Digital Mapping & Analysis

# PAKISTAN

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Purpose of this Document

To support the UNICEF Regional Office for South Asia's integration of digital tools, technologies, and best practices into Social and Behaviour Change (SBC) programming, this Digital Mapping outlines the existing digital interests, needs and challenges across Pakistan. This document outlines the country's context, media, digital habits and preferences, emerging trends and recommendations on leveraging the existing opportunities gathered through secondary research.
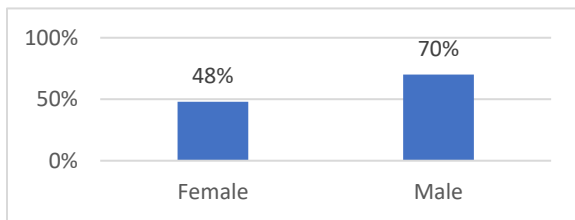
This document can inform digital SBC programme design, development, and implementation at the country level based on the available insights and data from recent years.
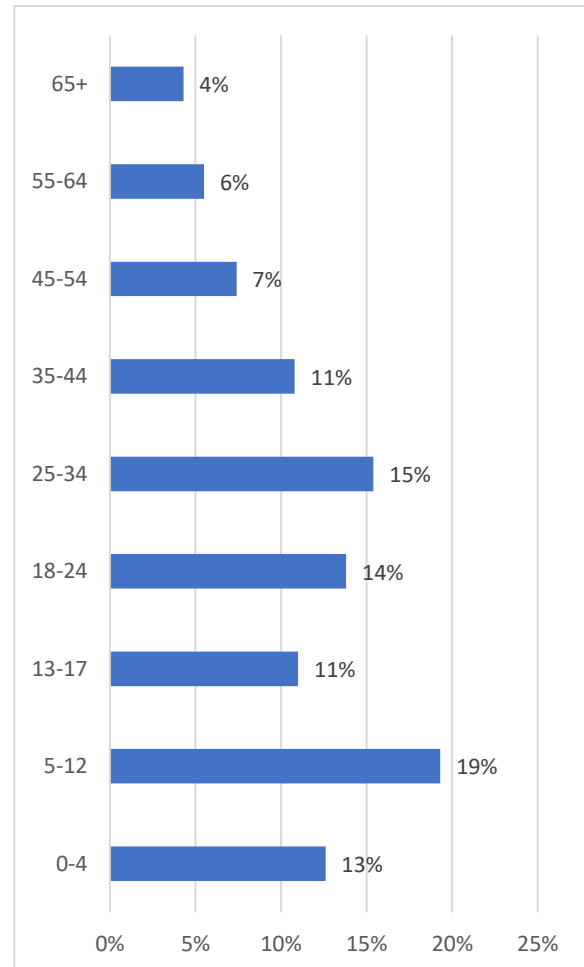
Demographic Overview

Total Population: 241.49M[i]

[iii]
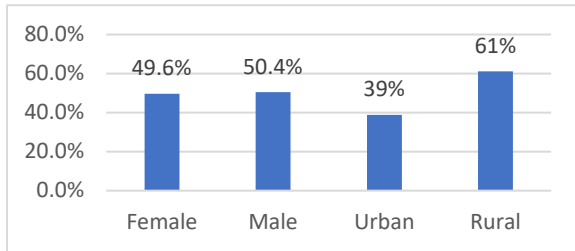
Literacy Rate: 59.3%[iv]

[v]

National Language: Urdu
Other languages spoken: Punjabi, Pashto, Sindhi, Balochi, Saraiki[vi]

Age Demographics[ii]

Digital Connectivity

As of Nov 2023, there are 189M Mobile Cellular subscribers, 126M mobile broadband subscribers and 129M broadband subscribers in Pakistan.[vii] 62.1% of mobile phone devices in Pakistan have 3G, 4G, or 5G broadband capabilities[viii] and the number of 3G and 4G users stood at 124.16M (Feb 2023 figure).[ix] Pakistan is seen as 'mobile first market', with digital services primarily accessed through mobile.[x] However, while 189M of the population had an active cellular mobile connection in 2023,[xi] the quality and speed of connectivity is poor.[xii] In 2023, the country's median mobile internet connection speed via cellular networks stood at 14.93 Mbps, and the median fixed internet connection speed was 10.28 Mbps. While the median mobile internet connection speed decreased in 2023 from 2022 by 1.42 Mbps, the median fixed internet connection speed increased by 1.42 Mbps.[xiii] Pakistan ranked 112th out of 145 countries in mobile connectivity speeds and 159th out of 175 countries in fixed connectivity speeds.[xiv]

According to the Pakistan Telecommunication Authority[xv] (PTA), there was a decrease of 0.77M in the number of cellular subscribers by Dec 2022[xvi], out of which around 36.5% were internet users.[xvii] And of these, around 78.6% accessed the internet through their phones. Broadband penetration in Pakistan is relatively low compared to other countries in the region[xviii], and this is further evidenced by the PTA data, which saw a decline in broadband penetration from 56% in Nov 2022 to 55.81% in December 2022.[xix] PTA speculated that the decrease is due to the biometric verification for SIM authentication and security.[xx]
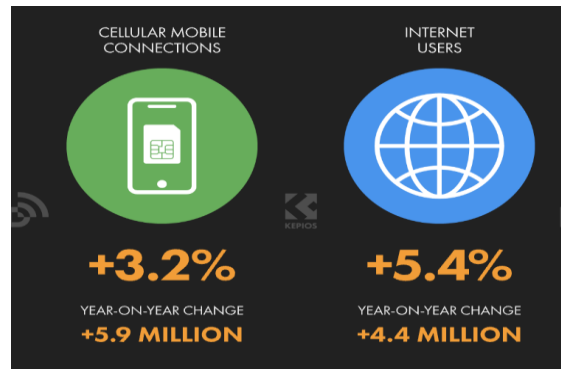
Digital Growth[xxi] (compared to 2022)

The Digital Quality of Life Index (DQL) report 2023 ranked Pakistan at 93rd (up from 90th in 2022) out of 121 countries. For Internet affordability it rose to 45th (from 83rd in 2022), it stands at 112th in mobile speed (a drop from 102nd in 2022) and 116th in broadband speed (dropped from 112th in 2022).[xxii]

Trends to Note (Nov 2022 to Nov 2023)[xxiii]
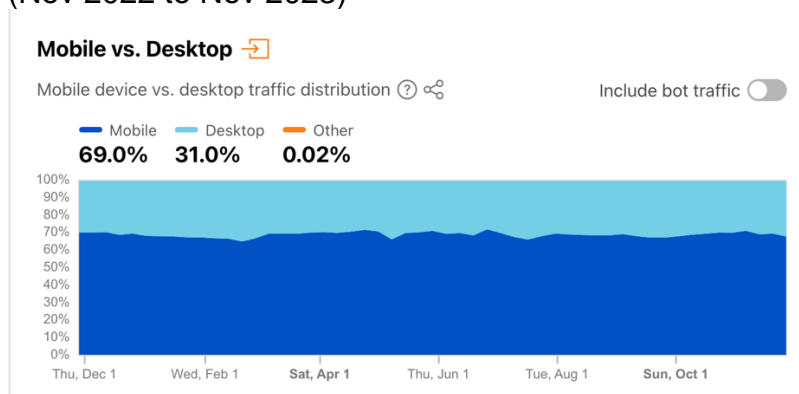
Mobile Operating Systems

