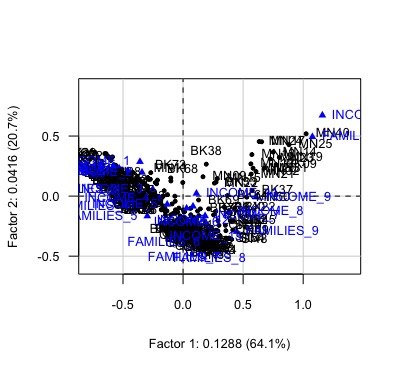
############################################

#AFC (reduction) et CAH (regroupement)

############################################

AFC puis classification ascendante hierarchique des quartiers, a partir de leur coordonnees selon les axes factoriels

Utilisation des packages ade4 et FactoClass

**AFC avec la fonction dudi.coa pour pouvoir calculer les distances euclidiennes entre les points**

Resultats de l'AFC stockes dans res.CA2

res.CA2 <- dudi.coa(DATA\_ACTIVES, scannf=FALSE, nf=5)

#INCOME\_1 Less than $10,000

#INCOME\_2 $10,000 to $14,999

#INCOME\_3 $15,000 to $24,999

#INCOME\_4 $25,000 to $34,999

#INCOME\_5 $35,000 to $49,999

#INCOME\_6 $50,000 to $74,999

#INCOME\_7 $75,000 to $99,999

#INCOME\_8 $100,000 to $149,999

#INCOME\_9 $150,000 to $199,999

#INCOME\_10 $200,000 or more

#INCOME\_11 With earnings

#INCOME\_12 With Social Security

#INCOME\_13 With retirement income

#INCOME\_14 With Supplemental Security Income

#INCOME\_15 With cash public assistance income

#INCOME\_16 With Food Stamp/SNAP bnfts in the past 12 mo

#FAMILIES\_1 Less than $10,000

#FAMILIES\_2 $10,000 to $14,999

#FAMILIES\_3 $15,000 to $24,999

#FAMILIES\_4 $25,000 to $34,999

#FAMILIES\_5 $35,000 to $49,999

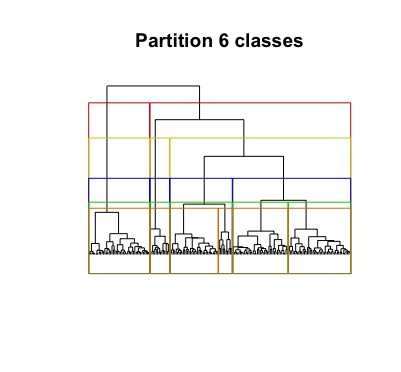
#FAMILIES\_6 $50,000 to $74,999

#FAMILIES\_7 $75,000 to $99,999

#FAMILIES\_8 $100,000 to $149,999

#FAMILIES\_9 $150,000 to $199,999

#FAMILIES\_10 $200,000 or more

**CAH : Calcul de la distance euclidienne entre les lignes**

res.CA2$li

distMat <- dist(res.CA2$li)

distMat

**Classification**

res.CAH <- hclust(distMat, method = "ward.D2")

**Dendogramme**

plot(res.CAH)

names(res.CAH)

plot(sort(res.CAH$height, dec=T)[1:100],type="h")

