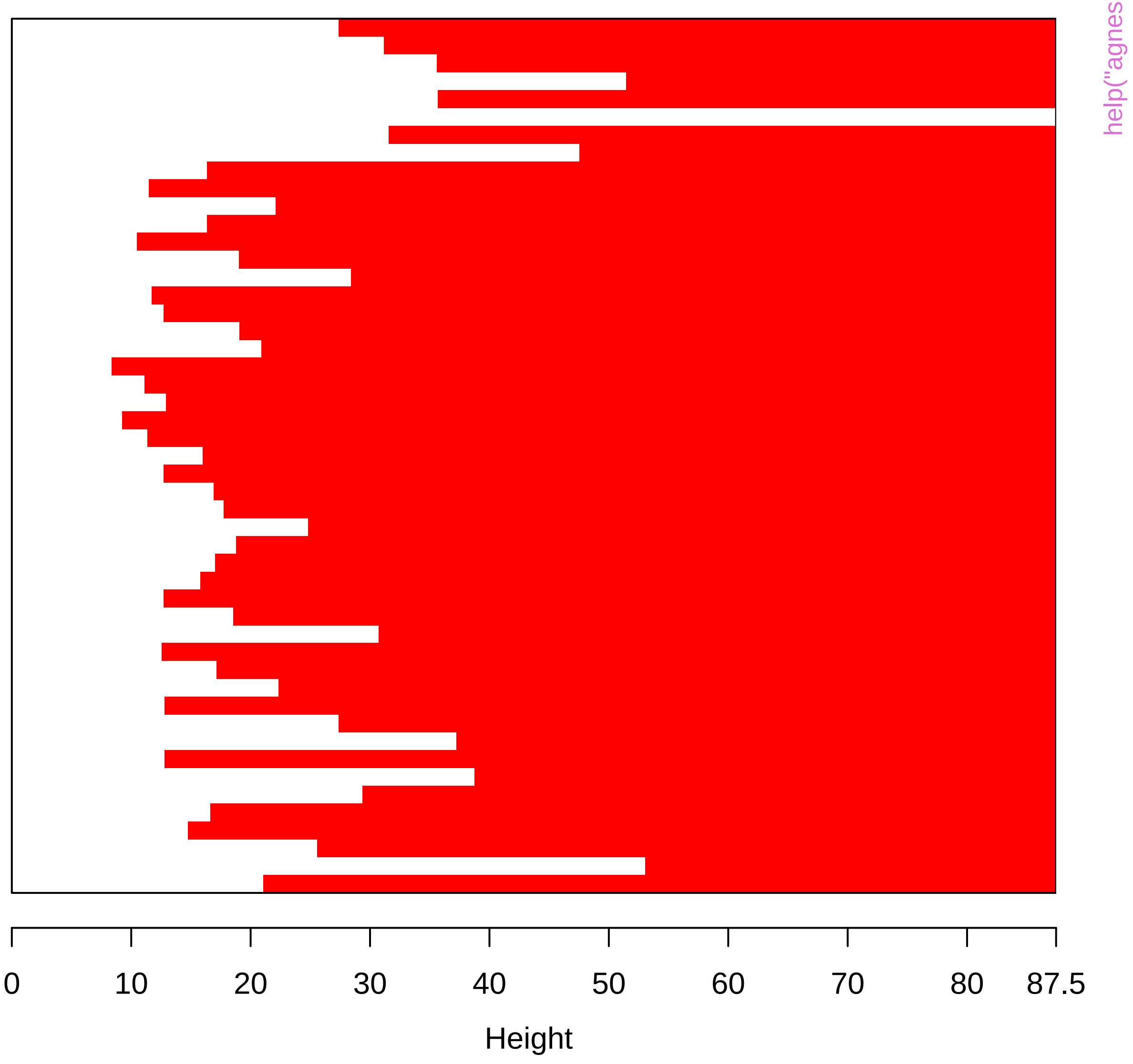
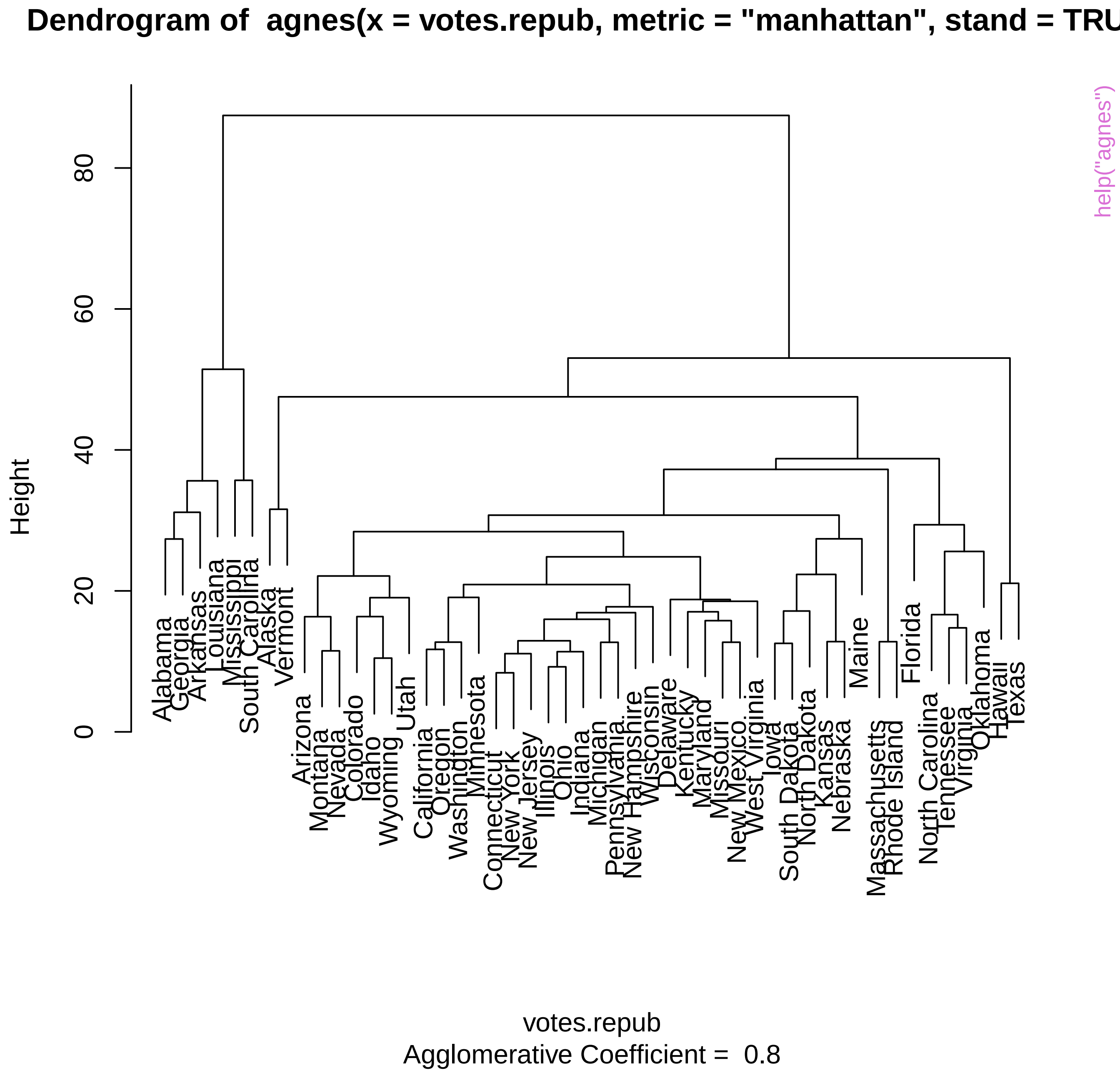
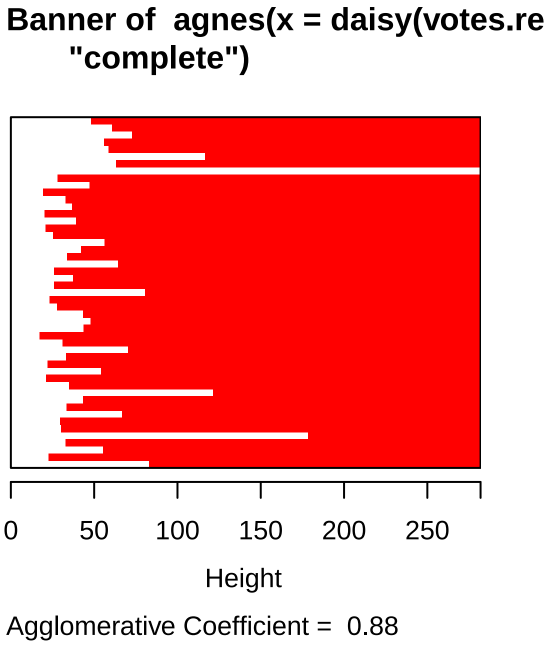
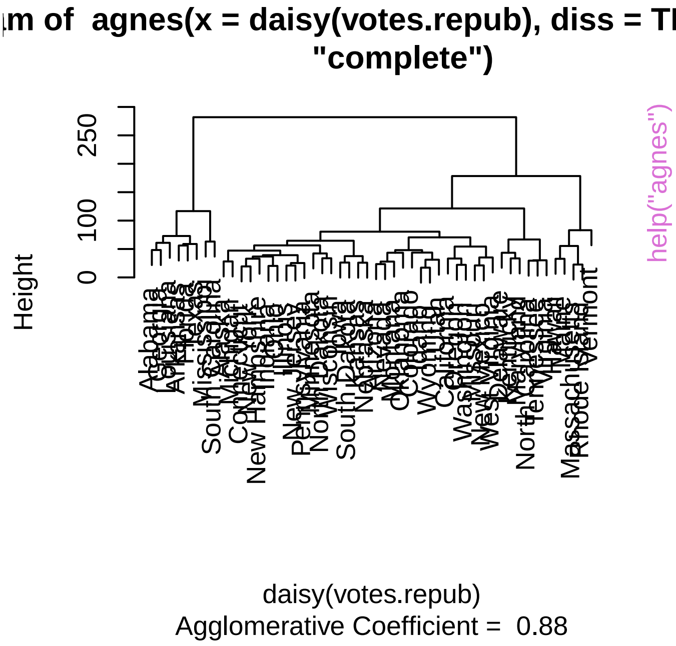
Banner of agnes(x = votes.repub, metric = "manhattan", stand = TR

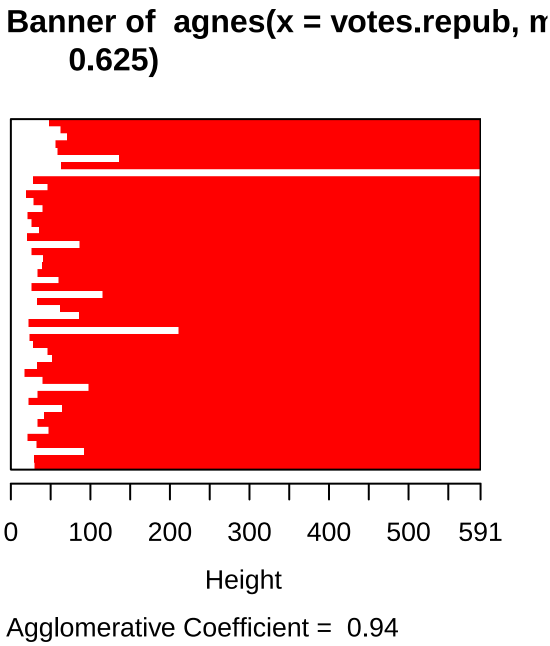


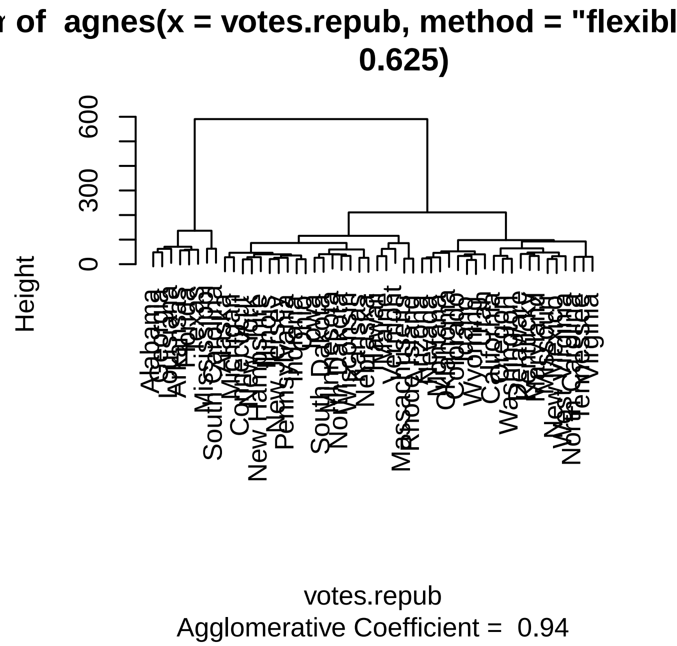
Agglomerative Coefficient = 0.8

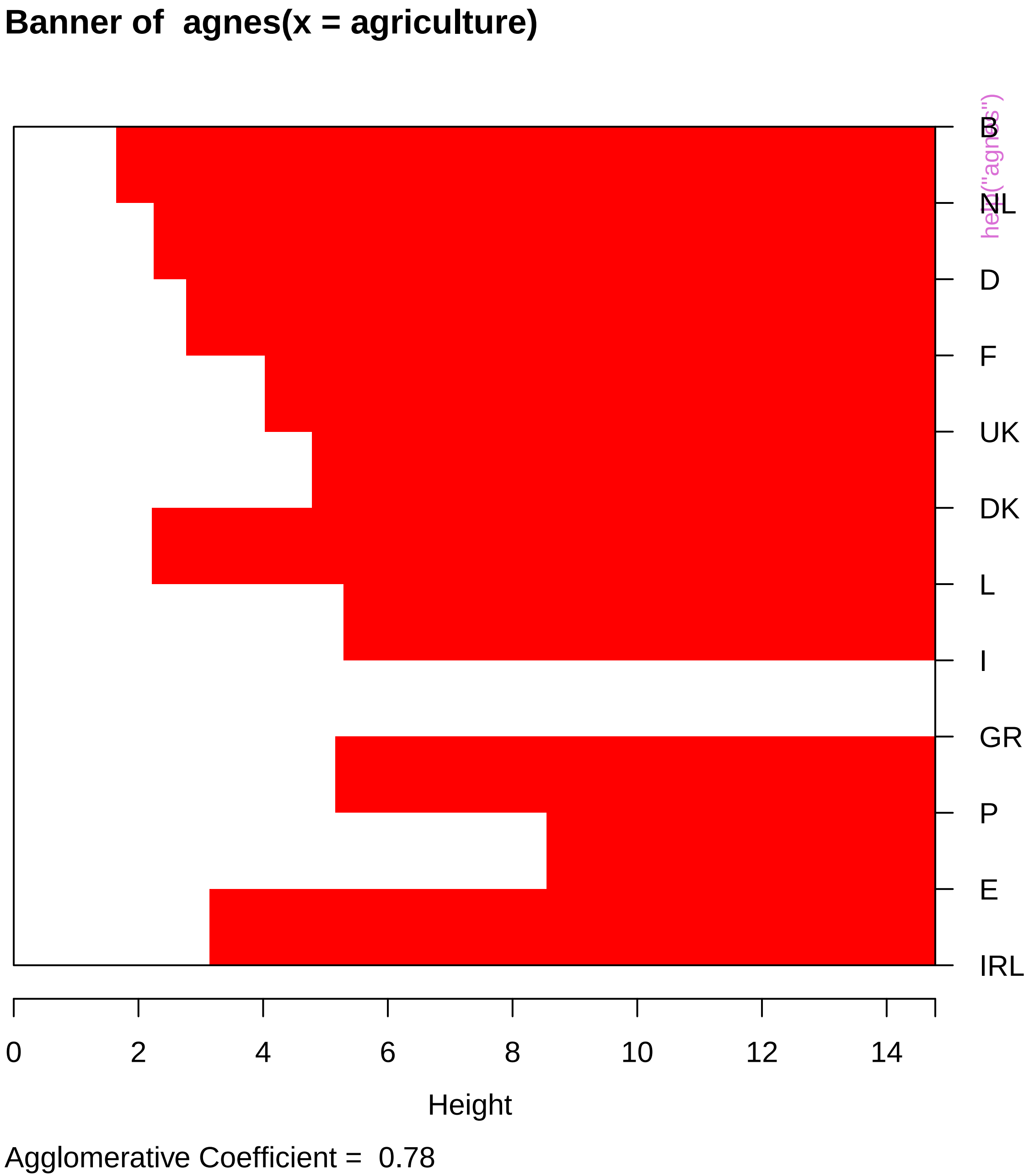

Dendrogram of agnes(x = votes.repub, metric = "manhattan", stand = TRU
help("agnes")
Height
0
20
40
60
80
Alabama
Georgia
Arkansas
Louisiana
Mississippi
South Carolina
Alaska
Vermont
Arizona
Montana
Nevada
Colorado
Idaho
Wyoming
Utah
California
Oregon
Washington
Minnesota
Connecticut
New York
New Jersey
Illinois
Ohio
Indiana
Michigan
Pennsylvania
New Hampshire
Wisconsin
Delaware
Kentucky
Maryland
Missouri
New Mexico
West Virginia
Iowa
South Dakota
North Dakota
Kansas
Nebraska
Maine
Massachusetts
Rhode Island
Florida
North Carolina
Tennessee
Virginia
Oklahoma
Hawaii
Texas
votes.repub
Agglomerative Coefficient = 0.8


Banner of agnes(x = daisy(votes.re
"complete")
0
50
100
150
200
250
Height
Agglomerative Coefficient = 0.88

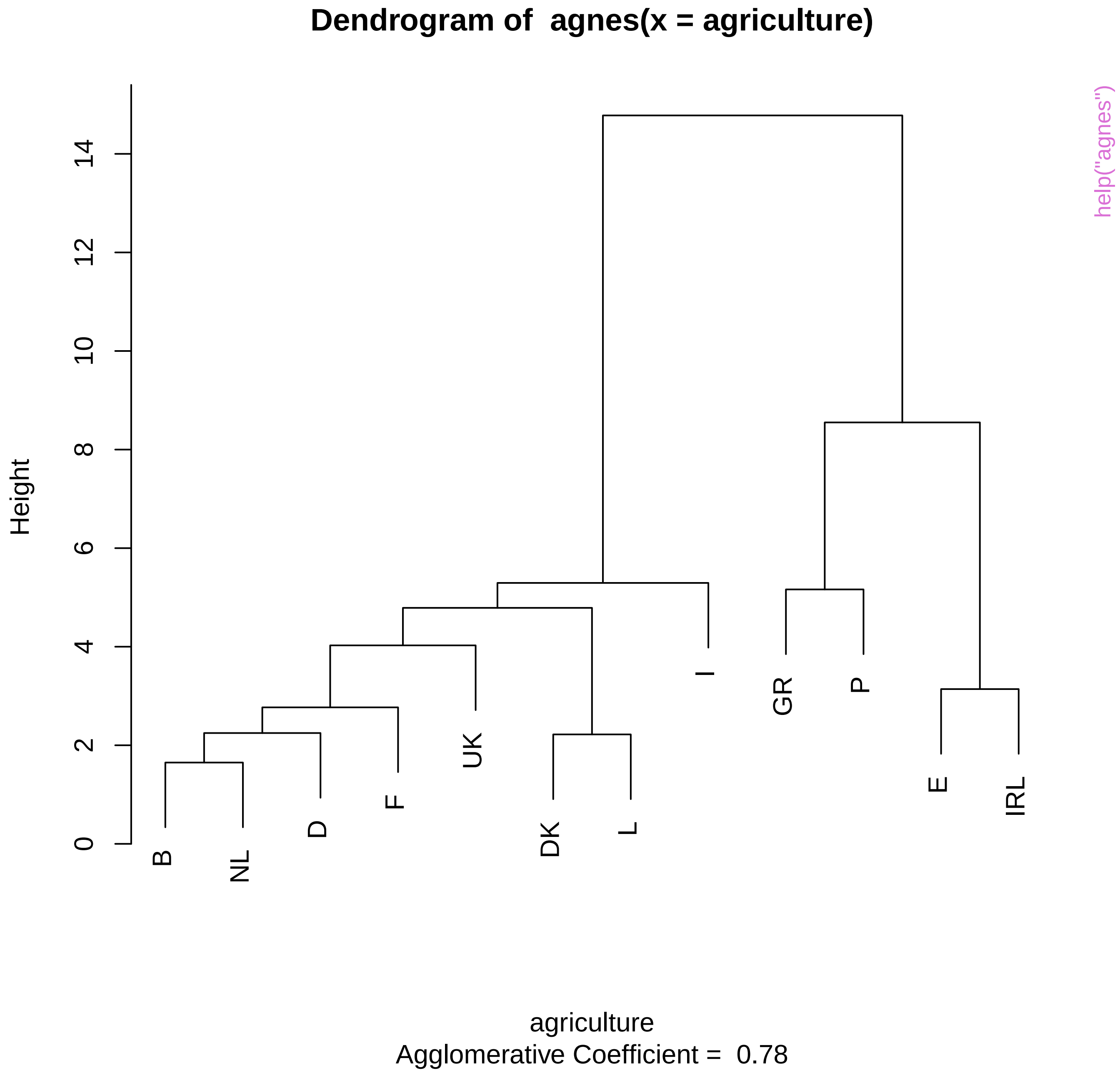

m of agnes(x = daisy(votes.repub), diss = T
"complete")
Height
0
100
250
daisy(votes.repub)
Agglomerative Coefficient = 0.88
help("agnes")

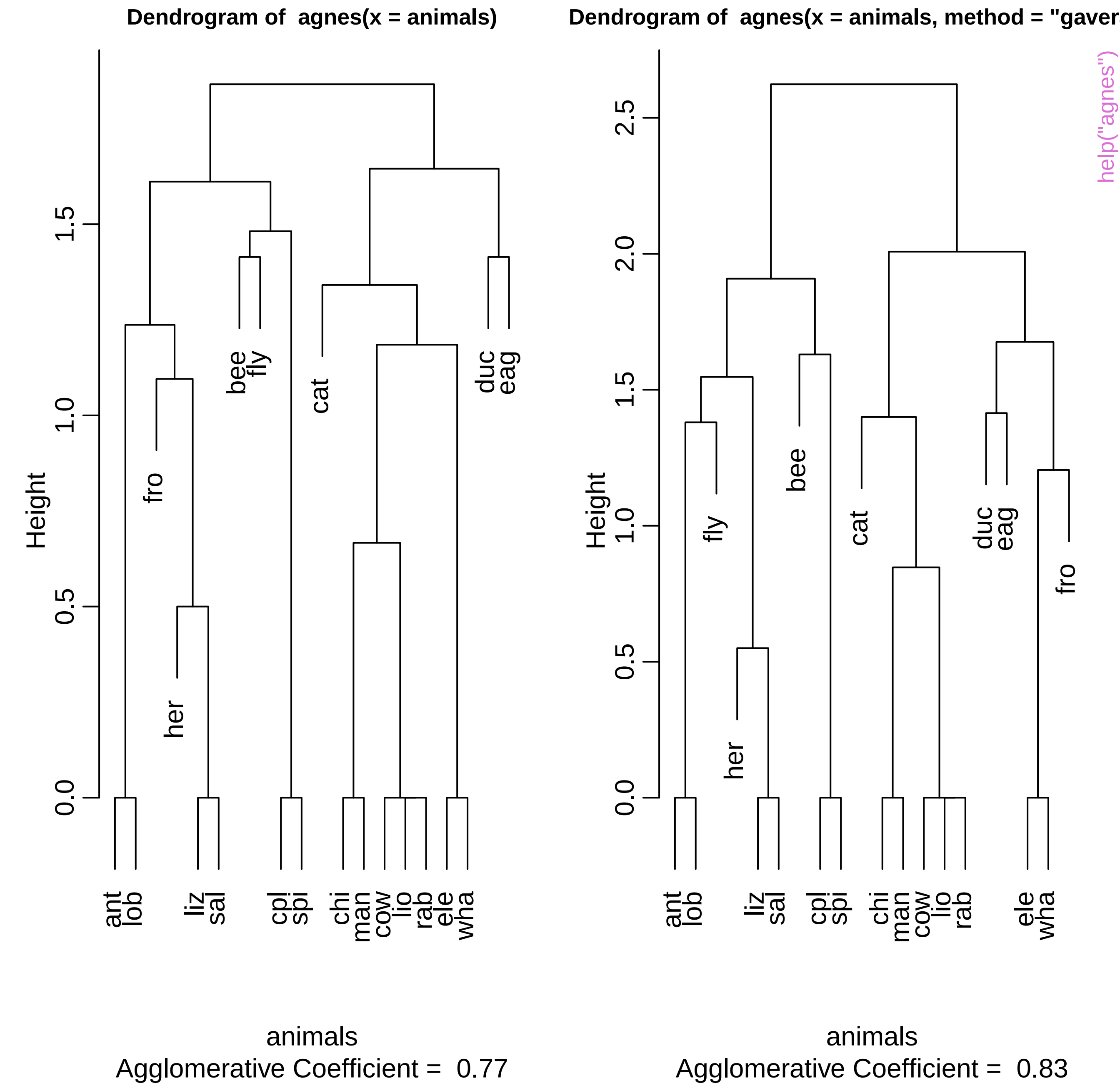

Banner of agnes(x = votes.repub, m
0.625)
0
100
200
300
400
500
591
Height
Agglomerative Coefficient = 0.94


of agnes(x = votes.repub, method = "flexibl
0.625)
Height
0
300
600
votes.repub
Agglomerative Coefficient = 0.94

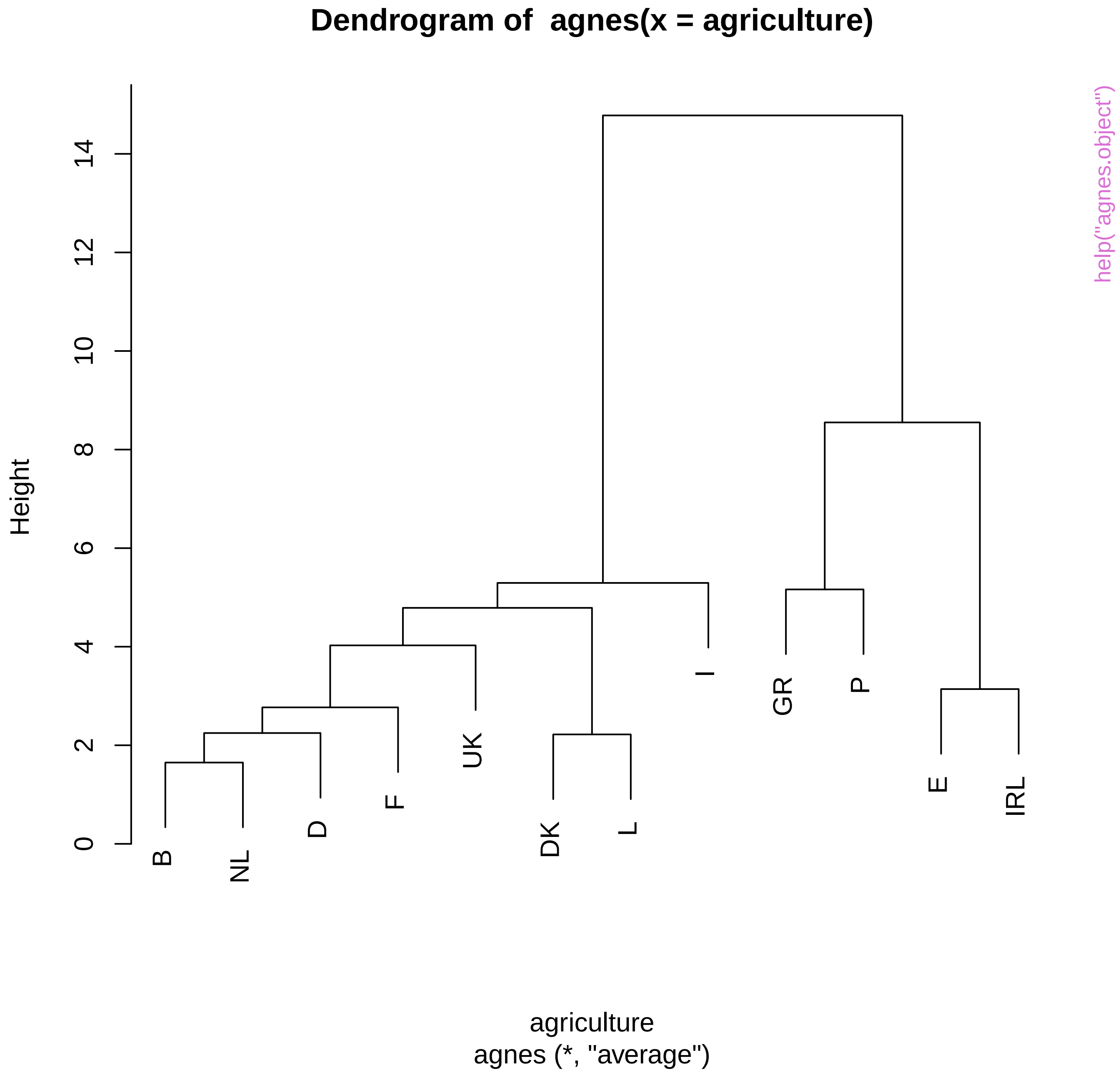


Banner of agnes(x = agriculture)
B
NL
D
F
UK
DK
L
I
GR
P
E
IRL
hclust("agnes")
0
2
4
6
8
10
12
14
Height
Agglomerative Coefficient = 0.78

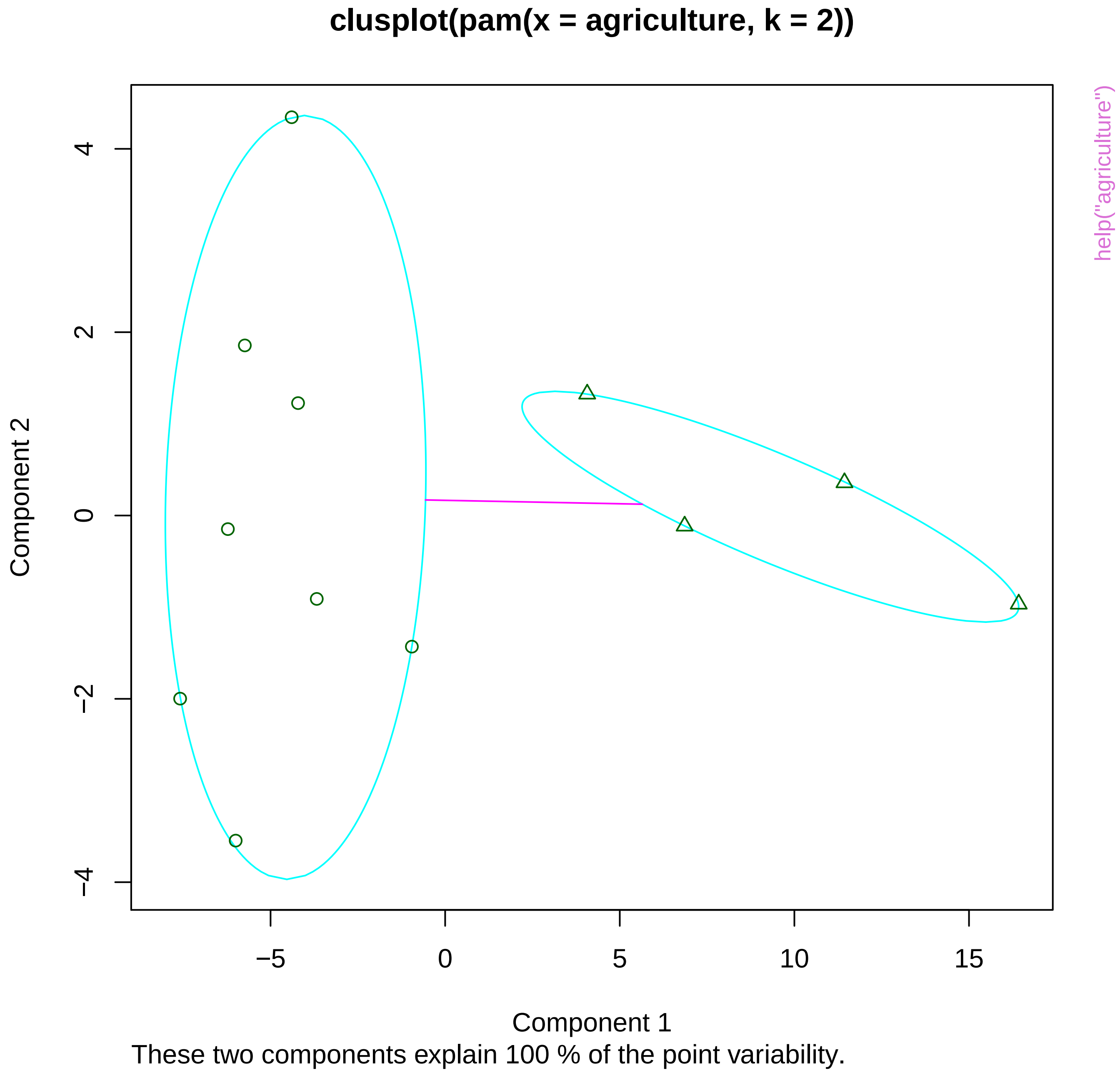

Dendrogram of agnes(x = agriculture)
help("agnes")
Height
0
2
4
6
8
10
12
14
B
NL
D
F
UK
DK
L
I
GR
P
E
IRL
agriculture
Agglomerative Coefficient = 0.78

