



Use of the Longitudinal Immigration database (IMDB) to Inform Immigration Research

Athanase Barayandema
Social and Aboriginal Statistics Division
Statistics Canada



Outline of presentation

- ◆ Context
- ◆ Sources of data on immigration
- ◆ Overview of the Longitudinal Immigration Database (IMDB)
- ◆ Uses (and limitations) of the IMDB



Context

- ◆ IMDB is managed by Statistics Canada on behalf of a federal-provincial consortium led by Citizenship and Immigration Canada (CIC).
- ◆ The data was created to respond to the need for detailed and reliable data on the performance and impact of immigration policies and programs.
- ◆ Aim of this talk: discuss the use of the IMDB in the context of immigration (policy) research

Sources of information on immigrants

- ◆ Census and National Household Survey
 - ◆ Very large sample of immigrants
 - ◆ Detailed info on place of birth, language, etc. as well as wide range of socio-economic variables
 - ◆ No “at landing” and immigration program info
 - ◆ limited to 5 year snapshot
- ◆ Regular surveys on a variety of topics
 - ◆ General Social Survey (GSS), Labour Force Survey (LFS)
 - ◆ Ask questions to identify immigrants
 - ◆ Broad social context but small numbers and limited detail on immigrant characteristics

Sources of information on immigrants

- ◆ Dedicated ad hoc immigrant surveys
 - ◆ For example, Longitudinal Survey of Immigrants to Canada (LSIC)
 - ◆ Follow same immigrants 6 months, 2 years, and 4 years after landing
 - ◆ Conducted infrequently (2005 last collection)
 - ◆ Detailed information on immigrants with broad social context but expensive and now getting dated
- ◆ Longitudinal Immigration Database (IMDB)
 - ◆ Links an administrative file on immigrant landings with annual (income) tax files

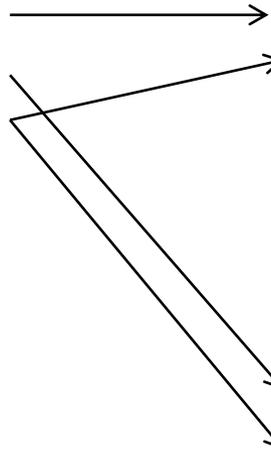
IMDB overview

- ◆ Begun in early 1990's
- ◆ Created to respond to the need for detailed and reliable data on the performance and impact of Canada's National and Provincial Immigration Programs
- ◆ Large database linking two sets of admin files
 - ◆ Immigrant Landing File (collected from landing form)
 - ◆ Personal income tax data with added family information



IMDB structure (relational database)

Landing file			
<i>imdb_id</i>	<i>age</i>	<i>category</i>	...
1			
2			
3			
...			



Tax file 1982			
<i>imdb_id</i>	<i>income</i>	<i>province</i>	...
1			
3			
5			
...			

Tax file 1983			
<i>imdb_id</i>	<i>income</i>	<i>province</i>	...
2			
3			
7			
...			

IMDB overview

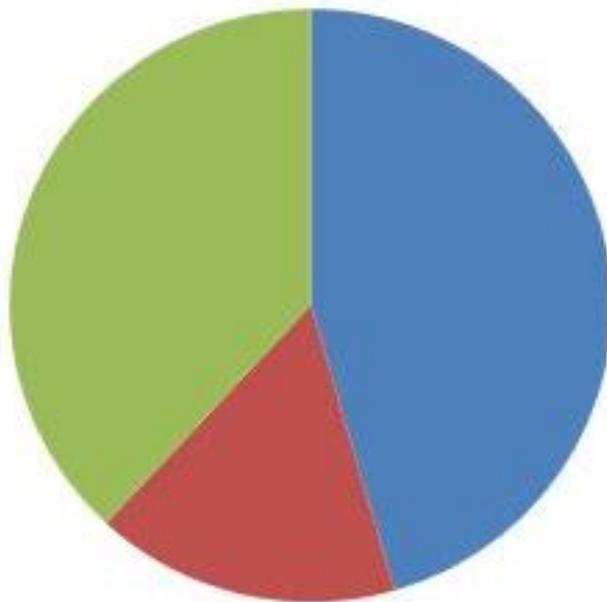
- ◆ Coverage
 - ◆ All immigrants landed since 1980
 - ◆ Filed taxes at least once since 1982
 - ◆ Updated annually
 - ◆ That is, limited to tax-filing immigrants who were linked by our procedures
- ◆ Output products
 - ◆ Public tables (CANSIM), ad hoc analysis for researchers

