

*ideal  
experiment*

Random  
assignment

No random  
assignment

*most  
observational  
studies*

Random  
sampling

Causal conclusion,  
generalized to the whole  
population.

No causal conclusion,  
correlation statement  
generalized to the whole  
population.

Generalizability

No random  
sampling

Causal conclusion,  
only for the sample.

No causal conclusion,  
correlation statement only  
for the sample.

No  
generalizability

*most  
experiments*

Causation

Correlation

*bad  
observational  
studies*