

Statistics, Inference, and Sampling

McCaig Statistics Group

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Experiments

The following examples are fictionalized for the purpose of differentiating randomized experiments from observational studies.

Example 0.1. The Graduate Student Association (GSA) offers workshops on scholarship writing for students. They are interested in how effective these workshops are at helping students secure funding. In the last 5 years, 2198 students applied to national funding (NSERC, CIHR, SSHRC). Of those students, 916 attended a workshop on scholarship writing. The GSA is able to attain the amount of money each student was awarded in national funding. They discover that students who attend the scholarships workshop secure an average of \$5,680 more than their peers who do not attend the workshop. They conclude that workshops are extremely effective at helping students secure funding.

Let's identify the information in Example 0.1.

Sample Size _____

Researcher(s) _____

Method _____

Results _____

Independent Variable _____

Dependant Variable _____

Experimental Units _____

Example 0.2. The MTC is interested in increase the number of scholarships McCaig trainees are awarded. The MTC randomly funds 41 trainees to attend a workshop on scholarship writing. The remaining 40 trainee do not attend the workshop. All trainees apply for national funding and report their award value to the MTC. The MTC finds that there is no difference in the amount of funding secured by trainees who attended the workshop compared to those who do attend. The MTC find that scholarship workshops have no effect on funding success and stops financially supporting the workshop.

Let's identify the information in Example 0.2.

Sample Size _____

Researcher(s) _____

Method _____

Results _____

Independent Variable _____

Dependant Variable _____

Experimental Units _____

We have the following terminology for experiments:

_____ The material that is assigned treatment.

_____ Number of experimental units.

_____ The variables the researcher changes. Also called independent variable, exposure, explanatory variable, predictor variable, etc.

_____ The variables the researcher measures. Also called response, dependant variable.