Administrative data informed donor imputation in the Australian Census of Population and Housing

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Abstract

Response rates for official statistical collections are falling globally, placing increasing emphasis on methods for handling missing data. At the same time, linked administrative data provides new opportunities for National Statistical Organisations. In 2016, the Australian Census of Population and Housing addressed unit non-response through nearest neighbour donor imputation. This method used dwelling and location characteristics to inform the selection of donors for each non-responding unit. This paper proposes a variation to the 2016 Census imputation method that incorporates administrative data to improve the selection of donors. Our method, Administrative Data informed Donor Imputation (ADDI), strengthens support of the assumptions of donor imputation, while limiting exposure to risks inherent in direct use of administrative data. We apply the ADDI method to the 2016 Census non-responding population, and demonstrate how the accuracy of imputation can be improved to produce higher quality statistics.