Introduction to the American Community Survey's Public Use Microdata Sample and Access through DataFerrett

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What are the PUMS?

- Public Use Microdata Sample
- Subset of American Community Survey responses
- Untabulated records about individual people or housing units

Summary Data vs Microdata

Table 1. **Conceptual Comparison of ACS Summary Products and Public Use Microdata Samples**

Example Summary Product						
Geography	**Males**	**Females**	**Median age**	**Occupied housing units**	**Owner-occupied units**	**Renter-occupied units**
State 1	7,345,968	7,952,709	35.9	5,689,354	3,005,973	2,683,381
County A	45,678	49,852	33.5	40,678	15,961	24,717

Example Public Use Microdata Sample Population Records						
Household ID	**Person ID**	**PUMA**	**Relationship**	**Sex**	**Educational attainment**	**Employment status**
105	1	00100	Householder	Female	Bachelors	Working
105	2	00100	Spouse	Male	Masters	Working
105	3	00100	Child	Male	Some high school	N/A

Why use PUMS?

- Create custom tables that are not available through pretabulated (or summary) ACS data tables

Why use PUMS?

- The Kentucky Department of Education requests data on the estimated number of 3 and 4 year olds living below 160% of the poverty line in Kentucky to gauge how well they are serving children eligible for state-funded preschool

U.S. Department of Commerce
United States Census Bureau

AMERICAN FactFinder

MAIN | COMMUNITY FACTS | GUIDED SEARCH | ADVANCED SEARCH | DOWNLOAD CENTER

Your Selections

Search using...

People:Age & Sex:
Age

People:Poverty:
Poverty

State
Kentucky

clear all selections and start a new search

load search | save search

B17024 | AGE BY RATIO OF INCOME TO POVERTY LEVEL IN THE PAST 12 MONTHS

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	Kentucky	
	Estimate	Margin of Error
Total:	4,230,912	+/-1,181
Under 6 years:	328,494	+/-1,841
Under .50	49,018	+/-1,941
.50 to .74	25,311	+/-1,291
.75 to .99	24,986	+/-1,428
1.00 to 1.24	20,911	+/-1,371
1.25 to 1.49	19,710	+/-1,229
1.50 to 1.74	17,666	+/-1,038
1.75 to 1.84	6,709	+/-670
1.85 to 1.99	10,179	+/-810
2.00 to 2.99	53,996	+/-1,813
3.00 to 3.99	40,775	+/-1,826
4.00 to 4.99	24,676	+/-1,151
5.00 and over	34,557	+/-1,464
6 to 11 years:	332,046	+/-2,430
Under .50	39,298	+/-1,667
.50 to .74	24,443	+/-1,339
.75 to .99	22,031	+/-1,522
1.00 to 1.24	21,387	+/-1,087
1.25 to 1.49	19,133	+/-1,240
1.50 to 1.74	17,694	+/-1,147
1.75 to 1.84	7,332	+/-653
1.85 to 1.99	9,913	+/-789
2.00 to 2.99	56,688	+/-1,694
3.00 to 3.99	45,161	+/-1,443
4.00 to 4.99	28,140	+/-1,374
5.00 and over	40,826	+/-1,416

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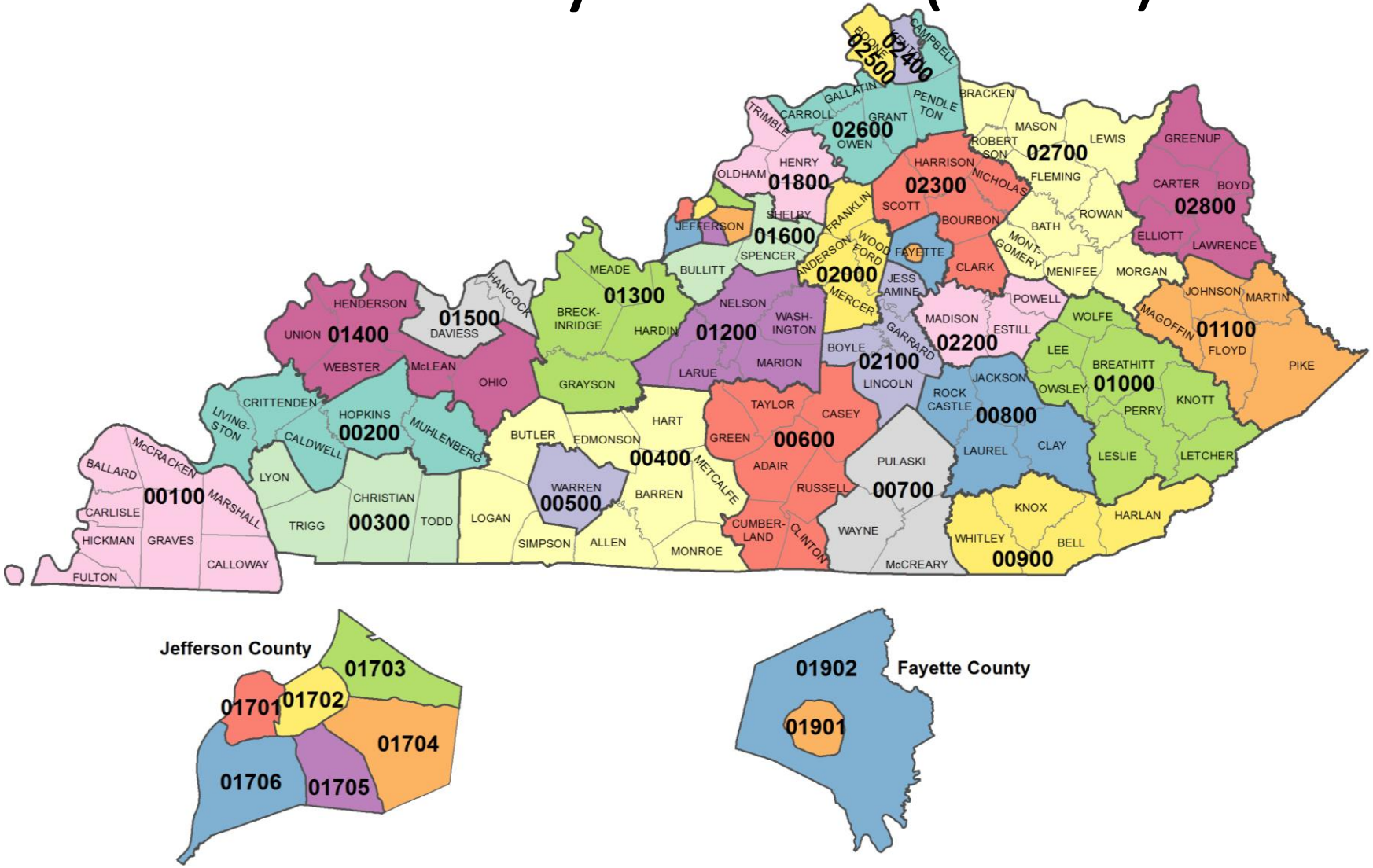
Geographic Coverage

- Nation
- All states, D.C., Puerto Rico
- Public Use Microdata Areas (PUMAs)

PUMA

- Minimum population threshold of 100,000
  - Current PUMA delineations (2012) based on the population from 2010 Census
- Contiguous
- Identified with a 5-digit ID
  - Use in combination with state ID for unique ID
- Revised every 10 years to reflect changes in population
  - State Data Centers help define

Kentucky PUMAs (2012)



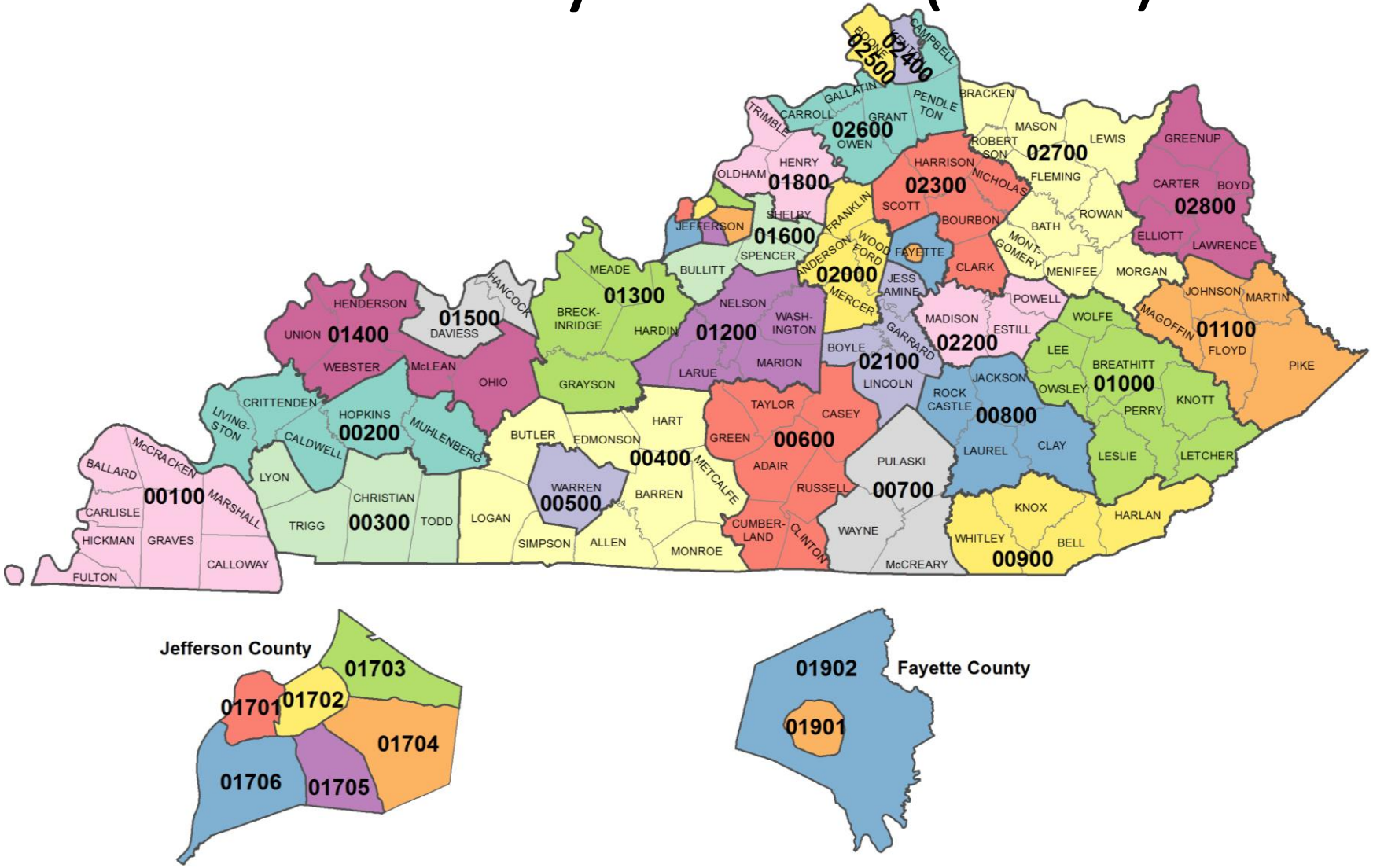
Using PUMS Data

- PUMS are subset of ACS responses
  - 1-year PUMS (1% sample)
  - 5-year PUMS (5% sample)
  - 3-year PUMS discontinued
- Be extra cautious when using multi-year PUMS
  - Multiple vintage variables

Using PUMS Data

- Dual Vintage PUMAs on multi-year PUMS
  - Years 2011 and earlier used PUMAs based on 2000 Census
  - Years 2012 forward use PUMAs based on 2010 Census
  - To use multi-year PUMS must key in on two different PUMA geographies
    - PUMA00
    - PUMA10

Kentucky PUMAs (2012)



