

---

## EDITORIAL

---

### ‘Ownership’ of Mobile Phones

Consider the question of how many people in the world ‘own’ a mobile phone? Given the COVID-19 pandemic, the use of eHealth / Digital Health has grown, with mHealth and mobile phones in particular, appearing front and centre in many publications. As editors and reviewers, we often see papers referencing facts and figures around mobile phone ‘ownership’ that raise a number of concerns and can be misinterpreted.

For example, in 2017, GSMA data indicated the 5 billionth ‘unique’ mobile subscriber had been signed up, with a ‘*unique mobile subscriber*’ being defined as ‘an individual person that can account for multiple ‘*mobile connections*’ (i.e. SIM cards)’.<sup>1</sup> However, headlines re-interpreted that statement – “5 billion people worldwide now have a mobile device, GSMA data shows.”<sup>2</sup>

More recently, a 2019 ITU report stated: “Some *4.1 billion people are now online, ...*” and “Almost the entire world population (*97 per cent*) lives within reach of a mobile cellular signal” (italics added).<sup>3</sup> How can such statements be reconciled with other statements, such as a 2018 statement from the World Bank “... almost half the world’s population - 3.4 billion people - still struggles to meet basic needs”.<sup>4</sup>

In 2020 it was stated, “In many countries in sub-Saharan Africa, access to mobile phones is *nearly universal, ...*” (italics added).<sup>5</sup> Of course ‘access’ differs from ownership – and just how feasible and practical is that access! Clearly, greater granularity, transparency, and accuracy in reporting are needed. But other concerns exist; many factors can impact such estimates, and it is not always clear which have been considered. Primary confounding factors are demographics, poverty, infrastructure, and location, although even concerns about education, disability, safety (theft) and security (threatening communications) can have an impact.

Consider a January 2023 report that stated “In total, the number of people that own a smart\* and feature\* phone is 7.33 billion, making up 91.53% of the world’s population”.<sup>6</sup> In other words just 8.47% of the world’s population do not own a smart or feature mobile phone. Really?

All figures for a single year are often unavailable, but what of:

**Demographics.** For 2023 it is estimated that 83% of the global population (~8.04 billion, 2023) will live in developing countries, i.e. 6.67 billion.<sup>7</sup> Perhaps of more concern, 25% of the global population in 2022 was 14 years-

old or younger, i.e. ~2.10 billion,<sup>8</sup> 42% of whom lived in sub-Saharan Africa in 2021.<sup>9</sup>

**Poverty:** The number of people living in ‘extreme poverty’ (on less than \$1.90 per day) rose to 9.5 per cent in 2020 to ~0.74 billion, due to the impact of COVID-19.<sup>10</sup> Further, living conditions well above the International Poverty Line can still be characterised by poverty and hardship.<sup>11</sup>

**Infrastructure:** The World Bank indicated that in 2020 about 9.6% of the population (0.77 billion; primarily in sub-Saharan Africa – 42%) had no access to electricity, making it difficult to maintain charge of a mobile phone.<sup>12</sup>

**Location:** Where you live makes a difference, not just in terms of connectivity and electricity but also ownership. A 2019 study showed that in India “40% of people own a feature phone (not a smartphone) and 35% of the population [*almost half a billion*] don’t have a mobile device”, while these numbers were 44% and 17% for Nigeria, and 28% and 29% for Indonesia.<sup>13</sup>

These (and other) confounding factors are clearly not additive in this specific instance but nonetheless show that the initial statement is very misleading. Other issues arise when numbers for active SIM cards or ‘penetration rate’ are reported. SIM cards are used not only in mobile phones (basic, feature, and smart), but also in tablets, IoT devices, even some laptop computers; also, one person may have multiple active SIM cards or subscriptions (one each for personal, business, and entertainment use) meaning the number of individuals is much less.

How are we to interpret all of this? And what exactly do catchphrases such as ‘online’ and ‘user’ and ‘within reach of a mobile cellular signal’ mean in real life? Consider, for example, a rural North-American couple and their 14 year-old schoolgirl. Each have their own smartphone with their own mobile service provider subscription plans that give 20 gigabytes of data access each month. This provides almost unlimited connectivity wherever they may be, allowing them to speak, text, stream, or search the www with ease. Now consider a rural sub-Saharan African couple and their 14-year-old schoolgirl. The schoolgirl (who is lucky to be at school) has no mobile phone at all – and she and her mother (being women) have only rare and monitored gatekeeper access to the only mobile phone in the household. The adult, male and head of the household, has a ‘basic’\* mobile phone and a very limited pay-as-you-go data plan; he struggles to

find the money and reliable infrastructure to access (connectivity), charge (electricity) and charge (data plan) this mobile phone, and has only the skill to make brief calls or send short text messages to a few select individuals. Can both settings truly be lumped together and considered to be ‘users’ ‘living within reach of a mobile cellular signal’ and a part of the ‘online community’? Careless use or simple reproduction of ‘published findings’ often distorts reality; the developed world reality is much different from the developing world reality.

