Department for Work & Pensions

Modelling & Forecasting

Developing long-term pensioner microsimulation modelling in Great Britain

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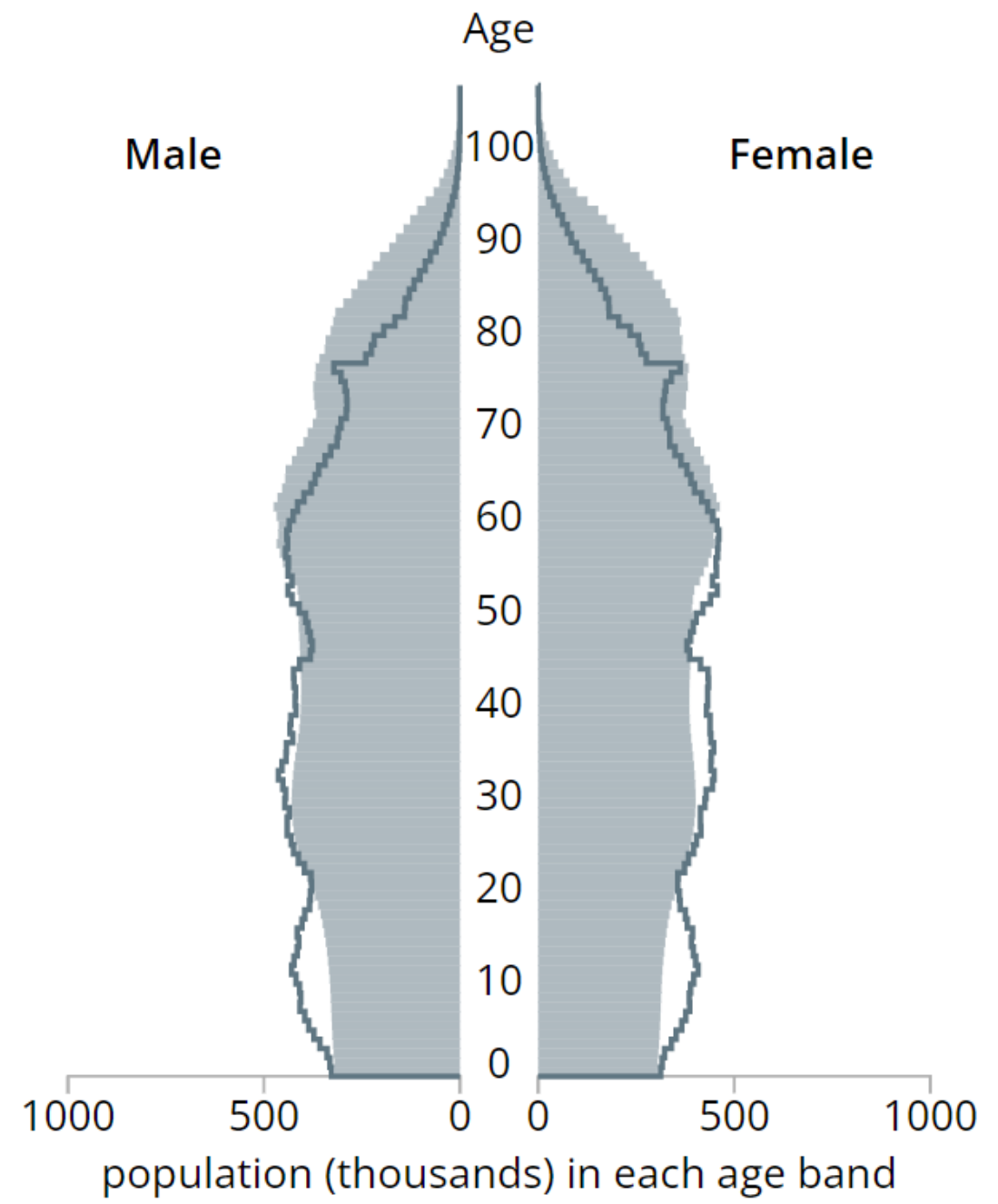
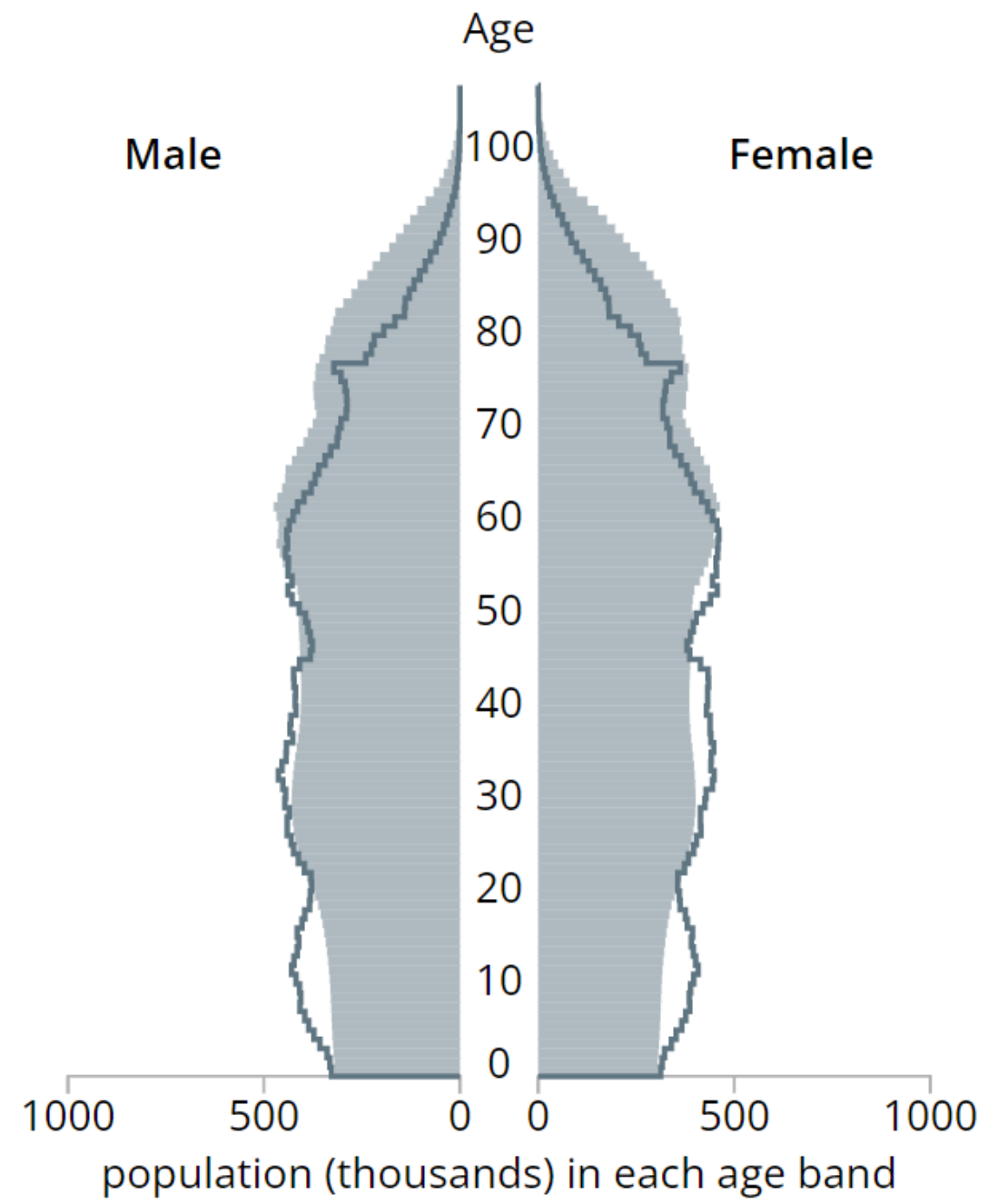
Department for Work and Pensions,
United Kingdom



Current projections show more older people and fewer children by 2073

Great Britain Principal Population Projections by age and sex:
Line = 2023; Grey bars = 2073.

