment delivery.

In a new ISSA report outlining major developments and trends for social security in Europe, leveraging data exchange for data-driven social security (together with digitalisation to improve service quality) are identified as key developments. Social security institutions throughout the region have recognized the value of exchanging data as part of their efforts to provide better and more holistic services, better identify target populations, and expand coverage. Examples provided in the report include France's URSSAF National Fund which exchanged data to identify and support self-employed workers during COVID-19. The new harmonized data exchange model enabled better identification of people's needs and served as a coordination mechanism between different institutions to provide social security coverage to self-employed workers and difficult-to-cover groups. In the Netherlands, the Social Insurance Bank (*Sociale*

Verzekeringsbank – SVB) has developed a multi-party data exchange to address the non-take up of an income support supplement by identifying the target population while still complying with data protection regulations (ISSA, 2024[22]).

The increased use of social information systems and registries for operational purposes

More countries are using social information systems and registries to support identification (particularly of people previously unknown to the system), outreach and determination of potential eligibility for social programmes. While social information systems are typically based on linked administrative data provided by government agencies, social registries enable individuals themselves to register and be considered for inclusion in social programmes based on an assessment of their needs and eligibility.

While there are risks associated with both social information systems and registries, for example relating to information security or the possibility of some population groups being excluded, they are becoming crucial to the design, implementation, monitoring and evaluation of social policies and services in many countries.

The data that social information systems and registers contain can also be used to create tools and methods to assess eligibility for programmes and benefits, identify who is missing out and to make offers. In addition, and as was seen during the COVID-19 pandemic, information systems and registries can play a key role in responding to crisis and emergency situations, when people in vulnerable situations need to be contacted quickly and/or to identify potential recipients of social benefits. This is a critical component of a responsive social protection system.

In Europe, the Belgian Crossroads Bank for Social Security (CBSS) which has existed for over 30 years is a noteworthy initiative (also see Chapter 3). The CBSS co-ordinates information exchanges between the country's 3 000 social security actors, allowing the automatic granting of several benefits (Box 4.6) (CBSS, 2023[23]).

Box 4.6. Crossroads Bank for Social Security (CBSS) (Belgium)

Belgium sought to address the problems arising from the lack of co-ordination and integration of information flows across different social security actors. For example, an information burden is imposed on citizens and companies if they are required to provide the same information several times. It started as a co-ordinated information management programme and led to the creation of a permanent and interoperable social security network, which includes all social security institutions operating in Belgium. It therefore acts as a public services integrator in the social security sector. This has allowed the reengineering and full automation of social security organisational processes for the benefit of relevant institutions, citizens and companies.

CBSS has fully integrated the workflows of around 3 000 social security national institutions, making the whole process available online. This provided single and fast access to all social services and benefits for customers as well as infrastructure and systems to the involved organisations, which increased agility and data transparency. CBSS illustrates how the introduction of a one-stop shop to implement electronic service delivery can lead to a structural reform process. In this case, ICTs transformed the delivery of social security services, by initiating a business reengineering process within and across all 3 000 organisations involved in the Belgian social security system. At the same time, back-office functions were automated significantly, reducing a large amount of duplication of information because of the large number of social security actors.

The new ICT-based system significantly increased the reuse of information and made it possible to send responses to beneficiaries and civil servants automatically. This led to a considerable

simplification of procedures and introduced a new, more integrated, personalised way of communicating with citizens and companies, which is better aligned with the needs of the final users.

Source: (CBSS, 2023[23])

Social registries are more common in the Latin American OECD countries and are being used to help capture new potential beneficiaries (Economic Commission for Latin America and the Caribbean (ECLAC), 2023[24]). In Costa Rica, social protection coverage is being addressed in part through SINIRUBE, a common database that draws together all registries from social programmes. This is helping to eliminate overlaps and increase coverage by enabling identification of potentially eligible beneficiaries not yet covered by those programmes. SINIRUBE has been used to assess the targeting of some social programmes (such as scholarships and non-contributory pensions) and there are plans to further increase the coverage of SINIRUBE and to incorporate individuals in remote locations or without access who are not yet included. SINIRUBE shows promise as a central tool for selecting beneficiaries for all social programmes to help improve targeting and evaluation of social policies. This is critical as some estimates suggest that in some social programmes, more than 40% of beneficiaries are middle and high-income households while according to the law the programmes are targeted to those in poverty (OECD, 2023[25]).

Chile's Integrated Social Information System (SIIS) is the digital platform that supports its social protection system and co-ordinates all data from municipalities and public entities in the Social Information Registry (RIS). The RIS contains data on individuals and families who are or could be recipients of public benefits and programmes, the benefits and amounts they obtain from these, the characteristics that make them eligible for social benefits and their socio-economic circumstances. The information in the RIS is provided by municipalities and by public and private entities administering statutory social benefits. RIS data are available so that these same stakeholders can use them and, where appropriate, better administer the programmes they are responsible for, always with due regard for individuals' right to privacy (Economic Commission for Latin America and the Caribbean (ECLAC), 2023[24]). The SIIS also includes the Social Registry of Households (RSH) which is discussed in more depth in Chapter 3.

Colombia's social registry, *Sistema de Identificación de Potenciales Beneficiarios de Programas Sociales (Sisbén),* was first introduced in 1995 and is the main targeting instrument for social programmes in Colombia. As of March 2024, around 34 million people are registered in Sisbén, equivalent to approximately 70% of Colombia's population. Despite the challenges faced in maintaining updated and accurate information, Sisbén remains a broadly used instrument and 21 social programmes at the national level currently use it for targeting, including flagship cash transfer programmes in the Department of Social Prosperity (*Departamento de Prosperidad Social*, DPS).

Unsurprisingly, COVID-19 accelerated the shift towards greater use of digital data sources for operational purposes when traditional data collection methods such as face to face meetings were no longer viable during multiple and sustained lockdowns. Integrated, cross-agency administrative data were used during the pandemic in many countries, for example in Brazil, Colombia and Türkiye, to facilitate outreach, assess eligibility for benefits and update beneficiaries' files.

With the onset of the pandemic, Türkiye very quickly linked social protection services to their e-Devlet platform. While the general use of e-government services for downloading and submitting completed forms – although not necessarily for social protection – was already increasing in Türkiye during COVID-19 there were around 4 million electronic applications for the Pandemic Support Programme (PSP) via e-Devlet in two weeks. Furthermore, those already registered in the Integrated Social Assistance Service Information System received the cash benefit automatically, without needing to apply for it. Being able to apply for social protection programmes through e-Devlet has enhanced access to social protection with the digital processes that were initially only possible for the PSP now in place for all social protection measures (Burattini et al., 2022[26]).

Following the pandemic, the United States' Department of Labor is testing an automated income verification service through a federal data sharing partnership with the Internal Revenue Service (IRS) which aims to build a more responsive income support system in the event of a future recession or national emergency. With such income data linking in place, programmes like Disaster Unemployment Assistance (DUA) and Pandemic Unemployment Assistance (PUA) – which currently rely on manual income verification processes and fragmented data – can be administered more quickly and efficiently.

Linked data for research and policy purposes

Several OECD countries are taking a systematic, cross-government approach to linking administrative data for *research* and *policy* purposes such as creating estimates of service coverage and gaps, measuring the impact of social services on peoples' well-being, and modelling the impacts of potential policy changes on different population groups. Individually identifiable data are linked before the resulting dataset(s) are stripped of information that could be used to identify individual people governed by strict protocols to ensure that there can be no spontaneous recognition of people in any analytical outputs.

One example of good practice comes from New Zealand, which has established the Integrated Data Infrastructure (IDI) to enable longitudinal research into the causes and correlates of social outcomes for New Zealanders. The data are de-identified, which means it cannot be used to take actions for individuals. Rather, the IDI has been used to better understand early benefit entrants' vulnerability to long-term welfare dependency and target services accordingly, and to identify relationships between individual measures of disadvantage and a measure of educational success resulting in a new school-based equity funding model (see Box 4.7).

Box 4.7. Integrated Data Infrastructure (New Zealand)

The IDI is a large research database developed and managed by Stats NZ. The IDI takes data from databases from various government agencies, non-government organisations, and Stats NZ surveys (including the Census), and the data are linked together, or integrated, to form the IDI. Data about people and households is de-identified (names, dates of birth, and addresses are removed, and numbers that can be used to identify people are encrypted). The data are about life events, like education, income, benefits, migration, justice, and health.

The IDI has been used in a range of ways to better understand the coverage, impact, and effectiveness of social policies and services:

Study of estimates of Working for Families eligibility and take-up rates

New Zealand's Ministry for Social Development (MSD) undertook a study using the IDI to estimate families' eligibility for, and take up of, the main Working for Families tax credit payments, Family Tax Credit, and the In-work Tax Credit. Working for Families tax credits are paid to families with dependent children to help with the cost of raising a family. The use of linked data has enabled MSD to produce estimates of eligibility and take-up for nationally representative samples of families. This includes families who do not receive Working for Families but could be eligible. Results revealed a decline in the eligibility rate from 72% of families in the 2010 tax year to 49% in the 2020 tax year. Growth in incomes over a period when abatement and payment rates increasingly targeted payments to lower income families contributed to the decline. The results also highlighted differences in take-up rates by ethnic group, and opportunities for addressing these.

One of the recommendations of a review of New Zealand's welfare system in 2019 was annual reporting on take-up rates for income support payments. The study is part of MSD's programme to build evidence on eligibility for and take-up of different payments in the New Zealand income support system. One of the methodological findings of the study was that estimation of Working for Families eligibility and

take-up requires several assumptions and simplifications and has a range of limitations and sources of potential error. Given this, there is considerable uncertainty in the estimates for any particular year taken in isolation. In addition, there is around an 18-month lag between the end of a tax year and comprehensive data becoming available in the IDI. This further reduces the usefulness of producing estimates on an annual basis. Nevertheless, patterns of receipt across longer time periods are likely to be indicative of real changes, as are sustained and large differences between different population groups. This means that there is likely to be value in updating the study every three or so years to identify emerging patterns or issues.

Social outcomes model

The IDI has been used to develop a Social Outcomes Model, which projects a range of future outcomes and service use for each adult in New Zealand, based on analysis of past trends using historical data in the IDI as well as economic forecasts. The Social Outcomes Model is itself made up of multiple, interconnected models that use past trends to help project future outcomes, including benefit receipt, emergency and public housing use, income and employment, mental health service use, police proceedings, corrections sentences, and education.

The model can be used for a range of analytical purposes, including describing the characteristics of different groups of people; estimating what people's future outcomes are likely to be, understanding how likely different outcomes are; comparing outcomes for different groups and over time, and creating "what-if" scenarios. The model has been used to estimate how many people are likely to need support in the future, and for how long; for example, it is used to estimate the future time that different groups of people will be supported by benefits, will be employed, or will be in public housing.

Measuring the effectiveness of employment assistance

MSD has developed a methodology for systematically assessing the effectiveness of its employment assistance (i.e., Active Labour Market policies), drawing on a range of linked administrative data, including data held in the IDI. This work helps the ministry understand what employment interventions are working for whom, and whether effectiveness is changing over time. These insights inform MSD's investment strategies and regular adjustments to how it delivers interventions.

The main method used to estimate the impact of employment assistance (EA) interventions is Propensity Score Matching, which constructs a matched group of non-participants who have the same (or similar) characteristics as participants. Effectiveness is assessed against five main outcomes that EA interventions are expected to have a positive impact on: employment, income, justice, educational qualifications, and welfare. Once there is an effectiveness rating for each outcome domain, the ratings are combined to arrive at an overall rating of a programme: effective, promising, mixed, makes no difference, likely negative, and negative. The effectiveness of around half the expenditure could be assessed in 2019/20, the balance could not be evaluated using this method, largely because it was not technically feasible.

Monitoring the effectiveness of ALMPs is an obligation in the Public Finance Act to report on the efficiency and effectiveness of MSD's expenditure. Using standardised evaluative monitoring based on linked data enables MSD to provide high quality, consistent and up to date information about performance. The effectiveness monitoring of ALMPs is applied at scale and covers all ALMP participants from the year 2000 onwards; results are updated each time the data in the IDI is updated (currently three times a year).

Source: (OECD, 2023[1]; Wilson and McLeod, 2023[27]).

In 2015 the Multi-Agency Data Integration Project (MADIP), was initiated by three Australian social protection and services agencies (the Departments of Social Services and Health and Aged Care, and

Services Australia) in partnership with the National Statistical Office, the Australian Bureau of Statistics. The project brought together different data sources and used a then emerging technology known as statistical data integration to improve the coverage, effectiveness and delivery of social protection and social services. At all times, close adherence to privacy and ethical governance arrangements was maintained to support the integration of data across government. MADIP is being effectively leveraged for new improvements in the delivery of services, two examples of which are provided in Box 4.8.

Box 4.8. MADIP applications in Australia

AIR-MADIP

The AIR-MADIP project was initiated in 2021 to inform the Australian Government's COVID-19 Vaccine Strategy. The Australian Immunisation Register (AIR) was linked to MADIP enabling more granular breakdowns and analysis of selected socio-demographic cohorts, which allowed COVID-19 policy interventions to be targeted accordingly.

The project brought together a range of Commonwealth health system datasets incorporating data from all levels of government – national, jurisdictional and non-government organisations. The rich socio-demographic information on people living in Australia alongside critical health outcomes such as vaccination records and utilisation of government-subsidised or funded services (where eligible) informed COVID-19 health policy for more vulnerable populations.

AIR-MADIP continues to inform the Australian Government's COVID-19 response and is a pilot for integration of Commonwealth data with information from privately held collections and states and territories. The success of the project and learnings are being applied in other health areas such as the broader National Immunisation Program as well as to the design of other whole-of-government health data initiatives including the Australian Centre for Disease Control.

A collaborative partnership of data analysts and health experts across government, research and academia also continue to use the project to deliver regular policy-relevant insights.

The National Disability Data Asset

Nine Australian state and territory governments are working with the disability community to establish the National Disability Data Asset. Once established, the disability data asset will bring together de-identified information from many different government agencies about Australians with and without disabilities, including information about health, education, employment, social security, justice and disability-specific services. The disability data asset will help to better understand the experiences of people with disability and how to improve the way policies, programmes and services support them. It will also provide more information to the disability community to advocate for change and to help inform decisions about supports and services.

The initiative is the first test of using data sharing arrangements in the Data Availability and Transparency Act 2022, which was enacted to promote better availability of public sector data, enable sharing of that data, enhance integrity and transparency, and to build confidence. The National Disability Data Asset went through an 18-month testing period where the best ways to share, link and access information were assessed.

Source: (OECD, 2023[1]).

Lithuania's State Data Agency has started to join administrative data from various registers and informational systems to create a data lake, a *centralised repository that enables storage of structured and unstructured data* at any scale. This joined-up data enables Lithuanian ministries to analyse data in more depth. In accordance with the Law on Official Statistics and State Data Management of the Republic of

Lithuania, a ministry has the right to request administrative data based on the State Data Management Program to carry out their activities and to undertake detailed analyses.

