Installare R

<https://www.r-project.org/>

Qualche risorsa aggiuntiva

<http://www.statmethods.net/index.html> (con vari “How to...”)

<http://www.gruppochemiometria.it/index.php/r-based-chemometric-software>

caricare pacchetto tourr, help(olive)

pacchetto Psych

head(olive)

olivenum<-olive[,c(3:10)]

animate\_xy(olive[,c(7,9,10)])

animate\_xy(olive[,c(7,9,10)],col=olive[,1])

plot(olivenum)

plot(olivenum[,c(1:3)])

olidim(olive)

n <- nrow(olive)

p <- ncol(olive)

medie <- colMeans(olive[,c(3:10)])

scarto <-sapply (olivenum, sd)

describe(olivenum)

describeBy(olivenum,olive[2])

R <- cor(olive[,c(3:10)])

eigen(R)

autoval <- eigen(R)$values

autovec <- eigen(R)$vectors

pvarsp = autoval/p

pvarspcum = cumsum(pvarsp)

plot(autoval, main="Scree Diagram", xlab="Numero Componenti", ylab="Autovalori")

abline(h = 1, lwd = 3, col = "red")

olive.scale <- scale(olive[,c(3:10)], T, T)

punteggi <- olive.scale%\*%autovec[,1:3]

plot (punteggi, col = olive [,1], main="Dispersione dei punteggi", xlab="PC1", ylab="PC2")

text(punteggi, rownames(olive[,c(3:10)]))

abline (v=0, h=0, col="red")

princomp(olive[,c(3:10)], cor=T)

summary(princomp(olive[,c(3:10)], cor=T))

screeplot(princomp(olive[,c(3:10)], cor=T))

plot(princomp(olive[,c(3:10)], cor=T)$scores)

text(princomp(olive[,c(3:10)], cor=T)$scores, rownames(olive[,c(3:10)]))

abline(h=0, v=0)

plot(princomp(olive[,c(3:10)], cor=T)$scores, col=olive[,1])

describeBy(punteggi,olive[2])

describeBy(punteggiolive,olive[2])