1:

setwd("C:/Users/user/Desktop")

data0=read.csv('Agriculture.csv')

data=scale(data0[,2:13])

rownames(data)=data0[,1]

##农业基本情况和农业生产条件主成分分析

data1=data[,1:10]##农业基本情况和农业生产条件的标准化矩阵

datapr1=princomp(data1,cor=TRUE)

summary(datapr1,loadings=TRUE)

screeplot(datapr,type="lines")

##农业基本情况主成分分析

data2=data[,1:6]##农业基本情况标准化矩阵

datapr2=princomp(data2,cor=TRUE)

summary(datapr2,loadings=TRUE)

screeplot(datapr2,type="lines")

##农业基生产条件主成分分析

data3=data[,7:10]##农业生产条件标准化矩阵

datapr3=princomp(data3,cor=TRUE)

summary(datapr3,loadings=TRUE)

screeplot(datapr3,type="lines")

2:

mdata1=as.matrix(data1)

Z1=dist(mdata1, method = "euclidean")#欧氏距离

library(ggdendro)

library(ggplot2)

library(plyr)

library(ape)

war=hclust(Z1,method="ward")#欧氏距离

war[["labels"]]=data0[,1]

ggdendrogram(war, rotate = TRUE, size = 4, theme\_dendro = FALSE, color ="tomato")+labs(title="离差平方和法(欧氏距离)")

3:

matrix1=cor(data)

pcoefficient=read.csv('主成分.csv')

PCA=as.matrix(data[,1:10])%\*%as.matrix(pcoefficient)

model1=lm(formula = data[,11]~PCA)

summary(model1)

model2=lm(formula = data[,12]~PCA)

summary(model2)

cor(PCA,data[,11:12])

model3=lm(formula = data[,11]~PCA[,c(1,3)]+0)

summary(model3)

plot(model3)

model4=lm(formula = data[,11]~PCA[,c(1:2)]+0)

summary(model4)

plot(model4)

model5=lm(formula = data[2:14,11]~PCA[2:14,c(1:2)]+0)

summary(model5)

plot(model5)

model6=lm(formula = data[2:14,11]~PCA[2:14,c(1:2)])

summary(model6)

plot(model6)