

Big Data for SDGs Implementation in East and North-East Asia

Introduction

Collection and analysis of statistical information operates in an environment where more and more human activity leaves a digital footprint or can be captured using rapidly evolving technologies. The fast-paced growth in innovation and capacity to collect and utilize data offers transformative opportunities for governments, especially in the planning, implementation, and review of the SDGs. Countries in the East and North East-Asian subregion have been at the forefront of technological innovation in this field and are poised to take advantage of innovative approaches to use data in their implementation of the Sustainable Development Goals (SDGs).

The combination of increasing digitization, the Internet of Things (IoT), and ever increasing computational capacity (including artificial intelligence) enables the efficient and instantaneous collection of data on a very wide range of issues. The data can then be immediately analysed and utilised to inform policy and programmatic decisions. The opportunities these new tools offer us goes beyond the speed and size of data processing, but they also enable the collection of data where it was difficult to do so before.

This paper will briefly summarise big data, opportunities for enhancing SDGs implementation, initiatives that already utilise big data in the subregion, and options for ESCAP to support member-states in this endeavour.

What is Big Data?

Big data as a phrase is used here to encapsulate a number of interrelated technologies – big data, internet of things, and artificial intelligence. At its core, big data refers to the very large amounts of data that is being generated by

citizens, consumers, businesses and governments every day.

Whilst societies have always generated significant amounts of activity, due to increasing digitization and online activities, more data have been generated than ever before. In addition, the advent of Internet of Things (IoT) and widespread mobile internet connectivity have allowed household, business, and the outdoor environment to connect to the internet, and share data collected by sensors or other connected electronic devices, creating multitudes more digital data in the process.

The additional data generated by social media, mobile phones, satellites and IoT is only useful if adequate computational methods existed to make sense of it. Artificial intelligence (AI) is the third technological innovation linked to big data due to its unparalleled ability to process data. AI can automate the collection of data as well as the computation of structured data to produce sophisticated models for consumers who do not have quantitative backgrounds; machine learning and advanced AI can also interpret unstructured data, such as recognizing images, written text, and spoken word.

The combination of all of these associated technologies can enable the collection and analysis of data to improve decision making in public policy, including implementing and monitoring the SDGs.

Big Data and SDGs

East and North-East Asia countries have already participated in national reviews of SDGs. China and the Republic of Korea were two of the inaugural 22 countries to present their national voluntary reviews at the 2016 High-level Political Forum on Sustainable Development

(HLPF). Japan presented their national voluntary review at the HLPF in 2017.

To assist the monitoring and ensure effective implementation of the 17 Goals, each Goal has component targets and indicators, producing a combined total of 169 targets and 230 indicators. As the SDGs are a transformative agenda to tackle some of the largest challenges the international community faces, many SDGs indicators are not widely captured and reported by member states yet. Big data offers a useful tool for countries to capture and analyse data that can be useful for the production of SDGs indicators on its own or combined with traditional statistics.

The UN Global Working Group on Big Data for Official Statistics, of which ESCAP is a member, shared with the UN Statistical Commission on the benefits of using big data. The report noted from a survey of 93 countries that big data is useful in a few different ways:

- More timely statistics from more up to date online sources, including real time data,
- Creating new products and services from the expanded sources of data and increased analytics,
- Reducing costs through digital data sources or algorithmic processing of analogue data, etc.

The 2030 Agenda notes that it is grounded in human rights, this is crucial in the context of big data as there are many ethical issues to be resolved. Many big data practitioners, including the United Nations Global Pulse, have noted it is important that human rights, including the right to privacy, be respected. As big data enables the linking of many different pieces of data together to yield insights, what may traditionally be considered innocuous data, such as google search results, could be combined with geolocation data, and demographic data to predict religious identity, health status or other more sensitive information, therefore privacy should be considered more holistically.

Additionally, as big data often uses algorithms to automate processes and decisions, there exist potential for algorithms to directly or indirectly discriminate on grounds prohibited by United Nations treaties, this is known as “algorithmic discrimination”. These and other emerging human rights concerns are not a barrier for using big data in the implementation of SDGs but are integral to ensuring that big data ultimately benefit the people and all of the SDGs.

Big Data in East and North-East Asia

East and North-East Asia has some leading nations in the area of internet connectivity. Mobile phone penetration is near universal in China, Japan and the Republic of Korea. The robust infrastructure has also translated to high uptake of service delivery via the internet, and citizen participation through electronic communication.

According to the UN e-Government Survey, The Republic of Korea leads the world in telecommunications infrastructure, with Japan only two places behind Republic of Korea. China leads most developing nations in its telecommunications infrastructure. In terms of online services offered by the government, Republic of Korea is in the top 10 countries, Japan within the top 20, and China within the top 40. In terms of civic participation through electronic platforms, Japan and Republic of Korea are third and fourth respectively. These robust capacities offer strong foundations for utilising big data for the implementation of SDGs.

In the broader public policy arena, countries of the East and North-East Asia are leading the development of innovative technologies and using them for sustainable development. For example, China is embarking on a large-scale program to use internet of things and automation to make cities more productive and greener (“Smart Cities”); the Republic of Korea have utilized linking government databases to private credit information systems to analyze household spending patterns and consumer price information, Japan has also used online tracking of consumer price information to track inflation trends.

The experiences of utilizing big data in ENEA countries will be valuable for other member states, and this is one area in which the UN can provide a platform to facilitate knowledge sharing and capacity building. In addition, given the rapid progress of technological developments, increasing attention will also be required in the fields of ethics and regulatory frameworks to strike a right balance between an enabling environment to promote the benefits of big data whilst ensuring that it does not infringe on privacy rights or exacerbate inequalities.

The ENEA Policy Briefs aim at providing a subregional-level review on common challenges and opportunities, and generating forward-looking discussions among key stakeholders. The views and options expressed in the briefs are the author’s own and do not necessarily reflect the official policy of the UN. ESCAP East and North-East Asia Office welcomes proposals from officials and experts for the Briefs. For further information, please contact the Office (escap-sroenea-registry@un.org).

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