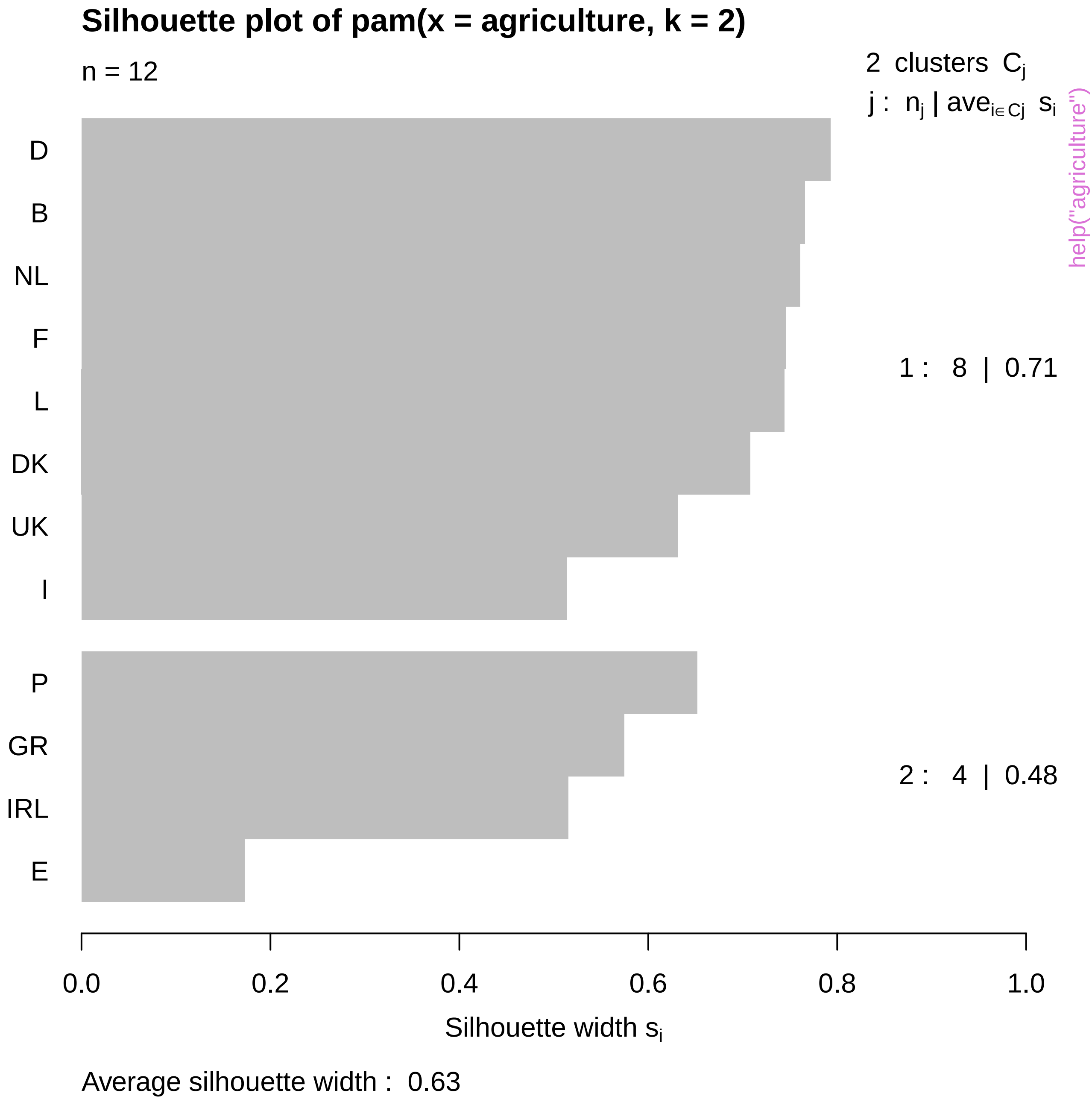


Dendrogram of agnes(x = animals)
Dendrogram of agnes(x = animals, method = "gaver
help("agnes")
Height
0.0
0.5
1.0
1.5
2.0
2.5
ant
lob
liz
sal
cpl
spi
chi
man
cow
lio
rab
ele
wha
her
fro
bee
fly
cat
duc
eag
animals
Agglomerative Coefficient = 0.77
Agglomerative Coefficient = 0.83

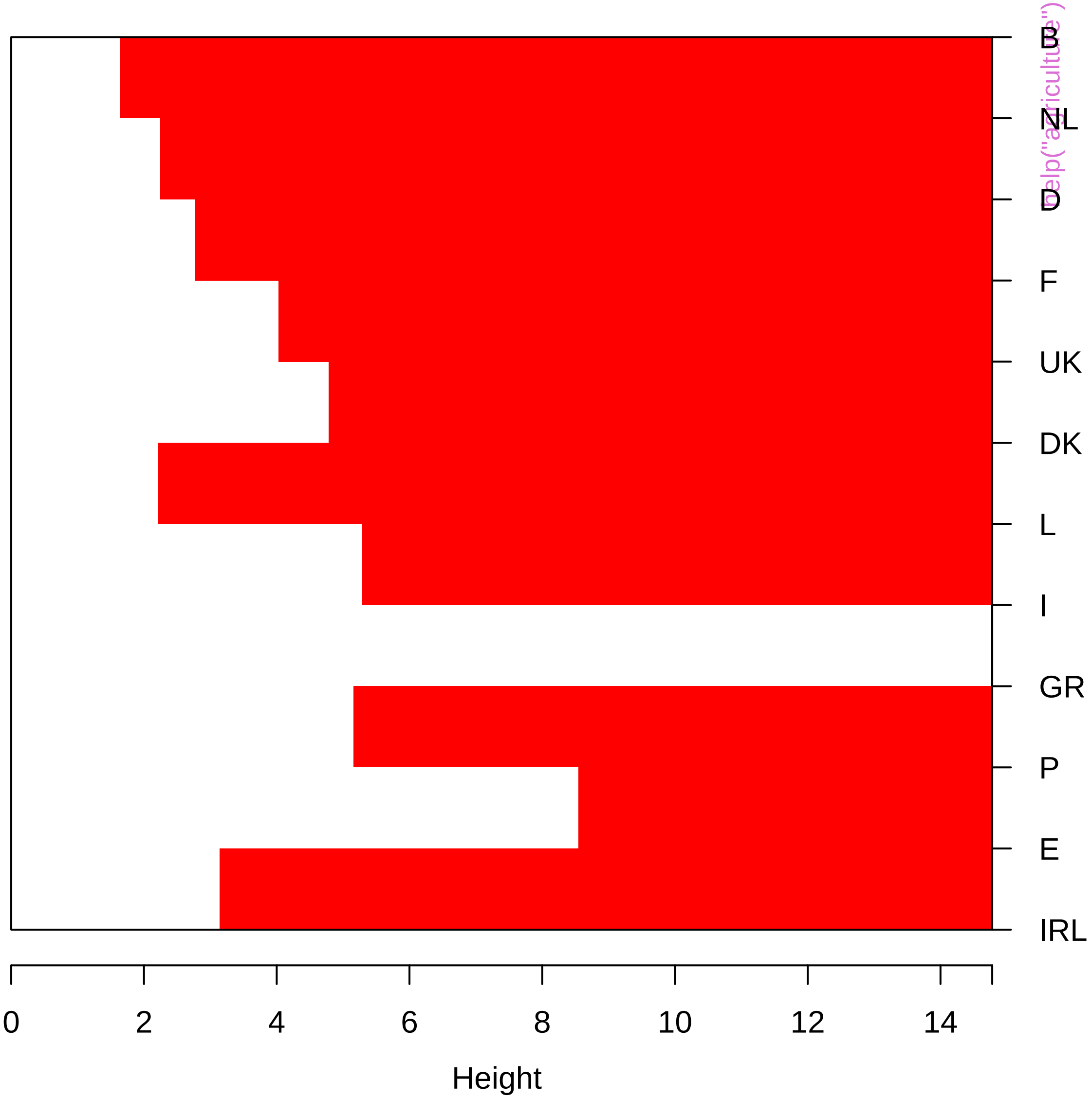


Dendrogram of agnes(x = agriculture)
Height
0
2
4
6
8
10
12
14
B
NL
D
F
UK
DK
L
I
GR
P
E
IRL
agriculture
agnes (*, "average")
help("agnes.object")

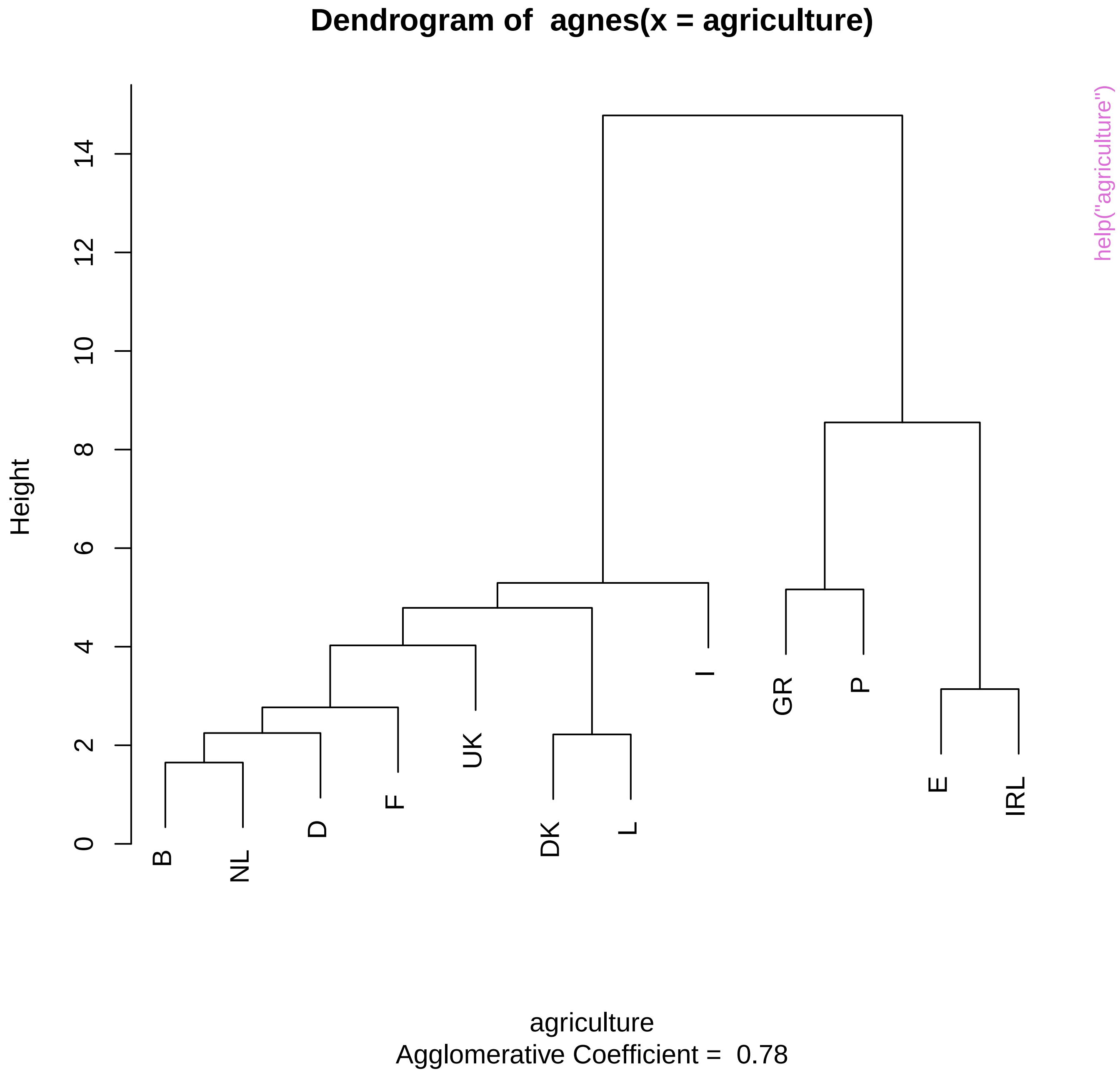

clusplot(pam(x = agriculture, k = 2))
Component 1
Component 2
These two components explain 100 % of the point variability.
help("agriculture")
−5
0
5
10
15
−4
−2
0
2
4


Silhouette plot of pam(x = agriculture, k = 2)
n = 12
2 clusters C_j
j : n_j | $\text{ave}_{i \in C_j}$ s_i
D
B
NL
F
L
DK
UK
I
P
GR
IRL
E
1 : 8 | 0.71
2 : 4 | 0.48
help("agriculture")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.63

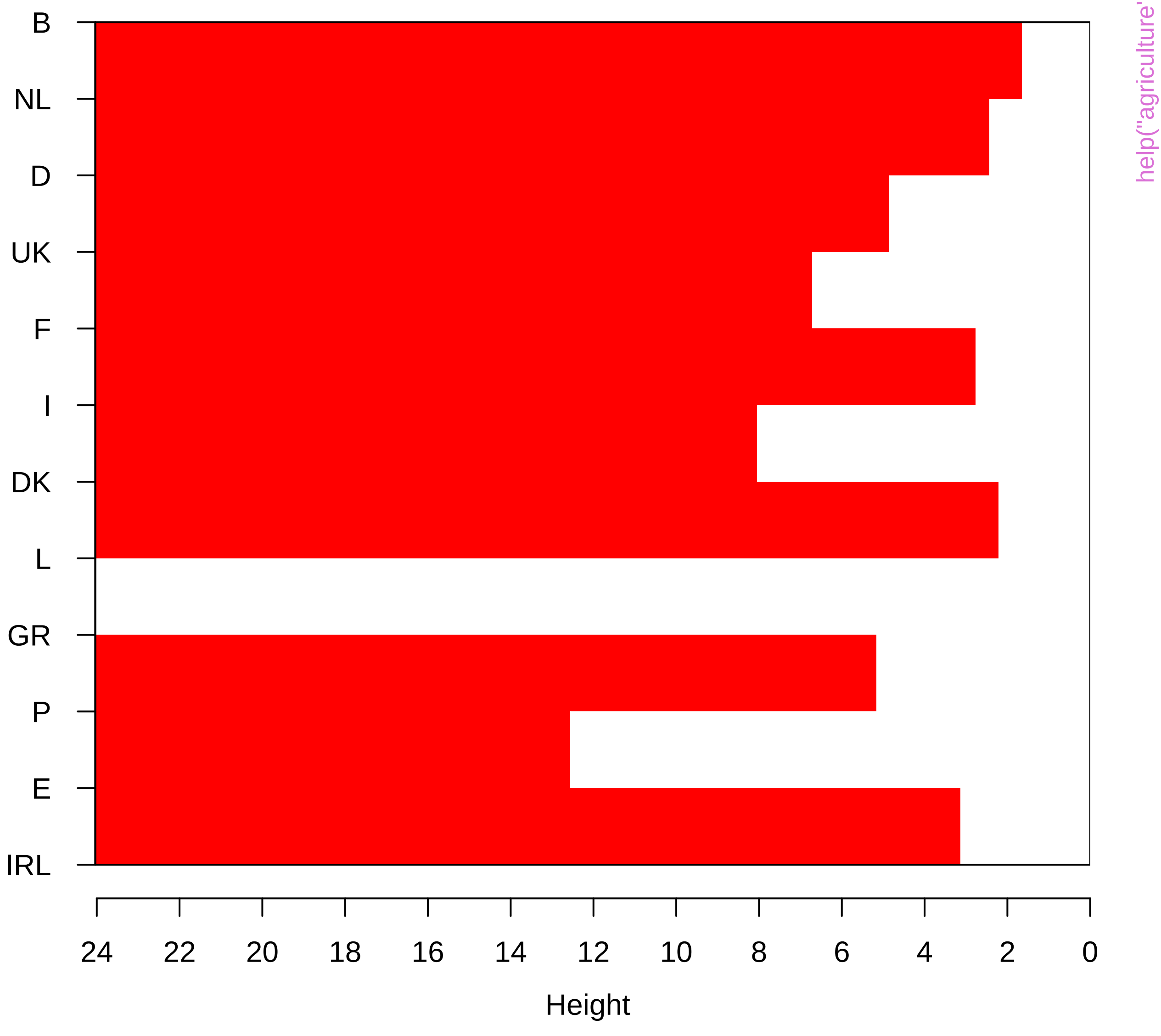
Banner of agnes(x = agriculture)



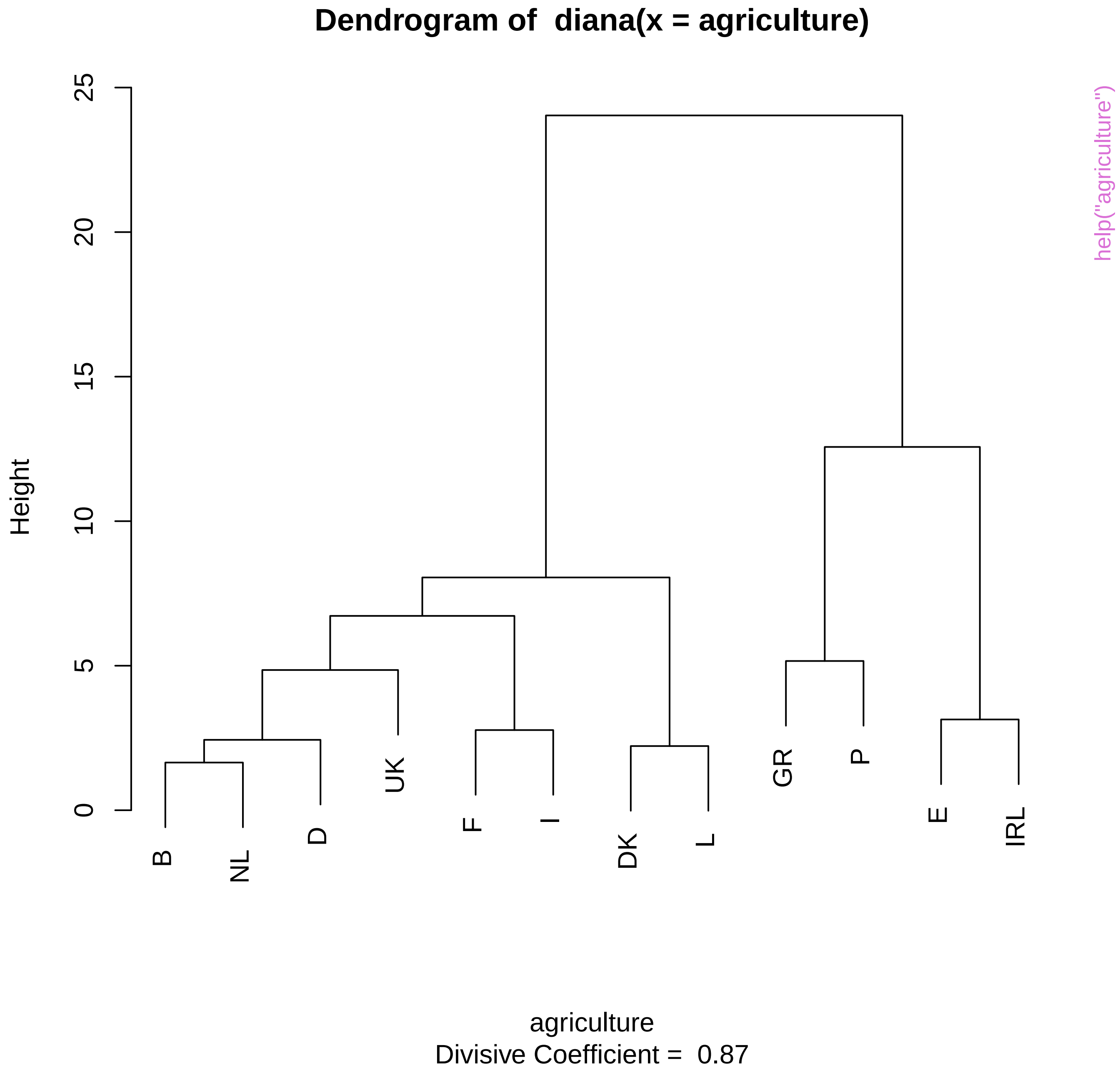
Agglomerative Coefficient = 0.78

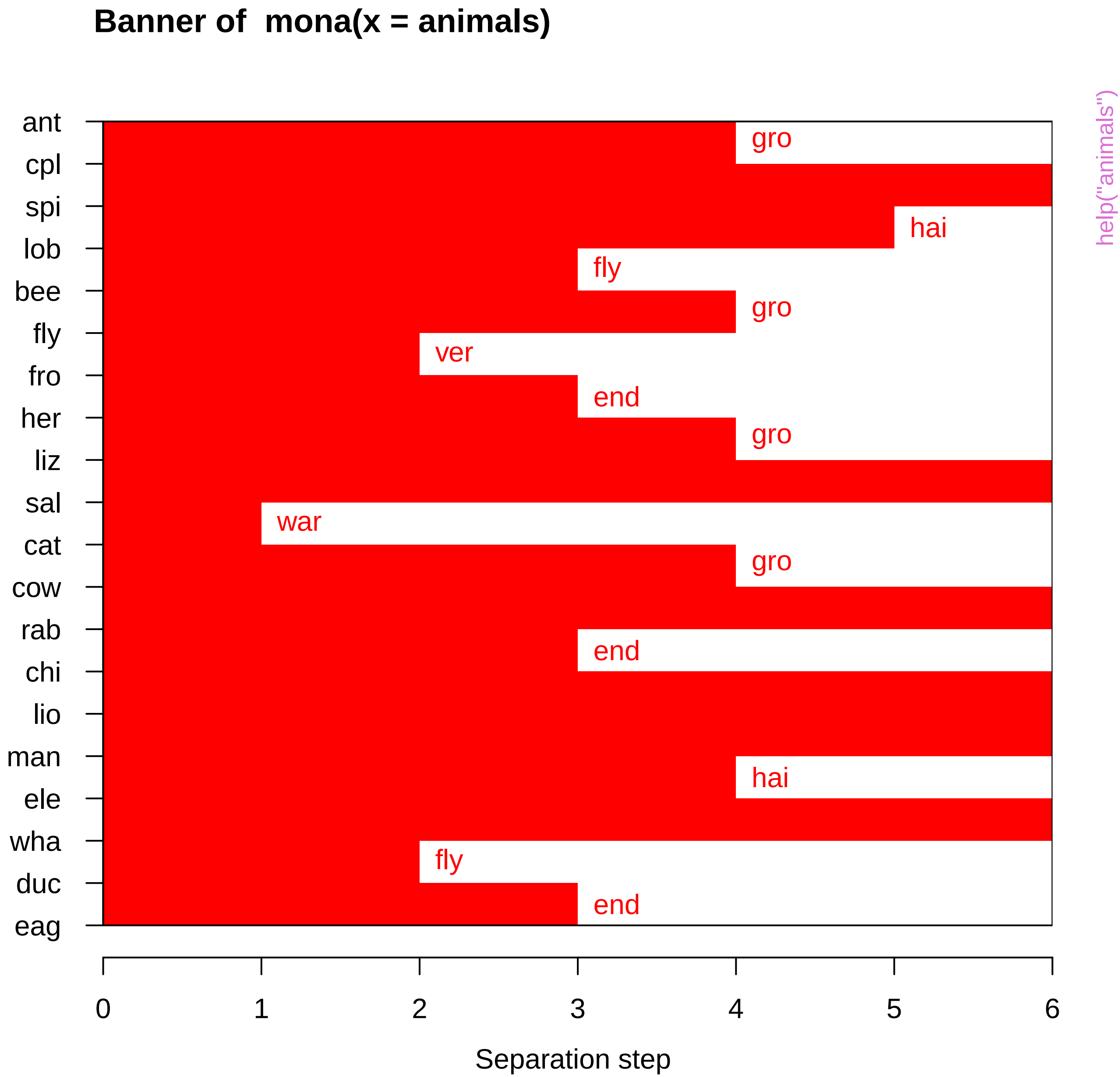

Dendrogram of agnes(x = agriculture)
Height
0
2
4
6
8
10
12
14
B
NL
D
F
UK
DK
L
I
GR
P
E
IRL
help("agriculture")
agriculture
Agglomerative Coefficient = 0.78

Banner of diana(x = agriculture)

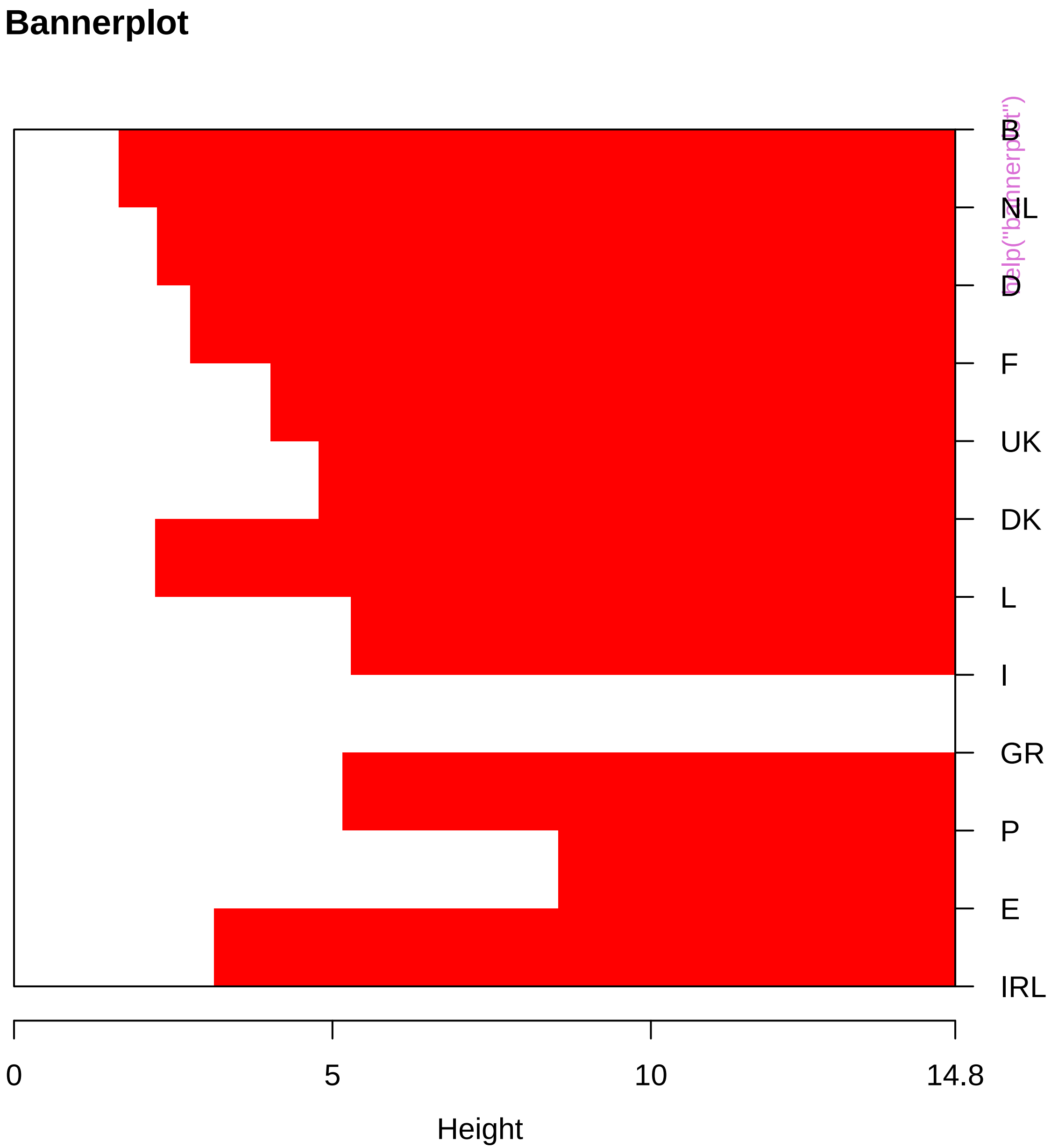


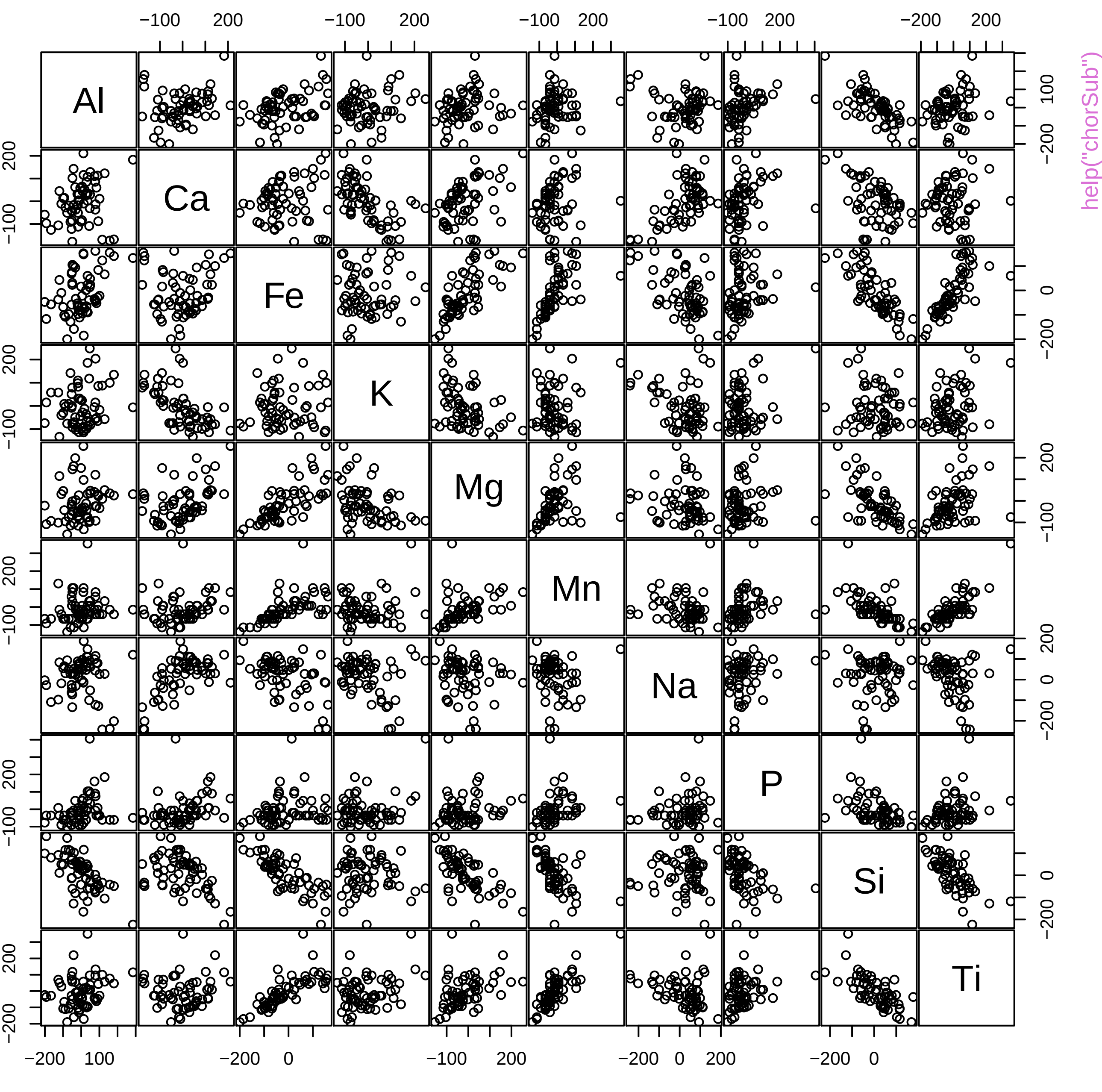
Divisive Coefficient = 0.87

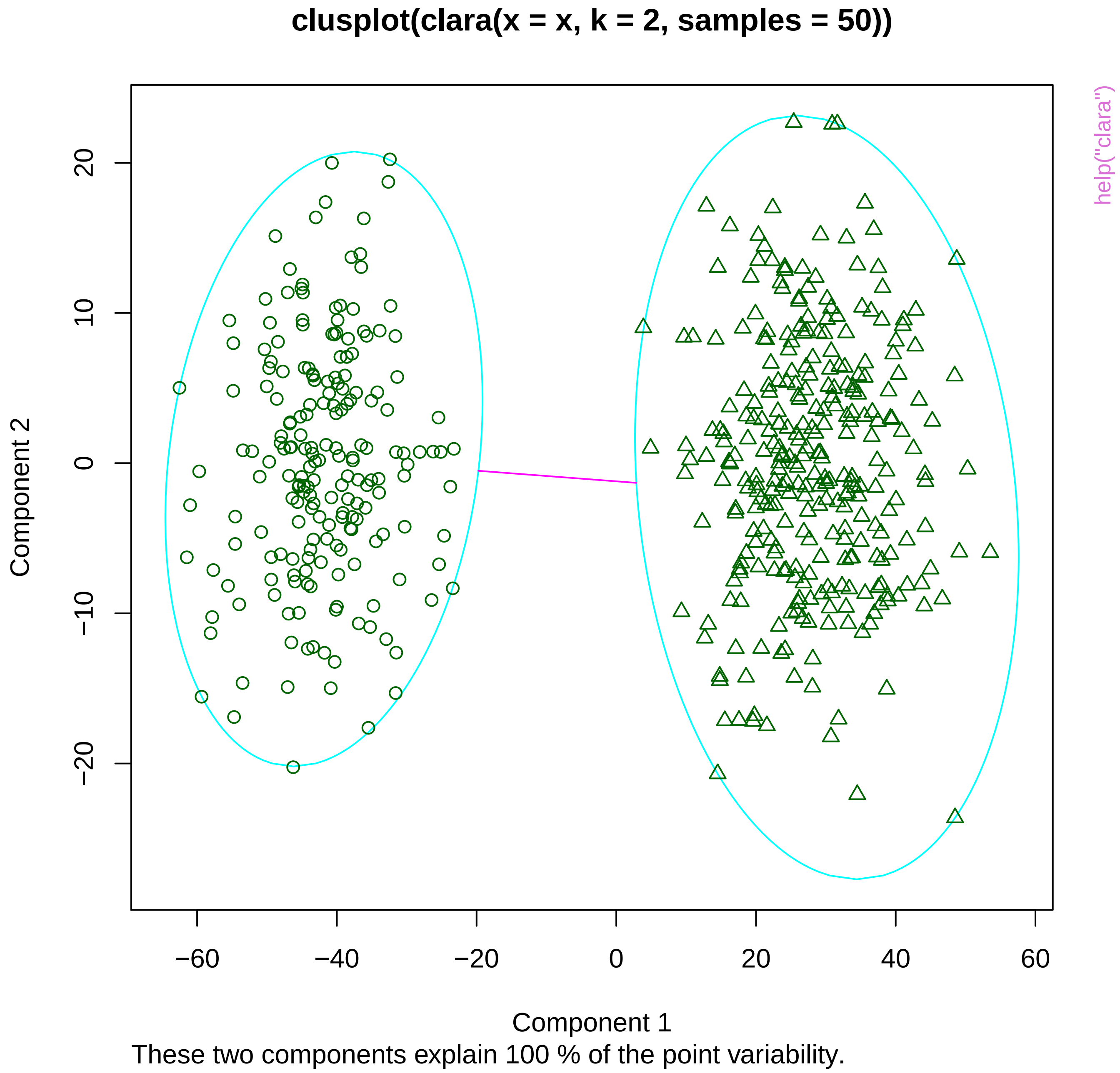

Dendrogram of diana(x = agriculture)
Height
0
5
10
15
20
25
B
NL
D
UK
F
I
DK
L
GR
P
E
IRL
help("agriculture")
agriculture
Divisive Coefficient = 0.87

