



The Digital Worlds of Internally Displaced People and Host Communities in Bor, South Sudan

Introduction

As mobile phones have become nearly ubiquitous globally, digitalisation has affected almost every aspect of modern life. Humanitarian contexts are no exception. For people affected by war, displacement and the increasingly severe impacts of climate change, mobile phones play a vital role, connecting them to both lifesaving information and to loved ones in times of crisis.

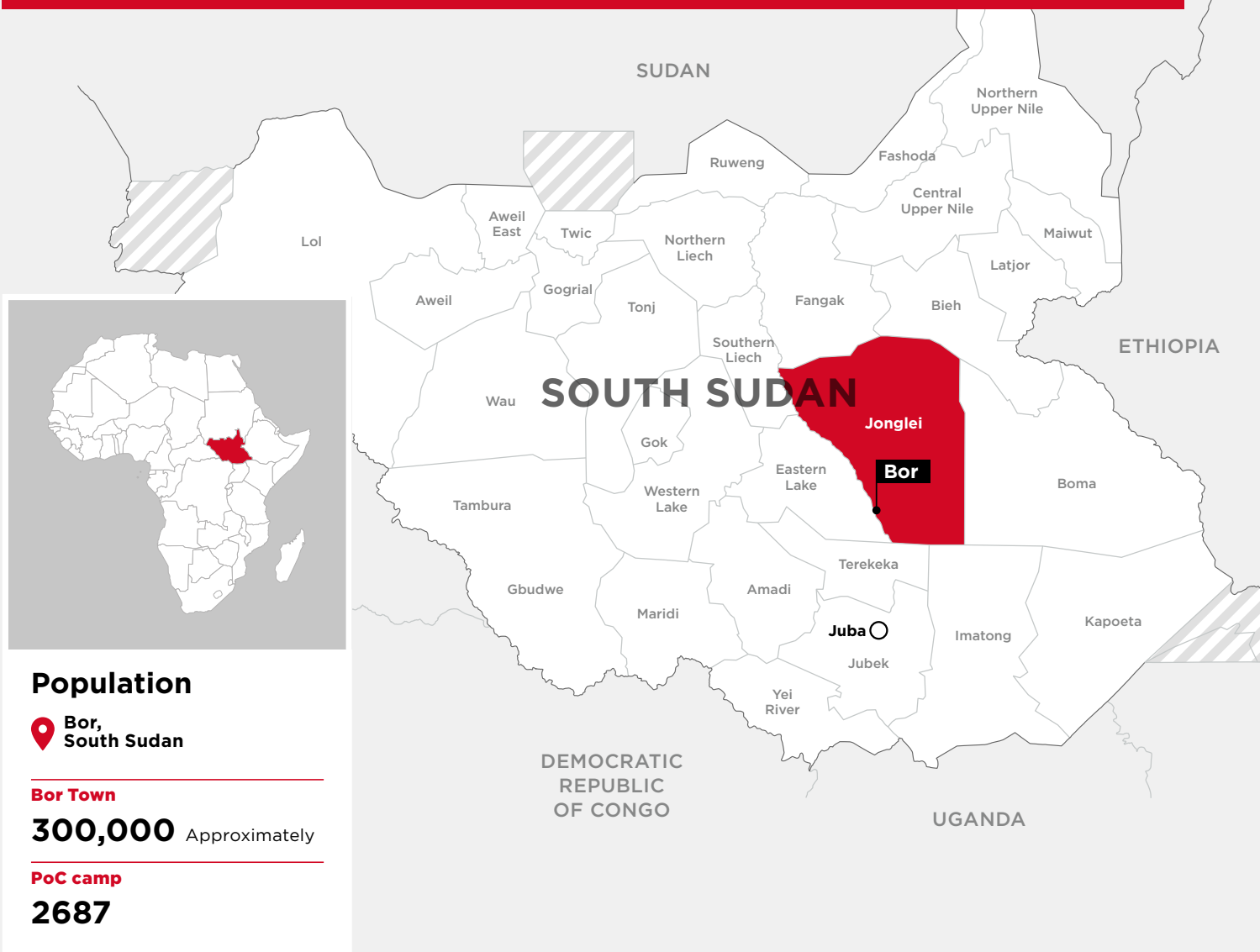
Through mobile phones, individuals and communities create their own digital worlds. While accessing humanitarian services and information might be part of that world, it almost always extends much further to the personal preferences and activities of users.

This case study is part of a larger research study conducted in partnership with UNHCR that explored how people in humanitarian contexts use and relate to their mobile phones. The research team conducted in-depth qualitative research activities and a representative survey in three locations: northern Lebanon; Iowara, Papua New Guinea; and Bor, South Sudan.