Source: Office for National Statistics



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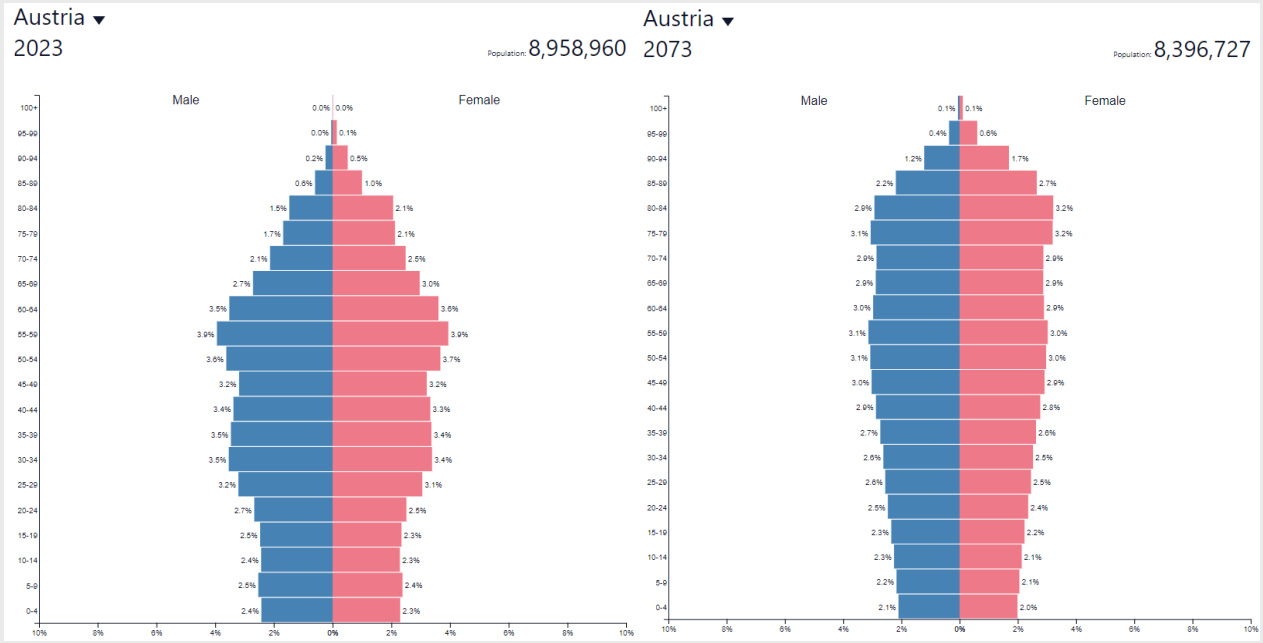

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Develop existing model or do something new?

- Long term dynamic micro simulation – Pensim3
  - 20+ years old
  - Survey data based
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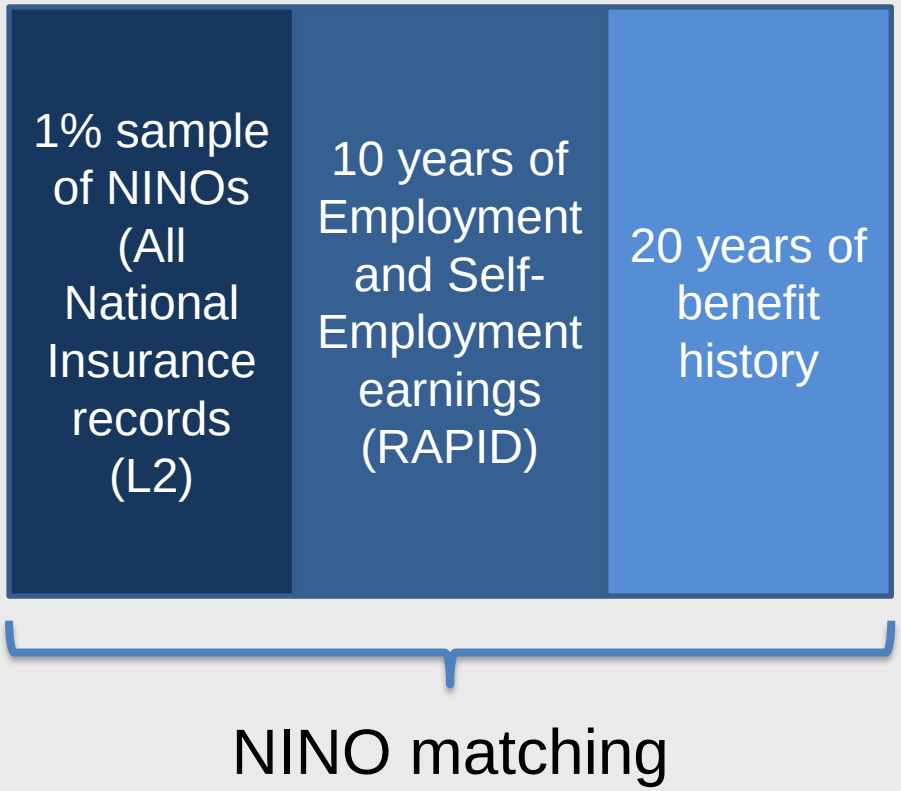
  - Needs development to deliver what we need
- Why do something new?
  - Scope to tackle new functionality
  - Admin data focus
  - Using new tools and techniques

Base data (or model starting point)



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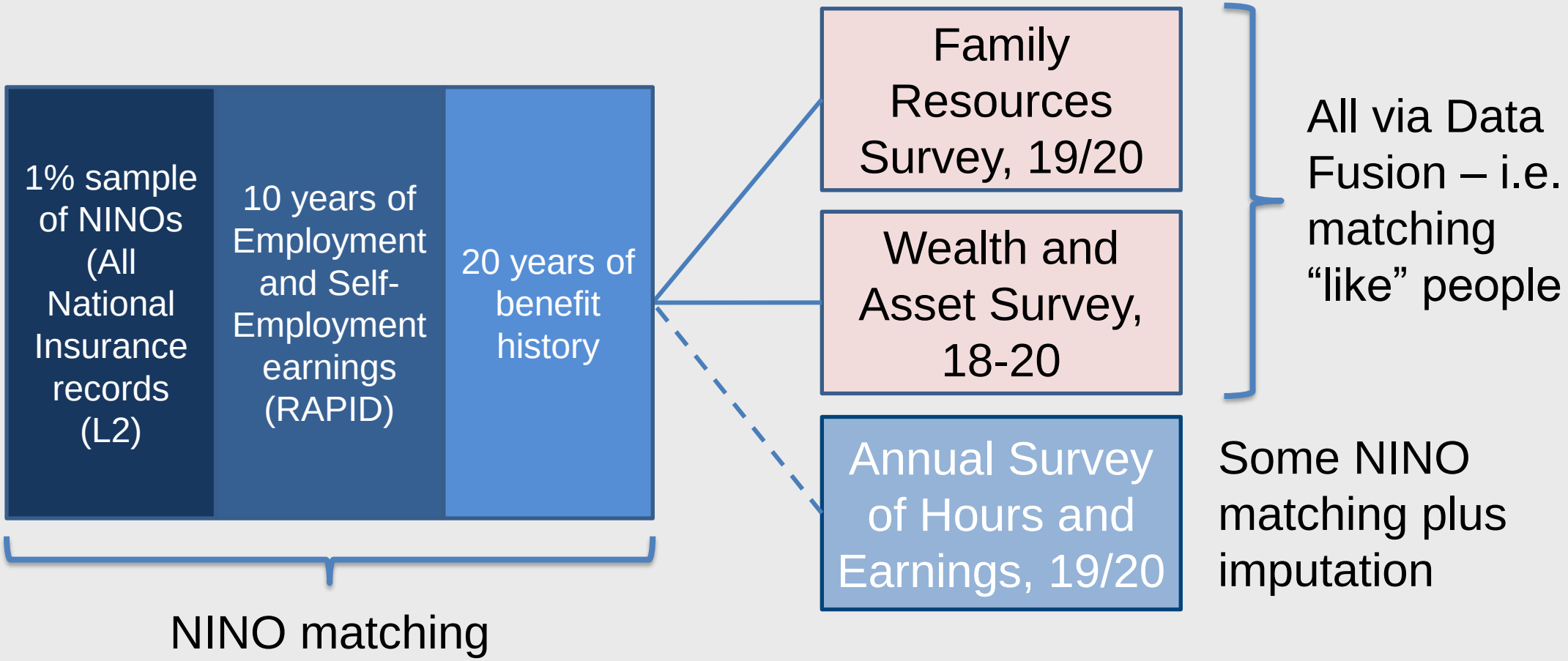

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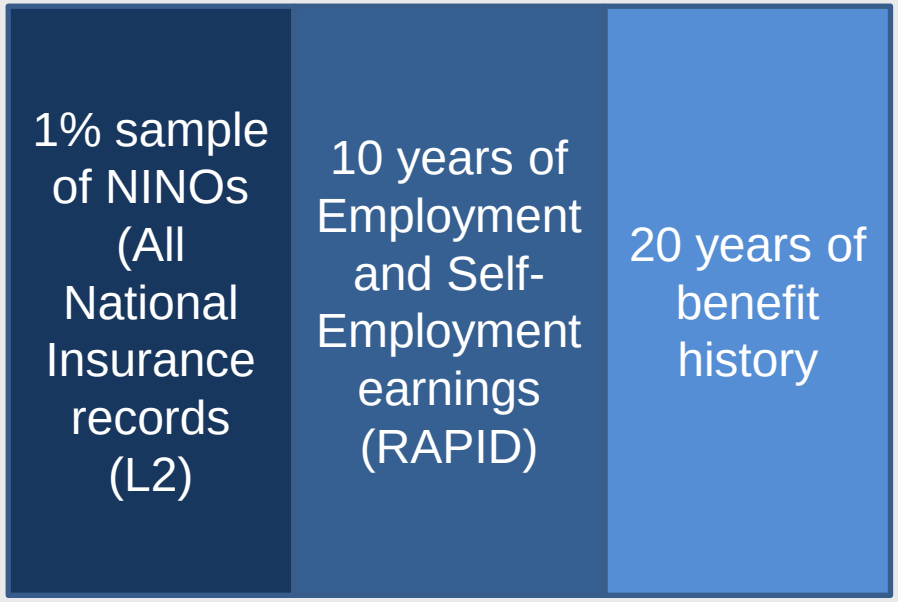