IMDB as a source of data for analysis

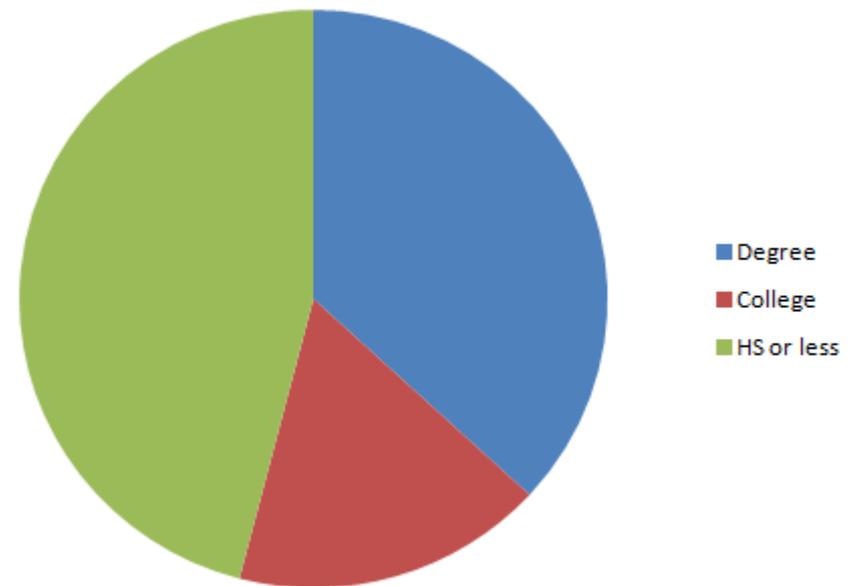
- ◆ Content
 - ◆ Detailed characteristics at landing such as admission category, education qualifications, language, country of origin
 - ◆ Detailed tax information such as sources of income, industry, deductions, family structure
 - ◆ Detailed geography on landing and tax sides
- ◆ Analytic uses
 - ◆ Follow immigrants' economic outcomes over time
 - ◆ Inter- and intra-provincial mobility
 - ◆ Local (= small geographic areas) analysis possible
 - ◆ Subject to confidentiality constraints
 - ◆ Cross-tabulations, linear and logistic models, multilevel models, survival models, longitudinal analysis
- ◆ Some examples follow...

