Despite near ubiquitous ownership of mobile phones at a household level, gaps in women's ownership, access to and use of mobile phones persist.[1,2] Evidence from Demographic and Health Surveys (DHS) for 15 counties with available data on women's phone ownership, suggest that gender gaps in mobile phone ownership vary, but they can be substantial, with less than half of women owning mobile phones in several countries.[2] Emerging evidence from India has identified the complex determinants underpinning women's phone access and use.[3] Beyond gaps in women's ownership of phones, women's access to and use of shared phones may further be impeded by low levels of language literacy and digital skill, permitted and desired access and use, time constraints, and the characteristics and functionality of the phones they are able to access.[3,4]

The gender gap in mobile phone use denies women equal access to the wide range of economic, social and health benefits of mobile phones. Mobile phone use can improve individual economic outcomes by promoting banking and increasing money transfers[5,6] and by improving market performance.[7,8] Mobile phones facilitate relationship maintenance,[9,10] enable the growth of larger social networks, and increase social capital.[11] Mobile phones can accelerate access to information and facilitate non-formal ongoing education[12] and bring health benefit[2,13] through facilitating access to outreach services, clinical care, appointment reminders, health information and follow-up services.[14]

The ability to monitor trends in phone ownership and use is vital for designing effective digital programs for women in low- and middle-income countries (LMICs) and for understanding the impact of these programs on development outcomes. In this presentation, we outline a two-year process undertaken with support of the Gates Foundation to develop improved metrics for measuring digital access and use across domains of physical access, affordability, connectivity, norms, agency, and digital skills (Figure 1).

Figure 1. Improving measurement of digital access and use in low- and middle-income countries



We present findings from qualitative research in India, Nigeria and Kenya which sought to enhance the wording and language translation of quantitative survey questions. We then present preliminary findings from a population-based survey (n=13,500) which is currently being implemented across ten

districts of the Indian State of Bihar. This survey is India's largest connectivity survey and will provide vital evidence on digital access and use not only at a population level among men and women 18-60 years of age, but additionally among Self Help Group members. Data on the latter will examine how access, connectivity, and digital skills vary between households and individuals in Bihar based on SHG membership. Additional qualitative research among digital archetypes of users will seek to understand women's digital journeys and the role SHG membership may play in catalyzing access to and use of technology for women's economic empowerment. Preliminary findings will also include a preview of reliability and validity testing which aims to bolster measurement approaches for digital skills, norms and other domains. Research activities are anticipated to culminate in the development of a repository of open access digital access and use survey questions which can be used to standardize measurement of digital access and use in LMICs globally.

References

1. GSMA. The Mobile Gender Gap Report 2020. 2020;52. Available from: https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/wp-content/uploads/2020/05/GSMA-The-Mobile-Gender-Gap-Report-2020.pdf
2. LeFevre AE, Shah N, Bashingwa JJH, George AS, Mohan D. Does women's mobile phone ownership matter for health? Evidence from 15 countries. BMJ Glob Heal [Internet]. 2020 May 17;5(5):e002524. Available from: https://gh.bmj.com/lookup/doi/10.1136/bmjgh-2020-002524
3. Scott K, Shinde A, Ummer O, Yadav S, Sharma M, Purty N, et al. Freedom within a cage: How patriarchal gender norms limit women's use of mobile phones in rural central India. BMJ Glob Heal. 2021;6.
4. Barboni G, Field E, Pande R, Rigol N, Schaner S. A Tough Call: Understanding barriers to and impacts of women's mobile phone adoption in India. 2018.
5. Mohan D, Bashingwa JJH, Tiffin N, Dhar D, Mulder N, George A, et al. Does having a mobile phone matter? Linking phone access among women to health in India: An exploratory analysis of the National Family Health Survey [Internet]. Vol. 15, PloS one. Department of International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, United States of America.; 2020. p. e0236078. Available from: http://europepmc.org/abstract/MED/32687527
6. LeFevre AE, Shah N, Scott K, et al. The impact of a direct to beneficiary mobile communication program on reproductiveand child health outcomes: a randomised controlled trial in India. BMJ Global Health 2022;6:e008838. doi:10.1136/ bmjgh-2022-008838
7. Beatty PC, Willis GB. Research Synthesis: The Practice of Cognitive Interviewing. Public Opin Q [Internet]. 2007 Jun 5;71(2):287–311. Available from: https://academic.oup.com/poq/article-lookup/doi/10.1093/poq/nfm006
8. Scott K, Ummer O, Lefevre AE. The devil is in the detail: Reflections on the value and application of cognitive interviewing to strengthen quantitative surveys in global health. Health Policy Plan. 2021;36(6):982–95.
9. NITI Aayog - National Institution for Transforming India. India National Multidimensional Poverty Index: Baseline Report. Vol. 4. 2021.
10. MoHFW India. National Family Health Survey-5, 2019-2020: Factsheet compendium [Internet]. 2022. Available from: https://mohfw.gov.in/sites/default/files/NFHS-5_Phase-II_0.pdf