Description

Even the most carefully constructed research studies can fall apart once the data has been collected. A flawless literature review can identify a perfectly valid research question and develop a robust hypothesis to be tested. The data can be collected in full compliance with all appropriate rules and regulations using a population sample that is totally representative of the broader population being investigated. The Nobel Prize, fame, and fortune are just moments away, and then you start to make some assumptions based on your data. Mistaken assumptions lead to errors in reasoning, otherwise known as fallacies, and there are two that show up in academic research with some regularity:

The Ecological Fallacy

An *ecological fallacy* occurs when assumptions are made about a specific individual based on the analysis of data from a group of which that individual is a member. For example, you may be asked to substitute teach an Advanced Placement (AP) math class for a group of students who have the highest average scores in the school. Now if one student seeks assistance you may assume that this should not be needed because he is a member of the math genius class. This is called as *ecological fallacy*.

The Exception Fallacy

The *exception fallacy*, also known as the stereotype fallacy makes a conclusion about a group of people based on observations of or data on one individual. For example, getting cut off in traffic by an older gentleman driving a car may result in the generalization that all old people must be bad drivers—a stereotype fallacy.

Proceed With Caution

These simple examples are indicative of greater issues within academic research. With so much invested in the collection of data—struggling to find a viable topic, battling for research funding, and grinding through the hard work of collecting and analyzing the data—the desire for results that are significant or at least noteworthy can sometimes overwhelm your better judgment and you start to see correlations that aren't really there. Worse still, the pressure to "publish or perish" will result in the temptation to "massage" the data so as to find a correlation worth publishing. Remember that the constant danger of fallacies is one of the reasons why we conduct research in the first place. Only by undertaking empirical research to collect accurate data on the conduct of groups and individuals can we truly develop a comprehensive picture of what is happening. Without that, all we are left with is base conjecture.

Category

1. Publishing Research
2. Understanding Ethics

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