

Simulation with algorithm 2

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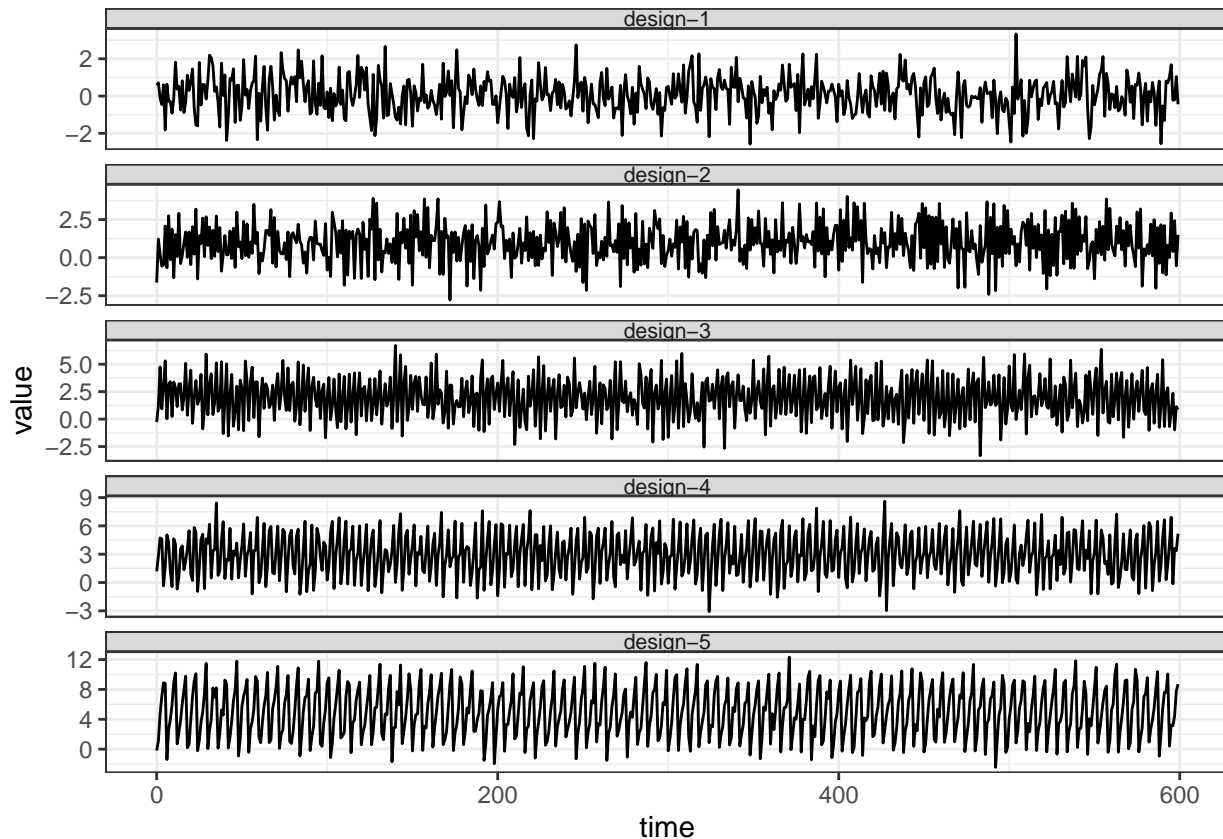
Simulation design

Three circular granularities g_1 , g_2 and g_3 are considered with levels 2, 3 and 4 respectively. Many time series with 600 observations are created using the five designs below, each of which is iterated four times. We anticipate to have five clusters, each with four time series conforming to the same design, once we execute the clustering.

Algorithm

Compute wpd for each granularity. The distance matrix is then computed with 20 time series as cases and three granularities as variables. Manhattan distances are computed and then hierarchical clustering is applied on them.