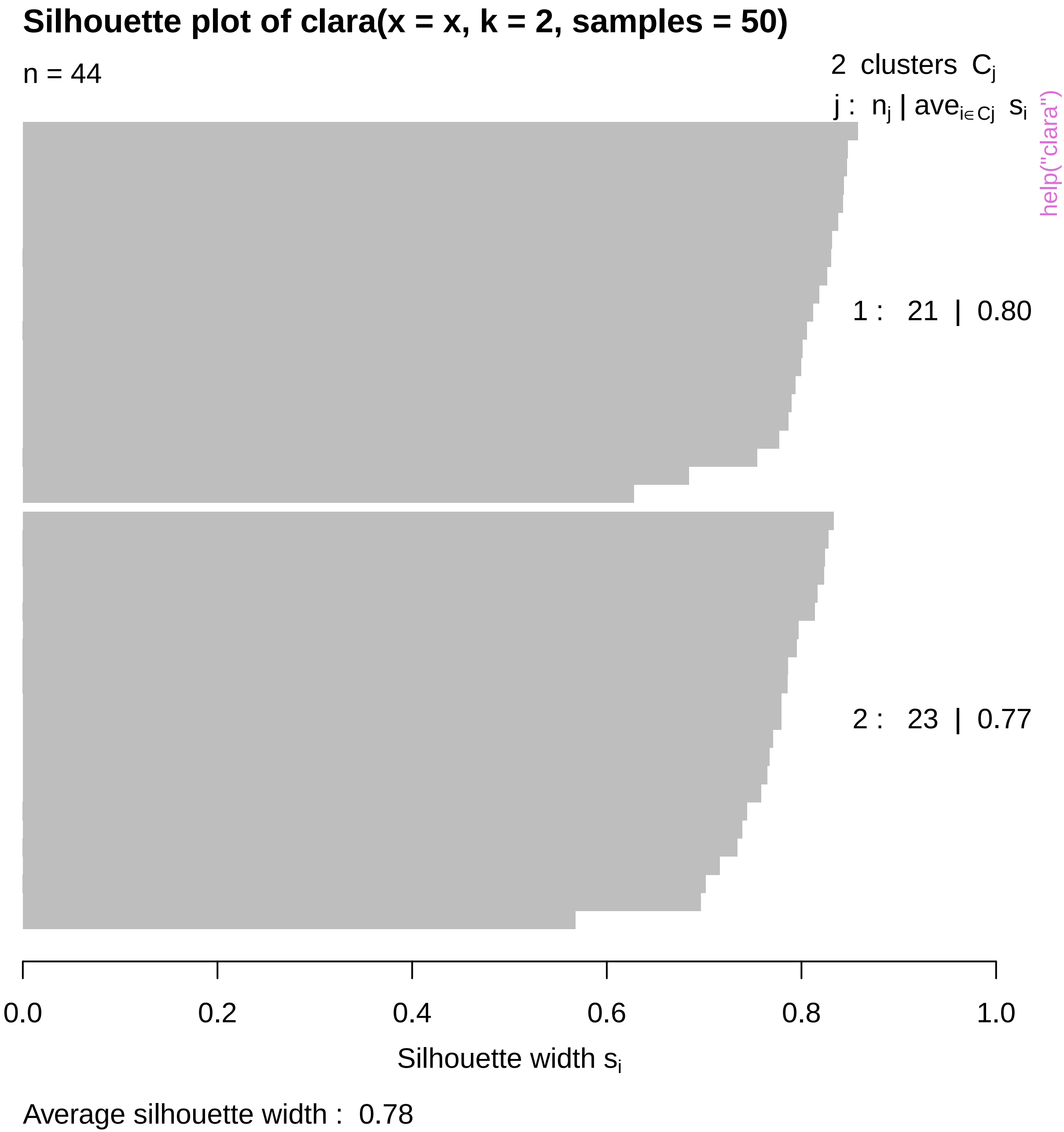


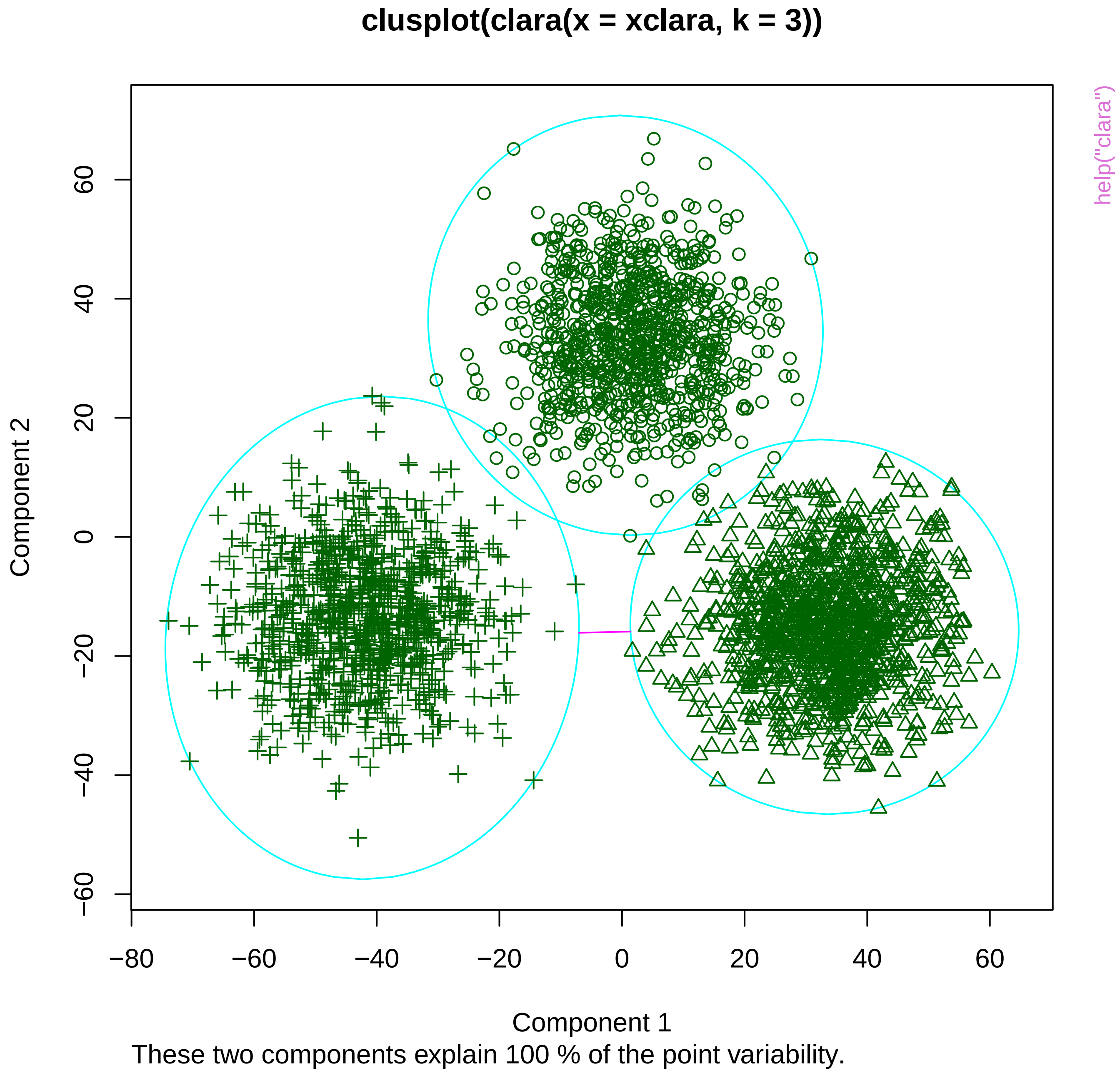
Banner of mona(x = animals)
ant
cpl
spi
lob
bee
fly
fro
her
liz
sal
cat
cow
rab
chi
lio
man
ele
wha
duc
eag
gro
hai
fly
gro
ver
end
gro
war
gro
end
hai
fly
end
0
1
2
3
4
5
6
Separation step
help("animals")

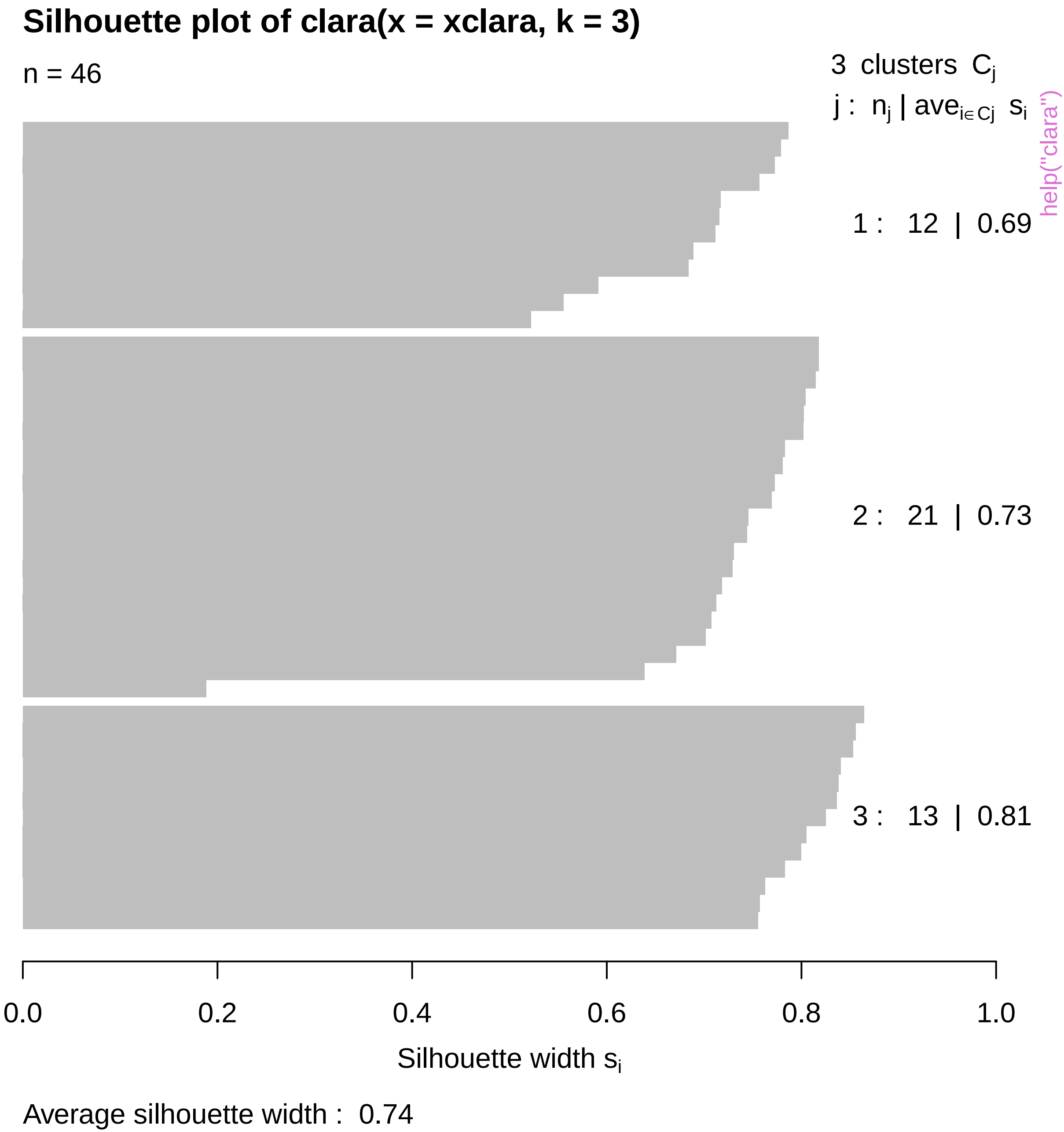

Bannerplot
help("bannerplot")
B
NL
D
F
UK
DK
L
I
GR
P
E
IRL
0
5
10
14.8
Height

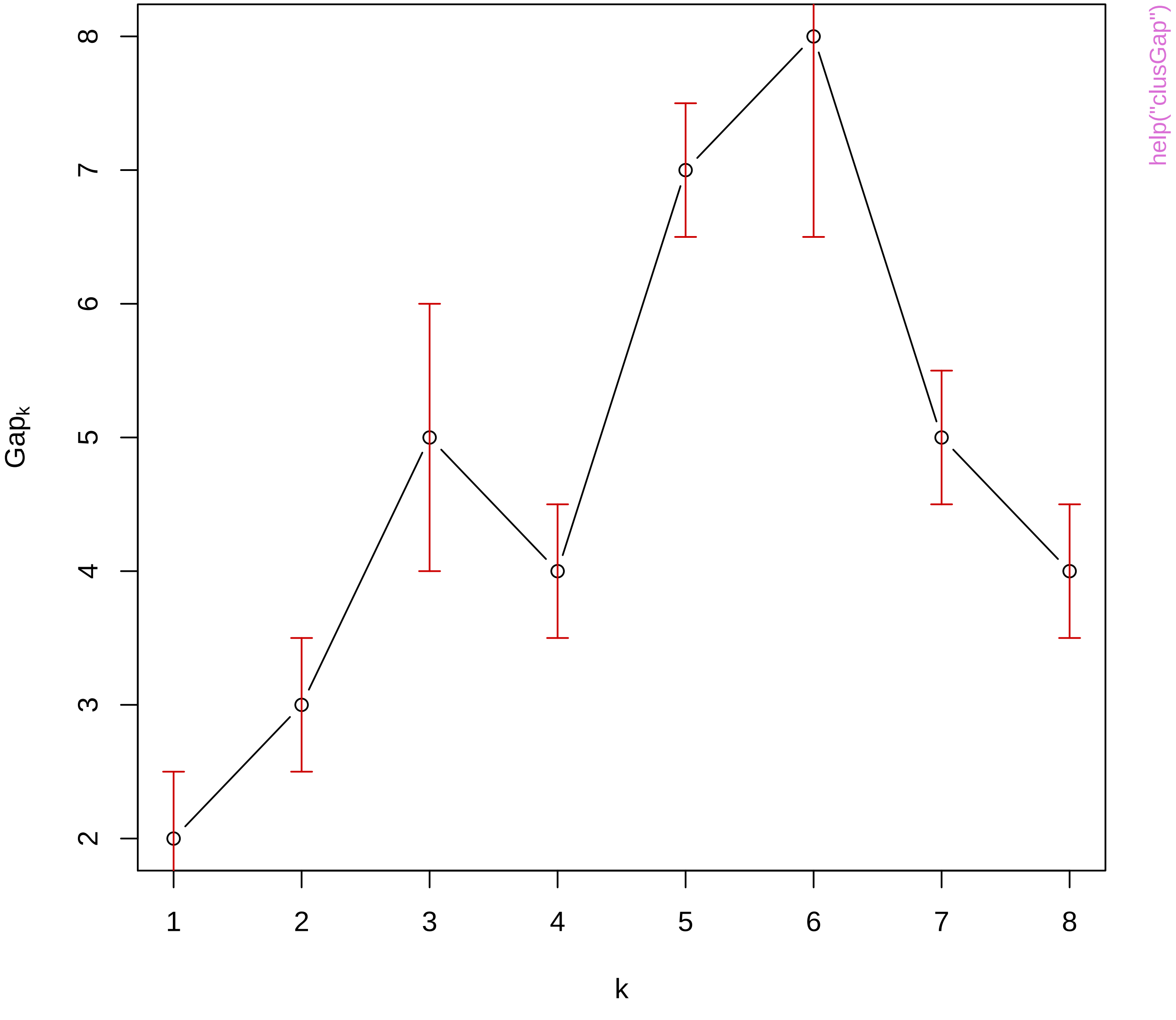

Al
Ca
Fe
K
Mg
Mn
Na
P
Si
Ti
help("chorSub")


clusplot(clara(x = x, k = 2, samples = 50))
Component 1
Component 2
−60
−40
−20
0
20
40
60
20
10
0
−10
−20
These two components explain 100 % of the point variability.
help("clara")

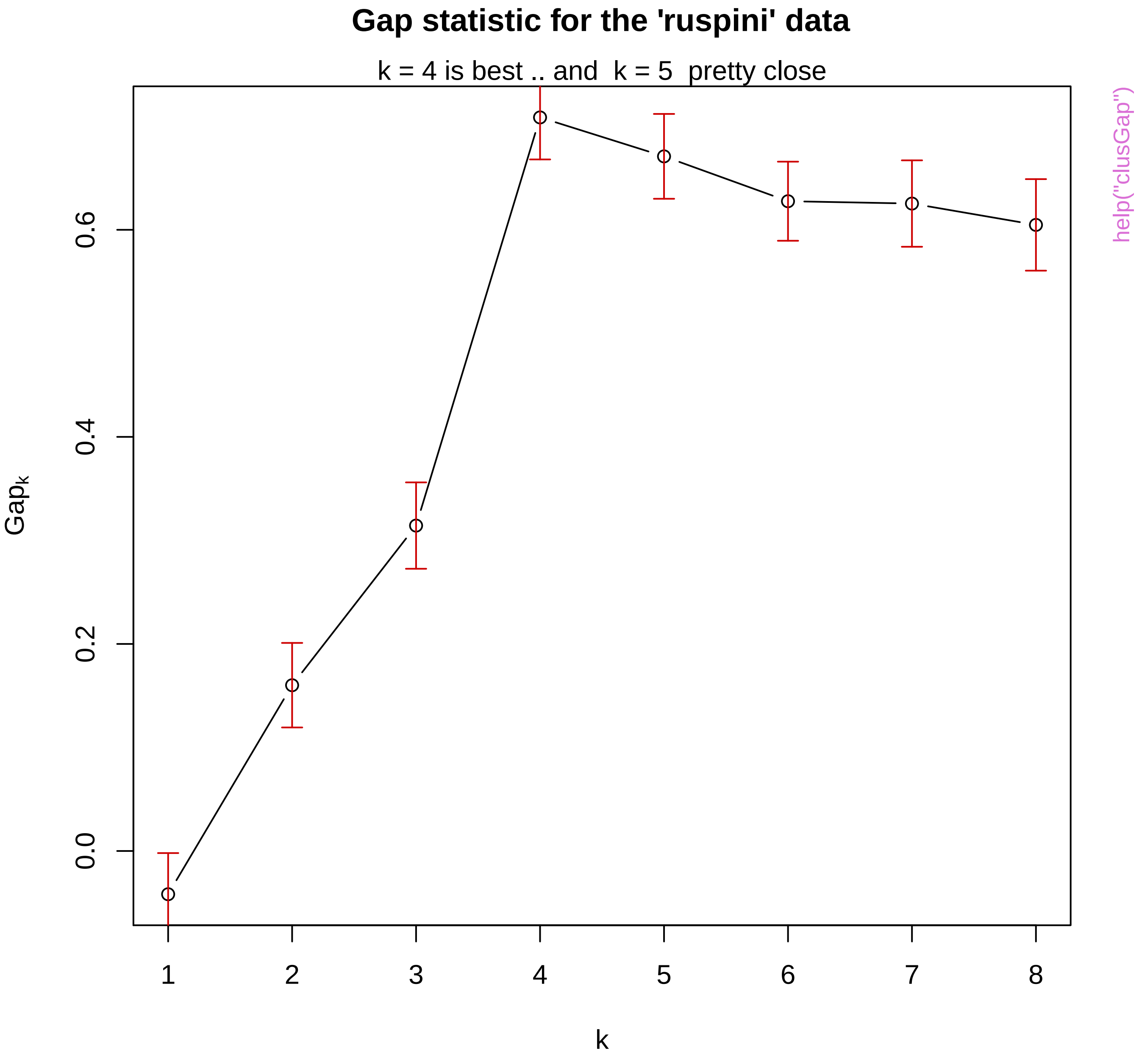

Silhouette plot of clara(x = x, k = 2, samples = 50)
n = 44
2 clusters C_j
j : n_j | $\text{ave}_{i \in C_j}$ s_i
help("clara")
1 : 21 | 0.80
2 : 23 | 0.77
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.78


clusplot(clara(x = xclara, k = 3))
help("clara")
Component 2
60
40
20
0
−20
−40
−60
−80
−60
−40
−20
0
20
40
60
Component 1
These two components explain 100 % of the point variability.

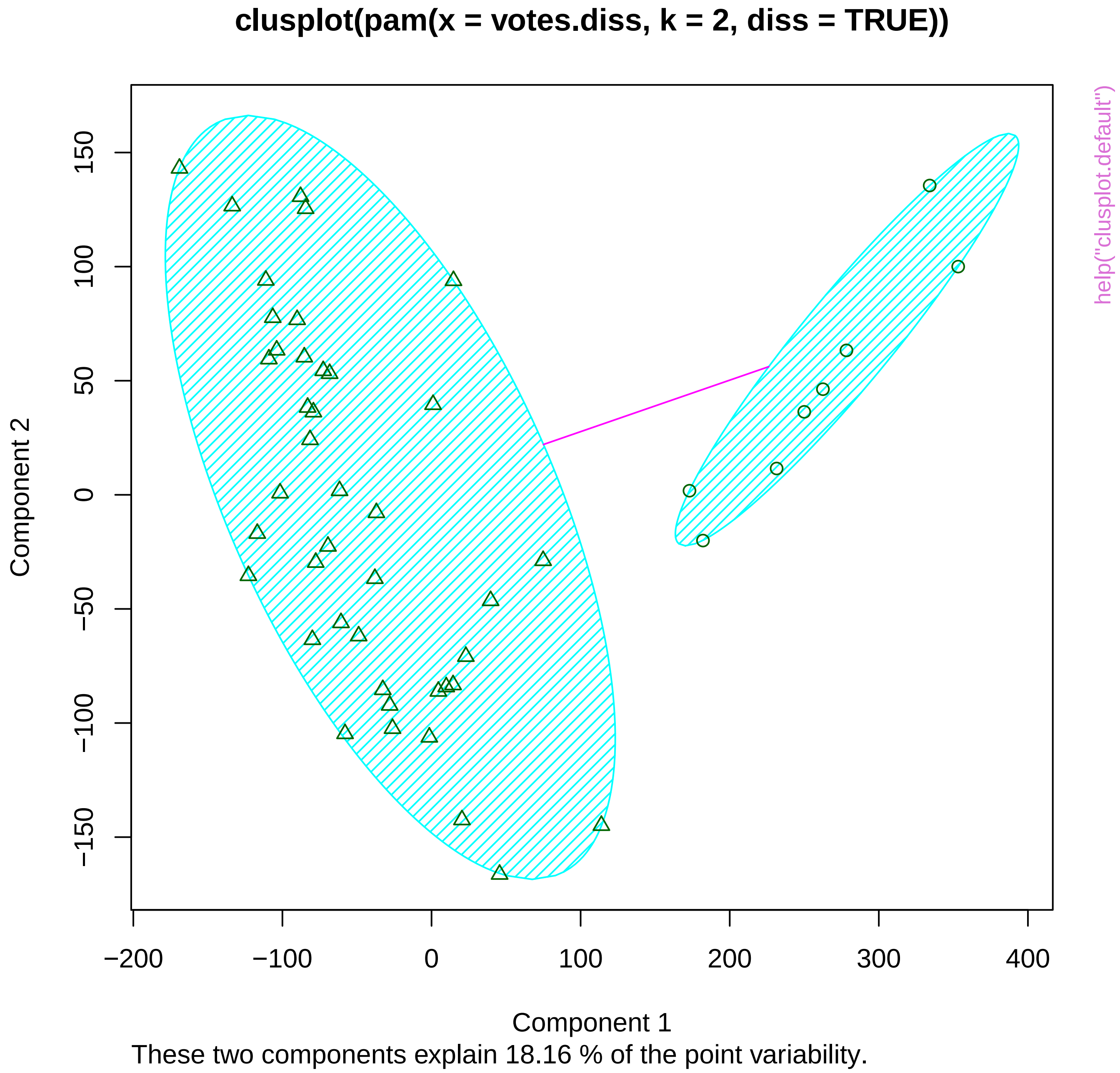

Silhouette plot of clara(x = xclara, k = 3)
n = 46
3 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
1 : 12 | 0.69
2 : 21 | 0.73
3 : 13 | 0.81
help("clara")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.74



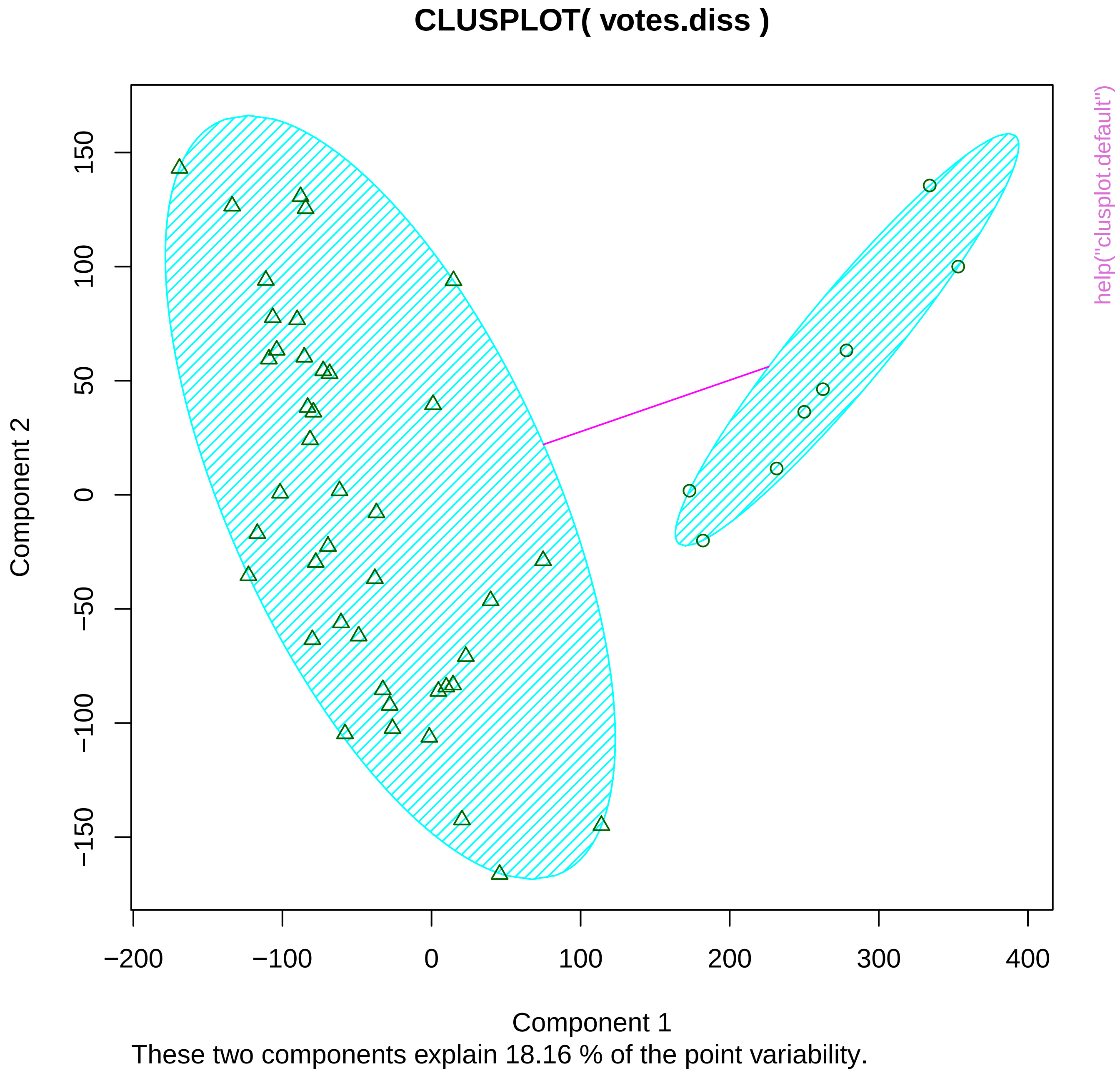
Gap$_k$
k
1
2
3
4
5
6
7
8
help("clusGap")

