

SFI Public Service Fellowship 2023

1. Name of Governmental Department or Agency
Central Statistics Office (CSO)
2. Title of the Project
CSO1 Developing Improved Annual Population Statistics (DIAPS)
3. Description of the Project
<p>Traditionally, population statistics in Ireland were measured using a combination of household surveys and the celebrated Five-Year census. While these approaches have worked very well for decades, they face increasing challenges include:</p> <ul style="list-style-type: none"> • New statistical requirements • The costs of traditional census operations – which are immense. • Developing administrative data-based population statistics. • Estimating difficult to enumerate populations. • Falling response rates in official statistics <p>Developing Improved Annual Population Statistics (DIAPS) is a planned 12-month Central Statistics Office (CSO) project, under the Life Events and Demography (LED) Division which aims to produce new types of annual population statistics that traditionally required expensive household surveys and censuses.</p> <p>DIAPS involves the SFI Public Service Fellowship Researcher, working in conjunction with CSO LED and Census statisticians conducting a detailed study of methods for estimating household composition, individual and household social and environmental attributes (such as household energy efficiency) on an annual basis to further enhance existing CSO statistical products such as Irish Population Estimates from Administrative Data Sources (IPEADS).</p> <p>IPEADS is an accepted, methodologically robust system for producing annual population estimates, for example, but in its current form cannot produce detailed household level statistics, nor provide detailed information on individual social attributes. This in turn would allow the production of annual Census-type statistics and help facilitate the transition from a five-yearly to a decennial census, with resulting savings in the tens of millions for the CSO.</p> <p>DIAPS aims take advantage of the ever-increasing range of administrative datasets available to the CSO under the National Data Infrastructure (NDI) to develop annual population datasets that will allow for detailed population statistics on individuals and households to be produced at annual,</p>

rather than every five years. Therefore, despite its small staffing requirement DIAPS offers immense value-for-money (VFM) opportunities for the CSO and the Irish Public Sector.

4. Project Scope

Strategic goals:

DIAPS has the following overall strategic goals, which the SFI Fellowship researcher will contribute to:

1. To demonstrate how administrative data and existing CSO products such as IPEADS can be developed to produce extremely detailed, including at small geographical areas, annual census-type population estimates and statistics for Irish households and individuals, rather than waiting for five-yearly estimates as in the Census.
2. The possibility of producing annual population counts would also facilitate the creation of additional statistical products including an annual migration series and annual longitudinal population datasets. Annual migration statistics are a key part of the output in the population estimates and provide the official statistics on how many people emigrate from and immigrate into Ireland every year. IPEADS, repeated annually, would facilitate more detailed annual migration statistics.

As such the DIAPS project team will have a series of specific objectives and deliverables:

Specific objectives:

1. Within the period 2023-2024 to investigate and establish new methods for producing household composition statistics, including household size and family type, from CSO administrative data sources. This will allow the annual IPEADS annual population estimates to become truly Census-like in their detail.
2. To develop detailed and more frequent migration (immigration and emigration) statistics from administrative datasets.
3. To examine how social attributes for individuals and households, as well as environmental attributes such as household energy efficiency could be incorporated into CSO annual population estimates. Access to such information annually would allow policymakers to further refine social and environmental policymaking due to more timely feedback than a five-year census.
4. Identify new sources of statistics from administrative data sources that could be added to annual population and migration estimates.

5. Skills/Expertise Required

The researcher will need to demonstrate the following skills/areas of expertise:

- Proficiency in using programming/scripting languages associated with statistical computing environment, in particular R or Python
- Technical statistical skills such knowledge or experience in sampling and survey design, data linkage and integration, data processing, and data modelling.

- Strong analytical skills to collect, organise, analyse and disseminate significant amounts of information with attention to detail and accuracy, and the ability to extract key messages and underlying trends.
- Ability to work effectively on own initiative and as part of the DIAPS team
- Strong communication, report writing and presentation skills.

6. Expected Outputs of Project

Deliverables:

As a 12-month project, DIAPS has the following objectives:

1. A detailed technical report on possible improvements to household statistics in IPEADS; as well as further development of migration statistics
2. A detailed study of feasibility of annual population statistics including social and environmental attributes.
3. A report with illustrative examples on how new datasets may be used on population statistics.

7. Working Arrangements

The researcher would ideally be based in the offices of the CSO in Cork. Flexible and remote working arrangements will be accommodated

8. Expected Timeline

The DIAP project is expected to have a 12-month timeline (full-time) with the following components:

1. Research and Development Phase- Months 1-4
2. Testing and deployment Phase – Months 5-10
3. Documentation and Dissemination Phase – Months 11-12

9. Contact Details

Tim Linehan,
Head of Division,
Life Events and Demography
Central Statistics Office