In Canada, British Colombia's Data Innovation programme available for use by government analysts and academic researchers to conduct population-level research. The programme links, de-identifies and provides access to administrative datasets in one secure environment. The programme creates a streamlined and consistent approach to obtaining, linking and storing data safely for researchers to use, unlocking the value and shared benefits of public sector data by collecting and integrating it under one governance regulation, in one place. In France too, where the issue of estimating non-take-up has been prioritised, government researchers have published rates of non-take-up of minimum pensions based on linked tax information (Chapter 3).

Making linked data available to external as well as government-employed researchers can broaden the knowledge base about what works to improve the effectiveness of social policy interventions and social protection coverage. To make it easier for researchers to gain approval for using linked data, several OECD countries have created framework institutions that facilitate data merging. Among these are Canada's Social Data Linkage Environment, France's Centre for Secure Data Access, Finland's upcoming FINDATA, the United Kingdom's Administrative Data Research (ADR UK) Strategic Hub, NZ's IDI and the United States' Census Bureau's Data Linkage Infrastructure. While details differ, these programmes typically combine several functions such as creating an inventory of data sources, reviewing research proposals, helping researchers gain approval from concerned agencies, linking the data and providing secure access.

4.3.3. Novel and new ways in which data are being used

Increased access to novel data sources is driving innovations in automated decision-making, risk prediction, evaluation methods and other analytical applications. There is a broad range of analytical (and statistical) methods that can be applied to novel data to tackle social and other issues. Increasingly both private and public sector organisations are employing advanced analytical techniques to be more responsive, enhance the service user experience and significantly improve their decision-making. Advanced analytics is an umbrella term referring to a range of data analysis techniques used primarily for predictive purposes, such as machine learning, predictive modelling, neural networks; techniques included in some definitions of AI.

While the priority of maximising the potential of digital technologies and data to deliver public value has been growing for years COVID-19 accelerated this trend, as there was no choice but to deliver public services digitally. In a context of increased demand for digital public services, governments needed to ensure the quality of public services, capitalising on the opportunity offered by digital tools and data to transform service design and delivery while preventing the emergence of new forms of digital divides and exclusion (OECD, 2022[28]).

There is no shortage of new public-sector data analytics use cases. Government entities have created real-time pandemic dashboards, conducted geospatial mapping for drawing new public transportation routes, and analysed public sentiment to inform economic recovery investment. While several of these examples were born out of necessity, public-sector agencies were already beginning, pre-pandemic, to embrace the role data-driven decision-making can play in optimising government resources by targeting them more effectively and enabling civil servants to focus their efforts on activities that deliver the greatest results (McKinsey & Company, 2021[29]).

A relatively common application of analytics now is to identify high-risk individuals among existing clients of a social service agency or in the population at large. For instance, the Chilean Ministry for Social Development is exploring how to identify vulnerable families beyond the needs-adjusted income score in their social registry (Chapter 3). New Zealand's Youth Service has a risk-scoring algorithm that aims to

predict which school leavers are at high risk of becoming long-term benefit recipients. The algorithm uses data to analyse factors such as how well the former student did at school, whether their parents received welfare benefits and if they were in contact with child protective services. Service providers then approach those deemed most at risk to offer a service (Box 4.9).

Box 4.9. Youth Service referral system and predictive tool in New Zealand

New Zealand's Youth Service provides coaching for 15 to 19-year-olds who could achieve better outcomes with the right help. It is designed to make sure that young people who access the service are not limited to those who are motivated to proactively ask for help. The automated referral system uses a statistical predictive modelling tool and eligibility rules to help predict need for young people aged 15 – 17 years old who have left school early.

The predictive modelling tool considers factors such as: demographic information, whether a young person's parents received income support, the school history of a young person (including educational achievement, reason for leaving school, and truancy history), and the level of contact a young person has had with Oranga Tamariki, New Zealand's child protection agency. These factors have been linked to the likelihood of a young person needing support.

The automated referral system also tells MSD what level of support a young person may need. The model which uses data from the Ministry of Education and Oranga Tamariki produces service level intensity indicators for school leavers: High, Medium, Low or Very Low. Contact details of those predicted to have the highest need, and who are eligible, are passed onto the Youth Service. Youth support specialists then contact the young person to ask if they want help, and together, through a needs assessment, they work out what might help them.

Young people can choose whether or not to participate in the service.

Source: (OECD, 2023[1]).

Increased access to different administrative databases (including at the subnational level), often combined with new data visualisation techniques, has deepened the understanding of policy makers and the public alike on how much life chances can vary between adjacent neighbourhoods (Chetty et al., 2018[30]). A study from Ontario analysed call records to a human services helpline to reveal regional variations in service gaps (Dillon Consulting, 2018[31]). A New Zealand study looking at the uptake of B4 School Checks, which is a free health and development screen for children at age four, used data from regional District Health Boards and found that national averages were hiding large regional differences in uptake (Nichola Shackleton, 2021[32]).

Lithuania monitors the effectiveness of social support measures across municipalities using linked survey and administrative data. Social support indicators such as poverty reduction, assistance and prevention are combined into a common index and then converted into ranks on a 10-point scale, where 1 represents the worst result and 10 represents the best. All indicators have the same weight in the index. The ranks show the situation of the municipality in that year in comparison with other municipalities.

Access to administrative datasets has led to inventive and more systematic (and sometimes cheaper) use of quantitative methods to evaluate social programmes, including longer-term and more ex-post evaluations. In the domain of active labour market policies (ALMPs), the OECD's Directorate for Employment, Labour and Social Affairs (ELS) has been working together with the European Commission's Directorate General for Employment, Social Affairs and Inclusion on a project that covers six EU countries and Canada (OECD, 2020[33]). The project aims to improve the effectiveness of ALMPs and strengthen countries' capacity for evidence-informed policy making.

Routine access to administrative data can allow researchers to design evaluations in a detailed manner prior to a policy change or programme implementation and to start carrying them out and have first results shortly thereafter (Langedijk, Vollbracht and Paruolo, 2019[34]). Short computer- and mobile-phone-based surveys can provide complementary data at more frequent intervals. Furthermore, big data from non-traditional sources can deliver additional information that is available more quickly or that is complementary, for instance allowing insights on public attitudes towards a policy (Global Pulse, 2016[35]).

Administrative data can also provide more accurate measures of key programme outcomes. For instance, a recent evaluation of anti-poverty programmes based on both survey and administrative data found that survey data often under-stated the incomes of low-income respondents. As a result, evaluations based on survey data alone found a lower poverty-reducing impact of the studied programmes (Meyer and Mittag, 2019[36]). Moreover, potentially eligible beneficiaries for a social benefit can be identified. A list of these individuals can then serve as a sampling frame for studies on why they do not apply and on policy interventions that might incentivise them to do so. Examples include an evaluation of policies to increase applications for food stamps among likely eligible individuals (Finkelstein and Notowidigdo, 2019[37]) and Belgium's TAKE project (Chapter 3) that applies different research methodologies including microsimulation models, a field experiment and micro econometric analyses based on survey and administrative data to study non-take up of various benefits in Belgium (TAKE-Project, n.d.[38]).

In 2018, New Zealand trialled an initiative to address low take up of a hardship payment within the income support system (see Box 4.10). A key feature of the initiative was the use of a micro simulation modelling approach which uses data on people's characteristics to determine if they meet the policy criteria. A randomised control trial would have been the usual method for evaluating the intervention, but this approach was considered inappropriate by stakeholders – as some individuals predicted to be experiencing severe financial hardship would have been allocated to the control group. Instead, a difference-in-difference model was developed to assess the effectiveness of the intervention. The campaign involved modelling who was eligible but not receiving the payments and proactively contacting individuals to tell them about the payment using either phone calls, emails, or letters. The campaign successfully increased take-up of the payment by ten percentage points and was subsequently turned into a business-as-usual process.

Box 4.10. Temporary Additional Support (TAS) campaign in New Zealand

New Zealand's TAS is a supplementary benefit for people who experience financial hardship. For many years advocates on behalf of benefit recipients expressed concerned that the number of people receiving the TAS payment was considerably less than the total who appeared eligible. It was argued that this low rate of take-up meant the welfare system was not adequately protecting families from financial hardship and poverty. Barriers to accessing TAS payments were thought to be highest among vulnerable populations including those with compromised physical and mental health. Analysis suggested several potential reasons for incomplete take-up of TAS including it was complicated and difficult for potential claimants to understand, it required substantial effort to apply, it had burdensome compliance requirements related to reporting changes in circumstances, and it automatically expired after 13 weeks and required a reapplication if the claimant was still eligible.

The purpose of the campaign was to trial an initiative to address the low take up of TAS. The campaign, using a microsimulation model to identify people who were not receiving the payment but appeared eligible suggested that only 68% of eligible people were receiving the payment. However, there was uncertainty about the estimate because the administrative data used in the eligibility calculation was not always up-to-date or comprehensive.

The campaign showed that proactive contact using the microsimulation model was able to increase take-up of TAS amongst the high need group. The trial also demonstrated the relative effectiveness of contact by phone, letters, and emails – with the former having the largest impact on take-up.

Source: (OECD, 2023[1]; Rea and Hyslop, 2023[39]).

The value demonstrated by advanced uses of data is contributing to calls to strengthen data collection. To understand domestic violence underreporting, the University of Chicago partnered with several city agencies in Chicago, merging medical record data from emergency room visits to the University of Chicago Medical Center from 2008 through 2018 with information on crime victimisation from the Chicago Police Department. Worldwide, around 26% of ever married/partnered women aged 15 and older report having experienced some form of physical and/or sexual intimate partner violence (OECD, 2023[40]). In the United States, the figure may be as high as 41% and even that is likely to be an underestimate due to barriers to reporting (Graber et al., 2023[41]). Linked data can help to improve these estimates.

The University of Chicago focused their analysis on adult ER patients who had had an X-ray. The data revealed that 60 out of every 10 000 adults receiving an X-ray go on to report a domestic violence victimisation to local law enforcement authorities within a few days of the ER visit. But only 5.5 out of 10 000 disclosed domestic violence to medical professionals in the ER. One implication of this findings is that many survivors are reporting to agencies –law enforcement –that are not well-equipped to handle complex medical and social needs of domestic violence survivors. Meanwhile, in most cases, institutions that might be better equipped to do this work –such as medical providers and their social service agency partners –do not know about these opportunities to help (Graber et al., 2023[41]).

Further, while the rate of reporting to law enforcement is higher than to medical professionals in the ER, almost half of survivors of domestic violence do not report the abuse to law enforcement either. That means most domestic violence survivors are unknown to the social service agencies who might be able to help (Graber et al., 2023[41]). An outcome of the findings is that the city of Chicago, in its new strategic plan to address gender-based violence has joined institutions like the World Health Organization in pushing to strengthen data collection across sectors and expand where survivors can be connected to services, including in the healthcare system. In addition, interdisciplinary teams around the United States, for example the Lutheran Settlement House Bilingual Domestic Violence Program in Philadelphia are exploring ways to support healthcare providers so that they can be more helpful to survivors.

4.4. AI: The transformative technology of our time?

AI is reshaping societies and economies. It promises to generate productivity gains, promote innovation and growth, improve well-being and help to address global challenges such as climate change, resource scarcity and health crises. In the government sector, advocates argue that AI could radically improve the efficiency and quality of public service delivery, in areas such as education, healthcare and social protection. AI could be used to improve access to social protection for example through more precise targeting of eligible beneficiaries, faster and more accurate eligibility decisions, and/or AI-assisted job matching assess eligibility and needs, make enrolment decisions, provide information about available programmes and benefits, to adjust benefits, and monitor and manage benefit delivery.

At the same time however, significant challenges exist. For example, a key risk when using AI to manage social benefits, is that assessments of benefit eligibility are incorrect or systematically biased against certain demographic groups (Verhagen, forthcoming[3]). The OECD's 2023 Employment Outlook which reviews the emerging evidence about the impact of AI on the labour market found that while workers and employers both reported AI can lead to greater worker engagement and physical safety, the downside is that with the removal of simple tasks workers can be left with a more intense, higher-paced work

environment (OECD, 2023[4]). The risks and challenges associated with digitalisation of social protection including through greater use of AI are discussed in more detail in Chapter 5.

Definitions of AI are often broad and encompassing, and it can be tempting to subsume within it most examples of analytics; however, not all analytical methods deploy AI techniques. The OECD describe an AI system as a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments. It uses machine and/or human-based inputs to perceive real and/or virtual environments; abstract such perceptions into models (in an automated manner e.g., with machine learning[1] or manually); and use model inference to formulate options for information or action. AI systems are designed to operate with varying levels of autonomy (OECD, 2019[42]). The OECD was aiming for a description that was understandable, technically accurate, technology-neutral and applicable to short- and long-term time horizons. The description, which is adopted for the purposes of this report, is also broad enough to encompass many of the definitions of AI commonly used by scientific, business and policy communities.[2]

Adoption of AI techniques in the public sector remains limited, relative to other sectors. It is used by some countries for activities such as fraud detection; the United Kingdom Government for example is using AI to help detect fraud in social benefits claims (Marr, 2018[43]). The Republic of Korea has made considerable advancements in using big data for error and fraud detection among health insurance claims. Korea's National Health Insurance Service (NHIS) houses big data on a range of socio-economic, health behaviour, healthcare utilisation and long-term care variables to which smart audit algorithms are applied to predict healthcare facilities with high probability of fraudulent claims, thereby pre-emptively supporting investigators (ISSA, 2022[44]).

According to (Ohlenburg, 2020[45]) reasons for the relatively slow uptake in the government sector include ethical and legal concerns, as well as scepticism about whether computer-driven systems are appropriate in the sphere of public policy and administration. Leveraging AI requires complementary investments in data, skills and digitalised workflows, as well as changes to organisational processes. As a result, adoption varies across sectors, industries and companies. The challenges including issues such as data accessibility and shortages of AI talent are discussed in Chapter 5.

Despite the challenges of applying AI in the government sector, countries recognise its enormous promise and are thinking carefully about how best to take advantage of it. As of June 2021, 20 EU Member States and Norway had published their national AI strategies, while another seven Member States are in the final drafting phase (Joint Research Centre, 2021[46]). Estonia's AI strategy for example covers a wide range of areas, including environmental applications, emergency assistance, cybersecurity and social services. Estonia's approach to AI-enabled digital public services is implemented as part of #KrattAI, an interoperable network of AI applications that allow citizens to use public services through voice interactions with virtual assistants. An intelligent conversational assistant for instance is being used for the treatment of people at risk of long-term unemployment in the context of unemployment insurance (Ott Velsberg, 2020[47]).

4.4.1. Chatbots and digital assistance

Examples of AI deployment provided by countries that responded to the OECD questionnaire were either of automated back-office processes (e.g., processing large amounts of data from traditional databases and unstructured text and images from scanned paper media) and/or automated support (i.e., chat bots and digital assistance). Several social security institutions have implemented smart chatbots to improve online customer services, with 24/7 availability in different industries and for different types of services. These intelligent assistants can mimic human behaviour and are able to autonomously respond to user requests.

In an ISSA 2021 survey of 166 government agencies across the world about AI adoption, chatbots emerged as the frontrunners with 26% of respondents already implementing them and another 59%

planning to implement them within three years. In a review of 230 AI-enabled public services across the EU, chatbots emerged as the first choice, accounting for over one-fifth of use cases. In 2017 Deloitte predicted that the global conversational AI market, including chatbots and intelligent virtual assistants would have a Compound Annual Growth Rate of 22% between 2020 and 2025 reaching almost 14 billion US dollars (ISSA, 2022[48]).

