Principal Component Analysis Using prcomp

PCA maximizes the sum of squared distances (SS) from the projected points to the origin for PC1 (accounts for the most variation in the data). Therefore, according to Pythagorean’s theorem, it reduces the distance of the points to the PC line.

sdev: The singular value for PC1 = √SS distances AKA √eigenvalue for a PC

rotation/loadings: The proportion of each gene responsible for the eigenvector of each PC. Essentially this is the slope of each PC.

x: Coordinates of the projected points on each PC

center: The coordinates of the points centred on 0 (x-x̅).