The full report, including details on methodology and findings from the other humanitarian contexts, can be found [here](#) 📄

Key findings:

- South Sudan has one of the lowest rates of mobile access and connectivity in the world. Yet, in Bor, mobile access and ownership is high: 79 per cent of internally displaced people (IDPs) surveyed owned a mobile phone and 90 per cent reported having access to one.
- Mobile ownership is relatively even among men and women, but women have more limited access to the internet and often need family approval to own a smartphone.
- For displaced people, mobile phones are especially vital to communicate with friends and family in other parts of South Sudan, and outside the country, through calls and social media.
- Mobile phones are used heavily for digital entertainment, particularly in IDP camps where there are no employment opportunities and where young people emphasised the importance of finding ways to pass the time. However, the high cost of data and lack of opportunity for charging has led to significant offline engagement with games, music and videos.
- Free-to-use apps like Facebook and WhatsApp were especially valued for staying in touch with family in the diaspora and finding relatives that had been displaced.
- While there are significant benefits to mobile use, there are concerns about the spread of false and fabricated information, particularly in regard to the conflict and peace agreement in South Sudan.



Context

South Sudan became independent on 9 July 2011 after decades of conflict. Since then, the population has continued to suffer from intercommunal tensions and conflict, most notably in December 2013 and July 2016. The signing of the Revitalised Peace Agreement on the Conflict in the Republic of South Sudan (R-ARCISS) in 2018 and the formation of a new government in 2020, the Revitalised Transitional Government of National Unity (R-TGONU), enabled about 500,000 refugees to return home. Nevertheless, there are still more than 2 million IDPs in South Sudan as a result of ongoing intercommunal conflicts, insecurity and flooding.

Bor, the capital of Jonglei State, was an epicentre of conflict in 2013, where tribal clashes between Nuer and Dinka groups resulted in the widescale displacement of civilians. Some still reside in an IDP camp – one of many former Protection of Civilians (PoC) sites in the country.¹ The camp is located roughly 7 kilometres from Bor Town and hosts around 2,687 IDPs,² most of whom are from

the Nuer community. In addition, Bor County is susceptible to flooding in the wet season, which can displace residents into urban centres or neighbouring highlands.³

IDPs in Bor are economically vulnerable with extremely limited opportunities to work due to being confined to the camp. A small number of residents engage in small-scale business such as eateries, retail shops and charcoal and firewood selling. All are dependent on humanitarian aid and remittances from relatives within and outside South Sudan. While some in the host community also depend on aid, income levels are generally higher and many people make ends meet through small businesses, cattle raising, and subsistence farming. There are several humanitarian services available in Bor, including general food distributions from the World Food Programme (WFP),⁴ as well as education, water, sanitation and hygiene (WASH), nutrition and protection programmes in the PoC camp.⁵

Mobile context

South Sudan has one of the lowest rates of mobile access and connectivity in the world, with market penetration of just 22.12 per cent.⁶ Until recently, MTN and Zain were the only two mobile network operators (MNOs) in South Sudan. The newest operator, Digitel, was launched in 2021 by President Salva Kiir.

Connectivity and infrastructure vary across the country, with transport conditions and fuel prices creating major barriers for MNOs to implement and maintain infrastructure. High displacement

also means that populations move from areas of connectivity to areas where there is no connectivity infrastructure at all. Conflict has also had a significant impact on MNOs in South Sudan. Zain suffered major infrastructure losses in 2016 and has since reduced staff numbers and downsized operations.⁷ According to their Managing Director, half of Zain's total telecoms infrastructure has been destroyed since 2013.⁸ Consequently, connectivity access and mobile ownership varies widely across the country.

1 REACH. (2022). Infographic: “[South Sudan Displacement Crisis: Bor Town Port and Road Monitoring – Bor South County, Jonglei State, South Sudan \(May 2022\)](#)”.

2 The 2,687 live in 1,047 households (1,346 males and 1,341 females). IOM/DTM. (6 May 2022). [South Sudan Biometric registration update: Bor IDP Camp \(December 2021\)](#).

3 IOM DTM event tracking report.

4 This was halted very recently due to funding gaps.

5 Education is provided by UNICEF and NRC, WASH and nutrition by FAO and protection by UNHCR.

6 GSMAi. (2022).

7 CDAC. (2017). [Media and Telecommunications Guide South Sudan](#). p. 17.

8 Mednick, S. (2019). [South Sudan Launches Mobile Money to Recover from War](#).

Mobile access and ownership

As the Jonglei state capital and with close proximity to Juba, Bor residents are likely to have more access to phones. Moreover, conflict and seasonal flooding has led many residents of Jonglei state to move to Bor town for shelter and acquire phones to cope, stay informed and keep in touch with their relatives. Conflict and seasonal flooding have led many residents of Jonglei State to move to Bor Town for shelter and acquire mobile phones to cope, stay informed and keep in touch with relatives. Residents

of Bor Town and the PoC camp also have strong ties to the diaspora, which requires them to stay connected and prioritise phone ownership.

