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Synthesis Report 1

Digitalisation of State Services in Bangladesh

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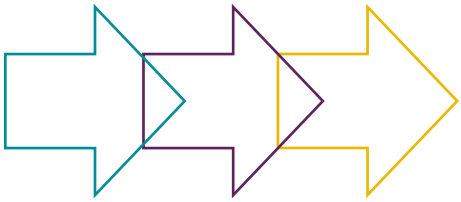
March 2024



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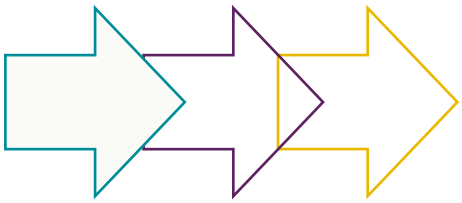

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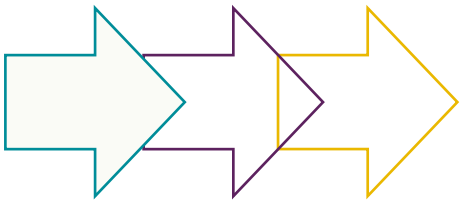

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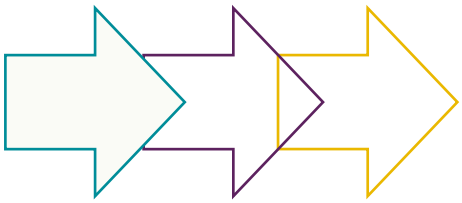
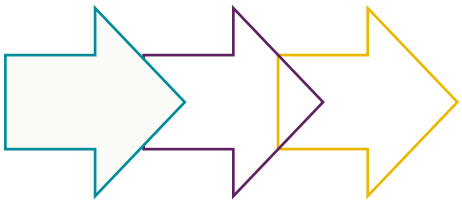


1. Introduction

The Covid-19 crisis catalysed rapid digital transformations across governance and public service institutions in Bangladesh as the nation grappled with sustaining critical functions amidst mobility constraints. Digitalisation of public services attempted to enable the continuity of services like healthcare, education, and social protection to vulnerable citizens. However, rushed digital technology integrations brought their own complex challenges around equitably reaching marginalised communities, upholding rights in digital spaces, and enhancing government accountability mechanisms. As Bangladesh charts its roadmap for the future, drawing crucial lessons from pandemic response innovations, it is essential to reflect on how to optimise the promise of technology interventions, while addressing ethical gaps that generate exclusion. This Synthesis Report aims to examine digital innovations across essential services spurred by the public health crisis. It discusses major accountability and access outcomes, particularly for marginalised groups across different capacities, identities, and geographic regions. The report highlights constructive pathways that help illustrate on the ground realities and people at the heart of systems level digitalisation – framing technology as an enabler of realising better futures together, rather than an automatically efficiency-enhancing tool alone.

To set the context of digitalisation in Bangladesh, the paper begins with an overview of Bangladesh's digital landscape, considering its digital strategy and regulatory environment. Subsequently, the opportunities and forms of digitalisation are presented across the following focus areas in the CLEAR programme: education, health, violence against women, social protection, and accountability and transparency. The challenges experienced through digital inequality and differentials are explored, identifying experiences and evidence across sectors in relation to differential access, differential capacity, and structural inequalities. The paper concludes with a section that challenges or confirms the current global debate related to the themes discussed in the paper and sets a knowledge agenda for Bangladesh on the digitalisation of public services.

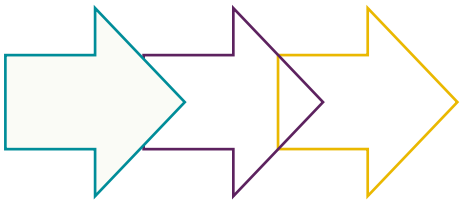


2. Digital Landscape of Bangladesh

In providing a context on digitalisation in Bangladesh, the key digital strategies and interventions implemented by the government offer a broad landscape overview. The overview presents Vision 2021 and Vision 2041 that established policies to support Bangladesh's digital agenda, and the digital regulatory environment that framed how the agenda unfolded. A key flagship initiative aimed at enabling local access are the Union Digital Centres (UDCs), which are a key element of the digital agenda at local level.

2.1. From Vision 2021 to Vision 2041

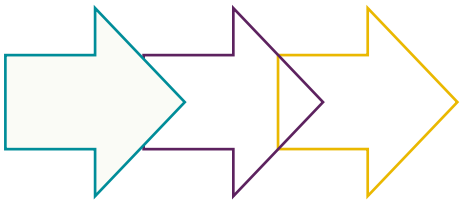
The government-led digital transformation agenda began well before the Covid-19 pandemic in Bangladesh – the pandemic itself simply accelerated digitalisation of public services globally. Originally, policies aimed at supporting digitalisation fell under 'Digital Bangladesh' as part of Vision 2021 proposed in 2008, which focused on improving public services using Information and Communication Technologies (ICTs) to promote transparency and accountability, improving social justice, developing skilled manpower, and promoting ICT in business (Prime Minister's Office 2009). Initiatives involved public investment in teaching ICT skills, subsidising device access, establishing UDCs, and promoting private sector innovation (Hossain *et al.* 2021). Building on the claimed success of Digital Bangladesh, 'SMART Bangladesh' was introduced as part of Vision 2041 that was announced in 2021. It is premised on driving innovation through emerging technology, aimed at four initiatives: Smart Citizens and Smart Government, Smart Economy and Smart Society, Smart Agriculture, and Smart Health (Pal and Sarker 2023). Aspire to Innovate (a2i), a flagship programme of the digital agenda (previously known as Access to Information supported by the UNDP), plays a central role in facilitating the implementation of digital transformation in Bangladesh, and realising the objectives of Smart Bangladesh. With a focus on facilitating citizen-centric digitalisation, a2i is premised around the following idea: 'that creating shared prosperity isn't possible unless administrative, financial, and political power is decentralised at the grassroots level. That is, unless all citizens are truly empowered' (a2i 2024a). Given the success, and learnings from its programmes, a2i is set to formerly establish itself as Bangladesh's national innovation agency. Across all sectors or areas studied within the CLEAR programme, a2i has facilitated or played a significant role in the digitalisation of public services.



There have been mixed perspectives on the progress and impact of digitalisation in Bangladesh – considering challenging issues related to digital inequality (Aziz 2021; Islam and Inan 2021). Bangladesh ranks 91st out of 134 countries on the World Economic Forum's (WEF) Networked Readiness index, an index that measures a country's potential to take advantage of opportunities offered by digital technologies (WEF 2023). The index includes four pillars: Technology, People, Governance, and Impact. Bangladesh ranked passably in the 'Technology' (78th) pillar due to good scores in indicators related to ICT coverage and digital content. It ranked poorly (90th) in the 'People' pillar due to low levels of ICT usage, skills, and literacy amongst people and businesses. It also scored low on the Governance (100th) and Impact pillar (101st).

2.2. The Digital Regulatory Environment

Several policies, regulations or strategies have been implemented, or are still in progress of being drafted to support Bangladesh's digital strategy. These include the Right to Information Act, National ICT Policy, Post-Covid-19 ICT Roadmap for Bangladesh, AI Strategy, Blockchain Strategy, Digital Security Act, Data Protection Act 2022 (Draft), ICT Master Plan for Smart Bangladesh 2041 (Draft), Strategy to Promote Microprocessor Design Capacity in Bangladesh, Cloud Computing Strategy (Draft), National Digital Commerce Policy, and the Start-up Act (Bangladesh Government 2022). The CLEAR reports continuously pointed to the Right to Information Act and Digital Security Act (DSA), which appear to have had an impact on realising the proposed benefits of digitalisation of public services and transparency. The Right to Information Act is aimed at promoting transparency and accountability, establishing the right of citizens to access information from documents, and facts and decisions from public, autonomous and statutory organisations, including private organisations funded by government or foreign organisations (Chowdhury and Hossain 2022; Paul 2009). Even though the Act was initiated in 2009, access to information still remains a challenge. The DSA, that was passed in 2018 (recently replaced by the Cyber Security Act in 2023), countered the intended purpose of the Right to Information Act, by restricting information flow and dissemination. The DSA was aimed at addressing cybercrimes, ensuring national digital security, and regulating the digital space. However, the Act had been criticised by journalists, human rights groups and activists for containing provisions that suppressed freedom of speech and access to information, hence enabling digital surveillance and media censorship mechanisms (Ahmed *et al.* 2023; Aziz 2021; Chowdhury and Hossain 2022; Sultan *et al.* 2022). Due to international and local criticism of the DSA, the government of Bangladesh recently replaced the DSA with the Cyber Security Act in 2023 (Mahmud 2023). However, a



review of the new Act by Amnesty international indicates that it still substantially retains the restrictive provisions of the DSA on the right to freedom of expression, with changes limited to the level of sentencing due to offences (Amnesty International 2023).

Bangladesh scores relatively well on indices regarding cybersecurity. It ranked 53rd of 182 countries and 11th in the Asia Pacific on the ITU's Cybersecurity Index (ITU 2021). However, the lack of legislation on data protection or a data protection authority has held it back from scoring even higher. That may soon change, as Bangladesh recently drafted and passed a Data Protection Act in late 2023. To public knowledge, the law has yet to be enacted at the time of writing but will include 10 principles related to data collection, processing, holding and usage, as well as, legal requirements regarding consent and the right to data (for a fee), and the right to request modification of incorrect data about oneself, amongst other rights (OneTrust DataGuidance 2024). The bill will also establish a board to oversee data protection. As a result, Bangladesh's score on the cyber security index should improve further, during the next iteration of the index. However, the draft of the Act has also been criticised by Amnesty International (2022) for not adequately ensuring citizen privacy against state surveillance.

The ITU generations of regulation regulatory tracker measures progress towards the ICT policy and legislative change necessary to enable digital transformation. Countries are classified into five generations (see Figure 1) (ITU 2023a):

- **G1 Regulated Public monopolies**: categorised by a command and control approach.
- **G2 Opening markets**: partial liberalisation and privatisation.
- **G3 Enabling investment, innovation and access**: focus on content delivery, consumer protection, and stimulating competition in service,
- **G4 Integrated Regulation**: led by economic and social policy goals.
- **G5 Collaborative Regulation**: harmonised approach and inclusive dialogue across sectors.

