Gender Study

Group Assignment

Girl or Boy?

You have a hypothesis that the gender of a child is dependant the the gender of previous born children. Data that could be used for this was summarised in a recent study:

`http://www.dst.dk/da/Statistik/NytHtml?cid=22535`

Assume that the chance in the general population of having a girl is 48.5% and the chance of having a boy is 51.5%.

1. Find the data provided in the link, where the couple has previous had two boys (first row).
   - What numbers would you get in an idealized experiment?
   - What would the statistical model for this experiment be; if we test whether the gender of the third child is dependant on the genders of the two previous children?
   - Define the NULL hypothesis and the alternative Hypothesis.
   - Calculate the p-value based on a Binomial distribution.
   - Can you with a significance level of 0.05, reject the NULL hypothesis?
   - Repeat the hypothesis test based on a normal approximation.
   - What is the estimator of p, and what is the variance of the estimator?
   - Calculate the confidence intervals for the p value.
2. Make a matlab script, which can make the hypothesis test for you.
3. Repeat the hypothesis test for all the data from the link. Can you in any of the cases reject the hypothesis?