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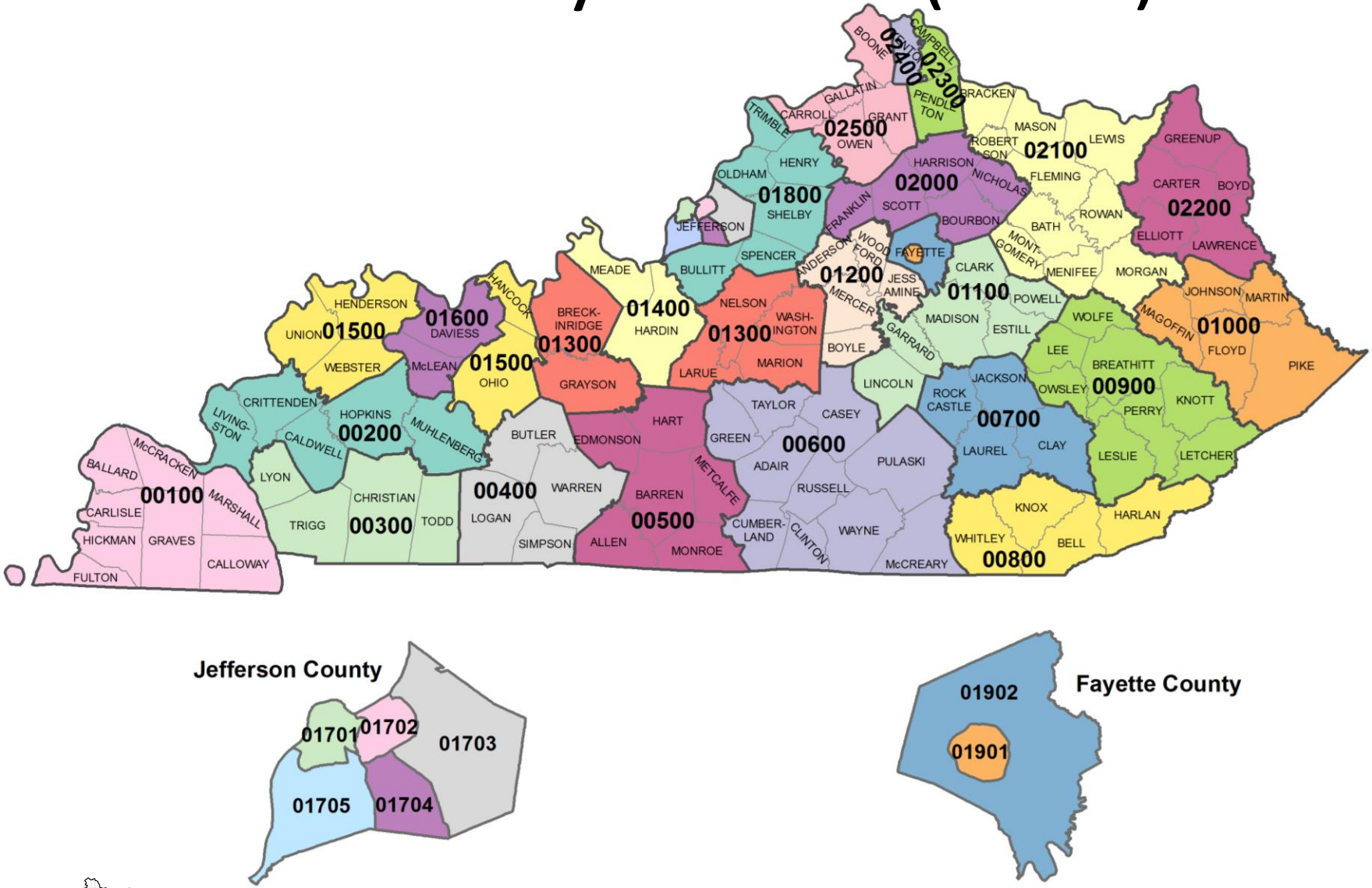
Kentucky PUMAs (2000)



Using PUMS Data

- Microdata files are HUGE
  - Requires statistical software (SAS, Stata, SPSS, R)
- DataFerrett provides access to PUMS data for users without special software

DataFerrett

- Requirements:
  - Latest version of Java
  - Allow pop-ups
  - Run in IE or Firefox (not Chrome)
- To turn off pop-up blocker
  - IE: Tools -> Internet Options -> Privacy -> uncheck pop-up blocker
  - Firefox: Menu -> Options -> Content -> uncheck pop-up blocker

DataFerrett

- http://dataferrett.census.gov/
- The Kentucky Department of Education requests data on the estimated number of 3 and 4 year olds living below 160% of the poverty line in Kentucky to gauge how well they are serving children eligible for state-funded preschool

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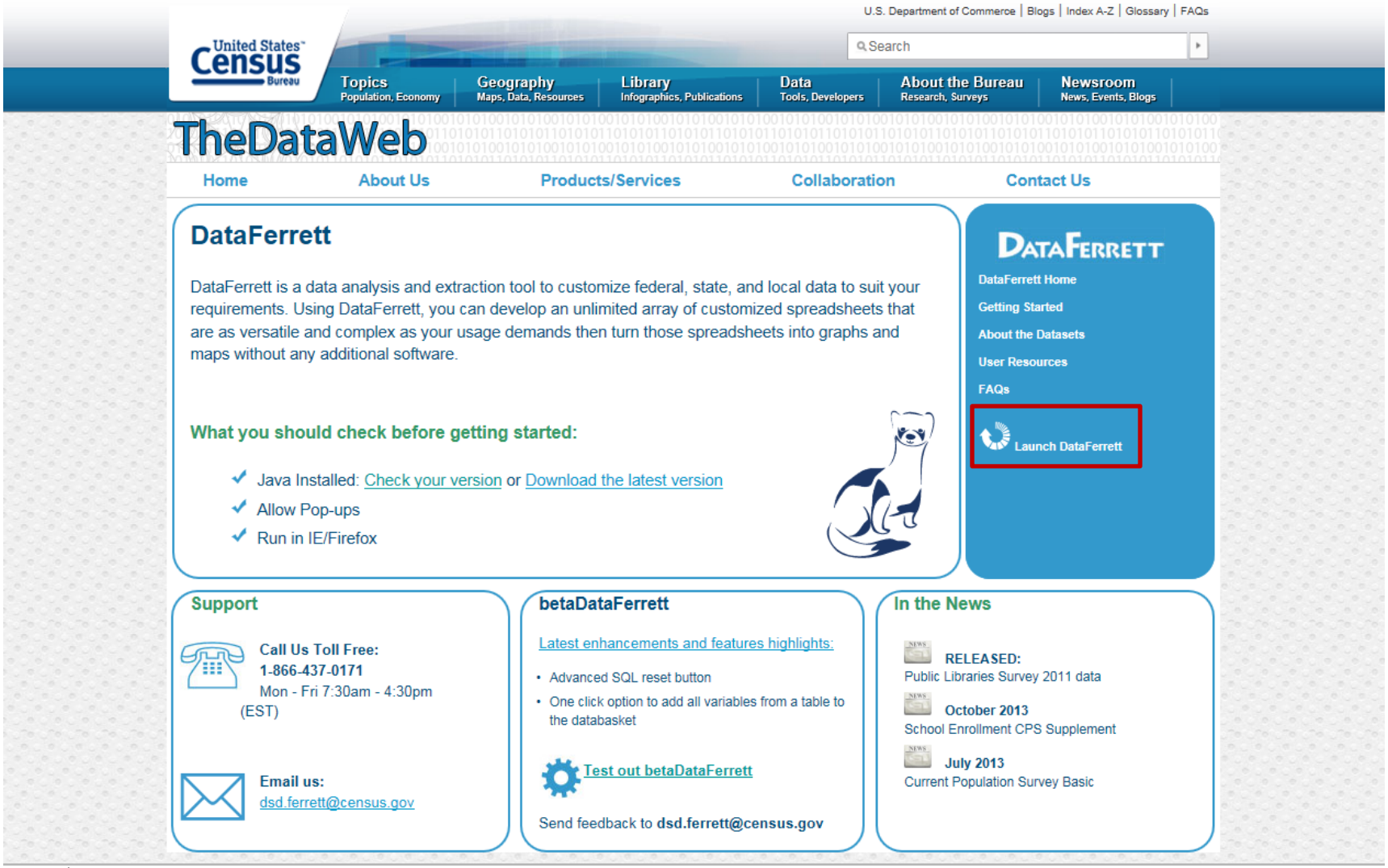

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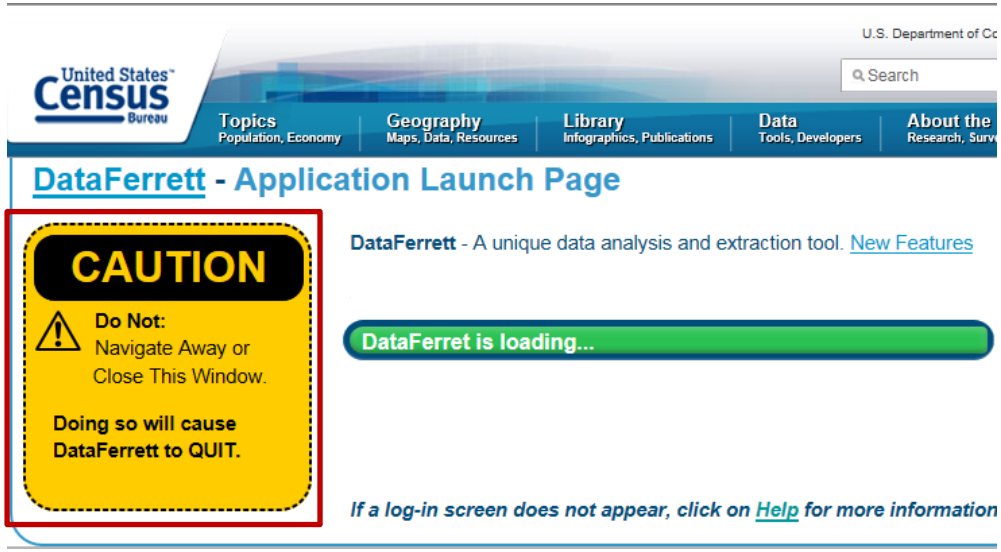
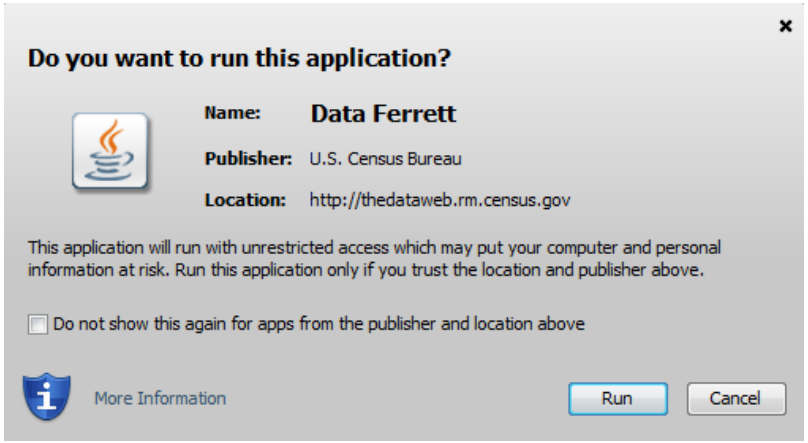
First Pop Up Window



Second Pop Up Window



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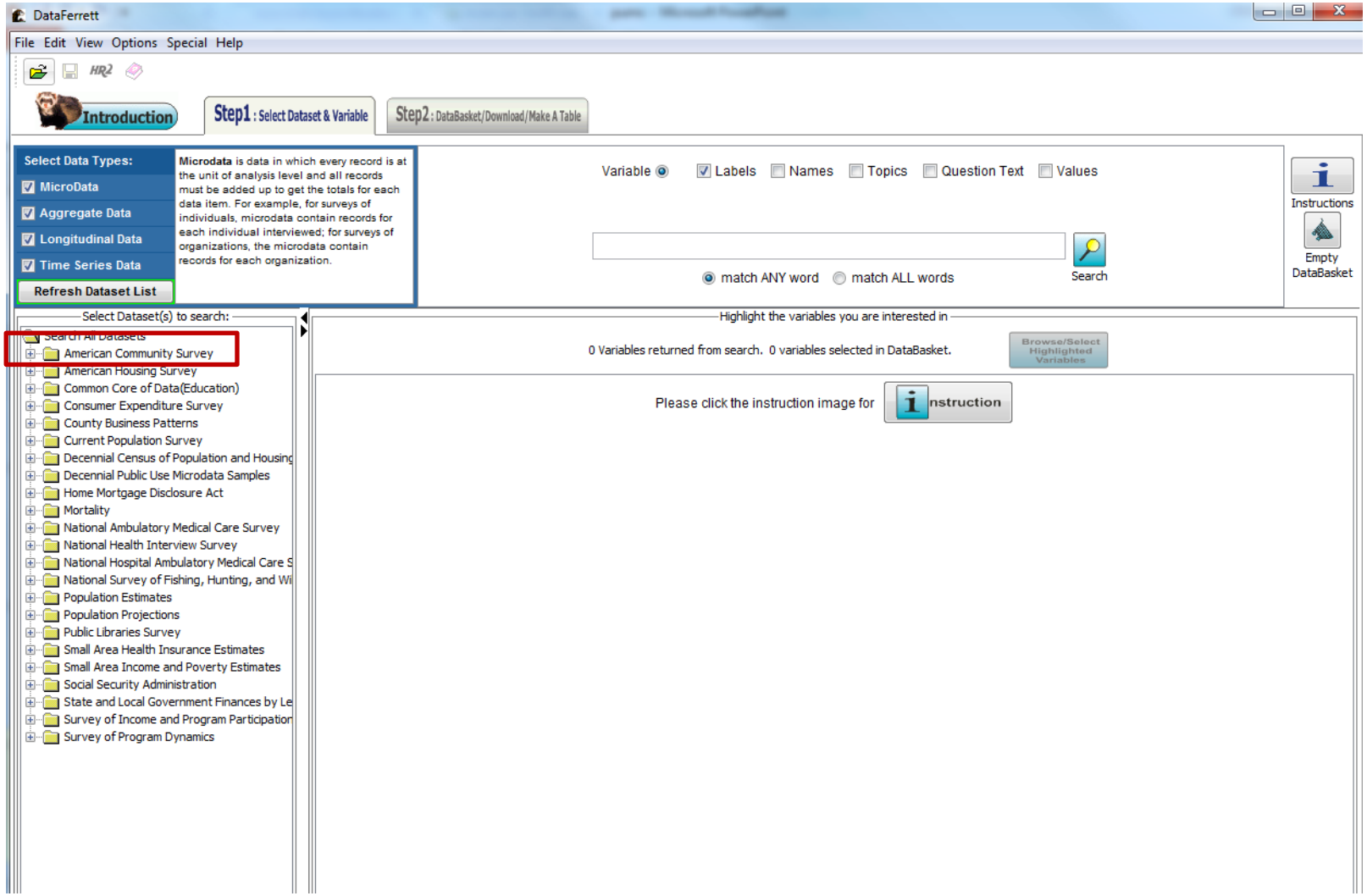

