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# **The sequential propensity household projection model**

By [Tom Wilson](#)

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## Abstract

**Background:** The standard method of projecting living arrangements and households in Australia and New Zealand is the 'propensity model', a type of extended headship rate model. Unfortunately it possesses a number of serious shortcomings, including internal inconsistencies, difficulties in setting living arrangement assumptions, and very limited scenario creation capabilities. Data allowing the application of more sophisticated dynamic household projection models are unavailable in Australia.

**Objective:** The aim was create a projection model to overcome these shortcomings whilst minimising input data requirements and costs, and retaining the projection outputs users are familiar with.

**Methods:** The sequential propensity household projection model is proposed. Living arrangement projections take place in a sequence of calculations, with progressively more detailed living arrangement categories calculated in each step. In doing so the model largely overcomes the three serious deficiencies of the standard propensity model noted above.

**Results:** The model is illustrated by three scenarios produced for one case study State, Queensland. They are: a baseline scenario in which all propensities are held constant to demonstrate the effects of population growth and ageing, a housing crisis scenario where housing affordability declines, and a prosperity scenario where families and individuals enjoy greater real incomes. A sensitivity analysis in which assumptions are varied one by one is also presented.

**Conclusions:** The sequential propensity model offers a more effective method of producing household and living arrangement projections than the standard propensity model, and is a practical alternative to dynamic projection models for countries and regions where the data and resources to apply such models are unavailable.

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