The Social Insurance Institution (Kela) in Finland set up two chatbots, Kela-Kelpo and FPA-Folke, to help clients find information about benefits on Kela's self-service web portal. Based on natural language processing, the chatbots speak two languages – Finnish and Swedish – and they also understand English. These conversational chatbots make it easier to discover and interpret information and to complete benefit applications. Furthermore, they provide customised tips based on contextual variables as clients fill out applications for benefits such as parental benefits and social assistance. A dedicated chatbot was temporarily deployed to address queries on COVID-19-related social assistance (ISSA, 2022[48]).

Services Australia uses a Digital Assistant to provide real-time assistance to customers with a range of questions related to social security payments.

The Austrian Social Insurance (*Dachverband der österreichischen Sozialversicherungsträger*) deployed an intelligent conversational assistant – OSC Caro – that provides digital assistance to members in several areas, such as childcare benefits, health benefits, and reimbursements (ISSA, 2020[49]).

Similarly, Brazil's National Social Security Institute (*Instituto Nacional do Seguro Social*) has implemented an intelligent conversational assistant – named "Helô" – to provide automated 24/7 responses to member requests as part of myINSS's personalised online services. "Helô" was implemented in phases. The first phase involved setting up a rules-based virtual assistant, using keywords. The second phase included the creation of a knowledge base to provide a more targeted service to citizens based on their profiles, and to enable integration with other social media and messaging platforms. In the first month of operation, a million calls were received, serving an average of 32 000 citizens a day; 57% of citizens using Helô said that it responded correctly (ISSA, 2022[48]).

Chatbots proved particularly valuable helping to meet the unprecedented demand for information during COVID-19. Between March and May 2020, the Norwegian Labour and Welfare (NAV) administration's intelligent conversation assistant responded to more than 8 000 daily requests, compared to 2000 before COVID-19. A review of the conversation assistant found the main success factors were training the assistant based on a knowledge base updated daily, with priority given to a specific type of information and having a permanent link between the assistant and a human expert. New topics were added to the remit of the conversational assistant, especially to help employers and freelancers (ISSA, 2020[49]).

The National Employment Office (*Office national de l'emploi* – ONEM) in Belgium set up a chatbot to ease contact centre pressures during COVID-19. The first chatbot was rolled out in May 2020 and gave citizens rapid access to copies of the tax certificates they needed to submit alongside their tax returns. In May 2021, the chatbot's capabilities were expanded, and based on an analysis of the questions posed to it, an upgraded version was rolled out in December 2021. The chatbot can now answer a range of questions relating to unemployment and career breaks. It also serves as a promotional tool to encourage use of e-box, Belgium's virtual, secure mailbox that enables authorities to communicate safely with citizens. The chatbot can remember the context in which a customer is situated when they ask questions, ensuring that the chatbot can continue supporting the customer regardless of where and how the customer navigates the website. Furthermore, the themes covered by the chatbot are regularly updated based on the analysis of customers' questions (ISSA, 2022[48]).

In Korea, an AI driven personalised conversation service (which remembers past conservations and uses them for the next call) is used to check on people's well-being once or twice a week, chatting with people for about two minutes.

Not all chatbots, however, are developed using AI technology. Some chatbots only replicate human actions and tasks in digital systems, typically tasks that are repetitive and rule-based i.e., they don't think or learn. The Canada Revenue Agency (CRA) for example is developing Chatbot and Online Chat solutions (Box 4.11) as part of its ongoing development and enhancement of comprehensive products and strategies related to digital services which are based on varying maturity levels of AI. The existing Chatbot is rules-based using a Question-and-Answer model. It can only respond from its knowledge base answers that match a specific set of topics. The online chat solutions leverage user-centric chat technologies to help clients navigate complex non-account specific material without having to leave the digital channel. The CRA is taking A People First approach to informing the design and delivery of their digital services to ensure they meet clients' evolving needs and expectations.

Box 4.11. End-to-End Digital Service Channel – Chat Services Project (CSP) in Canada

The CRA has deployed Chatbot and Online Chat solutions on a limited basis for public use. To date, Chatbot has answered 11.2 million questions, with client traffic increasingly significantly during the recent tax filing season. With the first iteration of Online chat, agents responded to over 56 000 non-account-specific chats between 1 March and 1 December 2022. The second iteration was launched in February 2023 and to 31 March 2023, agents responded to over 45 000 non-account-specific chats.

Efforts have begun on building an enterprise Chat Services solution for deployment across the CRA (the CSP) because despite the CRA's existing digital presence, clients continue to experience challenges with accessing information they need from the CRA's website. As a result, they abandon the digital portals and either complete their task incorrectly or resort to telephone services to get assistance. Chat technology presents an opportunity for the CRA to innovate and transform how it communicates online with clients and provides them with more options for a positive, seamless client experience.

The CSP initiative aligns with a number of the CRA's objectives to create a cohesive "whole-of-Agency" approach to delivering a tailored seamless client service experience. The approach includes a focus on digital and IT modernisation, content optimisation, and client experience initiatives across the organisation, building a more seamless and integrated service experience for clients and moving their service interactions to the first viable resolution point and the lowest cost channel. Further, the CRA is seeking to optimise its public web presence so that people can more easily find answers to their tax and benefit-related questions, adding chatbot and live chat agent services to help people navigate complex information and to get assistance through automated and live channels without having to leave the digital space.

The CSP will involve a wide-scale application of cloud technology. Once the digital solutions are deployed, they will involve the two-way transmission of data between host (the CRA) and client, the storage of data received from the client, and data-driven reviews of received client data to better address client pain points and call drivers. As a result, the CSP aims to ensure the safe and ethical use of the technology to:

- maintain clients' trust in the CRA as a credible and dependable source of information
- build clients' confidence towards the digital solutions as efficient and reliable methods to access services and benefits securely, and
- instil confidence in clients that the technological infrastructure behind these digital solutions will safeguard their privacy and protect their confidential information from security breaches.

Source: (OECD, 2023[1]).

4.4.2. Automated back-office processes

Governments are using AI techniques to improve customer experience and enhance the stewardship of their resources, for example, to automate fraud detection and to reduce time spent by civil servants on customer support and administrative tasks and. Employment and Social Development Canada (ESDC) for example is leveraging robotic process automation (RPA) to improve staff and client experience, by automating repetitive tasks, and improving response times for clients. RPA has been implemented for benefits processing (social protection, social insurance), as well as for elements of call centre management. The ESDC is also using natural language processing (NLP) to automate the review of free-text comments received on records of employment. The system follows specific business rules and takes simple actions to help reduce the manual workload of Service Canada officers and to ensure timely payment of benefits to Canadians.

Sweden is also deploying RPA to automate decision-making in social services. A review found that digitalisation in social services has a positive effect on civil servants' discretionary practices mainly in terms of their ethical, democratic, and professional values. In addition, a human – technology hybrid actor redefines social assistance practices (Ranerup and Henriksen, 2022[50]). Finland's Social Insurance Institution (*Kansaneläkelaitos*) uses AI image recognition to automate administrative processes through document recognition. Brazil's National Social Security Institute uses AI to speed up the identification of deceased beneficiaries, to avoid undue payments which in many countries can be a manual and thereby slow process (ISSA, 2020[49]).

The Austrian Social Insurance agency (*Dachverband der österreichischen Sozialversicherungsträger*) uses a voice recognition system to support call centre services by automatically forwarding requests to the appropriate offices. The system's linguistic model, which is based on AI, has been trained to recognise specific terms. In addition, AI is used to automatically distribute emails to relevant departments, with an accuracy rate of around 93%. In addition, there is an ongoing project to implement a semi-automated AI-based medical reimbursement process where AI is used to automate several tasks such as recognising submitted documents, classifying diagnostics according to ICD-10 codes, and extracting the data required for reimbursement (e.g., invoice amount and IBAN). Semi-automatic processing speeds up the reimbursement process and supports the staff involved (ISSA, 2020[49]).

As discussed already, COVID-19 triggered an unprecedented volume of requests for assistance and benefits. In Canada, the focus during the pandemic on implementing the Emergency Response Benefit (ERB) and simplified Employment Insurance (EI) claims meant the subsequent return to regular processing of EI resulted in a backlog of claim reviews. Implementation of a Pre-ERB EI Recalculation Outcome Prediction Machine Learning model sought to minimise the number of older claims (pre-March 2020) requiring review by an officer. The model was used to predict the most probable outcome of each recalculation and triage the associated work items accordingly, with recalculations that were unlikely to impact claimants. This project was conducted with oversight from the Artificial Intelligence Centre of Excellence in accordance with Treasury Board of Canada Secretariat guidelines and has subsequently undergone a peer review process.

4.4.3. Proactive identification to support outreach

A small number of examples exist where AI techniques are being used to identify individuals at risk of poor outcomes to then target specific services. To enhance its support to injured workers, Korea Workers' Compensation and Welfare Service (COMWEL) has developed the Intelligent Rehabilitation Recommendation System (IRRS). While COMWEL has been implementing customised rehabilitation plans for injured workers since 2011, the process has relied on limited information and the experience of managers in charge, resulting in variable service quality and timeliness. IRRS, an AI-based system was developed to select the injured workers with the potential to be active, and design scientifically tailored rehabilitation services for them. The IRRS calculates a vulnerability index based on administrative data on

98 million workers accumulated since 2011, comprising details about workers' compensation, unemployment insurance, the rehabilitation case management, using rule-based filtering and case-based reasoning methodology.

IRRS also suggests a rehabilitation plan based on the AI model. The workers selected for rehabilitation and return to work undergo consultation with the rehabilitation experts of COMWEL before AI-generated plans are finalised. The system was first implemented in early 2020 and although it was difficult to provide rehabilitation services then due to COVID-19, 32 627 services were provided to industrial accident workers through IRRS as a customised integrated service in the year 2020. The IRRS has helped COMWEL achieve consistent service quality nationally while ensuring timely and appropriate interventions to ultimately improve the return-to-work ratio (ISSA, 2022[44]).

The Danish Agency for Labour Market and Recruitment (STAR) has developed a profiling model using machine learning techniques that predicts the likelihood of people becoming long-term (>26 weeks) unemployed. The model combines data from administrative records and an online survey that gathers behavioural information. In collaboration with the University of Copenhagen, a new survey instrument is currently being developed that aims to capture structural personality traits such as time and risk preferences. The system is voluntary for jobseekers to use but if they do, they get full access to the model's results. The system does not automatically refer jobseekers to active labour market programmes (ALMPs), rather it supports caseworkers who keep full discretionary responsibility (Desiere, Langenbucher and Struyven, 2019[51]).

A recent OECD working paper exploring the use of AI in Public Employment Services in OECD countries finds that almost half of PES are utilising AI to enhance their services, most commonly to match jobseekers with vacancies and to identify jobseekers' needs for support using profiling tools (Ailbhe Brioscú et al., Forthcoming[52]).

4.4.4. Future AI deployment

It is clear from both the literature and responses provided to the OECD questionnaire that countries are planning to increase their use of AI techniques over time. Czechia's Ministry of Labour and Social Affairs for example is implementing a gradual programme of individual AI use-cases or proofs of concept to increase efficiency, streamline the Ministry's operations and enable faster and better communication with clients. Use cases are evaluated looking at expected benefits; technical requirements for the preparation and operation of the solution; financial requirements for running the solution; and meeting the entry conditions for implementing the solution. Use-cases found to be cost-effective and technically feasible will be fully implemented.

Current use cases in Czechia cover a variety of activities including:

- OCR (Optical Character Recognition) for manually filled forms and their subsequent processing (OCR is a technology that recognises text within a digital image)
- A Chatbot/Voicebot for communicating with clients regarding general queries on benefits and allowances – primarily State Social Support
- An internal chatbot for access to methodology, guidelines and workflows
- Job matching – a search for suitable jobs based on a candidate's CV
- Monitoring of topics addressed in the call centre and/or other communication channels
- Fraud detection and finding anomalies in benefit claims
- Designing individual action plans for employment – training, retraining, etc.
- Preparation of minutes of a client meeting in a defined structure
- Predicting the budgetary impact of changes in legislation.

4.5. Transformation programmes

Several countries provided examples of comprehensive change programmes utilising technology and data to revolutionise how public services are provided that over the medium to longer-term involve modernising technology platforms, changing operating models and ensuring the necessary cultural shifts. In September 2021, Japan established a Digital Agency to promote digitalisation across society. Moving forward, the government is enhancing digitalisation for administrative services while learning from other countries' advanced initiatives.

New Zealand has begun a multi-year transformation programme known as Te Pae Tawhiti, to improve the delivery of social protection and services that is supported by a strong technology platform. Tiered services will provide the range of supports clients need – from channels providing full self-service, which will work for large numbers of clients, through to intensive case management. Norway's NAV is also undertaking a major multi-year modernisation programme (see Box 4.12). NAV's strategy for 2030 describes a change towards more "push-based" services. NAV wants to be able to detect changes in a service user's circumstances and use this information to automatically adjust existing benefits and/or automatically enrol service users into benefit programmes for which they are entitled. NAV already has some experience of this with the child support benefit which is administered automatically.

Box 4.12. Protection Coverage and Social Service Delivery in Norway

NAV's focus over the last five to ten years has been to modernise its legacy systems by automating manual processes to improve efficiency and technical quality. NAV's systems for social protection and social services are more than 20 years old and are built on outdated technical platforms such as mainframes, and in large part with people evaluating cases and making decisions.

Modernising systems and improving efficiency will enable NAV to focus more resources on the cases that are not suited to automated systems, such as service users with complex backgrounds that require many different and intensive social protection services.

The new systems are based on modern software architecture, using open-source software and public cloud services, and are being developed using agile processes. The focus areas are:

- Automating the evaluation of requirements needed to receive benefits which requires the rules to be modernised. This is done using rule-based systems. Using an AI approach would reduce the transparency of the system and traceability of decisions, so this is not something that is currently being explored.
- Increasing the compliance of the system. By centralising and automating the evaluation of relevant laws supporting social services, users receive more equal results, compared to older systems where geographically distributed groups of people with responsible for doing the same job resulted in inequitable results depending on which region the user belonged to.
- The older systems have several weaknesses with regards to privacy. The modern systems are built to encompass modern privacy requirements. This includes traceability of each case, also increasing the transparency for the user.
- Sustainable technology and organisation. The new systems are built by stable teams, with ownership of the systems for the complete lifecycle, reducing the transfers between teams, with a more project-based mindset.

To achieve the goals of the modernisation plans, NAV is dependent on the quality of the data used as the base for the new automated services. There is a national programme for collecting the work and income data from employers, in a unified and systematic manner. This programme is a co-operation between different national agencies and integrates with commercial systems that are used for managing

employment and salaries. The transformation from manual to automated systems changes the requirements NAV have of these data. Data streams will need to be event based and have the possibility to listen to streams of events being captured across the Norwegian Government. Manual systems are better at handling ambiguity and low-quality data, whilst automated systems need data to be structured, consistent with high resolution.

Relevant laws will also need to be modernised, as many of them require a service user to apply for a benefit.

Source: (OECD, 2023[1]).