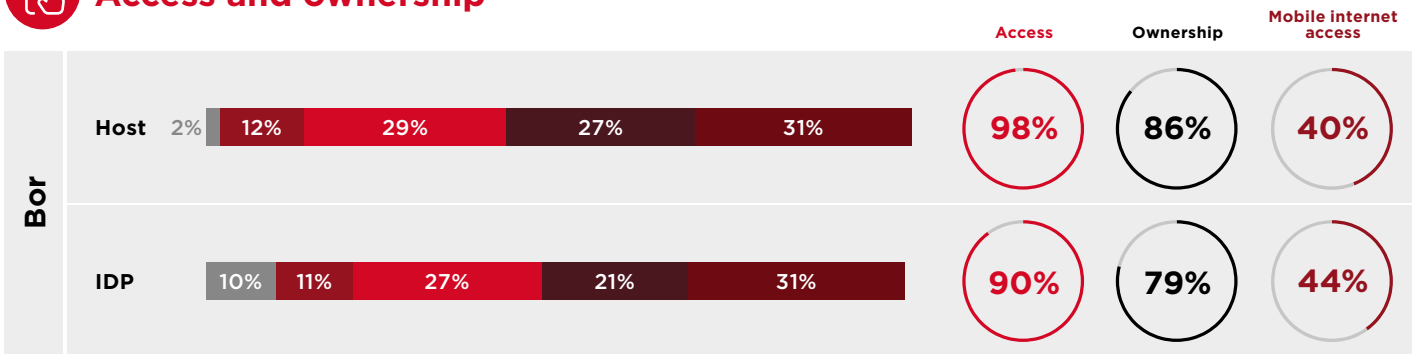
Mobile access and ownership in Bor Town and the PoC camp were much higher than the national market penetration rate of 22.12 per cent. Smartphone ownership was also high at 31 per cent in both Bor Town and the PoC camp (Figure 1).

Figure 1

Mobile access and ownership in IDP and host communities



Access and ownership



No access
 Can borrow
 Basic phone
 Feature phone
 Smartphone

Q: What kind of phone do you personally own? (None, Basic, Feature, Smart)

Q: Do you have access to someone else's mobile phone?

Q: Do you use mobile Internet (social media, apps, and websites like WhatsApp, Messenger, Facebook, etc)?

Smartphones were most often owned by men and younger people. However, among other groups, basic phones were valued for their affordability, durability, longevity and battery strength.

“Most importantly, basic phones are affordable and easily accessible. Basic phone battery can last for one week after it has been charged.”

- User research group, Bor Town, South Sudan



Digital exclusion

Overall, mobile ownership was relatively even among men and women of all ages. However, this data concealed several other issues of exclusion in Bor, including women’s control over their phones and internet access, as well as age and disability gaps in mobile use.

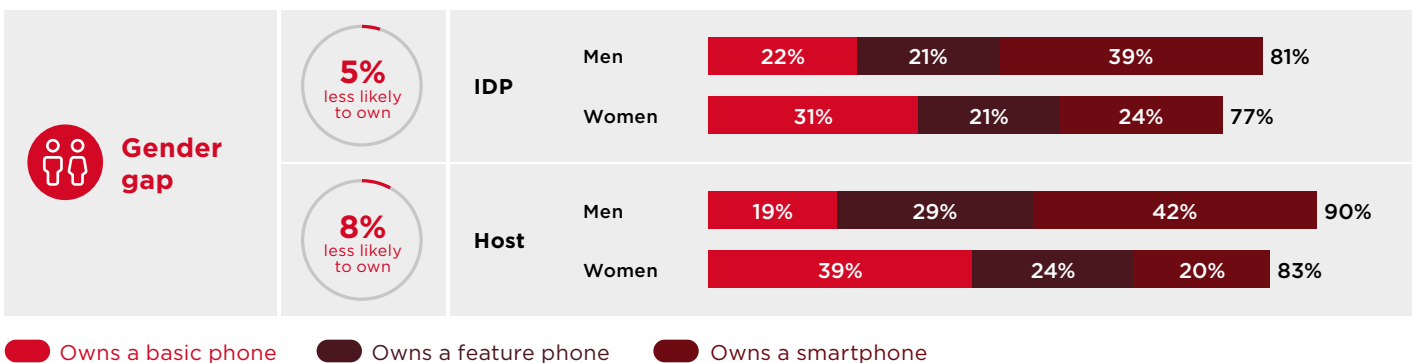
Gender

Although the gender gap in mobile ownership was relatively small, women had less access to the internet and less control over their phones. Several women

told researchers that they relied on their husbands to purchase their phones, to replace a lost phone or upgrade an existing phone.

