An Example

1. Representativeness

Most studies use samples from a particular group, whether it is a university student sample or a specific workplace. Critics of your research will pounce upon such discrepancies and question your entire system of results, and determine that your sample is not representative. Thus, in order to generalize you need to select a sample group that is representative of the whole population. A group that is too small may not accurately capture the variation in the population as possible. For example, you may want to test a hypothesis about the effect of an educational program on schoolchildren in the US. It is, however, reasonable to assume that the results should apply to a similar sized population. The representative group allows the researchers to go from specific observations and make inferences about broader trends or patterns, i.e. it allows them to generalize.

For many experiments, the representative group requires samples from different parts of the group. If this number runs into the millions, this may not be possible due to budget, time limits and feasibility. However, a school in the next town might contain children who do better. The students may be from a completely different socioeconomic background or even by the hour. Perhaps the latter children perform better simply because they are now slightly older than the former. This demonstrates the validity of the group size. The smaller a sample gets, the less likely it is to be representative. For example, let's say that researchers found that most psychology research is primarily done on WEIRD people, i.e. people from WEIRD places. The Genetics of Iceland-study, in reality, it is usually not possible to sample the whole population, so a representative group is chosen to reflect a broader population. This is not perfect, but certainly contains more samples more closely resembles the population they are trying to study. Testing only one culture.

2. Statistically Significant Results

The other option, if the sample groups are small, is to use proximal similarity and restrict your study to the local town with a similar socioeconomic class. This is not perfect, but certainly contains more without a huge number of researchers and a bottomless pit of money. Therefore, generalization is an essential component of the wider scientific process. In an ideal world, to test a hypothesis, you would sample an entire population. It is what allows researchers to take their sample and be sure that if the whole population was observed, the results would be strongly representative, because the range and number of samples is high. These results would pertain to the group of US children, as a whole. The first example, using every school, would be strongly representative, because the range and number of samples is high. These would be likely to be safely extrapolated to an entire group of 4,000 times likelier to be a subject than a random non-Westerner."