New tool to help distribute resources by identifying areas of need

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Research by the University of Auckland has created a new way of measuring social deprivation in New Zealand that could assist agencies to distribute resources better.

The New Zealand Deprivation Index (NZDep) has been the universal measure of area-based social circumstances for New Zealand used in policy making and research for the past 20 years.

The NZDep was developed after the 1991 Census in a response to calls for a tool to assist with needs-based resource allocation.

However, Dr Dan Exeter of the University's School of Population Health says the Census based model has its limitations due to the fact that few census variables directly measure deprivation and the data are quickly outdated because the census is only held every five years.

Dr Exeter and other academics from the Faculty of Medical and Health Sciences have used administrative data from various government agencies to develop a new tool called the Index of Multiple Deprivation (IMD) which can be updated more frequently.

Their research has been published in a paper, The New Zealand Indices of Multiple Deprivation: a new suite of indicators for social and health research in Aotearoa, New Zealand, published in *PLOS ONE*.

"This paper presents the first theoretical and methodological shift in the

measurement of area deprivation in New Zealand since the 1990s," Dr Exeter says.

The IMD uses 28 indicators of deprivation from national health, social development, taxation, education, police databases, geospatial data providers and the 2013 Census. These represent seven domains of deprivation: Employment; Income; Crime; Housing; Health; Education; and Geographical Access. The IMD is the combination of these seven domains. A strength of the IMD's domains is that they can be used separately or combined to explore the drivers of deprivation in different neighbourhoods.

"The IMD provides a more nuanced view of area deprivation circumstances in Aotearoa NZ."

As part of this research, Dr Exeter and his team also divided New Zealand into 5958 "Data Zones" to create neighbourhood level areas of a standard size. Data Zones have between 500 and 1000 usual residents, with an average population of 712, making them ideal for statistical analyses. In urban areas, they are just a few streets long and a few streets wide so are very recognisable areas for users.

"Our vision is for the IMD and the Data Zones to be widely used to inform research, policy and resource allocation, providing a better measurement of area deprivation in NZ, improved outcomes for Māori, and a more consistent approach to reporting and monitoring the social climate of NZ."

Dr Exeter says an accurate measurement of area-based socioeconomic deprivation is vital for planning and for ensuring that resources are allocated fairly and effectively.

More information: Daniel John Exeter et al. The New Zealand Indices

of Multiple Deprivation (IMD): A new suite of indicators for social and health research in Aotearoa, New Zealand, *PLOS ONE* (2017). [DOI: 10.1371/journal.pone.0181260](https://doi.org/10.1371/journal.pone.0181260)

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