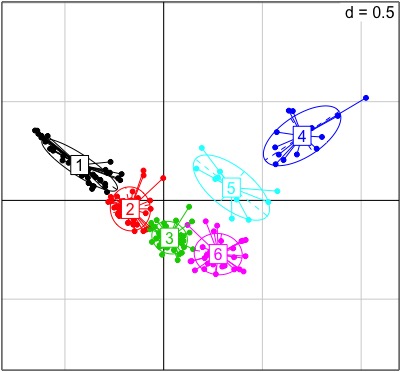
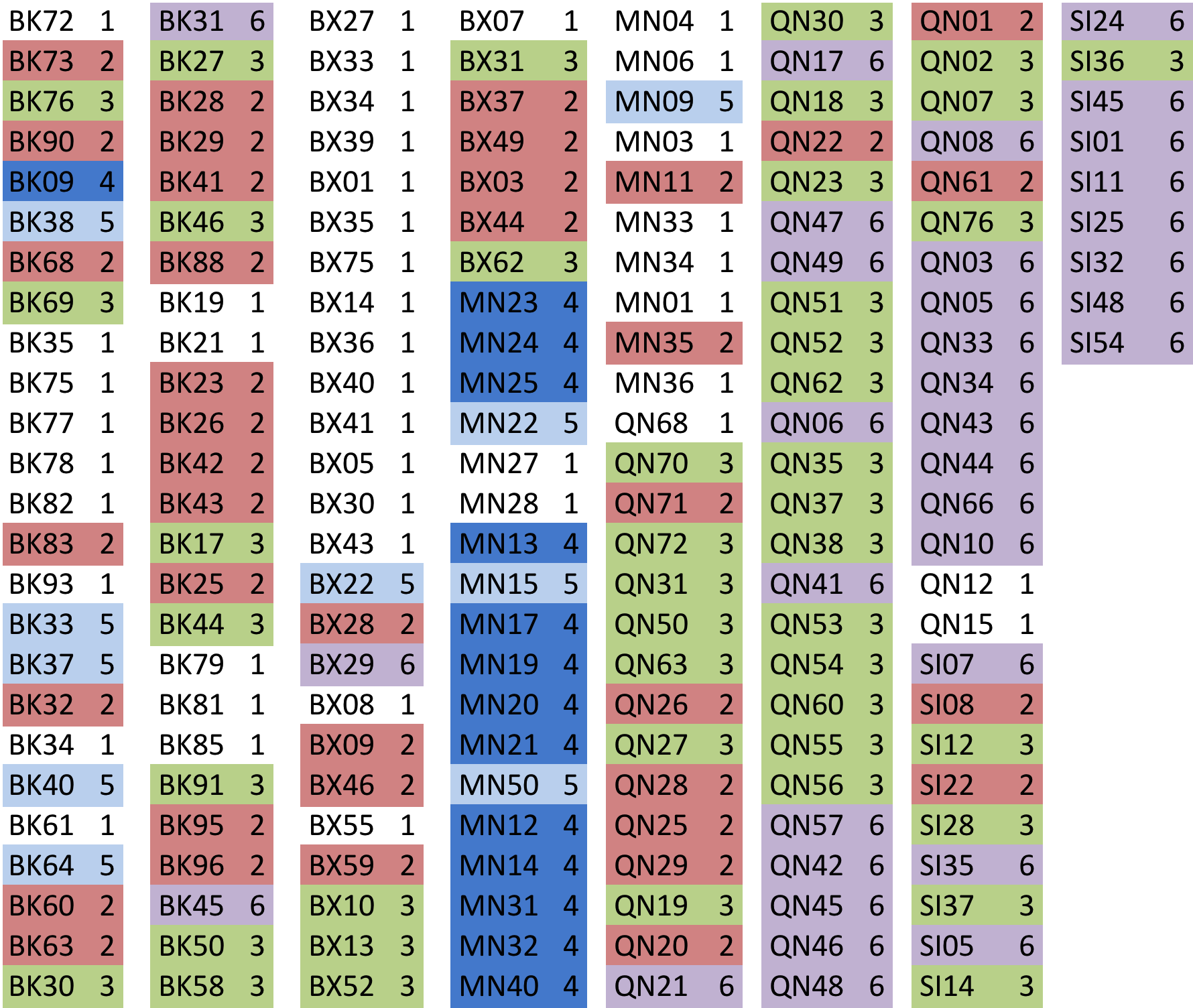
**Decoupage en 6 groupes et liste des groupes**

groupe.res.CAH <- cutree(res.CAH, k=6)

print(sort(groupe.res.CAH))

**Exporte les quartiers et les groupes dans un fichier csv**

write.table(groupe.res.CAH, file='CAH\_20170102.csv', col.names=TRUE, na="", sep=";")



**Fonction de calcul de stats pour comparer les moyennes des variables selon le groupe**.

Calcul des ecarts avec la proportion de variance expliquee.

L'idee est de comparer les moyennes des variables conditionnellement aux groupes.

stat.comp <- function(x,y){

#nombre de groupes

K <- length(unique(y))

#nb. d'observations

n <- length(x)

#moyenne globale

m <- mean(x)

#variabilite totale

TSS <- sum((x-m)^2)

#effectifs conditionnels

nk <- table(y)

#moyennes conditionnelles

mk <- tapply(x,y,mean)

#variabilite expliquee

BSS <- sum(nk \* (mk - m)^2)

#moyennes + prop. variance expliquee

result <- c(mk,100.0\*BSS/TSS)

#nommer les elements du vecteur

names(result) <- c(paste("G",1:K),"% epl.")

