Statistics By Jim

Learn How Anecdotal Evidence Can Trick You!

By Jim Frost

Anecdotal evidence is a story told by individuals. It comes in many forms that can range from product testimonials to word of mouth. It's often testimony, or a short account, about the truth or effectiveness of a claim. Typically, anecdotal evidence focuses on individual results, is driven by emotion, and presented by individuals who are not subject area experts.

The following are examples of anecdotal evidence:

- Wow! I took this supplement and lost a lot of weight! This pill must work!
- I know someone who smoked for decades, and it never produced any significant illness. Those claims about smoking are exaggerated!
- This anti-aging cream took years off. It must be the best!

I'm sure you've heard that you can't trust anecdotal evidence. Yet, we still ask our friends for recommendations about restaurants, travel destinations, auto mechanics, and so on. The tricky thing

about anecdotal evidence is that even when an individual story is true, it can still be entirely misleading. How does that work?

In this post, I'll show you why you can't trust anecdotal evidence!

Statistical Methodology versus Anecdotal Evidence

The table below shows how statistical and scientific methodology are opposites of anecdotal evidence.

Statistical evidence	Anecdotal evidence
Samples are large and representative. Typically, they are generalizable outside the sample.	Small, biased samples are not generalizable.
Scientists take precise measurements in controlled environments.	Unplanned observations are made and described informally.
Other relevant factors are measured and controlled.	Other relevant factors are ignored.
Strict requirements for identifying causal connections are followed.	Anecdotes assume causal relationships without evidence.

A quick look at the table should be enough to convince you that anecdotal evidence is not trustworthy! However, it's even worse thanks to psychological factors that prime us for believing these stories.

1. Humans are more likely to tell and remember dramatic, extraordinary personal stories.

2

Throw in some emotion, and you're more likely to believe the story. In psychological terms, statistical analysis of data that are carefully collected from well designed experiments lacks that emotional kick. Sad but true.

3

Furthermore, if B follows A, our brains are wired to assume that A causes B.

4

Finally, anecdotal evidence cherry picks the best stories. You don't hear about all of the unsuccessful cases because people are less likely to talk about them.

1 example

So, if Fred tells an emotional story about how he took a supplement and then lost a lot of weight, we'll remember Fred's story and assume that the supplement caused the weight loss. Unfortunately, we don't hear from the other 99 people who took the supplement and didn't lose weight. We also don't know what else Fred might be doing to lose weight.

Collectively, these factors bias the conclusions drawn from anecdotal evidence toward unusual outcomes and unjustified causal connections.

Therefore, it's important to remember that statistical evidence always beats anecdotal evidence.