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Notes

[1] Machine learning (ML) is a set of techniques to allow machines to learn in an automated manner through patterns and inferences rather than through explicit instructions from a human. ML approaches often teach machines to reach an outcome by showing them many examples of correct outcomes. ML contains numerous techniques that have been used by economists, researchers and technologists for decades. These range from linear and logistic regressions, decision trees and principal component analysis to deep neural networks (OECD, 2019[42]).

[2] The OECD has recently clarified the definition of an AI system contained in the 2019 OECD Recommendation on AI (the "AI Principles") to support their continued relevance. The following updated definition was adopted by the OECD Council on 8 November 2023:

An AI system is a machine-based system that ~~can~~, for ~~a given set of human-defined~~ **explicit or implicit** objectives, **infers, from the input it receives, how to generate outputs such as** ~~makes~~ predictions, **content**, recommendations, or decisions that **can influence physical** ~~real~~ or virtual environments. **Different** AI systems ~~are designed to operate with varying~~ **vary in their** levels of autonomy **and adaptiveness after deployment**.

5 Managing the challenges of leveraging technology and data advances to improve social protection

Dorothy Adams

There are significant risks and challenges associated with deploying advanced digital technologies and data in social protection. Governments have put considerable effort into measures to mitigate the risks, including legal, regulatory and accountability frameworks to protect people's privacy and to govern use of automated systems. Some countries are now going beyond these measures, implementing initiatives that also improve their overall interactions with citizens and modernise the way they do business, such as offering services through multiple channels, involving service users in solution design, and achieving incremental improvements through agile working methods. This chapter also discusses some of the broad range of capacities required to successfully meet the challenges of deploying digital solutions such as effective governance, a leadership culture that promotes innovation, an appropriately skilled workforce, and investments in modern technology infrastructure.

Key findings

The previous chapter in this report explores the different approaches countries are taking to leverage advances in technology and data to improve the design, delivery and coverage of social protection benefits and services. However, this does not come without considerable challenges and risks. Furthermore, while the potential benefits may be significant, they are uncertain and often only materialise in the longer-term. This chapter discusses the challenges governments face as they increasingly digitalise social protection systems, together with the measures they are adopting to manage those challenges. The literature and countries' responses to the OECD's questionnaire *Harnessing Technology and Data to Improve Social Protection Coverage and Social Service Delivery* (OECD, 2023[1]) highlight the following key issues and measures:

- Technology projects can fail if the foundations that underpin and enable technological improvements are not in place. A wide range of foundations are necessary for building digital capacity, including supportive policy, legal and operational environments, the availability of a range of specialised skills, and modern technology infrastructure.
- Technology improvements and innovations – particularly those aimed at better integration – can touch on and significantly alter the operational processes of a range of government agencies and other providers. This requires a high degree of cross-governmental collaboration which takes considerable organisational (and sometimes political) commitment, time and resources.
- Data sit at the heart of much government innovation and as countries increasingly collect, link and share more data, countries are considering how to manage the risks involved to make the most of the vast amount of data being generated in social systems.
- Commonly, data used for social protection purposes are people's personal information and governments have a duty to protect people's privacy when using their data. While legislation and rules exist to regulate the use of rapidly evolving technology and data, they are often complex and difficult to navigate making it challenging for agencies to act safely and effectively.
- Discriminatory biases can be built into automated processes and decision-making. Public confidence in governments' use of advanced technology and data solutions takes time to build and can be quickly lost. The possibility of errors and/or biases, particularly in relation to already disadvantaged populations, and the potential implications of those errors requires there to be transparent procedures in place that explain how people's information is being used together with protections and controls for addressing any issues if they occur.
- Greater use of data-driven and/or digitalised processes in social protection creates the risk of reinforcing or creating new sources of exclusion and disadvantage for some groups. Increased digitalisation can exclude those individuals who have limited access and/or ability to engage with digital services. This is a particular challenge when people with limited digital access are also key priority groups for social protection measures.
- Governments are seeking to optimise the benefits of rapid developments in technology and data while mitigating the risks involved with instruments such as legal and regulatory frameworks for example to protect people's privacy and to govern data management and use.
- Governments are also going beyond these measures, implementing initiatives that improve their overall interactions with individuals and communities, that enhance public trust and confidence and modernise the way they do business, including offering services through multiple channels, involving service users in solution design, achieving incremental improvements through agile working methods and encouraging innovative technology and data cultures through leadership and champions.

5.1. Introduction

Significant benefits can be realised from harnessing technology and data advances to enhance national social protection systems, from improving the effectiveness and timeliness of social programmes, for example the speed at which benefits can be scaled up and down to expanding benefit provision to a larger share of eligible beneficiaries, examples of which are outlined in Chapter 4 in this report and (Verhagen, forthcoming[2]).

Many social benefits – even in the world's wealthiest countries – do not reach all intended recipients (Chapter 1). Many individuals across OECD countries feel they cannot access benefits easily in times of need (Chapter 1, Figure 1.4), and people do not always enrol in benefit programmes for which they are eligible. They may have little or no information about a benefit or its eligibility criteria, and/or entitlement rules may be perceived as too complex or cumbersome. The application process can also make a programme less accessible: it may be bureaucratically cumbersome, requiring time, education, and other resources that potential claimants may not have, for different reasons (Chapter 2 and (OECD, 2023[3])).

Incomplete take-up of benefits leads to suboptimal outcomes. When groups or individuals miss out on the social benefits for which they are eligible, benefits become less effective for poverty reduction, income smoothing and risk management. Importantly, poor benefits coverage may also prevent eligible individuals from accessing services that are tied to benefit receipt, such as job-search support and other active labour market policies. Ineffective social services can also contribute to poorer outcomes and inefficient use of resources.

While technology and data advances can play an important role in improving the design, delivery and coverage of social protection benefits and services, they also create complex challenges for governments, and the risks involved in adopting new digital and data technologies can be significant (Verhagen, forthcoming[2]). Governments are attempting to strike a balance between undertaking necessary transformations and mitigating the risks involved in doing this (ISSA, 2023[4]). For example, the Department of Work and Pensions (DWP) in the United Kingdom has created an Artificial Intelligence (AI) Lighthouse Programme to safely explore their use of emerging Generative AI technology; one project is looking explicitly at supporting the interaction between a Work Coach and a citizen when face-to-face in a Job Centre. DWP see significant opportunities in using AI but are also very aware of the potential risks of such technology and have established a framework and process to explore such technology in a safe, ethical and transparent way.

This chapter first explores the challenges governments are facing as they increasingly utilise advanced technologies and data. Key challenges emerging from the literature and case studies provided in response to the OECD Questionnaire are discussed. These include mobilising the necessary capacities and enablers, getting the data right and using it appropriately, and mitigating the risks of further entrenching bias, discrimination and exclusion through accountability mechanisms and processes. Secondly, the chapter outlines some of the measures countries are adopting to manage those challenges, discusses lessons learned and potential ways forward for governments as a result.

5.2. The challenges of leveraging technology and data advances

5.2.1. Mobilising the necessary capacities and enablers

Digitalisation cannot be an objective of its own, as digital solutions only improve the provision of services if they are fulfilling their objectives well and are adopted by users. Thus, added value and user-friendliness are critical factors for digital platforms supporting service provision (OECD, 2022[5]). To ensure technology and data-driven improvements and innovations are successful, governments must first ensure a broad range of capacities and enablers are in place. Those capacities include the policy landscape, governance

and leadership, operating environments, human resources, co-operation across different levels of government, and investments in modern technology infrastructure to support advanced digitalisation projects.

Policy landscape

The policy landscape required to support increased and advanced uses of technology and data to improve public services including social protection coverage is multi-faceted. It includes legal, regulatory and governance frameworks, risk management models, strategies e.g., for promoting digital inclusion, clarifying data sovereignty and ownership issues and policy settings e.g., to avoid or manage the misuse of data. Embracing the results from greater use of technology and data can present significant challenges to the status quo and demands redirection of government resources, improved agency collaboration, changes to service delivery models, improved individual-level data, and better monitoring of policy and service outcomes.

Advanced uses of technology and/or data often requires an enabling legislative ecosystem which can include enabling general legislation such as privacy laws as well as changes to content-specific legislation (refer Chapter 4 for discussion on Article 22 of the EU's GDPR). For example, in the Slovak Republic a legislative amendment was a prerequisite to the creation of a new proactive service for the citizen in the provision of a childbirth allowance upon the birth of a child. The childbirth allowance is a state social benefit, which the state provides proactively without the participation of a beneficiary (see Box 5.1).

Ideally the policy landscape will align with a government's overall vision for digital government. International organisations are supporting governments' efforts to realise digital transformation with legal instruments like the OECD's 2014 Recommendation of the Council on Digital Government Strategies. The Recommendation offers a whole-of-government approach that addresses the cross-cutting role of technology in the design and implementation of public policies, and in the delivery of outcomes. It emphasises the crucial contribution of technology as a strategic driver to create open, innovative, participatory and trustworthy public sectors, to improve social inclusiveness and government accountability, and to bring together government and non-government actors to contribute to national development and long-term sustainable growth (OECD, 2014[6]).

Digital government strategies need to become firmly embedded in mainstream modernisation policies and service design so that relevant stakeholders outside of government are included and feel ownership for the final outcomes of major policy reforms. The OECD recommends that strategies for effective digital government need to reflect public expectations in terms of economic and social value, openness, innovation, personalised service delivery and dialogue with people and businesses. In the Communiqué of the Meeting of the Public Governance Committee at Ministerial Level held in Venice in November 2010, Ministers acknowledged the importance of technology as key ally to foster innovation in governance, public management and public service delivery, and to build openness, integrity and transparency to maintain trust, acknowledging that trust in government is one of the most precious national assets (OECD, 2010[7]).

Box 5.1. Legal amendments as a prerequisite for automatic enrolment (Slovak Republic)

Several legal amendments were required for the Slovak Republic to automatically provide a childbirth allowance upon the birth of a child (a state-provided social benefit) without any involvement from the beneficiary.

Changes and amendments to certain measures were required in several Acts, for instance to reduce the administrative burden by using public administration information systems. The government also had to amend and supplement certain Acts on the childbirth allowance and the allowance for multiple children born at the same time.

Source: (OECD, 2023[1]).

Governance and leadership

A critical enabler to support the more systemic use of technology and data (and possibly one of the most challenging enablers to affect) is the leadership required to execute the necessary change(s) to fully realise the value of technology advances. This includes leadership at the political and senior management level as well as at the functional and technical levels. Greater use of data in decision-making requires shifts in mind-sets, priorities and ways of working where there may be resistance due to other "business-as-usual" pressures and hard, inconvenient questions that can emerge with deeper data analysis. By way of example, quantitative evaluations may show programmes that have strong stakeholder and/or political support to be ineffective or of low impact.

Public trust, sometimes referred to as social licence, is important when scaling digital and data-driven innovations and automated decision-making. The OECD's Good Practice Principles for Public Service Design and Delivery in the Digital Age promotes three principles that will help to achieve accountability and transparency in the design and delivery of public services to reinforce and strengthen public trust: be open and transparent in the design and delivery of public services, ensure the trustworthy and ethical use of digital tools and data, and establish an enabling environment for a culture and practice of public service design and delivery (OECD, 2022[8]).

These principles can be hard to observe. Initiatives are not always well publicised, the roll-out of new web-based applications is not always smooth, there may be general resistance to changing a system that "works", and the public may not be able to easily access information about whether developments are pilots or fully operational. Governments and social security institutions may also not want to openly publicise the results from pilots or trials in cases where they did not achieve the desired results.

Public trust takes time to build and can be quickly lost. Prior poor experiences with government agencies, negative media stories and general distrust in governments can exacerbate doubts about governments' ability to manage digital and data-driven innovations. (Wagner and Ferro, 2020[9]). Indeed, 81% of respondents to a cross-national survey covering 36 countries reported that a negative experience would decrease their level of trust in the government (Mailes, Carrasco and Arcuri, 2021[10]). More pointedly, in a US survey on attitudes to AI development and governance, just 27% of respondents said they have "a great deal of confidence" or "a fair amount of confidence" that the US federal government could develop AI. By contrast, 32% had "no confidence" that the US federal government could develop AI (Zhang and Dafoe, 2019[11]). Data from the OECD's Trust Survey indicates that only about one-third of respondents across 22 countries believe a public agency would even adopt innovative ideas to improve public service provision (OECD, 2022, p. 80[12]).

The Data Innovation Program in Canada illustrates one way in which trust was built with citizens over time. Because the project requires individuals' consent for data sharing and use to be sought upfront, the project is both time and resource intensive but the benefits as a result are considered worthwhile (Box 5.2). It is important to note however that obtaining consent when using very large, national data sets is often difficult if not impossible. Some countries are working with their relevant national privacy body to develop better approaches that help build public confidence.

Box 5.2. Building trust through voluntary data sharing arrangements (British Colombia, Canada)

The Data Innovation Program consistently links, de-identifies and provides access to administrative datasets in one secure environment and is available for use by government analysts and academic researchers to conduct population-level research. The Program aims to address a previous lack of a whole-of-government approach to data sharing and usage, which made data-driven decision-making incomplete, time-consuming, and resource intensive.

A key challenge the Program faces is data sharing and acquisition and in response to this challenge a critical success factor is that data sharing is voluntary. However, this means there is significant up-front time required to build trust with data providers.

The challenge has been approached through the following steps:

- taking the time to educate potential data providers on the Program governance model,
- developing a framework that allows data providers (government agencies) to maintain control over access to the data they provide, with the opportunity to pre-review publications developed using that data; and
- starting small and using completed research projects to demonstrate that the Program is a responsible data custodian.

Source: (OECD, 2023[1]).

Operating environments

Digitalisation represents a major opportunity to enhance service effectiveness and efficiency, via interfaces for people using the services, as well as the back-office infrastructure for service providers to deliver knowledge-based services and automate administrative processes. The extent to which the benefits of digitalisation are realised in practice depends crucially on how the digital infrastructure is implemented and successful implementation relies in large part on operating environments that are ready or mature enough for greater digitalisation.

Since digitalisation efforts can fundamentally change the way organisations work, they may involve considerable structural change and/or standardisation in the way government departments, agencies, and providers are organised and operate. For example, Belgium's Crossroads Bank for Social Security (discussed in more detail in Chapter 4) required the back-office functions of all 3 000 organisations involved to be restructured and the organisational processes to be re-engineered and automated. Similarly, albeit on a smaller scale, New Zealand's efforts to provide digitised services for new parents and caregivers through SmartStart (Box 5.3) required several agencies to adapt and co-ordinate their processes. A key feature of these re-organisation efforts is a focus on providing more customer-centric services and ensuring this remains the key goal requires engagement with external stakeholders, advocacy groups and service users themselves. The risk of not adapting organisational structures and processes is that technology enhancements are fragmented, projects are unsuccessful or worse still, lead to poorer outcomes. Simply automating processes may replicate existing errors and inefficiencies.

Box 5.3. SmartStart in New Zealand

SmartStart is an online tool aimed at parents and caregivers who are planning to or about to have a baby. It gives people online access to integrated government information, services and support related to each phase of pregnancy and early childhood development up to six years of age.

Using SmartStart, an expectant parent can create a profile and add their due date to personalise the timeline with key dates that align with the important tasks they need to complete, such as choosing a lead maternity carer. Parents and caregivers can get tips on keeping themselves and their baby or child healthy and safe, as well as contact details for organisations that can offer help and support.