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Family Resources Survey, 19/20

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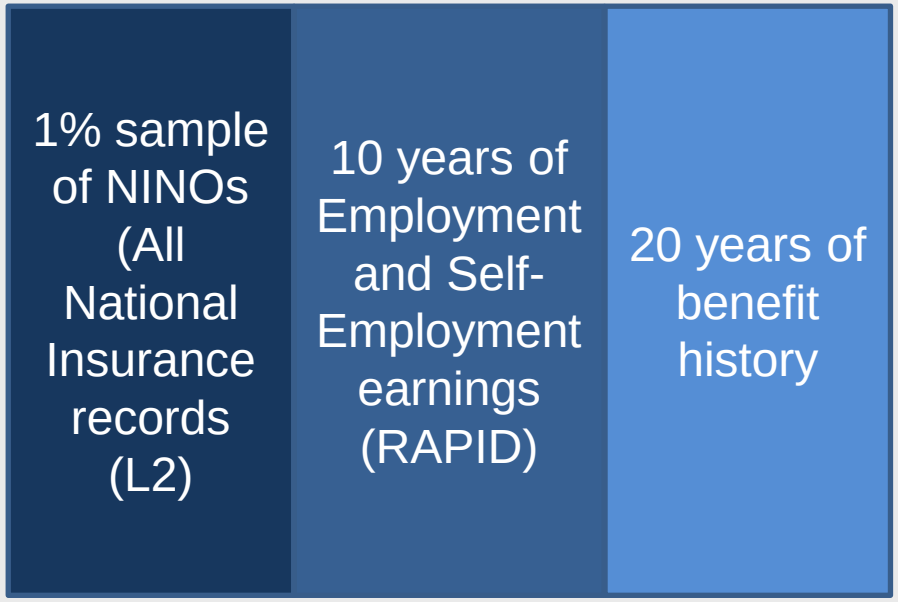

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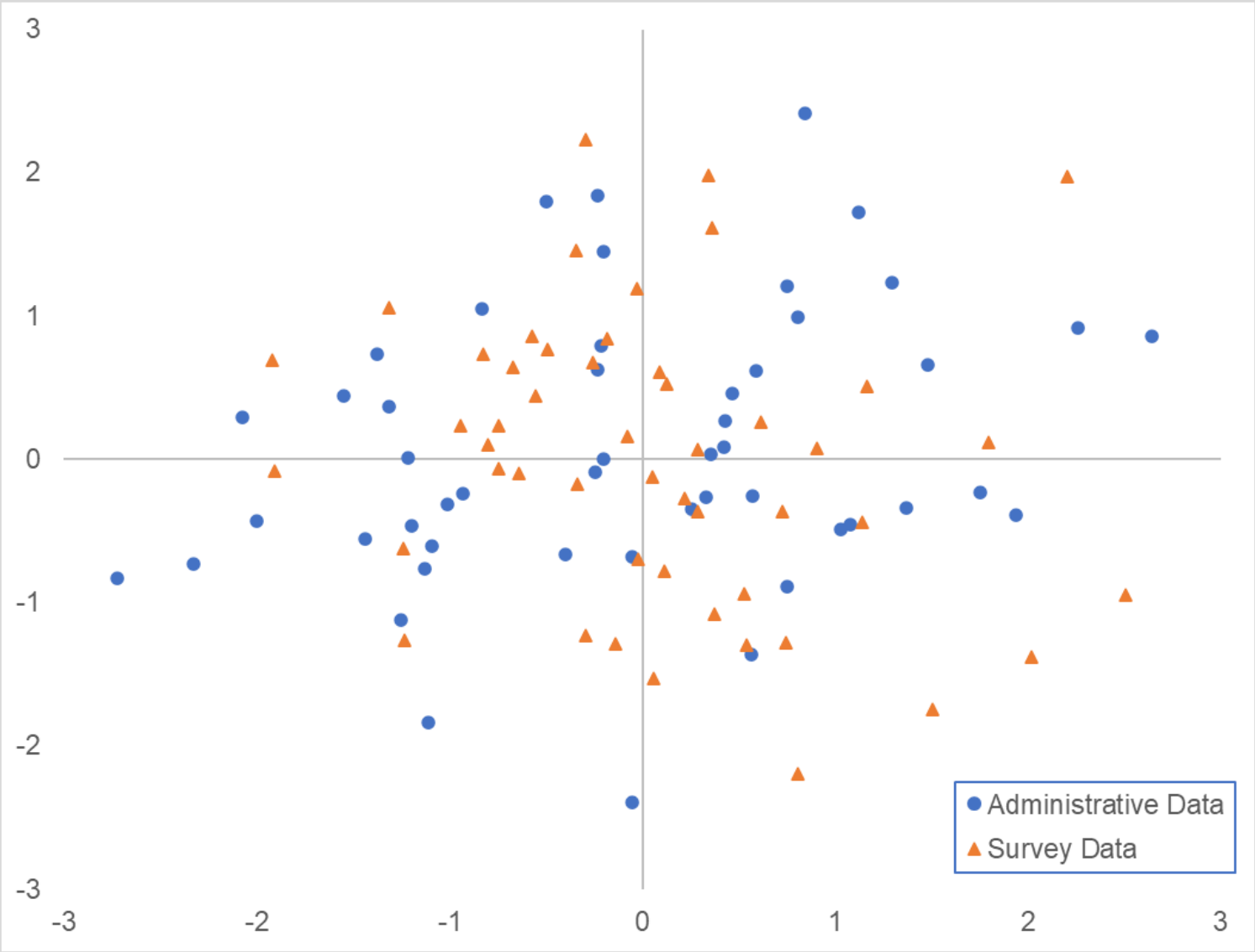
1. Design and select “Critical Subsets”

2. Resample the survey data so that
   a) Identical numbers of individuals in each critical subset
   b) Resampling is at a household level
   c) Survey weights are preserved (as close as possible)

3. Match survey records to closest admin data neighbour

Order of Decreasing Difference Methodology



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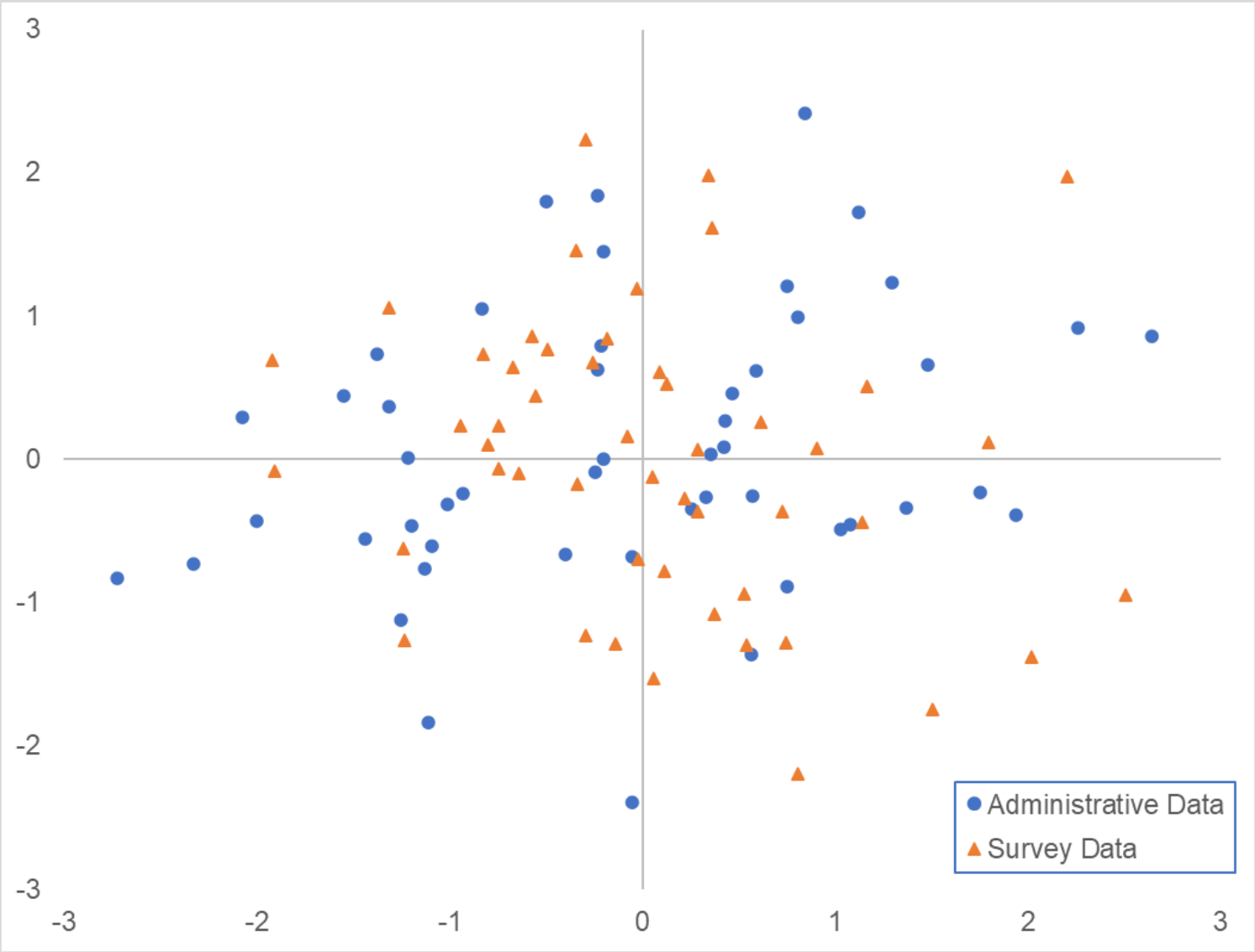

