test1

Loading needed libraries:

library(FactoMineR)  
library(factoextra)

## Loading required package: ggplot2

## Welcome! Related Books: `Practical Guide To Cluster Analysis in R` at https://goo.gl/13EFCZ

library(ggpubr)

## Loading required package: magrittr

prodrat = read.csv("C:/Users/fb8502oa/Desktop/DSCI 415/DSCI 415 fall/ProductRatings.csv", header=TRUE)  
names(prodrat)

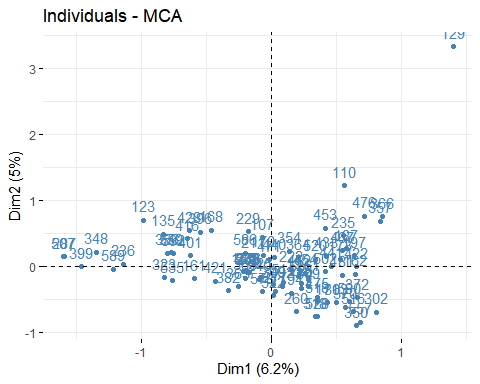
## [1] "QN" "PROD1" "PROD2" "PROD3" "PROD4" "PROD5" "PROD6"   
## [8] "PROD7" "PROD8" "PROD9" "PROD10" "PROD11" "PROD12" "PROD13"  
## [15] "PROD14" "PROD15" "PROD16" "PROD17" "PROD18" "PROD19" "PROD20"  
## [22] "PROD21" "PROD22"

row.names(prodrat) = prodrat$QN  
prod.mat = prodrat[,-1]  
prod.mat = apply(prod.mat,2,as.factor)

#doing the mca  
prod.MCA = MCA(prod.mat, graph = FALSE)  
summary(prod.MCA)