What then can we do as authors to enhance our scholarly work? Most likely we are all guilty of endeavouring to portray our research in the very best light. But, in the end, this may do a disservice to ourselves and other researchers. Data concerning ownership and use of mobile phones can be confusing and must be interpreted not at face value but with an open and cautious mind. As authors of manuscripts and as proponents of eHealth / Digital Health, it is incumbent upon us to read available literature critically. We must recognise that our understanding of reality may be superficial and misinformed, given that the ‘facts’ may be skewed, re-interpreted, or misinterpreted.

Before you are next tempted to quote a headline (or even the results from a well-intentioned peer-reviewed study) in one of your papers, a presentation, or a conversation, take the time to carefully reappraise what it may be implying, identify the facts, and correct the intent. After all – if it looks too good to be true ..... it probably is!

**Richard E Scott  
Maurice Mars**

\* ‘Basic’ phones can make voice calls, send and receive SMS (short message service) messages and make use of USSD (unstructured supplementary services data). ‘Feature’ phones offer additional features, such as cameras, increased storage, and Internet access. (Basic and feature phones are still available even in the developed world, and common in the developing world). ‘Smartphones’ offer advanced capabilities, for example: allowing users to add applications to their phones, and having a full-featured operating system, Wifi and (at least) 3G connectivity, and typically a QWERTY keypad.

## References

1. GSMA Intelligence. Number of mobile subscribers worldwide hits 5 billion. (2017). Available at: <https://www.gsma.com/newsroom/press-release/number-mobile-subscribers-worldwide-hits-5-billion/> accessed 24 January 2023.
2. Chang L. 5 billion people worldwide now have a mobile device, GSMA data shows. Digital Trends. (2017). Available at: <https://www.digitaltrends.com/mobile/5-billion-mobile-users/> accessed 24 January 2023.
3. International Telecommunication Union. New ITU data reveal growing Internet uptake but a widening digital gender divide. (2019). Available at: <https://www.itu.int/en/mediacentre/Pages/2019-PR19.aspx> accessed 24 January 2023.
4. The World Bank. Nearly half the world lives on less than \$5.50 a day. (2018) Available at: <https://www.worldbank.org/en/news/press-release/2018/10/17/nearly-half-the-world-lives-on-less-than-550-a-day> accessed 24 January 2023.
5. Meyer AJ, Armstrong-Hough M, Babirye D, Mark D, Turimumahoro P, Ayakaka I, et al.. Implementing mHealth interventions in a resource-constrained setting: case study from Uganda. *JMIR mhealth uhealth* 2020;8(7):e19552. DOI: <https://doi.org/10.2196/19552>
6. Bankmycell. How many smartphones are in the world? Available at: <https://www.bankmycell.com/blog/how-many-phones-are-in-the-world> accessed 24 January 2023.
7. United Nations Conference on Trade and Development. World population growth is mostly in developing countries. (2022). Available at: <https://unctad.org/data-visualization/norw-8-billion-and-counting-where-worlds-population-has-grown-most-and-why> accessed 24 January 2023.
8. United Nations Population Fund. World Population Dashboard | Population, by age group, per cent. (2022). Available at: <https://www.unfpa.org/data/world-population-dashboard> accessed 24 January 2023.
9. World Bank. Population ages 0-14 (% of total population). (2022). Available at: [https://data.worldbank.org/indicator/SP.POP.0014.TO.ZS?most\\_recent\\_value\\_desc=true](https://data.worldbank.org/indicator/SP.POP.0014.TO.ZS?most_recent_value_desc=true) accessed 24 January 2023.
10. United Nations. Department of Economic and Social Affairs | Statistics Division. End poverty in all its forms everywhere. (2019). Available at: <https://unstats.un.org/sdgs/report/2021/goal-01/> accessed 24 January 2023.
11. Hasell J, Roser M, Ortiz-Ospina E, Arriagada P. Poverty. (2023). Available at:

- <https://ourworldindata.org/poverty> accessed 24 January 2023.
12. World Bank. Access to electricity (% of population). (2022). Available at:  
<https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS> accessed 24 January 2023.
  13. [Pew Research Center](#). Smartphone ownership is growing rapidly around the world, but not always equally. (2019). Available at:  
<https://www.pewresearch.org/global/2019/02/05/smart-phone-ownership-is-growing-rapidly-around-the-world-but-not-always-equally/> accessed 24 January 2023.

DOI: <https://doi.org/10.29086/JISfTeH.11.e1>

Copyright:© The Authors 2023

Open access, published under Creative Commons  
Attribution 4.0 BY International Licence