Figure 1: Generations of Regulation

RATIONALE FOR GENERATIONS OF REGULATION

Source: ITU.

	1. Regulatory authority	2. Regulatory mandate	3. Regulatory regime	4. Competition framework
G1	• Consolidated with policy-maker and/or industry	• Business as usual	• Doing as we have always done	• State-owned monopoly
G2	• Separate agency	• First wave of regulatory reform	• Doing more	• Liberalization
G3	• Separate agency, autonomous in decision-making	• Advanced liberalization of ICT sector	• Doing the right things	• Partial competition
G4	• Separate agency with enforcement power	• Adjacent issues become core mandate	• Doing the things right	• Full competition
G5	• Separate agency as part of a network of partner regulators	• Active collaboration across the board	• Doing things together	• Intra-modal competition

Source: ITU 2023a

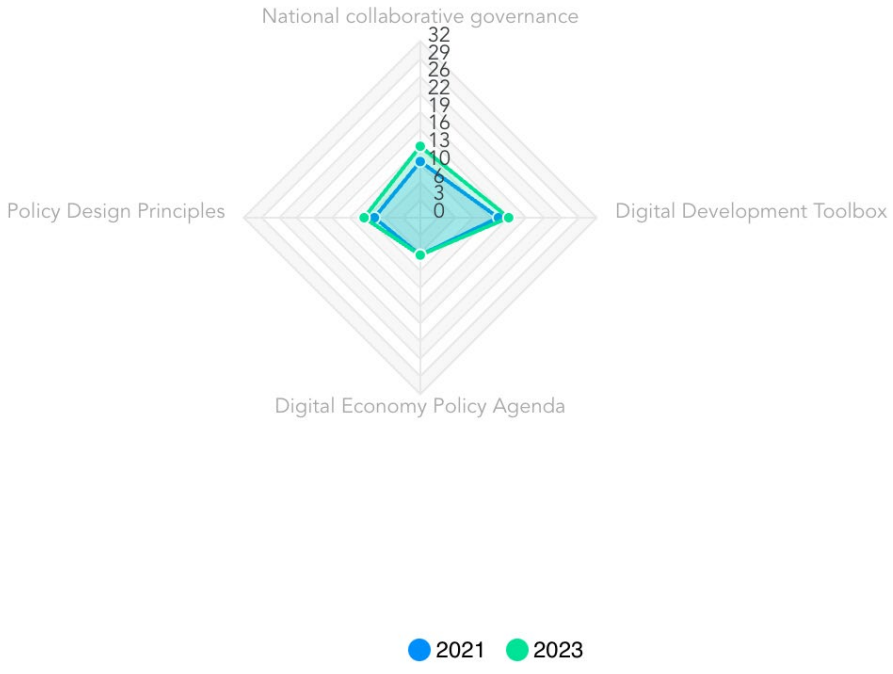
Bangladesh's regulatory environment was classified as G2 in the ITU's 2023 report, meaning it has a long way to go to putting in place the policies needed to be in the position to fully reap the benefits of digital transformation (ITU 2023b). However, Bangladesh has made great strides since 2007 (see Figure 2).

Complimentarily, every country receives a G5 benchmark score measuring how collaborative, agile and lean ICT regulation is in each country across five pillars: national collaborative governance, policy design principles, digital development toolbox (cybersecurity, data protection, cross-sector infrastructure sharing, emergency telecommunications), and digital economic policy agenda. Countries are classified as either Limited, Transitioning, Advanced, or Leading (from lowest to highest) based on their progress against these pillars. Bangladesh was classified as 'Transitioning' in 2023 against the benchmark (ITU 2023b).

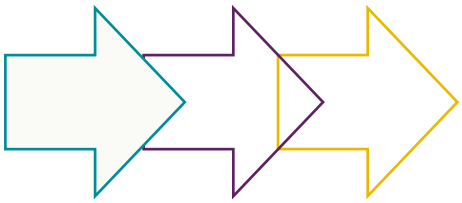
Figure 2: Bangladesh's scores on ITU's ICT Regulatory Tracker

Source: ITU 2023c

Figure 3: Bangladesh's across the pillars of the ITU's G5 Benchmark



Source: ITU 2023b



2.3. Union Digital Centres (UDCs)

Union Digital Centres are one of A2i's flagship initiatives. There are over 5,865 centres offering more than 150 essential government services as well as private services (a2i 2022). They are often presented as a way of ensuring digital inclusion for the less connected: 'Digital Centres ensure that the underserved such as rural women, people with disabilities and the elderly—regardless of the literacy and ICT literacy – can access vital information and services' (*ibid.*: 1). UDCs are available at the lowest geographic division of government (union councils), strategically placing them within 5km of all homes, even in the most remote parts of the country. This reduces the need for residents to travel to sub-district and district offices, which may be over 35km away.

A2i estimates that the digital centres have saved residents over 5 billion US dollars in costs, 4 million visits to access services far from home, and a total of 1 billion days in time (a2i 2022). The government plans to increase the number of digital centres to 20,000 by the end of 2024, and the number of services offered to 1,500. However, despite the digitally enabled vision of UDCs, they have been criticised for serving more as 'printing shops' with only very few of them working effectively to support public service access (Ahmed *et al.* 2023). This may be due to a wider digital government trend in which a majority of countries' online government portals are mainly used to provide information and partially digitalise services through providing access to necessary forms. In most countries, citizens still have to appear in person to complete transactions (United Nations 2022). This challenge is not unique to citizens seeking services through UDCs as many government services still require a combination of digital and manual work. Even though citizens are applying online, they often have to go physically to submit the form (Uzzaman 2023). Thus, until services are fully digitalised, citizens making use of UDCs may still have to take on significant travel and costs to complete services, given they are open. A survey found that UDCs were only open 77 per cent of the time during working hours (Shamrat and Hossain 2018). Despite these challenges, some UDCs were known to be successful and effective, where they established strong support from Upazila Nirbahi Officers (UNOs), who processed citizen forms that were printed at UDCs.

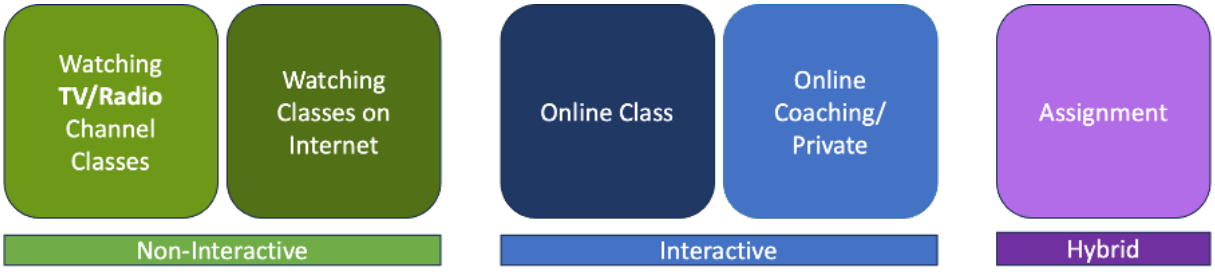
3. Opportunities and Forms of Digitalisation of Public Services

The structural drivers of digitalisation in the focus areas supported by the CLEAR programme, play out differently, but share similar opportunities and challenges – especially driven by Digital Bangladesh 2021 and Smart Bangladesh 2024. Focusing on aspects of digitalisation across the five areas in the CLEAR programme, this section describes motivations and forms of digitalisation in Education, Sexual and Reproductive Health and Rights, Violence Against Women, Social Protection, and Accountability and Transparency.

3.1. Education

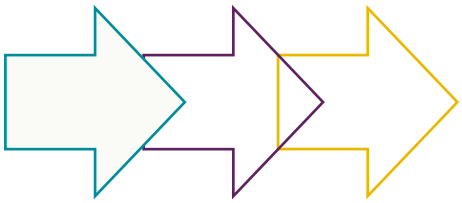
The Covid-19 pandemic impacted heavily on primary and secondary school pupils and parents, due to school closures and uncertain continuity in learning. Bangladesh implemented one of the longest-running pandemic school closures in the world, lasting over 18 months (Hossain and Wahedur Rahman 2022). As a result, the government implemented various learning interventions to support children. Hossain and Wahedur Rahman (2022) summarise these different approaches in Figure 4, which comprised of non-interactive, interactive, and hybrid interventions.

Figure 4: Different learning interventions during Covid-19



Source: Hossain and Wahedur Rahman 2022

Initially, remote education was predominantly non-interactive with no two-way communication between students and teachers. This was provided through local television channels, radio, and through social media, such as YouTube and Facebook. As school closures continued with no clear indication of when they would open, teachers resorted to providing online classes, with some offering online private tuition (Ahmed *et al.* 2023; Hossain and Wahedur Rahman 2022). With classes now delivered online, the authorities directed teachers to assign work digitally, grade assignments, and return them to students with feedback



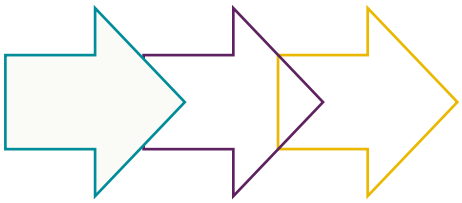
comments. This teaching approach of blending online and offline methods was defined as a hybrid model. The Covid-19 pandemic presented Bangladesh with a 'new normal', and as schools reopened, the government initiated a policy to continue with in-person and online learning – 'Blended Education' (Hossain and Wahedur Rahman 2022). This has been implemented to prepare students and teachers for any possible closure from possible future pandemics. Furthermore, it has been promoted as an initiative to develop technology skills and digital literacy for students and professionals to thrive in the digital economy. Government education programs at the primary and secondary level have therefore invested in digital facilities such as projectors, laptops, and internet connectivity in schools, as well as teacher training to facilitate blended learning and digital skills development.

3.2. Health

During the pandemic, government resorted to providing health services through digital platforms and telehealth. Key examples of telehealth programmes included (Chowdhury and Hossain 2022):

- **The National Hotline #333:** set up by the A2i, to provide citizens with convenient access to critical information and services. As the Covid-19 pandemic hit Bangladesh, Helpline 333 proved indispensable by swiftly extending advisories on health precautions, assessing infection risks, directing people to aid, and supporting the vulnerable population through a challenging time of difficulties and bureaucratic delays.
- **Shasthyo Batayon #16263:** operating a toll-free helpline that received over 14 million Covid-related calls by March 2022. Over 10 million people benefited from health advice, diagnosis and counselling via #16263 in 2020 alone, an exponential growth reflecting critical support during the Covid-19 crisis.
- **Bangladesh Child Helpline #1096:** provided support on methods for preventing coronavirus, where to access information and support, counselling, parental advice for supporting children during the lockdown, and coordinating with local authorities and emergency ambulance support.