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  - Find the admin data person furthest away from the origin.

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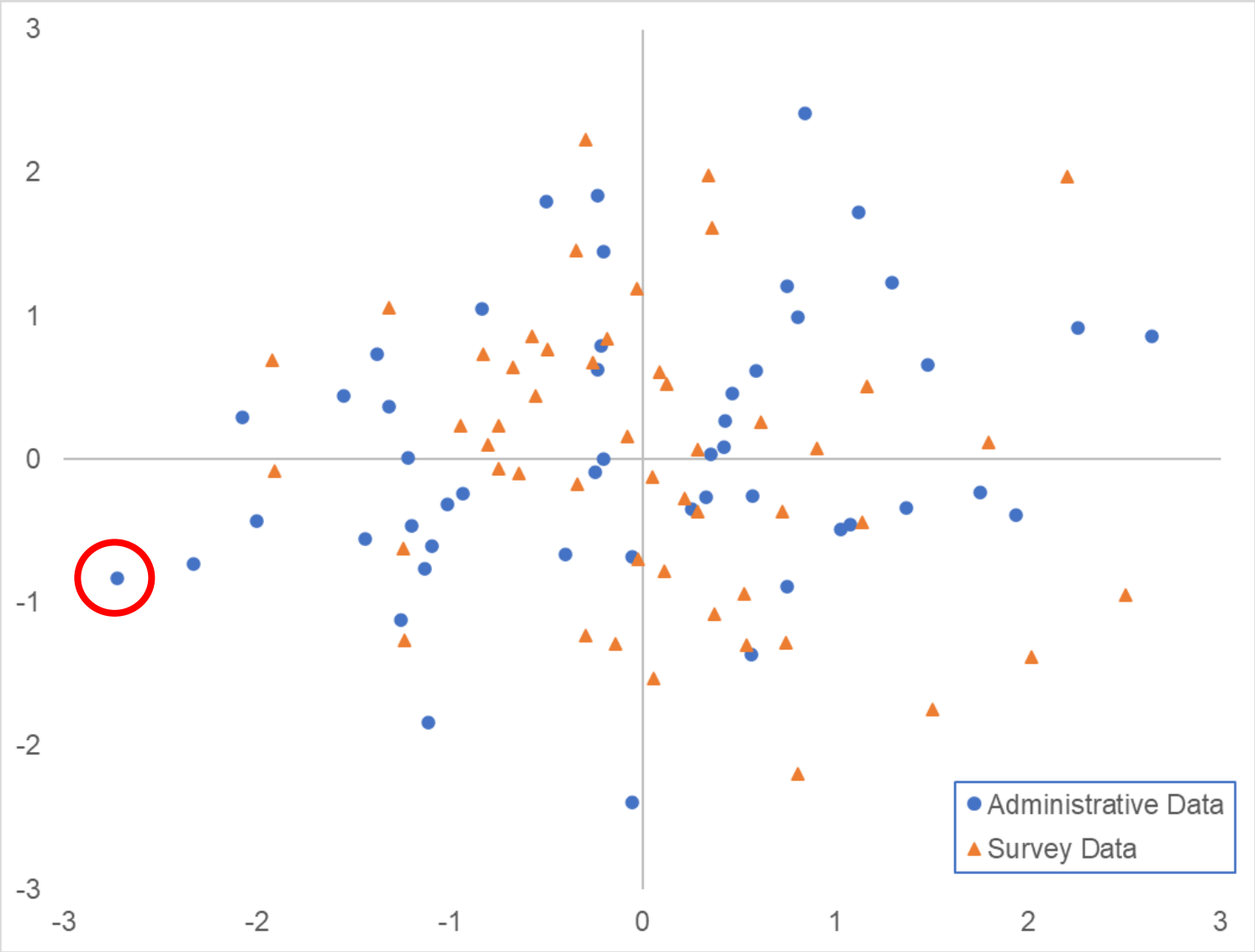

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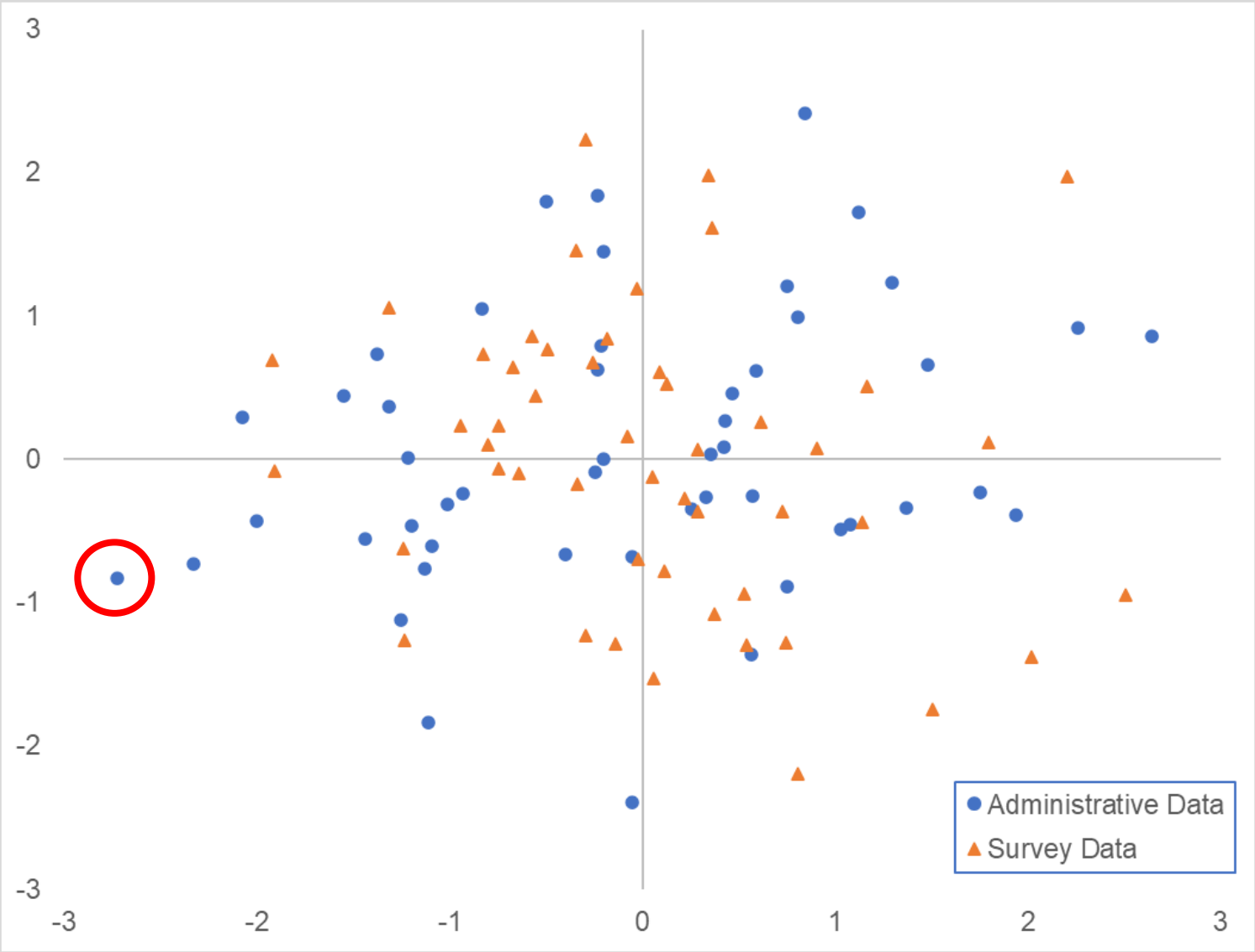

