

# **1 | multivariate analysis**

## **1.1 | terms**

### **1.1.1 | null hypothesis**

### **1.1.2 | dependence - if one set of variables can predict another**

### **1.1.3 | interdependent analysis - intercorrelations for underlying understanding**

### **1.1.4 | metric vs non metric - a metric variable is numeric**

## **1.2 | then a bunch of methods for dependence analysis**

### **1.2.1 | pick by matching which ones match your input/output variable types and numbers**

## **1.3 | interdependent multivariate analysis**

### **1.3.1 | factor analysis**

1. understand which variables highly correlate to others
  - (a) common factor analysis - extracts factors that correlate
  - (b) principal component analysis - extract factors that have the largest impact
2. cluster analysis
3. multidimensional scaling
  - (a) obtain tabular data from a weighted graph structure?
4. corresponding analysis
  - (a) like factor analysis or something?

## **1.4 | important matrices**

### **1.4.1 | data matrix**

### **1.4.2 | USSCP**

1. data matrix multiplied by the transpose

### **1.4.3 | some other thing CSSCP**

### **1.4.4 | covariance matrix (C)**

### **1.4.5 | correlation matrix (R)**

1. variables normalized for mean 0 and stddev 1

## 1.5 | **applications**

### 1.5.1 | **lots of fields**