Users can also complete specific tasks online such as registering the birth of a new baby. As part of the same process, users can consent to sharing their baby's registration information with Inland Revenue to apply for an Inland Revenue number for their baby and Best Start payments, and with the Ministry for Social Development to update their benefit entitlement details. They can also complete a Childcare Subsidy application and submit the form online. Users are invited to apply for a new post-natal tax credit "Best Start" through SmartStart. As part of this process, families give consent for Inland Revenue to use the information they provide to determine their eligibility for other Working for Families tax credits. This appears to have resulted in high take-up of Best Start. Take up of other Working for Families tax credits has also increased with the increase particularly pronounced for Asian mothers, a group is estimated to have had particularly low take-up in preceding years.

A key challenge with this integrated service is that government agencies need to think broader than their own ministerial deliverables, strategically, operationally and technically. To ensure a modern, more joined-up and citizen-focused public service, the focus must be on the customer, and their needs, and not on the agency.

Building government digital services means more than offering new digital services. It means changing existing processes and practices, changing the functions of existing teams, and often integrating more than one different agency's processes and practices into a single customer experience. Progressing such change is far more challenging than the development of a new online service.

Source: (OECD, 2023[1]).

Attracting, developing and retaining talented staff

To support a shift towards digital government, investment is needed in developing the skills of civil servants (Burtscher, S. Piano and B. Welby, 2024[13]). Social security organisations need to attract, develop and retain staff who are equipped for ongoing digital transformation, people with the necessary skills *and* mindsets. A continuum of skills is required, from frontline staff and senior decision-makers (who are confident using data to make decisions) at one end of the continuum who may need to be data aware and/or data capable to technical experts at the other. A recent OECD working paper that reviews good practices across OECD countries to foster skills for digital government presents different approaches in public administration to providing both training activities and informal learning opportunities. It also provides insights into how relevant skills can be identified through competence frameworks, how they can be assessed, and how learning opportunities can be evaluated (Burtscher, S. Piano and B. Welby, 2024[13]).

A broad range of technical expertise is necessary, for example, to collect, organise, and analyse data across different institutions; to exploit new data sources to better inform policy making; to improve the technical infrastructure; and to evaluate programme effectiveness. Specialised staff are also needed to interrogate, evaluate and keep systems and models up to date. The ability to evaluate systems is crucial

not only for their basic functioning but also to ensure that they are not discriminatory or regenerating pre-existing bias.

The skills required are even more specialised the more advanced and complex the emerging systems of data and analytics become (Redden, Brand and Terzieva, 2020[14]). Many relevant skills are already in short supply, in both social security institutions and in the broader labour market. For example, the Canada Revenue Agency experienced inefficiencies in their Chat Services Project relating to a lack of specialist staff to undertake a complex project that was treading new ground and being innovative. Given rapidly developing technologies, skill requirements will likely increase and change over time, which risks exacerbating the human resource challenges organisations face (ISSA, 2022[15]; Ranerup and Henriksen, 2020[16]). In addition, the public sector can struggle to compete with private sector salaries for highly sought after technical roles such as data scientists.

Given that certain skill in addition to specialised technical skills are necessary to support digitalisation efforts, for example content experts and behaviouralists, organisations can benefit from having multidisciplinary teams (ISSA, 2022[15]; OECD, 2022[17]). While some expertise can be developed within social security institutions, it is not always straightforward or desirable for welfare officials to transition from claims processing and benefit design to managing data innovation and advanced analytics projects. As such, the effectiveness of digital and data-driven improvements and innovations may depend on the way welfare officers interact with the system (Lokshin and Umapathi, 2022[18]).

Welfare experts are still required to interact with service users and for their knowledge about the needs of those service users, application processes and available service providers. When Sweden introduced automatic social assistance decision-making, welfare officers' roles changed, but they were still needed to offer help and support to applicants as they underwent the process of applications and appeals in the automatic system (Ranerup and Henriksen, 2020[16]).

Multidisciplinary teams can be particularly valuable when deploying AI and predictive models, to help to ensure that decisions generated by these advanced analytical methods are accurate, explainable, and fair. AI is increasingly focused on how to act in unknown and complex situations. It will therefore be important to evaluate its performance against a range of metrics, informed by different fields, including statistics, philosophy and social science (ISSA, 2020[19]).

Cross-government co-operation

Social protection systems sit within broader system and policy settings such as education, health, employment and tax policy, family and children policy, housing, legal aid and financial services (McClanahan et al., 2021[20]). Successful implementation of digital solutions aimed at improving social protection may require co-operation across government agencies which can be costly in terms of time and financial resources making technology solutions, particularly those requiring significant co-ordination, difficult to achieve in practice (OECD, 2022[8]; McClanahan et al., 2021[20]).

The "Chile Grows with You" (*Chile Crece Contigo*) policy for example which was implemented in 2006 as a holistic approach to early childhood development benefits and services had to scale back ambitions for a high degree of cross-sectoral co-ordination. While in principle, the policy envisaged a high degree of cross-sectoral co-ordination and even full integration, including shared policy making, one study found that co-ordination was in fact limited to inter-sectoral financial transfers from the lead ministry (Ministry of Social Development) to other ministries involved. Multi-agency plans and budgets were not prepared, followed, or assessed. Rather, co-ordination in practice was limited to identifying performance indicators and sectoral contractual agreements. The education sector was not included in key decisions at all, despite the implications of the policy for it (McClanahan et al., 2021[20]).

Effective co-operation and co-ordination are particularly important when a project requires government agencies to share data. This requires not only a mutual willingness to co-operate, but also practical

agreements for shared resources, regulations and infrastructure (OECD, 2023[21]). Australia experienced this when developing the National Disability Data Asset using the new Data Availability and Transparency Act to undertake a multi-agency data sharing project. Through the initiative Australia has found that to successfully establish multi-agency arrangements requires commitment, time, co-operation, and mutual respect – both vertical (different levels of government) and horizontal (different levels within government, from officer to Ministerial level) co-operation.

Challenges involved in reaching practicable information-sharing agreements are also highlighted in a Canadian example where issues around ownership and control of data, particularly for Indigenous populations, has required active collaboration within and between federal, provincial and territorial governments (Box 5.4).

Box 5.4. Cross-government information sharing as a key challenge for service digitalisation in Canada

While advancements in service digitalisation have accelerated in Canada over the past five years, information sharing across governmental entities and between levels of government remains a gap in the current Canadian context. Privacy and enabling programme legislation, data security requirements, in addition to Ownership, Control, Access, and Possession (OCAP) considerations for First Nations, Indigenous, and Métis populations are all elements that require review and analysis. Adjustments will be necessary to ensure that when data are shared, all laws and regulations are respected.

These elements are under active exploration and collaboration within and between Federal/Provincial/Territorial government officials. The establishment of a Digital ID is a key file being advanced at the most senior levels across Federal/Provincial/Territorial governments, with a view to also enabling OCAP for all Digital ID users and removing barriers to data sharing within and across governments. Shared credentialing use is also expanding.

Source: (OECD, 2023[1]).

Investing in the necessary infrastructure

Modern IT infrastructure and processes are essential foundations for the provision of effective digitalised public services. In many cases it will be necessary to modernise existing infrastructure prior to or in conjunction with digital and data transformation(s). In 2021-22 the OECD supported Lithuania to develop a new approach to personalised services for people in vulnerable situations which included reviewing Lithuania's IT infrastructure. The OECD recommended that Lithuania modernise the IT infrastructure for both social and employment services to better support service provision including digital service offerings, involving end-users throughout each phase of the modernisation process (OECD, 2023[22]).

Investments in IT transformations require well-scoped and costed business cases to convince governments to make what are often significant investments in digital systems, particularly given potential benefits can be uncertain and often materialise in the longer-term. The complexity of designing and iteratively implementing an integrated digital system that fully responds to the changing needs of users at all levels of administration, while also placing people at the centre, is often under-estimated. The time and cost, not only for set-up, but also for take-up, maintenance and continuous adaptation, needs to be considered. Ultimately, the cost for people to access and use a system needs to be minimal, and the benefits tangible to all. If the benefits are not visible, the risk is failure i.e., the new system is not used, or worse, creates significant setbacks (Barca and Chirchir, 2019[23]).

Investment cases should also consider the needs of marginalised groups who may lack access to the infrastructure and skills necessary to benefit from technology advancements. For example, Internet connections may be sparse or unreliable in rural or geographically isolated areas, some groups may not have access to devices. In addition, there may be skill gaps for current and potential applicants that need to be addressed.

Depending on the extent of infrastructure development or modernisation required governments may not have all the necessary capabilities and capacities and while development and maintenance tasks can be contracted out, governments should take care to ensure they retain system ownership. Private development partners may play a helpful role in building and maintaining technical solutions. For instance, the pension insurance DRV-Bund in Germany was able to use technology from a major cloud provider to cut costs involved with integrating a chatbot into its website (ISSA, 2022[24]). Likewise, British Colombia partnered with an academic institution to support the development of its Data Innovation Programme. However, governments may expose themselves to both short- and long-term risks if they do not retain ownership of systems and data when managing their public-private partnerships. This is particularly important where social protection organisations are nascent and evolving, such as in low- and middle-income countries (Barca and Chirchir, 2019[23]).

5.2.2. Getting the data right

Countries are increasingly collecting, sharing and using more data. Some countries are creating new data, for example through increased linking of administrative datasets across government agencies and making that data more widely available in useable formats. A small number of countries are also testing the value of using new or non-traditional data sources such as cellular phone or banking data for policy and research and to improve service design and delivery. Governments are carefully considering how they manage the challenges of optimising the value of their expanding data holdings.

Greater use of data can help to drive efficiency, effectiveness and innovation. However, if something goes wrong, for example sensitive information is made available when it should not have been, it may harm not only the individual(s) involved but also damage public trust and confidence. This is particularly acute in social services where much of the information used is people's personal, and often highly sensitive, information. For instance, if abusers of victims/survivors of domestic violence access classified information through privacy leaks, they may expose their victims to further violence (OECD, 2023[21]). Another example is the potential misuse of a person's health data by an employer to discriminate against them in the workplace.

The answer however is not to avoid the use of data because of potential harms. There are both individual and public benefits to providing social services for example and evaluating their effectiveness. While Article 12 of the International Bill of Rights states that no one shall be subjected to arbitrary interference with their privacy, family, home or correspondence, Article 27 specifies that everyone has the right to freely participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits; arguably this includes the right to benefit from data and technology advancements. All OECD countries have legal safeguards in place to mitigate the risks associated with the collection, use and disclosure of personal information to ensure information is used in a responsible, transparent, and trustworthy way. There is also an increasing number of ways in which countries are protecting people's data that go beyond laws and regulations, some of which are described below.

Data governance

Good data governance plays a fundamental role in helping governments and agencies become more data driven as part of their digital strategy and is critical to governments maximising the benefits of data access and sharing, while addressing related risks and challenges. The OECD describes data governance as a diverse set of arrangements, including technical, policy, regulatory or institutional provisions, that affect

data and their cycle (creation, collection, storage, use, protection, access, sharing and deletion) across policy domains and organisational and national borders (OECD, 2024[25]). The characteristics of a mature data organisation might include data informing a continuous evolution of business strategy, the organisation constantly looking for ways to leverage new datasets, the right data protection measures being in place and data governance integrated into business processes.

Enabling the right cultural, policy, institutional, organisational, and technical environment is necessary to realising the value from data. Yet, organisations often face legacy challenges inherited from analogue business models, ranging from outdated data infrastructures and data silos to skill gaps, regulatory barriers, the lack of leadership and accountability, and an organisational culture which is not prone to digital innovation and change. New challenges have also arisen resulting from the misuse and abuse of peoples' data. Furthermore, governments struggle to keep up with technological change and to fully understand the policy implications of data in terms of trust and basic rights (OECD, 2019[26]).

To achieve a data driven public sector the OECD proposed a holistic data governance model comprising three core layers (strategic, tactical and delivery) (OECD, 2019[26]). The strategic layer includes leadership, vision and national data strategies e.g. a data sovereignty strategy in countries with an indigenous and/or ethnic minority population whose conception of data is not the same as the democratic regime. The tactical layer enables the coherent implementation and steering of data-driven policies, strategies and/or initiatives. It includes data-related legislation and regulations as instruments that help countries define, drive and ensure compliance with the rules and policies guiding data management, including data openness, protection and sharing. The delivery layer allows for the day-to-day implementation (or deployment) of organisational, sectoral, national or cross-border data strategies.

The social sector can learn from the considerable advances that have been made in the health sector, including to data governance, to promote access to personal health data that can serve health-related public interests and bring significant benefits to individuals and society. In December 2016, the OECD Recommendation on Health Data Governance was adopted which identified core elements to strengthen health data governance, improve the interoperability of health data, thereby unlocking its potential while protecting individuals' privacy (OECD, 2017[27]). The Recommendation provides policy guidance to promote the use of personal health data for health-related public policy objectives, while maintaining public trust and confidence that any risks to privacy and security are minimised and appropriately managed. It is designed to be technology neutral and robust to the evolution of health data and health data technologies.

In 2022, the OECD's Health Committee in co-operation with the Committee on Digital Economy Policy provided a report on how the Recommendation was being implemented (OECD, 2022[28]). The results of a survey that informed the report showed that many countries were still working toward implementation of the Recommendation. Among those countries who had lower scores for data governance, there were gaps in addressing data privacy and security protections for key health datasets such as having a data protection officer and providing staff training, access controls, managing re-identification risks, and protecting data when they are linked and accessed. The OECD agreed it would continue to support the implementation and dissemination of the Recommendation and that a new series of country reviews of health information systems would be used to support countries in their efforts to develop health data governance.

The 2023 Health at a Glance contains a thematic chapter – Digital Health at a Glance which examines the readiness of countries to advance integrated approaches to digital health. The focus is on a non-exhaustive list of indicators of readiness to realise benefits from digital health while minimising its harms. The chapter also provides the groundwork for a more comprehensive approach to a robust suite of digital health indicators for readiness over time. While data are not currently available across all dimensions of digital health readiness (analytic, data, technology and human factor readiness) the chapter details the dimensions of a framework and signals where more regular data collection are needed (OECD, 2023[29]).

Data accuracy

Data quality is central to realising the potential of greater data use and is particularly important to initiatives aimed at improving social protection coverage, including through the use of predictive models and automated decision-making based on AI (Osoba and Welser, 2017[30]). Ideally, data need to be inclusive, timely and complete. No one data source is comprehensive. Administrative data for example suffers shortcomings in that records only cover those who are registered in government systems which may exclude, misrepresent or even overrepresent some groups. Administrative data are also often criticised for being deficit based because they are focused on the negative rather than positive aspects of a person's life such as benefit receipt or being known to the justice system. Furthermore, the conditions and/or incentives for people to provide accurate data do not always exist.

Survey data also has limitations. While countries have developed surveys that attempt to cover traditionally marginalised and excluded groups and to collect more sensitive information, achieving better representation remains a challenge. Surveying hard to reach groups is both complex and expensive.