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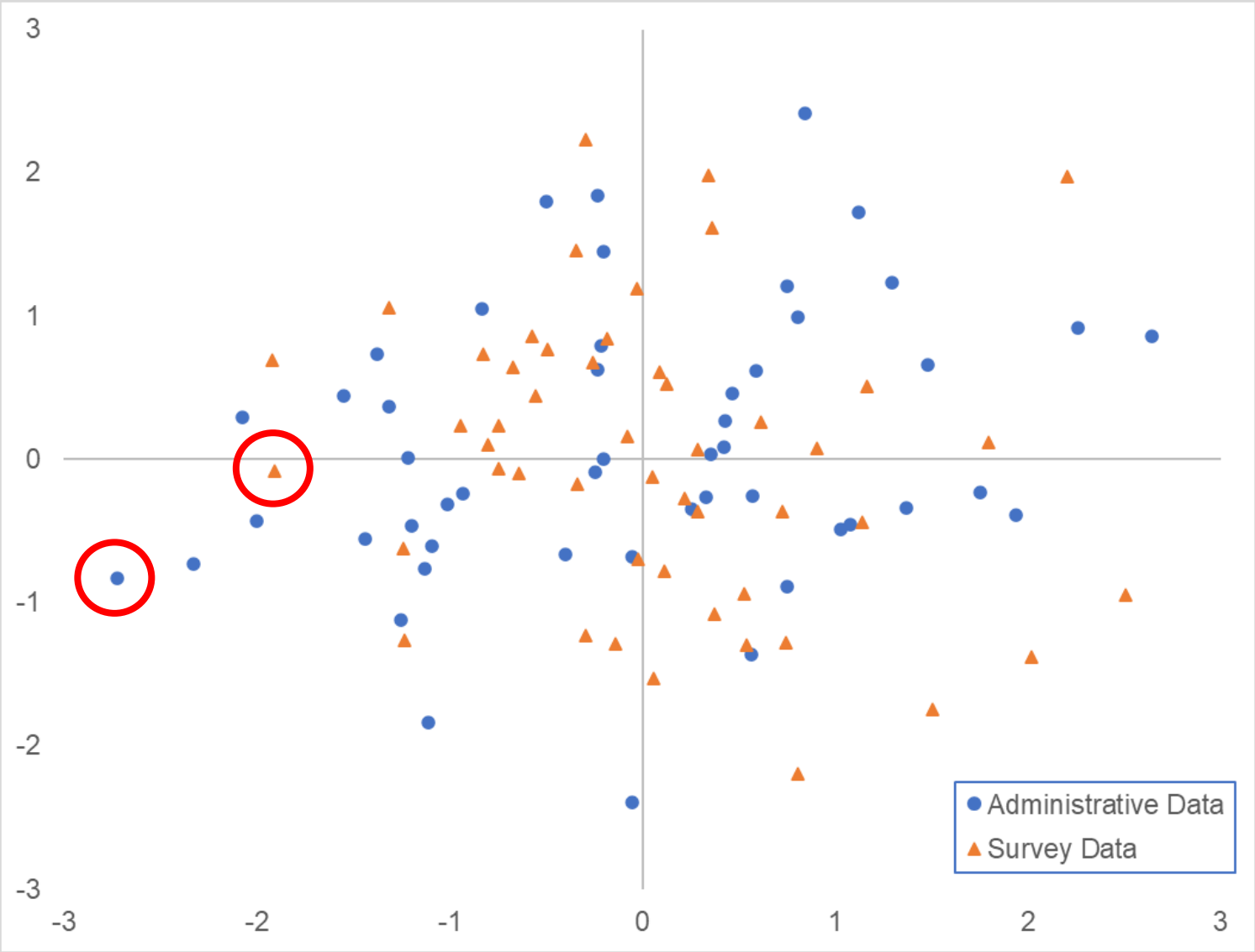

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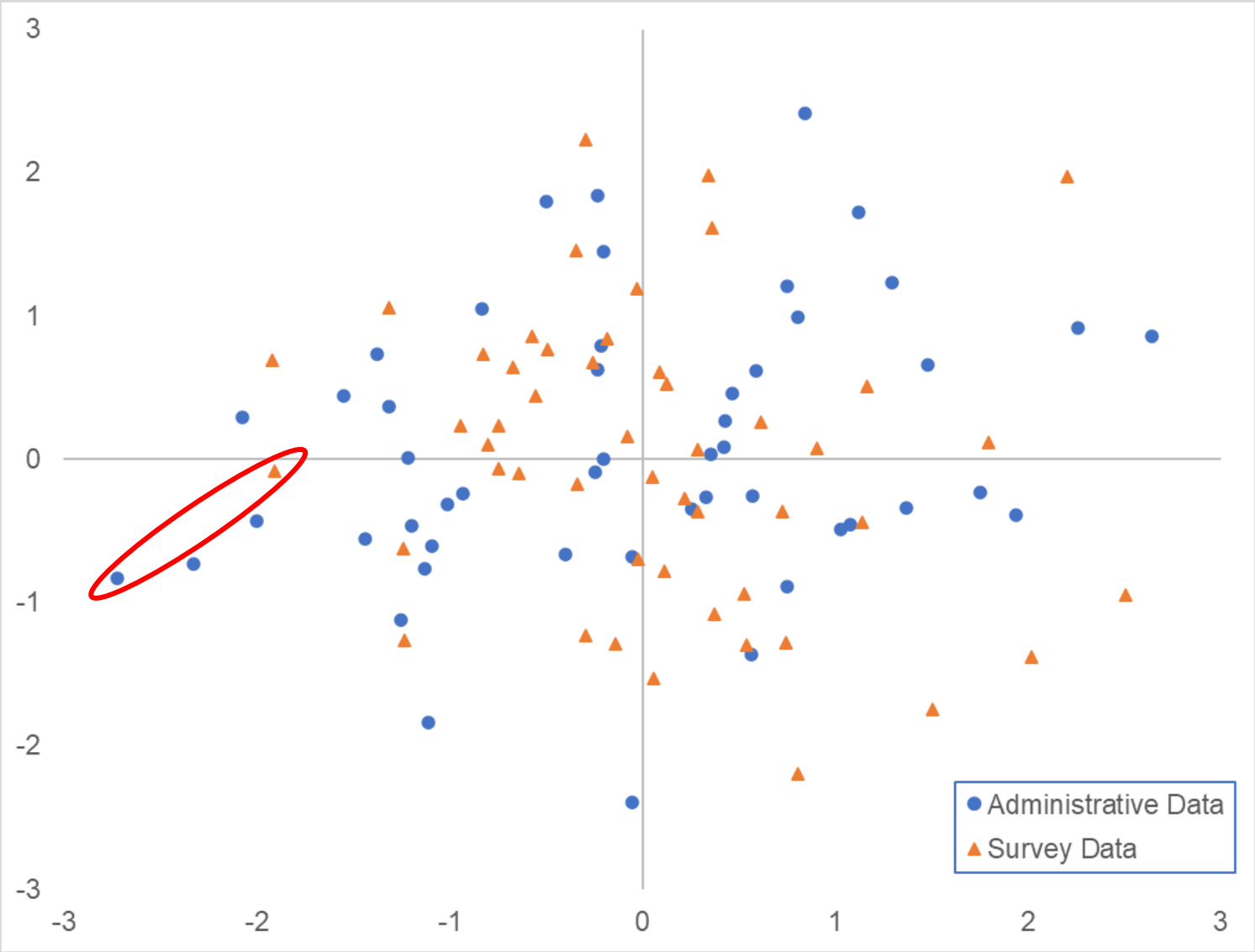