Distribution of mobile device requests to Cloudflare by operating system ⑦ ⪮
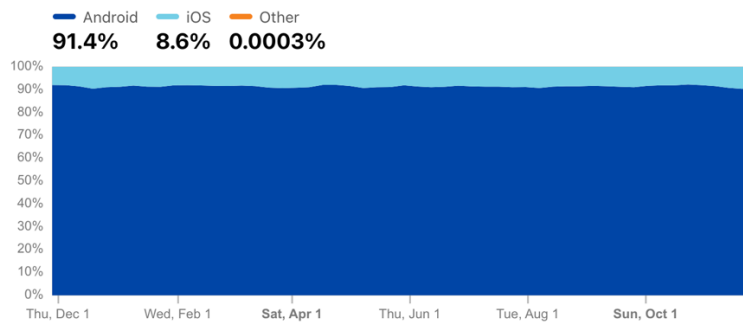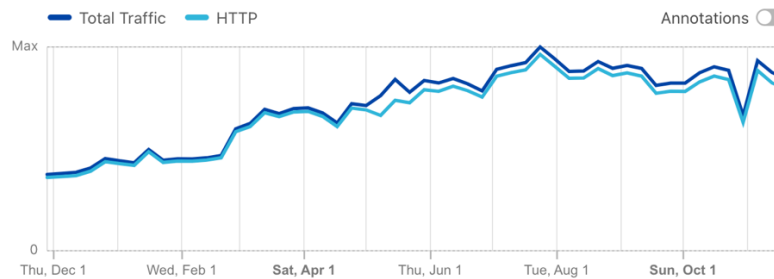
Android	iOS	Other
91.4%	**8.6%**	**0.0003%**

Internet traffic trends ⇥

Traffic volume over the selected time period ⑦ 📢 ⪮

Total Traffic — HTTP   Annotations ⬤

Digital Divide

👤 Gender divide

The gender divide exists across all sectors in Pakistan, from education (70% male literacy and 48% female literacy) to economic and political opportunities to access or even agency.[xxiv] Cultural and social norms, along with economic situation, remain one of the biggest hinderances for women and girls in Pakistan, and this is also visible in the digital gender divide. According to the World Economic Forum's Global Gender Gap Report 2023, Pakistan is at the 'bottom of the regional and global ranking tables' and has attained less than 40% parity. It is 7th in the region, 142nd globally (out of 146 countries) and has a score of 0.575 (on a 0-1 scale), a +0.011 change from 2022.[xxv] The widest gap is noted for the Political Empowerment subindex (0.152). Furthermore, according to the Inclusive Internet Index Report (2020) published by The Economist's Intelligence Unit, Pakistan ranked 90 out of 120 countries (lowest in South Asia) and ranked the lowest in two categories – gender gap in internet access and gender gap in mobile phone access.[xxvi]

According to GSMA's The Mobile Gender Gap Report 2023, of all the 12 LMIC surveyed, Pakistan has the widest gap in mobile ownership at 35% (52% of women own mobile compared to 81% of men). Mobile internet adoption is noted as low for both men (45%) and women (27%), and the use of mobile internet is also very low (9% for women and

15% for men).[xxvii] Share of the population by type of handset owned in Pakistan: 20% of women own basic phones (33% for men), 2% (6% for men) feature phones, and 20% own a smartphone (63% for men). The report also found that in Pakistan, 43% of men own a smartphone compared to just 20% of women. But mobile internet awareness is high (88% in men and 84% in women), and mobile internet use among those with 'internet-enabled devices' is also high (women (84%) and men (85%)).[xxviii]

Women or girls' access to the internet and devices is often restricted or monitored by male family members, resulting in a lack of agency and participation in the digital environment.[xxix] Key findings from the GSMA's Mobile Gender gap 2023 report noted '*that the proportion of people who use mobile internet, especially women, do not own a mobile phone or only a basic phone. This means they are accessing the internet on someone else's device.'* In Pakistan, 31% of female mobile internet users were using someone else's phone to get online, compared to only 7% of men.

Other key barriers noted were low literacy levels, unaffordable devices and data, geography, and socio-cultural constraints (such as family disapproval or TikTok being banned for being 'immoral').[xxx] Family disapproval was a major barrier to women's mobile ownership.[xxxi] The 2021 GSMA report had found that 25% of women, 'who do not yet own a mobile phone, *reported difficulties reading and writing as their top barrier to mobile ownership'*, and 7% reported not knowing how to use a phone as their top barrier.[xxxii] They also reported '*affordability'* as another major barrier to owning a device.

Moreover, lack of online safety, implementation of the cybercrime laws and policies and overall social attitudes towards women and girls having access to devices and the internet is also a major barrier.[xxxiii]

Inconsistent digital infrastructure for communities: Urban and Rural

There is an internet-use divide between urban and rural populations,[xxxiv] even though in the recent years there have been initiatives to improving internet connectivity in rural areas, but there are still significant gaps in coverage and access.[xxxv] The joint statement by the Digital Rights Foundation and Bolo Bhi, a civil society organisation engaged in advocacy, policy, and research in digital rights, stated that '*an uncritical embrace of technology should not ignore the fact that access to these technologies is still a luxury for many and provision of the internet is very low in countries such as Pakistan.'*[xxxvi] Given the poor state of connectivity (both mobile and internet) and the electricity shortage, access is also uneven across the country.[xxxvii]

Lack of Affordability: High Cost of Data and Devices

The World Bank Report pointed out that Pakistan has some of the lowest mobile data rates (average cost of 1GB data was $0.12 in 2023[xxxviii]) in the world but fixed broadband prices are above the' affordability threshold' (2% of GNI). It noted that the high cost of internet-enabled devices (partly due to taxes) and the low general and digital literacy continue to be a barrier to digital adoption and the digital economy in Pakistan.[xxxix] The smartphone ownership in 2022 stood at 44% for urban and 25% for rural populations.[xl] The State of Mobile Internet Connectivity 2023 report found that 'a

quarter of countries in South Asia saw device affordability worsen'.[xli] The GSMA report (2021) had also pointed out that the mobile-related taxes in Pakistan are relatively high, with 'taxes on handsets and mobile services accounting for around 23% of the total cost of mobile ownership'.[xlii]

This is perhaps also highlighted in the findings from the 2019 – 2020 Pakistan Social and Living Standards Measurement (PSLM) by the Pakistan Bureau of Statistics (PBS), covering 176,790 households across rural and urban communities, only 12% of households reported having at least one device such as computer, laptop and tablet and almost 93pc of households in the country reported having mobile/smartphone (with % higher in urban areas (96%) than in rural areas (91%).[xliii] It was also noted that 44% of government high schools and 38% of private high schools had computer labs in rural areas (with internet connectivity at 33% and 35% respectively). In contrast, in urban areas, the figures stood at 85% and 80% respectively.[xliv]

Low levels of literacy (impacting digital literacy)

The overall literacy rate stands at 59.3% (70% male literacy and 48% female literacy) [xlv] and has the world's second highest number of Out of School Children (22.8 million children between the ages of 5 and 16 and representing 44% of children not attending schools).[xlvi] Significant inequalities exist in basic digital literacy (across rural-urban, provincial, income and gender).

