

## Exercise 1

The data in FERTIL2.GDT contains information on a large sample of women in Botswana during 1988. It includes information on number of children, years of education, age, and religious and economic status variables. We will use this data in this exercise to analyze fertility determinants in Botswana.

- a) Find the smallest and largest values of *children* in the sample. What is the average of *children*? Does any woman have exactly the average number of children?
- b) Do the same for the variable *educ*.
- c) What percentage of woman have electricity in the home?
- d) Compute the average of children for those without electricity and do the same for those with electricity. Comment on what you find.
- e) Suppose you want to observe how the education affects the fertility rate. Specify the equation you want to estimate and use the data to estimate the model using OLS. Interpret the coefficients and test a hypothesis whether education has any effect on fertility rate.
- f) Suppose that, given the level of education, your aim is to determine how age affects the fertility rate. Make necessary adjustments to the model and estimate it. Test hypothesis whether age has significant effect on fertility.
- g) Test hypothesis whether age and education are jointly statistically significant. Clearly state the null and alternative hypothesis and the result of the test.