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  - Pair them

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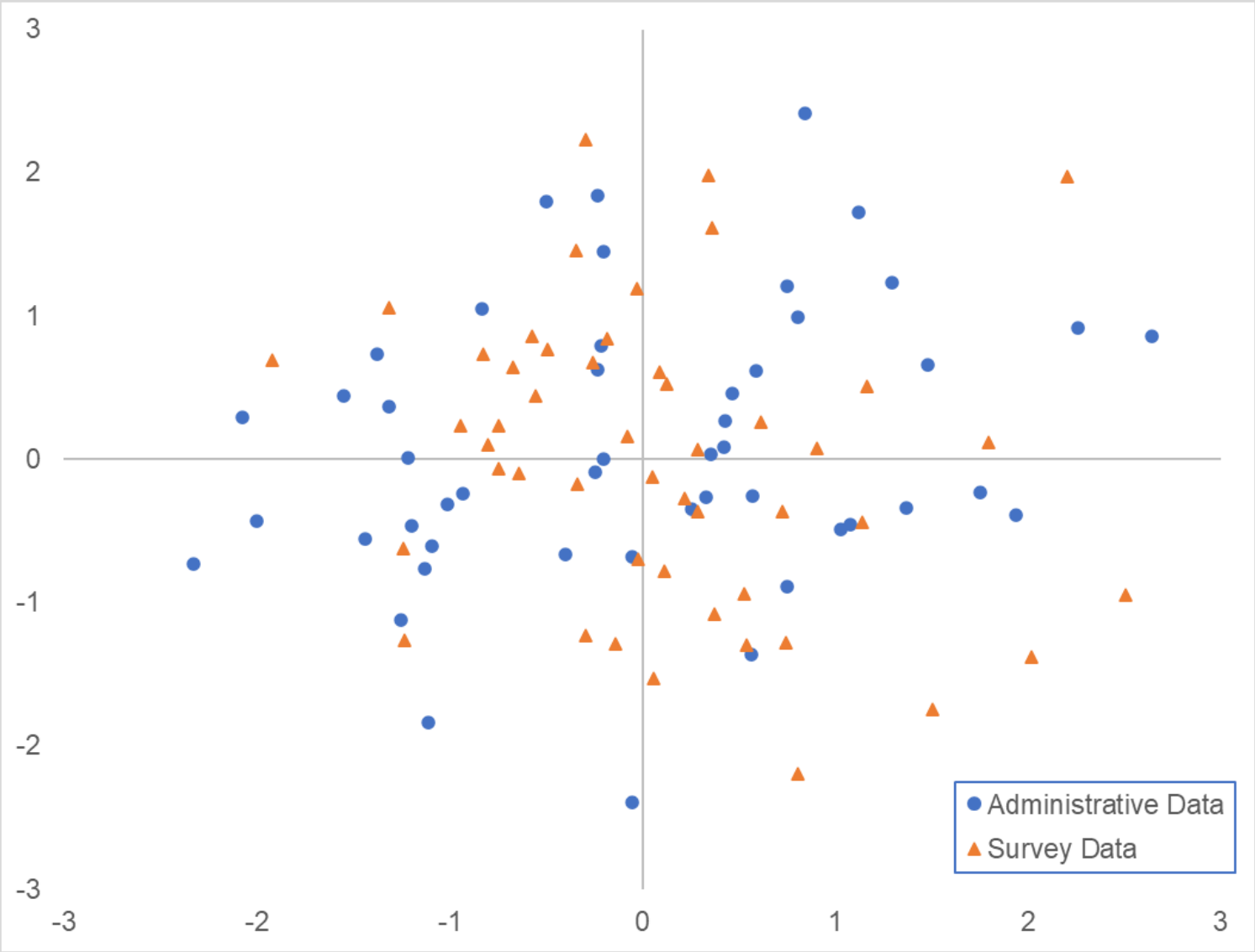

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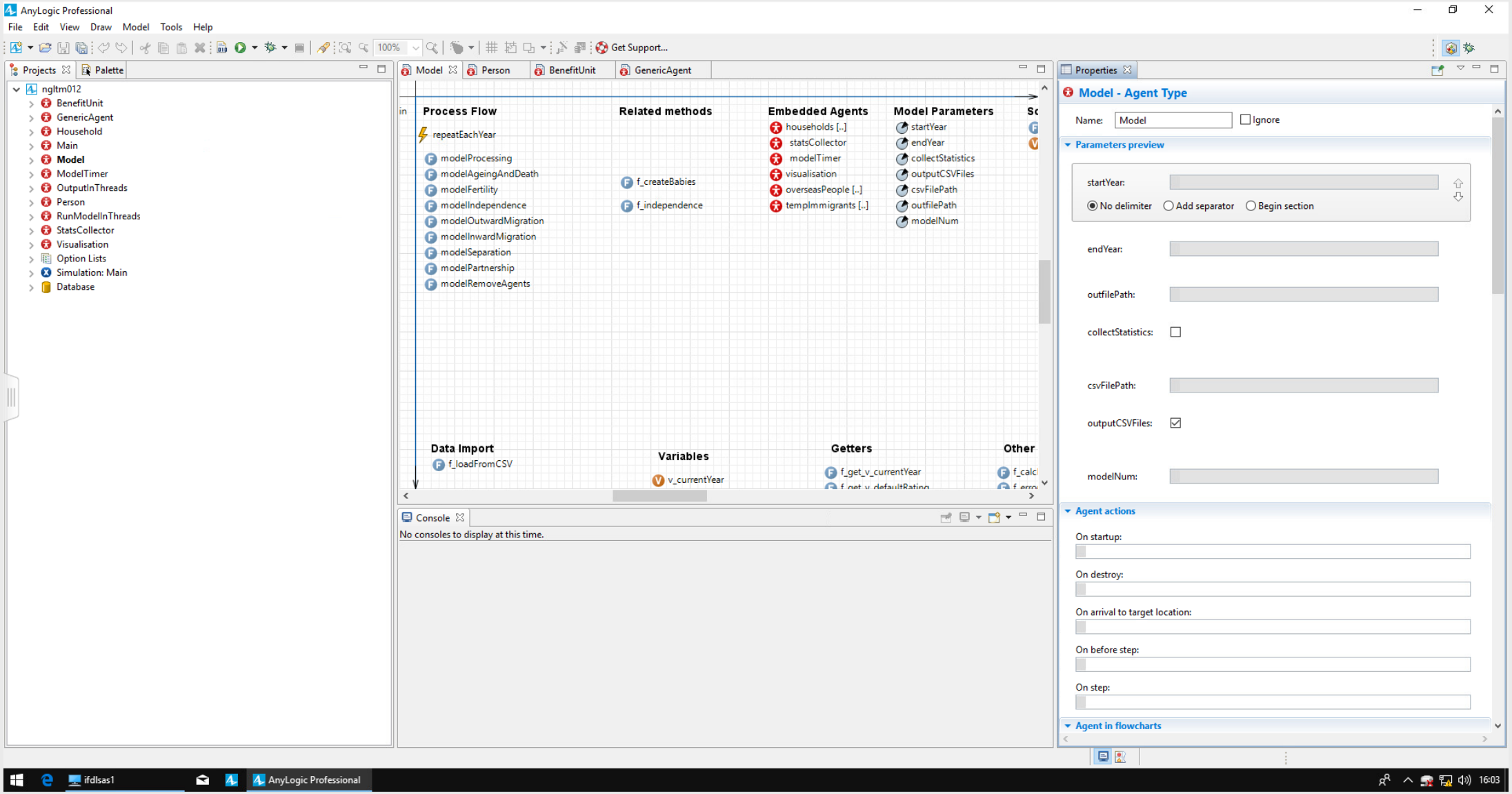
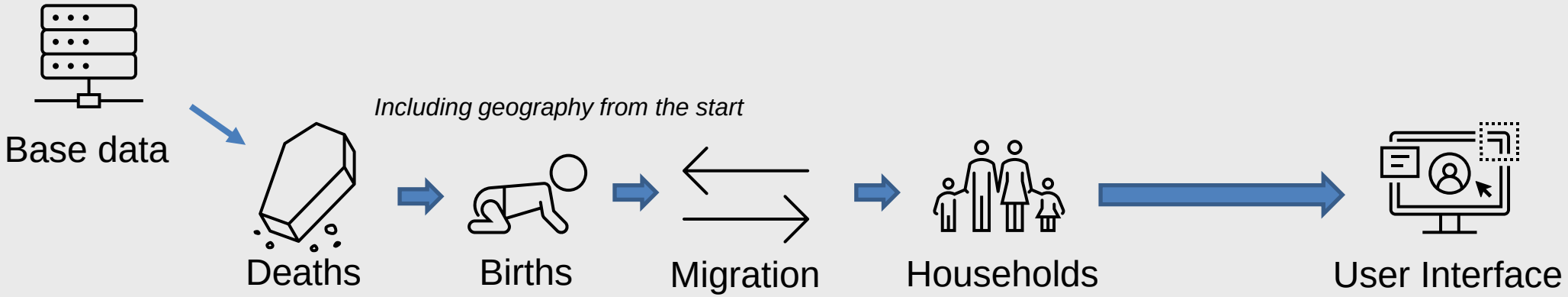
  - Find the closest survey respondent to that person.
  - Pair them
  - Remove and repeat!

