**2023 IAOS Young Statistician Prize  
Second Place**

**Integrating Big Data and Survey Data for Efficient Estimation of the Median**

Submission for the 2023 IAOS Prize for Young Statisticians

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**Abstract**

An ever-increasing deluge of big data is becoming available to NSOs globally, but it is well documented that statistics produced by big data alone often suffer from selection bias and are not usually representative of the population at large. In this paper, we construct a new design-based estimator of the median by integrating big data and survey data. Our estimator is asymptotically unbiased and has a smaller variance than a median estimator produced using survey data alone.

*Views expressed in this paper are those of the author and do not necessarily represent those of the Australian Bureau of Statistics. Where quoted or used, they should be attributed clearly to the author.*