Two-tier stochastic frontier analysis for the social sciences.

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README for Application ch. 5.4-Public Education

Files and their contents

|  |  |
| --- | --- |
| Boston Public-School Students\_dataset.csv | Original data set in .csv format |
| Boston Public-School Students\_dataset.xlsx | Original data set in excel format |
| EducationBoston\_github.gretl | The gretl session file with the data and the estimation results. |
| Gretl 2TSF Exp mle code Public Education.inp | The gretl code |

| **Variable Name in original data set** | **Variable description** | **Name in software** | **Name in book** |
| --- | --- | --- | --- |
| sex2 | Sex | sex2 | D\_Sex |
| race | Race/Ethnicity | Drace\_2\_Hispanic, Drace\_3\_White, Drace\_4\_Asian (Drace\_1\_Black for Black) | D\_Hispanic, D\_White, D\_Asian (D\_Black is the base) |
| bil2 | Bilingual Status | bil2 | D\_Bilingual |
| income | Income Level, Estimated from lunch status | income | Income band |
| sped | Special Needs Category, by increasing severity | sped | Special Needs |
| mcas01m | MCAS Spr 01 Math Scaled | mcas01m | Used to construct the dependent variable |
| mcas01e | MCAS Spr 01 ELA Scaled | mcas01e | Used to construct the dependent variable |
|  | Belongs to the majority school Race | AlignRace | D\_MajRace / D\_inracemajority |
|  | Income below majority income | DRelIncome\_0 | D\_Rel.Income-0 / D\_Belowincomemajority |
|  | Income above majority income | DRelIncome\_2 | D\_Rel.Income-2 / D\_Aboveincomemajority |

Original data set labels and description

| **Variable Name** | **Variable description** |
| --- | --- |
| seqno | Sequence Number (Student ID) |
| grade | Grade |
| sex2 | Sex |
| race | Race/Ethnicity |
| bilingual | Bilingual Category |
| bil2 | Bilingual Status |
| lunch | Free/Reduced Lunch |
| income | Income Level, Estimated from lunch status |
| sn | Special Ed. Code |
| sped | Special Needs Category, by increasing severity |
| absent1 | Days Absent Qtr 1 |
| absent2 | Days Absent Qtr 2 |
| present1 | Days Present Qtr 1 |
| present2 | Days Present Qtr 2 |
| v15 | 5/00 Sat9 Math gr tested |
| v16 | 5/00 Sat9 Math Pctile |
| v17 | 5/00 Sat9 Math Perf. Lev. |
| passfail | 5/00 Sat9 Math above level one |
| sat\_00\_m | 5/00 Sat9 Math Scaled |
| v19 | 5/00 Sat9 Rdg gr tested |
| v20 | 5/00 Sat9 Rdg Pctile |
| v21 | 5/00 Sat9 Rdg Perf. Lev. |
| sat\_00\_r | 5/00 Sat9 Rdg Scaled |
| v23 | 5/01 Sat9 Math gr tested |
| v24 | 5/01 Sat9 Math Pctile |
| sat1m | 5/01 Sat9 Math Perf. Lev. |
| sat\_01\_m | 5/01 Sat9 Math Scaled |
| v27 | 5/01 Sat9 Rdg gr tested |
| v28 | 5/01 Sat9 Rdg Pctile |
| sat1r | 5/01 Sat9 Rdg Perf. Lev. |
| sat\_01\_r | 5/01 Sat9 Rdg Scaled |
| spr00plm | MCAS Spr 00 Math Perf. Lev. |
| mcas00m | MCAS Spr 00 Math Scaled |
| spr00ple | MCAS Spr 00 ELA Perf. Lev. |
| mcas00e | MCAS Spr 00 ELA Scaled |
| spr01plm | MCAS Spr 01 Math Perf. Lev. |
| mcas01m | MCAS Spr 01 Math Scaled |
| spr01ple | MCAS Spr 01 ELA Perf.Lev. |
| mcas01e | MCAS Spr 01 ELA Scaled |
| fa01plm | MCAS Fall 01 Math Perf. Lev. |
| mcasfama | MCAS Fall 01 Math Scaled |
| fa01ple | MCAS Fall 01 ELA Perf. Lev. |
| mcasfael | MCAS Fall 01 ELA Scaled |
| sch | School |

Some more notes

SAT9 = Scholastic Aptitude Test; the "9" is probably the version number applicable at the time

MCAS = Massachusetts Comprehensive Assessment System (standardized tests in Math and English Language Arts).

Perf. Lev. = Performance Level (ordinal).

Students from schools with fewer than 200 students have had their records removed from the file.

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