Figure 2

Mobile ownership gender gap in IDP and host communities



Q: What kind of phone do you personally own? (None, Basic, Feature, Smart)

Q: Do you have access to someone else's mobile phone?

Q: Do you use mobile Internet (social media, apps, and websites like WhatsApp, Messenger, Facebook, etc)?

Men were more likely to own a smartphone (39 per cent in IDP camp; 42 per cent in host community), likely because they have more access to money and are traditionally seen as the head of their households with decision-making power over financial matters.

Younger women and girls often needed their parents’ approval to own a smartphone. For example, the main reason one 18-year-old woman in the PoC camp did not have a phone was “... I am told that I could not own a phone. The time when I will have and own a phone is yet to come. My parents think I am a small child. I am in agreement with my mother on that.” It was also common for women to obtain their husband’s permission to own a mobile phone. In the survey, 13 per cent of women who did not use mobile

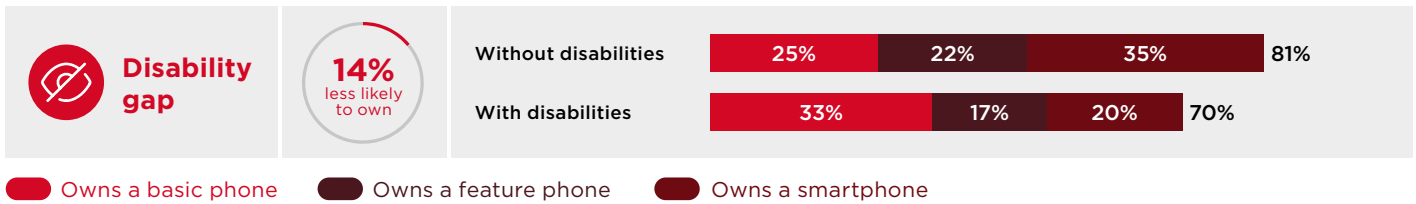
phones pointed to family disapproval as a reason they did not own a phone, compared to six per cent of their male counterparts. Women also spent more time on household chores, which reduced the amount of time they spent using their phones and accessing the internet.

Still, owning a mobile phone is perceived as prestigious, and it was suggested that some men often want their wives and daughters to own phones as a status symbol. Additionally, while households are traditionally headed by men, prolonged conflict and forced displacement has meant that many women in the PoC camp are the head of their households, which increases their decision-making power and ability to access mobile phones.

Disability

Figure 3

Mobile ownership disability gap



Q: What kind of phone do you personally own? (None, Basic, Feature, Smart)
 Q: Do you have access to someone else's mobile phone?
 Q: Do you use mobile Internet (social media, apps, and websites like WhatsApp, Messenger, Facebook, etc)?
 The sample base was only large enough to analyse for IDPs.

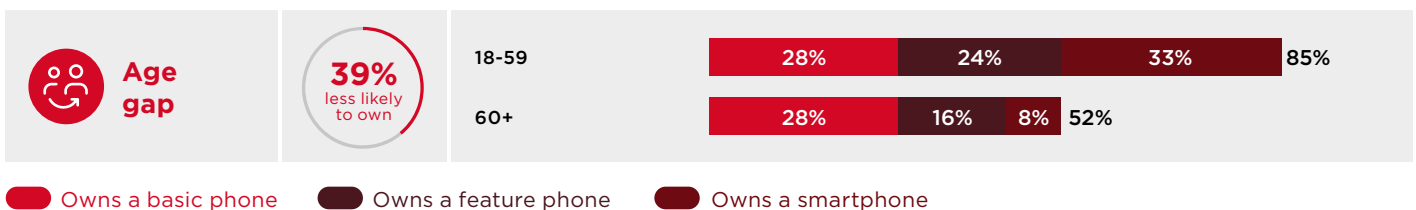
A significant proportion of IDPs in Bor (22 per cent) reported having at least one disability. Since mobile-enabled connectivity, information and services can be especially valuable for people with disabilities, lower mobile access and use can exacerbate vulnerabilities and exclude them from the broader benefits of mobile phones. It is concerning that there are lower

rates of mobile ownership and internet access among IDPs with disabilities and a 43 per cent smartphone gap. People with disabilities were twice as likely to say that they do not access the internet as much as they would like (24 per cent compared to 12 per cent without a disability).

Age

Figure 4

Mobile ownership age gap



Q: What kind of phone do you personally own? (None, Basic, Feature, Smart)
 Q: Do you have access to someone else's mobile phone?
 Q: Do you use mobile Internet (social media, apps, and websites like WhatsApp, Messenger, Facebook, etc)?
 IDP and host communities were combined due to base size, which makes the results indicative rather than robust.