Although these services were available and valuable, reports indicate that utilisation was limited, especially for vulnerable populations in Bangladesh – which needs to be further explored (Hrynick *et al.* 2022). Several digital health platforms were also implemented during the pandemic; however, a key successful intervention worthy of mention, is the Surokkha app, which proved successful despite digital inequalities experienced in Bangladesh. The Surokkha app was used as a Covid-19 vaccine registration application, with 86 per cent of people who had been vaccinated indicating they had registered through the Surrokka app (Chowdhury and Hossain 2022).

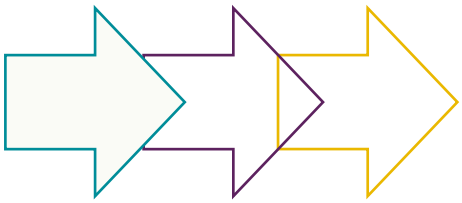


Intermediaries played a significant role in this, as Ahmed *et al.* (2023: 25) report that: '…of those who registered through the app, only 5 per cent managed it without help from others, 76 per cent successfully sought help from a local computer store to register, and 6 per cent were helped by the Union Digital Centers (UDCs)'. UDCs were also targeted as intermediary centres that citizens can use to access health information and services. The 'Tottho Apa' project trained and educated young women to directly reach and empower rural women with digital literacy programmes and health services at Upazila (sub-national) level UDCs (Ahmed *et al.* 2023). The aim was to enable low-income citizens countrywide to access online facilities otherwise inaccessible. Further usage analysis would need to be explored around who and how the project is supporting women in Bangladesh. Other forms of information dissemination and/or interaction with health services occurred through non-state and state television channels, social media posts, and SMS-based messaging.

Data-driven policy and approaches have emerged as fundamental in Bangladesh's public service delivery, which was also demonstrated through the management of Covid-19 vaccinations (a2i 2024b). In health, the government relies on data to understand citizen public health engagement and needs. Currently, the government has relied on their DHIS2 system reporting on public health, to examine changes in service utilisation during the pandemic (Hrynick *et al.* 2022). Accountability and transparency mechanisms could however enhance understanding of the realities of service delivery on the ground, by enabling citizens to report on challenges of access to health services, hence tailoring policy that explores utilisation and access. On the other hand, over a decade's investment in health digitalisation and online systems by the government seems to have enhanced its capabilities for internal communications and functioning during the pandemic crisis (Ahmed *et al.* 2023). It also enabled better public outreach and facilitated the Surokkha vaccination registration application to efficiently coordinate immunisation drives across the country.

3.3. Violence Against Women (VAW)

The Covid-19 crisis increased reliance on digital spaces and spurred social activists, media personalities, and social media content creators to leverage social media for furthering rights and social justice causes (Antara 2022; Sultan *et al.* 2022). However, heightened online activity also enabled rising violence and abusive threats against women, often forcing them to self-censor. This emergent public health issue – inflicting psychological, physical and economic harm – continues to impede

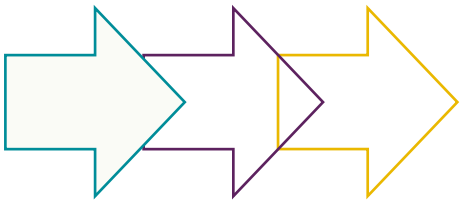


women's digital citizenship and access despite growing activism for gender equality.

The Covid-19 lockdown also severely restricted access to justice as physical courts were closed. Virtual courts emerged as a critical emergency response, enabling legal aid and rights groups to urge continuity of essential services, such as processing domestic violence cases (Sultan *et al.* 2022). The virtual court system pioneered a new approach to uphold justice during restrictions. However, while virtual courts expanded availability of legal services, their efficacy merits assessment – for example, barriers to access for women and the poor, complainants' access to general diaries, final reports, and case filing. Other mechanisms in responding to VAW included a hotline for VAW support, facilitated by government (from MoWCA and NLASO) and NGO/legal aid clinics. However, it also became apparent that usage monitoring, categorising call types, and follow-up patterns for government/NGO helplines were needed to make online information and crisis response more effective (Sultan *et al.* 2022).

3.4. Social Protection

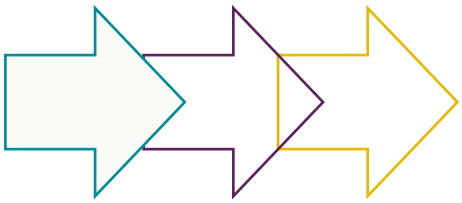
Digitalisation of social protection through mobile money payments was an ambitious move and priority for Digital Bangladesh (Siddiquee *et al.* 2022a). However, this proved to be a challenge, as the database consisting of the list of social protection beneficiaries of vulnerable citizens was not up to date. Use of the out-of-date registry, led to payments going through to citizens not needing social protection, including some government officials benefiting from corruption. The government had to resort to updating the list, by using traditional methods of compiling lists of citizens, with support from local government officials. However, introducing technology for beneficiary verification was also prone to errors, and the absence of mechanisms for citizens who had limited literacy or numeracy to report on errors presented several inaccuracies in the data listing (Ahmed *et al.* 2023; Begum *et al.* 2021). Digital innovation has the potential to improve and scale social protection in Bangladesh, however, Siddiquee *et al.* (2022a) emphasise that they need to be designed to work with how citizens actually engage with the state, if weakly accountable public institutions are going to learn how to deliver social protection to people who need it, when and how they need it'.



3.5. Accountability and Transparency

The Covid-19 pandemic opened up a new culture of engagement between citizens and government in Bangladesh, moving from top-down command-and-control approaches to more horizontal and mutual communication in a time of crisis (Ahmed *et al.* 2023). This was further accelerated by the need for information and services in a period of crisis and lockdown. Nonetheless, government responsiveness and feedback mechanisms government-led or facilitated by NGOs or citizens, still needed to reach a level of maturity that supported effective accountability and transparency in public service delivery. Social accountability mechanisms have developed over the past decade in Bangladesh, including participatory planning and budgeting, public hearings, the right to information, applications of the citizen's charter, etc. (Chowdhury and Hossain 2022). Chowdhury and Hossain (2022) advise that digital innovations in social accountability, need to consider differentiated and complimentary roles of both analogue and digital approaches. For example, the Anti-Corruption Commission (ACC) provided mechanisms for citizens to register complaints via coordinated district offices, or through email and a verified Facebook page. UDC centres were also commissioned to support citizens to access information disseminated through government websites, including the Citizens' Charter, budget and financial statements, development project lists, decisions, reports and circulars of the union parishad (Chowdhury and Hossain 2022). Social media played a role in information dissemination during the pandemic, but also enabled opening some digital public space where media, citizens, and government engaged on service delivery issues. However, digital regulations such as the previous Digital Security Act, at times constrained effective engagement on accountability and transparency – with calls to have the Act reviewed to enable government to achieved performance and throughput legitimacy through effective contemporary citizen engagement.

Z. Ahmed *et al.* (2023) indicate that the pandemic also shifted government organisational culture to a new way of working, through digitalisation of some of its operations. Digital channels enabled the transfer of information across government levels, providing mechanisms for citizen feedback to travel from the frontline to central government. Reports from different focus areas in the CLEAR Bangladesh programme all point to introducing digital citizen participation to address accountability and transparency in service delivery – as paramount to amplifying citizen voice through evidence-based engagement (Ahmed *et al.* 2023; Chowdhury and Hossain 2022; Hrynick *et al.* 2022; Huq 2022a; Siddiquee *et al.* 2022b)



4. Digital inequalities and differentials

In studying the different strategies that the government of Bangladesh has applied through their Vision 2021 and 2024 interventions to digitalise public services, a clear alignment needs to exist between visionary design and the contextualised realities their citizens are confronted with. Several of the CLEAR reports point to digital inequalities in the Bangladesh context, which constrain effective adoption and use of digital public services – experienced by citizens, as well as government officials. Digital inequality considers unequal access, distribution and use of digital technologies, infrastructure, skills and services across demographic groups and geographical locations (Robinson *et al.* 2015). However, beyond digital inequality, **digital differentials** are also prominent in the findings, pointing to broader social ecosystems and relationships that determine how digital technology access asymmetries translate to real-life impacts, and amplify or diminish outcomes of public service innovation (Toyama 2015). Here, digital technology augments or diminishes existing systemic and human intent and behaviours – where effectiveness is dependent on institutional/societal priorities and competencies. This section discusses the emergence or existence of differentials in access, capacity, and underlying structural inequalities (influencing differential aspirations/motivations), providing examples of experiences across the CLEAR focus areas.

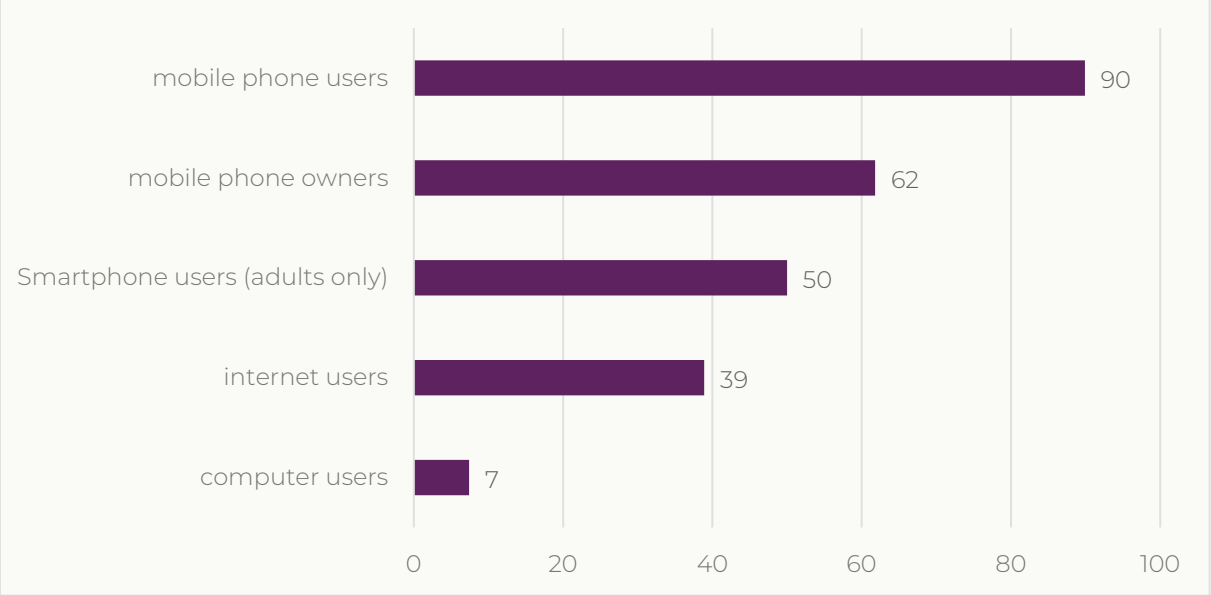
4.1. Differential Access

Differential access studies the variations experienced by government officials or civil servants and citizens in access to digital devices, digital equipment, Internet, software, and infrastructure. This section first presents a general overview of digital access in Bangladesh, followed by confirmed examples experienced in different sectors in the CLEAR programme.

