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Utilising Digital Public Infrastructures for Social Protection in G20 Countries

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Digital
Transformation

Abstract

According to the World Bank, an estimated 20% of the population in low-income countries still lack access to social protection due to limited interoperability between digital systems, hence vulnerable to economic shocks. The World Bank also estimates that 36% of the poorest people escaped poverty because of social protection.

In recent years, G20 declarations have committed to social protection for all workers, and this can be done by improving access to the existing social protection benefits. Meanwhile, New Delhi's Declaration of G20 countries recognised the use of DPLs for advancing financial inclusion for individuals and vulnerable groups in G20 countries. This was reaffirmed in G20 Brasil's Declaration that acknowledged the contribution of Digital Public Infrastructures (DPIs) to an equitable digital transformation.

DPIs can be defined as shared digital systems that are secure, and interoperable, built on open standards with robust governance frameworks to deliver equitable services at a societal scale (OECD, 2024). Some examples of DPIs include interoperable fast payment networks (such as PayNow in Singapore), and Digital Identity Systems (such as Aadhar in India).

The brief endeavours to provide policy recommendations based on the recent efforts of extending social protection benefits as DPIs utilised by some countries. A few examples include the Ejo Heza programme in Rwanda, Kartu Prakerja Programme in Indonesia, and Integrated Social Assistance Information System (ISAIS) in Turkiye. These initiatives achieved an efficient expansion of social protection coverage through identity verification of beneficiaries, secure data sharing across relevant departments, and providing easy access to the beneficiaries. Ejo Heza, for example, is built on a digital platform that is interoperable with government national IDs and social protection databases.

The policy brief will present recommendations for utilising DPIs to provide social protection benefits at scale keeping in mind different contexts of G20 countries for efficiency and transparency by minimising instances of corruption, and reducing fragmentation and delays in service delivery. A DPI-based social protection system can simplify the portability of social protection benefits, provide an integrated governance approach, and cost-effectiveness.

The objective of the policy brief is to contribute to the Task Force on Digital Transformation by providing evidence-based recommendations for G20 in building an ecosystem for developing DPIs to foster equitable digital transformation.

Keywords: Digital Public Infrastructure (DPIs), Social Protection, Digital Transformation, Inclusive Development

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Diagnosis

Efficient and universal social protection systems are crucial for achieving the Sustainable Development Goals (SDGs) SDG 1.3 calls for social protection systems for all to protect individuals from economic shocks and combat poverty¹. G20 declarations prioritise inclusive and sustainable development with universal social protection.²

Access to social protection remains constrained, with significant variations across G20 countries. The levels of social protection coverage is lower in the emerging economies within G20 countries (see Figure 1). Digital Public Infrastructures (DPIs) can help in increasing the social protection coverage significantly to meet the G20's priority through universal social protection. DPI refers to digital systems that are secure, interoperable, and constructed on open standards, supported by strong governance frameworks to provide equitable services at a societal scale (OECD, 2024). Examples include interoperable fast payment networks such as PayNow in Singapore, the Unified Payments Interface (UPI) in India, and Pix in Brazil.

¹ According to the World Bank, an estimated 36% of the poorest people escaped poverty because of social protection (World Bank, 2018)

² This can be noted in G20 Bali Leaders' Declaration, 2022, New Delhi Leaders' Declaration, 2023 and G20 Rio de Janeiro Leaders' Declaration