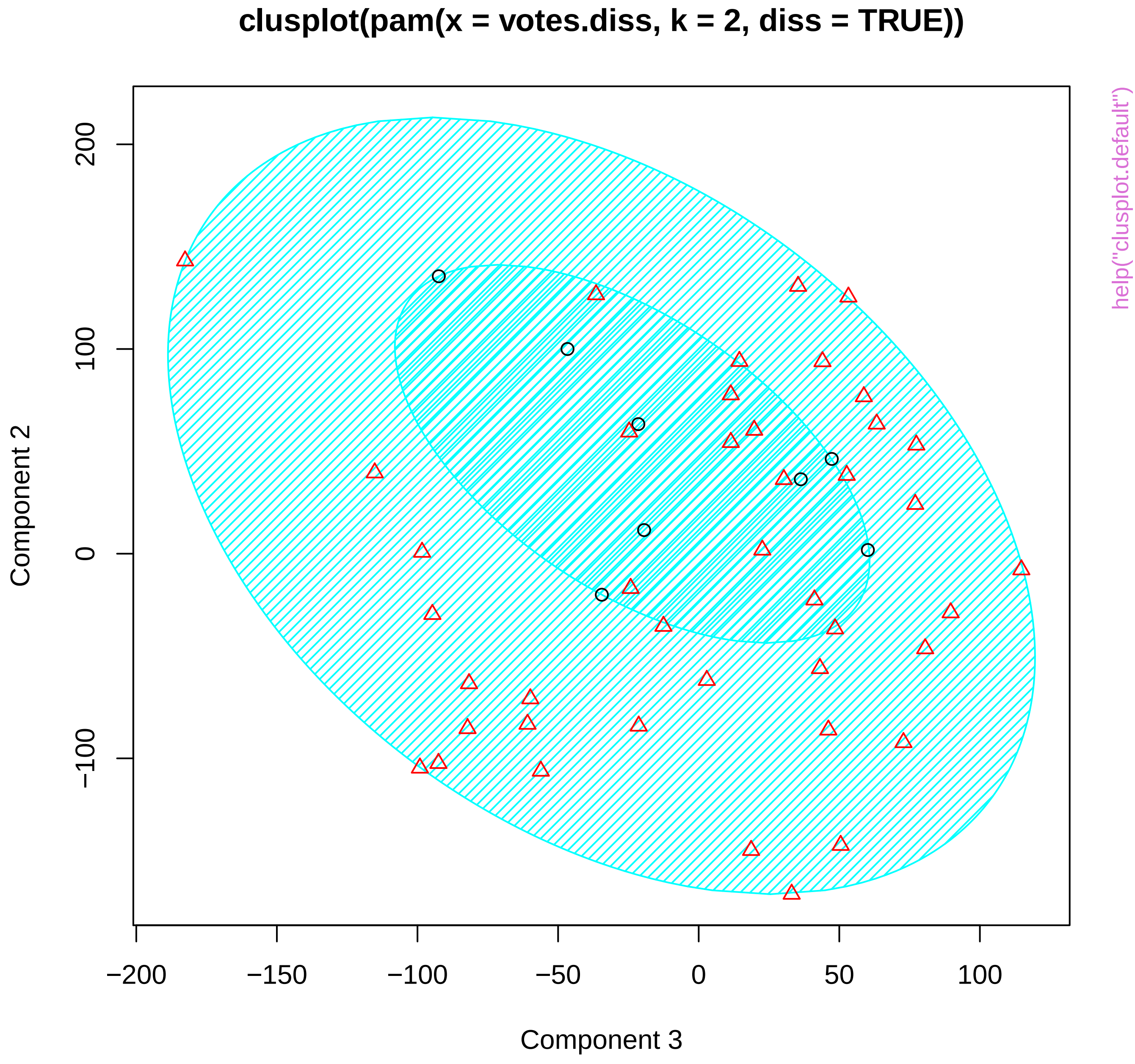


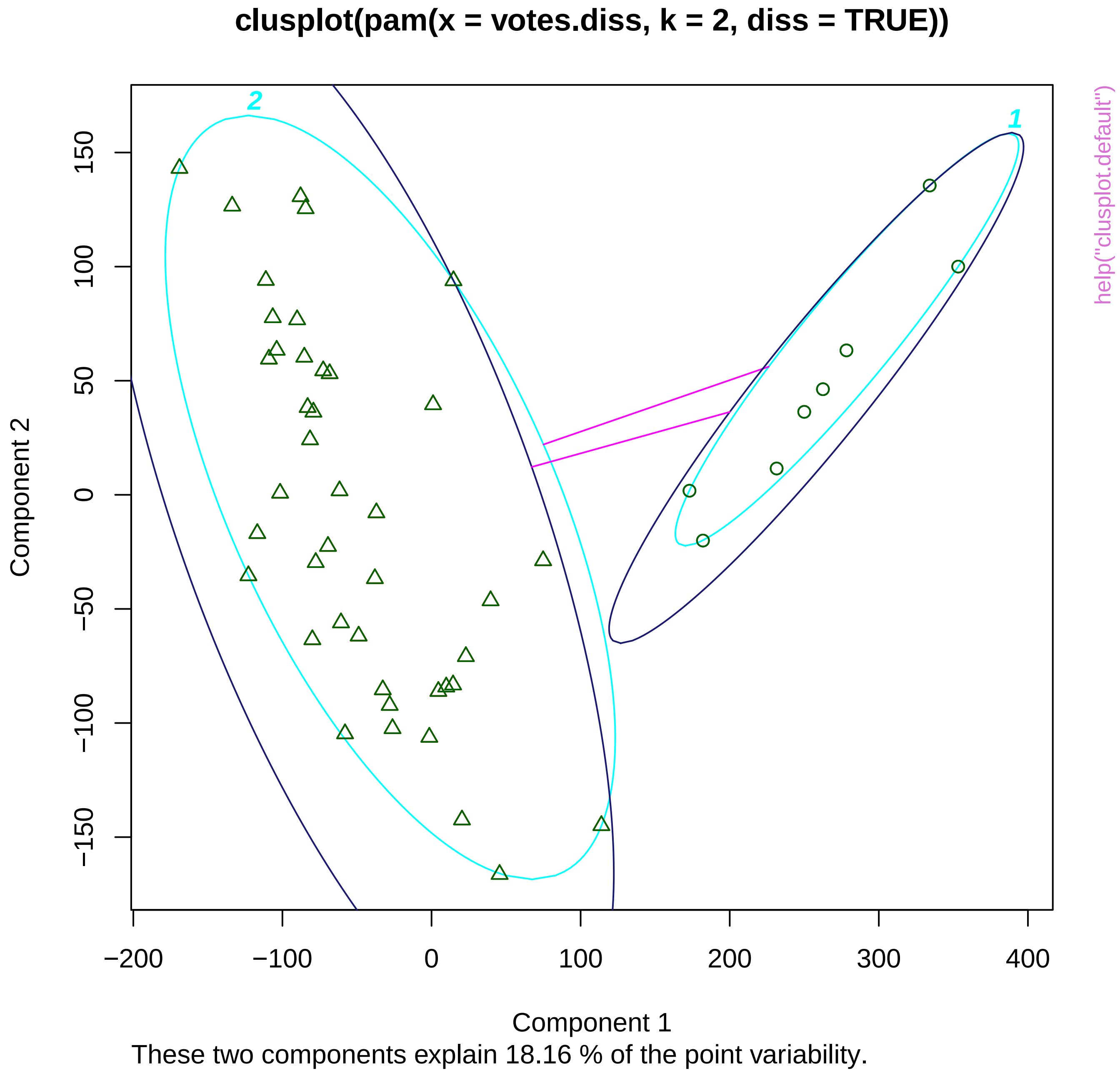
Gap statistic for the 'ruspini' data
k = 4 is best .. and k = 5 pretty close
help("clusGap")
Gap$_k$
0.0
0.2
0.4
0.6
1
2
3
4
5
6
7
8
k

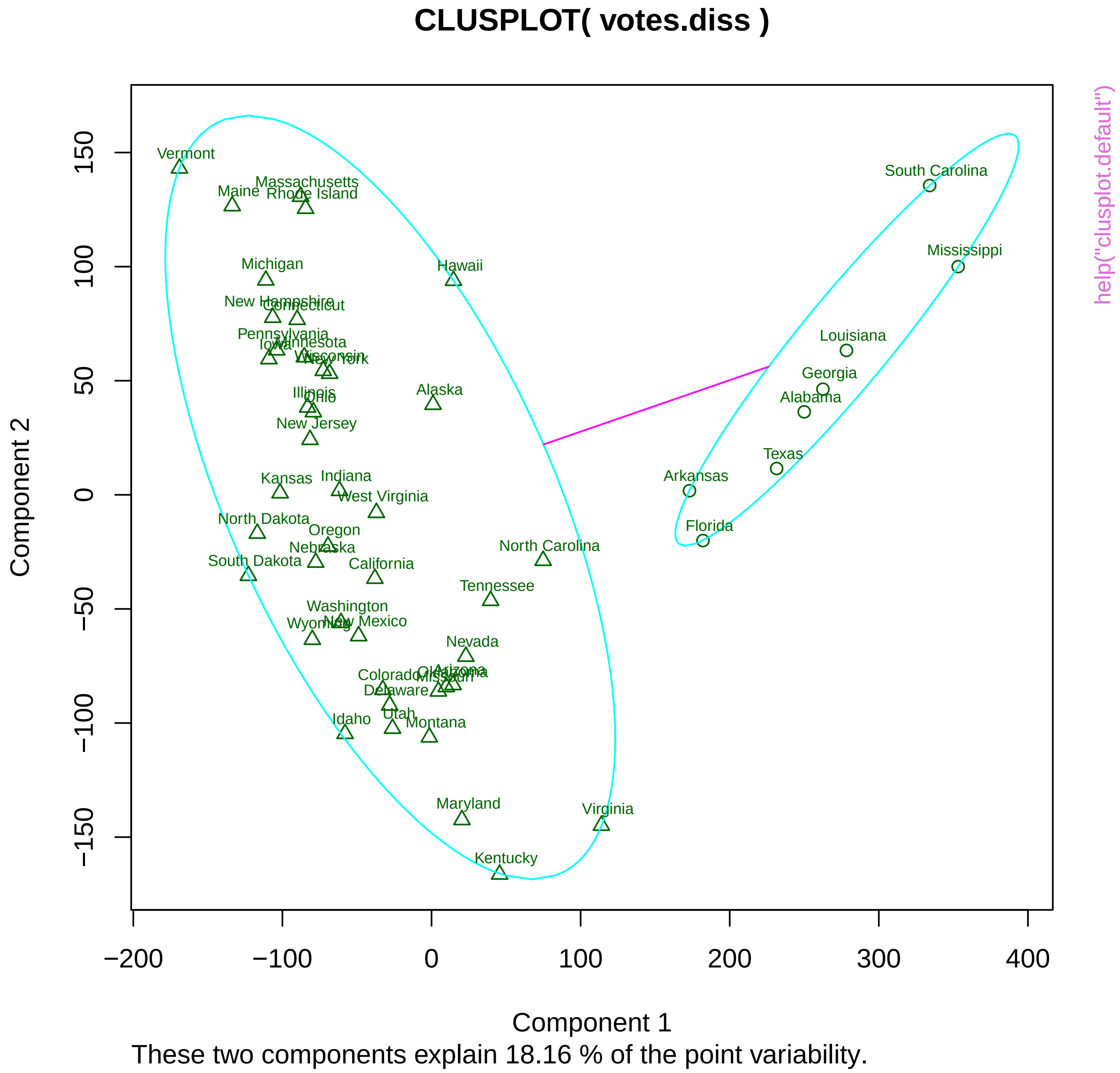


clusplot(pam(x = votes.diss, k = 2, diss = TRUE))
help("clusplot.default")
Component 1
Component 2
−200
−100
0
100
200
300
400
−150
−100
−50
0
50
100
150
These two components explain 18.16 % of the point variability.

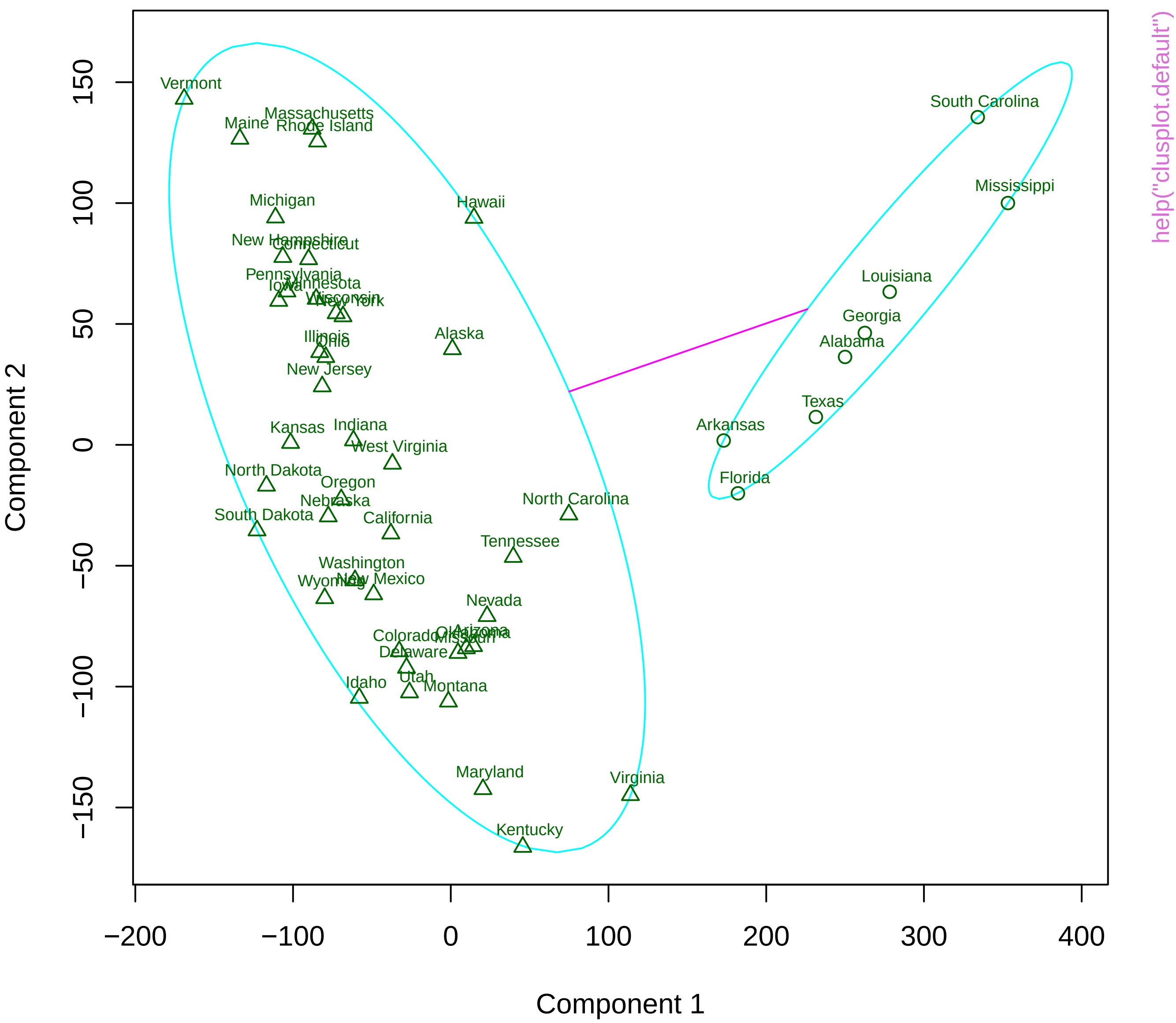

CLUSPLOT(votes.diss)
help("clusplot.default")
Component 2
150
100
50
0
−50
−100
−150
−200
−100
0
100
200
300
400
Component 1
These two components explain 18.16 % of the point variability.


clusplot(pam(x = votes.diss, k = 2, diss = TRUE))
Component 2
Component 3
200
100
0
−100
−200
−150
−100
−50
0
50
100
help("clusplot.default")

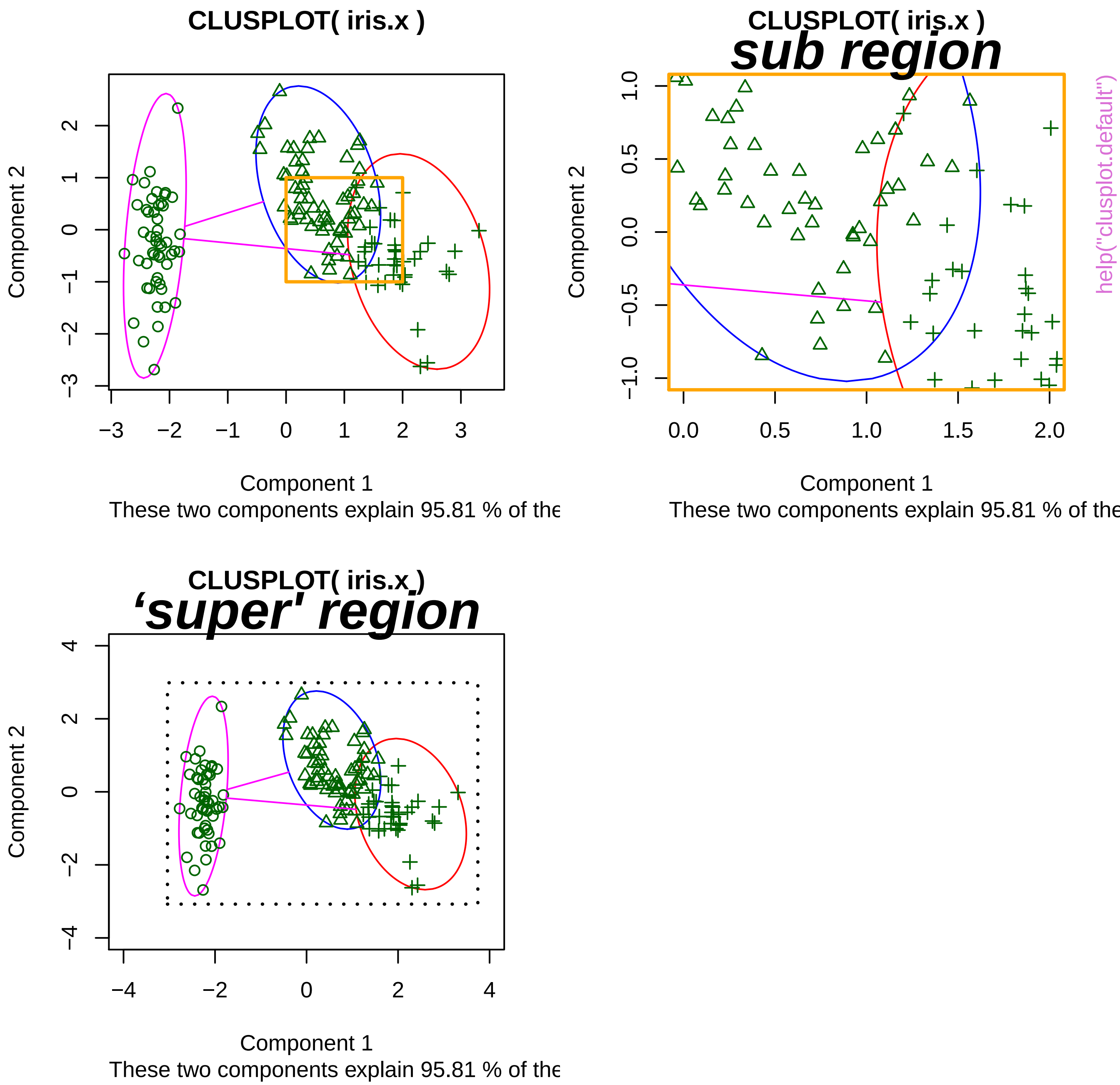

clusplot(pam(x = votes.diss, k = 2, diss = TRUE))
2
1
help("clusplot.default")
Component 2
Component 1
150
100
50
0
−50
−100
−150
−200
−100
0
100
200
300
400
These two components explain 18.16 % of the point variability.

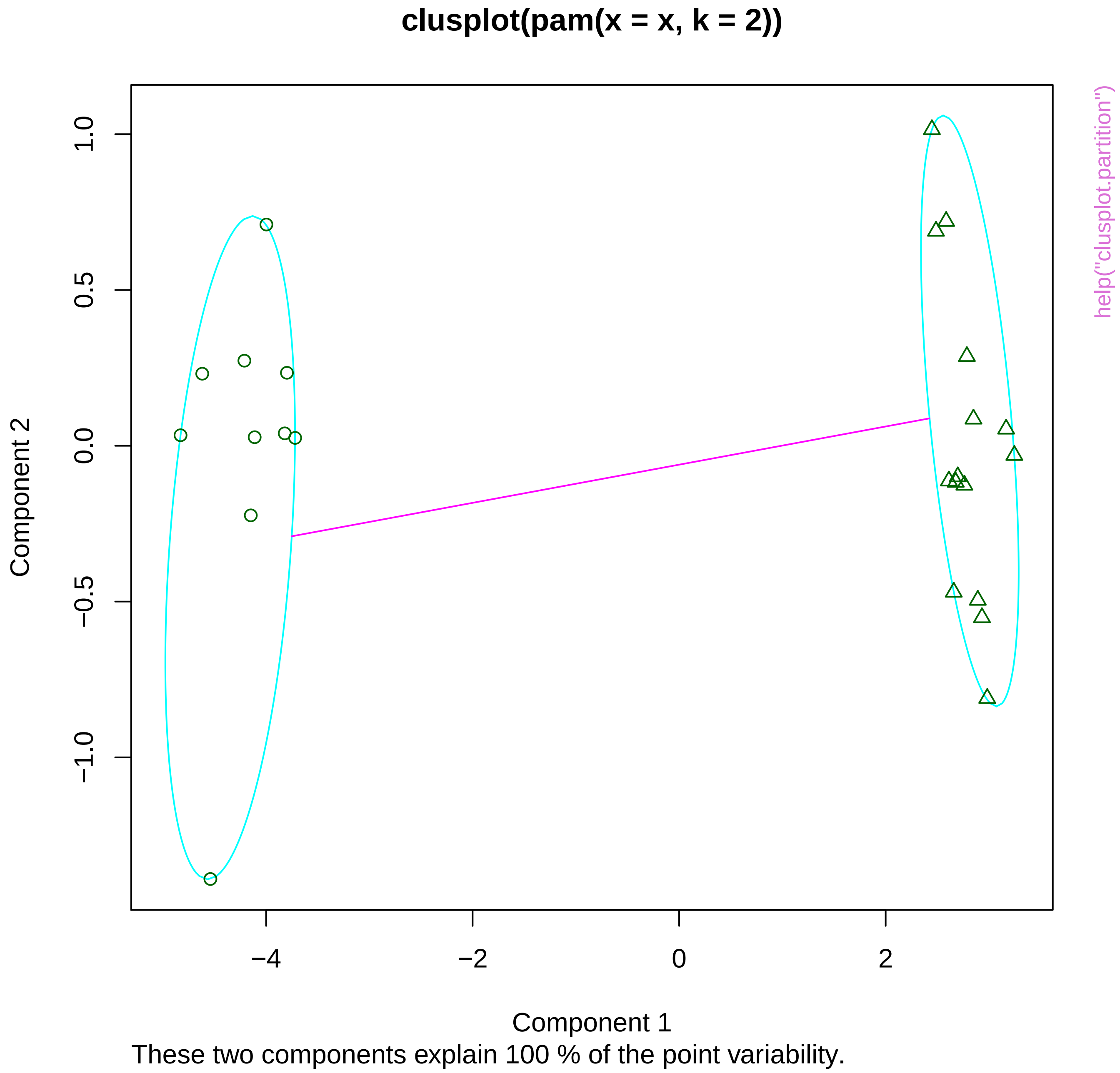

CLUSPLOT(votes.diss)
Component 1
Component 2
These two components explain 18.16 % of the point variability.
help("clusplot.default")
−200
−100
0
100
200
300
400
−150
−100
−50
0
50
100
150
Vermont
Maine
Massachusetts
Rhode Island
Michigan
Hawaii
New Hampshire
Connecticut
Pennsylvania
Iowa
Minnesota
Wisconsin
New York
Illinois
Ohio
Alaska
New Jersey
Kansas
Indiana
West Virginia
North Dakota
Oregon
Nebraska
South Dakota
California
North Carolina
Tennessee
Washington
Wyoming
New Mexico
Nevada
Colorado
Oklahoma
Arizona
Missouri
Delaware
Idaho
Utah
Montana
Maryland
Virginia
Kentucky
South Carolina
Mississippi
Louisiana
Georgia
Alabama
Texas
Arkansas
Florida

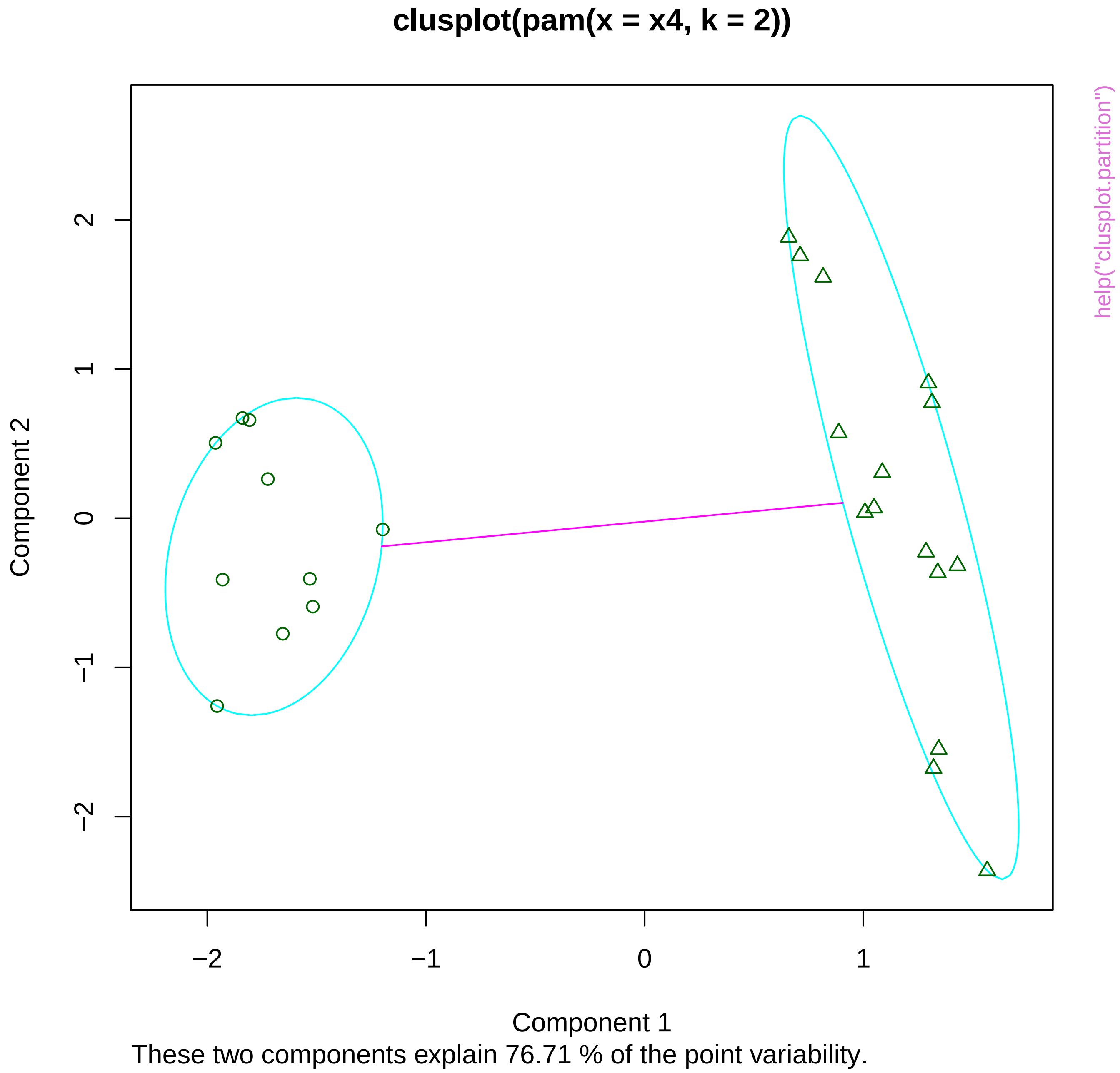
CLUSPLOT(votes.diss)

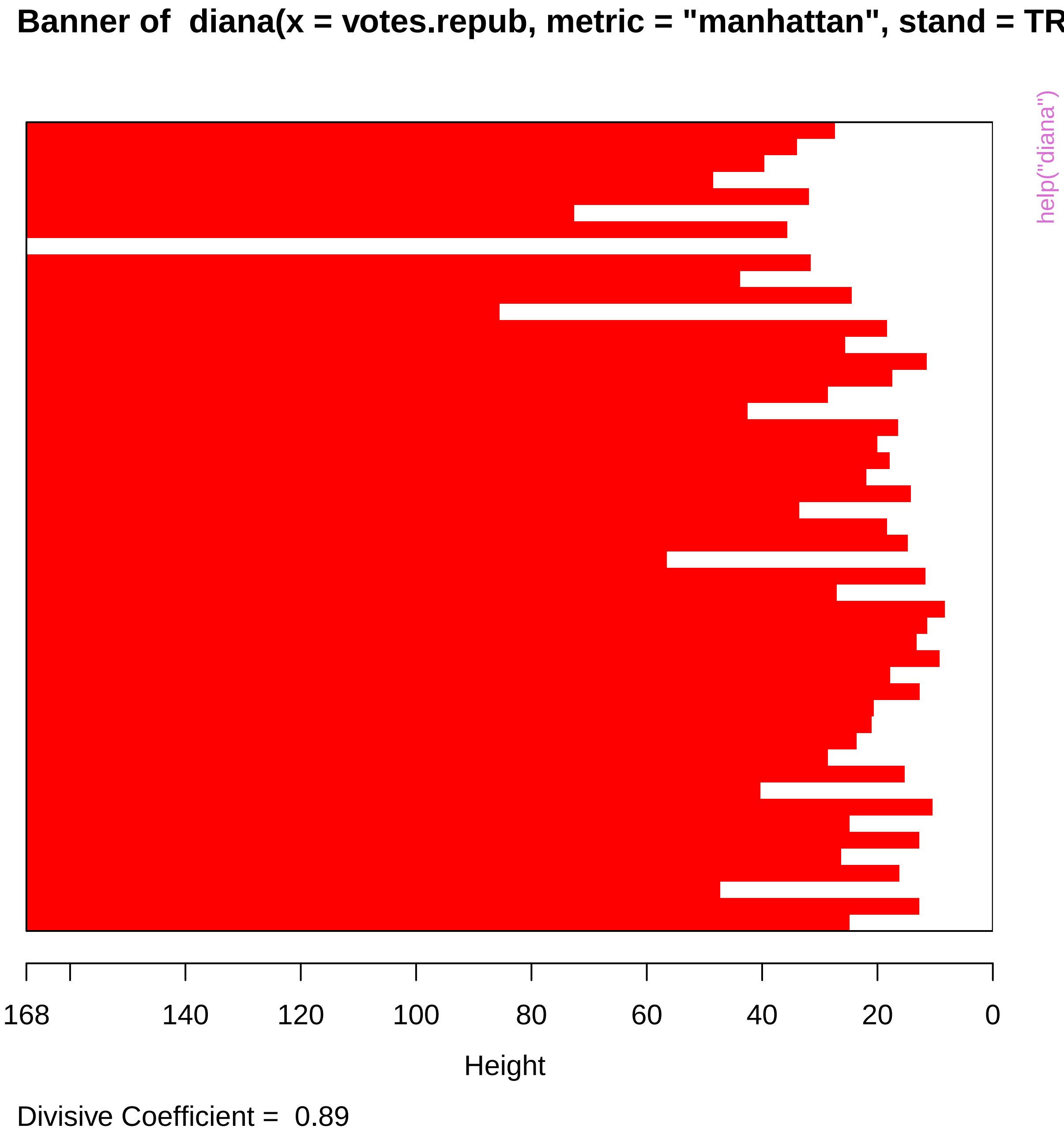


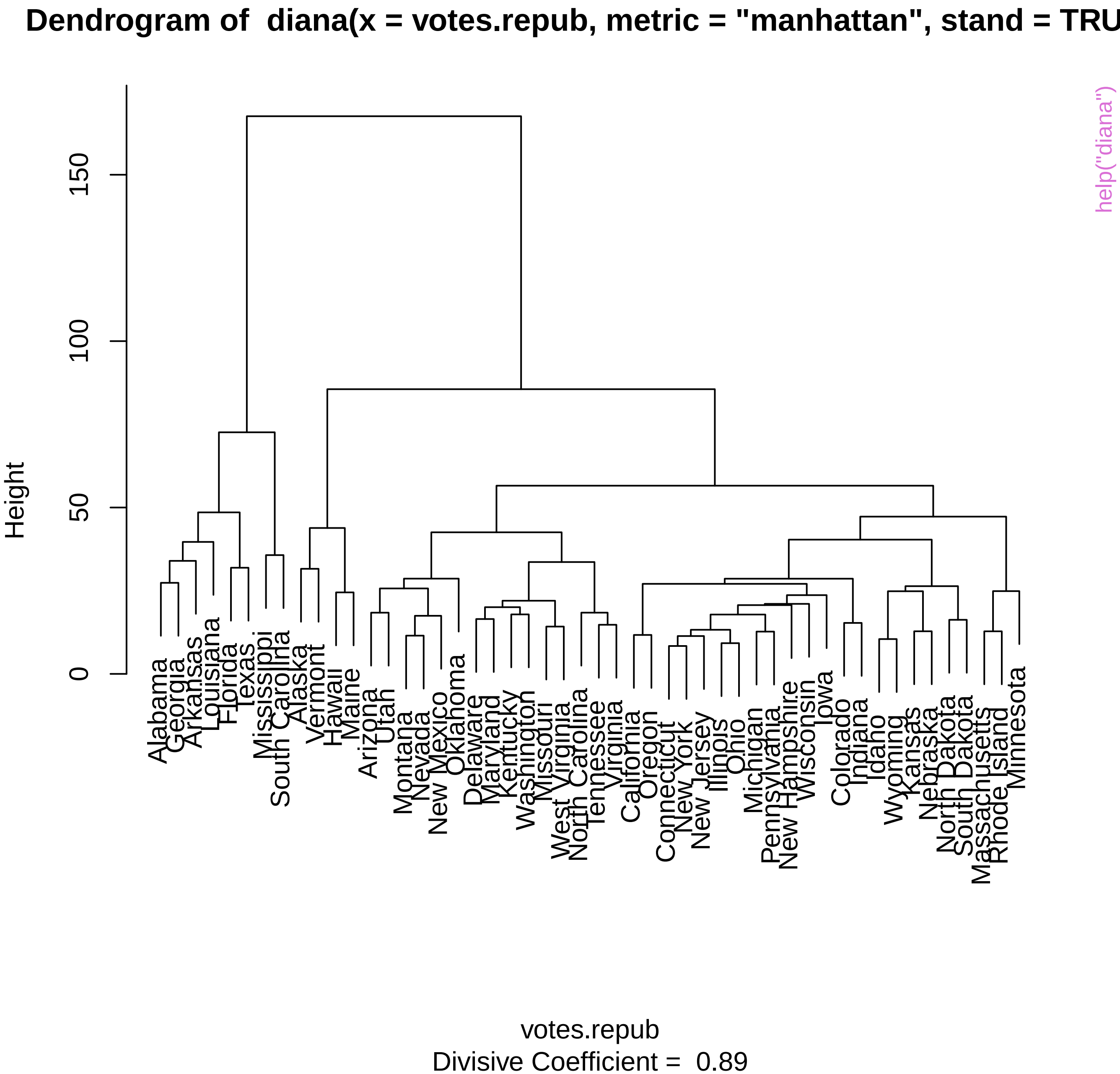
These two components explain 18.16 % of the point variability.