Raw plots



Designs (Distribution of simulated data across different granularities)

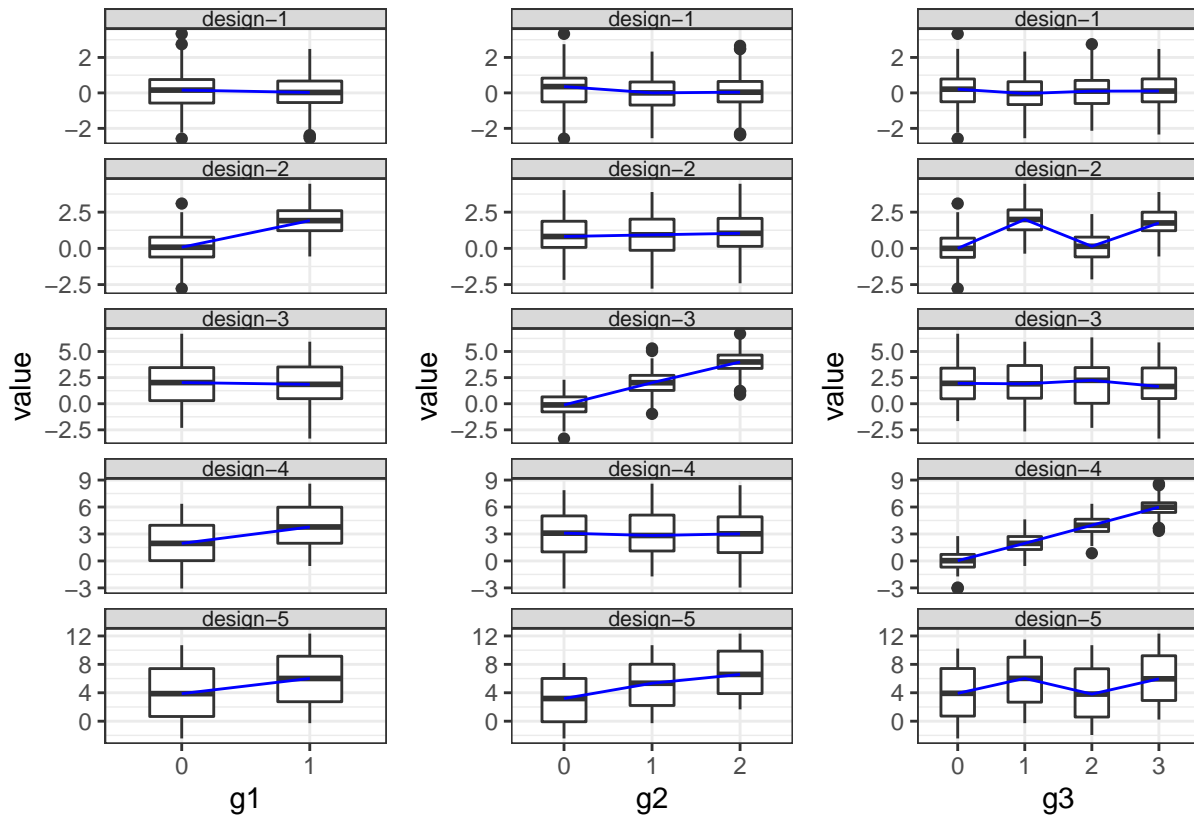
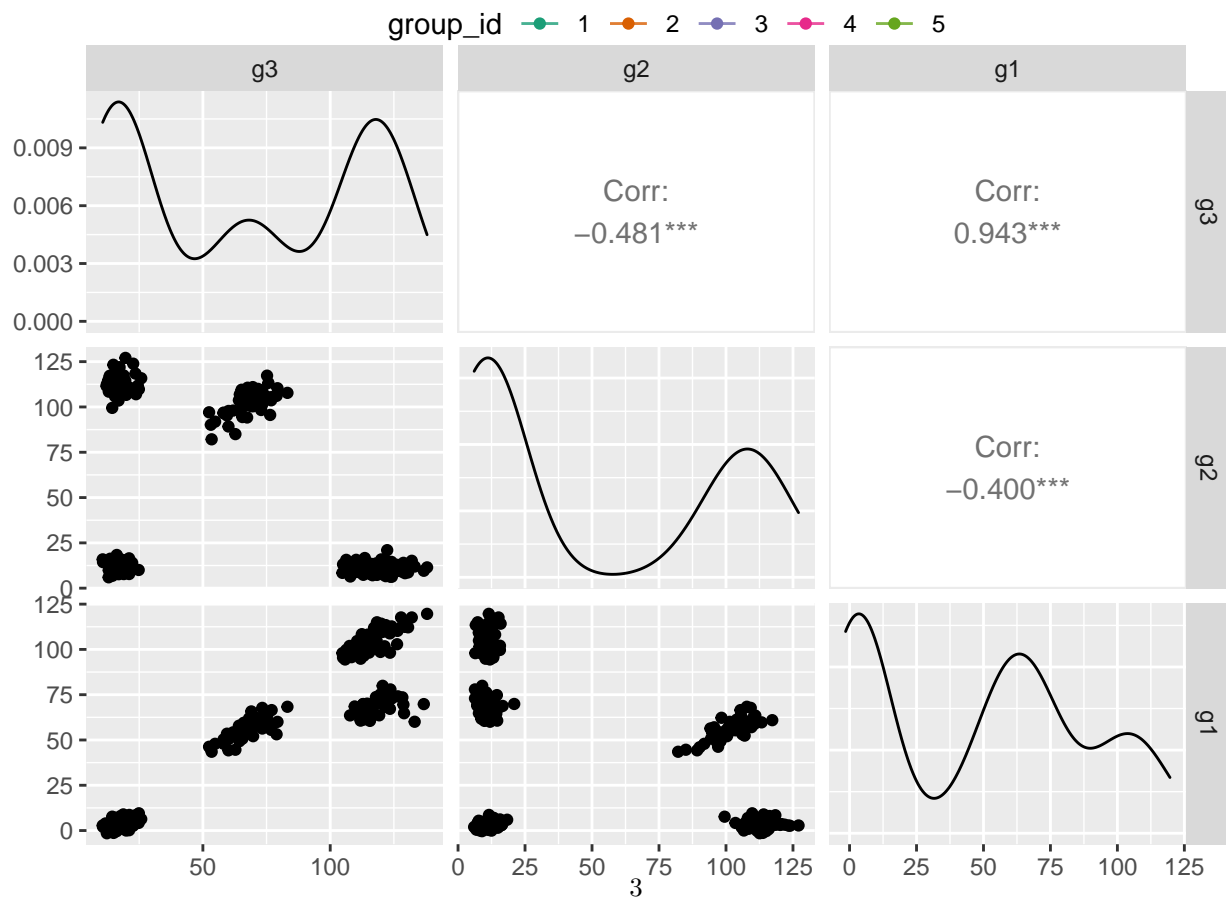
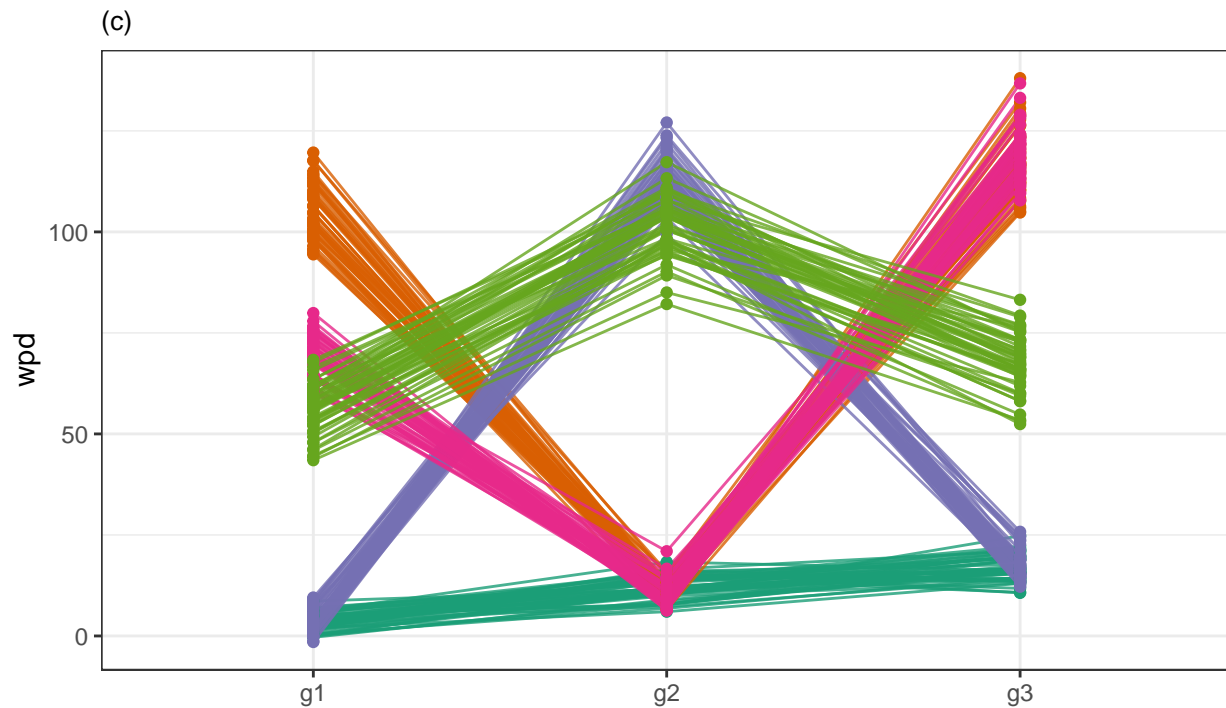