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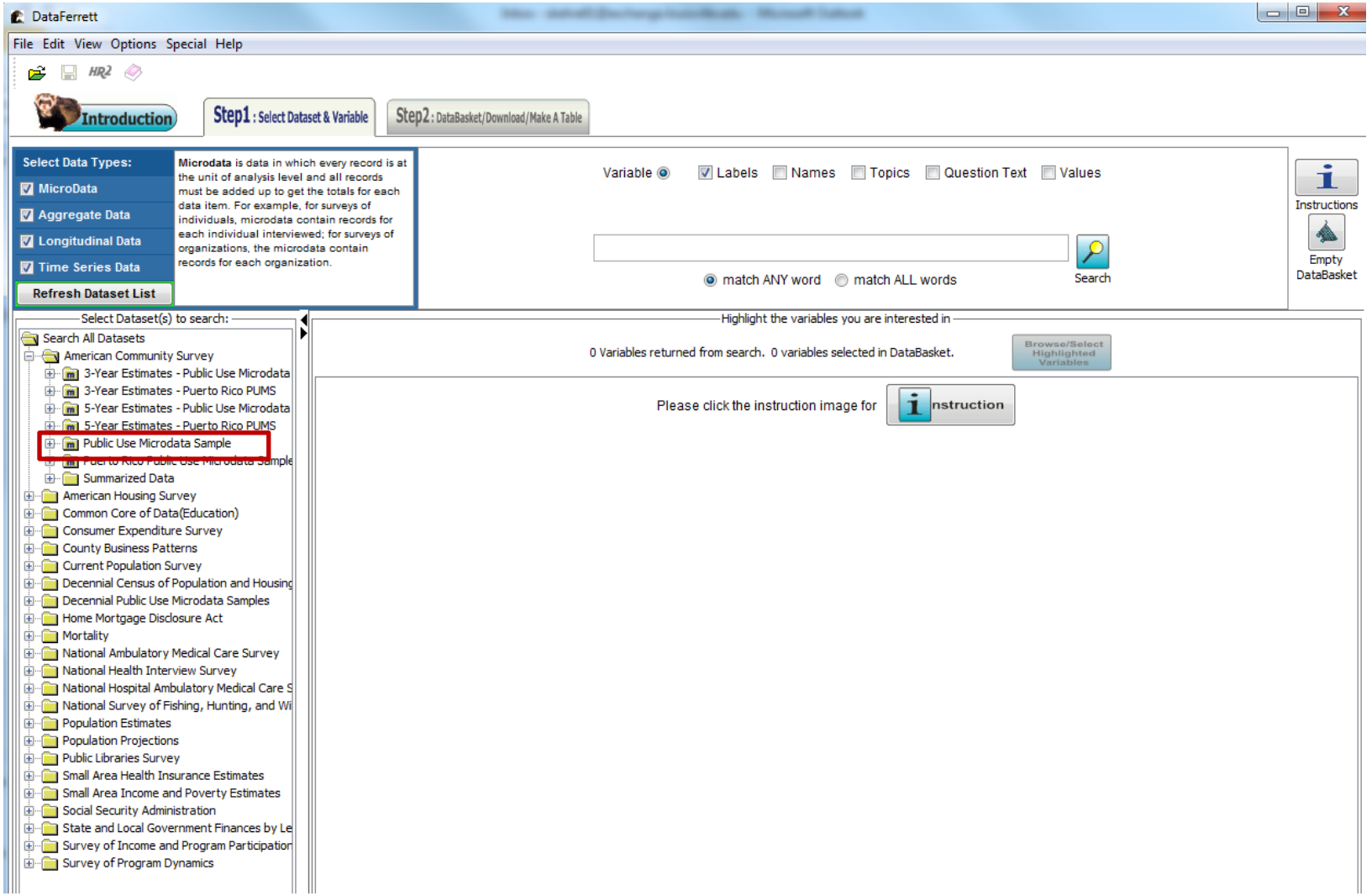

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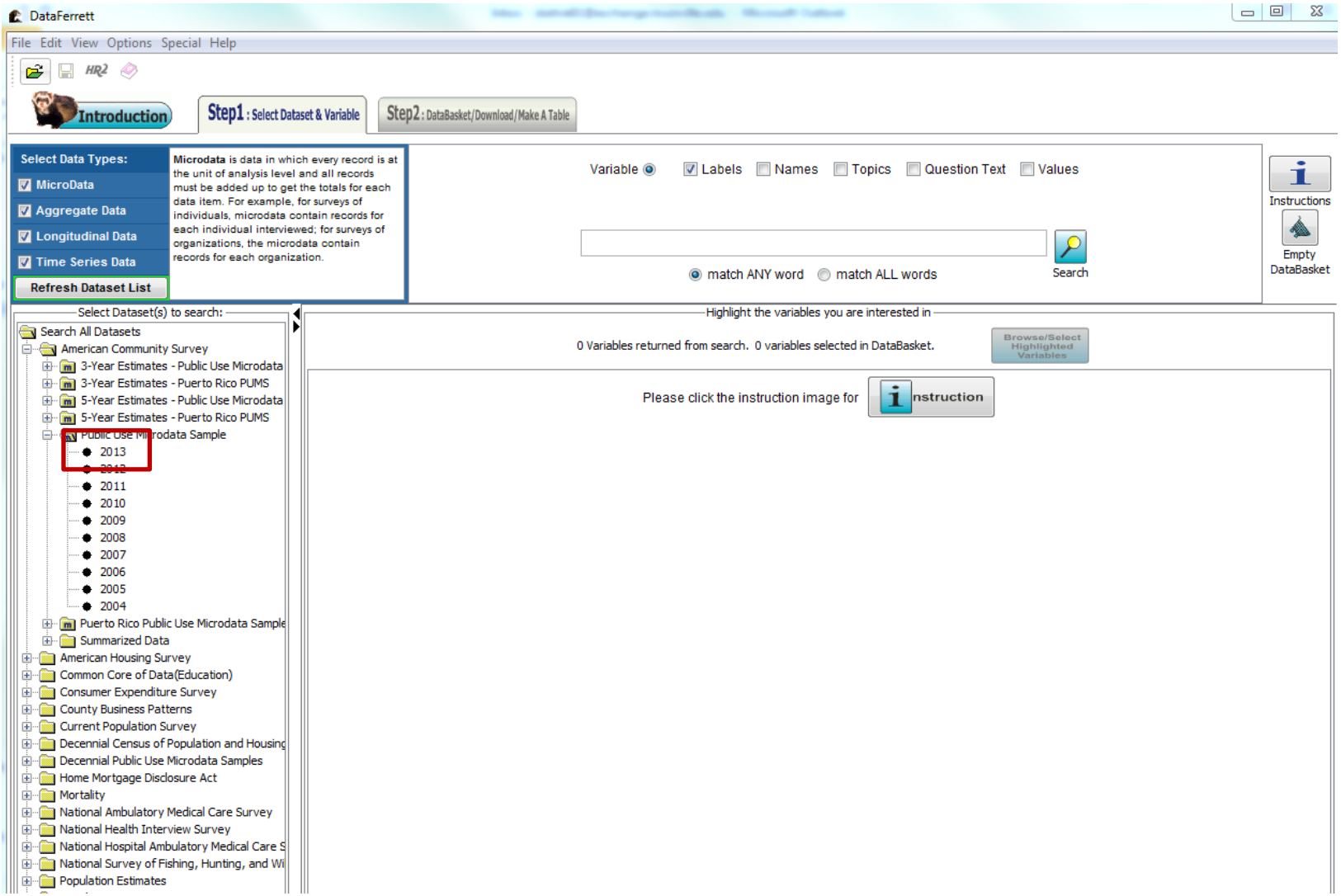

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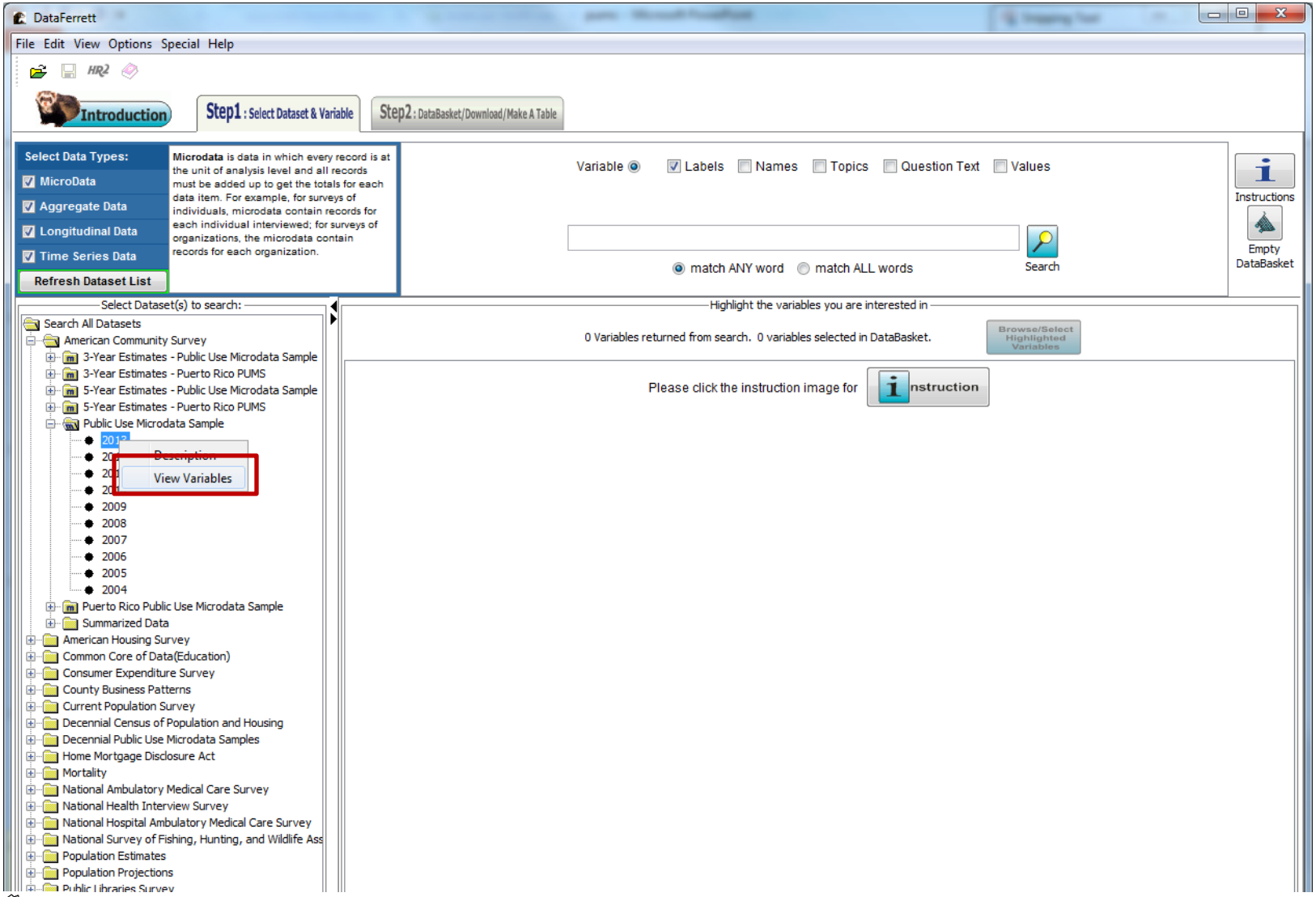