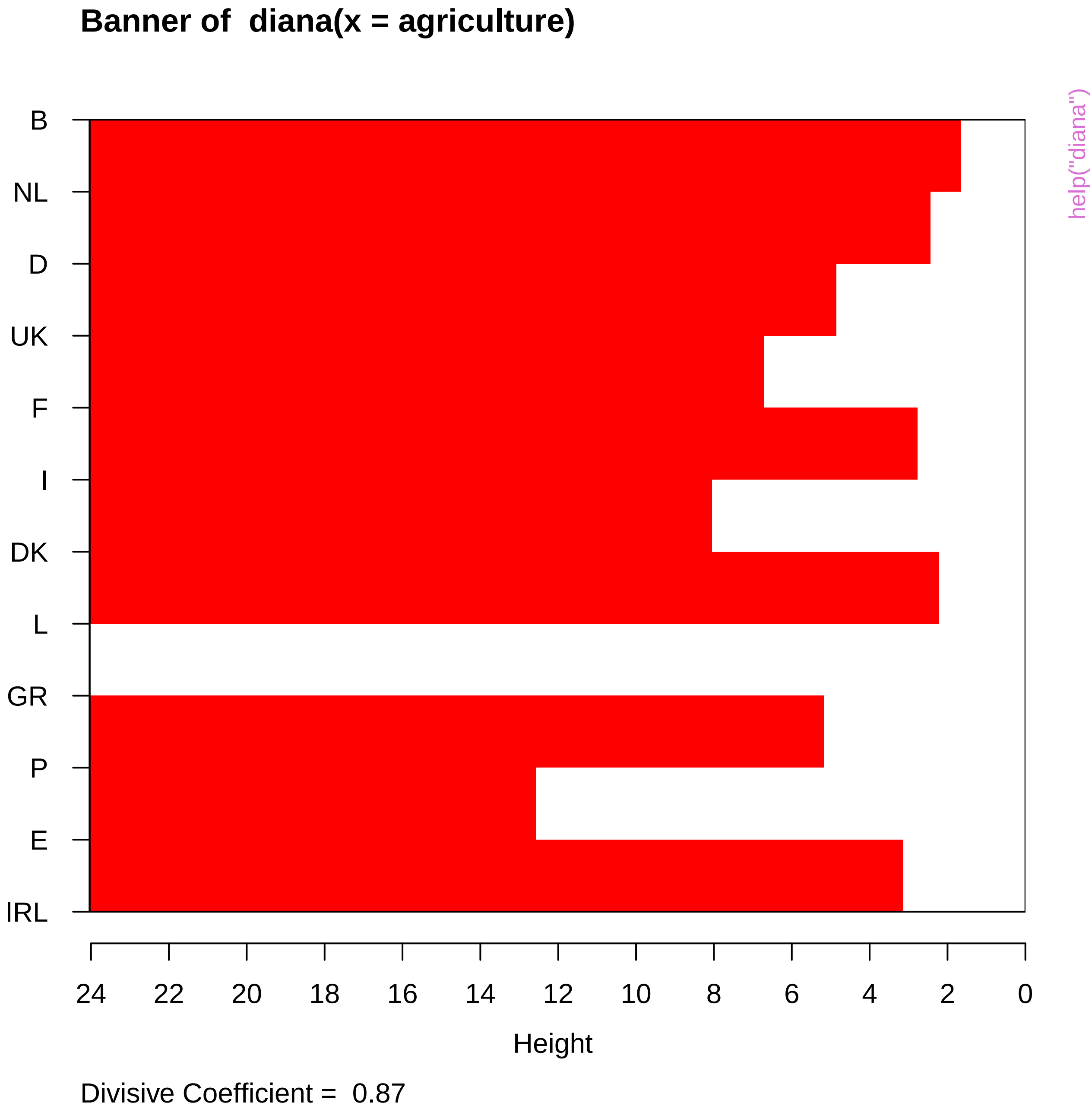

CLUSPLOT(iris.x)
Component 1
Component 2
These two components explain 95.81 % of the
CLUSPLOT(iris.x)
sub region
Component 1
Component 2
These two components explain 95.81 % of the
help("clusplot.default")
CLUSPLOT(iris.x)
'super' region
Component 1
Component 2
These two components explain 95.81 % of the


clusplot(pam(x = x, k = 2))
Component 2
Component 1
These two components explain 100 % of the point variability.
help("clusplot.partition")
1.0
0.5
0.0
−0.5
−1.0
−4
−2
0
2

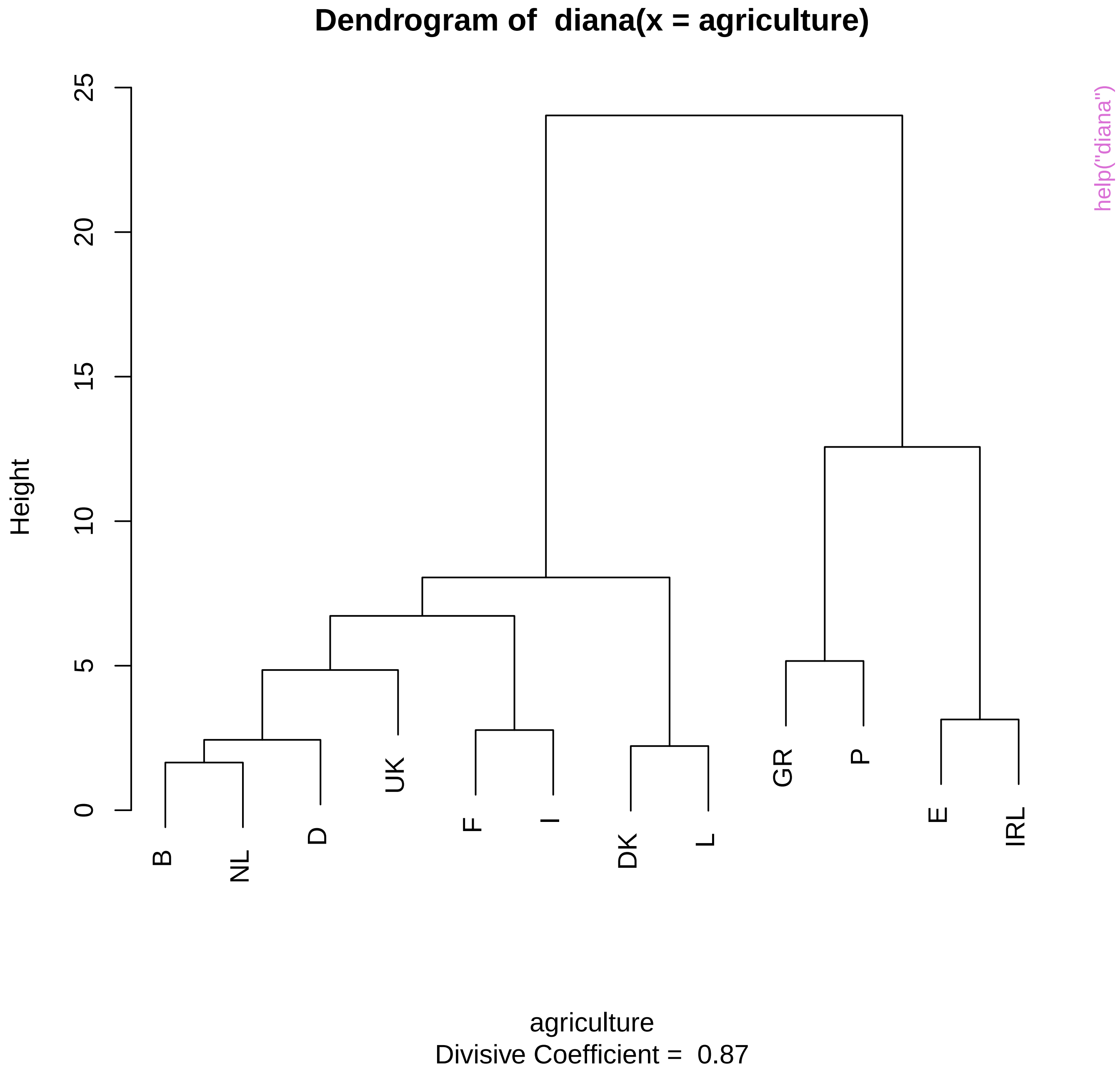

clusplot(pam(x = x4, k = 2))
Component 2
Component 1
2
1
0
−1
−2
−2
−1
0
1
These two components explain 76.71 % of the point variability.
help("clusplot.partition")

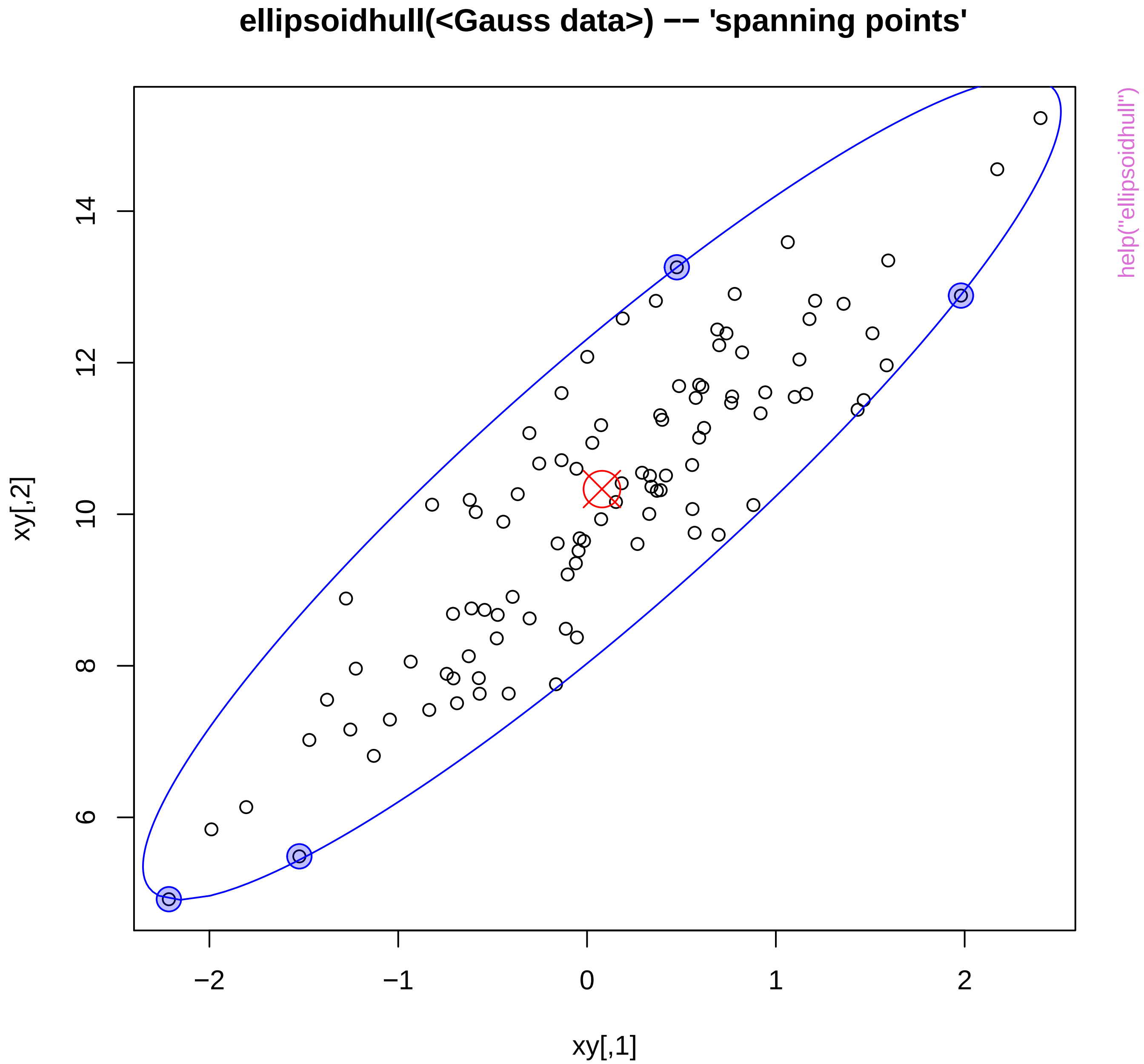

Banner of diana(x = votes.repub, metric = "manhattan", stand = TR
help("diana")
168
140
120
100
80
60
40
20
0
Height
Divisive Coefficient = 0.89

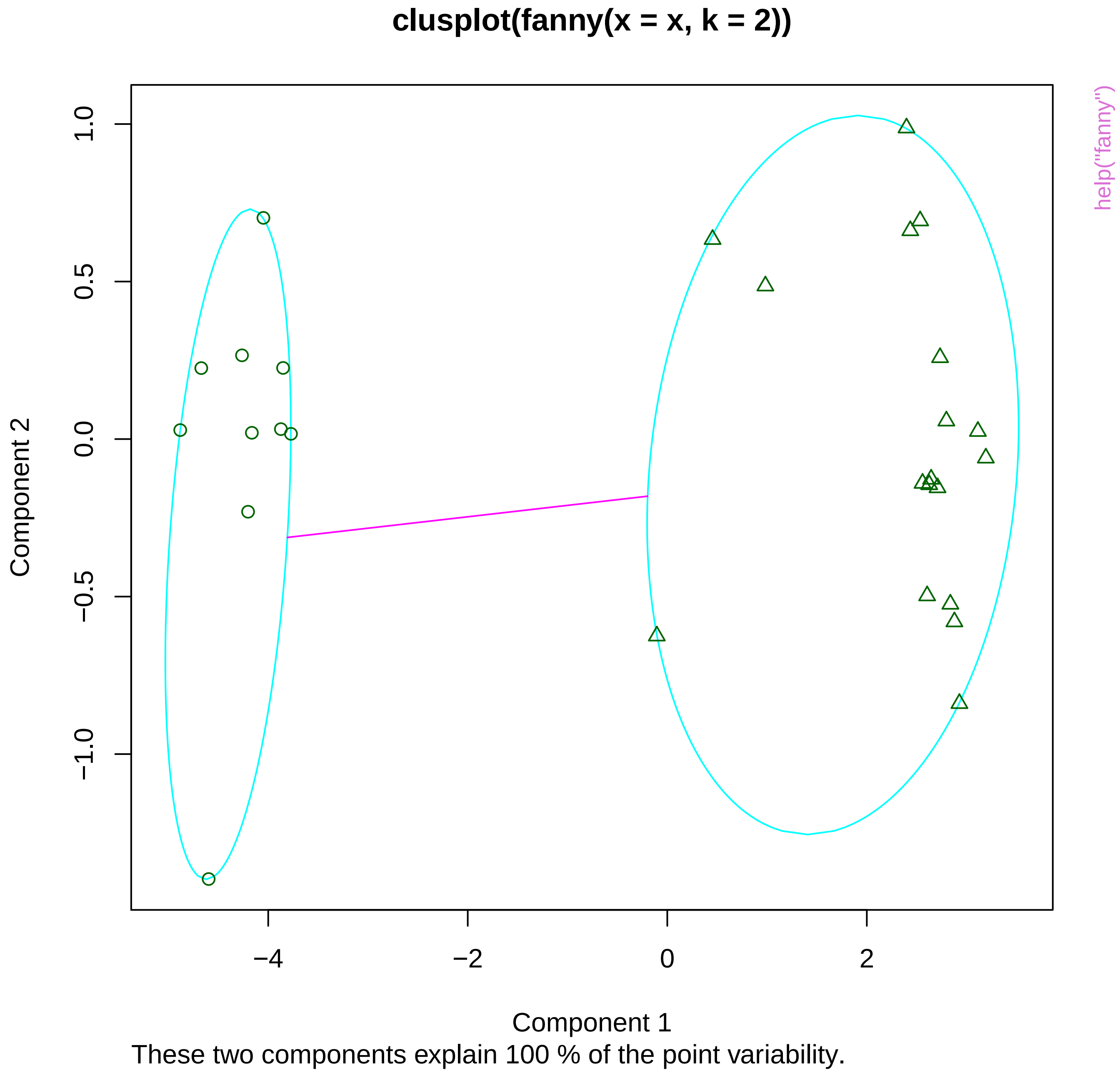

Dendrogram of diana(x = votes.repub, metric = "manhattan", stand = TRU
help("diana")
Height
0
50
100
150
Alabama
Georgia
Arkansas
Louisiana
Florida
Texas
Mississippi
South Carolina
Alaska
Vermont
Hawaii
Maine
Arizona
Utah
Montana
Nevada
New Mexico
Oklahoma
Delaware
Maryland
Kentucky
Washington
Missouri
West Virginia
North Carolina
Tennessee
Virginia
California
Oregon
Connecticut
New York
New Jersey
Illinois
Ohio
Michigan
Pennsylvania
New Hampshire
Wisconsin
Iowa
Colorado
Indiana
Idaho
Wyoming
Kansas
Nebraska
North Dakota
South Dakota
Massachusetts
Rhode Island
Minnesota
votes.repub
Divisive Coefficient = 0.89

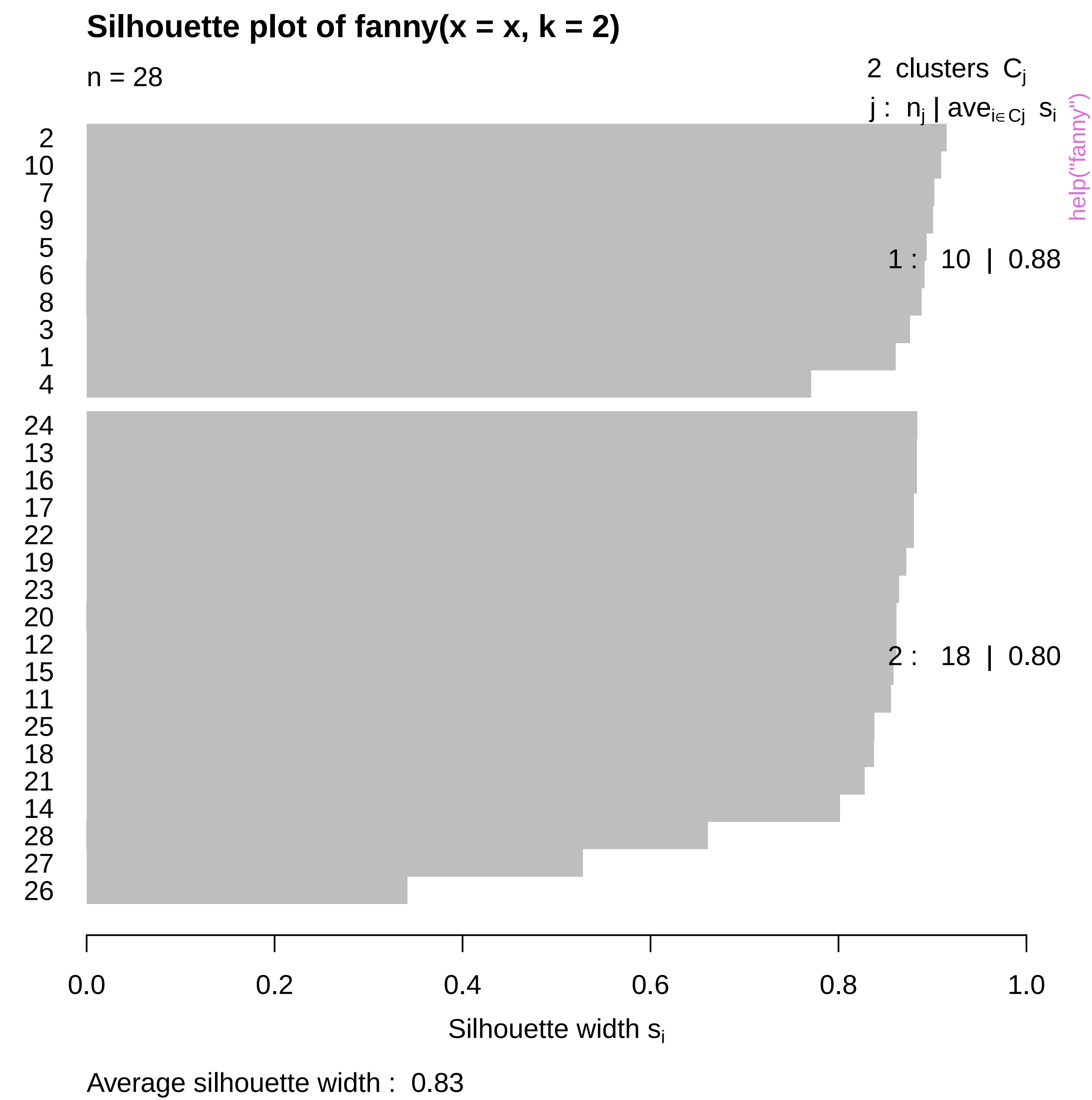


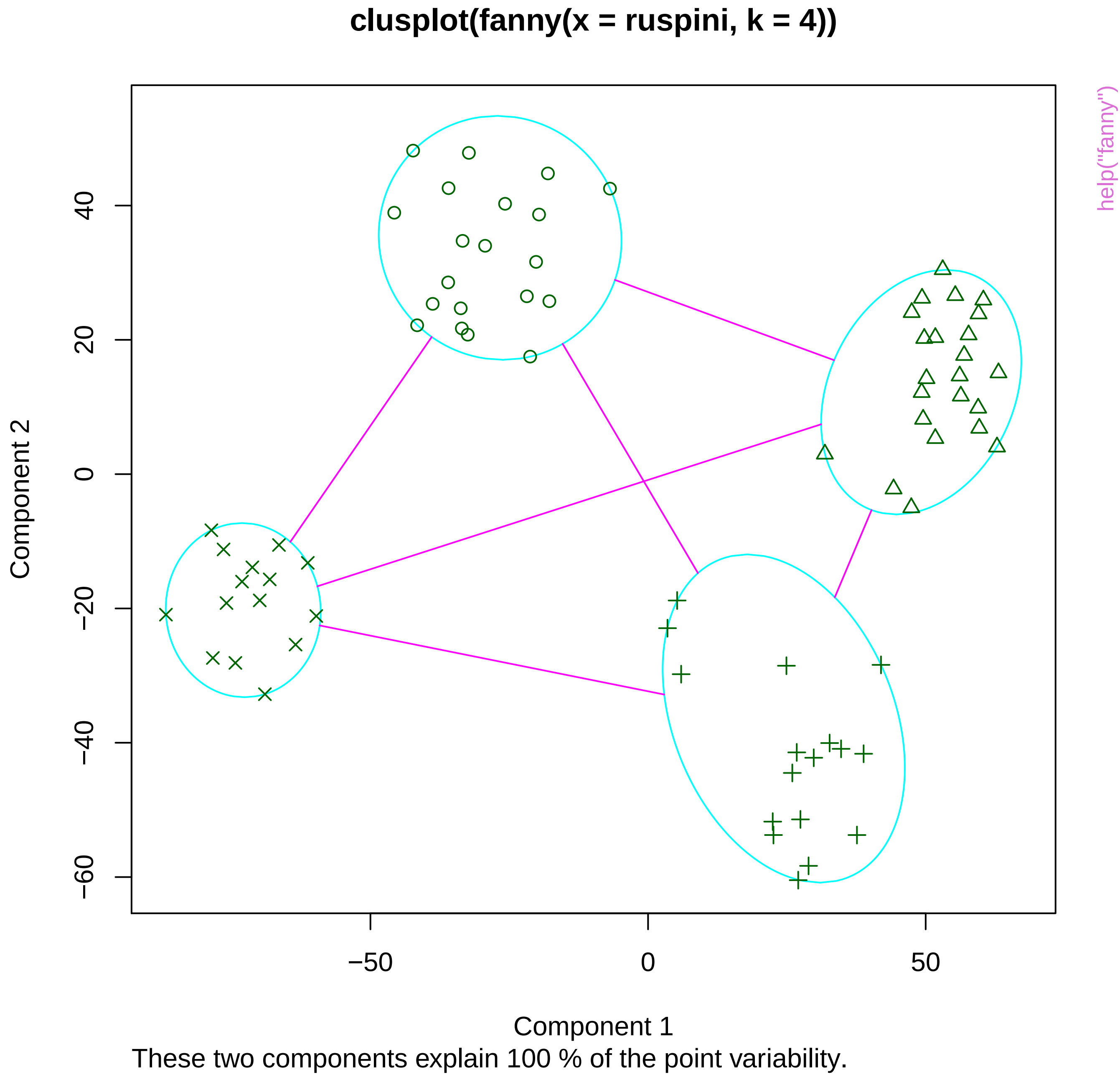
Banner of diana(x = agriculture)
B
NL
D
UK
F
I
DK
L
GR
P
E
IRL
24
22
20
18
16
14
12
10
8
6
4
2
0
Height
Divisive Coefficient = 0.87
help("diana")


Dendrogram of diana(x = agriculture)
Height
0
5
10
15
20
25
B
NL
D
UK
F
I
DK
L
GR
P
E
IRL
help("diana")
agriculture
Divisive Coefficient = 0.87

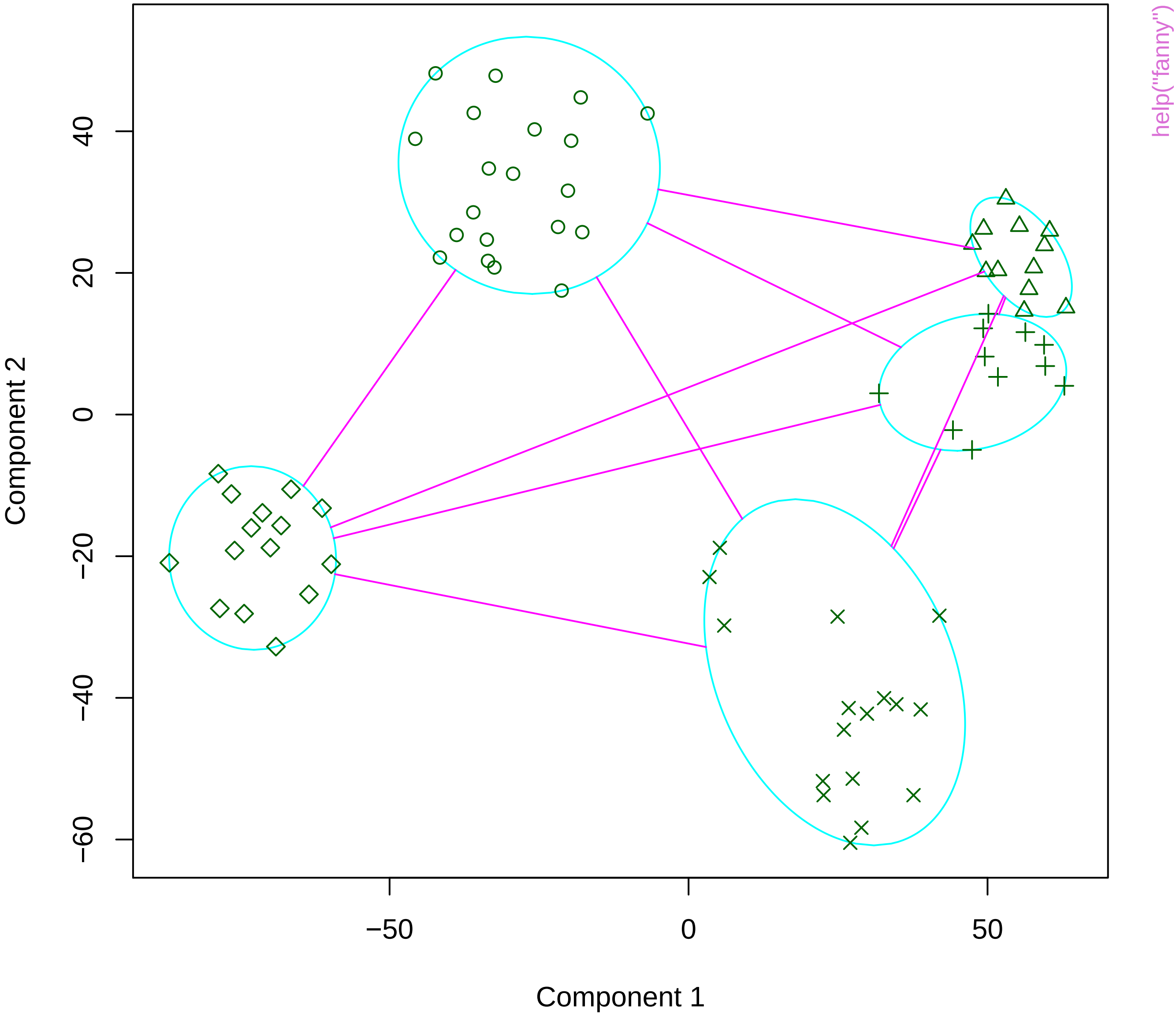

ellipsoidhull(<Gauss data>) -- 'spanning points'
help("ellipsoidhull")
xy[,2]
xy[,1]
6
8
10
12
14
−2
−1
0
1
2


clusplot(fanny(x = x, k = 2))
help("fanny")
Component 2
1.0
0.5
0.0
−0.5
−1.0
−4
−2
0
2
Component 1
These two components explain 100 % of the point variability.