Placing 132 out of 140 economies in terms of skills in the World Economic Forum's Global Competitiveness Index (GCI) for 2019, Pakistan was lagging behind all South Asian countries that were measured. The lack of, or low levels, of literacy (basic and digital) is the main contributor to poverty and unemployment, a barrier to digital adoption, and hinders economic development.[xlvii] Also, it is worth noting that in rural areas, neither men nor women neither have internet access nor are they literate/or skilled enough to use it.[xlviii]

A study from 2015 also investigated the digital divide from a Caste perspective. It stated that the older castes, which are often involved in more traditional occupations - farmers, weavers, etc. - had fewer reasons for adopting technology. [xlix] However, no present study can provide more recent data on this.

Low levels of trust

Although there are laws that regulate and protect people's data and privacy, as well as prevent cybercrimes (there is a dedicated cybersecurity agency[l]), Pakistan ranked below average on the safeguards score. Lack of human resources, technical capacity and an ongoing lack of data protection continue to create barriers to digital adoption.[li]

Slow uptake: Digital financial services (DFS), e-commerce and start-ups

The country's DFS are underdeveloped. While many Pakistanis cannot access banking services (affecting women more than men), the informal economy and low literacy (basic, digital and financial) rates contribute to limited DFS. Pakistan is also experiencing a rise in FinTech start-ups, however, only a few offer DFS due to 'perceived complex regulatory environment' and lack of collaborative platforms.[lii]

The Covid-19 crisis allowed Pakistan to experiment with digital payment with the Ehsaas Emergency Cash Program, where they collaborated with partner banks to disburse cash assistance to poor families, but to note, due to legal and other pertinent issues the recipients could only have 'Limited Mandate Accounts' with restricted functions rather than a fully functional bank account.[liii]

The government is trying to create an enabling environment for digital businesses, but the lack of consumer and data protection regulations, uncertain intellectual property rights, inconsistent tax regimes, etc, have held back investments or development. However, emerging trends in e-commerce and startups are positive, with '*e-commerce in Pakistan now a PKR 230 billion market annually, dominated by multi-retailer platforms and 720 start-ups have been established since 2010, 67% of which are still active.*' However, highlighting the prevalent gender divide again, as of July 2022, only 1% of women in Pakistan participate in entrepreneurial activities compared with 21% of men.[liv]

Digital Communications

Telecommunications

The Pakistan Telecommunication Authority (PTA) is the state agency in charge of telecommunications in Pakistan.[lv] Significant investment in telecoms infrastructure has ensured that mobile services are 'broadly available', highlighting the important role of telecommunications in Pakistan where many people live below the poverty line.[lvi]
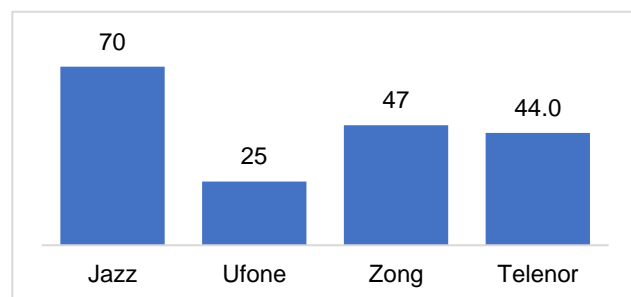
Active Subscribers (in millions, Nov 2023)

Jazz has the largest share in the market (37.23%) with Telenor (23.72%) and Zong (24.83%) close behind and Ufone at 13.311%.[lvii] In 2023, PTCL acquired Telenor's telecom business which will be merged with Ufone, making it the largest MNO in the country.[lviii]

Reference for the figure[lix]

Domain Insights (Nov 2022 to Nov 2023)[lx]

Top 10 Domains ⇥

Daily insights into domain popularity derived from Cloudflare 1.1.1.1 data ⑦ ⌗

1	google.com	2	googleapis.com	3	gstatic.com	4	facebook.com
5	gvt2.com	6	doubleclick.net	7	youtube.com	8	googlevideo.com
9	cloudflare.com	10	tiktokcdn.com				
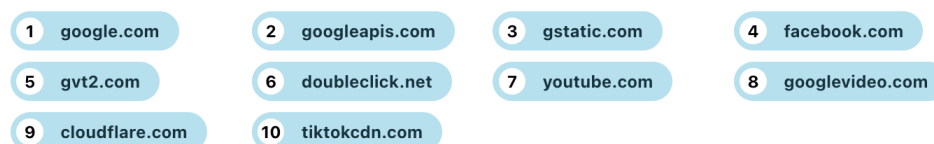
Social Media

There were 71.70M social media users in Pakistan, with 53.20M aged 18 and above. 28% of users were female and 72% were male.[lxi]

Reference for the figure[lxii]

0.75% Youtube users

0.68% Instagram users

90% Facebook users

0.56% Pinterest users

7.5% Twitter users
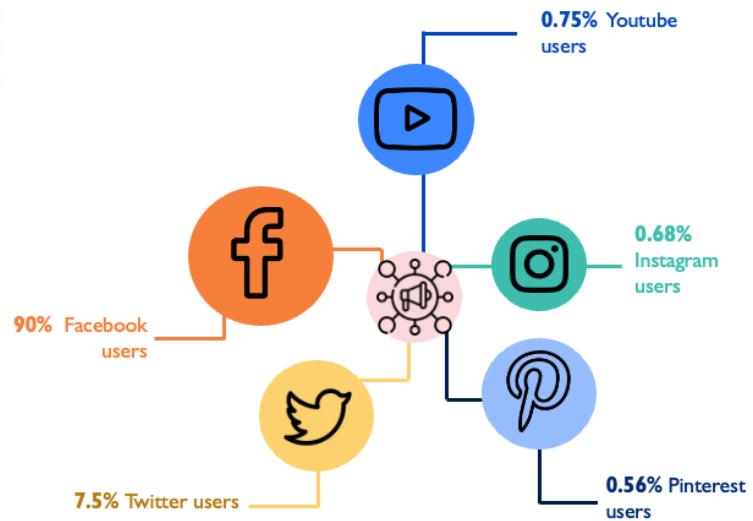
% of social media users that access third-party websites/information via clicks or taps on links published in social media platform

Social Media Platform Overview

According to data by PTA, Facebook, WhatsApp, Instagram, YouTube and TikTok are quite popular in Pakistan (most accessed).[lxiii]

Platform	User Demographics	Usage
Facebook	• 37.30M users[lxiv] • 23.7% Female, 76.3% Male[lxv] • Largest user group is 18-24	Primarily used for social networking, e-commerce, information access and exchange (including news and current affairs), and entertainment. It is also used for political engagement and community mobilisation.[lxvi]
Instagram	• 12.95M users[lxvii] • 35.3% Female, 64.7% Male[lxviii] • Largest user group is 18-24	Used to connect with friends and family, share photos and videos, promote businesses or personal brands, and follow celebrities and influencers. It is also used to make statements about political activities.[lxix]
LinkedIn	• 9.30M users[lxx]	To connect with a wide range of potential business partners, clients and collaborators.[lxxi] Furthermore, it is also a great way for professionals to stay updated with the latest industry trends, news and job opportunities.[lxxii]