Access to timely data is important, particularly for operational purposes. As Employment and Social Development Canada (ESDC) found when developing the Canadian E-vulnerability index, a key challenge is to find ways to ensure that data are both high-quality and timely (Box 5.5). Poor-quality or incomplete data may result in shortcomings in model predictions and automated decisions. For instance, research undertaken in Canada suggests that using poor-quality data (in the form of duplicate values) for predictive decision support in child protection services can create errors leading to sub-optimal foster care placement (Vogl, 2020[31]). Errors may compound when models rely on integrated data from various data sources and agencies.

Issues associated with incomplete data may have specific implications for disadvantaged and marginalised groups. For instance, certain populations might be over- or under-represented in datasets due to different experiences, statistical definitions and measurement. For example, Chile reports that undocumented migrants are underrepresented in its social registry as they typically do not have a national identification number, as are residents of very remote communities (such as islands) due to limited outreach or mobile connectivity. Similarly, OECD research shows that homelessness amongst women is typically underreported because homeless women tend to be less visible and are harder to capture in standard data collection approaches. Furthermore, those temporally sleeping in domestic violence shelters (a leading cause for women homelessness) are not statistically defined as homeless in around half of OECD countries (OECD, forthcoming[32]).

Box 5.5. The importance of data availability and timeliness – the case of Canada

The E-vulnerability Index (EVI) uses existing survey data from Statistics Canada, including data from the Census of Population, the Canadian Internet Use Survey, and the Programme for International Assessment of Adult Competencies.

The EVI is a key data input for analysis and decision-making at ESDC, informing service design and targeted outreach activities to populations most disadvantaged by the move to digital services. Internal users show continuous demand for EVI, requesting additional data points and disaggregation. However, ongoing challenges related to data availability and timeliness make it harder to improve and update the ~~EVI~~ index over time.

While caveats on EVI source data staleness and on any other data limitations are added to publications to inform users of the index limitations, ESDC has also collaborated with key data partners to improve the timeliness of data source accessibility. Additionally, ESDC is exploring alternative methodologies

for the EVI compilation, to leverage source data which is available on a timelier and/or disaggregated basis. The EVI will be updated during 2024.

Source: (OECD, 2023[1]; CONADI, 2023[33]).

Data privacy

The data collected and used for social protection can be highly sensitive and managing privacy is a constant challenge. Privacy risks are heightened when sensitive information is used for operational purposes such as generating automated decisions for individuals or contacting people directly (OECD, 2019[34]; OECD, 2013[35]).[1] Creation and use of large datasets and data lakes also carry complex challenges that test the ability of governments and agencies to apply all relevant legal frameworks and regulations to protect individuals.

All OECD member countries, and 71% of countries around the world, have laws in place to protect (sensitive) data and privacy (OECD, 2023[36]). Perhaps the best-known instrument is the 2018 EU General Data Protection Regulation (GDPR) which has advanced data protection principles in Europe. The European Union continues to develop its regulatory framework with the European Parliament and the Council of the European Union reaching a political agreement in June 2023 to amend the European Data Act to harmonise rules on fair access to, and use of data (European Commission, 2023[37]). The United States is also strengthening its data regulatory regime with several new federal and state bills aimed at changing the way technology firms and privacy regulation works (Fazlioglu, 2023[38]).

Some countries have enshrined the right to privacy in national constitutions or bills-of-rights. In Chile and Mexico for example, privacy protection rules have been adopted from constitutions into social assistance operational manuals. The Ministry of Planning and Co-operation in Chile must legally guarantee Solidario's beneficiaries' privacy and data protection. Despite these measures however, both countries experience significant enforcement gaps which weaken the effect of these regulations (Carmona, 2018[39]). There are also international human rights instruments and conventions that protect privacy such as the Universal Declaration of Human Rights while other international organisations such as the UN and OCED have created guidelines (Carmona, 2018[39]).

While critically important, multiple regulatory frameworks can cause confusion, they can be complex and difficult to navigate making it challenging for agencies to act safely and effectively. In addition to having to adhere to overarching data privacy frameworks and laws there may be other agreements, rules and responsibilities that must be observed, for example in specific legislation or government policies. Recognising this challenge, in 2021 the New Zealand Government introduced the Data Protection and Use Policy. A key aim was to help government agencies and social service providers navigate the various laws, regulations, rules, conventions and guidelines and to ensure the respectful, trusted and transparent use of people's personal information.

Data breaches are becoming more common with governments finding themselves managing data breaches on an increasingly regular basis. In most cases, government data breaches involve personally identifying data, such as names, Social Security numbers, and birthdates, the loss of which can result in substantial consequences for victims as well as erode public trust in government's use of data. The risk of a data breach may increase when aspects of a social protection programme are outsourced to a third party. For instance, if elements like payment delivery are managed by private firms, information flows become more complex, requiring additional data security rules related to both data sharing and processing (Carmona, 2018[39]). In the example of outsourcing data management for the Transport Agency in Sweden, there was a departure from the legislation that was supposed to govern data handling that occurred without any malicious intent (Box 5.6).

Countries are adopting a range of measures to both prevent data breaches occurring and for managing them when they do, measures such as protective security frameworks, staff training, data loss prevention tools, access controls and guidance for handling personal information security breaches. These efforts are often supported by Privacy or Information Commissioners.

Box 5.6. Risk of data regulation breach in public-private partnerships in Sweden

In 2015, the Swedish Transport Agency experienced a considerable data breach in association with outsourcing of data handling. Confidential data about military personnel, along with defence plans and witness protection details, were exposed. Fortunately, there is no evidence that information was leaked to third parties because of the security breach.

The Swedish Transport Agency had contracted private firm IBM to run its IT systems. The contract included outsourcing maintenance and functioning of hardware, networks and programmes. However, in the process of outsourcing data handling, the director general of the Transport Agency was able to abstain from closely following standard regulations under the National Security Act, the Personal Data Act and the Publicity and Privacy Act.

Investigations by the Swedish Security Service and the Transport agency found that IBM staff without the necessary security clearances had been able to access confidential information. While the data were found to have been exposed to non-cleared staff, there was no evidence that IBM had mishandled the information.

Source: (BBC, 2017[40]; Swedish Transport Agency, 2023[41]).

Overreach and lack of legal basis

Linking data across agencies and providers, which is becoming increasingly common, raises complex issues regarding informed consent. It can be difficult to predict when someone's information is collected for a particular administrative purpose whether it will be linked with data from other sources and used for other purposes such as research, data analytics, or even enrolment in other programmes. This makes informed consent difficult (Lokshin and Umapathi, 2022[18]).

Data integration can introduce the potential for overreach, i.e. a deviation from the intention under which the data were originally collected (Levy, Chasalow and Riley, 2021[42]) and there are examples of integrated datasets created for one purpose being used for another. For example, the Florida Department of Child and Family collected multidimensional data on students' education, health, and home environment. However, these data were subsequently interfaced with Sheriff's Office records to identify and maintain a database of juveniles who were at risk of becoming prolific offenders.

Historically some social protection agencies have failed to fully consider the legal and ethical implications of automating a process or system. The United Nations Special Rapporteur for Extreme Poverty and Human Rights notes several cases where automated systems were implemented without paying sufficient attention to the underlying legal basis. For instance, in February 2020 the District Court of the Hague ordered an immediate halt to the Netherland's System Risk Indication system because it violated human rights norms. In June 2020, the Court of Appeal ordered the United Kingdom's DWP to fix a design flaw in the Universal Credit which was causing irrational fluctuations and reductions in how much benefit some people received (Special Rapporteur on extreme poverty and human rights, 2019[43]).

5.2.3. Mitigating the risks of further entrenching discrimination, bias and exclusion

Discrimination, stigmatisation and exclusion can result from use of models and automated systems

There is a risk that discrimination, stigmatisation and exclusion can result from the use of predictive models, automated decision-support tools, and other targeting mechanisms. Several factors can cause discriminatory outcomes including algorithmic bias (i.e. systematic and replicable errors in computer systems for example where algorithms have been trained on datasets reflecting existing prejudices), unevidenced variable selection or poorly constructed criteria, an algorithm being used in a situation for which it was not intended, and/or the use of poor including biased data.

Evaluations of algorithmic decisions have found they can be discriminatory even when variables by which discrimination can be measured, such as gender, ethnicity or age, are themselves not included. As Osoba and Walker (2017, p. 17[30]) state, "applying a procedurally-correct algorithm to biased data is a good way to teach artificial agents to imitate whatever bias the data contains". Data may be biased for different reasons. First, certain population groups could be over- or under-represented. Second, an algorithm may mirror decisions taken by biased individuals and third, algorithmic decision support can create self-reinforcing feedback loops. When attention is focused on a certain population group(s) more data are gathered about them that may then provide evidence that even more attention should be focused on that same group (O'Neil, 2016[44]).

Examples of discriminatory outcomes resulting from the use of algorithms suggest that disadvantaged groups are more likely to be exposed to these outcomes than others. For example, in Austria an algorithm was used to allocate job applicants into two groups: one receiving a higher degree of job search support and one receiving less. However, it discounted the chances of employment among groups with certain characteristics who already tended to face disadvantages in the labour market in a way that disproportionately allocated them to the group receiving less support (Box 5.7).

The algorithm used to predict the risk of fraud among recipients of France's Family Allowances Fund (CNAF) has been criticised for several reasons. One criticism is that the algorithm targets people in precarious positions because their status is associated with risk factors that are correlated with precariousness. For example, higher risk scores are allocated to individuals who must file complex income declarations (for APL, activity bonus, disabled adult allowance, etc.) which has allegedly meant that those on minimum-income benefits are disproportionately likely to be controlled for (Benoît Collombat, 2022[45]).

Similarly, the automated means-testing algorithm that underpins the Universal Credit programme in the United Kingdom has been criticised for miscalculating some individuals' entitlements, causing benefit entitlements to fluctuate significantly. Monthly earnings are a key input variable and for those whose earnings are irregular, such as contractors and other workers in insecure jobs the algorithm can perform poorly (Human Rights Watch, 2020[46]). This is particularly problematic because it disproportionately affects those who are already in precarious situations who earn income from several and/or insecure jobs.

New research in the United States shows that Black American taxpayers are three to five times more likely to be audited on their tax returns, compared to other taxpayers (Hadi Elzayn et al., 2023[47]). Although the tax collection agency does not collect information on race, the algorithms used to select tax units for auditing have created a racial bias. People filing for the Earned Income Tax Credit are more likely to be selected for audits. The IRS has identified this problem in the algorithm and is making changes to how people are selected for audit.

Box 5.7. Risk of predictive models leading to misleading results in Austria

The Austrian Government used an algorithm to predict jobseekers' employment prospects with the aim of tailoring employment support interventions for individuals. Services that actively help jobseekers into jobs, such as job search assistance and job placements, are prioritised for those who are predicted to have moderate employment prospects. Those who are predicted to have low employment prospects are allocated to crisis support measures.

However, studies show that the algorithm discounts the employment prospects of women over 30, women with care responsibilities, migrants, and persons with disability. Systematically misclassifying these groups of people risks limiting them to crisis support rather than active employment support thereby reducing their chances of entering employment. This is not only discriminatory, but also weakens the chances of groups who tend to already face disadvantages in the labour market.

Source: (OECD, 2023[1]; Allhutter et al., 2020[48]; Human Rights Watch, 2022[49]).

Errors and biases in models and automated systems can be hard to detect. Explaining algorithmic models is complex and, in some cases, impossible because they are both inscrutable and nonintuitive (Selbst and Barocas, 2018[50]). This can result in errors going undetected until many people are affected (Redden, Brand and Terzieva, 2020[14]). Australia's Robodebt Scheme, introduced in 2015 to assess entitlements to payments highlights the challenges of detecting a systemic issue in an automated system. While individual members of the Administrative Appeals Tribunal (the body responsible for conducting merit reviews of administrative decisions under Australian federal government laws) noted problems with overpayment calculations, the systemic nature of the problem was not identified immediately, and the scheme continued to operate until 2019 (see Box 5.8).

Box 5.8. Robodebt in Australia

From 2015 to 2019 the Department of Human Services implemented a debt recovery scheme – Robodebt – to recover overpayments to welfare recipients dating back to 2010-11. To calculate the overpayments, social security payment data was matched with annual income data from the Australian Taxation Office and a process known as "income averaging" was used to assess income and benefit entitlement. Debt notices would then be issued to affected welfare recipients who would have to prove they did not owe a debt, which was often many years old.

The process both produced inaccurate results and did not comply with the income calculation provisions of the Social Security Act 1991. Despite adverse findings by the Administrative Appeals Tribunal to some cases, the systemic nature of the problem was not immediately identified, and the scheme continued to operate. By the end of 2016, the scheme was the subject of heavy public criticism, but it continued until November 2019, when it was announced that debts would no longer be raised solely based on averaged income. That was followed in 2020 by the settlement of a class action and an apology, in June 2020, from the then prime minister, the Hon Scott Morrison. A 2022 Royal Commission into the Robodebt Scheme made 57 recommendations as the result of its inquiry; the recommendation relating to automated decision-making is discussed below.

Source: (Lokshin and Umapathi, 2022[18]; The Royal Commission into the Robodebt Scheme, 2023[51]).

Errors and biases can make someone appear ineligible for a benefit they are legally entitled to – a false negative (OECD, 2019[34]). A false negative is an outcome where the model incorrectly predicts the negative class resulting in some individuals receiving less "treatment" or services than they need which

may result in poorer outcomes for some priority groups. A false positive is an outcome where the model incorrectly predicts the positive class, and some individuals may receive more "treatment" or services than they need which can result in an inefficient allocation of resources. Both have implications although research suggests people are more concerned with avoiding false negatives.

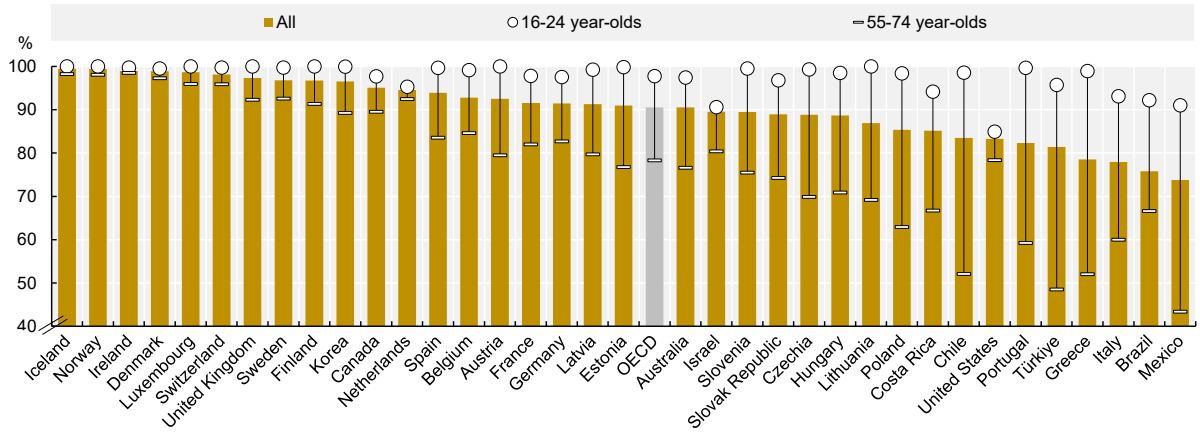
Exclusion

Increased reliance on digitalised services risks excluding people without digital access. Further, these people are likely to be the same people who already suffer poorer access to social services. Globally, more than 84% of national governments now offer at least one online service (ISSA, 2022[52]). Despite the increased opportunities digital services present, the access to, and use of digital infrastructure and tools, is uneven. An estimated 2.9 billion people do not use the Internet. The digital divide is even starker when viewed from the lens of age, gender, poverty and location (ISSA, 2022[52]). Across the OECD, 22% of 55-74 year-olds state that they do not use the internet, in Türkiye and Mexico it is more than 50% (Figure 5.1).