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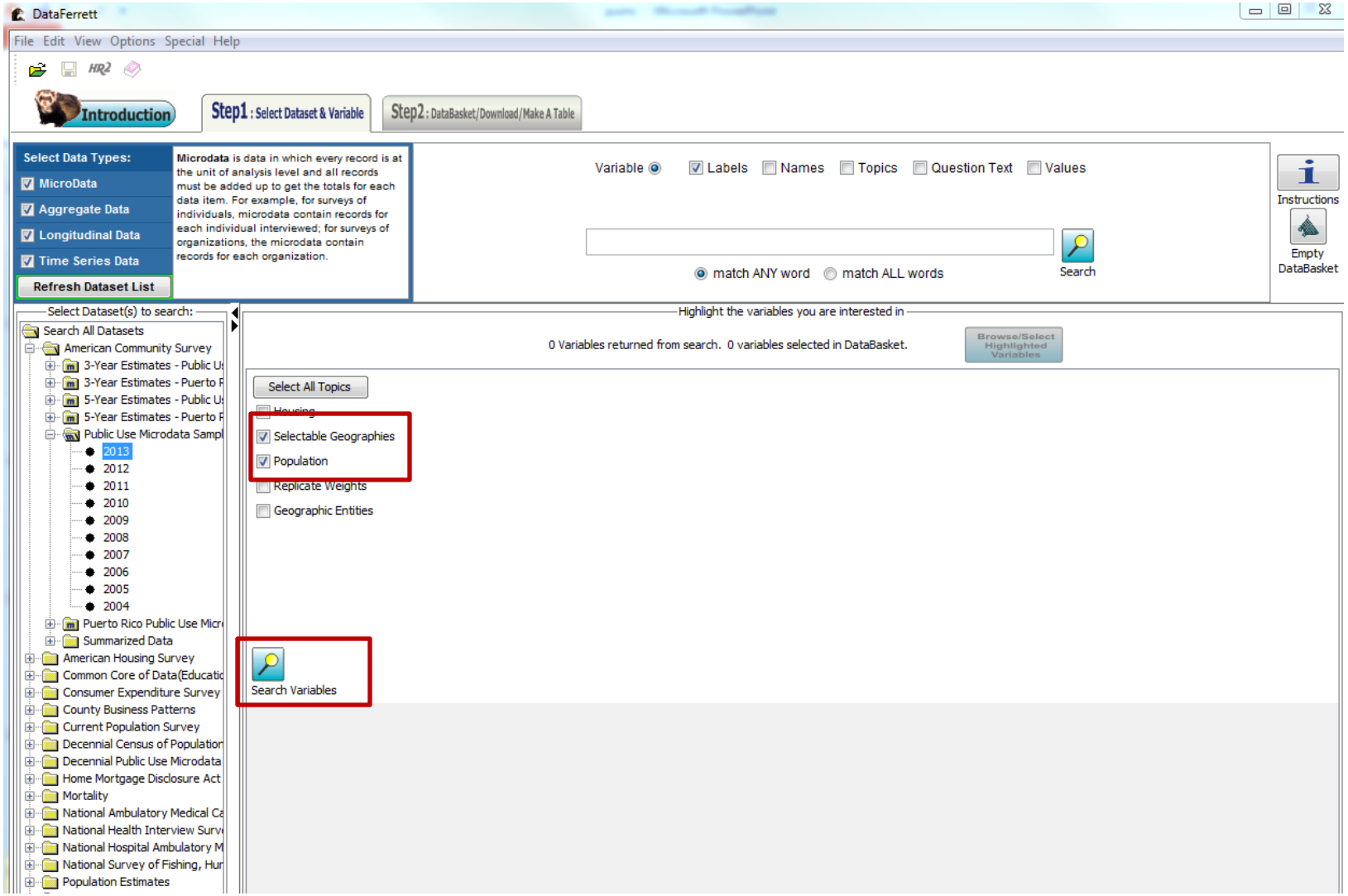

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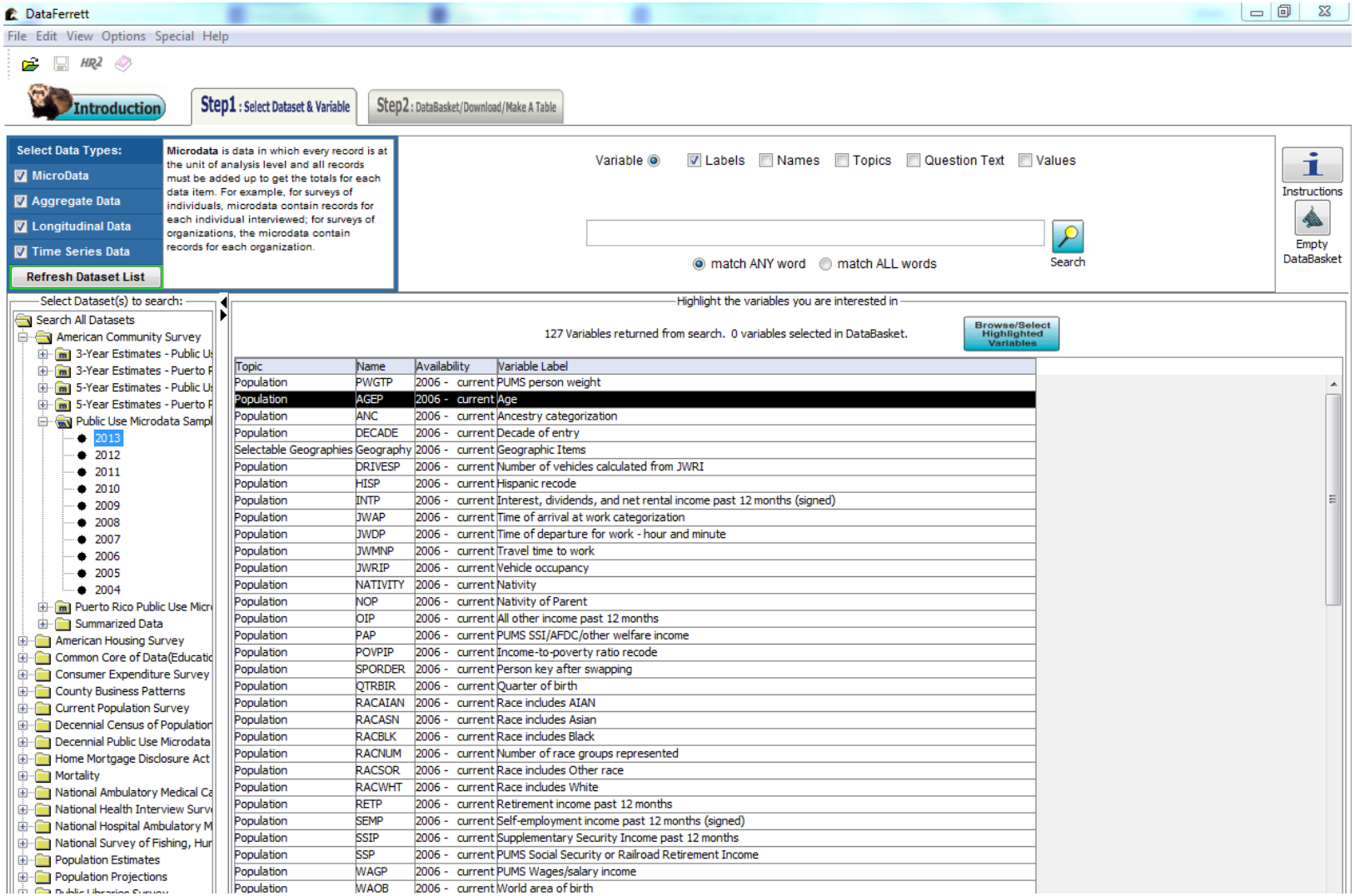

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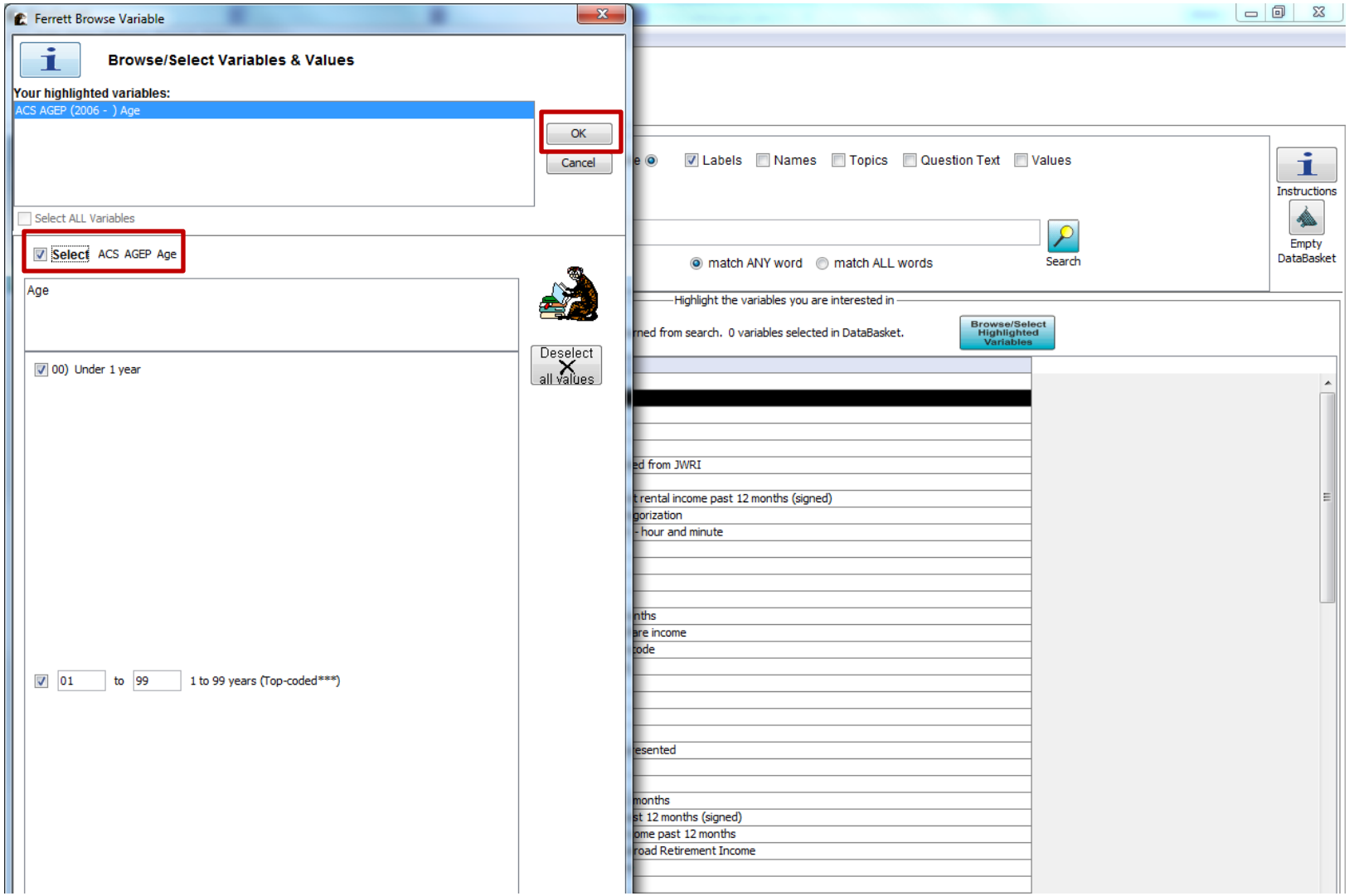

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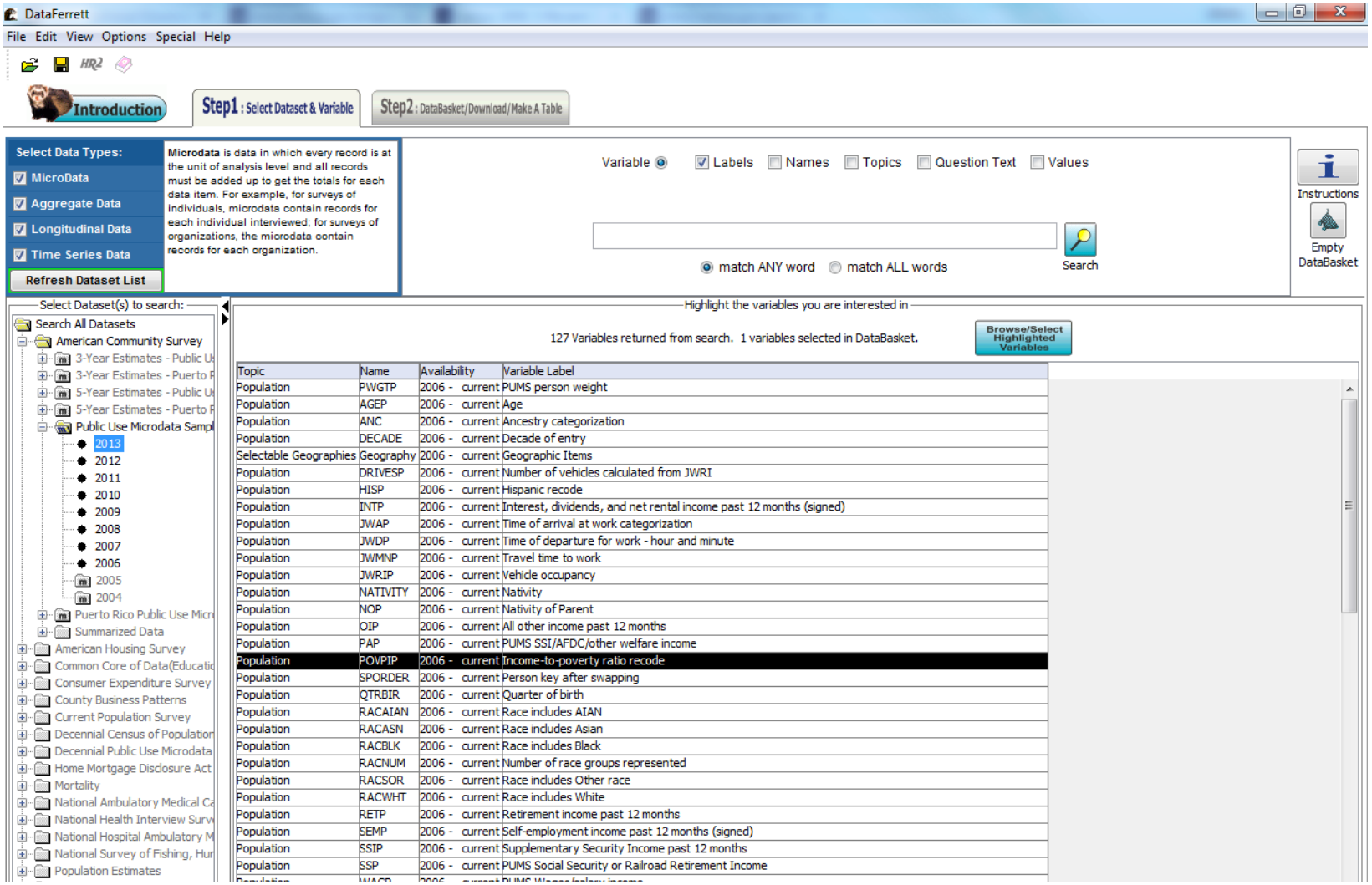