YouTube	• 71.70M users[lxxiii] *User group data not available*	YouTube is rated higher than Facebook in terms of traffic, the second highest in Pakistan. The platform is used primarily for entertainment, news and commentary, education and learning.[lxxiv]
Twitter	• 4.65M users[lxxv] *User group data not available*	Primarily used for information exchange on current affairs, and political debate. It is actively used for campaigning and mobilization and frequently by government, political parties, law enforcement agencies, and other civil society groups.[lxxvi]
TikTok	• 16.5M Users[lxxvii] *User group data not available*	TikTok is the leading short-form video-sharing and streamlining applications platform in Pakistan. While extremely popular, there have been multiple bans over the past few years[lxxviii] due to concerns over "immoral and indecent" content.[lxxix]

Social Messaging Applications

The most popular messaging applications in Pakistan are Snapchat (*25.70M users[lxxx]*), Facebook Messenger (11.65M users[lxxxi]), and WhatsApp (*user data not available).*[lxxxii]

Social Media Key Influencers[1]

The top ten key influencers, as identified by the criteria indicated in <u>Annex 1</u>, have been identified below. Local macro influencers, who are celebrities or key opinion leaders will be the priority criteria used for this digital mapping. As they have the most potential for meaningful partnerships with UNICEF, reaching target communities seems most likely with this cohort. However, depending on the Country Office priorities, as well as the evolving nature of social media influencers, key influencers may need to be re-identified.

Influencer	Social Media Platform	Number of Followers	Category	Type of Content
Ayman Zaman	Instagram TikTok Twitter	Instagram – 1.2M TikTok – 7.2M Twitter - 77	Entertainment Celebrity	Social Posts Videos
Sadia Hassan Hayat	Instagram	1.1M	Entertainment Celebrity	Social Posts Videos
Humaima Malick	Instagram	Instagram – 1.4M	Lifestyle Celebrity	Social Posts

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[1] Social influencer statistics may have changed since they were last checked in January 2023.

		Twitter	Twitter – 535.6K		Videos
Junaid Khan	Instagram Twitter YouTube	Instagram – 1.7M Twitter – 20.7K YouTube – 15.5K	Entertainment Celebrity	Social Posts Videos
Sadaf Sabzwari	Instagram	Instagram – 1.4M	Fashion Celebrity	Social Posts Videos
Waliya Najib	Instagram YouTube	Instagram – 1.3M YouTube – 42.2K	Entertainment Key Opinion Leader	Social Posts Videos Blogs
Aniqa Nisar	Instagram YouTube Twitter	Instagram – 22.9K YouTube – 53.8K Twitter – 33.7K	Journalist Key Opinion Leader	Social Posts Videos
Ghana Ali Umair	Instagram Twitter	Instagram – 1.2M Twitter – 429	Entertainment Celebrity	Social Posts Videos
Ahmad Ali Butt	Instagram YouTube Twitter	Instagram – 1M YouTube – 1.18K Twitter – 132.4K	Entertainment Celebrity	Social Posts Videos
Aagha Ali	Instagram YouTube Twitter	Instagram – 1M YouTube – 143K Twitter – 13.8K	Entertainment Celebrity	Social Posts Videos
Humna Raza	Instagram Facebook YouTube Twitter	Instagram – 409K Facebook – 178K YouTube – 61.9K Twitter - 163	Entrepreneur	Social posts Videos
Jannat Mirza	Instagram TikTok	Instagram – 4.1M TikTok – 21.8M	Content Creator Entrepreneur	Social posts Videos
Javed Ahmad Ghamidi	Facebook Twitter	Facebook – 1M Twitter – 12.4K	Islamic scholar	Social posts
PUBG MOBILE Pakistan Official	YouTube	994K	Online gaming	Videos

Online Groups

Group Name	Social Media Platform	Number of Followers	Category	Type of Content
Two Rings	Facebook	57K	Matchmaking	Matchmaking Wedding Planning
Soul Wonders	Facebook	116.9K	Matchmaking	Matchmaking
MrJayPlays	Discord	160.6K	Gaming	Voice over Internet Protocol

				Instant messaging
Meme Kids	Discord	16.7K	Memes	Voice over Internet Protocol Instant messaging
Pakistan: Unity, Faith, Discipline (r/pakistan)	Reddit	171K	Humor Politics Finance Research Advice	Discussions
Photographs of Pakistan (r/ExplorePakistan)	Reddit	17.2K	Photography	Discussion
Chutyapa (r/chutyapa)	Reddit	34.3K	Satire News Announcements	Discussion
PakGamers | Official (r/PakGamers)	Reddit	15.4K	Online gaming	Discussions
PakGamers – Pakistan's Gamers Community	Facebook	5.1K	Online gaming	Social posts
Clash of Clans PAKISTAN (Family Group)	Facebook	2.8K	Online gaming	Social posts
Clash of Clans Pakistan	Facebook	138.9k	Online Trading	Trading group for Clash of Clans
PUBG MOBILE Pakistan	Discord	57.6K	Online gaming	Voice over Internet Protocol Instant messaging
PAKISTANI PUBG MOBILE COMMUNITY PK	Facebook	3.3K	Online gaming	Social posts
Call Of Duty | Pakistan Community	Facebook	12.3K	Online gaming	Social posts
DOTA 2 Pakistan Community	Facebook	3.8K	Online gaming	Social posts
Garena Pakistan	Facebook	1.6K	Online gaming	Social posts

Mobile Legends: Bang Bang Official - Pakistan	Facebook	5.1K	Online gaming	Social posts

Gaming Platforms and Communities

Community Name	Type of Content
PakGamers	• Offers a wide variety of gaming platfoorms (e.g., PC, console, and mbile gaming) • The community gathers game reviews, discussion frums, and gaming news
Steam Community	• A digital distribution platform that offers a wide range of video games, software, and other digital content • Allows members to discuss the latest developments in the gaming industry and to share their views on various gaming-related topics
Free Fire Esports Pakistan	• Official competitive gaming league for Free Fire in Pakistan • The league offers a platform for players to connect with each other, improve their skills, and showcase their talent on a national and international level
Garena	• A digital entertainment platform that offers a wide range of online games (e.g., Free Fire, League of Legends, and Call of Duty Mobile) and social networking services • Offers localized content and support for Pakistani gamers and provides access to exclusive in-game events and rewards
PUBG Mobile Pakistan	• A localized version of the PUBG game that is tailored to Pakistani gamers. It offers localized content, events, and rewards, as well as dedicated servers for players in Pakistan • The game has also organized various esports tournaments in Pakistan, offering players the opportunity to compete at a professional level and win cash prizes

Traditional Media Platforms

TV remains the most trusted, and dominant, source of information for Pakistanis. There are many private TV channels (viewed via cable) and 'no private, terrestrially-broadcast' stations. State-run Pakistan Television Corporation (PTV) is the 'national terrestrial broadcaster.' Radio Pakistan is state-run, and it operates 25 stations nationwide along with the FM 101 network (entertainment station for younger listeners).[lxxxiii] There are more than 100 licensed private FM radio stations. And many unlicensed FM radio stations are noted to be operating in tribal areas, usually operated by community leaders (such as clerics) themselves.[lxxxiv] Associated Press of Pakistan (APP) is a government-operated

national news agency with 'News Exchange Agreements with several Foreign News Agencies.[lxxxv]

