

I kept 3 principal components from the previous exercise based on a combination of PVE, the elbow plot, and Kaiser's rule. Together they explained about 50% of the variance.

```
## K-means clustering with 2 clusters of sizes 48, 74
##
## Cluster means:
##      PC1      PC2      PC3
## 1 -2.226487  0.009970616 -0.10649882
## 2  1.444208 -0.006467427  0.06908032
##
## Clustering vector:
## [1] 2 2 2 2 2 1 1 1 2 2 2 1 2 2 2 1 2 2 2 2 1 2 2 2 2 2 1 2 2 1 1 2 2 2 2 1
## [38] 2 2 2 1 1 2 1 2 2 1 1 2 1 2 2 2 1 2 1 2 2 1 2 2 2 1 2 1 1 2 2 1 1 1 1
## [75] 2 1 2 2 2 1 2 1 1 2 2 2 1 2 1 1 2 2 1 1 1 2 2 2 1 1 2 1 1 2 1 1 2 2 1
## [112] 1 2 2 2 1 2 2 1 2 2 2
##
## Within cluster sum of squares by cluster:
## [1] 282.9528 397.5548
## (between_SS / total_SS =  36.6 %)
##
## Available components:
##
## [1] "cluster"      "centers"      "totss"        "withinss"     "tot.withinss"
## [6] "betweenss"    "size"         "iter"         "ifault"
##
## cluster_assignments
##  1  2
## 48 74
##
## cluster_assignments
##  1  2  3
## 47 42 33
##
## $'2'
## [1] 0.3181106
##
## $'3'
## [1] 0.4836909
##
## $'4'
## [1] 0.6149405
##
## $'5'
## [1] 0.6952783
##
## $'6'
## [1] 0.8527499
##
## $'7'
## [1] 0.9003584
##
## $'8'
## [1] 1.059681
```

```
##  
## $'9'  
## [1] 1.188951  
##  
## $'10'  
## [1] 1.310413  
  
## pdf  
## 2
```