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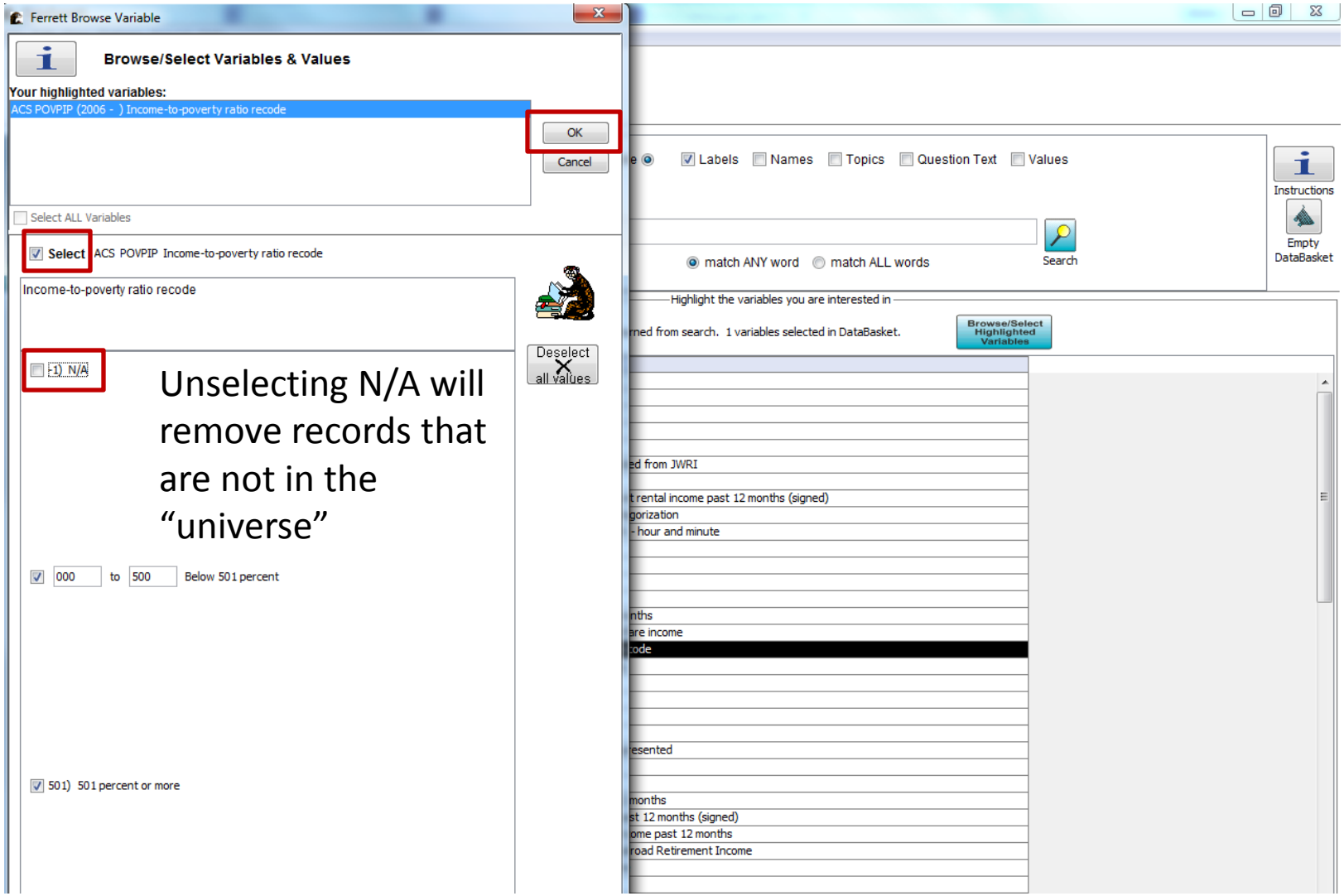

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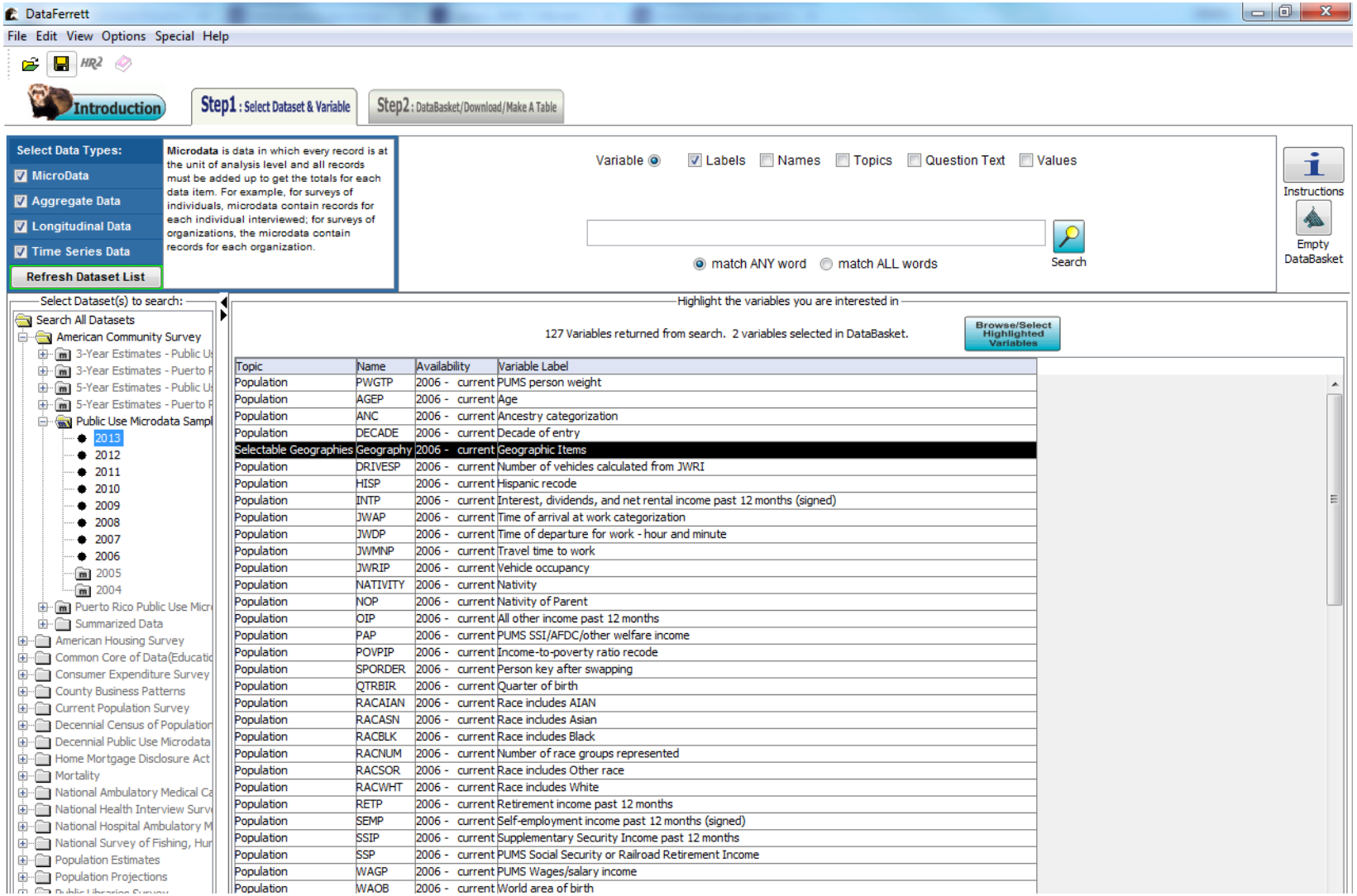

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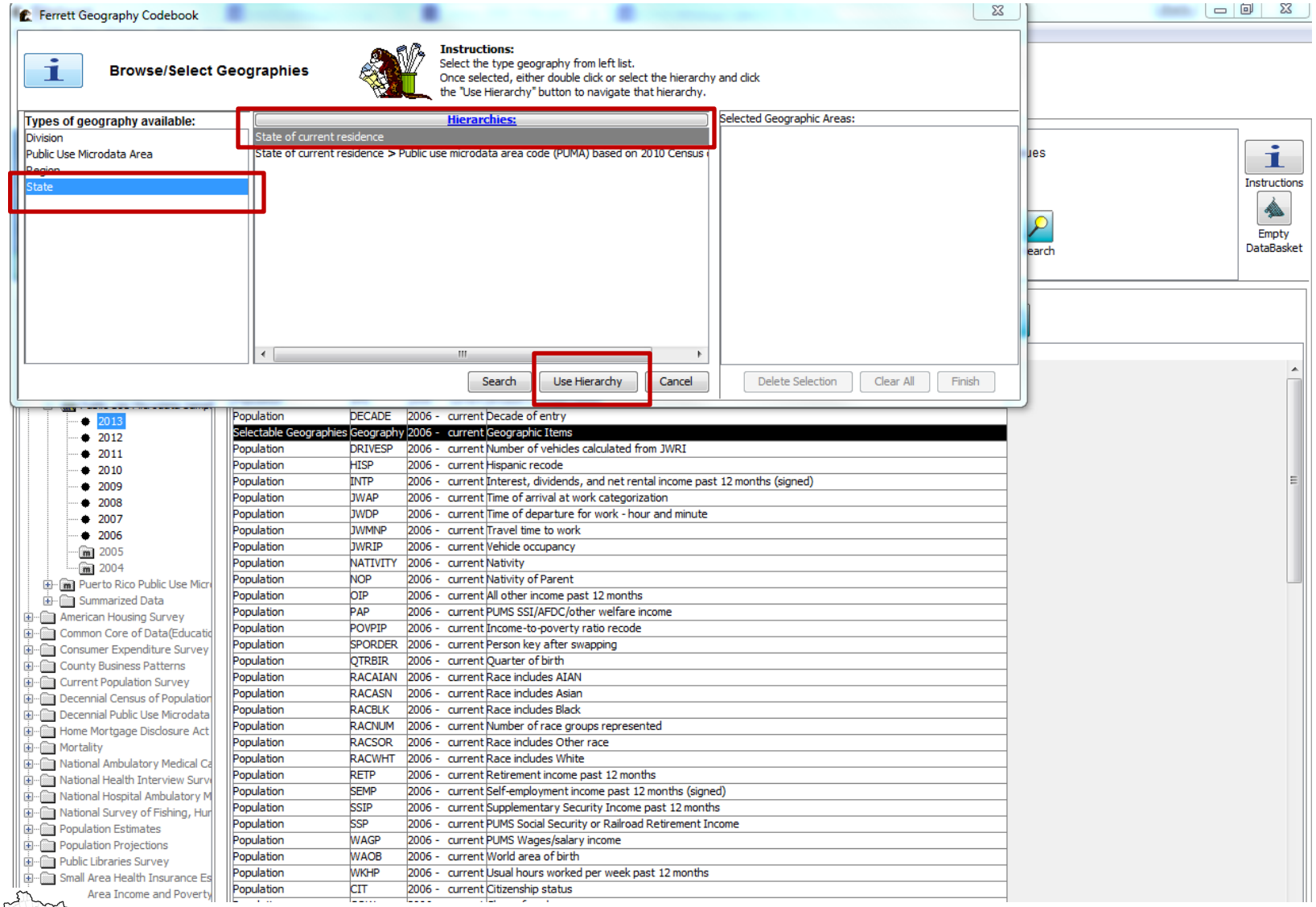

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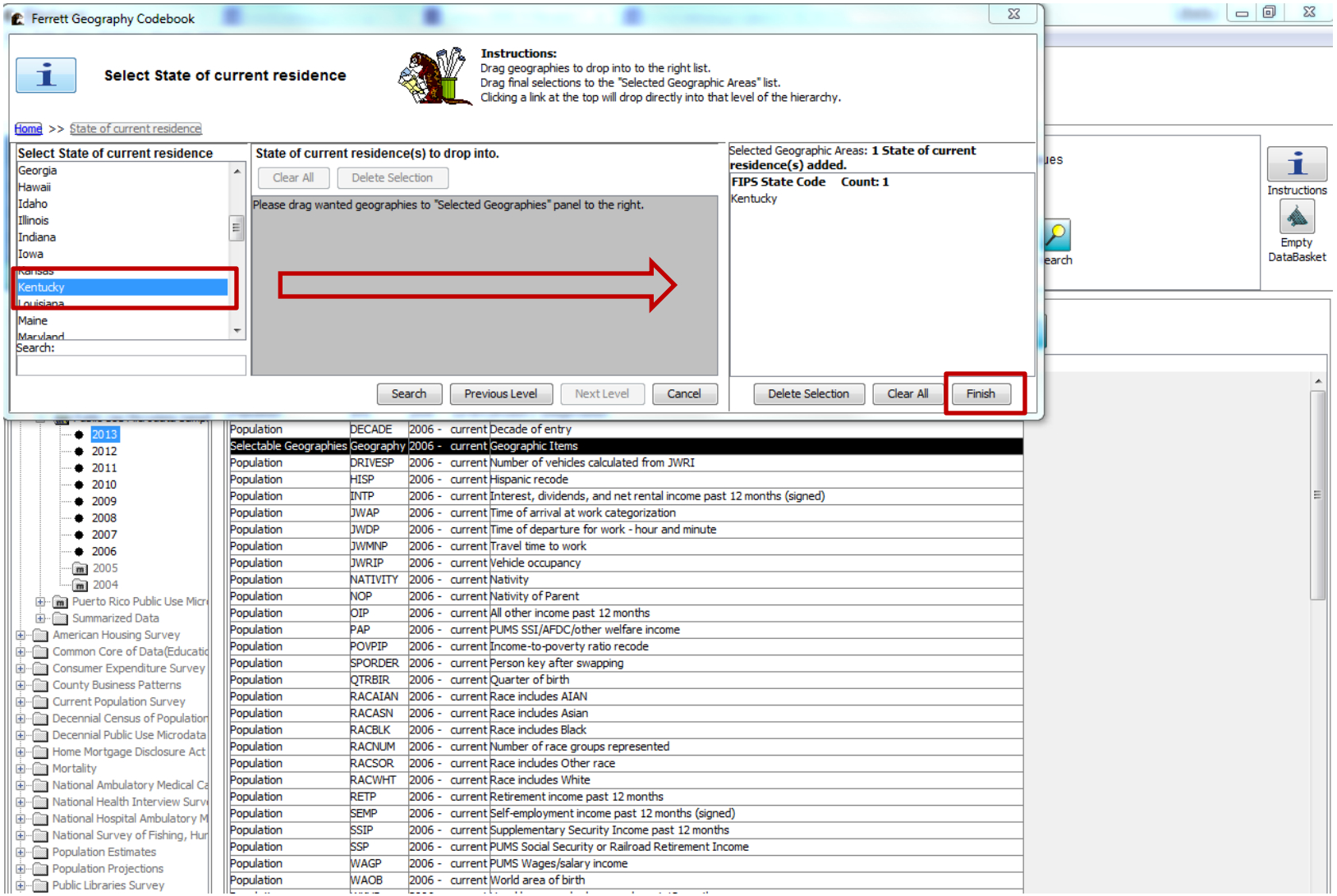

