Big Data for Remote Areas: The Use of Mobile Positioning Data for Measuring Tourism on the Indonesian Border

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Abstract

Data collection is complicated in Indonesia due to vast geographic distances and difficulty of travel. So is it that the cross-border survey for measuring tourism is undercoverage.

Indonesia has a vast border area, covering over 3000 km of land border and sea border. These border areas lie far from the capital city of the province and airport. Some of provinces in Indonesia have direct border with other countries, such as Malaysia, Philippines, Papua New Guinea and Timor Leste. Some of cross border areas do not have an immigration posts (checkpoints) and only guarded by military personnel or the head of the village. Also, some of the border areas have insufficient infrastructure, such as main road, mode of transportation, etc. These conditions cause the high cost for conducting cross border survey and also for obtaining data from immigration posts.

In order to overcome the coverage and timeliness problems of tourism statistics, BPS Statistics Indonesia started to use mobile positioning data in 2016. Mobile positioning data from the largest mobile network operator (around 92 percent at the border and 60 percent nationality) is used. The use of mobile positioning data is believed could improve the quality of data and to provide real time (timeliness) of tourism statistics. So, the use of mobile positioning data can support the real time of evidence based policy making and SDGs indicators.

This paper shows the use of big data for collecting data for hard-to-reach remote areas, with the example of mobile positioning data in Indonesia. The data is now used regularly in official statistical production.

Keywords: Mobile Positioning Data, remote areas, SDGs, big data