

Social Impact Call for Papers

Project – Their Futures Matter Family Investment Model

Brief description of the research project, goals, and partners

Their Futures Matter is a new Government Agency set up by the Australian state of New South Wales. The main responsibility of Their Futures Matter is to improve life outcomes for vulnerable children and their families.

Their Futures Matter was set up following a 2015 review of the way government as a whole relates to vulnerable children and families. That review found that while the current system responds to immediate crises, it failed to address the complex needs of vulnerable children and families or arrest the devastating cycles of intergenerational abuse and neglect.

Central to the work of Their Futures Matter is a Family Investment Model which was commissioned in 2018 and which continues to evolve.

The Family Investment Model allows Their Futures Matter to project lifetime pathways for all NSW residents currently under age 25 (almost 3M people). The lifetime pathways include key outcomes such as educational attainment and interactions with key government agencies such as police, corrections, health, social housing and child protection. The model also provides a family view where parents' outcomes interact with their children's pathways recognising that changes to the parents' situations can profoundly affect the pathways of their children.

The Family Investment Model was developed using individual-level linked administrative data across most government sectors.

The Family Investment Model is being used to identify the most vulnerable children and families in the state to prioritise programs to meet their specific needs. Its principle goal has been to support the case for funding preventative programs rather than just traditional crises driven services. These programs aim to improve the lives of the state's most vulnerable children and young people while also saving the public money in the longer-term.

This project was an initiative of Their Futures Matter. The consulting firm Taylor Fry undertook the analysis and modelling. The cross-agency dataset that was central to this work was created through the co-operation of numerous NSW Government Departments including Health, Family and Community Services, Justice and Police.

What is the main innovation that you would like to show?

The key innovations that the project demonstrates and which we would like to show are:

- By linking data at the individual level across multiple government agencies we can paint a rich picture of vulnerability across the population
- Furthermore, by using data mining, statistical modelling, micro-simulation and actuarial valuation techniques we can identify patterns in that data which allow us to understand who in the population is likely to have poor outcomes and what those likely outcomes are across a person's lifetime.
- This is allowing Their Futures Matter to prioritise investments in vulnerable children using a consistent evidence base which considers long-term (lifetime) outcomes.

We will illustrate this using a visualisation of a simulation which demonstrates the inter-generational transmission of vulnerability. The simulation shows that vulnerable young women transitioning into adulthood are far more likely than their non-vulnerable peers to have children in foster care (out of home care).

How does this fit with the KDD ecosystem?

- Shows the value of large datasets, particularly those created by linking data from different sources at the individual level
- Demonstrates the use of KDD for socially impactful goals
- Technically interesting in the way the project combines machine learning, traditional statistical approaches, micro-simulation techniques, and actuarial valuation approaches.

Links to online demonstrations

The visualisation we would like to show can be found here:

<https://investmentmodel.taylorfry.com.au/>

A password is required which is included in the email to which this document is attached.

A report summarising many of the key outcomes from this project will be made publicly available by Their Futures Matter during the month of June. Following its publication, we will be free to share more insights from the project.