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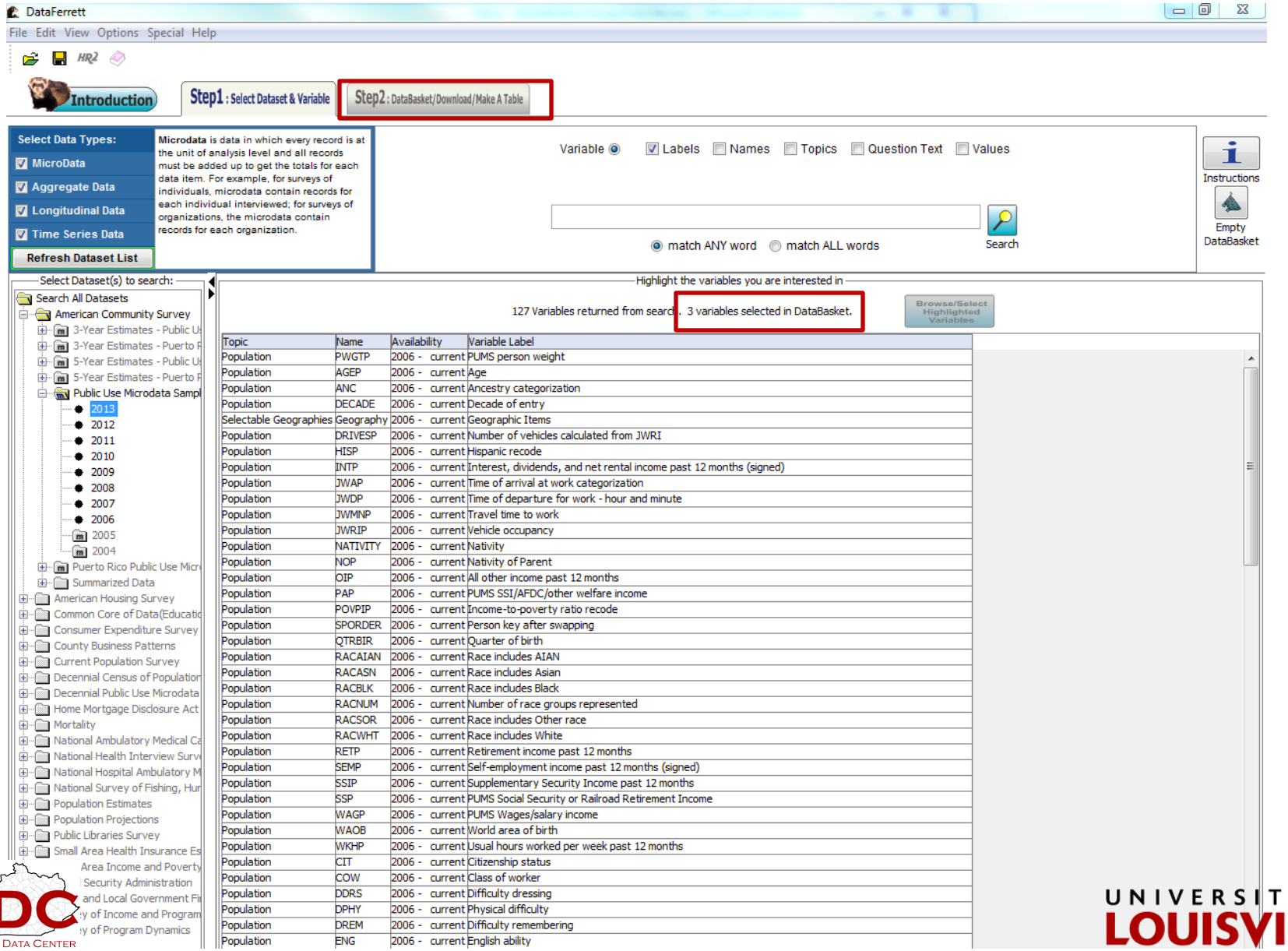

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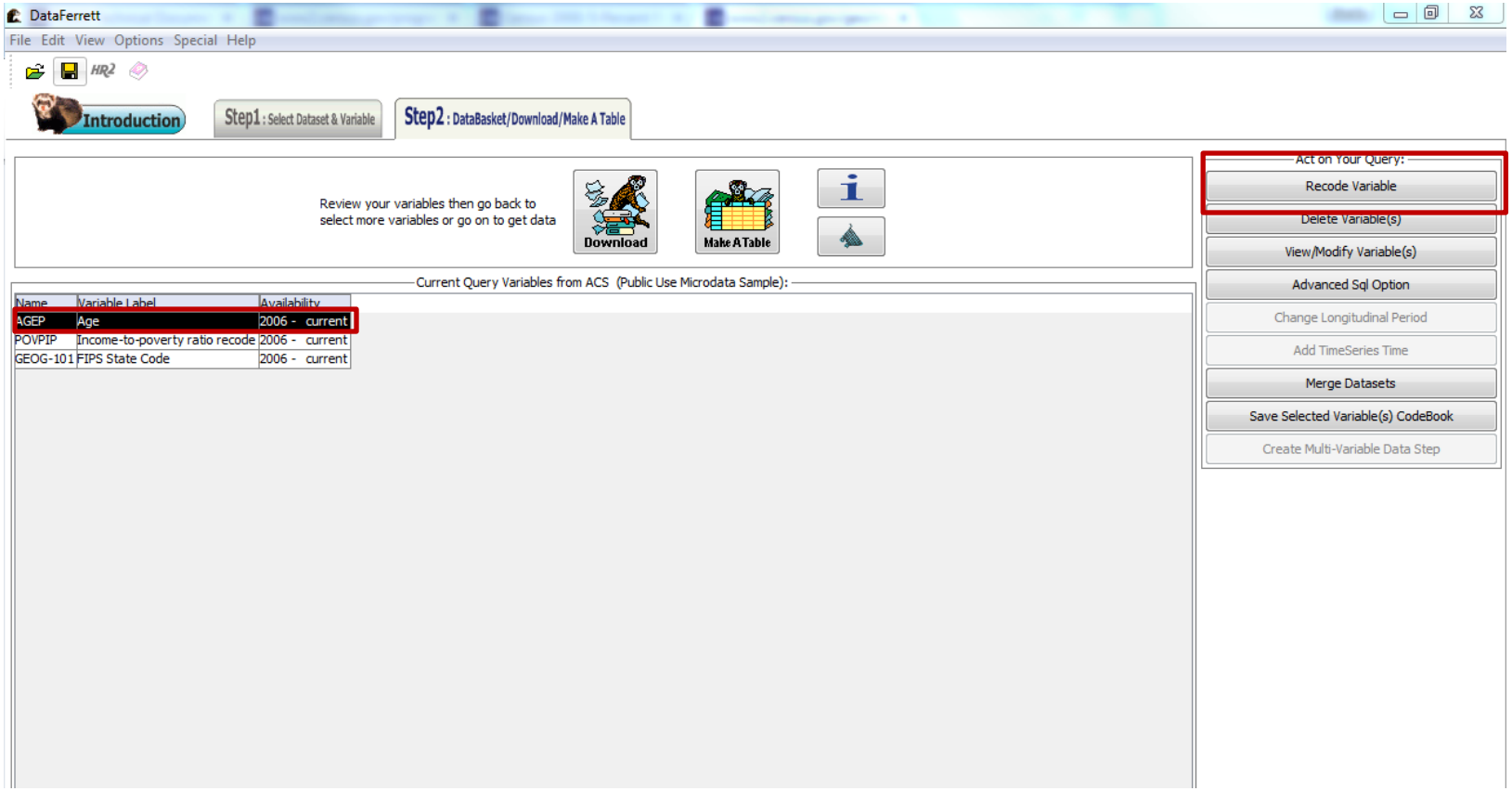

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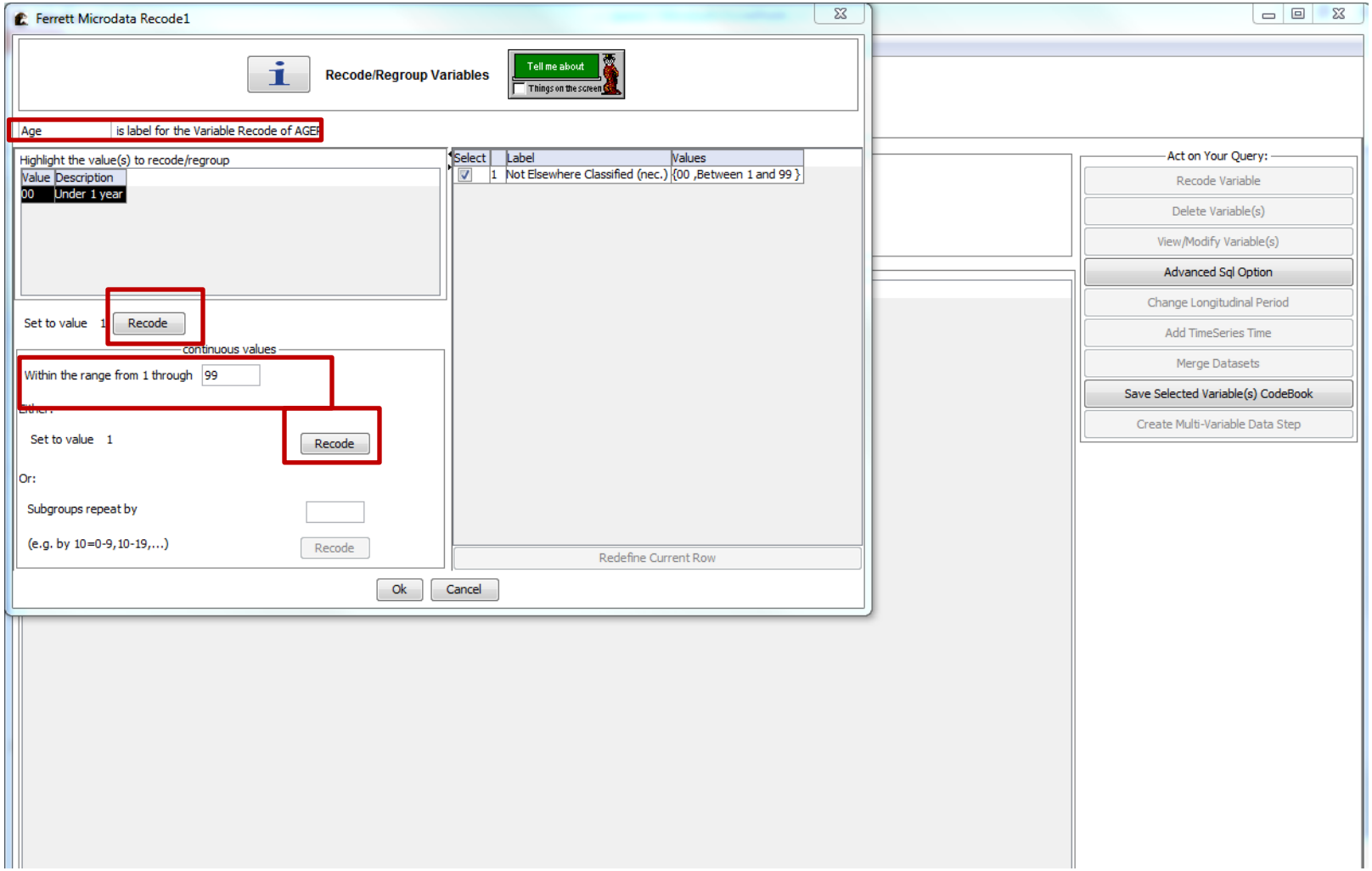