- Some of Pakistan's most popular television channels include PTV (Pakistan Television Corporation), the state-owned broadcaster, and private channels such as Geo News, ARY News, and Dawn News.[lxxxvi]

- The state-owned Pakistan Broadcasting Corporation (PBC) operates radio stations across the country, including FM101 and FM99. There are also a number of private radio stations, such as CityFM89 and FM106.[lxxxvii]

- Some of the most widely read newspapers in Pakistan include Dawn, Jang, The News International, and Express Tribune. [lxxxviii]

Online Media Platforms and Websites

The two most popular streaming services in Pakistan are Netflix and iFlix. While Netflix offers individual subscription based-streaming services, iFlix streaming services are offered as a bundle by the Pakistan Telecommunication Company Ltd (PTCL) when customers get a smart TV connection.[lxxxix] As of 2022, Netflix had around 300,000 subscribers[xc] and current data for iFlix could not be found. Some other popular online media platforms and websites in Pakistan are Amazon Prime Video and Starz Play. Starz Play is partnering with Cinepax Pakistan to offer streaming services in Pakistan.[xci] However, PTA data showed relatively low traffic for Amazon Prime and Netflix.[xcii]

Dating (social) Apps and their Use:

In 2020, Pakistan banned dating apps such as Tinder, Grindr, Tagged, Skout and SayHi 'for not adhering to local laws' and for 'disseminating "immoral content"', though people may still be accessing them via VPN.[xciii] Despite that, the young population turned to Facebook groups[xciv] or other more localised dating apps such as Muzz[xcv] and Dil Ka Rishta.

Digital Tools

Education

- E-Taleem: digital education integrated platform launched by the government of Pakistan to provide access to quality education for all, promoting several other apps and learning tools such as Taleemabad[xcvi], Noon Academy[xcvii] etc and features several components such as teleschool, radioschool, inclusive learning and accelerated learning.[xcviii]

- Eduvision: an online education and career planning platform that provides access to educational resources and online courses for students.[xcix]

- LearnSmart: a web portal and an app that aims to improve the quality of education in Pakistan by providing access to high-quality educational resources and online courses in English, Maths and Science.[c]

- EduTech: an initiative of the Higher Education Commission (HEC) to promote the use of digital technologies in education; includes the development of an online education portal that provides access to educational resources.[ci]

- The Distance Learning Program by Allama Iqbal Open University (AIOU) provides access to education for students who are unable to attend traditional classes.[cii]

Health

Pakistan's National Digital Health Strategy 2022 – 2030, lays out the framework to achieving a 'healthy population' through uptake of digital technology for strengthened and people-centered health system. Some examples of digital health platforms operating in Pakistan are as follows:

- Sehat Kahani: a telemedicine platform that connects female healthcare providers in underserved communities with patients through video consultations. It aims to improve access to healthcare for women and girls in rural areas, where access to healthcare is often limited.[ciii]

- e-Khidmat Markaz: an initiative of the government of Pakistan, which aims to provide access to government services through digital channels, including health services.[civ]

- Digital Health Pakistan: Pakistan's first hackathon to develop innovative digital solutions to advance and strengthen healthcare.

- UNICEF mRef App: digitised electronic referral app that enables registration of women and children into the centralised database connected with provincial EIR.

- Dawaai: a digital platform that provides medicines and medical equipment. It is internationally certified and registered.

- Healthwire: an online pharmacy

- Marham: has been building a community of PMC-verified doctors and connects individuals doctors to patients based on the need.

Child Protection

- The Child Protection and Welfare Bureau (CPWB)'s hotline 1121 of Punjab helps safeguard the physical and physiological welfare of the children.

- Digital Rights Foundation (DRF), Internet Watch Foundation (IWF) and the Global Fund to End Violence Against Children launched a portal to improve children's online safety in Pakistan. It allows internet users in Pakistan to anonymously report child sexual abuse material in three different languages – English, Urdu, and Pashto.[cv]

Protection

- The Digital Rights Foundation (DRF) is a non-profit organization in Pakistan that works to promote and protect human rights online. The organization provides digital security training and awareness raising to individuals, organizations and government bodies.[cvi]

- Pakistan's Computer Emergency Response Team (CERT) is a government-run organization that aims to protect Pakistan's digital infrastructure from cyber threats. The organization also provides digital security training and awareness raising to individuals, organisations and government.[cvii]

- The Cyber Crime Reporting Portal is an online platform launched by the government of Pakistan where citizens can report cybercrime. The portal also provides information on different types of cybercrime, such as hacking and identity theft, and provides guidance on how to report such crimes.[cviii]

Digital Ecosystem and Infrastructure

Pakistan made some progress in implementing e-governance to improve the access and quality of information and services to citizens using ICT. Examples of few e-governance programs under National Information and Technology Board (NITB) (that facilitates federal ministries and divisions to implement these programs[cix]) include: Mera Bacha (under development for Child Protection), City Islamabad App, E-Taleem, WECARE etc.[cx] Despite these efforts, in 2022 UN E-Government Survey, Pakistan dropped from 153 in 2020[cxi] to 150 in 2022.[cxii]

Despite investments in its digital infrastructure (both by the government and the private sector), the infrastructure is still relatively underdeveloped in some areas of the country, particularly in rural areas. [cxiii] The government of Pakistan has also been actively promoting the development of digital connectivity in the country. Some of the policies include the National Broadband Policy, National IT Policy, and the National Digital Pakistan Policy.

The State Bank of Pakistan (SBP) has implemented various measures to promote the use of Digital Financial Services (DFS) in the country, such as issuing guidelines for mobile banking and electronic funds transfer (EFT) services[cxiv] and the government has launched various initiatives to promote DFS as well, such as the launch of the "E-Sahulat"

Metric	Percentage
Used the internet to pay bills in the last year	7.3%
Used online backing in the last year	7.6%
Made a purchase on the internet in the past year	0.9%
Made or received digital payments in the last year	17.7%
Have a mobile money account	6.9%
Have an account with a financial institution	18%
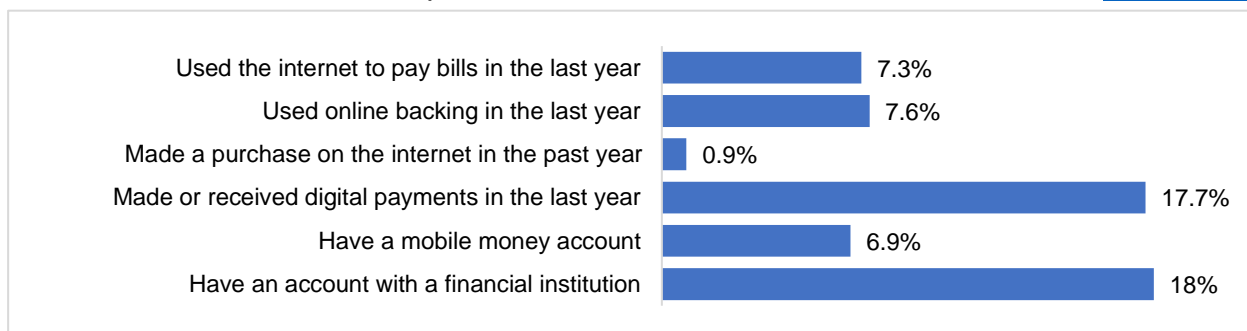
[program](#) which aims to provide electronic payment services to underserved areas. Despite these efforts, the adoption of DFS in Pakistan is still relatively low compared to other countries in the region, but the recent COVID-19 pandemic had accelerated this adoption somewhat.