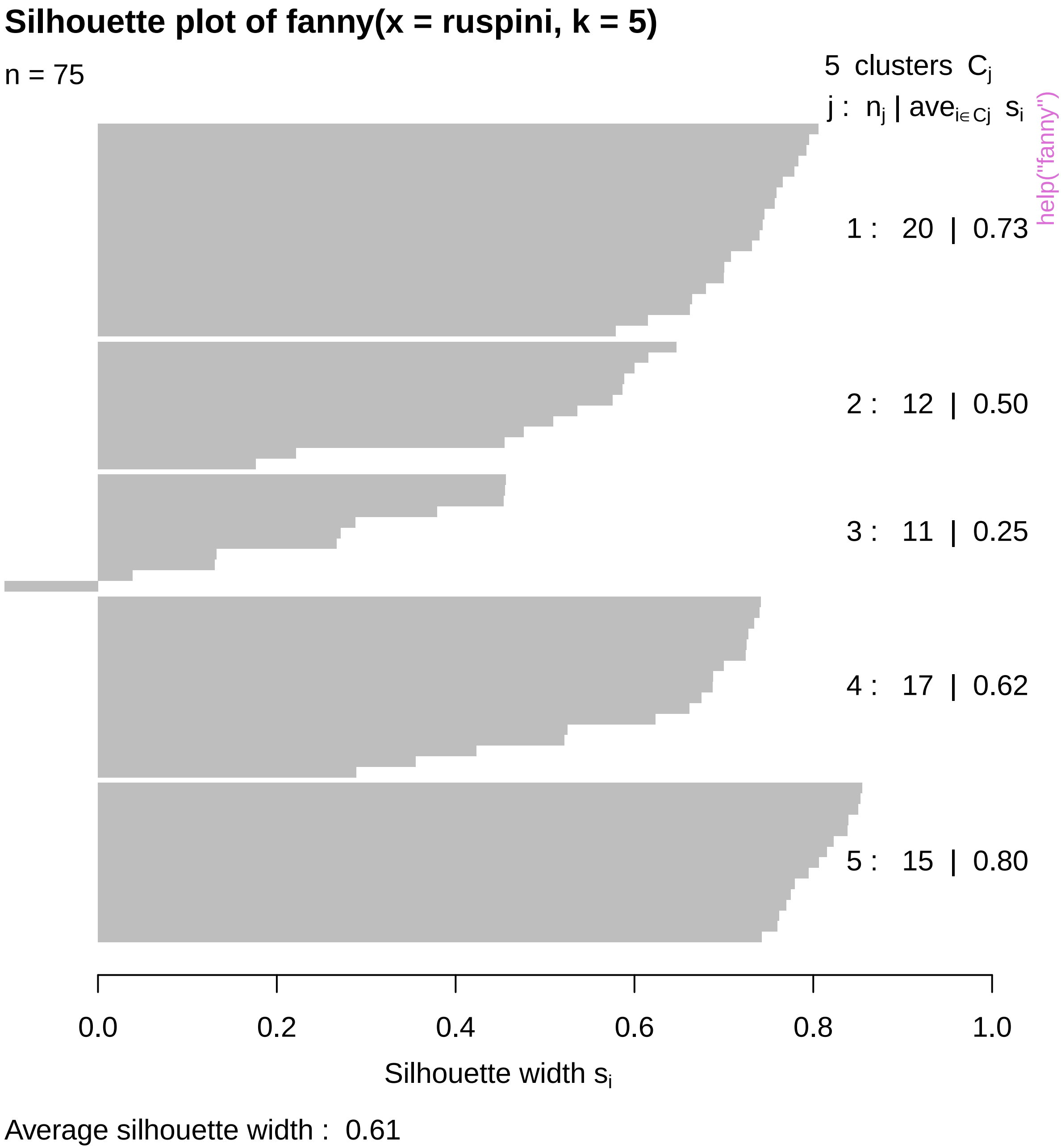

Silhouette plot of fanny(x = x, k = 2)
n = 28
2 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("fanny")
1 : 10 | 0.88
2 : 18 | 0.80
2
10
7
9
5
6
8
3
1
4
24
13
16
17
22
19
23
20
12
15
11
25
18
21
14
28
27
26
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.83

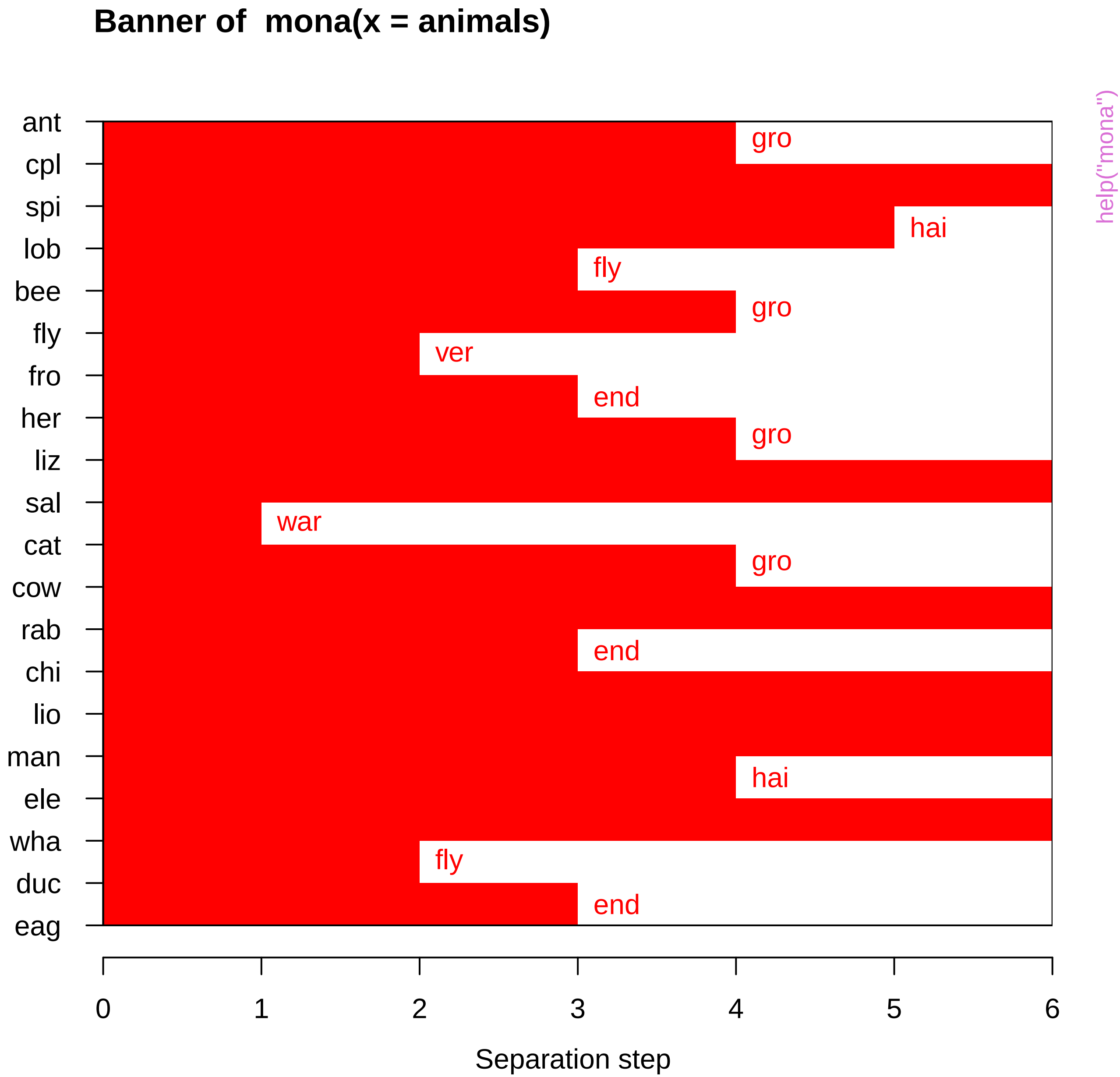

clusplot(fanny(x = ruspini, k = 4))
help("fanny")
Component 2
40
20
0
−20
−40
−60
−50
0
50
Component 1
These two components explain 100 % of the point variability.

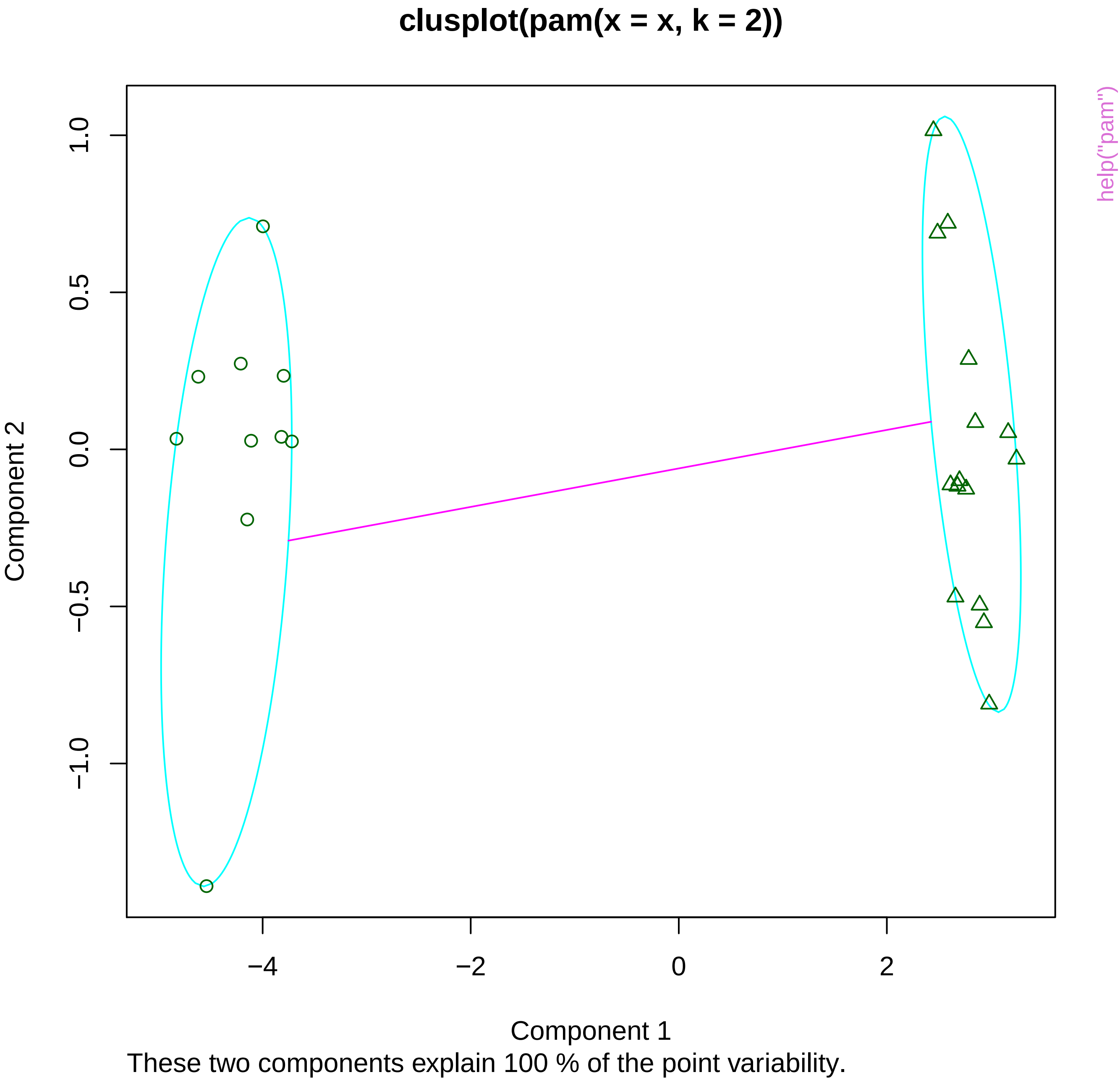
clusplot(fanny(x = ruspini, k = 5))

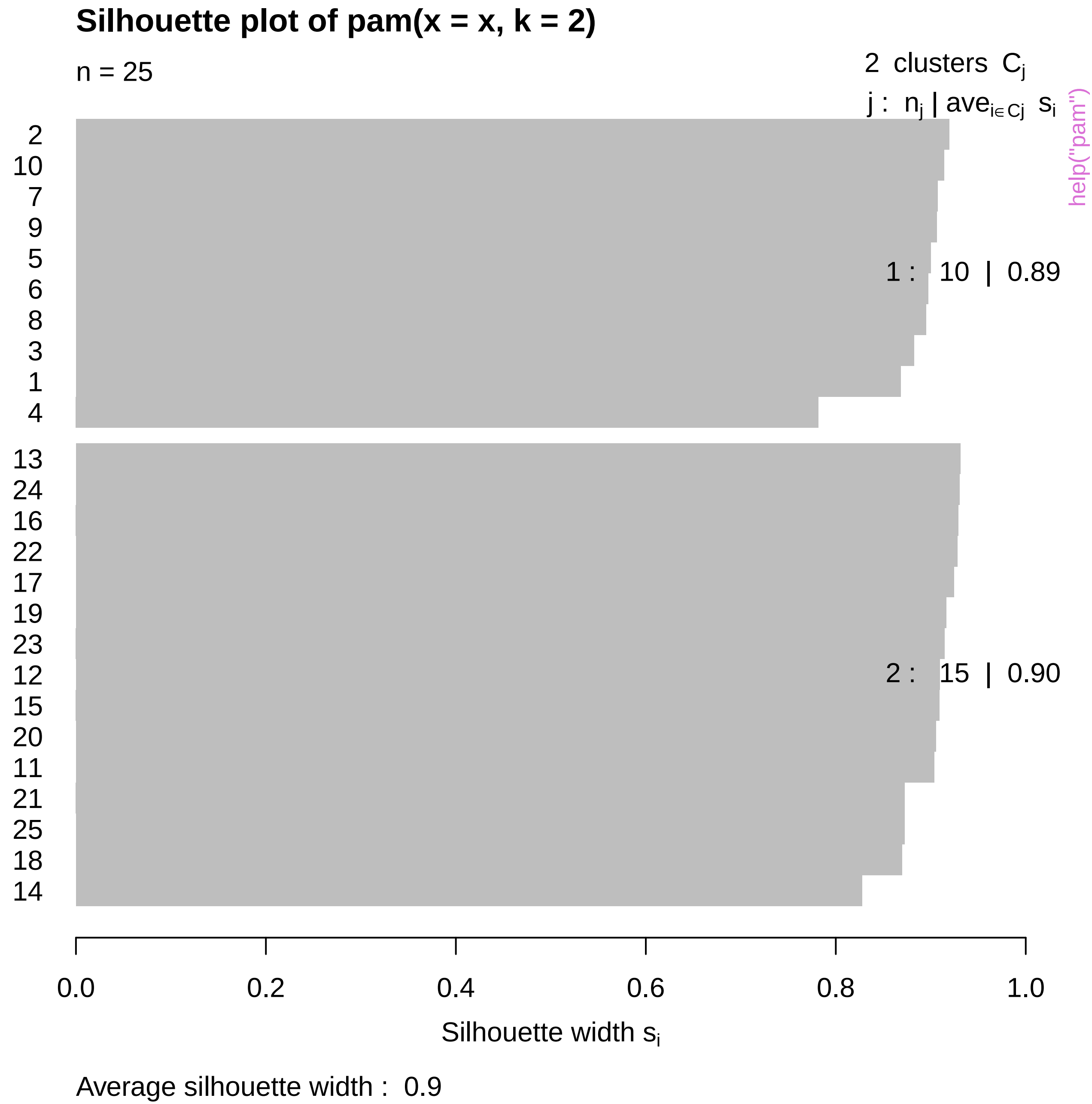


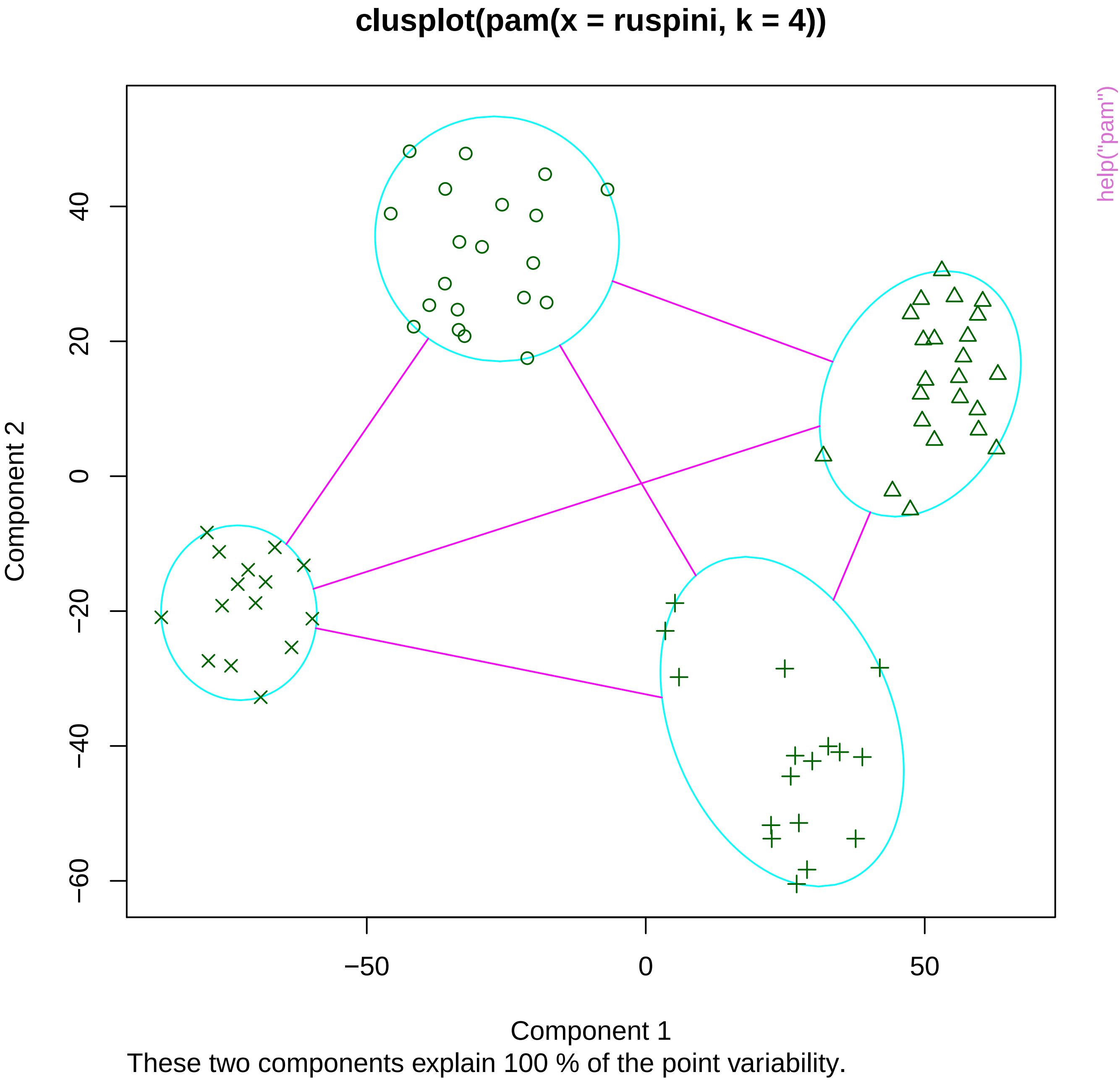
These two components explain 100 % of the point variability.

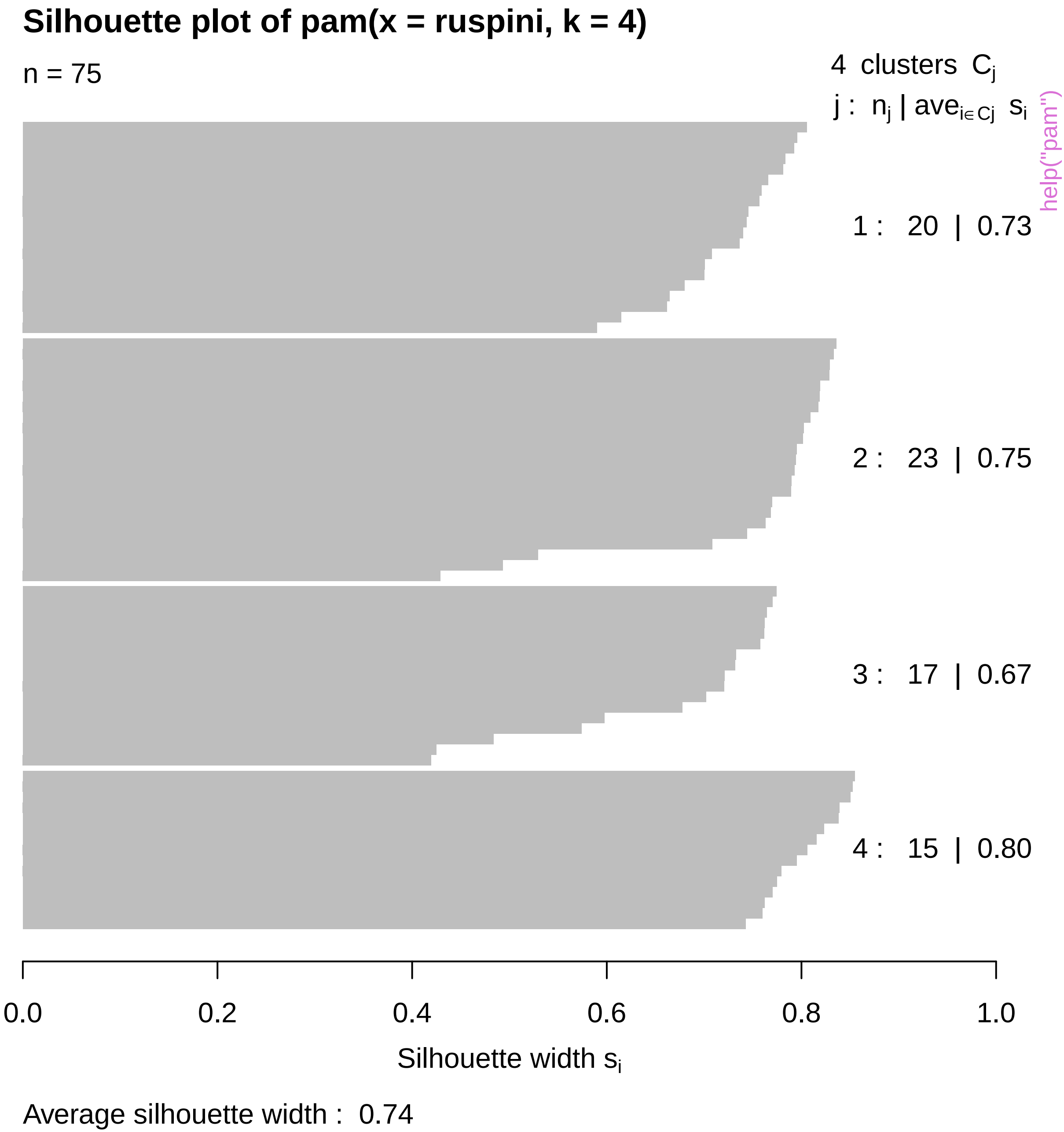

Silhouette plot of fanny(x = ruspini, k = 5)
n = 75
5 clusters C_j
j : n_j | $\mathrm{ave}_{i \in C_j}$ s_i
1 : 20 | 0.73
2 : 12 | 0.50
3 : 11 | 0.25
4 : 17 | 0.62
5 : 15 | 0.80
help("fanny")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.61


Banner of mona(x = animals)
ant
cpl
spi
lob
bee
fly
fro
her
liz
sal
cat
cow
rab
chi
lio
man
ele
wha
duc
eag
gro
hai
fly
gro
ver
end
gro
war
gro
end
hai
fly
end
0
1
2
3
4
5
6
Separation step
help("mona")

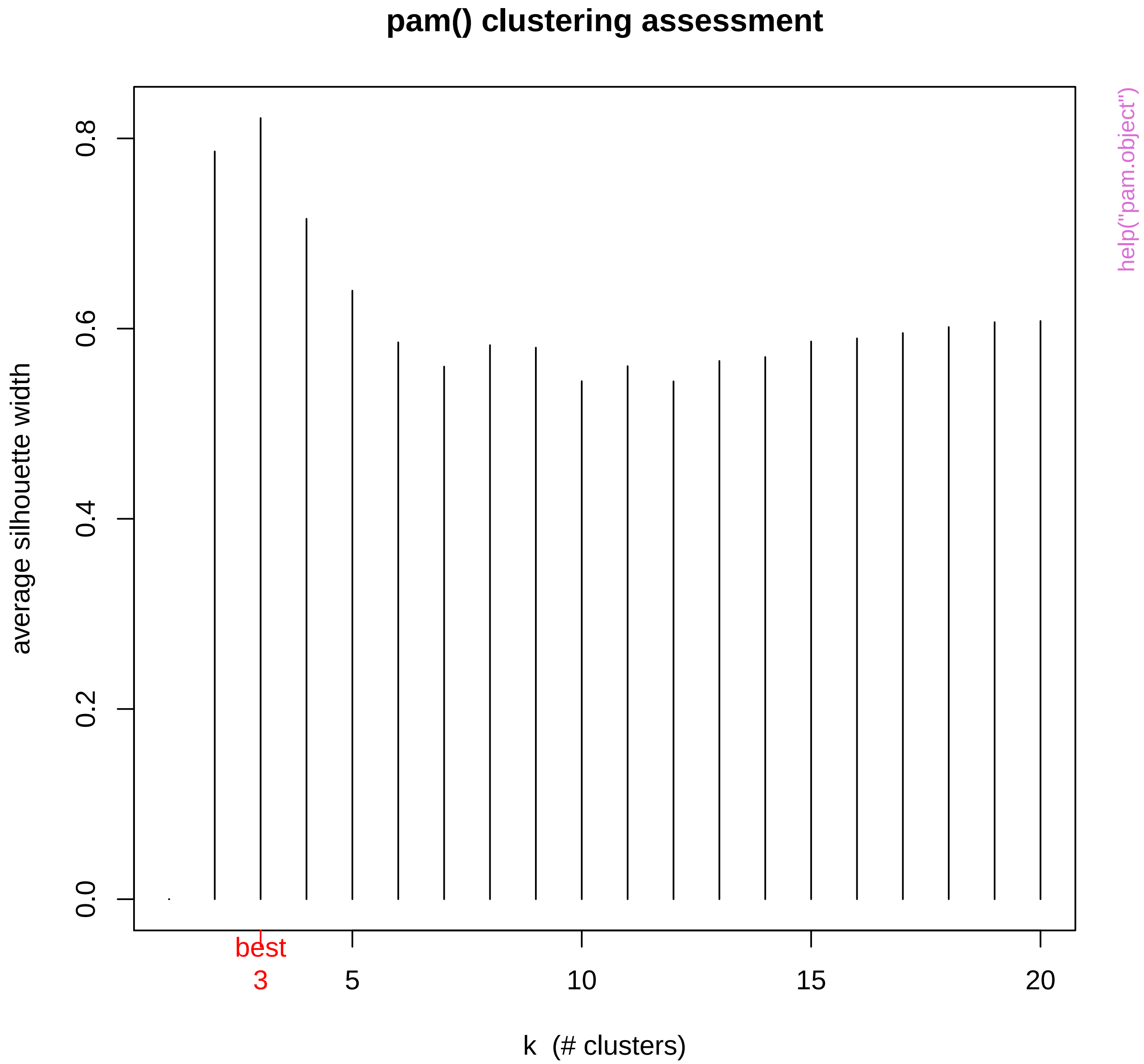

clusplot(pam(x = x, k = 2))
help("pam")
Component 2
1.0
0.5
0.0
−0.5
−1.0
−4
−2
0
2
Component 1
These two components explain 100 % of the point variability.


Silhouette plot of pam(x = x, k = 2)
n = 25
2 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("pam")
2
10
7
9
5
6
8
3
1
4
1 : 10 | 0.89
13
24
16
22
17
19
23
12
15
20
11
21
25
18
14
2 : 15 | 0.90
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.9

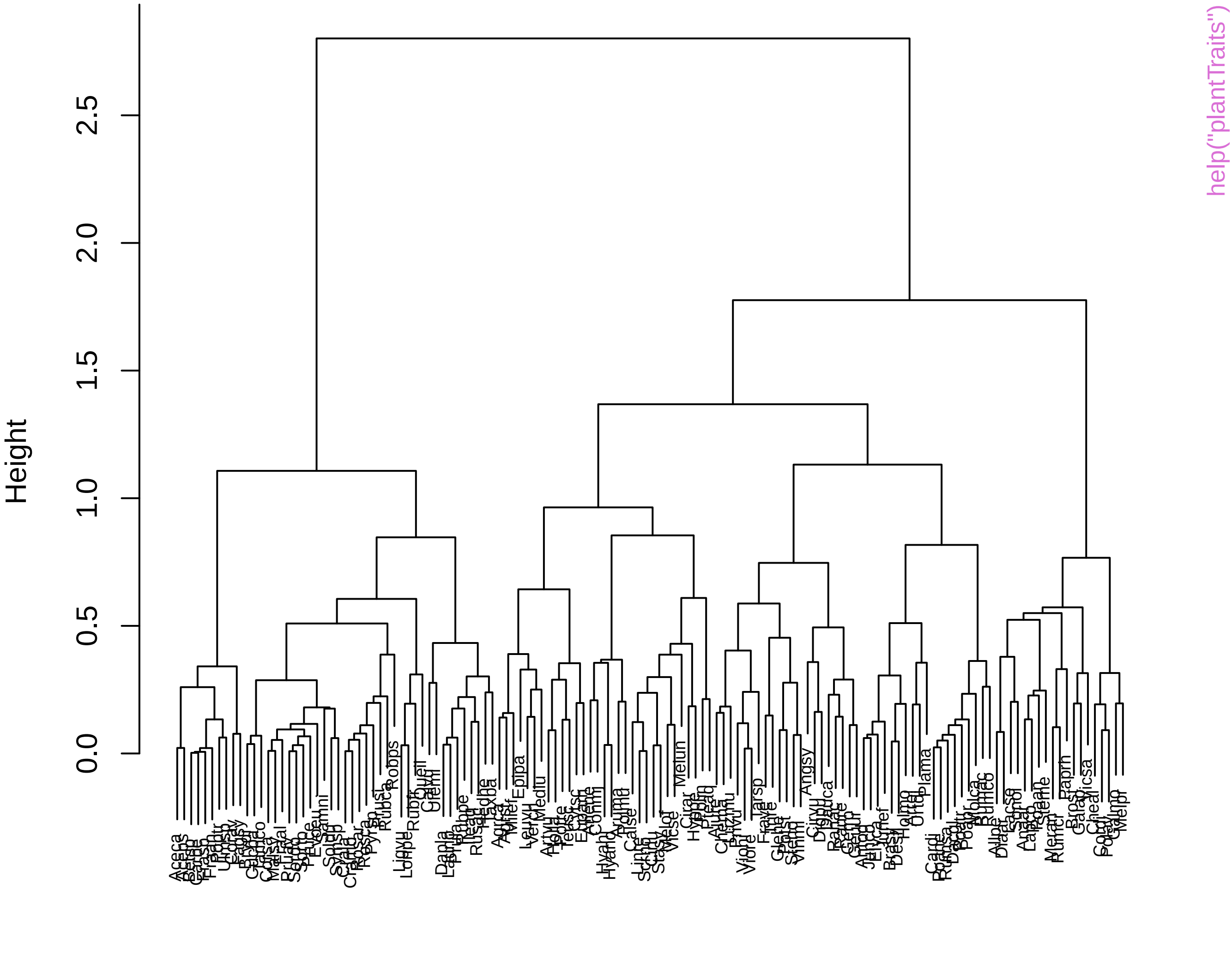

clusplot(pam(x = ruspini, k = 4))
help("pam")
40
20
0
−20
−40
−60
Component 2
−50
0
50
Component 1
These two components explain 100 % of the point variability.