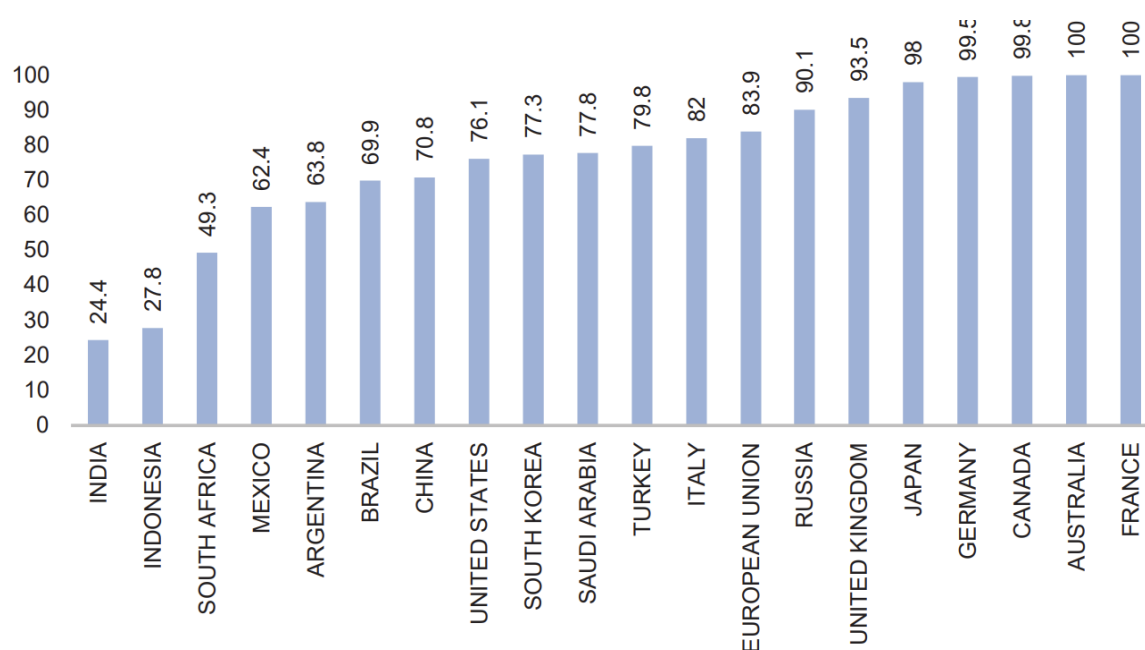


Figure 1: Effective Social Protection Coverage in G20 Countries (% of Population)³. (Source: ORF, 2023)

The absence of interoperability and digitalisation is a significant factor contributing to the constrained access to the social protection benefits. It is estimated that 20% of the population in low-income countries lacks access to social protection due to limited interoperability between digital systems (World Bank Group, 2018). Furthermore, DPIs can help governments to provide social assistance to the larger population during a crisis. World Bank (2022) showed that governments with pre-pandemic investment in DPIs were better able to implement social assistance programme during the COVID-19 pandemic⁴. G20 India's Declaration recognised the use of DPI to advance financial inclusion for

³ The figure lacks the information on the African Union which became a G20 member in 2023. According to ILO (2021), only 17.6% of population in Africa was covered by at least one social protection in 2020, lower than the global average of 46.9%

⁴ Countries that were able to use digital databases and trusted data sharing to identify beneficiaries reached on average 51% of their population, while countries that had to rely on collecting new information from beneficiaries reached on average only 16% of their population.

individuals and vulnerable groups. This was reaffirmed in G20 Brasil's Declaration the following year.

According to the UNDP, "Core DPI" refers to a foundational set of digital systems that enable essential functions for digital transformation and public service delivery. The components of core DPI are digital identity, digital payments, and data exchange platforms. These components are foundational to DPIs and enable the function of interoperability. (UNDP, 2024). Digital identity provides a trusted, verifiable way to identify individuals or entities across systems, enabling secure access and authentication. Digital payments create interoperable financial rails that connect verified users and allow seamless money transfers across different platforms and sectors. Finally, the data exchange platforms securely connect different systems, allowing them to share and process information efficiently, so that identity, payments, and services work together smoothly, thereby enabling the function of interoperability.

Public services, such as social protection, benefit from DPI if those are designed and implemented with interoperability in mind (World Bank Group, 2025). DPI can improve convenience, inclusion, and empowerment by helping individuals access services and rights. DPIs can reduce transaction and disbursement costs, improve targeting, minimise leakages and ID fraud, build transparency and foster innovation. However, digitalisation can marginalise persons with limited digital access, skills, and literacy; mismanage personal data. An inadequately built system can over-centralise data, creating surveillance threats and diminish flexibility. Inadequate design might make DPI exclusionary (World Bank Group, 2023b; Artha Global, 2023).