#renvoyer le vecteur resultat

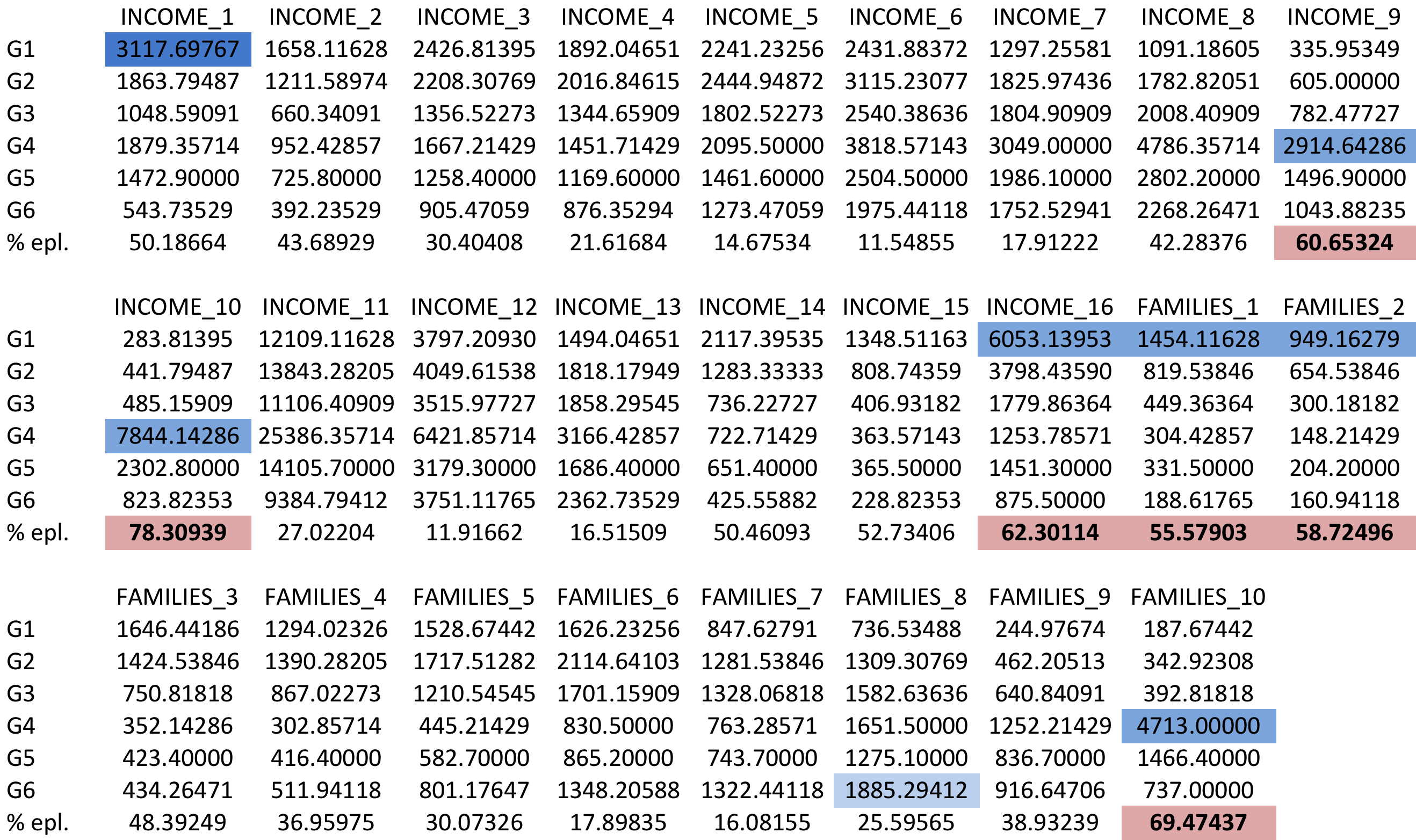
return(result)

}

**Appliquer stat.comp aux variables de la base d'origine DATA\_ACTIVES**

sapply(DATA\_ACTIVES,stat.comp,y=groupe.res.CAH)

**Opposition des quartiers avec des hauts revenus et des revenus plus modestes qui sont complémentés par des aides**



########################Colonnes supplementaires

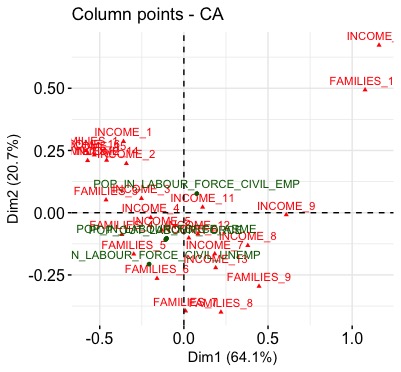
###LABOUR

#POP\_IN\_LABOUR\_FORCE\_CIVIL\_EMP : Employed

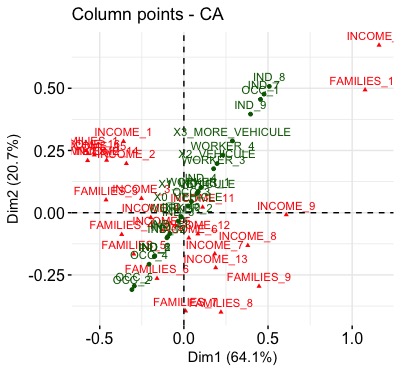
#POP\_IN\_LABOUR\_FORCE\_CIVIL\_UNEMP : Unemployed