With the increased use of smartphones, more internet access and increasing use of mobile payments, increase in e-commerce is noted. _Daraz_ is the country's leading e-commerce platform and has become very popular among Pakistani consumers. The company has also been actively involved in promoting e-commerce in Pakistan, for example by organizing annual online sales events such as the Daraz 11.11 Global Shopping Festival.[cxv]

The government has also taken steps to promote e-commerce by introducing supportive policies and initiatives such as the establishment of a [National e-Commerce Council](#), and a [National Incubation Centre](#) for e-commerce start-ups, which has enabled the growth of small and medium-sized e-commerce businesses. However, lack of trust in online transactions, limited infrastructure for delivery and logistics, and lack of consumer protection laws still remain barriers to the full potential of e-commerce.

Regulations promoting Digital Transformation and Inclusion

There are several regulations in place in Pakistan that hinder digital adoption and inclusion while others are supportive. Some examples include:

- The Pakistan Telecommunications Authority (PTA) is responsible for blocking websites that are deemed offensive or against national security. However, as of 2023, the PTA must consult the IT Ministry before taking any actions to block a website.[cxvi]

- The government has implemented measures to control and monitor social media[cxvii]

- The government has also banned access to VPNs and proxy servers in order to prevent users from bypassing internet censorship.[cxviii]

- The State Bank of Pakistan (SBP) issued guidelines for mobile banking and electronic funds transfer (EFT) services, which outline the requirements that financial institutions must adhere to.[cxix]

- The SBP issued a "National Financial Inclusion Strategy" which sets out the framework for promoting the use of digital financial services in Pakistan, with a focus on increasing financial inclusion among underserved populations.[cxx]

- The SBP has also issued regulations on digital banking and e-wallets which are supervised and regulated by the central bank.[cxxi]

Artificial Intelligence

Over the past decade, Pakistan has slowly entered into the artificial intelligence and machine learning sector.[cxxii] While the Government of Pakistan has identified the need to develop the AI sector,[cxxiii] there is still minimal integration of new innovative technology in the country. On one hand, there is a growing sector and IT workforce. In 2022, Pakistan had more then 600,000 IT professionals and over 25,000 fresh IT graduates entering the

workforce;[cxxiv] and there are several universities such as FAST National University of Computer and Emerging Sciences, COMSATS University Islamabad, Shaheed Zulfikar Ali Bhutto Institute of Science and Technology, and Ghulam Ishaq Khan Institute of Engineering Sciences and Technology who offer AI programs.[cxxv] On the other hand, there is a limited number of Pakistani companies and start-ups in the country who are providing AI services and products. However, there are a number of internationally-based companies such as Motive, that have an engineering hub or AI team in Pakistan.[cxxvi]

The government has also supported the country's AI landscape by establishing the Presidential Initiative for Artificial Intelligence & Computing (PIAIC), the National Centre of Artificial Intelligence (NCAI), and the SinoPak Center for Artificial Intelligence (SPCAI).[cxxvii]

- The PIAIC's aim is to promote education, research, and business opportunities in AI.[cxxviii]
- The NCAI in Islamabad was established with the aim of being a leading hub of innovation, scientific research, and transferring knowledge to the local economy.[cxxix]
- The SPCAI's objective is to strengthen the field of AI by encouraging students to study IT in collaboration with a Chinese or Austrian university and to use AI to solve local problems.[cxxx]

However, while the government has demonstrated readiness in harnessing AI, Pakistan ranks 117 on the 2020 Government AI Readiness Index.[cxxxi]

While Pakistan does not have any laws regulating the AI sector at the moment. Though in it's 2018 Digital Pakistan Policy, the Ministry of Information Technology & Telecommunication highlighted the need to promote and develop AI along with other innovative technologies.[cxxxii] Additionally, in the country's National Cyber Security Policy 2021, the same ministry identified that AI was a new 'cybersecurity risk and challenge that would need a risk management and risk-based approach to protect', as well as a need to "upgrade and establish next-generation national cyber security forensic and screening setups to safeguard against advanced cyber threats in Artificial Intelligence (AI) driven environment."[cxxxiii]

Challenges, Opportunities, and Recommendations

Challenge/ Opportunity	Narrative	Recommendations
Challenges		
Underdeveloped or limited digital infrastructure	There is an internet-use divide between urban and rural populations,[cxxxiv] even with some improvement initiatives, there	• Advocate for investments in digital infrastructure, such as broadband networks and improved electricity supply. • Partner (shared value) with the government and private sector (PTA/MNOs/Tech) to improve connectivity and digital infrastructure in remote areas. Or provide data-free access to certain apps/platforms (can be intervention or programme-specific) or communities that UNICEF is working with. • Support the ongoing national programs for digital transformation and inclusion.

	are still significant gaps in coverage and access.[cxxxv]	• Partner with relevant authorities to develop alternative solutions such as local access community networks, community-led networks and satellite-based internet solutions. • Implement initiatives that bridge the gap between online and offline communities. Do a service mapping to ensure that SBC digital interventions are linked to relevant support, and this also reduces the online and offline gaps (a community being reached online should be able to get support offline and vice-versa). The loop should be completed.
Lack of Affordability: data and devices	Pakistan has some of the lowest mobile data rates in the world, but fixed broadband prices are significantly above the affordability threshold.[cxxxvi] This continues to hinder the digital economy, combined with low general and digital literacy.	• Develop alternative solutions such as community-led networks and satellite-based internet solutions or support the development of community-led solutions (engage the youth), such as shared community Wi-Fi networks/centres. • Advocate for policies that promote affordable internet and device access for all. • Work with telecommunication companies to expand coverage to underserved areas and reduce the digital divide. • Develop offline solutions, such as low-tech mobile applications (such as the existing UNICEF tools/platforms) and text messaging services, to reach those without sustained or reliable access. • Partner with PTA/telcos/internet service providers to offer low-cost/free internet packages for low-income (rural) communities, as part of the SBC interventions and programmes. • Implement initiatives that bridge the gap between online and offline communities, such as all SBC interventions ensuring that communities can be guided/referred to online via offline means (or vice-versa).
Low (Digital) Literacy and Skills	The overall literacy rate stands at 59.3% (70% male literacy and 48% female literacy)[cxxxvii] and has the world's second highest number of Out of School Children (22.8 million children between the ages of 5 and 16 and representing 44% of children not attending schools).[cxxxviii] Significant inequalities exist in basic digital literacy (across rural-urban, provincial, income and gender).	• Advocate for recent and relevant data to ascertain the situation of digital literacy and skills in Pakistan (segregated by gender). Support the relevant authorities/partners to carry out the research (nationwide). • Advocate for a balanced curriculum to improve both traditional and digital literacy skills. • Partner with the Ministry of Education (and any other relevant authority and UNICEF sectors) to develop digital literacy and online safety programs for schools and communities. Use gamification and interactive learning tools (AI and games) to make digital literacy programs engaging and fun. • Partner with local NGOs to provide digital skills and online safety training to marginalized communities. • Strengthen the capacity of teachers, educators (TOT) and parents on digital skills and online safety. • Partner with CBOs/CSOs, private sector or media to develop and implement educational, edutainment or gaming programmes to improve literacy and awareness of the online platforms/tec/tools etc. • Leverage social media platforms and communities to raise awareness and develop the community's digital literacy skills: promote the use of social media for educational purposes. For example,