##   
## Call:  
## MCA(X = prod.mat, graph = FALSE)   
##   
##   
## Eigenvalues  
## Dim.1 Dim.2 Dim.3 Dim.4 Dim.5 Dim.6  
## Variance 0.369 0.297 0.256 0.252 0.231 0.207  
## % of var. 6.242 5.020 4.331 4.257 3.902 3.504  
## Cumulative % of var. 6.242 11.262 15.594 19.850 23.752 27.256  
## Dim.7 Dim.8 Dim.9 Dim.10 Dim.11 Dim.12  
## Variance 0.197 0.193 0.186 0.176 0.167 0.156  
## % of var. 3.329 3.266 3.155 2.984 2.829 2.638  
## Cumulative % of var. 30.585 33.851 37.006 39.991 42.820 45.457  
## Dim.13 Dim.14 Dim.15 Dim.16 Dim.17 Dim.18  
## Variance 0.151 0.144 0.133 0.129 0.127 0.119  
## % of var. 2.560 2.432 2.244 2.184 2.152 2.008  
## Cumulative % of var. 48.017 50.450 52.693 54.878 57.030 59.038  
## Dim.19 Dim.20 Dim.21 Dim.22 Dim.23 Dim.24  
## Variance 0.114 0.109 0.105 0.103 0.098 0.097  
## % of var. 1.937 1.839 1.777 1.746 1.656 1.636  
## Cumulative % of var. 60.976 62.814 64.591 66.337 67.993 69.629  
## Dim.25 Dim.26 Dim.27 Dim.28 Dim.29 Dim.30  
## Variance 0.089 0.088 0.088 0.081 0.079 0.075  
## % of var. 1.510 1.490 1.482 1.379 1.340 1.276  
## Cumulative % of var. 71.139 72.629 74.111 75.490 76.830 78.106  
## Dim.31 Dim.32 Dim.33 Dim.34 Dim.35 Dim.36  
## Variance 0.071 0.067 0.065 0.060 0.059 0.056  
## % of var. 1.199 1.133 1.094 1.013 1.003 0.943  
## Cumulative % of var. 79.305 80.438 81.532 82.545 83.548 84.492  
## Dim.37 Dim.38 Dim.39 Dim.40 Dim.41 Dim.42  
## Variance 0.054 0.050 0.048 0.046 0.046 0.043  
## % of var. 0.913 0.843 0.819 0.774 0.772 0.735  
## Cumulative % of var. 85.405 86.248 87.067 87.841 88.613 89.348  
## Dim.43 Dim.44 Dim.45 Dim.46 Dim.47 Dim.48  
## Variance 0.041 0.041 0.038 0.036 0.034 0.032  
## % of var. 0.701 0.692 0.648 0.606 0.568 0.547  
## Cumulative % of var. 90.049 90.741 91.389 91.995 92.563 93.111  
## Dim.49 Dim.50 Dim.51 Dim.52 Dim.53 Dim.54  
## Variance 0.031 0.029 0.027 0.025 0.024 0.022  
## % of var. 0.519 0.497 0.452 0.416 0.411 0.380  
## Cumulative % of var. 93.630 94.127 94.579 94.995 95.405 95.786  
## Dim.55 Dim.56 Dim.57 Dim.58 Dim.59 Dim.60  
## Variance 0.020 0.020 0.018 0.017 0.016 0.015  
## % of var. 0.343 0.331 0.307 0.293 0.279 0.260  
## Cumulative % of var. 96.129 96.460 96.767 97.060 97.339 97.598  
## Dim.61 Dim.62 Dim.63 Dim.64 Dim.65 Dim.66  
## Variance 0.014 0.013 0.012 0.010 0.010 0.009  
## % of var. 0.242 0.214 0.199 0.173 0.166 0.153  
## Cumulative % of var. 97.840 98.054 98.253 98.426 98.592 98.746  
## Dim.67 Dim.68 Dim.69 Dim.70 Dim.71 Dim.72  
## Variance 0.008 0.008 0.008 0.006 0.006 0.005  
## % of var. 0.143 0.141 0.136 0.106 0.101 0.091  
## Cumulative % of var. 98.889 99.030 99.165 99.272 99.372 99.464  
## Dim.73 Dim.74 Dim.75 Dim.76 Dim.77 Dim.78  
## Variance 0.004 0.004 0.004 0.004 0.003 0.003  
## % of var. 0.071 0.068 0.061 0.060 0.051 0.043  
## Cumulative % of var. 99.534 99.602 99.664 99.724 99.775 99.818  
## Dim.79 Dim.80 Dim.81 Dim.82 Dim.83 Dim.84  
## Variance 0.002 0.002 0.002 0.002 0.001 0.001  
## % of var. 0.039 0.035 0.030 0.027 0.021 0.017  
## Cumulative % of var. 99.857 99.892 99.922 99.949 99.971 99.987  
## Dim.85  
## Variance 0.001  
## % of var. 0.013  
## Cumulative % of var. 100.000  
##   
## Individuals (the 10 first)  
## Dim.1 ctr cos2 Dim.2 ctr cos2 Dim.3 ctr  
## 107 | -0.071 0.016 0.001 | 0.439 0.756 0.036 | -0.260 0.308  
## 110 | 0.559 0.985 0.028 | 1.225 5.885 0.136 | 0.415 0.781  
## 123 | -0.991 3.095 0.116 | 0.702 1.933 0.058 | -0.537 1.309  
## 129 | 1.395 6.136 0.102 | 3.336 43.625 0.582 | -0.120 0.066  
## 135 | -0.830 2.173 0.142 | 0.494 0.957 0.050 | 0.050 0.011  
## 155 | -0.221 0.154 0.010 | -0.075 0.022 0.001 | -0.538 1.316  
## 161 | -0.595 1.115 0.113 | -0.184 0.132 0.011 | -0.479 1.040  
## 162 | 0.643 1.303 0.076 | -0.114 0.051 0.002 | -0.406 0.749  
## 168 | -0.464 0.679 0.041 | 0.551 1.188 0.058 | -0.318 0.460  
## 170 | -0.061 0.012 0.001 | 0.174 0.119 0.005 | -0.289 0.379  
## cos2   
## 107 0.013 |  
## 110 0.016 |  
## 123 0.034 |  
## 129 0.001 |  
## 135 0.001 |  
## 155 0.057 |  
## 161 0.073 |  
## 162 0.030 |  
## 168 0.019 |  
## 170 0.015 |  
##   
## Categories (the 10 first)  
## Dim.1 ctr cos2 v.test Dim.2 ctr cos2 v.test   
## PROD1\_2 | -0.852 0.312 0.026 -1.493 | -0.268 0.038 0.003 -0.470 |  
## PROD1\_3 | -0.832 0.595 0.052 -2.100 | -0.345 0.127 0.009 -0.870 |  
## PROD1\_4 | -0.909 0.946 0.085 -2.683 | -0.279 0.111 0.008 -0.825 |  
## PROD1\_5 | 0.042 0.004 0.000 0.178 | -0.032 0.003 0.000 -0.136 |  
## PROD1\_6 | 0.233 0.226 0.028 1.533 | -0.155 0.124 0.012 -1.020 |  
## PROD1\_7 | 0.297 0.316 0.036 1.753 | 0.403 0.725 0.067 2.381 |  
## PROD2\_1 | -0.298 0.025 0.002 -0.424 | -0.145 0.008 0.001 -0.207 |  
## PROD2\_2 | -0.154 0.003 0.000 -0.154 | -0.349 0.022 0.001 -0.349 |  
## PROD2\_3 | -0.017 0.000 0.000 -0.047 | -0.443 0.244 0.017 -1.215 |  
## PROD2\_4 | -0.875 0.548 0.047 -2.004 | -0.307 0.084 0.006 -0.704 |  
## Dim.3 ctr cos2 v.test   
## PROD1\_2 -0.425 0.112 0.007 -0.746 |  
## PROD1\_3 0.976 1.180 0.071 2.464 |  
## PROD1\_4 0.832 1.144 0.071 2.457 |  
## PROD1\_5 0.028 0.002 0.000 0.119 |  
## PROD1\_6 -0.225 0.304 0.026 -1.481 |  
## PROD1\_7 -0.205 0.217 0.017 -1.210 |  
## PROD2\_1 5.173 11.052 0.637 7.359 |  
## PROD2\_2 0.148 0.004 0.000 0.148 |  
## PROD2\_3 0.146 0.031 0.002 0.402 |  
## PROD2\_4 0.489 0.247 0.015 1.121 |  
##   
## Categorical variables (eta2)  
## Dim.1 Dim.2 Dim.3   
## PROD1 | 0.195 0.074 0.167 |  
## PROD2 | 0.167 0.211 0.674 |  
## PROD3 | 0.573 0.183 0.258 |  
## PROD4 | 0.345 0.033 0.342 |  
## PROD5 | 0.610 0.626 0.066 |  
## PROD6 | 0.369 0.475 0.405 |  
## PROD7 | 0.627 0.389 0.235 |  
## PROD8 | 0.562 0.396 0.075 |  
## PROD9 | 0.258 0.148 0.245 |  
## PROD10 | 0.442 0.413 0.138 |

#ploting the individual   
fviz\_mca\_ind(prod.MCA, col.ind = "steelblue")



#outliyer = indv 129

analysis blah blha blah