#POP\_IN\_LABOUR\_FORCE\_ARME : Armed Forces

#POP\_OUT\_LABOUR\_FORCE : Not in labor force



######EMPLOI

#OCC\_1 Management, business, science, and arts occupations

#OCC\_2 Service occupations

#OCC\_3 Sales and office occupations

#OCC\_4 Natural resources, construction, and maintenance occupations

#OCC\_5 Production, transportation, and material moving occupations

#IND\_1 Agriculture, forestry, fishing, hunting, and mining

#IND\_2 Construction

#IND\_3 Manufacturing

#IND\_4 Wholesale trade

#IND\_5 Retail trade

#IND\_6 Transportation and warehousing, and utilities

#IND\_7 Information

#IND\_8 Finance and insurance, and real estate and rental and leasing

#IND\_9 Professional, scientific, and management, and administrative and waste management services

#IND\_10 Educational services, and health care and social assistance

#IND\_11 Arts, entertainment, and recreation, and accommodation and food services

#IND\_12 Other services, except public administration

#IND\_13 Public administration

#WORKER\_1 Private wage and salary workers

#WORKER\_2 Government workers

#WORKER\_3 Self-employed in own not incorporated business workers

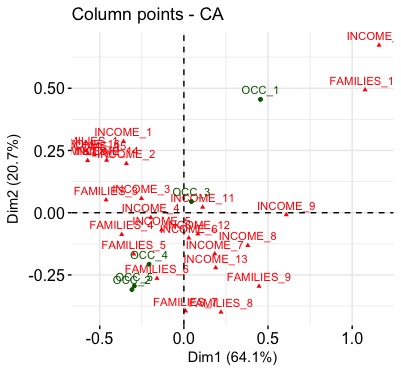
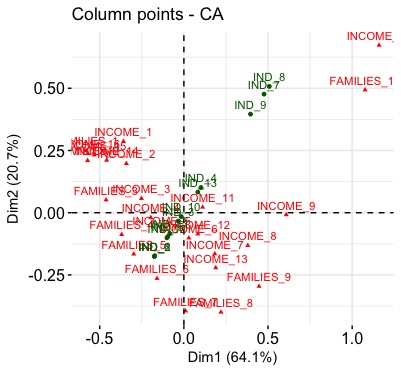
#WORKER\_4 Unpaid family workers

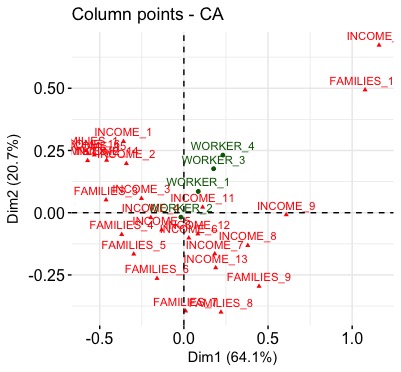
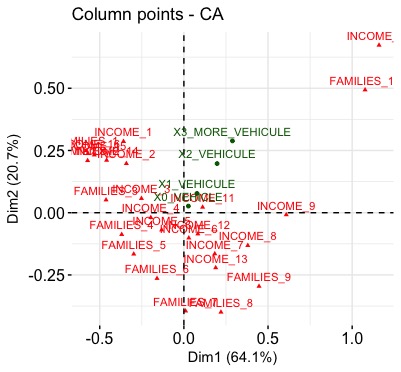
#0\_VEHICLE