In both host and IDP communities, older people had a significantly lower rate of mobile ownership, including a 76 per cent smartphone gap. One explanation is that it was common for older people to associate internet use and digital entertainment with youth. It was common for older people to associate internet use and digital entertainment with youth. One reason an elderly man from the host community gave for not owning a phone was: *"I am too old to bother myself holding a phone."*

"Young people enjoy leisure time with phones, while older people use very few applications, especially basic phones for music or songs for leisure."

- User research group, Bor Town, South Sudan

Barriers

Despite high mobile penetration in Bor Town and the PoC camp compared to other parts of the country, there were still significant barriers to mobile ownership and internet access:



Costs

The most important barrier for users was the cost of devices,⁹ airtime, SIM cards, data bundles and even charging. This is because most people in the PoC camp had no source of income and relied on relatives for support. Sixty-three per cent of the host community and 51 per cent of IDPs cited this as a barrier. The ways that people used their phones depended on the extent to which they could access money. Those who could were more likely to play games, chat and access information.

“I will need credit to call people in America or far places. These calls take so much money in calls and in MBs. Even if you topped phone credit up for 1,000 SSP, this would only be five minutes of normal call time. Money is an issue.”

- Male IDP, PoC camp, South Sudan



Charging

Access to charging is a major barrier to mobile use in both locations, with 97 per cent of users in Bor and 99 per cent in the PoC camp unable to charge their phones from home. In the PoC camp, young people will often walk to places to charge their phones, such as an NGO office or a charging point in the market, and then stay in those locations to use their phones and take advantage of good connectivity.



Low literacy and digital literacy

Both functional and digital literacy were significant barriers to mobile use, and these were emphasised as particular barriers for those in the PoC camp, older people and people with disabilities. Both literacy and digital literacy were identified as a barrier in the survey. For example, 21 per cent of IDPs who did not own a mobile phone said that not knowing how to use one was a barrier to ownership.

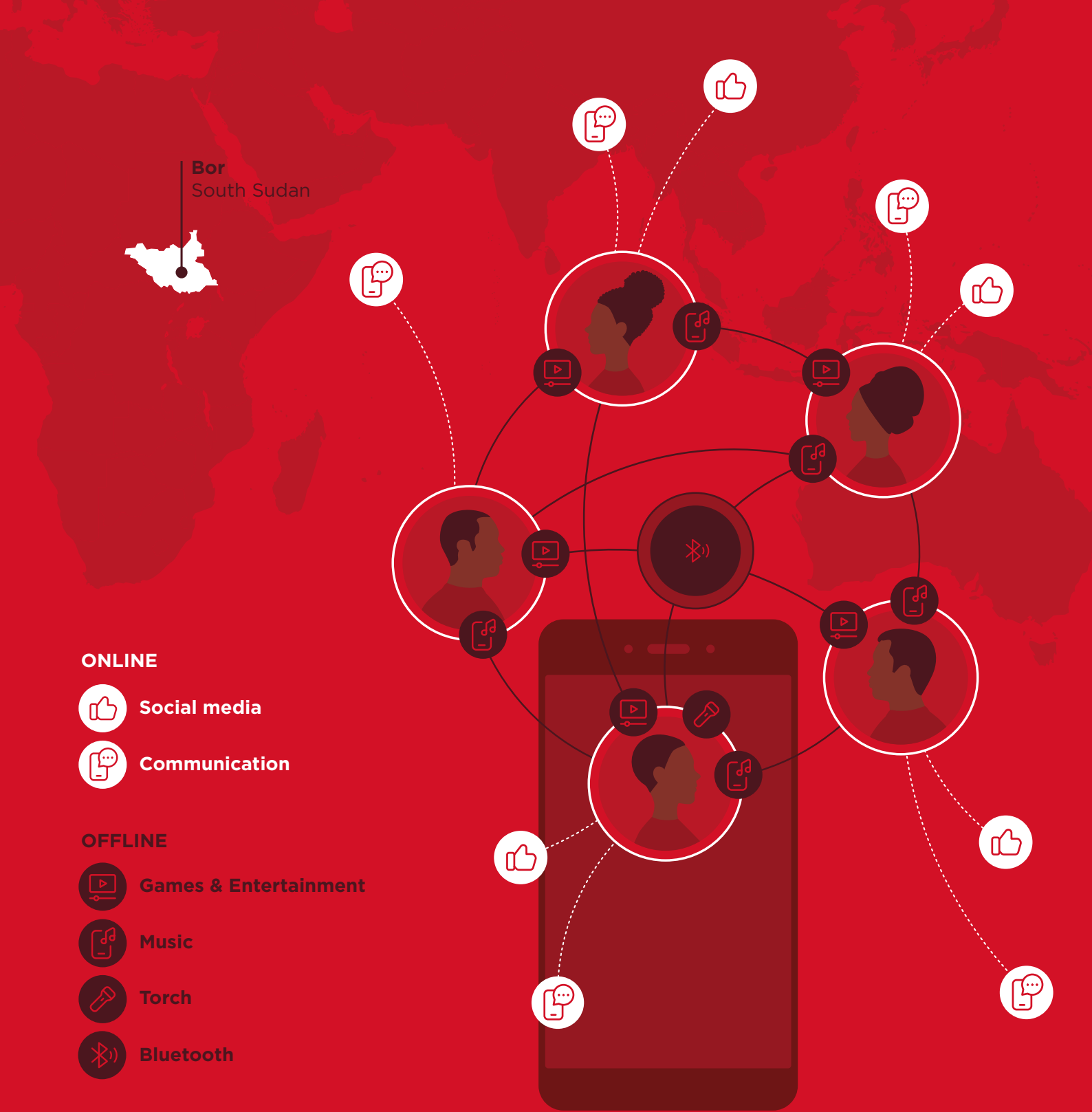
“I’m an illiterate old man who can’t be able to make a call or chat with SMS message.”

