

# Criteria of Good Research

# The Basic Criteria

1. Important
2. Credible Methodology

Both terms are vague, undefined, unclear, suffer from multiple definitions, non-objective, etc...

# 1. Important

- What makes a study important?
- A clearly stated contribution to society, an academic field, a theory, or a piece of a larger contribution
- Generally, *not* enough to say “no one has done this before...”

# Unimportant Example

- I want to build a 7-wheeled car
- “No one has done it” → starts from the wrong place
- What contribution does it make?

# Example of Seeking Importance

- I am developing a vehicle that is more energy efficient yet durable. (*Seven wheels will make it more durable...*)
- Societal needs for energy efficiency (*Hot, Flat, and Crowded*)
- Need within a larger research agenda (systematic experimentation with multiple wheeled vehicles for Mars rover)
- Test a theory of wheels and efficiency

## 2. Credible Methodology

- A reasonably trained person should be able to follow every step of your process
- You need to make reasonable methodology decisions and...
- explain each step in your research process clearly

# All Methods have Strengths and Weaknesses

- **Fieldwork**: deals with observed complexity of real situations (but few cases and little generality)
- **Survey**: potentially generalizable (but often verbal responses, re-interpretations, weak samples)
- **Experimentation**: clear causality (but not realistic)
- **Nonreactive**: uninvolved researcher (but data quality limited or unclear)
- **Case-Control**: prone to confounding
- **Modeling**: allows for the rigorous testing of non-reality 😊



# Reasonable Decisions

- Every study is limited by resources
- You need to be very aware of how these limited resources might limit your study
- You need to *not hide* these from a reader or reviewer



# Reasonable Example (?)

- Limited sample size: an experiment with a limited sample size ( $N = 30$ )
- Limited treatment condition: survey about what you *would* do rather than monitoring actual behavior (“attitude vs. action”)

# All studies...

- Open to criticism
- You should be able to explain how methodology choices could affect results

Acknowledge limitations, but make the *importance* of the study clear

Better to have an incomplete answer to a good question than the complete answer to the wrong question