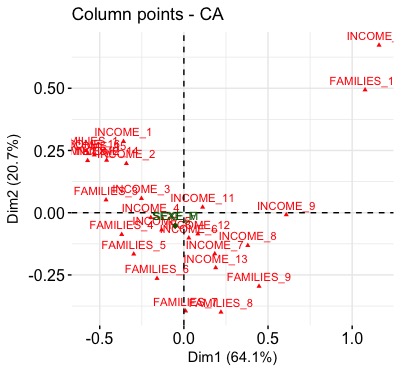
#1\_VEHICULE

#2\_VEHICULE

#3\_MORE\_VEHICULE





######SEXE, AGE ET SITUATION

#SEXE\_M Male

#SEXE\_F Female

#TR1\_AGE Under 5 years

#TR2\_AGE 5 to 9 years

#TR3\_AGE 10 to 14 years

#TR4\_AGE 15 to 19 years

#TR5\_AGE 20 to 24 years

#TR6\_AGE 25 to 34 years

#TR7\_AGE 35 to 44 years

#TR8\_AGE 45 to 54 years

#TR9\_AGE 55 to 59 years

#TR10\_AGE 60 to 64 years

#TR11\_AGE 65 to 74 years

#TR12\_AGE 75 to 84 years

#TR13\_AGE 85 years and over

#RELATION\_HOUSEHOLDER Householder

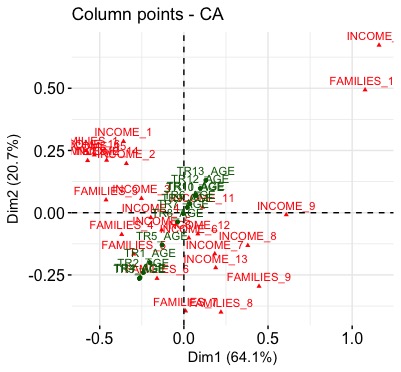
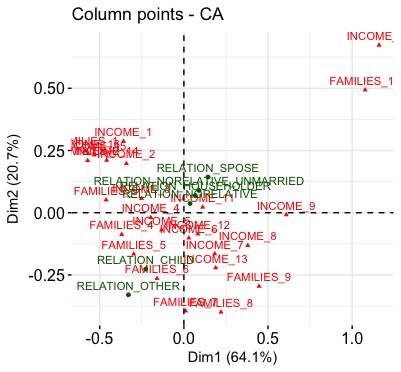
#RELATION\_SPOSE Spouse

#RELATION\_CHILD Child

#RELATION\_OTHER Other relatives

#RELATION\_NORELATIVE Nonrelatives

#RELATION\_NORELATIVE\_UNMARRIED Nonrelatives - Unmarried partner



######EDUCATION

#SCHOOL\_ENROLLMENT Population 3 years and over enrolled in school

#SCHOOL\_BEFORE Nursery school, preschool

#SCHOOL\_KINDERGARDEN Kindergarten

#SCHOOL\_ELEMENTARY Elementary school (grades 1-8)

#SCHOOL\_HIGH High school (grades 9-12)

#SCHOOL\_COLLEGE College or graduate school

#EDUC\_1 Less than 9th grade

#EDUC\_2 9th to 12th grade, no diploma

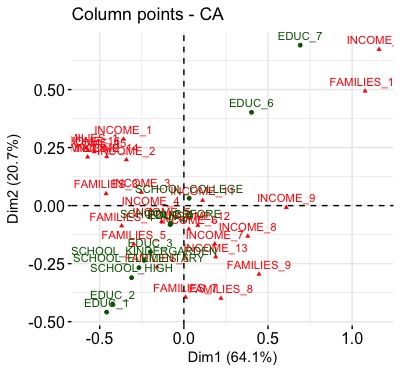
#EDUC\_3 High school graduate (includes equivalency)

#EDUC\_4 Some college, no degree

#EDUC\_5 Associate's degree

#EDUC\_6 Bachelor's degree

#EDUC\_7 Graduate or professional degree



######HOUSING

#OWNER\_OCC Owner-occupied

#RENTER\_OCC Renter-occupied

#1\_UNIT\_DET 1-unit, detached

#1\_UNIT\_ATT 1-unit, attached

#2\_UNITS 2 units

#3\_4\_UNITS 3 or 4 units

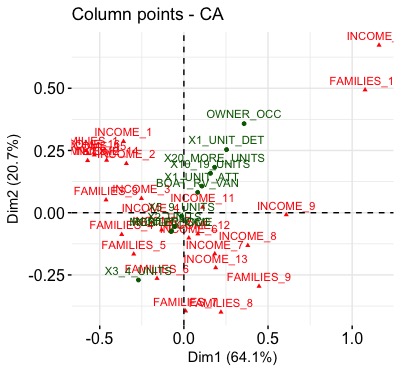
#5\_9\_UNITS 5 to 9 units

#10\_19\_UNITS 10 to 19 units

#20\_MORE\_UNITS 20 or more units

#MOBILE\_HOME Mobile home

#BOAT\_RV\_VAN Boat, RV, van, etc.



########################Lignes supplementaires