		Facebook Groups can be used for collaboration, co-creation and discussions etc. or to create edutainment programmes.
		• Partner with AI and tech companies and organisations, to establish platforms and tools (such as online courses, games, training, hubs, labs, centres etc) that can digitally empower communities, or leverage the existing ones, that can be sustained. Apply design thinking when developing new or existing digital interventions, tools and platforms to improve literacy skills.
		• Partner with telcos to provide connectivity and data to ensure that digital tools and platforms are accessible to the community. This will also encourage digital adoption.
		• Partner with the gaming community as an entry point to build digital literacy and skills and promote online safety (ensuring mental health is a key component there).
Digital Gender Divide	The gender divide exists across all sectors in Pakistan, from education (70% male literacy and 48% female literacy) to economic and political opportunities to access or even agency. [cxxxix]	• Assess the situation of girls and women in Pakistan: carry out formative research (identify KABP, barriers, challenges hindering the move to digital and opportunities and best practices that can be emulated to bring girls/women online) etc.
		• Collaborate with the gender focal points/section and develop a digital SBC strategy (based on the learnings from the research) as a foundation to bring girls and women online; address the negative gender norms (and the hindering social and cultural norms), educate the men/fathers/mothers/community and religious leaders/other decision makers on the positive outcomes of ensuring girls/women have access and devices, create STEM programs/tools/platforms for girls, advocate for/create women/girls only safe online spaces, ensure online safety is a core part of the interventions/discussions etc
		• Embed the discourse about girls' access to digital into the ongoing SBC programmes (or as part of any new intervention).
		• Utilise digital tools and social listening on a continuous basis to gather insights (behaviour as well) for impactful community engagement and for M&E as well.
		• Develop specific programs, in partnership with the relevant ministries, private sector organisations etc, to encourage and promote digital entrepreneurship culture among women (support with financing, establishing businesses and connecting to digital services to support the inception and promotion).
		• Partner with women entrepreneurs to reach and engage with girls/women in urban and rural areas and encourage the use of digital technology as a source of information and livelihood (offline to online movement).
		• Establish (in consultation with the women/girls) digital centres/hubs/labs/platforms, and partner with local private sector organizations to develop gender-sensitive digital platforms.
		• Mobilise influencers, religious leaders and activists to advocate for online, and device, access for girls/women.
		• Partner with tech companies to promote their safety measures/safeguarding tools to parents as a stepping stone to bringing girls online and to

		• provide safeguarded devices to girls to ensure ongoing and sustained access.
		• Partner with telecoms to:
		o Provide connectivity to girls/women: such as special data packages or zero-rated apps/content. Especially for women/girls in rural or remote areas.
		o Expand the reach of existing digital and e-learning platforms (using AI technology and tools), specifically targeting girls/women in rural areas to develop their digital literacy and skills.

Opportunities		
Lower mobile data costs and 'Mobile First Market'	Pakistan has some of the lowest mobile data rates in the world.[cxl] Pakistan is seen as 'mobile first market', with digital services being accessed primarily through mobile.[cxli]	• Leverage this to promote digital adoption. This could include leveraging the existing mobile apps/tools or developing other mobile-friendly digital platforms to support SBC work such as providing mobile-based programs and content, engaging community influencers and mobilizing them digitally (and to bridge the offline and online) or for frontline workers training etc. • Partner with universities, tech companies and vocational training centres to provide digital skills training to marginalised communities or increase reach and engagement with SBC work using mobile platforms/apps. • Develop mobile-based services that are optimized for low-bandwidth connections to ensure that they are accessible to all.

Reach of Telecos/Mobile Network Operators (MNOs)	As of Nov 2023, there are 189M Mobile Cellular subscribers, 126M mobile broadband subscribers and 129M broadband subscribers in Pakistan.[cxlii] 62.1% of mobile phone devices in Pakistan have 3G, 4G, or 5G broadband capabilities[cxliii]	• Partner with PTA/telecos/mobile network operators to:
		  o Expand the reach of digital interventions and programmes, particularly in remote and underserved areas.
		  o Provide subsidised or free data for specific interventions/programmes/activities/community.
		  o Develop and implement data-driven interventions to bridge the digital divide.
		  o Use their micro-segmentation on high engagement channels to target communities and people for specific digital interventions.

Large youth group passionate about technology	There is an opportunity to utilise the youth's passion for tech and digital to build the digital economy.[cxliv]	• Foster partnerships with local universities, technology/startup incubators and youth-led organisations to develop or co-create innovative digital solutions to social challenges. • Use social media platforms to engage with young people and gather their opinions on different issues (social listening); co-create applications and platforms where they have agency. • Develop and implement digital literacy and entrepreneurship programmes targeting youth, encourage the development of youth-led tech startups. • Mobilise the youth (especially boys/men) to address the gender digital divide.
Established digital platforms	COVID-19 has stimulated activities on digital platforms specifically for e-commerce and schooling.[cxlv]	• Partner with local and international fintech organisations and startups to promote and develop learning or social change platforms. • Develop partnerships with established digital platforms, such as e-commerce, learning and social media platforms, to promote child-friendly policies and practices.

		• The very high use of chat apps for information distribution and consumption (and the use of text formats on these platforms) is an opportunity to reach large groups of people quickly and inexpensively in Pakistan. Developing AI technology for those applications or integrating components of it within the interactions will also help with engagement. • Support the expansion of e-learning platforms, particularly in remote and underserved areas, to improve access to education and information (relevant content): apply design thinking, gamification and AI elements to make platforms more interactive, relevant and engaging. • Partner with universities and vocational training centres to provide accreditation to learning online and create digital skills training and online safety content (ensuring mental health is a core component) for other communities such as parents/caregivers/frontline workers etc.

Growing population of online content providers and creators		• Develop partnerships with trusted online content providers, content creators and influencers to:
		  o Provide reliable and fact-checked information to their follower
		  o Disseminate digital literacy programmes and awareness campaigns.
		  o Deliver innovative digital solutions.
		  o Engage with communities and gather feedback on relevant topics and SBC programmes/interventions.
		• Advocate for policies that promote transparency and accountability among online content providers and creators.
		• Partner with tech companies to reduce misinformation and disinformation: create programs, promote their in-house tools to the general public etc.

AI		• Leverage the interest and focus of the government on AI and support its growth for SBC work: partner with relevant authorities to work together on ethical and protection issues and on leveraging the technology for children and other communities. • Introduce AI into SBC programming and interventions (internal and external capacity building). • Partner with AI start-ups and organisations to develop digital solutions (and elements) to enhance SBC work in Pakistan. • Leverage the existing AI-powered platforms and tools: partnerships, content support etc.

Annex 1 – Key Influencer Criteria

For the purpose of this document, key influencers have been defined in three ways - by the number of followers, types of content, and level of influence.

Defining influencers by the **number of followers** can be categorised into four types.