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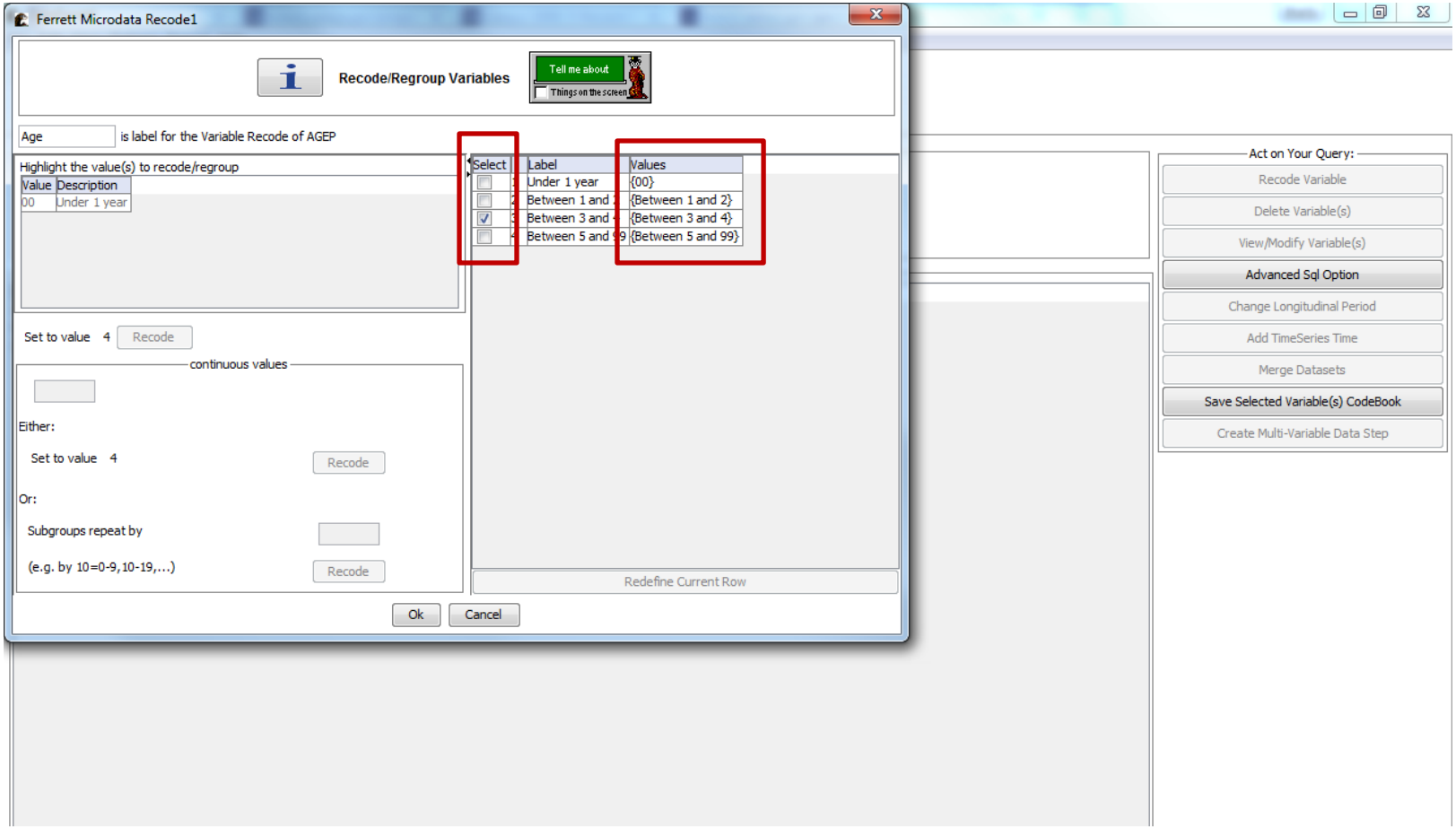

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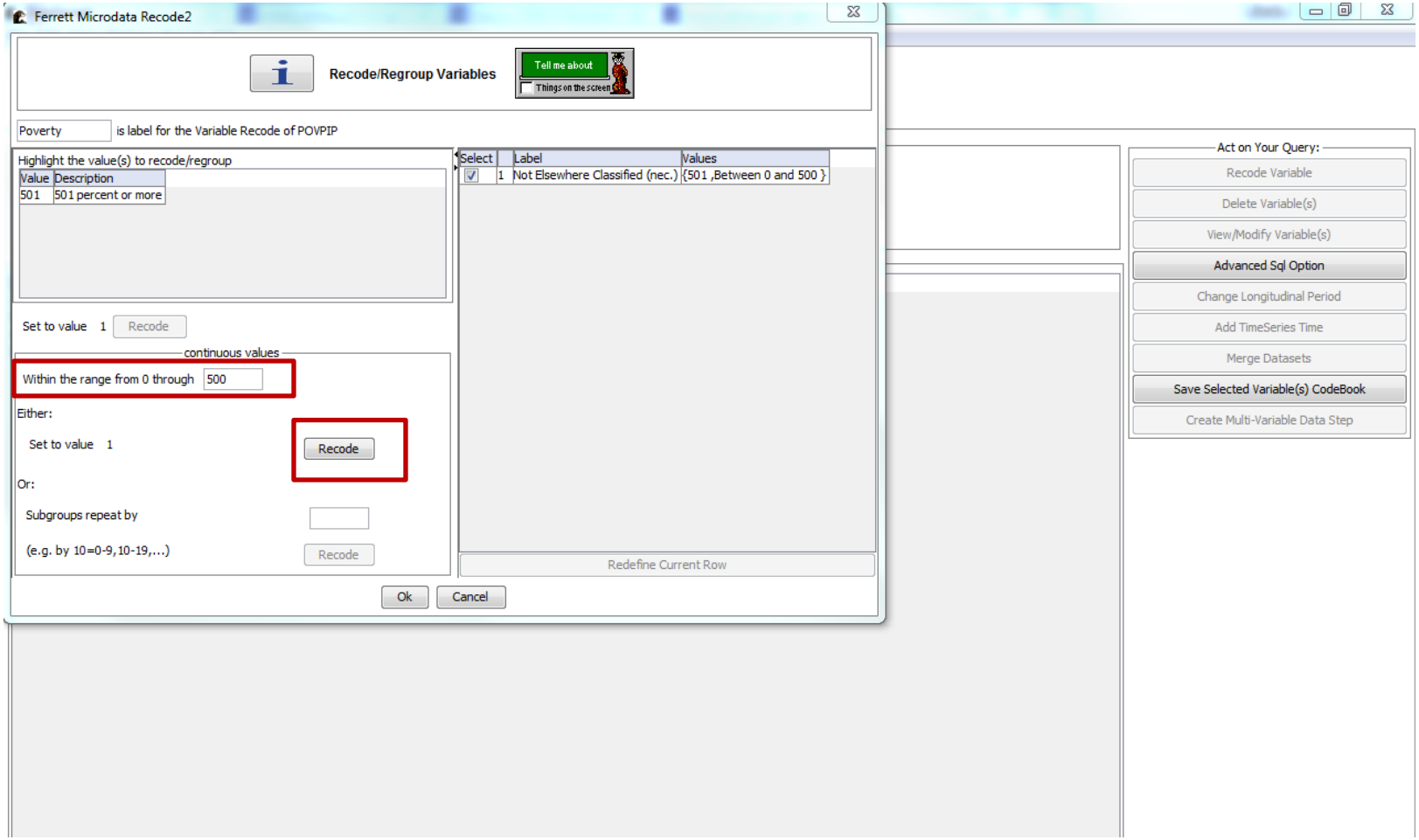

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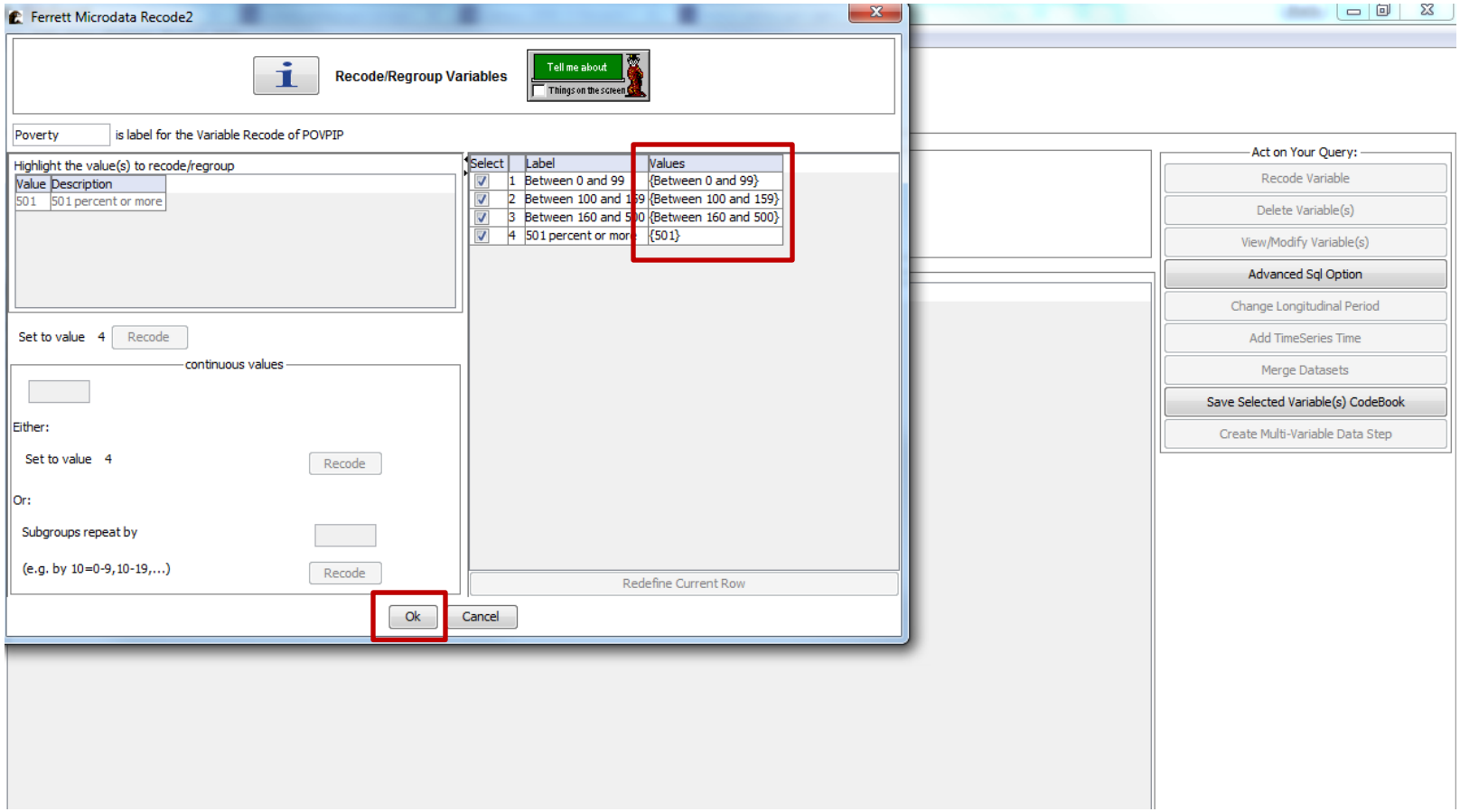

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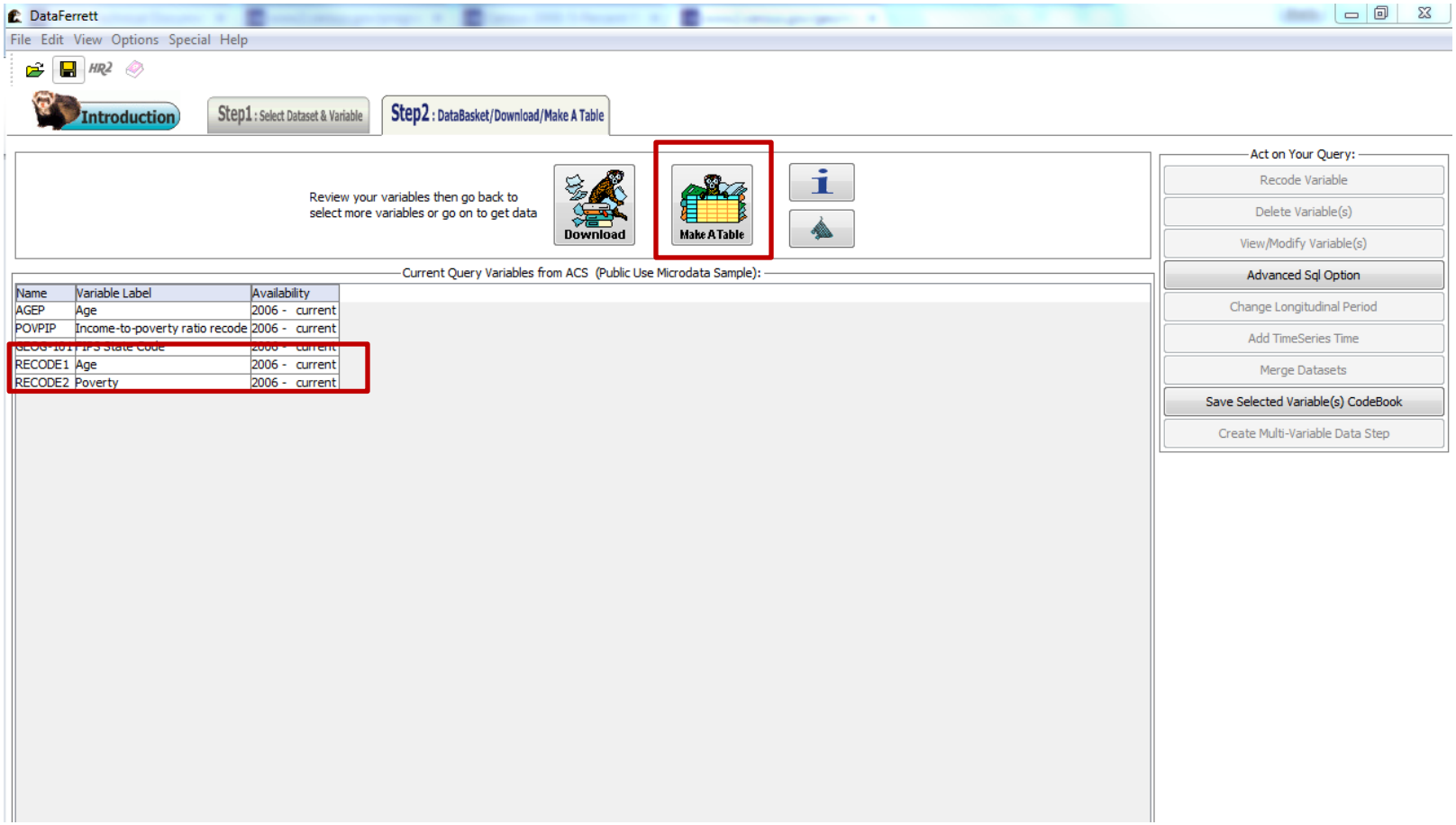