The risk of exclusion extends to linked datasets that governments increasingly use to determine eligibility for services and benefits. For example, the Canadian benefit system faces problems regarding its ability to include Indigenous populations in their linked data bases that provide the foundation for benefit eligibility (Box 5.9).

Figure 5.1. One-fifth of 55-74 year-olds across the OECD do not use the Internet

Internet users by age, as a percentage of the population in each age group, 2021



Source: OECD (2022), ICT Access and Usage by Households and Individuals Database, http://oe.cd/hhind (accessed in January 2022).

The literature is very clear, while the potential positive impacts of the digital transformation are substantial, without deliberate efforts to correct digital inequities, it may compound existing vulnerabilities. Access to the internet and relevant devices, such as a mobile phone, will be critically important to how people benefit from new services (OECD, 2022[17]) and people will also need the necessary skills and capacities to use relevant technologies and devices to make use of services (ISSA, 2022[52]).

Many countries are already actively working to address this challenge with governments including in their digital strategies explicit provisions to promote digital inclusion for those more likely to miss out. Other approaches include engaging directly with people and providing training, intermediation or subsidies for devices. In the United States for example, eligible households can access the Affordable Connectivity Program which helps ensure households can afford the broadband they need for work, school and healthcare. The benefit provides a discount of up to USD 30 per month toward internet service for eligible

households and up to USD 75 per month for households on qualifying Tribal lands. There is also a one-time discount of up to USD 100 to purchase a device. However, due to funding constraints, this programme will no longer be accepting new applications after February 2024.

Governments are also taking indirect approaches, working on language and communication, improvements to the user experience and creating intuitive user interfaces (ISSA, 2022[52]). For instance, the German Social Insurance for Agriculture, Forestry, and Horticulture used a website as a forum to disseminate information about the rights of marginalised migrant seasonal workers in the languages most frequently spoken and understood (Box 5.9).

Box 5.9. Including everyone in digitalised solutions

Canada: Indigenous populations face difficulties accessing key social benefits

In Canada, several important social benefits at the federal level (e.g., Canada Child Benefit, Canada Workers Benefit) and at the provincial level are delivered through or linked to the tax system. To be eligible, individuals must therefore complete a tax return. In 2021, Statistics Canada reported just over 28.1 million tax filers, or roughly 87% of the population aged 15 years and over. This suggests about 13% of Canadians are not filing a tax return and are potentially not receiving benefits from key social programmes.

Rates of non-tax filing are particularly elevated among Indigenous populations. There are several reasons for this, including that Indigenous populations in Canada may be concerned that the disclosure of personal and financial information to the government might ultimately cause them harm. For instance, a report by Prosper Canada found that Indigenous peoples fear that applying for and receiving benefits may lead to “scrutiny by social services and potential removal of children” or that “additional one-time income may jeopardise needed housing or childcare subsidies.” Heightened distrust in government may likely stem from historical experiences of discrimination.

Indigenous people are also more likely to lack personal identification, such as a birth certificate, which is required to obtain a social insurance number, itself a requirement for filing taxes and accessing many social benefits.

Geographical remoteness is another key barrier to completing tax returns, especially for Indigenous populations. There are many reasons why remoteness presents a barrier, including the lack of access to Internet for online tax filing software and virtual support. Indeed, only 43% of First Nations reserve areas and 49% of the North had 50/10 unlimited broadband coverage in 2021. This compares to about 91% of all Canadian households.

Germany: Communicating information about workers’ rights to non-native speakers

The German Social Insurance for Agriculture, Forestry, and Horticulture aimed to promote safety at work and protect the health of workers. However, they realised that there might be knowledge gaps about the issues of occupational health and safety among seasonal workers. Addressing this, they developed a web platform in 2021.

To ensure that seasonal workers, many of whom are from Central and Eastern Europe, can access information, the platform was made available in ten languages. It prioritises clarity of information and contains a mix of text, images, and videos to ensure that information is easily digestible.

The platform also contains a section with an updated list of real-world questions asked by workers, and points users to the telephone and email for other queries.

Source: (Government of Canada, 2023[53]; ISSA, 2022[52]; Office of the Auditor General of Canada, 2022[54]; Prosper Canada, 2018[55]; Robson and Schwartz, 2020[56]; Sanders and Burnett, 2019[57]; SVLFG, 2023[58]; Canada, 2022[59]; Canada, 2023[60]).

Mitigating the risks of generating discrimination, stigmatisation and exclusion

The increasing digitalisation of public services means issues associated with implementing automated systems including the use of algorithms will continue to arise and governments need to have in place appropriate accountability frameworks and procedures. Without them, technology and data-driven innovations risk disempowering and disengaging people and eroding public trust and confidence as discussed earlier. Principle 1.5 of the OECD's AI principles (discussed in Chapter 4), which arguably can be usefully applied beyond AI technologies specifies that AI actors should be accountable for the proper functioning of AI systems, based on their roles, the context, and consistent with the state of art (OECD, 2019[61]).

In the Netherlands nearly 26 000 families were falsely accused of fraud by the Dutch tax authorities between 2005 and 2019 due to discriminative algorithms. Risk profiles were created for individuals applying for childcare benefits in which "foreign sounding names" and "dual nationality" were used as indicators of potential fraud. As a result, thousands of (racialised) low- and middle-income families were subjected to scrutiny, falsely accused of fraud, and asked to pay back benefits they had obtained legally, which in many cases amounted to tens of thousands of euros. The consequences were devastating. Families went into debt, many ended up in poverty with some losing their homes and/or jobs. More than 1 000 children were placed in state custody as a result (The European Parliament: parliamentary question, 2022[62]). The Dutch Government's lack of action and accountability even after it was clear something was wrong led to the eventual resignation of the government in 2021.

Incidents such as the Dutch childcare benefit scandal as well as the Robodebt Scheme in Australia offer important lessons for how the potentially negative impacts of automated systems and algorithms can be mitigated. According to Assistant Professor Błażej Kuźniacki, lack of transparency was one of the causes of the Dutch scandal. Dutch legislation did not allow AI automated decision-making to be checked and there was not enough human interaction; further, procedures were too automatised and secretive. AI was allegedly able to use information that had no legal importance in decision making, such as sex, religion, ethnicity, and address which can lead to discriminatory treatment. If tax authorities are not able to explain their decisions, they cannot justify them effectively. The higher the risks, the higher the explainability requirements should be (Błażej Kuźniacki, 2023[63]).

Two of the Australian Royal Commission into the Robodebt Scheme's 57 recommendations specifically addressed automated decision-making:

Recommendation 17.1: Reform of legislation and implementation of regulation

The Commonwealth should consider legislative reform to introduce a consistent legal framework in which automation in government services can operate.

Where automated decision-making is implemented:

- there should be a clear path for those affected by decisions to seek review,
- departmental websites should contain information advising that automated decision-making is used and explaining in plain language how the process works,
- business rules and algorithms should be made available, to enable independent expert scrutiny.

Recommendation 17.2: Establishment of a body to monitor and audit automated decision-making

The Commonwealth should consider establishing a body, or expanding an existing body, with the power to monitor and audit automate decision-making processes regarding their technical aspects and their impact in respect of fairness, the avoiding of bias, and client usability.

The Australian Government accepted, or accepted in principle, all recommendations made by the Royal Commission into the Robodebt Scheme, including recommendations 17.1 and 17.2.

The Australian Government accepted recommendation 17.1, and committed to consider opportunities for legislative reform to introduce a consistent legal framework in which automation in government services can operate ethically, without bias and with appropriate safeguards, which will include consideration of:

- review pathways for those affected by decisions, and
- transparency about the use of automated decision-making, and how such decision-making processes operate, for persons affected by decisions and to enable independent scrutiny.

The Australian Government accepted recommendation 17.2 and agreed to consider establishing a body, or expanding the functions of an existing body, with the power to monitor and audit ADM processes.

Both cases highlight the critical importance of transparency and explainability and the need for meaningful human involvement, particularly when automated decisions can, potentially and significantly impact people's lives. Transparency involves disclosing when automated systems are being used e.g., to make a prediction, recommendation or decision, with disclosure being proportionate to the importance of the interaction. Transparency also includes being able to provide information about how an automated system was developed and deployed, what information was used and how, how an output was arrived at, who is responsible for that output and how it can be appealed. An additional aspect of transparency is facilitating, as necessary, public, multi-stakeholder engagement to foster general awareness and understanding of automated systems and to increase acceptance and trust (OECD, 2019[64]).

Explainability is the idea that an automated system or algorithm and its output can be explained in a way that "makes sense" to people at an acceptable level enabling those who have been adversely affected by an output to understand and challenge it. This includes providing – in clear and simple terms, and as appropriate in the context – the main factors included in a decision, the determinant factors, and the data, logic or algorithm used to reach a decision (OECD, 2019[64]). Some algorithms are more readily explainable but potentially less accurate (and vice versa) and so while requiring explainability may negatively affect the performance of an algorithm, it may in some cases be an outweighing factor.

There should always be a degree of human involvement in automated decision-making, proportionate to the potential impact of the outputs generated. Principle 1.2(b) of the OECD's AI principles specifies that AI actors should implement mechanisms and safeguards, such as capacity for human determination, that are appropriate to the context and consistent with the state of art (OECD, 2019[61]).

Article 22 of the GDPR stipulates that organisations deploying automated decision-making under permissible uses must "implement suitable measures to safeguard the data subject's rights and freedoms and legitimate interests." The latter shall include, at least, the rights "to obtain human intervention on the part of the controller, to express his or her point of view and to contest the decision" (Sebastião Barros Vale and Gabriela Zanfir-Fortuna, 2022[65]). While inserting humans into the loop of automated systems is a crucial way of helping to achieve accountability and oversight, this doesn't come without challenges. For example, what level of oversight, accountability and liability are attached to human-made decisions? What qualifications and/or expertise is required to question an automated decision?

European Data Protection Board guidelines on automated individual decision-making and profiling state that a controller cannot avoid Article 22 provisions by fabricating human involvement. For example, if someone routinely applies automatically generated profiles to individuals without any actual influence on the result, this would still be a decision based solely on automated processing. To qualify as human involvement, the controller must ensure that any oversight of the decision is meaningful, rather than just a token gesture. It should be carried out by someone who has the authority and competence to change the decision. The controller should identify and record the degree of any human involvement in the decision-making process and at what stage this takes place (European Data Protection Board, 2017[66]).

The right to review an automated decision or output is an important feature of an accountability framework. Those negatively impacted by automated decision-making should be able to appeal a decision and know how to do that. As the OECD's 2019 Recommendation on AI specifies, those that are adversely affected

by an AI system should be able to challenge the outcome(s) of the system based on easy-to-understand information about the factors that served as the basis for the prediction, recommendation or decision (OECD, 2019[61]). Grievances and investigations should be taken seriously and made publicly available together with the outcome(s) so that lessons can be learned and shared with others undertaking similar work.

Some groups may not know they have been overlooked or have the resources to address any issues (Lokshin and Umapathi, 2022[18]; Barca and Chirchir, 2019[23]). Complaint processes should account for this with public agencies ensuring that marginalised and excluded populations are supported in making any application for a review of a decision. Staff who engage with social security applicants need to be able to explain how a decision was reached and provide information about how that decision can be reviewed. This requires staff to be adequately trained and for there to be sufficient complaint processes to be place. Furthermore, public agencies should consider developing algorithms in-house using internal experts and/or understand and be able to explain algorithms developed by external partners (OECD, 2019[34]).

It may also be necessary for lawyers, judges or other arbitrators to receive training on the functioning and fallibility of algorithms (Citron, 2007[67]; Gilman, 2020[68]). This will help those individuals who have been exposed to negative outcomes from issues such as data breaches, unjustified automated decisions, or other negative outcomes to question decision-makers' actions and take legal action if necessary.

5.3. Embracing the challenges – a way forward

Governments have put considerable effort into measures such as legal, regulatory and accountability frameworks, data governance and management, and strategies and policies to promote the respectful use of people's personal information and to protect their privacy. International organisations are supporting government efforts, for example by developing legal instruments such as the forementioned OECD Recommendation on Digital Government Strategies and Recommendation on Health Data Governance and international sharing of good practices such as the ISSA's Webinar Series on AI. The European Law Institute has designed a set of Model Rules on Impact Assessment of Algorithmic Decision-Making Systems to supplement European legislation on AI in the specific context of public administration (European Law Institute, 2022[69]).

These measures are well covered in the literature, and they are continually being improved. This section explores approaches governments are taking to balance optimising the benefits of rapid developments in technology and data to improve public services with the challenges of doing so that go further than specific legal and technical solutions. Approaches or strategies that improve governments' overall interactions with people and communities, enhance public trust and confidence and modernise government operations that countries can learn from as they undertake their own digital transformations.

5.3.1. Service offerings through multiple channels.

A key solution to addressing the challenge of reinforcing or creating new sources of exclusion and disadvantage through increased use of digitalised solutions is to provide alternative service delivery channels, combining digital offers with call centre and in-person options. Multiple service channels are particularly important for people with high and complex needs for whom online services are often not appropriate, people living in remote locations and/or people who are unable to or choose not to access digital solutions (Box 5.10). Furthermore, those outside regular customer groupings are far less likely to access online services (ISSA and United Nations University, 2022[70]).

Many governments offer human touchpoints alongside digital options. For instance, when a city in Sweden implemented automated decision-making in unemployment assistance, caseworkers remained in close contact with benefit applicants. While decision-making was automated, based on certain rules,

caseworkers helped applicants with their applications, including explaining the process and helping to file appeals if needed (Ranerup and Henriksen, 2020[16]).

A 2022 ISSA and UNU-EGOV survey of social security organisations showed that most who participated in the survey utilise a mixed set of service delivery channels. Of the responding institutions, 91% have websites and offer online services, while 86% utilise paper forms and physical service centres. This is also reflected in 64% of institutions still accepting letters and application forms via post. Surprisingly, only 58% of institutions have call centres, the use of which has proven highly effective and efficient as a service channel both before and during the pandemic. Almost half of the institutions, or 48%, use various forms of SMS/text messaging in their communication with customers. A small number of institutions (46%) have solutions based on mobile applications (or "apps") which often incorporate notifications.

Least common, at 17%, are stand-alone kiosks, but this is likely to be due to other technology-based solutions being less costly and more flexible. In short, online service offers exist but the customers' utilisation of these electronic services (e-services) is still mixed, and for various reasons are still limited amongst institutions that deliver and manage social security services globally (ISSA and United Nations University, 2022[70]).

Importantly, the survey results showed that in-person services can play an important role in helping people who wish to, to transition to digital services. For instance, floor walkers at physical service centres have long been applied by both the public and private sector. Through observations, floor walkers help identify individuals who are using digital devices and thus have the potential digital skills, advise them on online service offers or assist customers on standalone kiosks or computers.