- **Mega influencers** are people with a large number of followers, usually over 1M followers on at least one social media platform. Mega influencers tend to be celebrities who have gained their fame offline, however some will have gained their followers online and through social activities.
- **Macro influencers** usually have 40,000 to 1M followers on social media platforms. This group tends to have high profiles and can be great for raising awareness on issues. It may be easier to connect with macro influencers, as there tends to be more of them than mega-influencers.
- **Micro influencers** have between 1,000 to 4,000 followers and tend to be ordinary everyday people who have become well-known and popular for their knowledge about a specific topic. This means that their followers tend to be interested in that specific topic. These influencers tend to have smaller followings but higher engagement and influence with their followers.
- **Nano influencers** have less than 1,000 followers and tend to be experts in a highly specialized or technical field. Similar to the followers of micro influencers, they tend to have smaller followings but higher engagement and influencer with their followers. However, they will not have as much influence as micro influencers as they have less followers.

Defining influencers by **types of content** which can be categorised into four types.

- **Bloggers** tend to have the most authentic, active, and engaging relationship with their followers.
- **Video makers** are popular types of content, and most tend to create and share videos on YouTube.
- **Podcasters** are the newest form of content to start generating followers and is growing increasingly popular.
- **Social posting only** is rare and tends to happen in parallel with other types of content creation.

Defining influencers by **level of influencer** which can be categorised into two types.

- **Celebrities** can sometimes lack credibility with specific target audiences, or around certain types of topics.
- **Key opinion leaders** are industry experts that can also be considered influencers who gain credibility among followers and people in general due to their technical expertise, qualifications, position, and experience. Key opinion leaders can include journalists, academics, industry experts, and/or professional advisors.

Macro and micro influencers, who are celebrities or key opinion leaders will be the priority criteria used for this digital mapping. As the potential for meaningful partnerships with UNICEF, to reach their target communities seems most likely with this cohort.

Annex 2 – Digital Public Goods (DPGs) case studies

UNICEF Ghana

UNICEF's Ghana office is a Pathfinder and runs the StartUp Lab, which assists sustainable entrepreneurs to develop their products and business models. The lab also serves as an incubator for open source startups and educates those considering it. The objective is to prepare DPGs from the StartUp Lab to apply for UNICEF's Venture Fund investment. The Country Office evaluates the StartUp Lab's solutions through its programmatic sections and collaborates with national institutional partners to incorporate open-source work into broader policy solutions.

UNICEF employs various tools, including the StartUp Lab, Venture Fund, and Innovation Hubs, to support innovation at different stages. In Ghana, the UNICEF Country Office used this system to uncover and advance two DPGs: Bisa App and EduNOSS, as well as DPG nominee Project Konko. For more information visit this site.

UNICEF Philippines

UNICEF Philippines started their DPGs Pathfinding Pilot in early 2021 with two objectives. Firstly, to discover how existing technical country capacity can be advantageous to DPGs and improving Technology for Development (T4D) that are relevant to UNICEF and the government's programmes. And secondly, developing a tool that would allow the sharing of knowledge and capacity among sectors. For more information visit this site.

UNICEF Innovation Funds

UNICEF Innovation funds exclusively invest in open-source technology solutions from new and emerging companies. Through its investments, UNICEF is strengthening communities, increasing the number of DPGs, and having an impact on children. For more information visit this site.

Safe YOU: Virtual Safe Space for Women

Safe YOU was launched in Northern Iraq (Kurdistan) in partnership with UNFPA Iraq and UNFPA Armenia in 2021. With the help of UNICEF Innovation, Safe YOU was recognised as a Digital Public Good (DPG), a digital tool aimed at achieving sustainable development goal number 5 (Gender Equality) as set by the United Nations Secretary General's 2020 Roadmap for Digital Cooperation. Safe YOU aims to be a key resource for evidence-based policy-making through our sophisticated AI data analysis system. This will lead to the prediction & prevention of Violence Against Women & Girls. For more information, visit the site here.

Annex 3 – UNICEF Digital Platforms

U-Report is a messaging tool that enables young people to interact with and raise their voices on issues that are important to them. It is operated by local government, organizations, and young people who record gather information, tips, and opinions from mobile device users on a range of issues. Based on the data and insights gathered by U-`reporters, the results are shared with the relevant communities and stakeholders. For more information on U-Report, visit this site. Access UReport South Asia here: https://southasia.ureport.in/

RapidPro collects data via short message service (SMS) and other communication channels (e.g. voice; social media channels, such as Facebook Messenger, Telegram, WhatsApp) to enable real-time data collection and mass-communication with target end-users, including beneficiaries and frontline workers. The technology allows users to design, pilot, and scale direct mobile outreach services without the help of a software developer in both normal development contexts and humanitarian emergencies.
For more information on RapidPro, visit this site.

Internet of Good Things (IoGT) aims to build people and communities' knowledge by closing the digital divide. For more information on IoGT, visit this site. Access South Asia IoGT here: https://sa.goodinternet.org/en/ or the Pakistan site here: https://nanhayqadam.org/ur/

All Children Learning is a regionally focused platform designed to strengthen assessment capacity and learning. The platform offers four different guidance's (government, emergencies, development, and teaching) to improve the users' assessment capacity and learning. For more information on All Children Learning, visit this site.

OKY app: the world's first menstruation education and period tracker app co-created with girls, for girls. Access here**:** Oky Nepal and Oky India

Bebbo app, developed by the UNICEF Regional Office for Europe and Central Asia, is an application that supports responsive, positive parenting. It aims to provide comprehensive information about early childhood development and parental care in a parent-friendly format. Bebbo also supports the dissemination of messages and information related to COVID-19 prevention and protection for children.
For more information**: https://www.bebbo.app/about-us**

USupportMe: part of the Mental Health and Psychosocial Wellbeing Portfolio at UNICEF. It is an app for on-demand psychosocial support services. After successful pilots in East and Central Asia, we're scaling up this innovative solution to meet its full potential.

UNIlearn: online national learning and knowledge-sharing platform which hosts dynamic education, skills, and other content from different states in India and from other countries.

AGORA is a platform that provides learning opportunities to UNICEF's staff, partners, and supporters. The learning opportunities range from specific thematic areas to strategies to languages to career support. For more information on AGORA, visit this site.

INFORM provides UNICEF and partners with a turnkey solution for field-based data collection, management and visualization. Inform supports UNICEF's strategic outcomes and strengthens our position as the global leader in data for children.
For more information: visit this site.

UNICEF SOCIAL MEDIA PLATFORMS

Endnotes

Definitions to Note:
- **Fixed Broadband Internet**: High-speed connectivity for public use of at least 256 Kbit/s or more in one or both directions (downloading and uploading). It includes cable modem Internet connections, DSL Internet connections of at least 256 Kbit/s or higher, fibre and other fixed broadband technology connections (such as satellite broadband Internet, Ethernet LANs, fixed-wireless access, Wireless Local Area Network, WiMAX, etc.).[cxlvi]
- **Mobile Broadband**: Mobile broadband technology allows for a wireless wide area network (WWAN). In simple terms, it provides wireless high-speed Internet access to portable devices by way of radio towers.[cxlvii]
- **Gross Domestic Product (GDP) per Capita**: is the sum of gross value added by all resident producers in the economy plus any product taxes (less subsidies) not included in the valuation of output, divided by mid-year population.[cxlviii]
- **Unbanked**: people with no bank account[cxlix]
- **Underbanked**: people with insufficient access to banking[cl]

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