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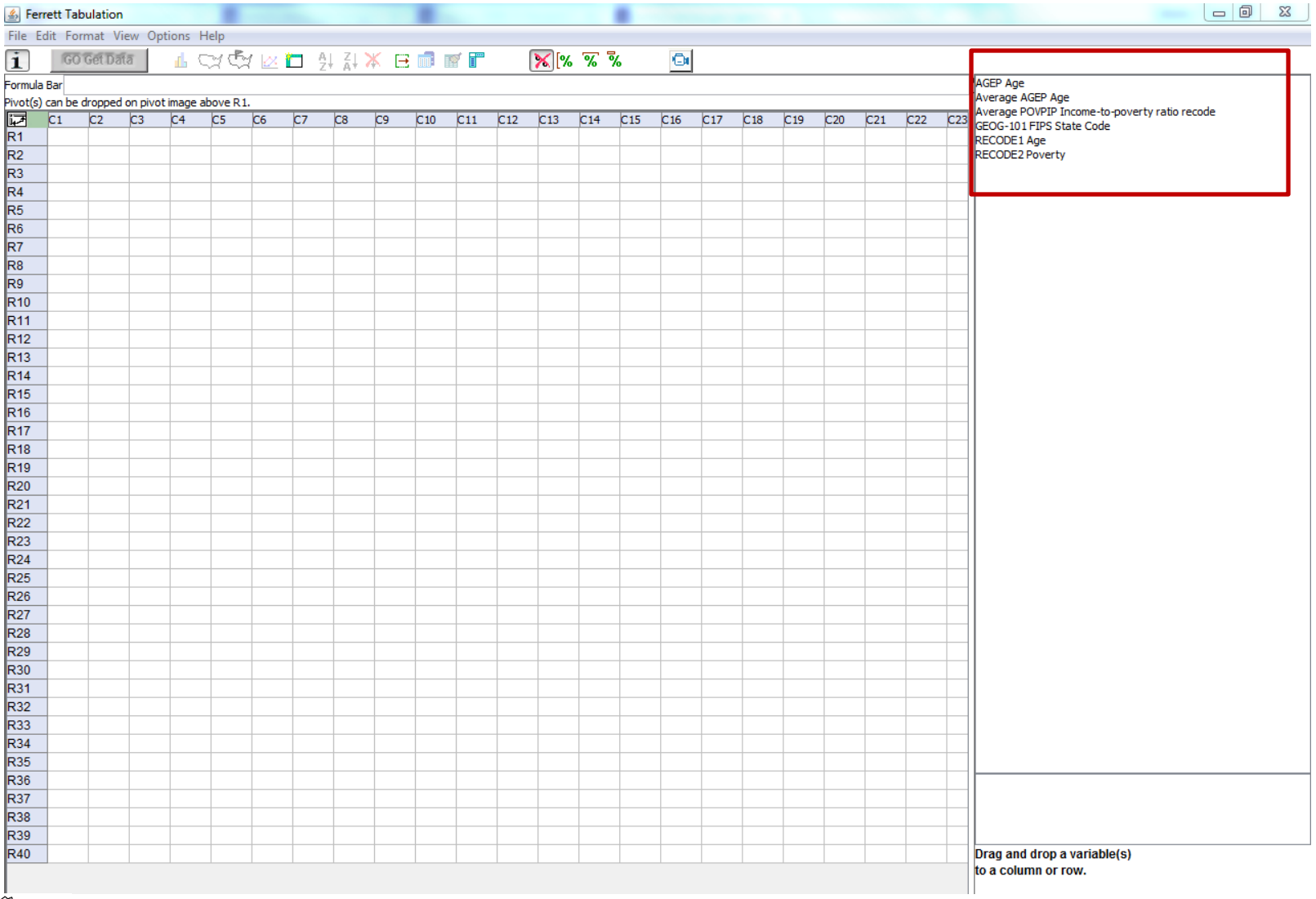

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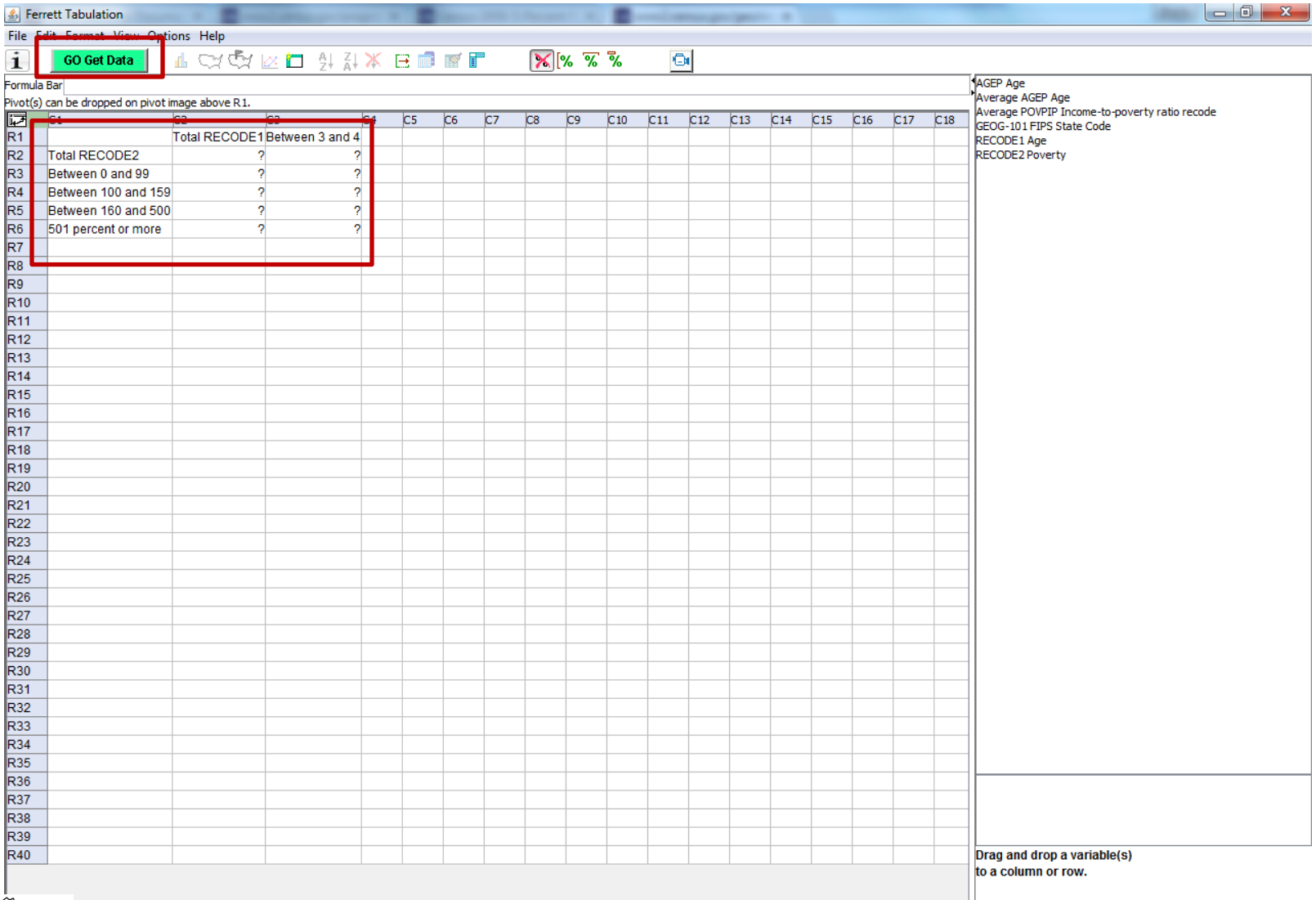

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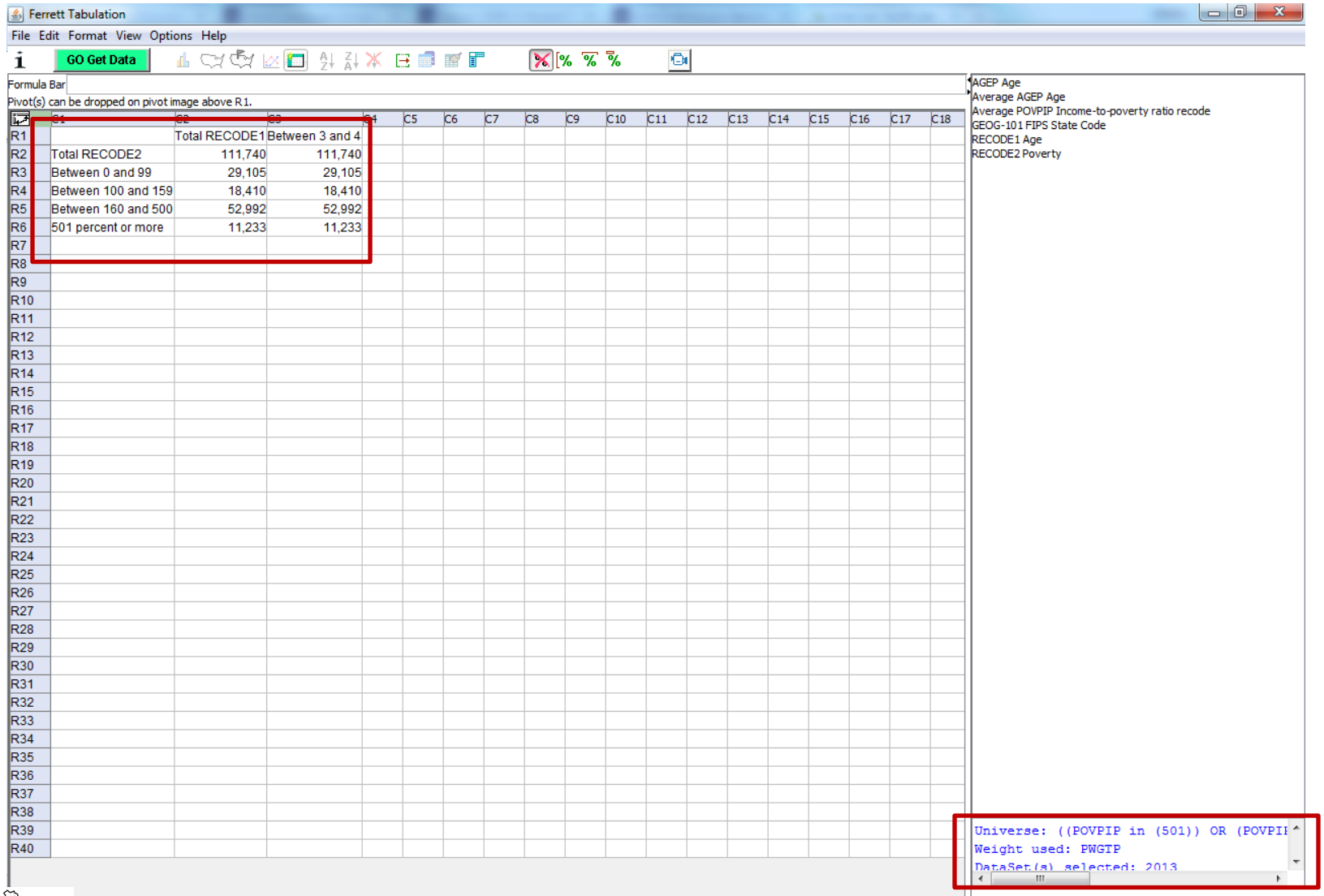

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- Save Tables in CSV format
- Save Queries in .fsf file

Additional Cautions

- PUMS use smaller sample size than full ACS
  - Estimates produced from PUMS will be different than what is published in ACS Summary Tables
  - PUMS estimates are less reliable than ACS Summary Tables
  - Percentages produced from PUMS are more reliable than numeric estimates

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