Using AnyLogic



Development Road Map



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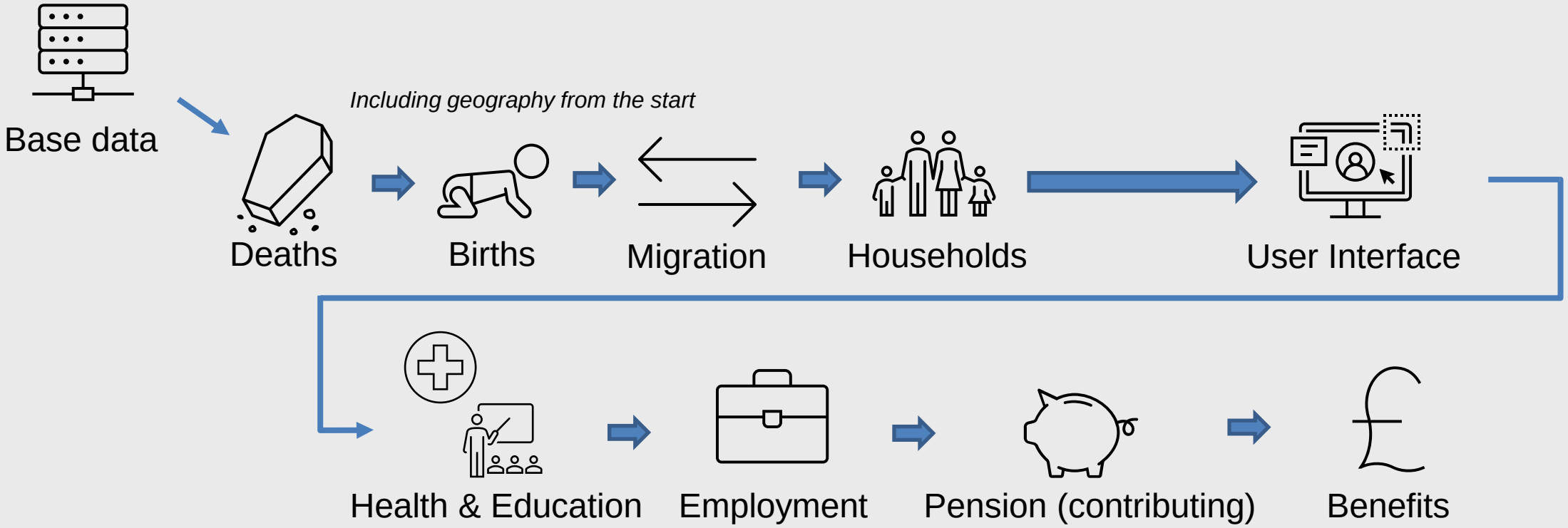

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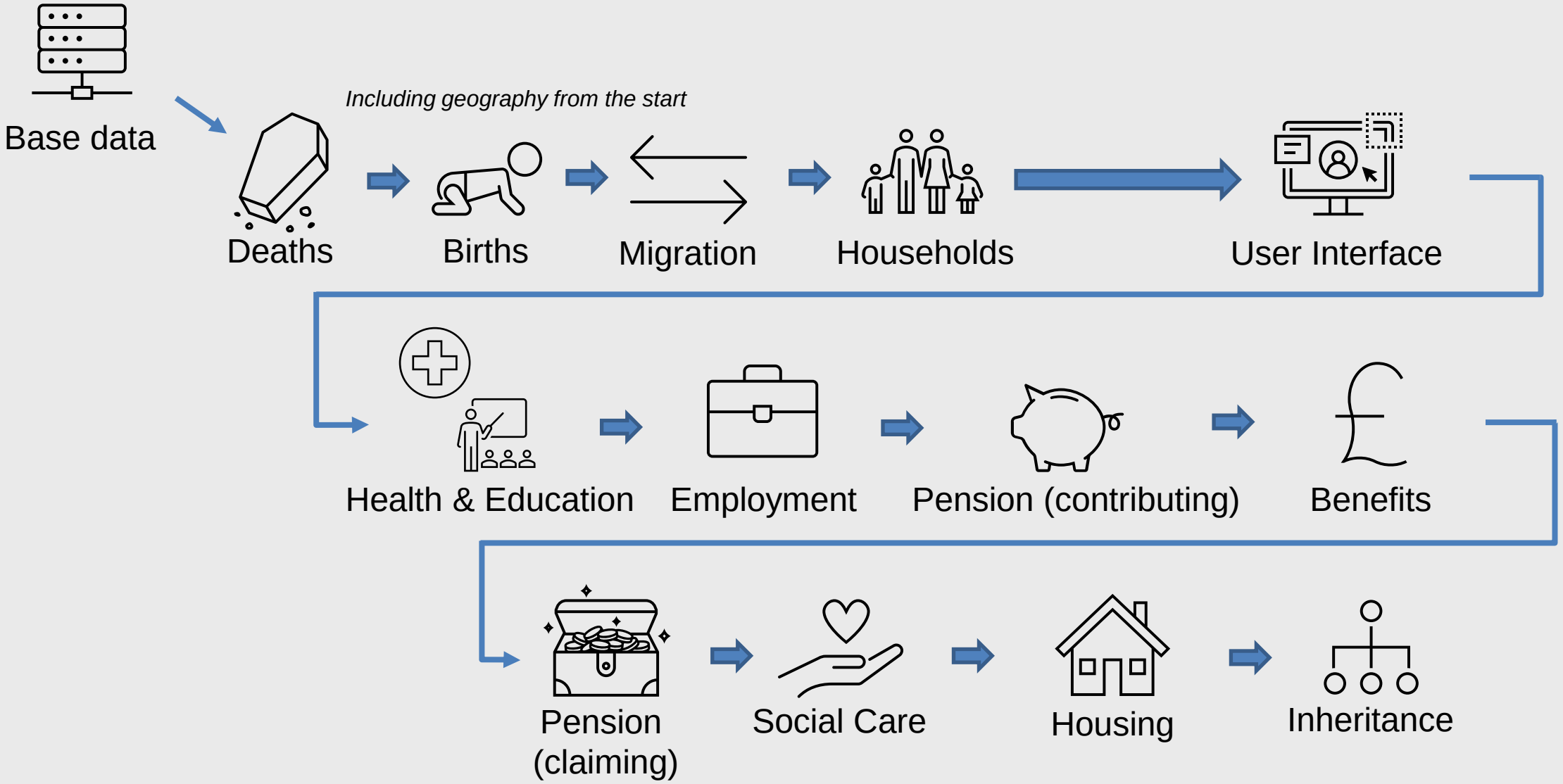
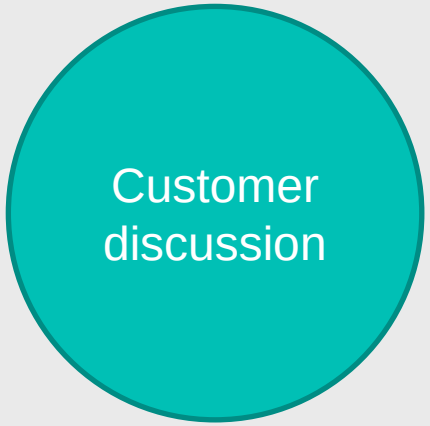


And how will we use it?



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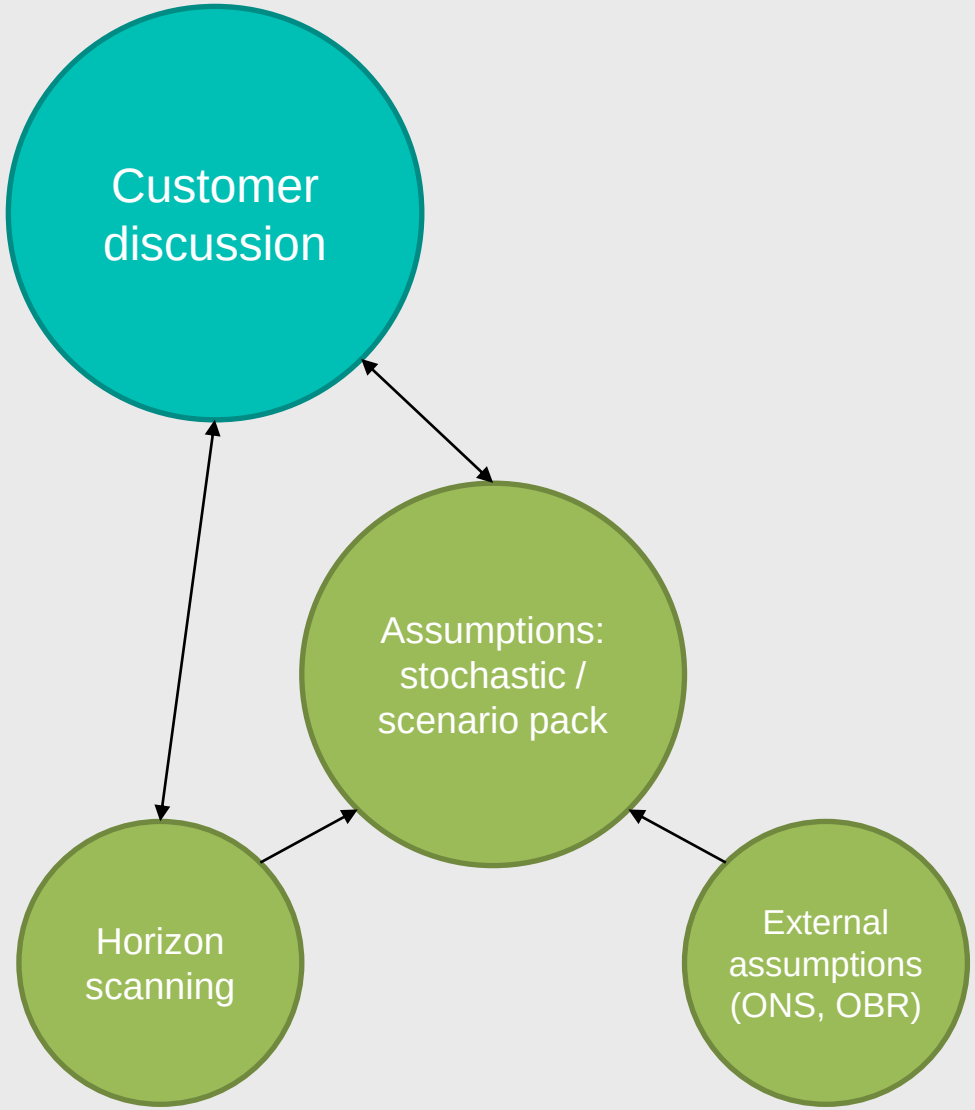

