



**Commission on the Status of Women  
Sixty-second Session**

**Participation in and access of women to the media, and  
information and communications technologies and their  
impact on and use as an instrument for the advancement and  
empowerment of women**

**INTERACTIVE EXPERT PANEL**

**Innovative data approaches for measuring progress on  
gender equality and women's empowerment**

**Transforming the Data Revolution into A Revolution for Gender Equality – Some  
Reflections**

by

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Friday, 16 March 2018

3:00 – 6:00 pm

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\* The views expressed in this paper are those of the author and do not necessarily represent those of the United Nations.

**“Never again should it be possible to say we didn’t know. No one should be invisible. This is the world that we want – a world that counts.”** This is the lofty goalpost for ‘data for development’ efforts that has been articulated by the UN Secretary General’s Independent Expert Advisory Group in its landmark 2014 report. But as most of you would surely agree, this goal is nowhere within sight.

One of the areas in which we are particularly lagging behind is assessing progress towards women’s empowerment and gender equality. There are huge gender related data gaps in critical domains such as health, education, political participation and human security. Out of the 53 SDG indicators that currently have a gender component, over one-third cannot be tracked due to issues of “*conceptual clarity, coverage, regular country production or international standards*” -- as the Data 2x project has observed.

In this context, the logical way out seems to be capitalising on the ‘Big Data’ revolution around us – to ensure that we have “high-quality, timely and reliable data” for a robust policy response that promotes equal rights and opportunity, for women and girls everywhere. But in this turn to Big Data, it is important to tread carefully. Embracing the potential of Big Data should not be at the cost of submitting to the Big Data dogma.

### **The Big Data dogma**

There are two critical tenets of the Big Data dogma, and this has been beautifully summarised by the scholar Rob Kitchin.

#### **Dogma 1. The god view**

The idea that Big Data can completely capture a whole domain and provide full resolution – thus opening up a ‘*God’s eye view*’ into a situation.

#### **Dogma 2. The end-of- theory**

The idea that we no longer need theory, models or hypotheses because we have new data techniques that can ascertain inherently meaningful patterns and relationships within data sets without any theoretical framing that is based on context or domain-specific knowledge. This approach advocates an all-out return to an absolute empiricism in knowledge-building.

But as we are increasingly realising, and as valuably underlined by UN Global Pulse, it is important to remember that contrary to this orthodoxy, Big Data does run up against critical limits in both these aspects.

### **Limits of Big Data**

**Limit 1. The empty dream of complete representativity.** Big Data is touted to fix the problems of representational sampling. But just because its large size makes the sampling rate

irrelevant, it does not mean Big Data is completely representative. The question of whose behaviour is being mapped– whose experiences are being captured – still remains.

And when the gender digital divide is not going to go away anytime soon – in fact ITU statistics indicate that this is on the rise – this concern becomes even more pertinent to our discussion today.

## **Limit 2. The perils of ignoring contextual theory-building**

Here, it would be useful to begin with a story. This is not apocryphal but drawn from a real-life experience of a Big Data researcher. In Rwanda, a researcher who was utilising Call Details Records to assess a post-flood situation concluded that low mobility of people was due to an outbreak of cholera. But a quick ground survey revealed that the true cause was due to washed out roads! Extant knowledge of context is thus indispensable.

And this is a lesson that is worth remembering when there is increasingly a push for turning to Big Data techniques – to draw valuable insights into women’s freedom of movement, patterns of expenditure, contraceptive access, and health and nutrition, in different parts of the world.

Considering that gender norms operate in highly culture-specific ways, it is imperative that conclusions drawn from these initiatives be bolstered by insights from contextually embedded theory-building.

**So, based on this full acknowledgment of Big Data’s limits, let us now examine today’s main question: How can we deploy Big Data to improve our understanding of critical aspects of women’s and girls’ lives, for effective policy and programming?**

**1. (Small data)** Insights from traditional ‘small data’ are important for building and fine-tuning Big Data models, so that they adequately factor in contextual realities. For instance, Census data sets can be extremely useful training data sets for Big Data algorithms.

**2. Guard against discriminatory/exclusionary results stemming from Big Data’s imperfections,** such as lack of representativity, inadequate contextual mooring that leads to spurious correlations. Within national statistical systems, it is increasingly clear that we urgently need standards for transparency and accountability around the use of Big Data methodologies – to prevent unjustified differential impacts on citizens in data-supported decisionmaking. The IEEE is debating a technical standard on “algorithmic bias”. Within national systems too, we need something similar.

**3.** As the UN Development Group has flagged, when entering into public-private partnerships in Big Data, **concerns around privacy and data ethics must be treated as non-negotiable.** And as big data methodologies have now made it possible to profile minority communities, even if they do not compromise individual privacy, it is important to evolve sophisticated frameworks that re- imagine privacy from a group or collective right-against-discrimination perspective.

**4. Invest in data as a public good.** It is true that platform companies hold the lion's share of digital data about individuals. And this is why when we talk about 'data for development', we inevitably limit our conversations to exploring suitable Big Data partnerships with the private sector. But as experiences of countries such as Singapore and Canada reveal, creating an enabling public infrastructure for data and digital intelligence in key sectors – urban mobility and energy monitoring etc. – can go a long way in supporting effective policy decision-making.

For example, a state-run online agriculture market – such as India's e-National Agricultural Market portal – can, with wider adoption by producers and traders, become the data ecosystem for effective, intelligence-based, policy implementation that can address barriers faced by women small farmers. Of course, all this needs to be carried out within the limits set by a robust privacy and personal data protection architecture.

And with these thoughts, I conclude – with the hope that we are able to realise our shared dream of converting the data revolution into a revolution for gender equality.