In general, basic access to mobile phones is high in Bangladesh with 90 per cent of individuals reporting to have used a mobile phone in the last three months in 2022 (Bangladesh Bureau of Statistics 2022). Fewer people (62 per cent) own a mobile phone of any kind. Only 50 per cent of adults use a smartphone (GSMA 2023a) and only 39 per cent of people reported using the internet once in the previous three months in 2022 (Bangladesh Bureau of Statistics 2022). There is no publicly available data regarding the overall percentage of people owning a smartphone, but

disaggregated data on gender and location does exist for this metric (see Figure 5), which suggest it would be significantly lower than 50. A very small portion of the population uses computers.

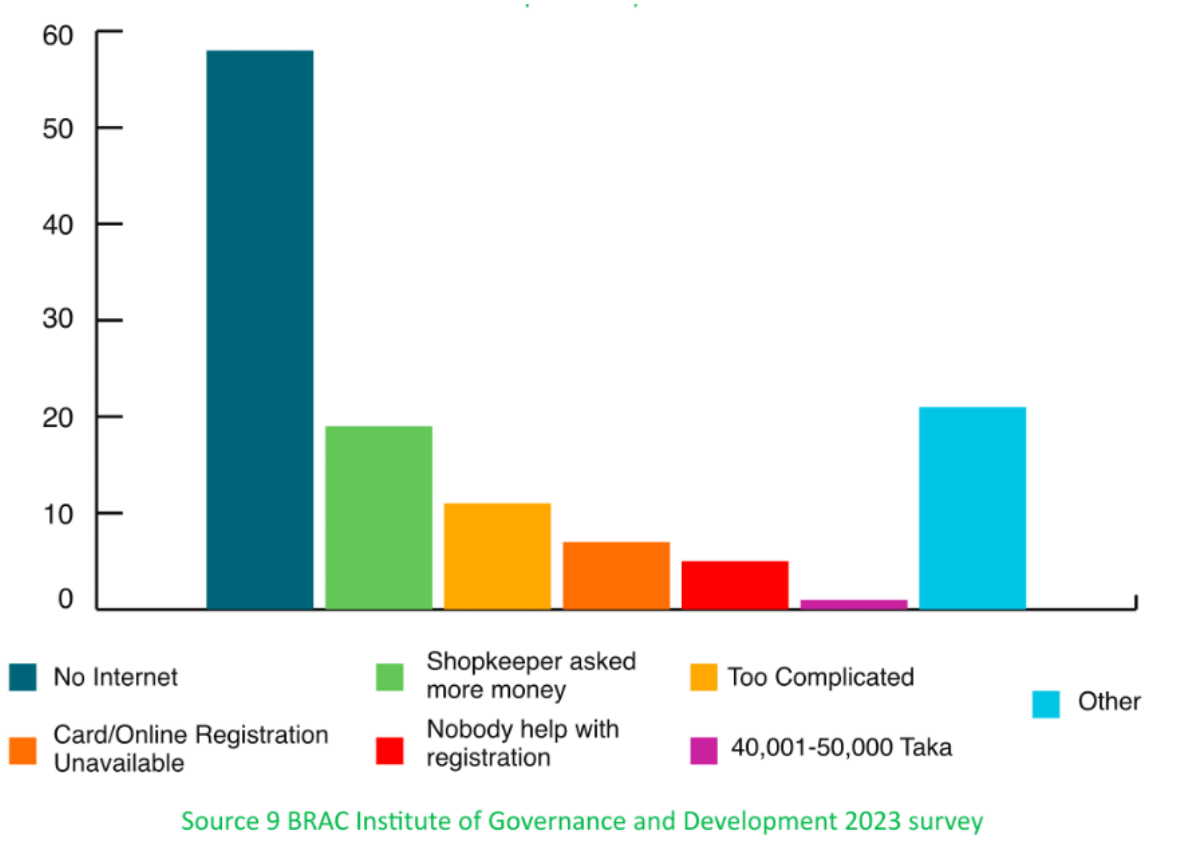
Figure 5: Access to mobile phones, internet, and computers in Bangladesh, 2022 (% of individuals above the age of 5)



Source: Bangladesh Bureau of Statistics 2022; GSMA 2023a

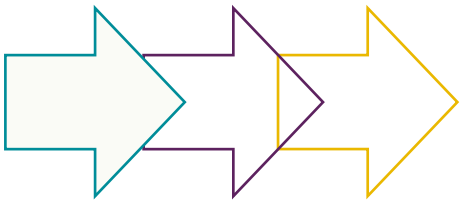
In efforts to address digital access, Union Digital Centres (UDC) were set up and expected to provide access to the internet and digital devices. The extent to which these centres provided adequate access is still debatable, as reports indicate that it is not clear what the function of UDCs are and the extent of their usage and effectiveness in supporting public services access (Aziz *et al.* 2020; Chowdhury and Hossain 2022). Despite the availability of online platforms of public services, in 2022 Bangladesh was still reported to have 64 per cent of citizens without direct access or use of the Internet. Even with the successful implementation of the Surokkha app for vaccine registration, success did not demonstrate digital access, but rather the mechanisms digitally resilient citizens applied to seek alternative ways of registering on the app, for example, through a local computer store. Only 6 per cent of registered citizens used UDC centres. However, 6 per cent of citizens were unable to register at all, with Figure 6 illustrating varied reasons that constrained access.

Figure 6: Problems that prevented people from registering with the Surokkha app (from the 6 % who faced problems)



Source: Z. Ahmed *et al.* 2023: 25

The extent of digital access differentials was also demonstrated in findings on Education and remote learning where a UNICEF 2021 report indicated that 56 per cent of students did not participate in online lessons or 'Sangsad' TV – which was particularly more prevalent among ethnic minorities (75 per cent) (Ahmed *et al.* 2023). Table 1 provides a representative breakdown of access to traditional ICTs (TV and Radio) and modern ICTs (mobile phones, smartphones, computers), and Internet access across regions, and levels of median wealth (World Bank report) (Hossain and Wahedur Rahman 2022). What is apparent is that access to a device, does not translate into access to the Internet, which was the medium used for online interactive/hybrid learning. Furthermore, 'access' does not directly imply 'ownership' and 'use', as other social-cultural factors constrained students' use of these devices for online learning – especially in economically disadvantaged households where pupils had to work while at home (Ahmed *et al.* 2023; Huq 2022b). Findings in an education report also indicated that none of the adolescent female participants in an interview study reported owning a phone, and they



often attended online classes using a parent's or sibling's (mainly brothers') mobile phone (Hossain and Wahedur Rahman 2022).

Other contributing socio-cultural factors relate to parents of female adolescents being more cautious of daughters accessing online material that may involve them getting into romantic relationships. As a result, boys were more likely to have access to mobile learning applications, the Internet, television or radio, than female adolescents. Students with disabilities experienced even more constraints, with a lack of 'accessible' material tailored for students' learning needs. According to Huq, 'pre-pandemic education for children with special needs already had scope for improvement and the adoption of blended learning methods raised concerns about how inclusive these were for different impairments' (2022b: 2).

Table 1: Children's access to various technologies (according to various reports) and regions

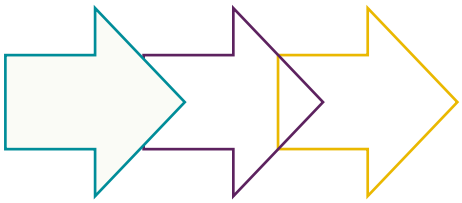
Study	% Children with access	TVs	Radio	Mobile Phones	Smart Phones/Computers/ laptops/tablet	Internet/Wi-fi
ADB	Overall	44%	6%	96%	42%	24%
	% Rural children	31%	7%	96%	38%	21%
	% Urban children	76%	4%	96%	52%	32%
	% Urban-slum children	74%	4%	97%	55%	24%
CAMPE	Overall	62%	2.30%	89%	54%	25%
	% Rural children	48.1%	1.6%	91.3%	42.8%	16.3%
	% Urban children	75.4%	3.9%	84.1%	68.0%	36.0%
	% Urban-slum children	79.8%	0.8%	96.7%	65.0%	35.4%
World Bank	Overall	48.1%			37.6%	21%
	% Students with below median wealth				28%	13.8%
	% Students with above median wealth				47.8%	28.6%
BIGD-PPRC	Overall	27%		29%	33%	
	% Rural children	20%		29%	32%	
	% Urban-slum children	33%		29%	35%	

Source: CAMPE, 2020; ADB, 2021; BIGD-PPRC, 2021; Biswas et al., 2020

Source: Hossain and Wahedur Rahman 2022

Within schools, ICT equipment was provided by government to facilitate blended learning – usually including a multimedia projector, internet access installation, and projection screen. However, a study on schools reported a lack of devices and/or maintenance support, including material/content to support remote learning. According to Ahmed *et al.*:

> ICT system (multimedia projector, internet, projection screen) was seen to be available in the classroom of only 11 per cent of primary schools visited while one-fourth (25.4 per cent) of secondary