Silhouette plot of pam(x = ruspini, k = 4)
n = 75
4 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("pam")
1 : 20 | 0.73
2 : 23 | 0.75
3 : 17 | 0.67
4 : 15 | 0.80
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.74

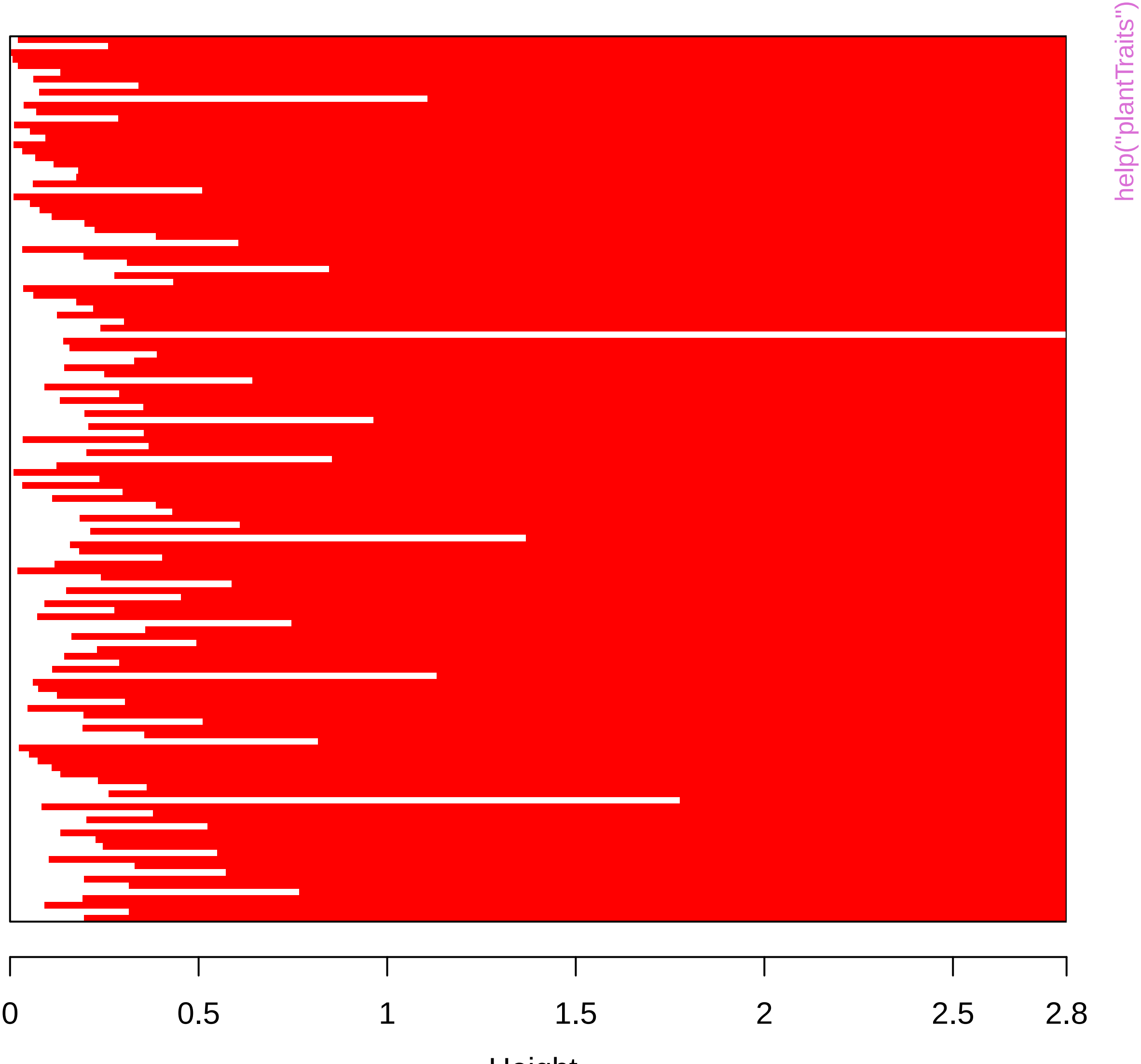

pam() clustering assessment
average silhouette width
0.0
0.2
0.4
0.6
0.8
best
3
5
10
15
20
k (# clusters)
help("pam.object")

Dendrogram of agnes(x = dai.b, method = "ward")

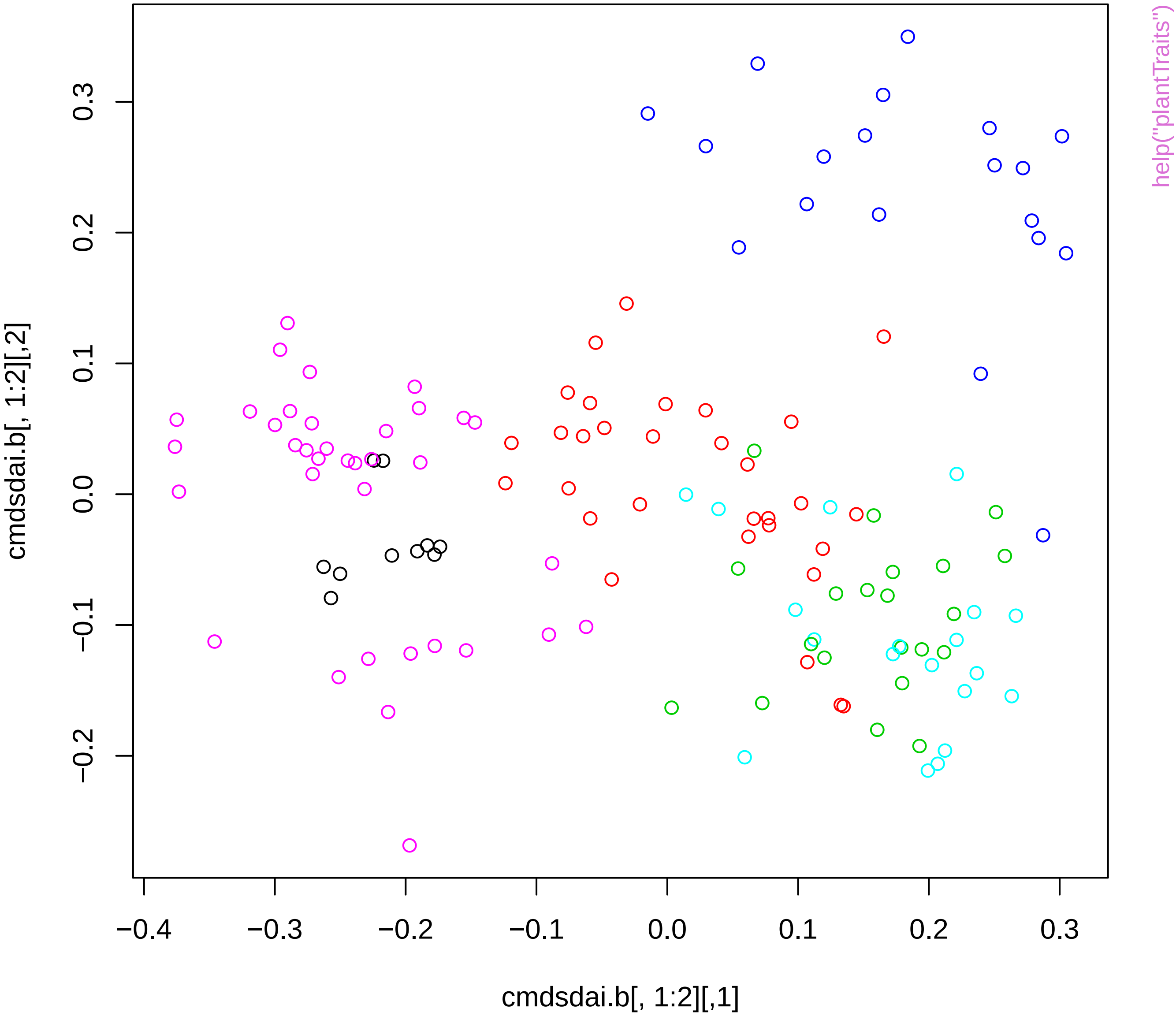


dai.b
Agglomerative Coefficient = 0.95

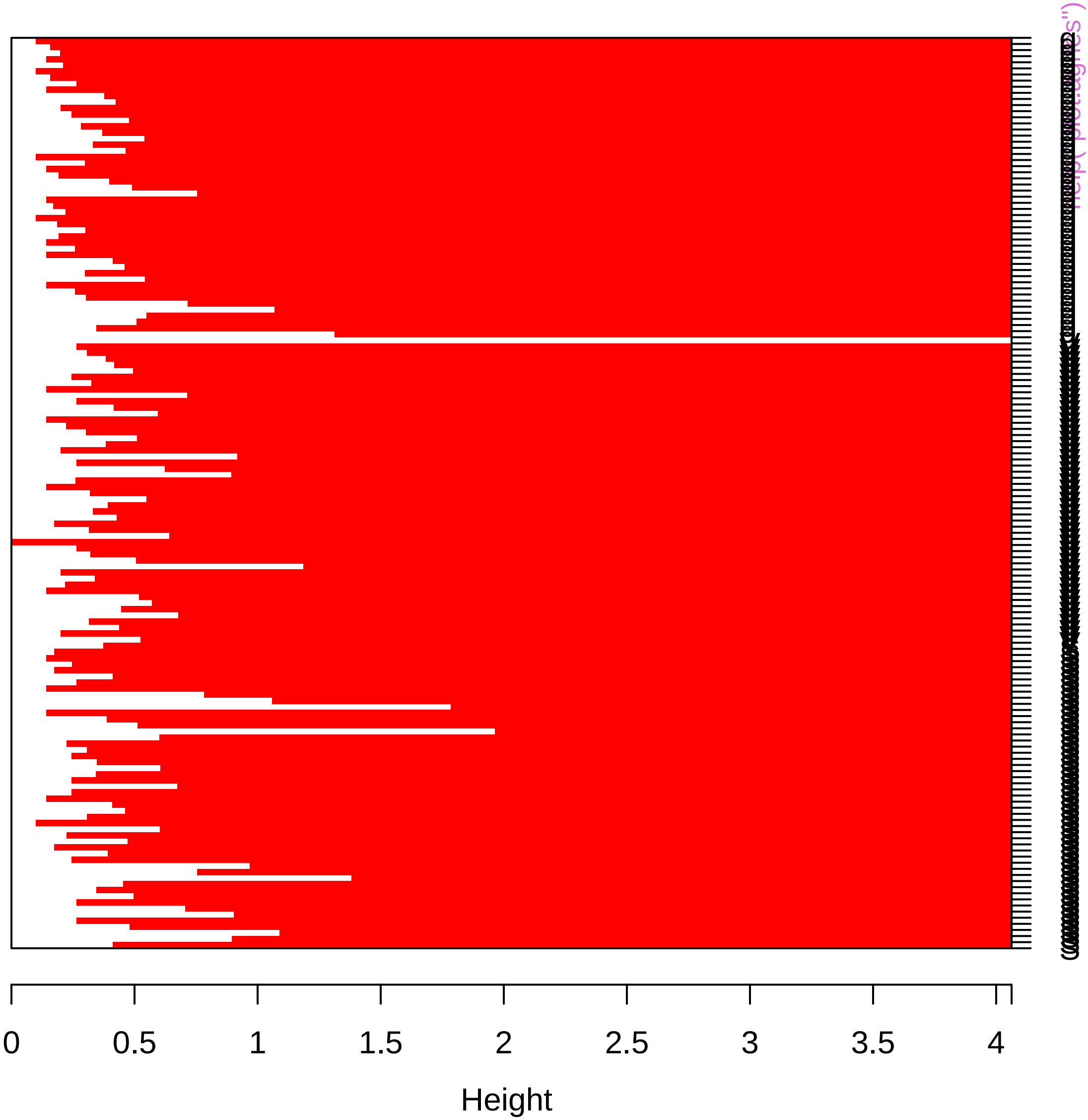
Banner of agnes(x = dai.b, method = "ward")



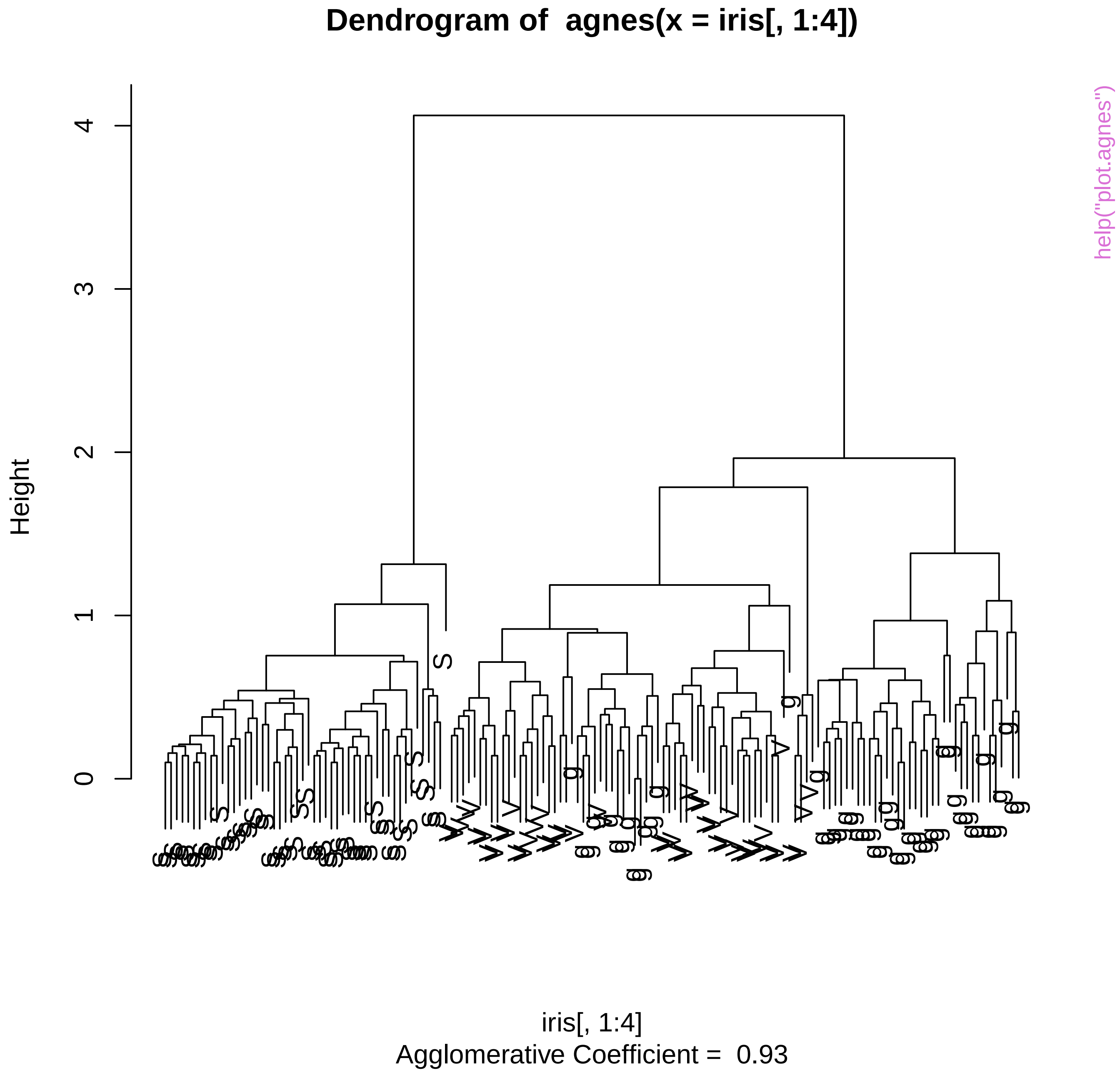
Agglomerative Coefficient = 0.95

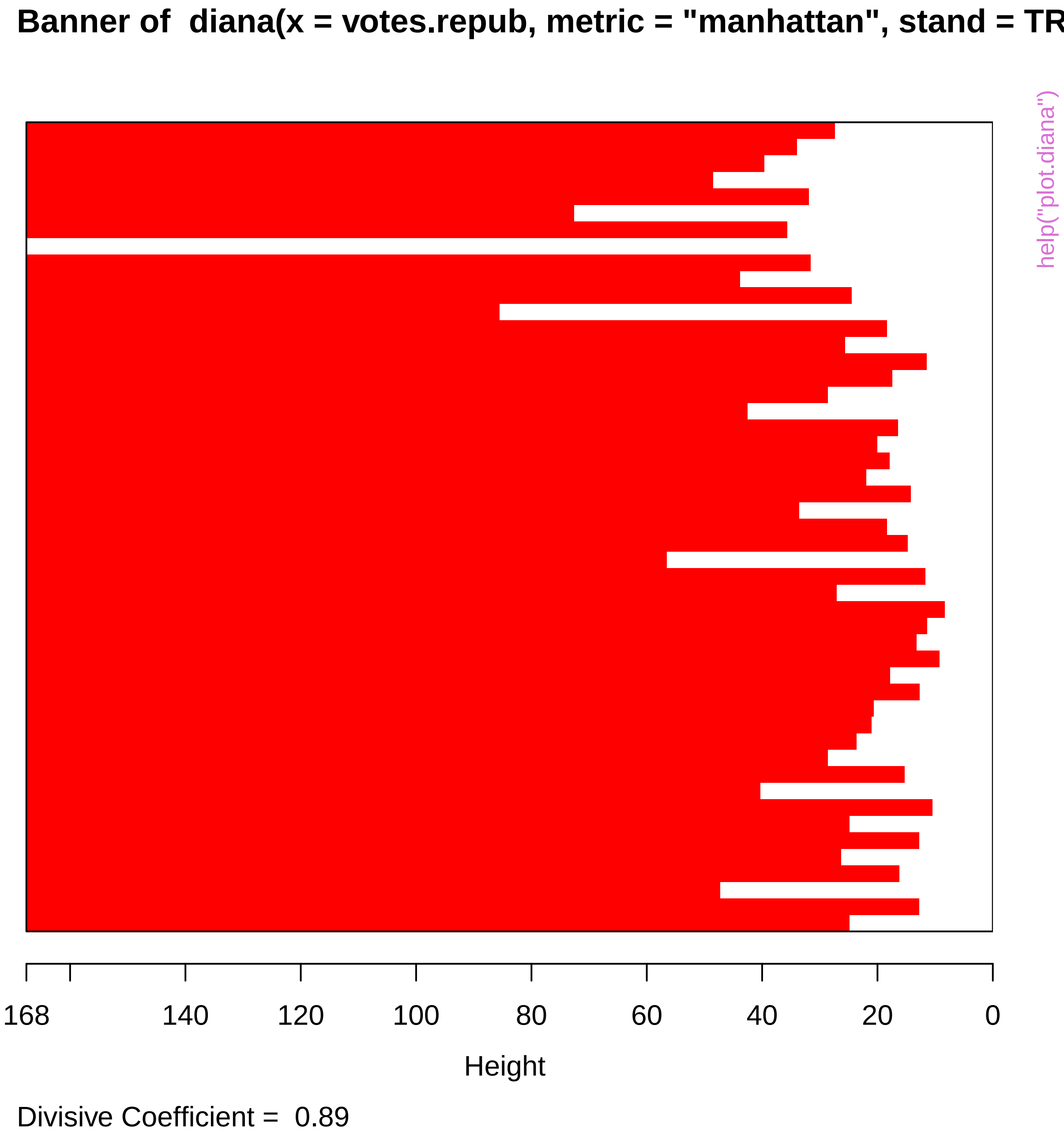

cmdsdai.b[, 1:2][,1]
cmdsdai.b[, 1:2][,2]
−0.4
−0.3
−0.2
−0.1
0.0
0.1
0.2
0.3
help("plantTraits")

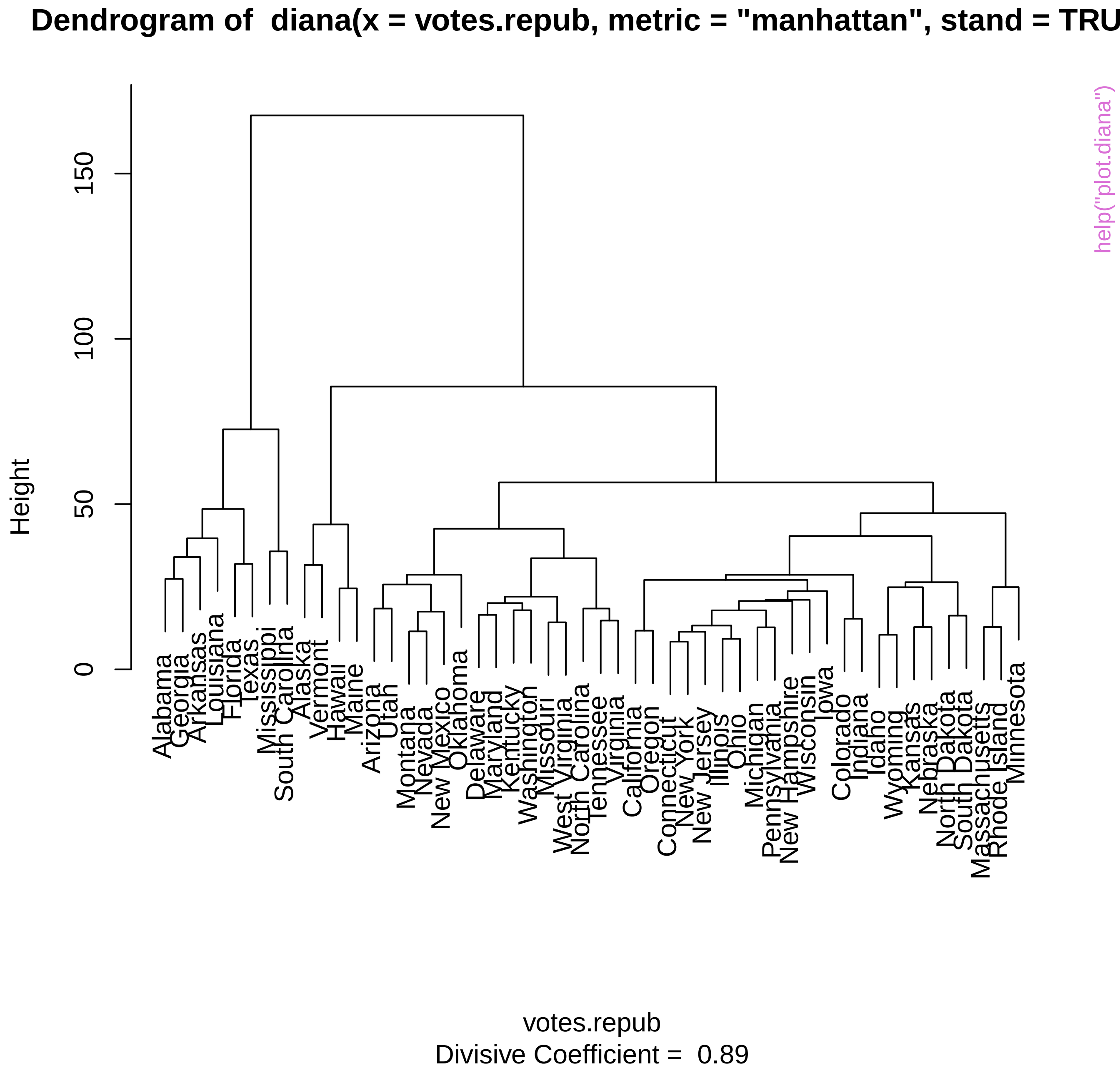
Banner of agnes(x = iris[, 1:4])

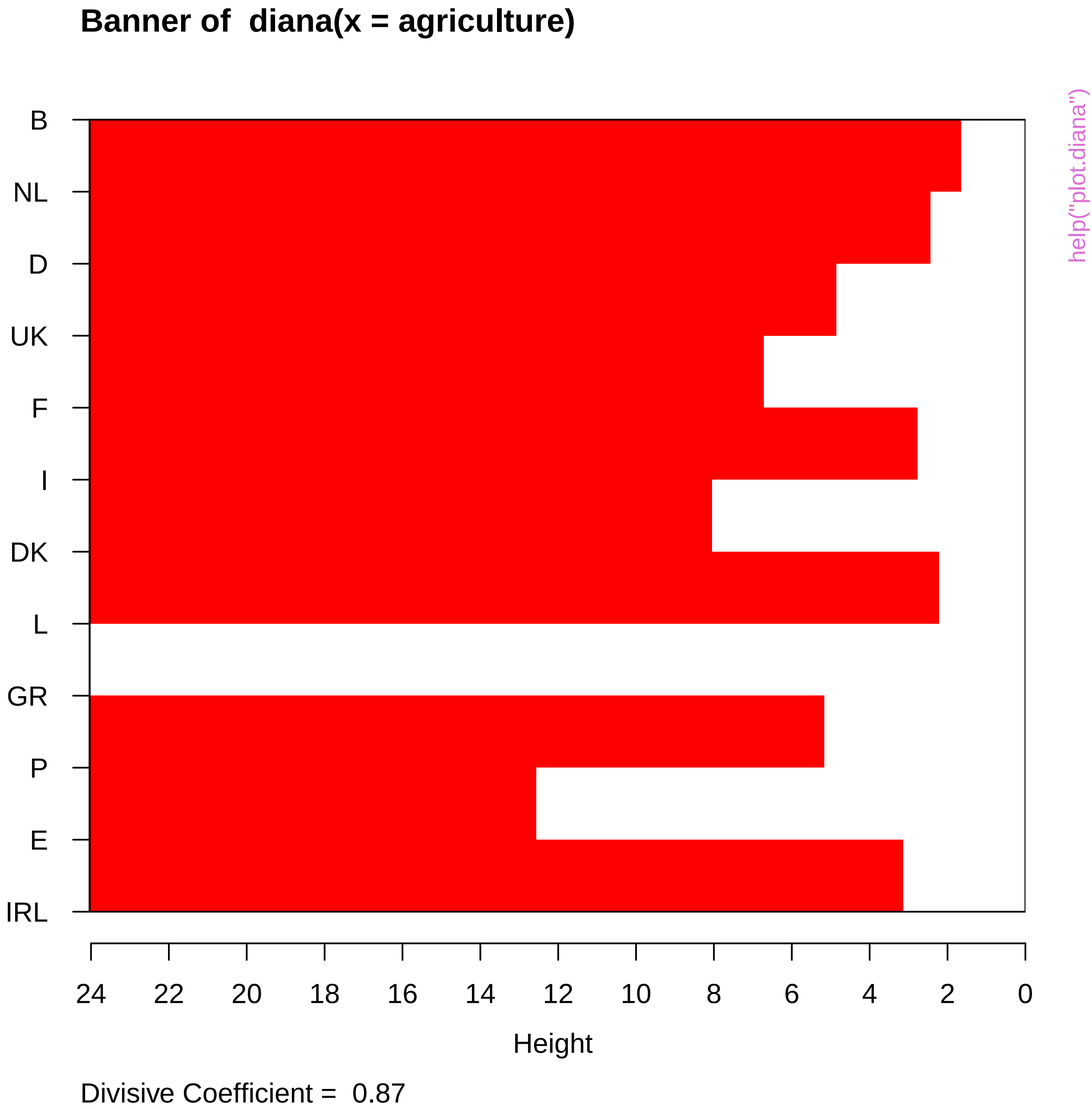


Agglomerative Coefficient = 0.93

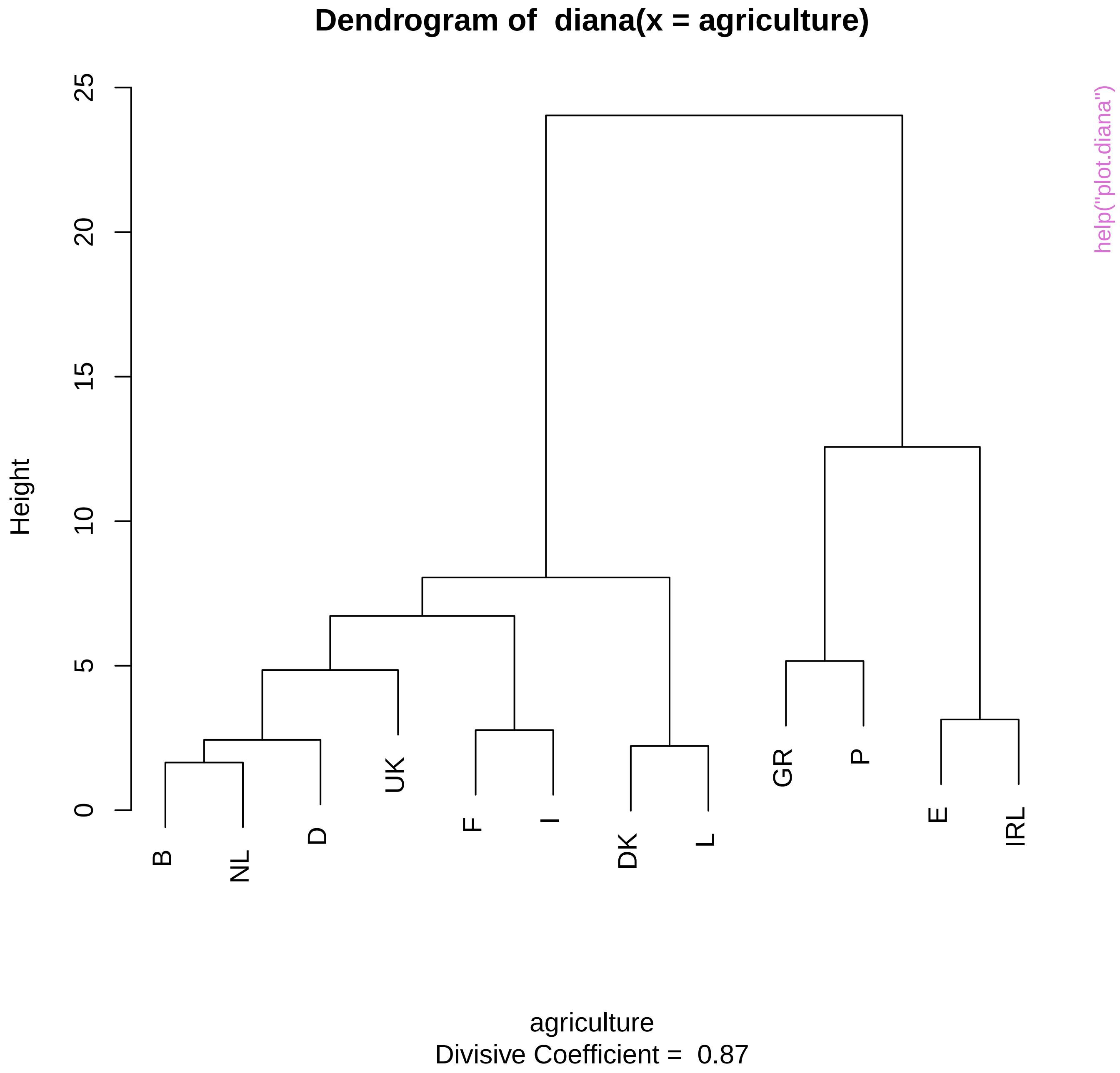

Dendrogram of agnes(x = iris[, 1:4])
Height
0
1
2
3
4
iris[, 1:4]
Agglomerative Coefficient = 0.93
help("plot.agnes")


Banner of diana(x = votes.repub, metric = "manhattan", stand = TR
help("plot.diana")
168
140
120
100
80
60
40
20
0
Height
Divisive Coefficient = 0.89

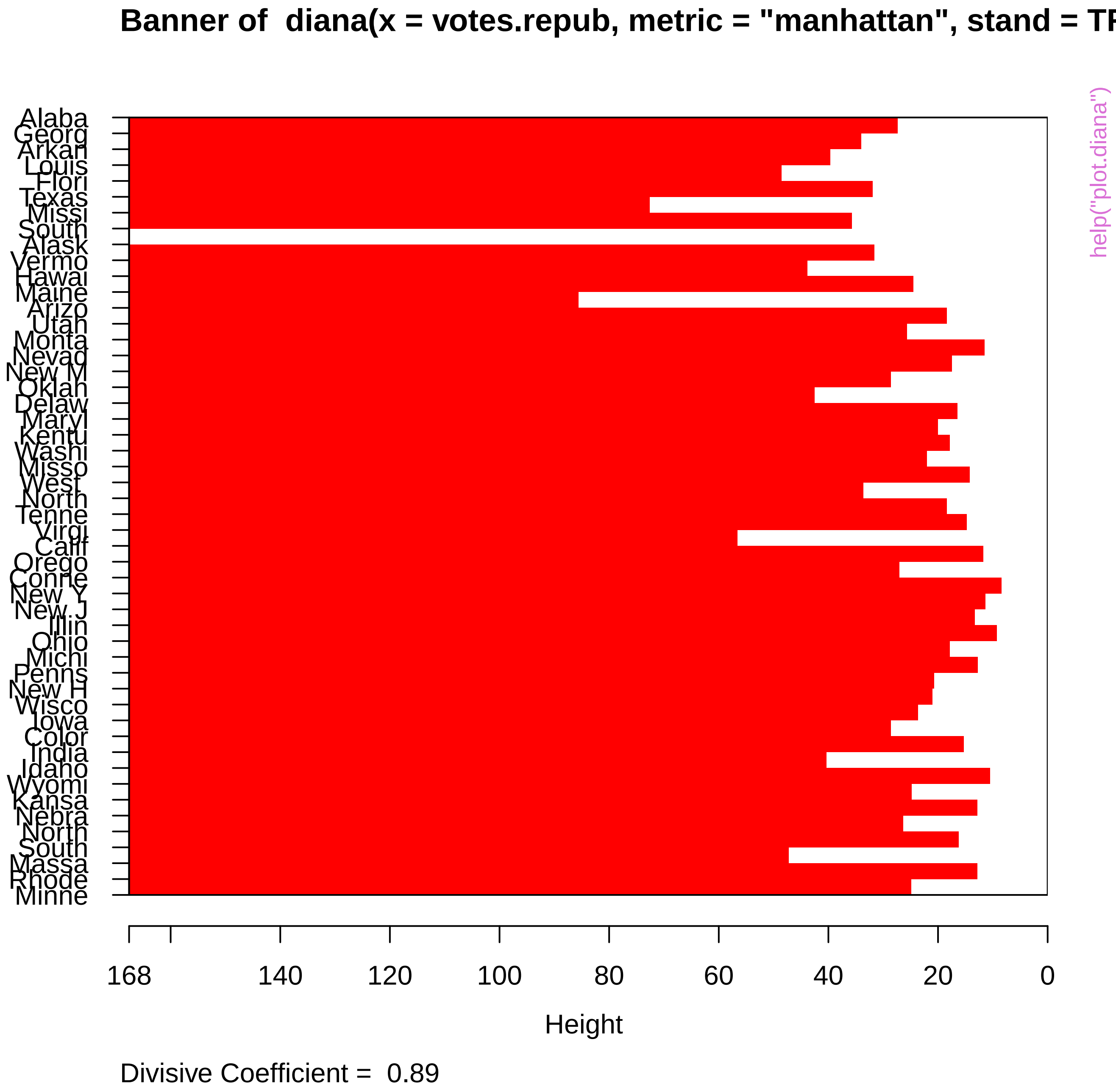

Dendrogram of diana(x = votes.repub, metric = "manhattan", stand = TRU
help("plot.diana")
Height
0
50
100
150
Alabama
Georgia
Arkansas
Louisiana
Florida
Texas
Mississippi
South Carolina
Alaska
Vermont
Hawaii
Maine
Arizona
Utah
Montana
Nevada
New Mexico
Oklahoma
Delaware
Maryland
Kentucky
Washington
Missouri
West Virginia
North Carolina
Tennessee
Virginia
California
Oregon
Connecticut
New York
New Jersey
Illinois
Ohio
Michigan
Pennsylvania
New Hampshire
Wisconsin
Iowa
Colorado
Indiana
Idaho
Wyoming
Kansas
Nebraska
North Dakota
South Dakota
Massachusetts
Rhode Island
Minnesota
votes.repub
Divisive Coefficient = 0.89