Table of wpd across designs and wpd

Clustering of designs



With optimal number of clusters

Design 2 and 4 form a part of the same cluster with the optimal number of clusters chosen as 4. Design 2 and 4 are similar in the sense that both of them changes across categories for g1 and g3, and remains constant for g2.

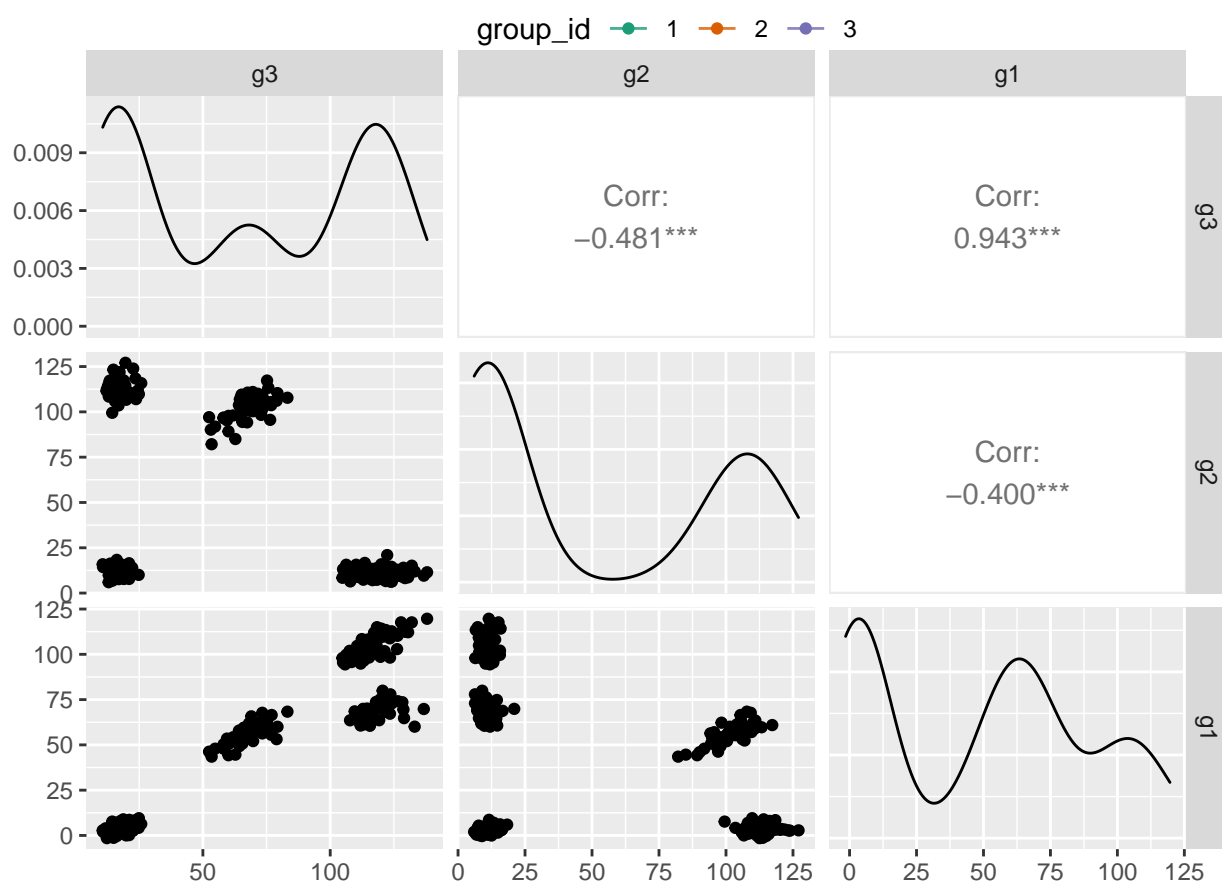
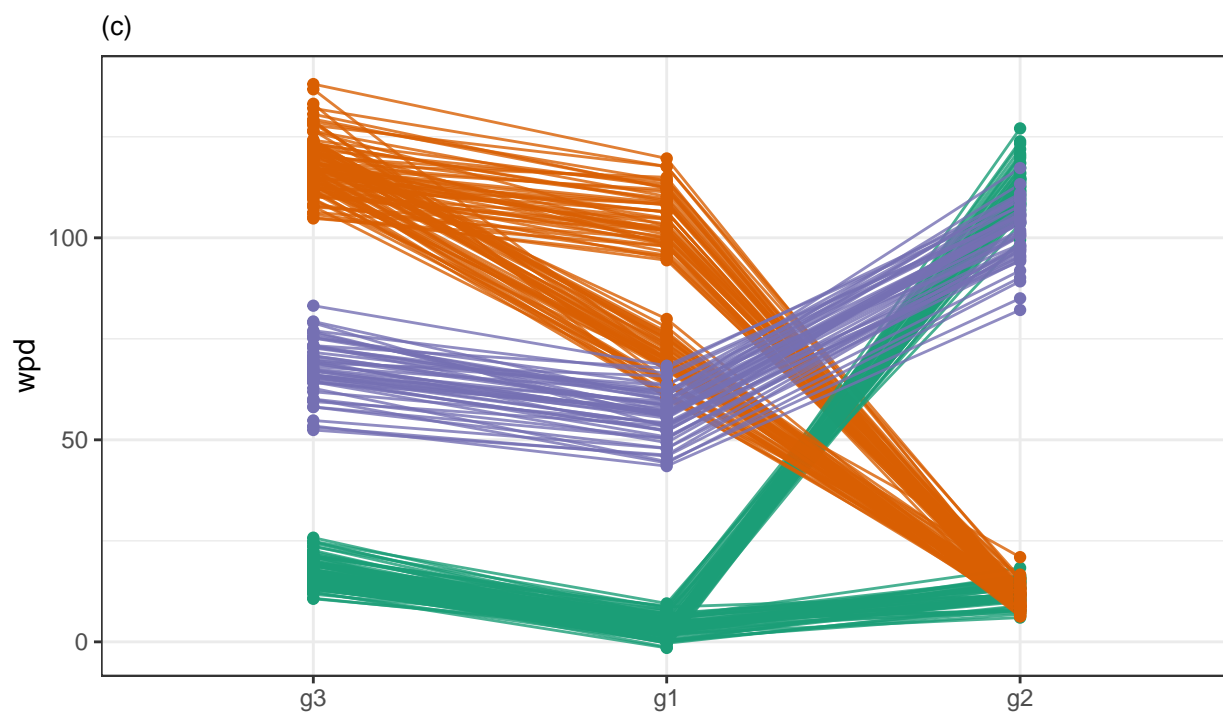
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PCA based clustering