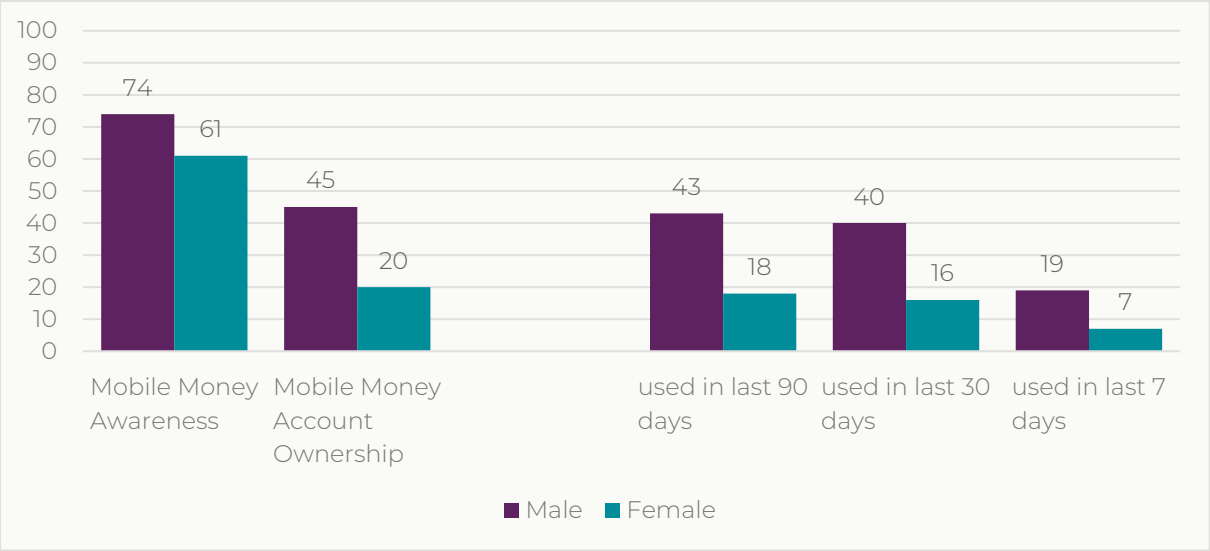
> schools had ICT and related materials. These were more prevalent in urban (22.2 per cent) and the City Corporation area (20.8 per cent) while rural schools (13.6 per cent) were lagging behind. (2023: 92)

The budget allocated to schools to maintain ICT equipment and provide online resources, access education content, and support hybrid initiatives was often reported as insufficient.

In health, with a variety of interventions, including telehealth, the availability of these services did not translate into use. For example, the telehealth system such as Shatho Batayon **#16263** that was setup to provide health services, had limited awareness among slum dwellers in Bangladesh (Hrynick *et al.* 2022). A progamme set-up to support pregnant women also had a very low uptake, owing to gendered divisions discussed below; relating to low levels of access, but also low levels of trust in the use of digital applications for health services.

In efforts to digitalise social protection and mobile money transfers, the system excluded beneficiaries who did not have mobile service accounts. The current state of mobile money adoption follows similar patterns to other technologies covered in this section. Men are more likely to be aware of mobile money and are more than twice as likely to own a mobile money account than women (see Figure 6) (GSMA 2023b). Similarly, men are around twice as likely to have made active use of their mobile money accounts within the last 90 days, 30 days, and 7 days. Unsurprisingly though, a preference for cash is the most cited barrier to mobile money uptake for both men (52 per cent) and women (44 per cent) who are aware of the service (GSMA 2023b). Moreover, a significant portion of aware non-users prefer to transact through a mobile agent (36 per cent of men and 29 per cent of women) or through a friend or family's account (30 per cent of men and 28 per cent of women). Skills also remain a barrier with 28 per cent of men and 33 per cent of women citing not knowing how to use mobile money as a barrier. These general facts proved challenging for beneficiaries (especially women), excluded from social protection and access to benefits.

Figure 1: Percentage of men and women aware of, owning and using mobile money accounts in 2022



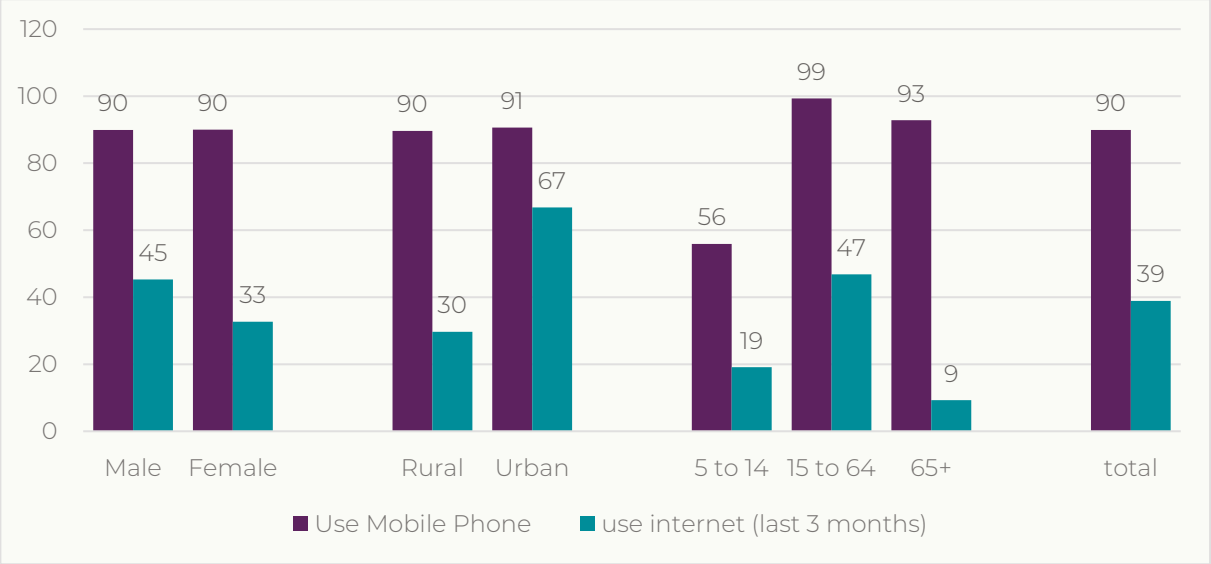
Source: GSMA 2023b

For vulnerable citizens that provided some sort of mobile number for social protection, where a mismatch existed between SIM registration and National ID data, 3.6 million people received aid in delay (Siddiquee *et al.* 2022b), which was extremely challenging during the pandemic. Beneficiaries may have used a friend or relative's number, which may have changed over time, leading to errors in an outdated list in the database.

Disaggregated data shows that women, rural residents, the elderly, and people with lower levels of education are especially less likely to have basic access to digital technologies. On the other hand, men, urban residents, young adults, and more educated individuals are the most likely to have access. Although these gaps are less prevalent and non-existent for most groups in terms of mobile use, they are significant for mobile ownership and use, and ownership of every other technology (see Figure 7).

Men are one and a half times likely to have basic access to the internet than woman. Urban resident are more than twice as likely to have basic access to the internet than rural residents and people between the ages of 15 to 64 are almost five times more likely to have basic access to the internet than the elderly (Bangladesh Bureau of Statistics 2022).

Figure 7: Mobile Phone and Internet use (once in last three months) by key demographics 2022 (% of individuals)



Source: Bangladesh Bureau of Statistics 2022

Studies show that ownership of a device provides users with more autonomy over its use than borrowing (Girl Effect 2018; Schradie 2011). Users who own a device tend to use them for more activities and are more likely to make use of them to build digital skills through learning by doing (Robinson 2009). Data suggests that men, urban residents, young adults, and the well-educated are more likely to own devices and thus have autonomy over their usage of devices than women, rural residents, the elderly and people with lower levels of education (see Figure 8). Although 72 per cent of males own a mobile phone, only half of women do. Similarly, there is a significant gap in mobile ownership between urban (71 per cent) and rural (59 per cent) residents.

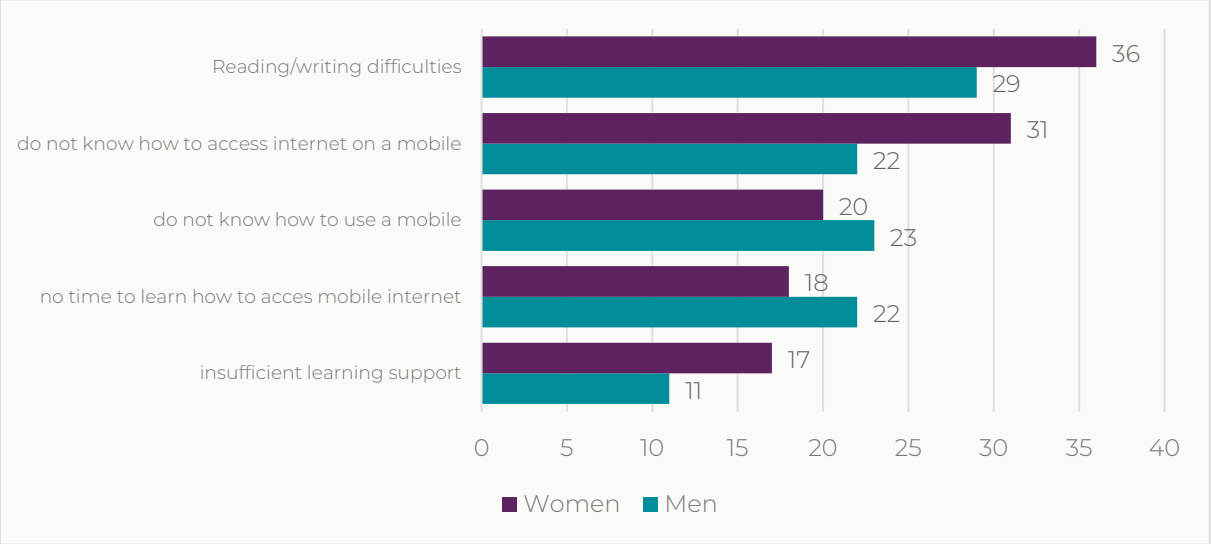
4.2. Differential Capacity

The ability of individuals to use digital technology for its intended purpose determines initiation, continuity of use, and effectiveness in use. Several factors determine the capacity of individuals, with education levels being one of the most prominent factors. However, capacity is not limited to the ability of one to navigate an application, but to effectively use it to provide added value for a service it supports. Understanding the public service (including its contextual constraints) and the value-added functionality of a digital application, should be well aligned to navigate digital innovation in public services. This proved quite challenging in the Bangladesh context, due to issues related to data and digital literacy,

digital fragmentation from several platforms, incorrect use of applications, a lack of awareness of applications, lack of support available to strengthen capacities for use, and concerns arising around digital surveillance and data injustice.

