

STAT9005 - Time Series and Factor Analysis

CRN 26645

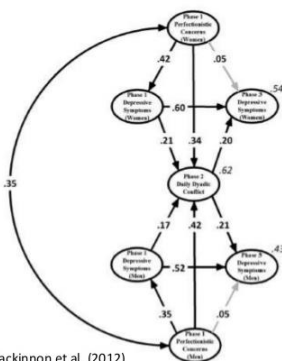
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This module provides methods to develop and critically evaluate structural equation modelling and time series models.

Among the many topics covered are:

- **Factor analysis:** Data screening, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), Structural Equation Modelling (SEM);
- **Time series analysis:** Decomposition (trend, periodicity, seasonality, white noise), Smoothing Techniques, Autoregressive (AR), Moving Average (MA) and mixed (ARIMA) models.
- Use of IBM **SPSS** Statistics and IBM SPSS Amos to generate and analyse models.

Structural Equation Modeling



Mackinnon et al. (2012)

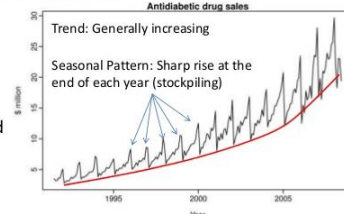
Like path analysis, except looks at relationships among latent variables

Useful, because it accounts for the unreliability of measurement so it offers more un-biased parameters

Also lets you test virtually any theory you might have

Time Series Data

- Observations (at regular intervals) sequentially over time.
- Forecasting extrapolates trend and seasonal patterns.
- Trend : long term increased/decrease.
- Seasonal: e.g. daily weekly, yearly (fixed & known length).
- Cycle: rises/falls that are not a fixed period (variable & unknown length).



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