Canonical Analysis

Multivariate Solutions

Basics of Canonical Analysis

- ***Canonical analysis is used to assess the relationship between two sets of variables.***
  - ***For example, a group of risk factors and a group of symptoms;***
  - ***Exposure to certain advertisements and purchase intent for several brands.***
  - ***Is satisfaction at work related to satisfaction in other things in life?***
  - ***Can certain purchase triggers be related to other lifestyle variables?***

Key Measures of Canonical Analysis

- ***Canonical correlations***
  - ***Square root of the Eigenvalues created by the analysis***
  - ***Customary to report the highest correlation as the primary measure between groups***
- ***Canonical weights***
  - ***Standardized***
  - ***Interpreted like beta weights in multiple regression or like factor weights in Principle Components (Factor) Analysis***
  - ***Can be interpreted by summing weights across Canonical factors (roots)***
- ***Factor Structure***
  - ***Correlations between the Canonical roots and each variable in the respective sets***
  - ***Interpret at face value***

Electronics Purchase Triggers Canonical Example

Study Objectives

- **To Determine if there is a causal relationship between a set of purchase triggers and a group of self-evaluated life attributes.**
- **Canonical analysis will examine both the group and individual relationships to find any underlying structure.**

Variables in Example Canonical Analysis

trignutv	Purchase of new television
trigbig	Celebrate a big event
triggift	Big ticket holiday gift

enjoy	I really enjoy owning and using state-of-the-art technology products.
freetime	I am known for planning my free time so I can watch sporting events.
friends	Getting together with friends is really important to me.
decor	It is really important to me that my home has the most up-to-date decor.
comfy	I fell confident I can comfortably meet my monthly financial obligations

Eigenvalues and Canonical Correlations

Eigenvalue and Canonial Correlations

	Root 1	Root 2	Root 3
Eigenvalues (television.sta)	0.080	0.027	0.004
Canonical correlation sqrt (Eigenvalue)	0.284	0.164	0.064

.3 is considered good for the sample size of 200

Electronics Purchase Triggers Canonical Example
Findings

- **The canonical correlation square for Root 1 is .284. A statistically accepted square for the sample size of 200 is around 0.3.**
- **The conclusion is that there is no definitive evidence linking the purchase triggers to self-evaluated attributes.**