Big Data for Development: Challenges and Opportunities (2012)

This is a white paper developed in 2012 by UN Global Pulse, an initiative based in the Executive Office of the Secretary-General United Nations.

Abstract:

"Innovations in technology and greater affordability of digital devices have presided over today's Age of Big Data, an umbrella term for the explosion in the quantity and diversity of high frequency digital data. These data hold the potential—as yet largely untapped— to allow decision makers to track development progress, improve social protection, and understand where existing policies and programmes require adjustment.

Turning Big Data—call logs, mobile-banking transactions, online user-generated content such as blog posts and Tweets, online searches, satellite images, etc.—into actionable information requires using computational techniques to unveil trends and patterns within and between these extremely large socioeconomic datasets. New insights gleaned from such data mining should complement official statistics, survey data, and information generated by Early Warning Systems, adding depth and nuances on human behaviours and experiences—and doing so in real time, thereby narrowing both information and time gaps.

With the promise come questions about the analytical value and thus policy relevance of this data—including concerns over the relevance of the data in developing country contexts, its representativeness, its reliability—as well as the overarching privacy issues of utilising personal data. This paper does not offer a grand theory of technology-driven social change in the Big Data era. Rather it aims to delineate the main concerns and challenges raised by "Big Data for Development" as concretely and openly as possible, and to suggest ways to address at least a few aspects of each.

It is important to recognise that Big Data and real-time analytics are no modern panacea for age-old development challenges. That said, the diffusion of data science to the realm of international development nevertheless constitutes a genuine opportunity to bring p owerful new tools to the fight against poverty, hunger and disease."

The full paper can be found at http://www.unglobalpulse.org/sites/default/files/BigDataforDevelopment-UNGlobalPulseJune2012.pdf