Distributions of education for movers into/out of Toronto versus non-movers

Movers



Non-movers

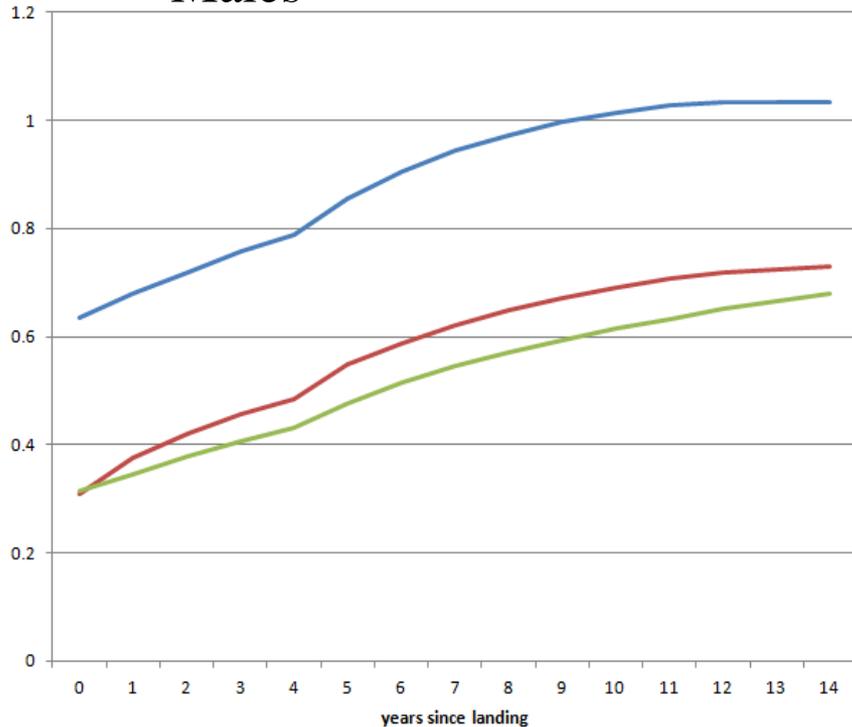


Key observation: the more education you have, the more likely you are to move

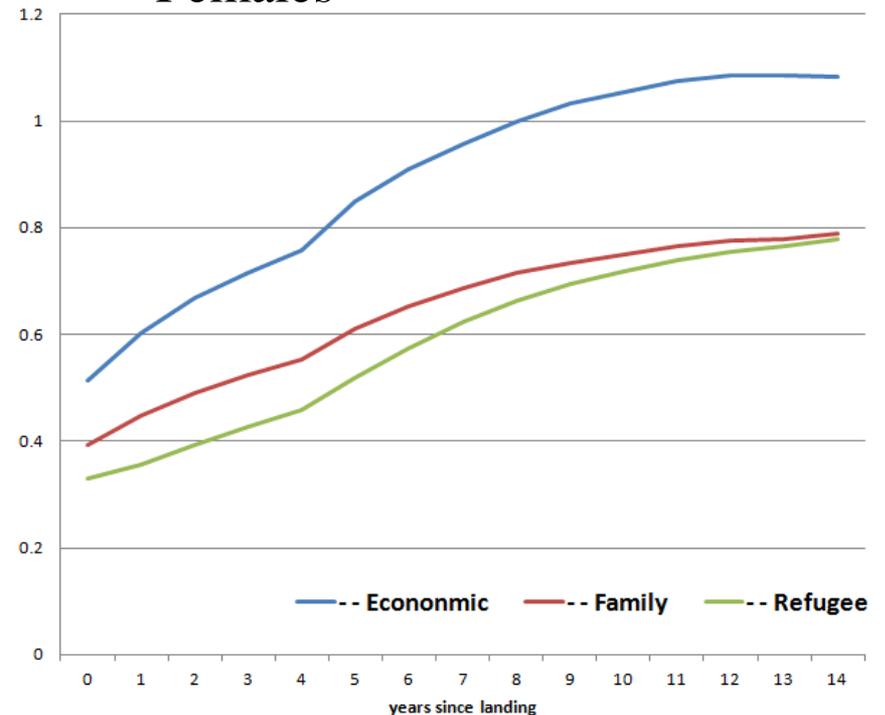


Indices of immigrant wage income relative to all Canadians, 1996 cohort

Males



Females



Key observations: economic class fares better, other classes may not reach parity, female immigrants relative to female Canadians fare better



The IMDB (Immigrant Landing File) as a source of data for linkage

- ◆ Link to ongoing surveys to improve immigrant detail
 - ◆ Type of immigrant, landing date, etc.
 - ◆ General Social Survey, Labour Force Survey
- ◆ Link to the National Household Survey
 - ◆ Data quality evaluation
- ◆ Link to Longitudinal Survey of Immigrants to Canada
 - ◆ Extend longitudinality of economic outcomes for respondents to that survey
- ◆ Link to the Address Register for frame enrichment
 - ◆ Households with immigrants for targeted surveys
- ◆ Link to health admin data for analysis

Current limitations of the IMDB

- ◆ Limited socio-demographic info after landing
- ◆ Limited socio-demographic info before landing
 - ◆ Have tax filing info on immigrants who file before they formally land
 - ◆ While the contents are limited, the quality of the data is good
- ◆ Limited info on out-migration
 - ◆ Some estimates of out-migration and death are possible based on disappearance from IMDB and auxiliary information
- ◆ No info on subsequent generations
- ◆ Limited to info collected by admin systems
 - ◆ But, these admin systems are driven by policy so the data collected has direct relevance to analyses of those policies
- ◆ Not quite a complete census of immigrant tax-filers

Current limitations of the IMDB

- ◆ Only those we find by record linkage techniques
- ◆ But, our methodology is improving
 - ◆ Constantly improving record linkage techniques involving immigrants
 - ◆ Big files, require lots of computing power
 - ◆ Special considerations like name and country of origin
 - ◆ IMDB uses hierarchical deterministic matching
 - ◆ Very few false positives
 - ◆ High linkage rates
 - ◆ For IMDB, find 80% of immigrants with tax info
 - ◆ For working age adults, find 90% (there is a theoretical maximum to linkage)

Some initiatives to improve the IMDB

- ◆ Exploring the addition of Temporary Residents
 - ◆ Temporary Foreign Workers, students, refugee claimants
 - ◆ Idea is to follow immigrants through “life cycle” from arrival to citizenship
- ◆ Exploring the addition of older files (landing years 1952 to 1979)
- ◆ Use linkage “in reverse” to add data to IMDB
 - ◆ use student admin system to add post-landing education to the IMDB
 - ◆ Citizenship take-up information
- ◆ Derivation and addition of new variables
 - ◆ Census contextual information for neighbourhood effect
- ◆ Culture of ongoing quality assurance and improvement



Questions?

Athanase Barayandema:

athanase.barayandema@statcan.gc.ca

613-404-9212

Social and Aboriginal Statistics Division Help Desk:

fe-sasddssea@statcan.gc.ca

613-951-5979



More information

Canadian Socio-economic Database (CANSIM) tables:

<http://www76.statcan.gc.ca/stcsr/query.html?style=emp&qt=income+and+mobility+of+immigrants&GO%21=Search&la=en&qm=1&st=1&oq=&rq=0&rf=0>

Statistics Canada Help Desk: infostats@statcan.gc.ca; 1-800-263-1136

<http://www.statcan.gc.ca>