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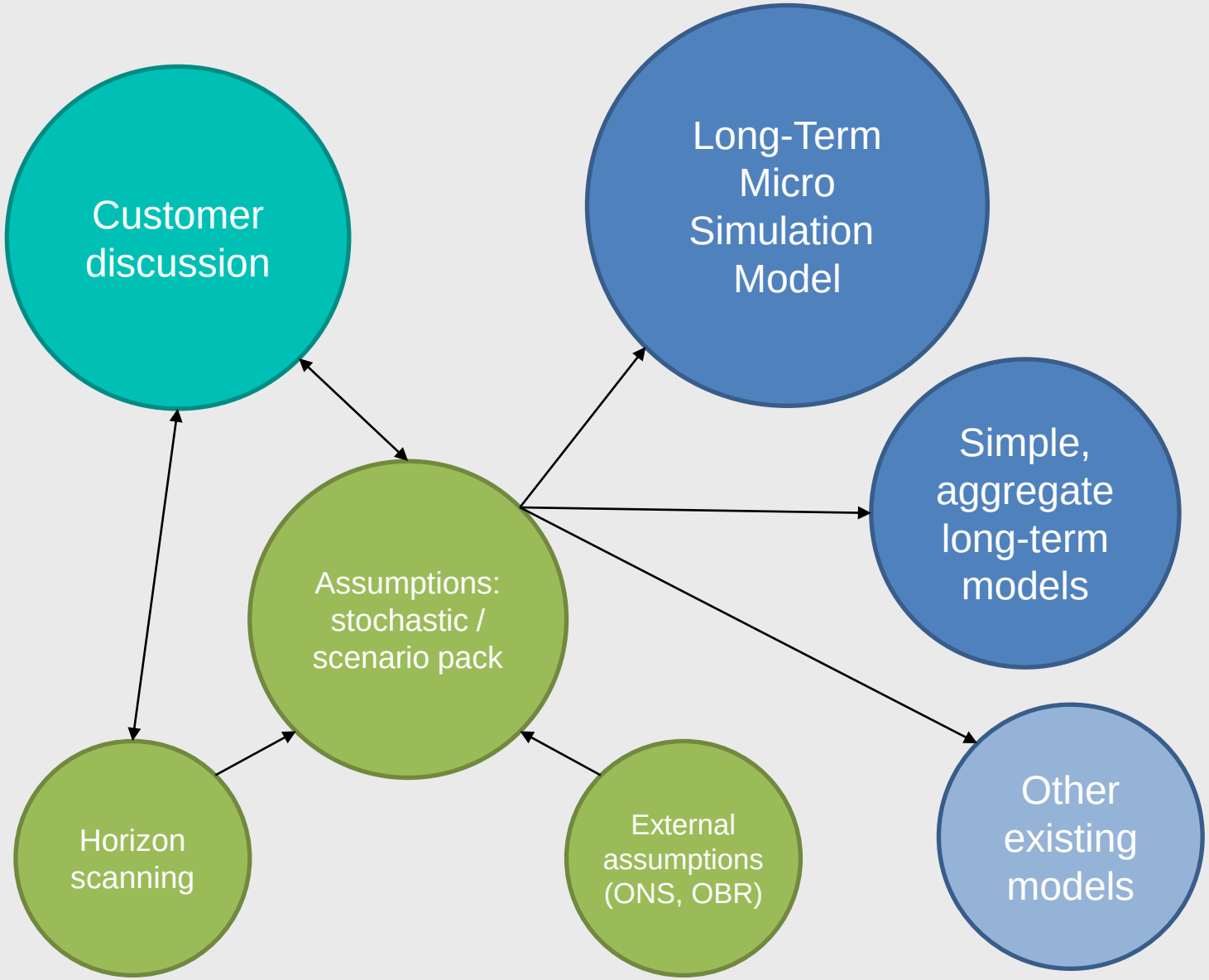

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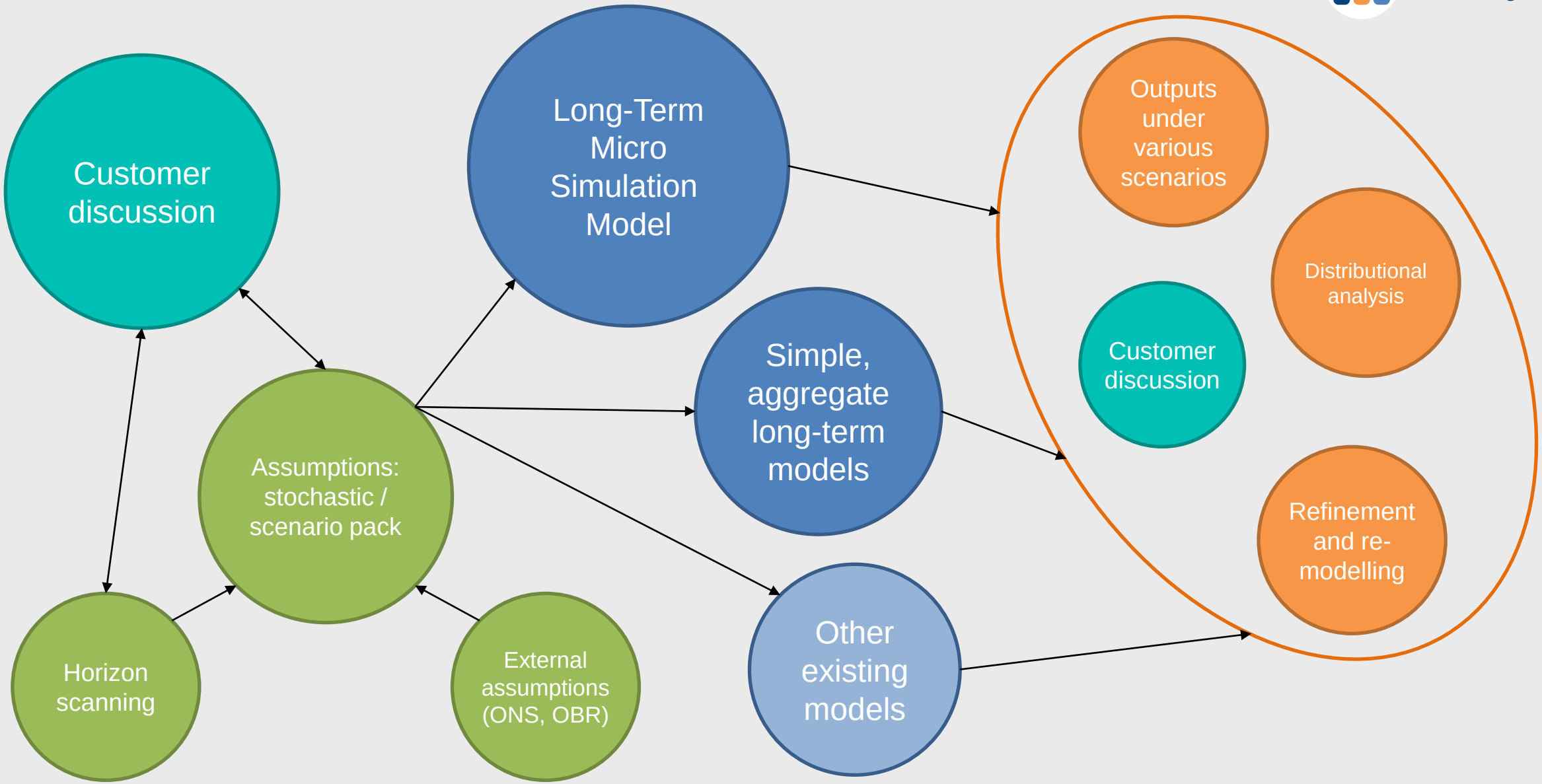

Contact details

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