One of the recommendations resulting from the ISSA and UNU-EGOV survey was to promote digital inclusion, gender inclusion and digital empowerment through dedicated initiatives including training both service providers and call centre staff to act as floor walkers and promoters of digital service offers and digital skills development initiatives. Other initiatives include actively monitoring customers and proactively informing them of self-service terminals; make digital skills training available; develop short instruction videos and clickable demos of key services with targeted messages to marginalised custom groups; and, provide material directly or through partnerships with libraries and community centres or stakeholders representing the customers group in questions (ISSA and United Nations University, 2022[70]).

Box 5.10. Ensuring access for everyone through multi-channel service offerings

Canada: Using human support staff to ease possible concerns among benefit applicants

When Service Nova Scotia took over the administration of the Property Tax Rebate for Seniors programme (PTRS) in 2018 they realised that all those who receive PTRS also met the requirements for the Heating Assistance Rebate Program (HARP).

Due to information and privacy protocols, the department was unable to automatically provide the HARP rebate to PTRS recipients. Instead, an opt-in feature was developed to confirm applicant consent.

To abate possible concerns about checking the opt-in feature for HARP, the programme developed a holistic plan for engagement with easily digestible information and human assistants. The programme worked with communications staff to ensure that the application form had concise and easy-to-read messages about opting in for HARP. The customer support staff at the department were also provided with messaging about how the opt-in feature works.

Indiana, the United States: Misguided automation can inadvertently lead to declining enrolment rates

The state of Indiana wanted to lower the administrative costs and increase convenience for clients and operators. Therefore, they contracted IBM in 2006 to automate caseworker assistance for the state's

welfare services. The roll-out of the new system started in 2007. However, it was terminated two years later due to performance issues.

An evaluation found that the automated system created additional burdens related to the application and recertification, leading to sharp declines in key benefit enrolment rates. Key reasons behind enrolment declines were found to be a lack of personalised human assistance from caseworkers, overburdened call centres resulting in significant delays and technical issues, as well as a lower tolerance for application and recertifications errors.

United Kingdom: Offering in-person support to those who cannot claim online

Most recipients of the United Kingdom's Universal Credit access the application process online, but there are cases where the online process is not sufficient. The Department for Work and Pensions (DWP) has found that 98% of households who make a claim for Universal Credit do so online. However, there is a small number of people with complex needs or without access to the internet who are not able to use the online process. In response the DWP provides a range of support to make the service more accessible.

Help to Claim support is delivered independently by Citizens Advice, in partnership with Citizens Advice Scotland, with support provided through telephone and digital channels. Those individuals who are unable to access support via these channels can go to their local jobcentre, local libraries, or local advice centres where they can use computers with internet access free of charge. Jobcentres remain open to provide access to services for claimants who need face-to-face support. There is also a telephone number displayed outside each Jobcentre with details of how to contact DWP. In addition, DWP has contracted Interpreter and Translation Services which can be arranged for claimants where English is not their first language, or who are deaf, hard of hearing or speech impaired.

Source: (OECD, 2023[1]; Wu and Meyer, 2023[71]).

5.3.2. Involving service users in solution design

Taking a user-centric approach to communication, channel and service design can help to address the barriers to accessing and using digital services. An increasingly popular way of ensuring positive user experiences is to adopt user-centred design methods when developing and implementing digital solutions (OECD, 2009[72]; OECD, 2022[8]). Service user involvement can range from providing feedback on existing initiatives to co-design and co-creation of new ones. It can also involve piloting, testing, and scaling services with continuous feedback and improvement mechanisms (ISSA, 2023[73]). It has been shown that user-centred approaches can help to ensure services meet the needs of a wider range of users (World Bank, 2022[74]). Indeed, government agencies and social security institutions globally have started making this transition. It is estimated that 60% of government agencies worldwide have integrated user-centred design methodologies by 2023 (Gartner, 2022[75]).

By way of example, Ireland is moving to systematic involvement of service users in the creation of digital and other solutions to help combat non-take-up of benefits and services. They start with customer research questions such as: What is the customer understanding and experience of a current service? Is use of terminology challenging? How does the flow and functionality of the service work for them? They also ask business research questions: What are the common issues customers contact us about? What would improve the process? Are there untapped opportunities? Prototype solutions are tested with customers. This approach is leading to balancing customer and business requirements, meeting accessibility objectives, easier to use services, greater take up of online services, and enabling space to support customers that are unable to access online services (ISSA, 2023[76]).

Employment and Social Development Canada has developed and implemented an innovative Service Transformation Plan (STP) designed to employ a client-centric outside-in approach, with clients at the centre of everything. Included in the STP is the Client Centric Policy Playbook which recognises that clients deserve programmes and services that provide the best experience for them, when and where they need it. The Playbook strengthens the ability to engage clients in the design of programme and service policies. Through extensive engagement with policy experts and employees on-the-ground, the Playbook has brought together innovative best practices, tools and resources for engaging clients. This solution enhances client experience by giving clients an opportunity to be part of the policy generation process and by ensuring that programmes and services are reflective of their needs (OPSI, 2019[77]).

New technologies can also help facilitate feedback on existing services and customer experience. A review by the World Bank found that new technology can facilitate service user feedback as a technical contribution to the design of policy and service provision. In a best-case scenario, such technological solutions to feedback mechanisms would also support the inclusion of communities who have traditionally been excluded or marginalised in the social dialogue (World Bank, 2016[78]). Many countries have adopted client experience measurement surveys to gather and analyse client feedback to improve service delivery. Such surveys can provide accurate and reliable data on drivers of customer satisfaction, where service improvements can be made, and information on client groups facing barriers that can lead to more in-depth investigation.

5.3.3. Achieving incremental improvements through agile working methods

New working methods, which will also require new capacities and skill mixes, are necessary if government organisations are going to meet people's changing needs. The risk of technology solutions failing can be mitigated through more agile ways of working, for example, re-use of existing assets, later re-use of products developed, developing solutions within existing enterprise architecture, and testing and prototyping solutions throughout the development process. While it may not be the way governments have worked historically, agile methodologies that employ a people and results-focused approach to technology development can be flexible and fast and deliver continuous improvements at potentially lower costs and avoid larger and more expensive problems later.

It is important to start with a comprehensive assessment of the current state and future needs, before focusing on developing simple and well-designed systems that address those needs, testing as you go. More advanced features can be added later, supported by continuous evaluation and ongoing improvements (Box 5.11) (Barca and Chirchir, 2019[23]). Sufficient funding is critical; the resources required to pilot and scale and for ongoing maintenance need to be identified and realistically costed.

Continuous testing can contribute to the initiatives with the most potential being selected, increasing the chances of successful implementation. In France for instance, the National Family Allowances Fund's digital inclusion programme invests in two special test sites that experiment with and evaluate digital inclusion programmes, based on a structured evaluation protocol. Only the most promising initiatives are presented to a steering committee for approval and finally integrated into a core curriculum (ISSA, 2022[52]).

Furthermore, as data volumes grow, machine models need to be continuously trained and evaluated for robust performance. This implies having in place a strong performance framework to evaluate model performance using a consistent set of metrics. Metrics typically include accuracy (the proportion of the total number of predictions that were correct), precision (the proportion out of all positive predictions was correct) and recall (the proportion of correct positive predictions out of all positives a model could have made).

Services Australia, the agency responsible for delivering social services and means-tested social security payments in Australia has leveraged data analytics to reliably assess claims through Straight Through Processing (STP). With the onset of COVID-19 Services Australia extended its automated decision-making

capabilities to expedite payments to the unprecedented volume of claimants for the Jobseeker programme. The aim was to provide payments to people in need as fast as possible and to assure the government that automated payments, while socially responsible and administratively efficient.

While Services Australia had implemented STP for other categories of payments in the past, the crucial difference was the scale and speed at which it was implemented for Jobseeker claims. It was therefore important to measure and demonstrate the administrative efficiency of automating the claims process while providing assurance on the integrity of the payment outcome. While there was an existing business framework to guide the development of automation products, the data-driven assurance process which conducts checks on a statistically valid sample of automated payment decisions was key to demonstrating reliability and accuracy. A payment accuracy benchmark of >95% for automated payment decisions and data-driven analysis were used to measure achievements against this target. An accuracy target of 99% has been achieved (ISSA, 2022[15]).

Box 5.11. Iterative development of an integrated one-stop shop in Spain

The General Treasury of Social Security (TGSS) in Spain used agile working methods with iterative development cycles to implement a new portal called Importass. The portal offers a digital one-stop shop for administrative and tax-related tasks such as managing employment, freelancing, or the hiring of labour for domestic tasks. It is accessible via mobile devices, on the web, the Electronic Office and the Social Security app.

The development of Importass was inspired by agile work methods, using self-organised and cross-functional teams that worked with iterative versions. Evaluations were conducted throughout the development process, using quantitative analysis, service design, user experience research, and process analysis. The teams adopted a user-centred approach, analysing user profiles, conducting focus group discussions, and employee and citizen interviews. Based on this, processes were re-engineered continuously.

The new portal has become widely used since its introduction, with:

- 2.6 million users, of which 73% are new users
- On average taking six minutes to register
- Two million working life report applications received
- 54.7% of users accessing the portal from their mobile phone.

Source: (ISSA, 2023[73]; Ministry of Social Security, 2023[82]).

The rapid transition to fully digital services during the COVID-19 pandemic highlighted the challenges of scaling at speed solutions that have not necessarily been sufficiently tested. In a 2020 international survey, following the outbreak of the pandemic,[2] while around half of respondents reported that online services met all or most of their needs, 7 in 10 reported experiencing problems during their most recent digital interaction with government (Mailes, Carrasco and Arcuri, 2021[10]). Respondents cited length of time required, the inability to use fully online services, and difficulties switching between channels as common sources of frustration (Mailes, Carrasco and Arcuri, 2021[10]).

COVID-19 has accelerated the pace of technological change as well as cement existing divides. Measures are being put into place to ensure there is equal access to, and use of digital infrastructure and tools. By way of example, social distancing has transformed the way we connect and innovate at work. To help employers, recruiters and educators ensure that Europeans are equipped with digital skills in the post-pandemic context, the European Commission launched (European Commission, 2020[79]) new digital competence guidelines (Centeno, 2020[80]) that include practical steps, key actions, tips and online

resources for digital users. These help people make best use of their digital competences from the perspective of the "employability path" – from education to sustainable employment, and entrepreneurship (European Commission, 2020[81]).

5.3.4. Encouraging an innovative technology and data culture through leadership and champions

Informed and supportive leaders and champions can help to drive reform agendas and to promote an innovation culture (OECD, 2014[6]). Given the many challenges and costs involved in undertaking digital and/or data-driven projects, it is necessary that both leaders and staff understand the challenges as well as the potential benefits. Employment and Social Development Canada for example trained a network of change ambassadors and deployed them throughout the country. The ambassadors are employees who can explain the process of change, agile ways of working and service transformation objectives to their colleagues. They are also responsible for presenting ideas to working groups and for providing employee feedback (ISSA, 2023[73]).

Individual people and positions at various levels can play important leadership roles. First 5 South Carolina, discussed in more detail in Chapter 5 is an initiative that connects families with young children in South Carolina with public services. Having a dedicated project manager, as well as a variety of champions, has enabled challenges such as ensuring adequate time is allocated from all partners to address project needs has enabled the initiative to move forward at several points to avoid delays and to ensure the correct information is being collected. The Estonian Proactive Service Provision for Disabled People project (Box 5.12) exhibits the importance of the use of novel service design methods, openness towards change and having a strong project manager.

Some countries are strengthening data and technology leadership capability through enabling innovative and cross-cutting data governance and policy approaches often led by data champions and/or data officers, positioned at senior levels. Estonia's data governance journey for example has gone through three distinct stages. In the early 2000s, the focus was on developing systems and digitizing paper-based documents. Up to the mid-2010s, data were managed primarily for service delivery, however in the late 2010s a paradigm shift occurred as the understanding of data's inherent value grew, leading to managing data as a valuable asset.

According to the Estonian Government's Chief Data Officer, Ott Velsberg, the next phase of the journey involves leveraging AI-powered data within both the government and private sector to transform various domains such as education, research and development, and the legal system. Effective data governance is possible if approached strategically. It requires several pieces that make up the whole – management involvement and support, a clear understanding of the benefits and goals, competent people with the right tools and guidelines, and continuous monitoring and reiteration for improvement (Ott Velsberg et al., 2023[83]).

Box 5.12. Leadership in government as a success factor in Estonia

The "Proactive service provision for disabled people" project was implemented by the Social Insurance Board in 2020. The aim of the project is to automate the disability application process to simplify the current system for users and reduce personnel resource costs for the Social Insurance Board (e.g. the application review process is very time-consuming for the physicians involved).

Certain key factors have contributed to the success of the project. Firstly, the role of the government Office, who has been leading the innovation programme enables different government actors to experiment with a novel service design framework. This has enabled actors a framework within which they can approach the collaboration process, which was very smooth considering the various challenges (e.g. limited resources and time, incompatibilities with the legal framework, etc.) participants faced. Individual actors were motivated to contribute additional resources to ensure a positive result from the collaborative arrangement. Another key success factor was the role of the project manager. She was not a member of the Social Insurance Board which meant she was uninhibited by established organisational legacies. As a result, she brought a collaborative mindset to the project, which proved crucial in bringing about change, as she held an alternative perspective, which allowed for the rethinking of established work routines.

Source: (ISSA, 2023[4]; Nõmmik and Lember, 2021[84]).

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Notes

[1] The OECD Council Recommendation concerning Guidelines covering the Protection of Privacy and Transborder Flows of Personal Data recognises this tension, noting that “more extensive and innovative uses of personal data bring greater economic and social benefits, but also increase privacy risks” (OECD, 2013[35]).

[2] The survey cited refers to BCG 2020 Digital Government Citizen Survey, a survey of 24 500 citizens across 36 countries: Argentina, Australia, Austria, Bangladesh, Canada, Chile, China, Denmark, Estonia, France, Germany, Hong Kong, India, Indonesia, Japan, Kazakhstan, Kenya, Malaysia, Morocco, the Netherlands, New Zealand, Nigeria, Norway, Poland, Qatar, Russian Federation, Saudi Arabia, Singapore, South Africa, South Korea, Sweden, Switzerland, United Arab Emirates, United Kingdom, Ukraine, and United States (Mailes, Carrasco and Arcuri, 2021[10]).

Modernising Access to Social Protection

STRATEGIES, TECHNOLOGIES AND DATA ADVANCES IN OECD COUNTRIES

Despite having advanced social protection systems, OECD countries still face challenges in identifying, enrolling, and providing benefits and services to all those in need. Even when programmes are well-designed and adequately funded, cumbersome enrolment processes and challenges in service and benefit delivery can be an obstacle to the full take-up of social programmes. Advances in digital technologies and data can go a long way towards making social protection more accessible and effective. This report presents a stocktaking of OECD governments' strategies to identify individuals and groups in need, collect and link (potential) beneficiary data across administrative and survey sources, and apply data analytics and new technologies to improve programme enrolment and the benefit/service delivery experience – all with the objective of reaching people in need of support in OECD countries.

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