- Male IDP, Bor PoC camp, South Sudan, edited for legibility

⁹ The cost of a basic handset ranges from SSP 7,500-8,500, a feature phone from SSP 12,500-13,500 and a smartphone from SSP 75,000-110,000.

Mobile use

Figure 5
Mobile use among IDPs in Bor PoC camp



People's digital worlds in Bor are characterised by high levels of social connection between people within South Sudan, in the region and internationally. Due to displacement and the widely scattered diaspora, the use of calls and social media to stay in contact with families and friends in multiple locations is particularly important.

Mobile phones are also used heavily for digital leisure, with many people in the PoC camp using them to pass the time and find relief from the hardship of their daily lives. However, the high cost of data has meant that many users have found ways to use their phones primarily offline. Sharing media is common and is one way young people build and maintain connections. Music, movies and videos are often shared via Bluetooth apps.

In both Bor and the PoC camp, more than half of people share their phones, and phone sharing across households is common. Parents spoke of lending their phones to their children to listen to music or play games while older people spoke of borrowing phones to make calls. Box 1 gives a flavour of a typical user's digital world.



Connecting with others

The main use of mobile phones was communicating with friends and family, both within Bor but also in Juba and the diaspora. The diaspora includes those living in refugee camps or resettled in other countries, such as Kenya, Uganda, Sudan, Ethiopia, Canada and the US, many of whom have been displaced or migrated in search of work. People described calling their families frequently to find out how they are, provide updates on their own well-being, plan travel, rally together to solve problems and send/receive money.

Social media apps were used as cheaper modes of communication for those who had access to feature or smartphones, as direct phone calls are expensive. Social media was viewed as a way to keep in touch with friends both within and outside South Sudan, as well as a way to spend leisure time.

“I spoke a lot on the telephone. I spoke on WhatsApp by voice (calls). I also used Messenger, I have also been using it for calls with my husband's family in Lankien and my family calls me from Juba as well.”

- Female IDP, PoC camp, South Sudan, edited for legibility





Entertainment and offline use

As mentioned, one of the top uses of mobile phones in Bor is for games, entertainment and music (60 per cent of IDPs; 48 per cent of host community). Smartphone and feature phone users spent significant amounts of time using their phones for digital leisure.

Due to costs, digital leisure is often offline. Forty-one per cent of users reported listening to downloaded music, sharing media using Bluetooth sharing tools and watching downloaded videos on their phones. Thirty per cent of IDPs and 24 per cent of the host community use the internet as much as they would like, whilst 44 per cent of IDPs and 40 per cent of the host community use it overall.

A recent report by UNHCR demonstrated that digital leisure can have a wide range of benefits for the overall well-being for displaced people.¹⁰ Additionally, early evidence suggests that leisure is a key driver of the adoption of digital technologies and enables users to build their digital skills.¹¹ People reflected that they learned through leisure how to extend battery life and navigate settings to minimise costs.



Mobile money

Mobile money uptake was low (six per cent of users had a mobile money account) despite services being available and a significant theoretical appetite for it. Low uptake was largely attributed to people not having enough money to send via mobile money and the high transaction costs, particularly among informal dealers. Those with mobile money accounts primarily used them to send and receive money from friends and family or to buy airtime (i.e., meet their basic needs). For displaced people with few opportunities to earn income and high levels of food insecurity, the ability to receive money is potentially lifesaving.

