

# HDDA Tutorial: Dimension Reduction

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## *Tutorial 10*

1. Load the socioeconomic data on U.S. States (used in the lecture on principal components). Isolate the 5 numeric variables and scale this data
2. Carry out the singular value decomposition on the standardised data.
3. Construct a correlations biplot using `ggplot`. Before doing so look at the help function for `pc.biplot` for additional instructions on how this is constructed
4. Using the spectral theorem, prove that Principal Components are uncorrelated by construction.