Some G20 countries utilise DPIs to enhance social protection systems by expanding their social protection coverage, increasing efficiency and

transparency by reducing leakages, fragmentation and delays in service delivery. The literature lacks policy recommendations based on learnings from DPIs in G20 countries. This is where the policy brief is seeking to contribute. We studied the three DPIs or programmes utilising DPIs from G20 countries that meet the following criteria:

1. Public Sector or Government-Led⁵
2. Emphasises the integration of digital platforms into existing governance structures
3. From emerging economies

Initiatives to extend social protection by Rwanda, Indonesia and Türkiye

- **Ejo Heza**⁶ is Rwanda's digitally enabled pension programme for informal and low-income workers. By integrating digital identity, digital payments, and interoperable data systems, Ejo Heza ensures seamless pension contributions and withdrawals. Implemented in 2019, the scheme covered 27% of the working population in four years (World Bank, 2023a).
- Indonesia's **Kartu Prakerja Programme**⁷ is designed to enhance workforce skills and support job seekers through vocational training and financial assistance. The programme utilised DPIs for beneficiary selection, training provision, and conditional cash transfers (Supangkat, et.al. 2023). The programme also utilises DPI for interoperable training platforms, as a result, beneficiaries could access to all training programmes by various providers from a single window (United Nations, n.d).

⁵ Though private sector-led DPIs are less common, there are a few examples, especially for digital payments, such as m-Pesa in Kenya, and BankID in Sweden and Norway.

⁶Ejo Heza Platform: <https://ejoheza.rssb.rw/en>

⁷ Training platform by Kartu Prakerja Program: <https://www.prakerja.go.id/>

- Türkiye's **Integrated Social Assistance Information System (ISAIS)**⁸ digitised social assistance by consolidating information in a single portal, thereby improving eligibility assessments and reducing redundancy. Data, ID verification, and payments across numerous welfare schemes are integrated to efficiently offer social assistance (Digital Convergence Initiative, 2022).

Learnings and Recommendations

Learnings from the social protection initiatives

All aforementioned initiatives from Rwanda, Indonesia, and Türkiye, have common features namely, Digital Identity, Digital Payments and Data Exchange Systems (Core DPI). These elements enable the interoperability capabilities of DPI. Our learnings are as follows:

- 1. Utilising Digital IDs for eligibility verification of beneficiaries:** Interoperability with national databases in ISAIS reduces documentation requirements from 17 to 1 (Turkish Ministry of Family and Social Policies & World Bank, 2017). Ejo Heza, reduces the risk of financial frauds, and contributes to efficient fund management⁹ (World Bank, 2023a).
- 2. Utilisation of Digital Payments:** In Ejo Heza, digital payments helped beneficiaries to contribute conveniently through USSD codes, and Mobile Money Services (GoR, 2023). In ISAIS, and Kartu Parkerja, the digital payments

⁸ ISAIS Platform: <https://www.turkiye.gov.tr/aile-ve-sosyal-hizmetler-sosyal-yarim-basvuru-hizmeti>

⁹ Ejo Heza utilises digital payment systems, such as mobile money and bank transfers that are linked to national IDs. This setup minimizes cash handling. Thus, reduces opportunities for fraud or leakage. Proportion of actively contributing beneficiaries increased from 39% in 2019 to 76.1% in 2021. A centralised fund management system through a platform provides real-time data on subscriber, intermediary behavior and compliance. Thus, enabling efficient monitoring of outcomes

helped in direct cash transfers (G2P payments) to the beneficiary ensuring efficiency and transparency.