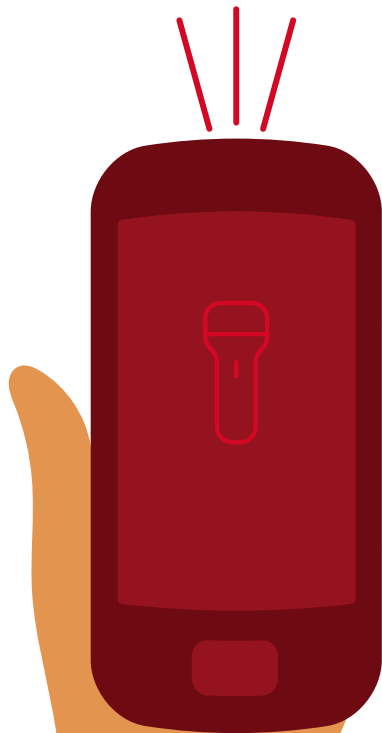
“I agree that the majority don’t use mobile money. I don’t even know what mobile money looks like. I heard but never saw how it works.”

– Male, user research group, Bor Town, South Sudan



Torch

The torch (flashlight) function was a frequently cited use in both sites, with 94 per cent of users in the host community and 78 per cent of IDPs saying that they used their mobile phone as a light source. This reflects the limited availability of electricity in people’s homes, as less than two per cent of all respondents had access to electricity to charge their phones at home.



¹⁰ UNHCR. (2022). [The Digital Leisure Divide and the Forcibly Displaced](#).

¹¹ Ibid.



Education

Disrupted access to education over many decades means that people in South Sudan often continue their schooling well into their late teens and early twenties. As such, many young people found ways to use their phones to support their education. Young people in school or college in the PoC camp told us that they use their phones to read books online, access educational texts and video and look up words in dictionaries. A few teachers also described using their mobile phone to prepare teaching materials.

“I have three books for primary and secondary school I got from (the internet). I write notes from what I have downloaded from the phone. There are so many classes whose books are not given (course books are unavailable). You can also do research by phone if you have bundles.”

- Male IDP, PoC camp, South Sudan



Concerns and risks

While mobile phones offer significant benefits, people in Bor shared concerns about false and fabricated information regarding the conflict and peace agreement. Stories of ethnic, political and tribal conflicts often linger in public discourse for a long time and details are lost or altered with each telling. There are also many fabricated videos and images circulating on social media that depict a false interpretation of events, notably on YouTube, Facebook and WhatsApp groups. Many users, particularly younger people, had seen false information (45 per cent in Bor Town; 31 per cent in the PoC camp) or hate speech (43 per cent in Bor Town; 35 per cent in the PoC camp). Most people who had access to the internet reported seeing false information online, with Facebook being the least trusted source of information.



Humanitarian uses

Few of the humanitarian agencies working in Bor use mobile channels. Fourteen per cent of users reported using their phones to find information about humanitarian aid, while 15 per cent had used a phone hotline or other service to provide feedback. Among the agencies themselves, mobile phones were frequently used for internal communication, needs assessments and monitoring and evaluation, but not to deliver information or services to the population. The exception appeared to be an ICRC programme that provided SSP 300 (approximately \$2.30) for airtime to help users find and communicate with displaced relatives.



Digital diary

Nyatong* is a 26-year-old woman living in the PoC camp. She attended school until primary eight (14 years old) and does not have a job. She owns a smartphone, Tecno Pop 2, and shares it with her brothers and sisters.¹²

**Not her real name*

Day 1	How you used your phone	Detail
Morning	I made a phone call to my brother in Khartoum, Sudan.	I called him to ask about his well-being. He also wants to come to South Sudan and to Bor, so he wants us to send him money. I called to share with him our plans about his travels. I felt good because he said he was well and excited that he would come home.
Afternoon	I logged into Facebook and used Facebook Messenger to talk with my father who is in Ethiopia (Gambella).	My maternal grandmother is not feeling well. So I called my father to find out how she was doing. I received assurance from my father that she is recovering. I then resumed household chores. I felt good, relieved and shared the good news with the rest of my family.
Evening	I listened to Nuer music (church songs)	I had finished with household activities, was tired and wanted to refresh my mind.
Day 2	How you used your phone	Detail
Morning	I used my phone to communicate with my relatives in Nasir, Upper Nile State.	My relatives wanted to know when my family and I in Bor PoC camp would go to Nasir to visit them there. They asked me in particular to come to Nasir, but I have no money for this visit. I felt good about this call. I would like to see them.
Afternoon	I used my phone on social media – Facebook Messenger and WhatsApp	I watched more videos for entertainment. After watching the videos, I chatted with friends on Messenger and WhatsApp. I was just trying to entertain myself and to catch up with family and friends through chatting.
Evening	In the evening time I used my phone for communication on WhatsApp a lot.	I talked with my grandfather on WhatsApp who is living in America. He was trying to find out how we are all doing here in the Bor PoC camp. I assured him that we are okay. He promised that he would send us some money. He wanted to send the money through a bank. Unfortunately, there is no bank to send the money to us here in Bor. Maybe he will send it to us through Juba. I felt happy about this communication. At least we have hope.
Day 3	How you used your phone	Detail
Morning	I took my phone to charge at 9:00 am.	I did not make phone calls, but took my phone for charging in the morning.
Afternoon	I communicated with my sister this afternoon after I took my phone out of charge.	I spoke with my sister who lives in Kenya about how she is. It was a good call. We are both happy to know about how our family is doing.
Evening	I went online on Facebook, WhatsApp and Messenger to chat with friends.	I spoke with my aunt who is now in Uganda. We were all trying to learn about how our families are doing. It is always good to speak to family.