As mentioned earlier, most people in Bangladesh do not use the internet. Language and digital literacy remain a significant barrier. Reading and writing difficulties were the largest skills-related barrier (and largest barrier overall) to adopting mobile internet in 2022, making general literacy a larger barrier than digital literacy (GSMA 2023c). As can be seen in the Figure 8, a large portion of non-users do not know how to use the mobile internet, do not know how to use mobile phones, and experience learning barriers.

Figure 8: Literacy and Digital Skill barriers to mobile internet adoption by sex, 2022 (% of non-users)



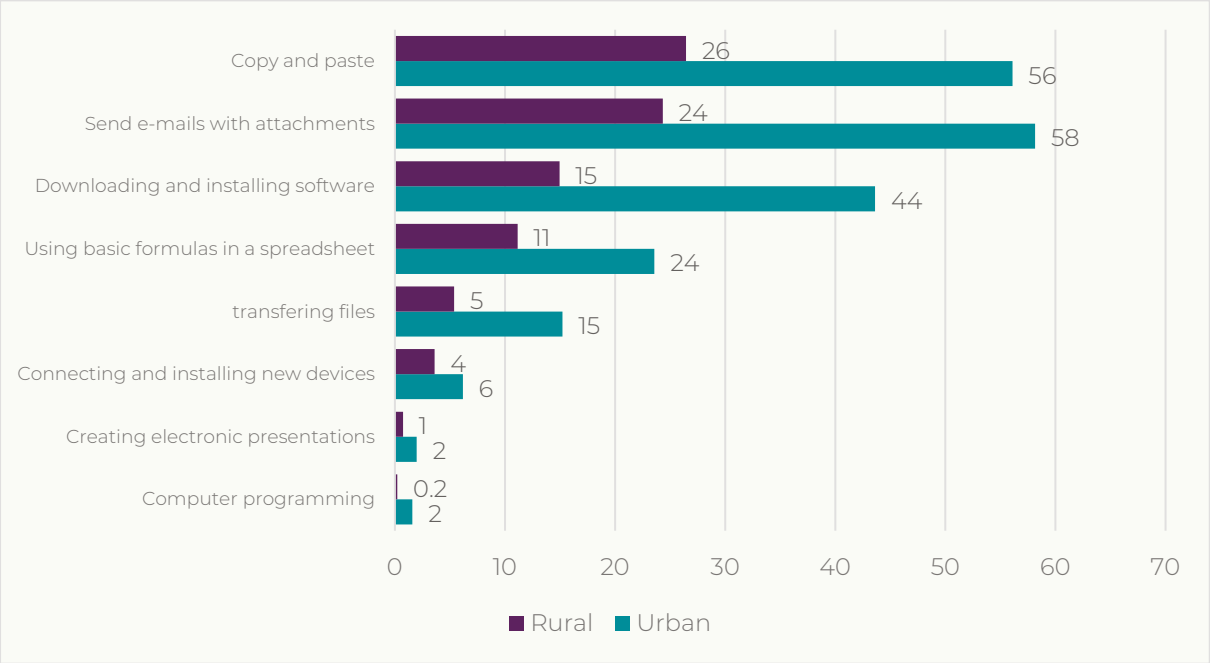
Source: GSMA 2023c

Along with non-users, a lack of skills can hinder current users from making full use of the internet. Surveys show that very few people in Bangladesh possess basic digital skills such as copy and pasting text, sending emails with attachments, and installing software. There are also significant gender and location gaps with women and rural residents being less likely to possess digital skills than men and urban residents (see Figure 9). The digital skills gap between urban and rural areas is more pronounced than the gender digital skills gap.

In primary and secondary education, **digital literacy** has been part of the digital agenda of government who have invested in ICT equipment and teacher training to strengthen capacities for hybrid approaches. However, the effectiveness of implementing remote learning or hybrid approaches

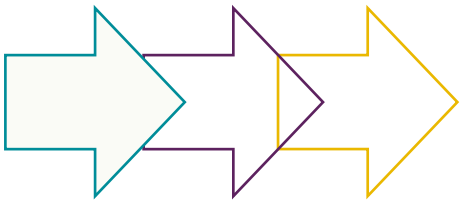
were often questioned in reports, as availability of remote learning did not translate into use. Some teachers reported the need for additional in-person training as they may have struggled with introducing effective pedagogies that kept students engaged and less distracted in blended learning (Ahmed *et al.* 2023). On the other hand, some teachers, especially in rural areas, reported they were not familiar with the term 'blended learning', nor how it could be effectively applied in teaching and learning. According to Hossain and Wahedur Rahman (2022: 18): 'Even though practically all primary school teachers (93 per cent) had received subject-specific training, three-quarters of them reported having received no ICT training. ICT training was designed to provide them with the necessary skills to create e-learning content and facilitate the operation/use of multimedia in the classroom.'

Figure 9: Individuals possessing digital skills by locality, 2021



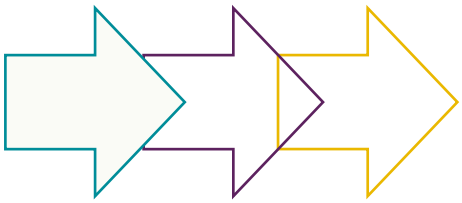
Source: ITU n.d.

In accountability and transparency of public services, digital literacy gained importance with the proliferation of digital platforms for participation and reporting on service delivery issues. These platforms were characterised as being fragmented gathering citizen feedback and providing citizen information – however also becoming difficult for both citizens and state actors to navigate. While government responsiveness relied on political priorities, the state's effectiveness in addressing citizen concerns was also contingent on its institutional capacities to gather and leverage data-driven insights about real-time service delivery outcomes (Ahmed *et al.* 2023).



Data literacy also emerged as being just as important as digital literacy during the pandemic, especially for government. Chowdhury and Hossain (2022) report that data initiatives were overwhelming in numbers, and difficult to access, navigate or use. Furthermore, data on the pandemic was often described as dispersed, non-transparent, user un-friendly, making it difficult for civil society to have access to regular/real-time and transparent data in usable forms. Government lacked the capacity around practicing good data governance and management of growing data – often relying on NGOs and Think tanks to analyse data to support the delivery of policies across different sectors. The BRAC Institute eventually ran an online course with civil servants, which proved useful for government as they requested for further training. The availability of data and ability to process it grows in importance – as the pandemic also revealed gaps in data on Violence Against Women, health services, and social protection, which constrained policy designed to meet the emergent needs of these particular focus areas (Hrynick *et al.* 2022; Siddiquee *et al.* 2022b; Sultan *et al.* 2022).

Digital citizenship practice and protection: The spread of misinformation emerged as a major challenge in Bangladesh during the pandemic, where social media platforms played a significant role. This proliferation of false claims online called into question responsible usage of media, eventually leading to far-reaching consequences across society. Using Jones and Mitchell's definition, digital citizenship focuses on using the Internet to '(1) practice respectful and tolerant behaviours toward others, and (2) increase civic engagement activities' (2016: 2065). The ability of authorities to manage and address digital ethical issues that infringe on the safety and security of individuals is also essential. Misinformation on social media, especially Facebook, was rampant in Bangladesh during the pandemic, reaching volumes that became challenging to manage and address (Aziz *et al.* 2020). When VAW activists took to social media to advocate for women's rights, they were confronted with harassment and backlash from users – social media like Facebook could not even filter posts, as they were posted in a language it did not recognise (Sultan *et al.* 2022) – discussed further in Section 4.3 on Structural Inequalities. Despite the existence of a special unit of the police for responding to crime, they were not sure how to address cyber abuse experienced by activists. Nonetheless, female personalities demonstrated digital resilience by using tactics to respond and manage such backlash – for example recruiting someone locally to monitor posts, using humour and sarcasm to "lighten" the effects of posts, and calling out hate commenters (Antara 2022).



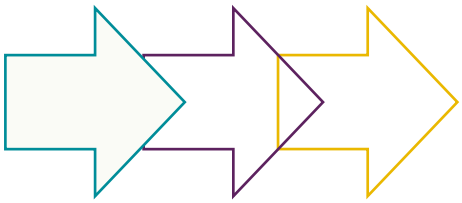
4.3. Structural Inequalities

Structural inequalities that contribute to differential access and capacity in Bangladesh, influence the motivation of citizens to use digitalised public services – and public services in general. Key issues the findings highlight are human capital, political economy and influence, and social norms and culture.

4.3.1 Human Capital

Intergenerational inequalities have an effect on access to digital technologies in Bangladesh. Human capital accumulated by parents is strongly associated with access at the household level. People living in households where the household head has completed Higher Secondary education are almost twice as likely to have access to a smartphone or the internet and are almost 6 times as likely to have access to a computer. Not only are children from more educated households more likely to have access to interactive technologies, but they are also more likely to have access to broadcast technologies like Television and Radio (Bangladesh Bureau of Statistics 2022). This is largely unsurprising due to the link between education levels and wealth and the fact that wealth is also associated with digital technology adoption. Data from UNICEF (2021) found that poor children in Bangladesh were very unlikely to have access to the internet at home just before the pandemic in 2019 with just 9 per cent of children from the poorest 20 per cent of households having access. On the other hand, most children from the wealthiest 20 per cent of households (76 per cent) had access to the internet at home. The strong association between parental education levels, wealth, and digital access likely contributed to the phenomenon observed globally during the pandemic where children fortunate enough to have family members with high levels of education were more likely to receive assistance with their remote coursework during lockdowns compared to children with family members with lower levels of education (Goudeau *et al.* 2021; UNESCO *et al.* 2021). On the other hand, parents from low-income households (especially rural) who already had to deal with other household expenses, struggled with organising and maintaining remote learning for their children (Hossain and Wahedur Rahman 2022).

