

# Big Data receive major attention at the ISI congress in Rio

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*Authors: Miriam van der Sangen and Barteld Braaksma*

*Translated into English by Gaby Salazar*

## Introduction

How do we produce statistics based on Big Data, and how do we make them internationally comparable? Big Data was one of the topics discussed at the ISI World Statistics Congress (WSC) in Rio de Janeiro at the end of July. The congress is a significant event as it brings together statisticians from statistical agencies, businesses and scientific institutions from all over the world.

## Big data

Big Data was among the many topics discussed by over 1,800 statisticians at the WSC. Social media, data on telephone use, traffic counts and satellite data are all promising sources of information for compiling statistics, and studies on how this can be done are currently in full swing. Some of these focus on methodological analyses of the source selectivity: e.g. how do you provide reliable conclusions when it is evident that not everyone uses Twitter, or that Twitter accounts do not show the identity of the user? Other items discussed extensively included calculation techniques for processing enormous amounts of data, and legal and ethical aspects. As many questions still need an answer, sharing experiences and opinions is essential in order to work out such issues together.

## Sharing knowledge

According to Ada van Krimpen, the director of the organising host International Statistical Institute (ISI), exchanging opinions says a lot about the value of the WSC. "We are different from most other organisations in that we bring together statistical agencies, scientists and businesses from all over the world. Information exchange is a core element of our work. Everyone is free to express their opinion in our organisation". For instance, one of the keynote speakers on the topic of Big Data was a top researcher at Google; his presentation was followed by an open debate with the participants in the room. In addition, there were special theme sessions elaborating on a certain aspect of Big Data.

## Social media, data on telephone use, traffic counts and satellite data: promising sources for statistics production

## Trends

The director of ISI recounts a number of trends in methodology and content that were discussed at the WSC as well. "As for methodology, one trend prevailing worldwide is the aim to produce more information about small populations. How does this work in terms of privacy and representativeness? As for content, one trending topic is sustainability, as currently new political targets are being set in this area within the UN framework. We need new statistical indicators that can measure whether those targets are being met, and these will be based partly on Big Data". Another topic featured was Statistical Capacity Building as one of the chief missions of ISI, because the institute is contributing to the development of a statistical infrastructure in developing countries. Talented researchers from these countries will be eligible for scholarships for participating in the congress.

## International comparability

The International Statistical Institute (ISI) is an international association involving statistical agencies, businesses and academic institutions. The association also has individual memberships. In total

around 4,500 individuals and organisations are registered as members. During its establishment in 1885, its mission was to make statistics comparable internationally. “This is still key after 130 years”, according to Van Krimpen, who transferred from Statistics Netherlands in 2009. “But in a different context. We have accomplished international comparability by means of UN classifications. Now it is time for another challenge: international comparability in the context of Big Data”.

### **Highlights**

The ISI is permanently located in the Netherlands and based at the premises of Statistics Netherlands. At her office in The Hague, Van Krimpen reflects back on the sixtieth edition of the biannual congress with a sense of accomplishment. What were the highlights of this year’s congress, according to her? “I think the lecture by the Mexican Carlos Jarque, who received the Mahalanobis International Award in Statistics. He effectively described the challenges for statistics in the digital world of the 21st century from the perspective of a developing country. Other presentations by various speakers from Statistics Netherlands were also well-received. For example, Bert Kroese, Deputy Director General, described the realisation of the first official traffic statistics ever based on Big Data. Jan van de Brakel, a methodologist at Statistics Netherlands and professor at the University of Maastricht, spoke on the embedding of experiments in probability sampling. This methodology has already been implemented by Statistics Canada”.

### **More contact**

ISI’s role is becoming increasingly important. “Due to new developments such as Big Data our members have a growing need to exchange knowledge and experience. We are turning into a linking pin and knowledge hub. Face-to-face meetings are very valuable for this. That is why we have recently started organising regional congresses in addition to the biannual world congresses”.

*The next edition of the ISI WSC will be held in July 2017 in Marrakech, Morocco.*