¹² This diary has been edited for readability.

Conclusions and recommendations

Recommendations

For humanitarian organisations:

- **Humanitarian organisations** should recognise that mental well-being and community resilience can be enhanced through interventions that support access to digital leisure and should be factored appropriately into community-based humanitarian programming and local protection activities.
- To facilitate equal access to mobile technology and its benefits, **humanitarians** could consider programming to support digital inclusion in the communities they serve and address the barriers facing women, younger people, older people and people with disabilities. This could include digital literacy training (which should also include training on recognising misinformation and raising awareness of potentially harmful content) or providing Wi-Fi and charging at key locations to help those with Wi-Fi-enabled devices take greater advantage of the internet. However, the impact on local phone-charging services must be considered, and humanitarians should work with local entrepreneurs to make charging more affordable for community members.
- Considering the low levels of employment in the PoC camp, **humanitarians** should leverage their position to expand access to livelihoods through private-sector partners, with a focus on digitally enabled livelihoods and remote work opportunities through enhanced digital access and skills. For IDPs, this would extend the value of mobile financial services beyond receiving money.

For humanitarian organisations and MNOs:

- **Humanitarians and MNOs** should explore partnerships to pilot the delivery of humanitarian cash assistance through mobile money alongside digital literacy programming.
- **Humanitarians and MNOs** could work in partnership to raise awareness and provide

training in online misinformation, disinformation and hate speech, especially in relation to ethnic, political and tribal conflicts.

For MNOs:

- **MNOs** should explore possibilities for network expansion and ways to reduce costs for customers, for example, through tailored fees, tariffs and bundles for marginalised customers such as people with disabilities.

For donors and governments/regulators:

- Given the vital role of connectivity in South Sudan, **regulators** should support the telecommunications industry to expand coverage through more sustainable models, potentially with support from international donors.

For all stakeholders:

- **Governments, MNOs and humanitarian organisations** should work to develop digital literacy programming to help users reap the full benefits of mobile technology. For MNOs, partnerships with humanitarians also have potential for long-term return in terms of increased revenue. While this could (and should) be done alongside any digital humanitarian programming, it should also be explored as an outcome in its own right.
- **Humanitarians and MNOs** should explore potential partnerships that would help de-risk and incentivise network expansion in areas of South Sudan that are currently underserved, often where there has been conflict and insecurity.
- All **stakeholders** should ensure they understand who has access to mobile phones and who does not, especially internet-enabled ones. Only paying attention to the high overall access figures masks disparities among groups already at risk of being marginalised.

Conclusion

Mobile use and connectivity in Bor is higher than in other areas in South Sudan, a reflection of both high demand and uneven infrastructure development in the country. People's digital worlds are centred around communication and entertainment, both online and offline. Mobile phones are particularly important for displaced people to connect with friends and family displaced within the country, in the region and globally. Using phones for digital leisure is prevalent among residents of the PoC camp who report that it contributes to their well-being and helps them develop digital skills.

There are significant opportunities to improve digital literacy through humanitarian

programming. These efforts could include tackling the risks of misinformation, increasing connectivity infrastructure in the region and tackling social and economic barriers to mobile ownership and use. While cost is a key barrier to mobile use and uptake, there is a strong interest in mobile money and using digital channels. This is an opportunity for both MNOs and humanitarians to deliver cash assistance through mobile channels alongside relevant digital skills training. By working together to dismantle local barriers, humanitarian organisations, digital service providers and MNOs can expand access to mobile technology, diversify mobile phone use and deliver more effective services.



GSMA Head Office

1 Angel Lane

London

EC4R 3AB

United Kingdom

Tel: +44 (0)20 7356 0600

Fax: +44 (0)20 7356 0601

