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Component: Business Survey Infrastructure

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Frames

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Introduction

- Frames are a vital component in the survey process
  - Defines the population to be surveyed
  - Provides information needed to
    - Define the sample plan
    - Select the sample
    - Contact selected units

Introduction

- Frame inadequacies can lead to
  - Operational problems
  - Non-sampling errors
  - Misleading interpretation of results
- For example
  - Incorrect contact information can lead to many problems
  - Inclusion of many dead units leads to inefficient collection and increases the variance
  - Omission of a certain sub-population can lead to misleading results

Source of Frames

- In most statistical agencies, a Business Register (BR) is main source
  - Allows the use of similar concepts and common definitions
  - Maintenance of frames is more cost efficient (economies of scale) and information is more up-to-date (survey feedback)
  - Standardization allows for integrating results across survey programs
    - Improved coherence for data users

Source of Frames

- If a central BR is not available, frames have to be created and maintained by the survey programs

  - Usually built from administrative data or external lists available from associations, levels of government, etc.

  - Each program would have to bear the cost of creating and maintaining their frame

  - The use of different concepts and possibly non-standard classifications may make integration across programs difficult or impossible

Source of Frames

- If BR not available, factors to consider
  - Cost: Administrative sources often provide an inexpensive starting point for constructing the frame. They are also a source of information for updating the frame.
  - Coverage: The administrative source should adequately cover the target population.
  - Up-to-date: Important to consider how up-to-date the administrative information is.
    - The time it takes to process the updates and the delay before they are available to the statistical agency should be considered as they might be the deciding criteria as to whether or not a specific administrative source should be used.

Source of Frames

- Definitions: The definitions used by the administrative source should correspond as closely as possible to the concepts of the survey.

- Quality: Quality of the data provided by the administrative source should meet the overall quality standards of the survey. For example, if the administrative data have a high edit failure rate, the statistical agency may decide that the data are of insufficient quality.

- Stability of source information: When administrative sources are used to construct a frame, the set of variables provided by the source should be as stable as possible through time. Changes in concepts, classifications, or in content at the source can lead to serious problems in frame maintenance

Source of Frames

- Legal and formal partnerships: Ideally, there should be a relationship between the statistical agency and the source providing the administrative information.

- Documentation: The data files should be documented with respect to the variables they contain and their layout. This is particularly important if files are held in different jurisdictions.

- Accessibility/Ease of use: Is the information available electronically? How is the information organized? Do different lists have to be combined before they can be used?

Survey Frames

- A survey frame is a set of units which make up the survey population (or universe)
  - Must contain all units in the population
- It should contain the following for all units
  - Unique identifier / Business information (including status)
  - Classification data such as industry (ISIC) and geography
  - Contact information so that the unit can be contacted
    - This can be survey specific
  - Ideally, some auxiliary information for the sample design
    - Size measures for stratification

Survey Frames

- ## Types of frames
  - ### List frame
    - A list of units in the population
  - ### Area frame
    - A set of geographic areas from which areas are selected and associated units are contacted
    - Can be used for informal sectors but more often used in household surveys

- ## Business surveys almost always use list frames
  - Available from central BR in most cases
  - More efficient designs and cheaper collection methods

Features of Business Frames

- Skewed nature of population
  - Usually a few dominant businesses
  - Typically a small percentage of units account for the majority of economic activity

- Business structures
  - At what level should we sample?
  - What level should we contact?
  - How do we classify a complex business?

- Industry dimension
  - SNA usually needs estimates at the industry level

Preparation for Sampling

Frame Clean up

- Ensure that all of the required information is available for each unit
  - Unique ID and business information (name, address, status, etc.)
  - Industry code
  - Geography code
  - Contact information (could be survey specific)
- Vintage of the information
  - Is more up-to-date information available?
    - Births and deaths
    - Updated industry code, contact information, business status, etc.

Define Survey Population

- Survey population could be different than target population

- Some agencies define what they call a take-none portion
  - Reduction of response burden for small businesses
  - Collection from certain units may be too difficult
  - Chronic refusals

Define Survey Population

- These TN units are still part of target population but are not eligible to be selected in the sample

  - A strategy must be developed to account for the contribution of these units to the estimates

  - Estimation of this contribution can be based on administrative data, data available from the internet or other sources, etc.

- Exclusions should also be identified

  - These units are not part of the target population, so their contribution does not have to be estimated

Define the Statistical Unit

- Usually enterprise or establishment level
- Characteristics of enterprises
  - Autonomy with respect to financial and investment decision making
  - Authority to allocate resources for production of goods and services
  - Level at which financial and balance sheet accounts are maintained
    - From which international transactions, an international investment position and the consolidated financial position can be derived
  - Can own and control one or more establishments

Defining the Statistical Unit

- **Characteristics of establishments**
  - Management responsibility for production operations
  - Engages in a principal economic activity but may also engage in secondary activities
  - Usually can provide information on operating revenues, operating costs and detailed commodity inputs and outputs
- **Financial surveys typically target the enterprise level as its statistical unit, while production surveys typically target the establishment**

Development of Sample Plan

- The actual sample will be drawn later
- Things to consider when developing a sample plan
  - Variable of interest
    - Single variable or multiple
    - If multiple, which variables are most important?
  - Domains of interest
  - Are there auxiliary data available which could be used to improve the sample plan?
    - Are there auxiliary data which are related to the variable(s) of interest?

Summary

- Frames are essential components of business surveys

    - Define target population, allow for efficient sample designs and contact of sampled units

- Availability of a central BR simplifies the creation of sample frames

- Even with a BR, there are still many steps that need to be performed before sampling

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