Cluster Analysis

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1. Introduction

- Brief description of the variables
- Correlation
- Results from PCA

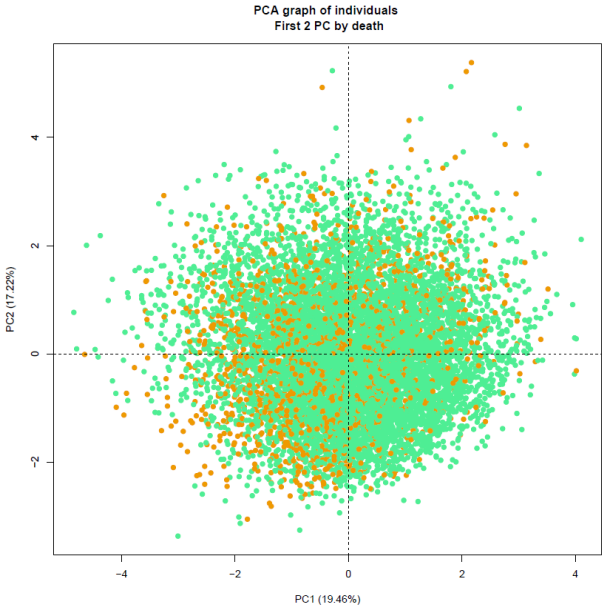

Figure 1: First 2 PC for crash2 Data Set

2. Cluster Analysis

```
getwd()
```

```
## [1] "C:/Users/CCONE/Documents/Cesar/Projects/RControlVersion/UC3M/MultiAnalysis"
```

```
library(png)
```

```
## Warning: package 'png' was built under R version 4.0.3
```

```
img_path = 'figure_output/Report1/pca_death.png'
img1 <- readPNG(img_path,native = TRUE, info = TRUE)
attr(img1, "info")
```

```
## $dim
## [1] 844 841
##
## $bit.depth
## [1] 8
##
## $color.type
## [1] "RGBA"
##
## $gamma
## [1] 0.45455
##
## $dpi
## [1] 143.9926 143.9926
```

```
#include_graphics(img_path)
```

2.1. Partitional Clustering

Selecting the number of neighbors

2.2. Hierarchical Clustering

2.3. Model base clustering

3. Factor Analysis

we back one

```
dir()
```

```
## [1] "data"                                "figure_output"
## [3] "rda"                                 "README.md"
## [5] "Report1-Data_Presentation"           "Report2-PCA"
## [7] "Report3-Cluster_Factor_Analysis"     "scripts"
## [9] "UC3M_MultiAnalysis_Project_1.Rproj"
```

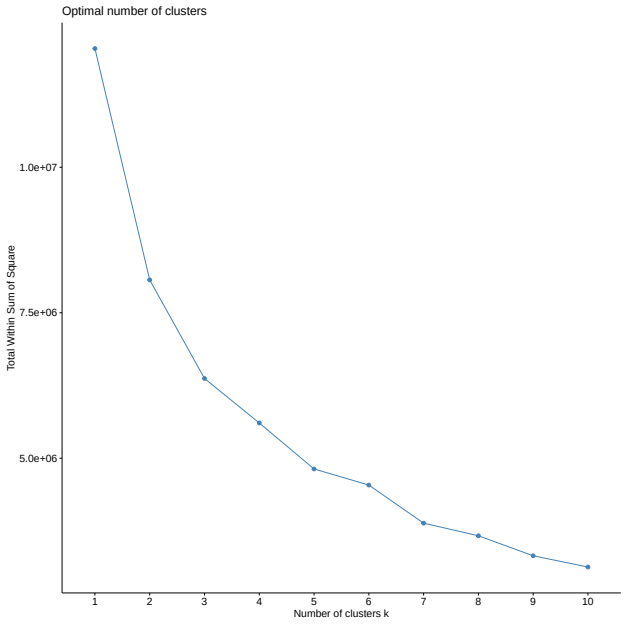

Figure 2: Selecting K with WSS

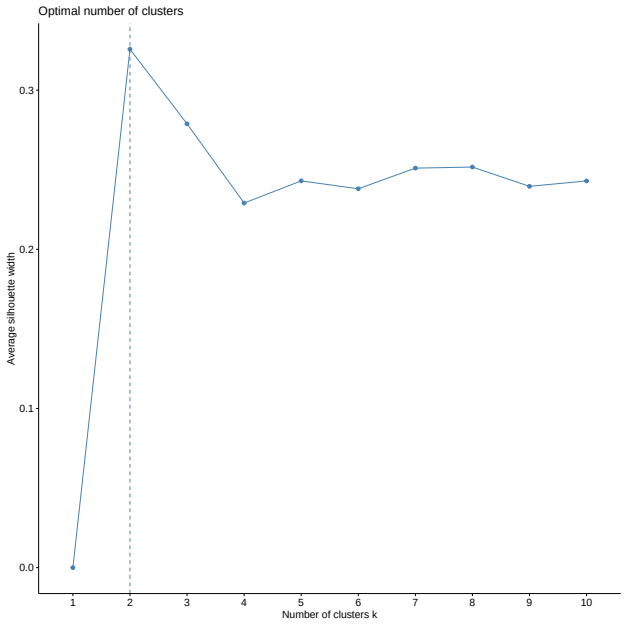

Figure 3: Selecting K with WSS