- 3. Utilisation of interoperability and data exchange:** Kartu Parkerja connected multiple e-learning providers (e.g., Ruangguru, Skill Academy) through a unified platform, allowing beneficiaries to get consolidated information. ISAIS consolidated information from 28 institutions and offered 120 web-based services via a single portal (Turkish Ministry of Family and Social Policies, 2021).
- 4. The impact generated at large-scale:** Access, effectiveness, efficiency, and transparency of social protection is enhanced. 87% of the beneficiaries of Ejo Heza were informal workers in 2022. Number of active contributions increased from 39% in 2019 (before implementation) to 70.6% in 2020, and 76.1% in 2021 (World Bank Group, 2023a). Kartu Prakerja reached 14.3 million people, with a high representation of the marginal groups: low-educated (17%), low-income (73%), unemployed (58%). ISAIS achieved operational efficiency by reducing duplication in social assistance by 10%, using 2.3 million fewer documents each month, and reducing processing time by 20% (Turkish Ministry of Family and Social Policies & World Bank, 2017).

Policy Recommendations for G20 Countries

The G20 can play a crucial role in shaping the use of DPI for social protection, ensuring that digitalisation enhances inclusivity, efficiency, and security while mitigating associated risks. The G20 should consider:

- 1. Establishing governance framework and policies for wider adoption of DPIs:** A common governance framework for ethical and inclusive DPI, ensuring interoperability, accessibility and privacy safeguards across member states should be designed. The governance framework could help member states create inclusive, transparent, and resilient digital welfare systems. DPIs face certain risks, such as data breaches, identity theft, discrimination, and

beneficiary exclusion (Access Now, 2024). Thus, G20 countries should be encouraged to develop risk-based governance mechanisms with suitable regulatory oversight (GPFI, 2023). These mechanisms require collaboration between the government (regulatory oversight), private sector (agility and technology), and end-users (Aapti Institute, 2024). Some examples are-purpose specification of personal data collection, and data minimisation principle as used for ONDC in India (ONDC, 2022), and the enforcement of disclosure obligations when data is compromised, Pix in Brazil is a good example (World Bank Group, 2022a).

2. Publish strategy and action plan document for DPIs: G20 should publish a strategy and action plan document to define short/medium/long-term objectives for developing DPI. It will allow civil society and researchers to identify gaps and make evidence-based recommendations for change (Aapti Institute, 2024). In the strategy and action plan document, G20 should consider the following:

- Promote best practices for digital literacy tailored to social protection systems and invest in enhancing digital skills especially for vulnerable populations. Member states should be encouraged to pilot and test DPIs on vulnerable populations to ensure inclusivity. For example, Indonesia tested a mock digital ID app with low-literate women and disabled people. This made the interface and functionalities more user-friendly and accessible to marginalised groups (World Bank Group, 2025).
- Support the establishment of mutually recognised digital ID frameworks in member states that balance accessibility with security, ensuring universal and portable access to social services. However, this might cause the risks of data breaches and exclusion of undocumented populations. Therefore, minimum security benchmarks for DPI in social protection to safeguard against cyberattacks and misuse of personal data should be identified. Member states can build secure ID systems that safeguard citizen data

while ensuring service delivery according to these benchmarks. For example, the Estonian X-Road® ecosystem follows the 'minimal data' approach by collecting only necessary data, sharing data only once, and sharing relevant data with other systems for service delivery (Aapti Institute, 2024).

- 3. A common G20 fund for promoting international collaboration and co-designing DPIs:** As suggested by the Task Force on Digital Transformation by Think20 Brasil, G20 can establish a G20 fund for participatory governance and co-designing such infrastructures could be established to enhance knowledge transfer and technical support among the member countries. This can also strengthen cooperation between the Global North and the Global South for effective data governance (Think20 Brasil, 2024).
- 4. Monitoring and evaluating DPI Implementation in Social Protection:** While G20 has established a global DPI repository during India's presidency, there is potential to empower it with more resources such as impact generated by each of the DPIs, best practices, risk-based regulation and governance frameworks.¹⁰ Furthermore, a DPI observatory could help in conducting impact assessments and external evaluation to strengthen DPI governance.

¹⁰ Global DPI Repository (G20 India): <https://www.dpi.global/home/aboutus>

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