Human capital was also required to enable civic participation and government accountability, through designing initiatives that relied on evidence-based real time data for policy formulation. The Covid-19 crisis exposed severe deficiencies in Bangladesh's human capital across public agencies responsible for informing policy decisions with data-driven insights (Chowdhury and Hossain 2022). Expert observers noted an erosion of competencies over time even in premier statistical bodies like

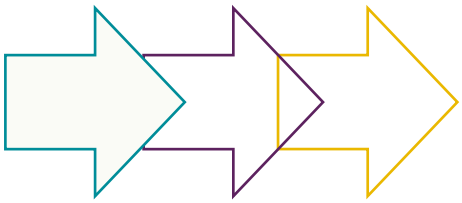


Bangladesh Bureau of Statistics in their capacity to undertake rapid, granular research attuned to ground realities. There were concerns that institutional capacities were lacking in the ability to generate credible evidence without governmental influence amidst weakened mechanisms for non-state inputs into the knowledge base. Additionally, opacity in official data methodologies bred scepticism regarding accuracy. Such dynamics saw policies formulated without substantive engagement with unfolding socio-economic scenarios, frontline worker perspectives, or civil society inputs. The lack of skilled, empowered research ecosystems shielded from political capture compromised the emergence of targeted pandemic response backed by public health and welfare data analysis beyond the official line. Addressing this human capital gap can catalyse institutions as trusted custodians of public data intelligence.

4.3.2 Political Economy and Influence

Bangladesh's pandemic governance unfolded within a political backdrop of Awami League's longstanding dominance, narrowing space for dissent while still needing performance legitimacy amidst control over civic actors (limiting throughput legitimacy) (Chowdhury and Hossain 2022). This generated complex tensions around digital public services – while the leading political party saw digital public services as useful for visibility, it simultaneously expanded digital oversight to curb criticism (Ahmed *et al.* 2023; Aziz 2021). Political imperatives compelled patronage appointments not aligned with building transparent, data-reliant public systems or opening dialogue with external experts over the evidence or knowledge base used for policy decisions (Basu and Devine 2023; Chowdhury and Hossain 2022). Yet, the imperative to secure public compliance for pandemic restrictions meant disregarding lived experiences of citizens – which was neither viable nor sustainable as effective policy. This led to the expansion of digital civic interfaces like online vaccine registration through the Surokkha application to demonstrate responsiveness, even as capacities for rights-based oversight bodies like the National Human Rights Commission of Bangladesh (NHRCB) were systematically weakened and voices of activists and journalists questioning data claims suppressed through arrests, using the Digital Security Act (Ahmed *et al.* 2023). Disinformation spread widely as dominant political actors exploited social media to vilify critics instead of fostering inclusive public dialogue and debate.

While specialised agencies struggled with outdated skills for real-time data analysis, non-state inputs to plug gaps were informally solicited selective policy domains like service delivery while squeezing spaces for inputs perceived as unfavourable (Chowdhury and Hossain 2022). The lack of channels for transparent, politicisation-free data generation, fed public

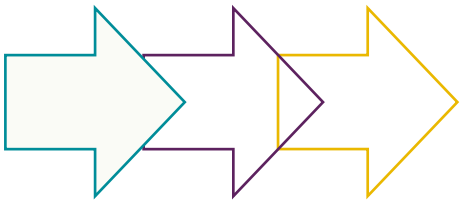


scepticism over official pandemic statistics. Ultimately, while digital public services advanced at scale, social accountability and rights safeguards did not keep pace – all while promoting technology as signalling reformist good governance. Persistent uncertainty around who and how platform data gets used combined with fear of retaliation for vocalising grievances risk accentuating exclusion errors even among digitally enrolled citizens (Aziz 2021).

4.3.3 Social Norms and Culture

Patriarchal norms, poverty barriers, and digital divides saw online public services like remote learning and healthcare failing to reach adolescent girls, low-income groups, and other disadvantaged segments equally in the pandemic. Girls and women in rural areas and urban slums, faced challenges like lacking digital devices, household workload pressures, and restrictions on device use – exacerbating access issues even when services moved online (Hossain and Wahedur Rahman 2022). This precluded many from leveraging digital opportunities to counter mobility limitations. In Bangladesh, women are significantly more likely to report family disapproval as a barrier to owning a mobile money account, adopting the internet and owning a mobile phone (GSMA 2023c). Moreover, about one out of seven women who do not own a mobile phone, and one out of eight women who do not use the mobile internet in Bangladesh cite family disapproval as their top barrier (GSMA 2023c).

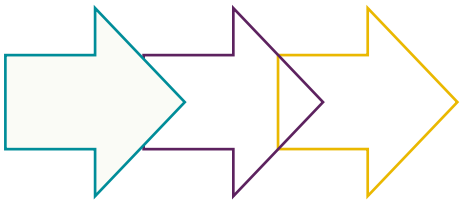
Though activism and civil society initiatives countered social restrictions through advocacy and support systems, marginalised communities frequently had to navigate exclusions, misinformation risks, and stigma without wider solidarity (Antara 2022; Huq 2022c). The rapid expansion of digital spaces also enabled elements of social harassment, violence and polarised religious rhetoric to play out online – now weaponised to target women and minority opinion holders not conforming to dominating narratives (Antara 2022). Women and sexual minorities who go online—especially those vocal about gender and sexual rights—are more likely to experience a plethora of online harms including delegitimising posts, receiving hate comments, having sexually fabricated photographs of them posted online, receiving threats of rape and violence, cyberstalking, public shamming, spamming, 'revenge porn', and receiving messages involving sexual advances. A survey conducted by Action Aid (2022) showed that 64 per cent of women in Bangladesh experienced online violence in November 2022, an increase of over 50 per cent from the year before. Moreover, nearly a third of all women reported experiencing five or more incidents of online violence in one year, with 10 per cent having experienced more than 10 instances of online violence. Women who are victims of online violence report experiencing psychological trauma (e.g.



depression and anxiety), a loss of confidence in expressing views online, feeling traumatised, and loss of self-dignity (Action Aid 2022). Though providing platforms for collectivising around shared struggles, digital avenues largely mirrored structural inequities.

Hindus, Buddhists and Christians are religious minorities in Bangladesh, who also experienced digital harm. Hindus in particular constitute a sizable 8 per cent of the population while Buddhists (the majority whom are also indigenous peoples) and Christians make up a much smaller portion of the population (Bangladesh Bureau of Statistics 2022). The percentage of Hindus in the country has been continuously decreasing from 22 per cent in 1951 (Minority Rights Group 2018). This is partially due to declining birth rates amongst Hindus but also a direct result of many Hindus fleeing the country due to the harsh environment religious minorities often encounter in everyday life and communal violence against Hindus and other religious minorities instigated by religious extremists. There is evidence that digital spaces—especially social media—are reinforcing and fuelling the offline violence experienced by Hindus and other religious minorities sin the country. '[D]igital media [in Bangladesh] seems to reinforce political Islam and feed the communal appetite of religious fanatics' (Al-Zaman 2020). There have been numerous examples of purposeful disinformation being spread on Facebook by religious fanatics about Hindus and Buddhists that ultimately led to real-life violence against entire communities and places of worship (Al-Zaman 2020; Roy *et al.* 2023). This disinformation usually employs one or more of three tactics: (i) creation of fake profiles of real members of religious minorities, doctoring of digital contents (for example, editing photos), and spreading rumours (Al-Zaman 2020).

Lack of minority representation and vernacular interfaces added barriers across sectors like health, welfare, outbreak updates (Hrynick *et al.* 2022; Siddiquee *et al.* 2022b). Grievance redressal services rarely recognized those facing layered impacts at society's fault lines. Surmounting exclusion requires going beyond digital provision to addressing root causes of alienation embedded in social institutions first. This entails cooperation between state and community stakeholders to co-create safe, accessible digital ecosystems where the benefits can be shared more evenly, upholding both innovation and equity goals.

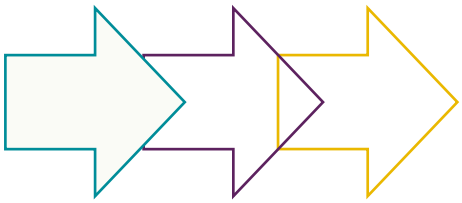


5. Challenging or Confirming Current Debate

5.1. Achieving SDGs related to digital technology adoption

The SDGs include numerous targets and indicators related to ICTs. The main target associated with digital technology is target 9.C which originally called for 'Significantly increase[ing] access to ICT and strive to provide universal and affordable access to the internet in least developed countries by 2020'. As a global community, we have already missed universal access by 2020 and are not on track to reach it by 2030 (ITU 2022). This trend is also confirmed in Bangladesh, where less than half of the population uses the internet in 2024 and only around a quarter use it every day. Similarly, target 5.B calls for 'Enhancing the use of enabling technology, particularly information and communications technology, to promote the empowerment of women'. However, significant gender gaps in mobile ownership and internet usage still persist across the world with Low-Income Countries especially likely to have digital gender gaps (ITU 2023d). This report confirms that the issue being especially acute in Bangladesh with severe gender gaps in digital technology ownership and usage.

Moreover, although the ITU and National Statistical Offices have traditionally measured internet users as anyone having used the internet at least once in the last 12 months – and more recently in the last three months – there is growing recognition that more regular access to the internet is needed to ensure inclusion as societies digitalise. There is also a growing recognition that users often continue to encounter barriers once online that can fuel digital exclusion (Helsper 2021; Robinson *et al.* 2020). As a result, international organisations are increasingly embracing concepts like 'meaningful connectivity' which take into account quality of access (A4AI 2022a; United Nations Office of the Secretary General's Envoy on Technology and ITU 2021). In order for individuals to be meaningfully connected they must be able to use the internet regularly (e.g. daily) via a powerful device that they own (e.g. a smartphone or PC) on a fast and reliable connection (e.g. 4G or better) with sufficient–ideally unlimited–data to undertake all essential and leisure activities they wish to engage in (A4AI 2022a). Users who meet these thresholds have been found to be significantly more likely to engage in a wide range of digital activities including those related to achieving the SDGs like accessing



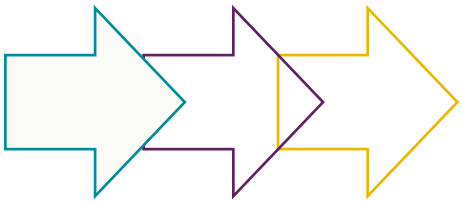
healthcare or taking online classes (A4AI 2022a). Evidence from elsewhere suggests that the percentage of meaningfully connected users tends to be substantially less than the percentage of people with basic access (who use the internet at least once in the last three months) and that gender and rural connectivity gaps tend to be wider for meaningful connectivity than they are for basic connectivity (A4AI 2022a; 2022b). Research is needed to determine what meaningful connectivity levels may look like in Bangladesh, especially if digitalisation continues in a way that makes it more difficult to engage with service providers offline.

5.2. Leaving No One Behind

Digitalisation is often presented as a mechanism to accelerate progress across the SDGs due to its potential to have an impact across sectors economies, societies, and the environment (ITU 2017). However, it is also widely recognised that the relationship between increased digitalisation and SDG gains is not always given and that in many areas, digitalisation may interfere with our ability to achieve SDG goals unless action is taken to reverse current trends (Hernandez 2019; Unwin 2017). This is especially true for the overarching goal of Leaving No One Behind. Although marginalised groups have the most to gain from accessing digitalised services, they also tend to be the least likely to own or use digital technologies. As essential service providers across government, private sector, and civil societies digitalise their services and offline alternatives remain absent or are removed, those who are digitally excluded find it increasingly more difficult to participate in a rapidly digitalising world (Hernandez and Roberts 2018). This report has summarised CLEAR research across several sectors which confirms that digitalisation is currently occurring in a way that threatens to leave marginalised groups behind in Bangladesh.

5.3. Multi-channel service delivery and interoperability

Experiences across CLEAR research also confirms the principle that multi-channel service delivery – which incorporate both digital and offline options to engage with essential services – fuels inclusion of the most vulnerable. For example, one CLEAR scoping report highlighted how an integrated feedback system between the Ministry of Health and Family Welfare (MOHFW) and the Directorate General of Health Services (DGHS) was the most well-developed feedback system. One of the features that set this feedback apart from other was that it received feedback through various mechanisms including through online portals, via hotlines, and in-person (Ahmed *et al.* 2023). Other sectors like social protection currently do not have integrated channels for feedback. In general, feedback



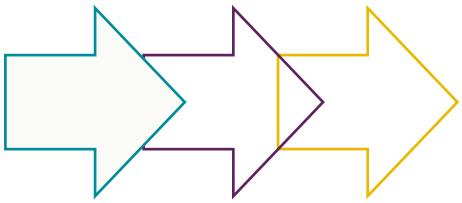
mechanisms in Bangladesh have been criticised for being duplicative, numerous, and fragmented without the numerous grievances mechanisms effectively feeding into one another (Ahmed *et al.* 2023). This makes it difficult for citizens – and even accountability experts – to keep track of all the redress systems and channels available and likely contributes to low levels of awareness regrading redress options.

A growing number of countries are now moving towards one-stop shop service delivery and public grievances systems (United Nations 2022). As one of the CLEAR research papers highlights, the company would be well-served adopting best practices from countries like Indonesia or Nepal which provide a centralised one-stop shop platform where citizens can provide feedback or file complaints for services across all government departments and levels of governments (Ahmed *et al.* 2023). At the same time, it is important that face to face methods are integrated into these systems as they continue to be the preferred method of engagement for a very large portion of the population, especially amongst those at risk of being left behind by the pandemic.

5.4. Organise messy procedures before digitalising them

Digital social protection—and other government services—can lead to several benefits for both governments and citizens when implemented in an inclusive, streamlined, and transparent way. Governments can reduce administrative costs, improve data accuracy, minimise errors and duplication, improve beneficiary targeting, and enhance coordination of social protection interventions. Beneficiaries can benefit from reduced travel costs and time needed to access social protection (Burattini *et al.* 2022). However, these benefits are far from guaranteed. In Bangladesh an out of date, inefficient and error-prone beneficiary list that was not well-integrated with beneficiary lists from other departments was digitalised leading to exclusion errors. Moreover, when the government resorted to a messy process for updating the list (asking local government officials to produce names), the messy process led to further exclusion and inclusion errors – and even corruption – with many people who did not require social protection receiving it.

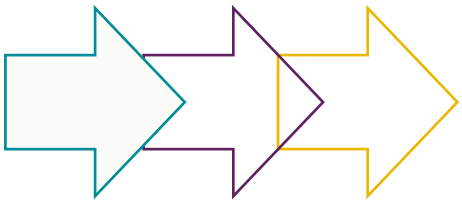
The digitalisation of databases on its own cannot make up for faulty, inaccurate, or out of date data. Targeting decisions and any other decisions made using digital databases will only ever be as good as the data fed into the database. This common mistake has led to the popularisation of the term 'garbage in, garbage out' in computing and data-related fields. Digital services will never improve efficiency nor be inclusive unless processes for targeting beneficiaries are not streamlined, up to date, and inclusive. In other words, ‘when there is inefficiency in a



service, map the bottlenecks and think about how to streamline the process. Don't just digitise the bottlenecks, they will keep on being an expensive problem' (Peixoto and Cordova 2019). Similarly, as mentioned in the previous recommendation, digitalising fragmented feedback systems without finding ways to have them integrate with one another will lead to fragmented experiences.

5.5. Challenges related to digital rights and government oversight

Bangladesh's growing digital ecosystem has seen concerning deployments of digital-aided surveillance and restrictions over civic space in recent years. Restrictive provisions of the Digital Security Act (now replaced by the Cyber Security Act) have limited active civic space for activists and journalists aiming to engage citizens and government on challenges experienced in public service delivery during the Covid-19 (Aziz 2021; Chowdhury and Hossain 2022). Mandating integration of national IDs across services like vaccine registrations also expanded risks of profiling, tracking citizens, and self-censorship (Chowdhury and Hossain 2022). Urgent stakeholder dialogue between state authorities, technologists, rights groups, industry and judicial experts could build consensus on coupling innovation goals with rights safeguards through a progressive Data Protection law. Global standards that limit data usage to specific purposes, along with mandatory breach disclosure rules adapted to each economy's situation, can balance responsible data sharing and use with appropriate safeguards against excessive surveillance capabilities by public and private organisations.



6. The Knowledge Agenda

6.1. Deliberative Approaches and Principles in the Design and Governance of Digital Public Services

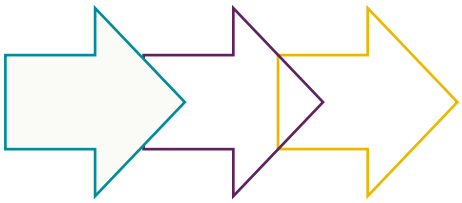
With the growing digitalisation of public services, the government of Bangladesh needs to develop and embed democratic principles in the design and governance of digital public services. This consultative process requires the participation of key actors across sectors including government, the private sector, civil society, academia and research institutes, and grassroots activists and groups (including minority groups). Progressive approaches of knowledge sharing and development are essential, cutting across expertise and respecting ontologies that will vary across actors (Khene 2023).

6.2. Digital Ethics and the Regulatory Environment

The accelerated adoption of technologies like AI, biometrics and social media in governance applications has brought concerns around privacy, equality, accountability, and freedom of expression in Bangladesh to the forefront. This calls for assessing existing regulation on both intended welfare outcomes and unintended consequences to ethical principles and fundamental rights. Assembling multi-stakeholder insights on present impediments and constructive roadmaps to address complex socio-technical realities through a rights-first legislative standpoint can make digital transitions reflective of a pluralistic society's needs and aspirations beyond selective interests of control alone (Roberts and Zheng 2022). Research areas can include for example: Evaluating strengths and limitations of current laws under the paradigm of rights to information, dissent and dignity to chart specific principles at risk across activists, minorities and marginalised groups; and studying ruling patterns for traceable biases, group impacts and reasoning gaps betraying narrow institutional priorities rather than upholding pluralistic Digital Age values.

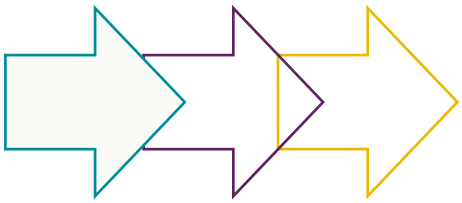
6.3. Critical Data Needed

- **Lack of connectivity data for minority groups:** Unfortunately, there is a lack of official data that shows levels of access for other marginalised groups in Bangladesh including religious minorities (e.g. Hindus, Christians and Buddhists) and Indigenous Peoples and other ethnic and linguistic minority groups. For example, according to the latest Census in 2022, there is a sizable Hindu community who comprise 8 per cent of the



population (TBS News 2022). Hindus in Bangladesh have been identified as marginalised minority group by Minority Rights Group with the discrimination they encounter (including land grabs and threats of violence) leading many Bangladeshi Hindus to migrate to India (Minority Rights Group 2018). There is a need to collect data on digital access for minority groups to understand whether they also experience discrimination in the form of lower levels of access to technology and thus access to essential services in a rapidly digitalising context.

- **Lack of intersectional connectivity data:** Apart from intersectional data on gender and location available through the ITU, there is no further data available showing the levels of connectivity for groups who may belong to more than one marginalised group.
- **Lack of data on who exactly uses digital services:** Although there is some data to signify the total number of users for digital services in Bangladesh, there is no data that disaggregates users for specific digital services. Thus, it is currently impossible to determine to what extent or how intensely digital inequalities are being amplified by digitalisation in the country. Efforts are needed to collect and publicise digital service usage data disaggregated by gender, age, religious and ethnic group, level of education, and income levels.



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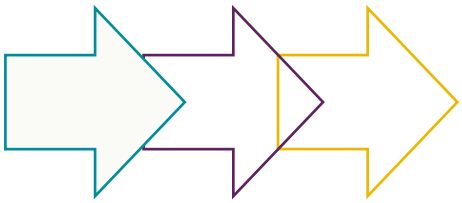

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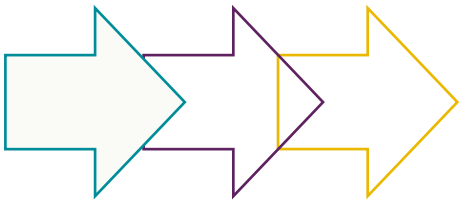

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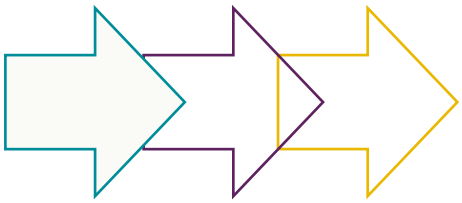

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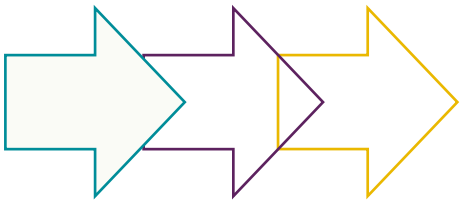

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