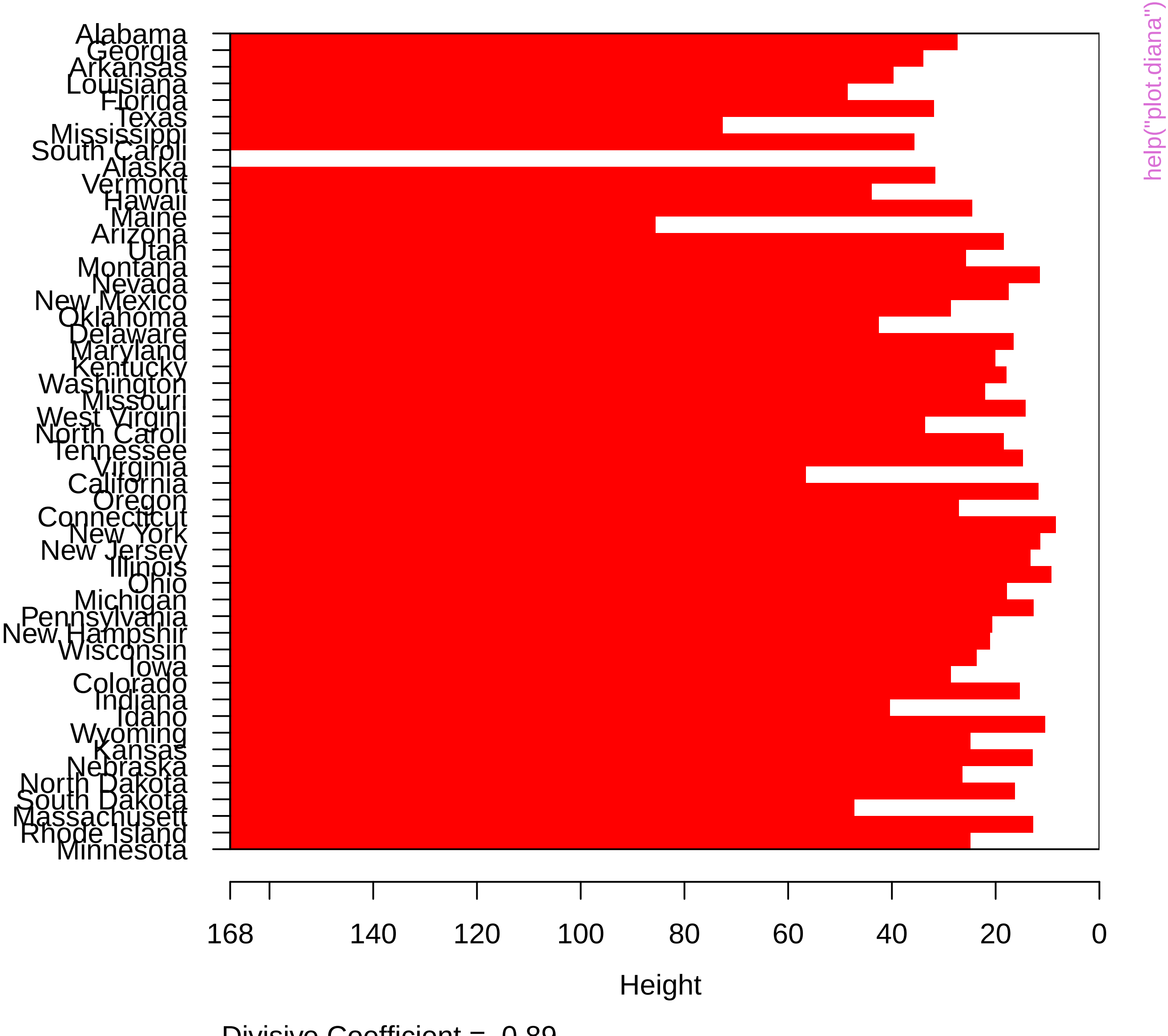
Banner of diana(x = agriculture)
B
NL
D
UK
F
I
DK
L
GR
P
E
IRL
24
22
20
18
16
14
12
10
8
6
4
2
0
Height
Divisive Coefficient = 0.87
help("plot.diana")



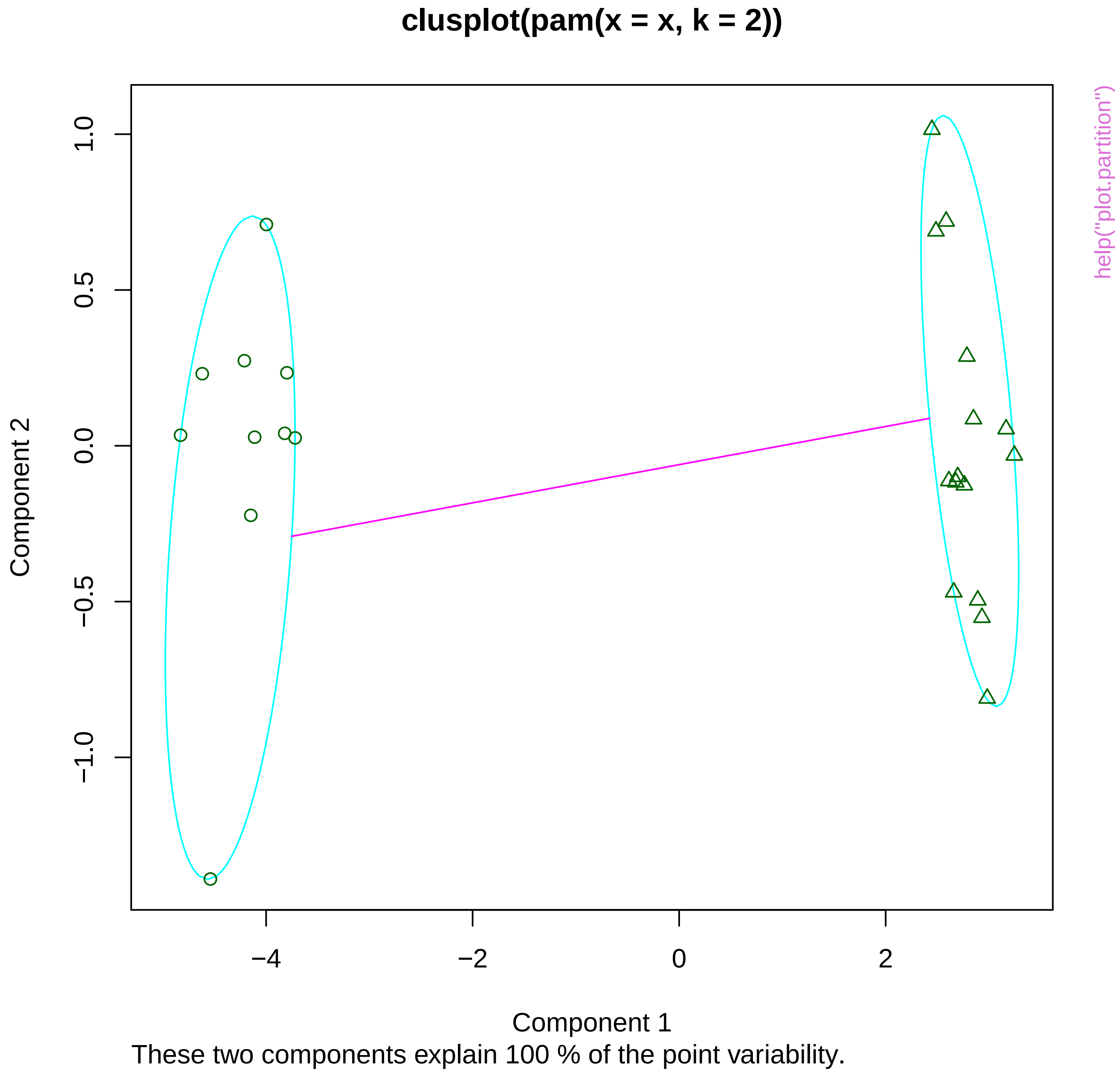
Dendrogram of diana(x = agriculture)
Height
0
5
10
15
20
25
B
NL
D
UK
F
I
DK
L
GR
P
E
IRL
help("plot.diana")
agriculture
Divisive Coefficient = 0.87

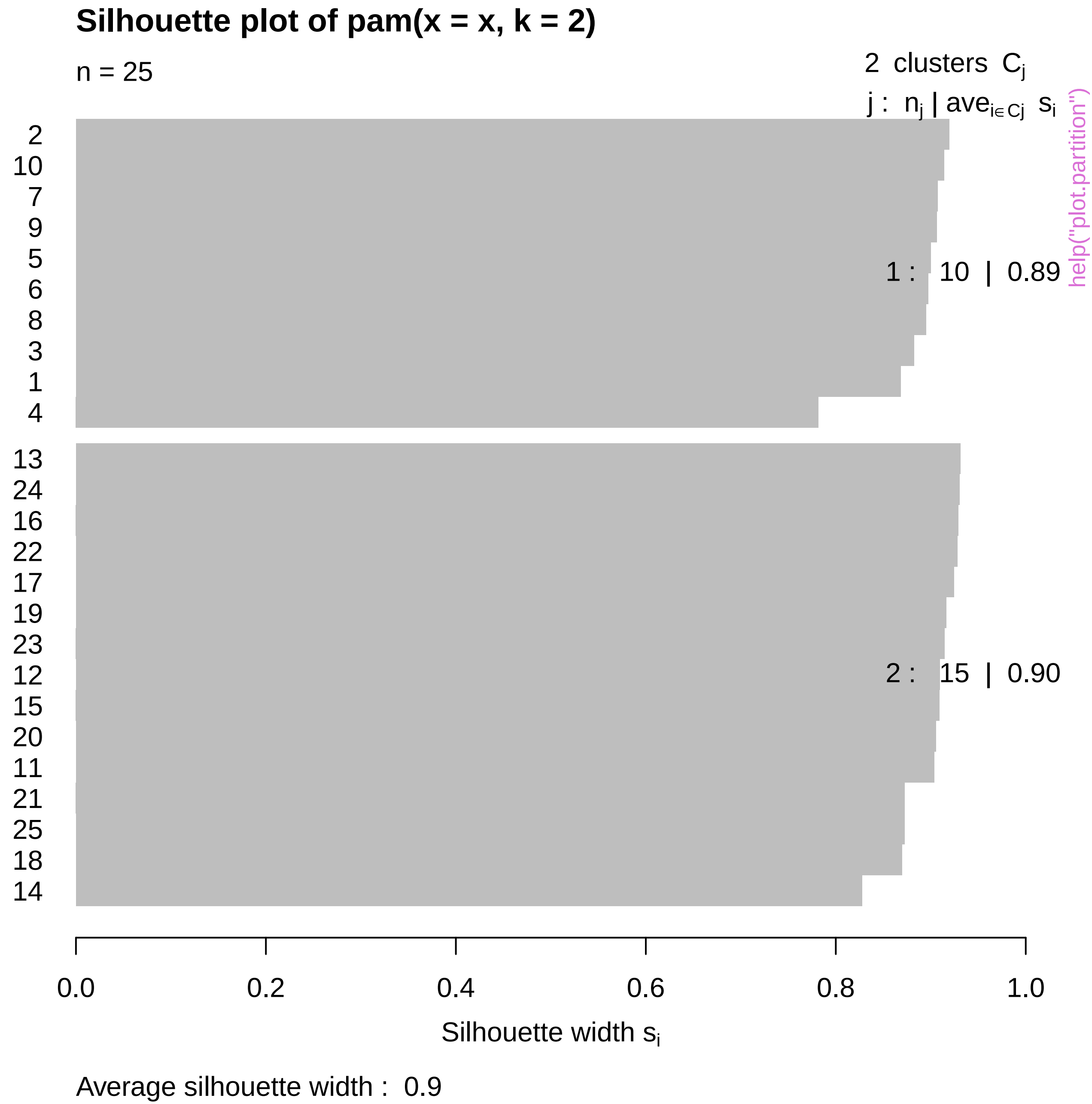

Banner of diana(x = votes.repub, metric = "manhattan", stand = TR
Alaba
Georg
Arkan
Louis
Flori
Texas
Missi
South
Alask
Vermo
Hawai
Maine
Arizo
Utah
Monta
Nevad
New M
Oklah
Delaw
Maryl
Kentu
Washi
Misso
West
North
Tenne
Virgi
Calif
Orego
Conne
New Y
New J
Illin
Ohio
Michi
Penns
New H
Wisco
Iowa
Color
India
Idaho
Wyomi
Kansa
Nebra
North
South
Massa
Rhode
Minne
168
140
120
100
80
60
40
20
0
Height
help("plot.diana")
Divisive Coefficient = 0.89

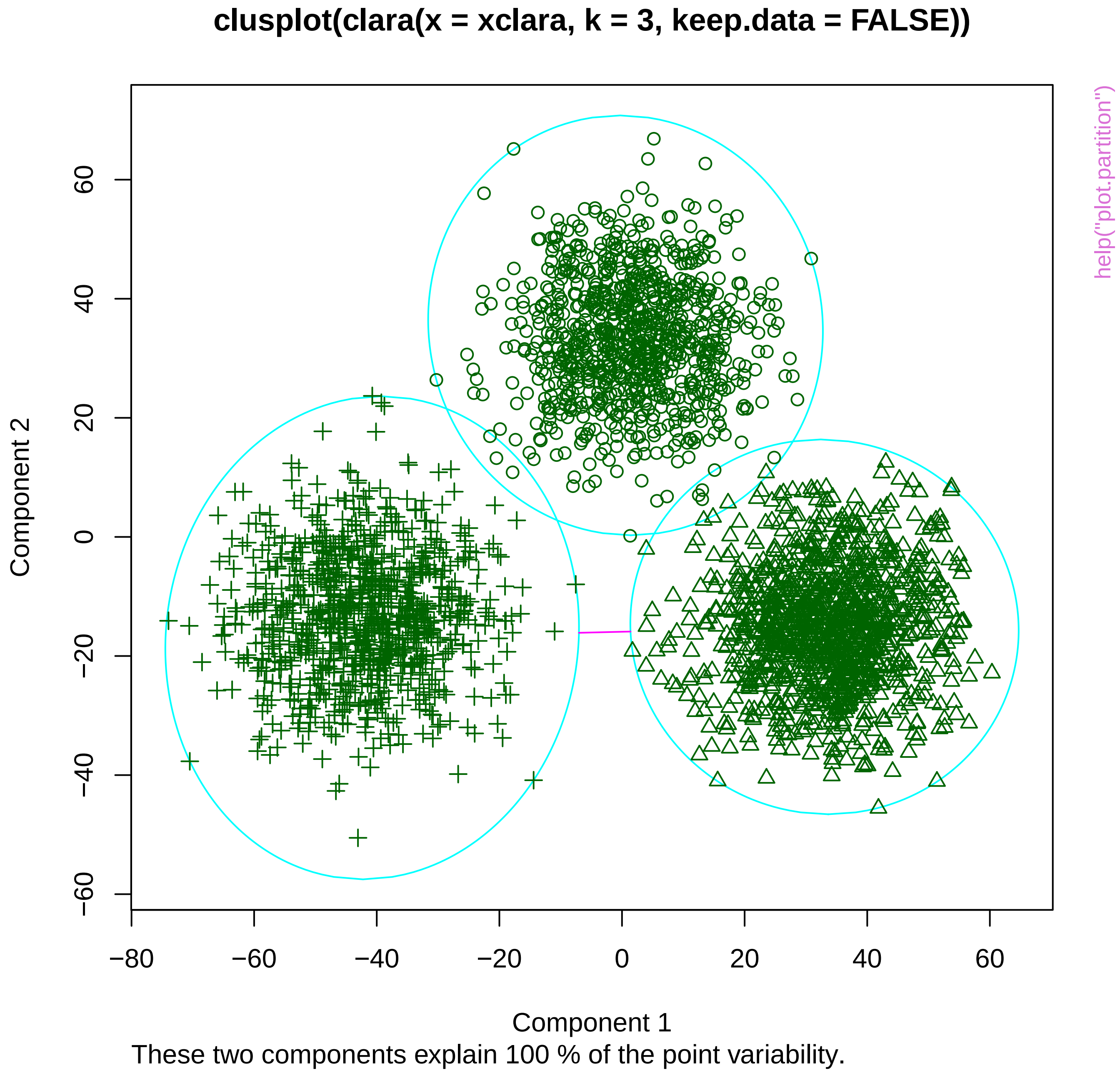
Banner of diana(x = votes.repub, metric = "manhattan", star

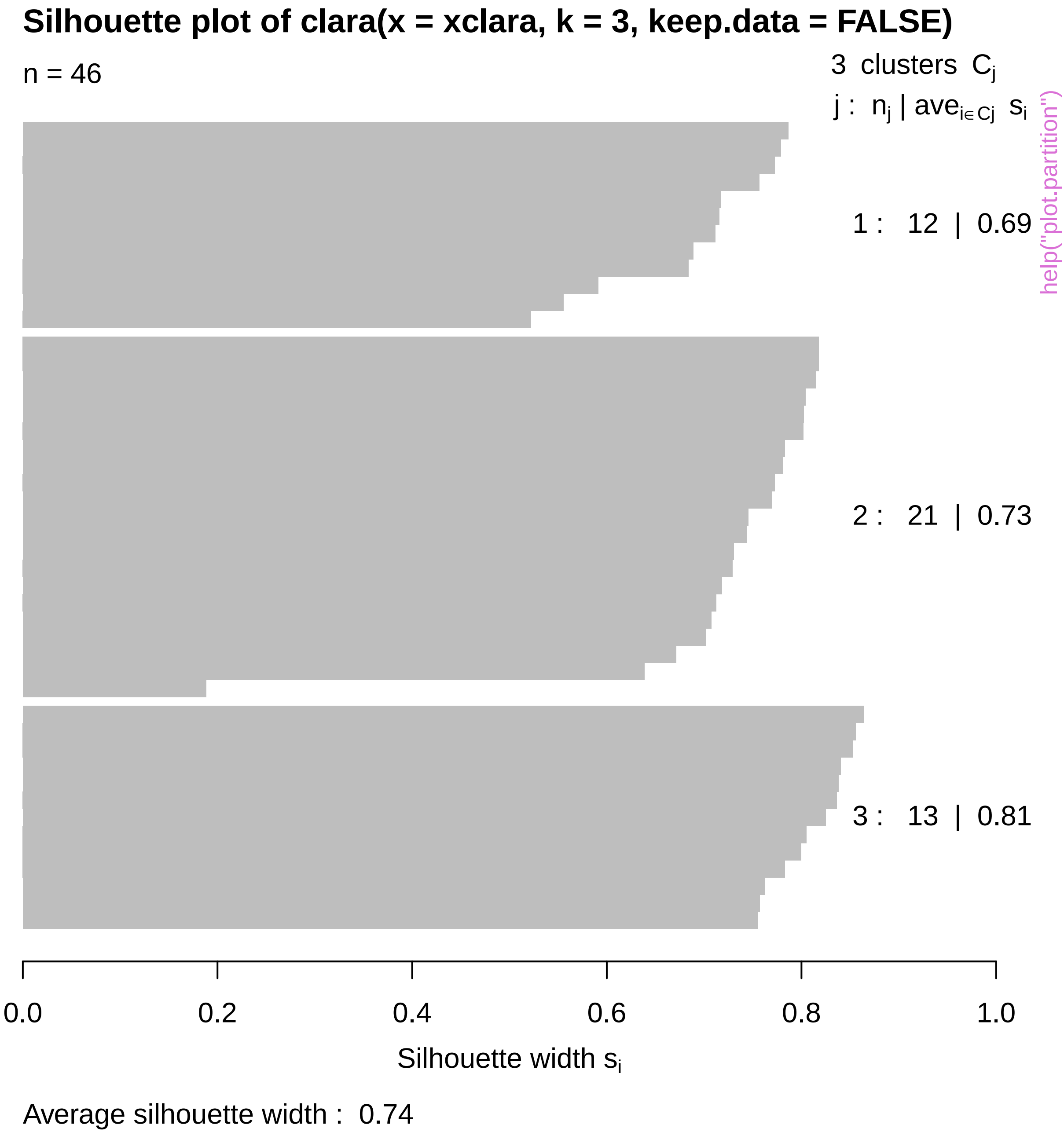


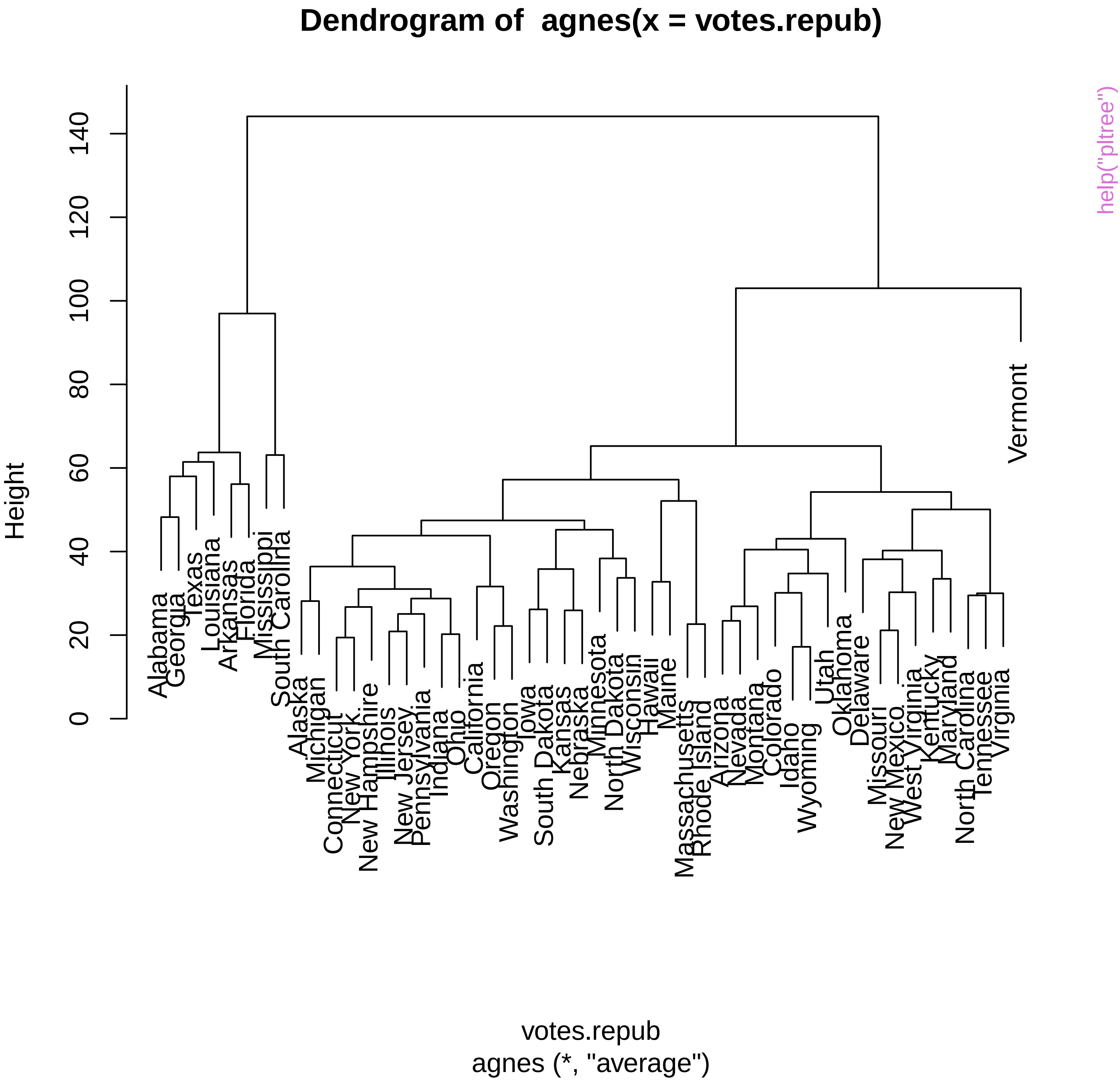
Divisive Coefficient = 0.89


clusplot(pam(x = x, k = 2))
Component 1
Component 2
−4
−2
0
2
1.0
0.5
0.0
−0.5
−1.0
These two components explain 100 % of the point variability.
help("plot.partition")

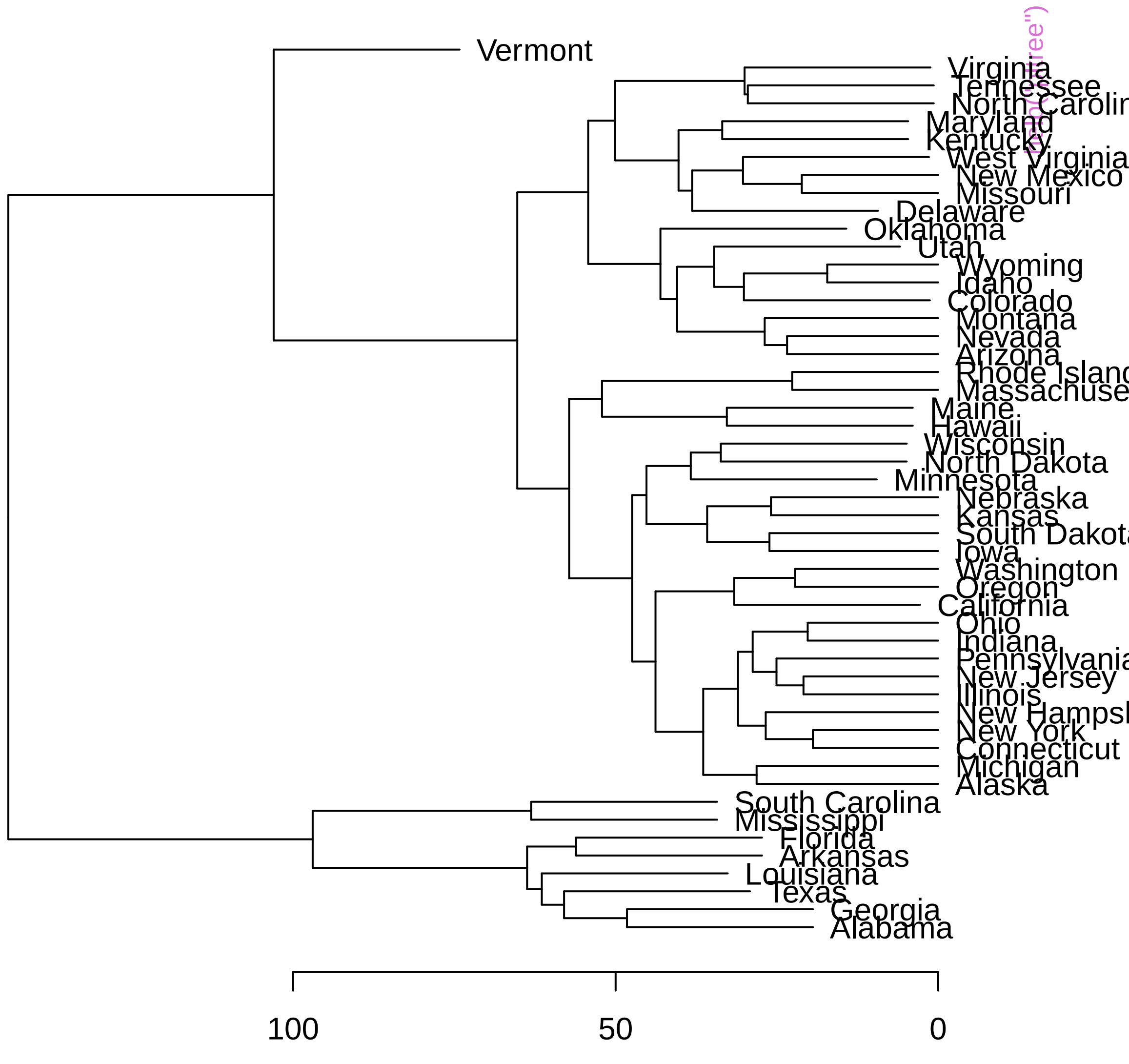

Silhouette plot of pam(x = x, k = 2)
n = 25
2 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
1 : 10 | 0.89
2 : 15 | 0.90
help("plot.partition")
2
10
7
9
5
6
8
3
1
4
13
24
16
22
17
19
23
12
15
20
11
21
25
18
14
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.9


clusplot(clara(x = xclara, k = 3, keep.data = FALSE))
help("plot.partition")
Component 2
60
40
20
0
−20
−40
−60
−80
−60
−40
−20
0
20
40
60
Component 1
These two components explain 100 % of the point variability.

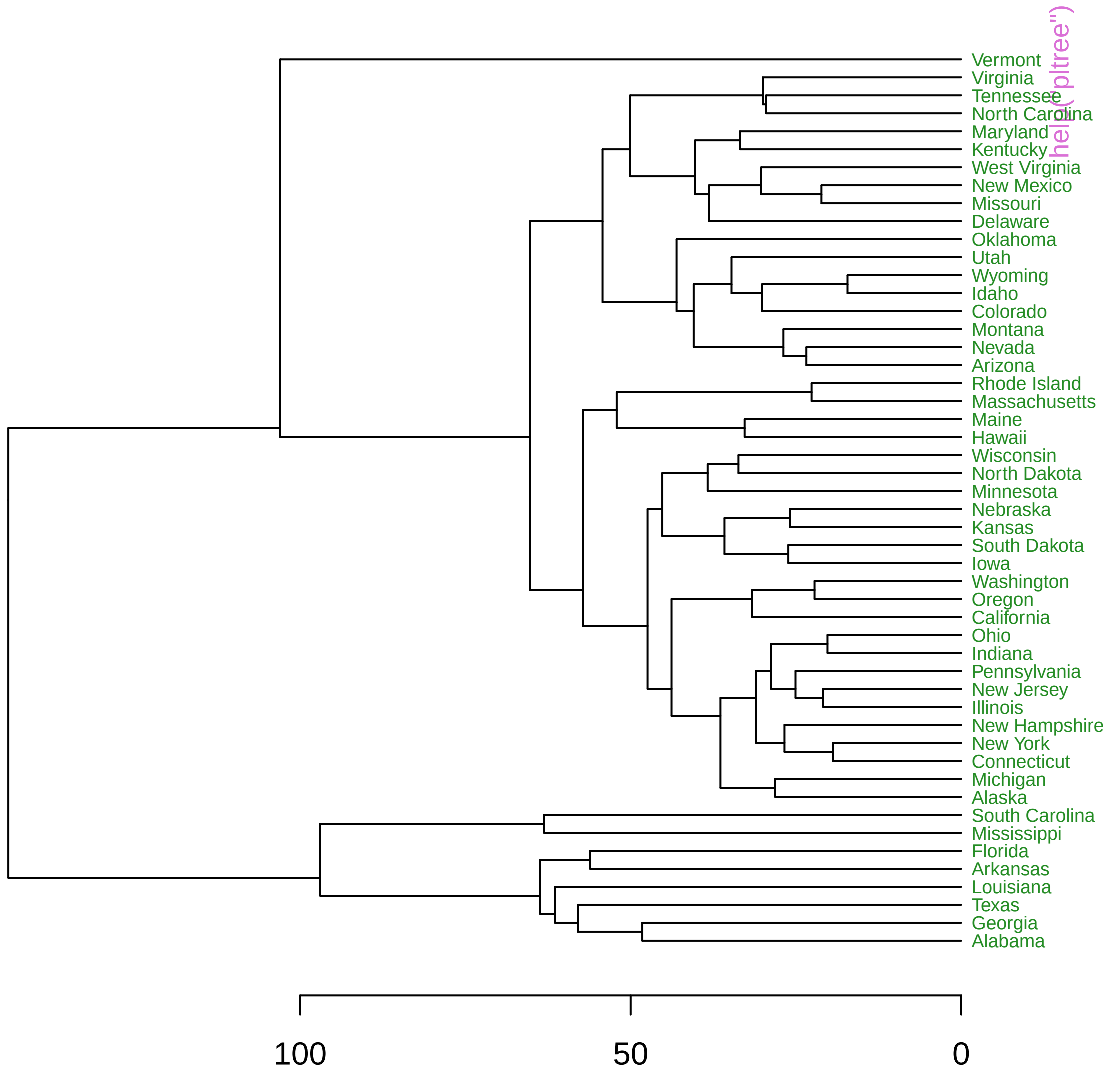

Silhouette plot of clara(x = xclara, k = 3, keep.data = FALSE)
n = 46
3 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("plot.partition")
1 : 12 | 0.69
2 : 21 | 0.73
3 : 13 | 0.81
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.74

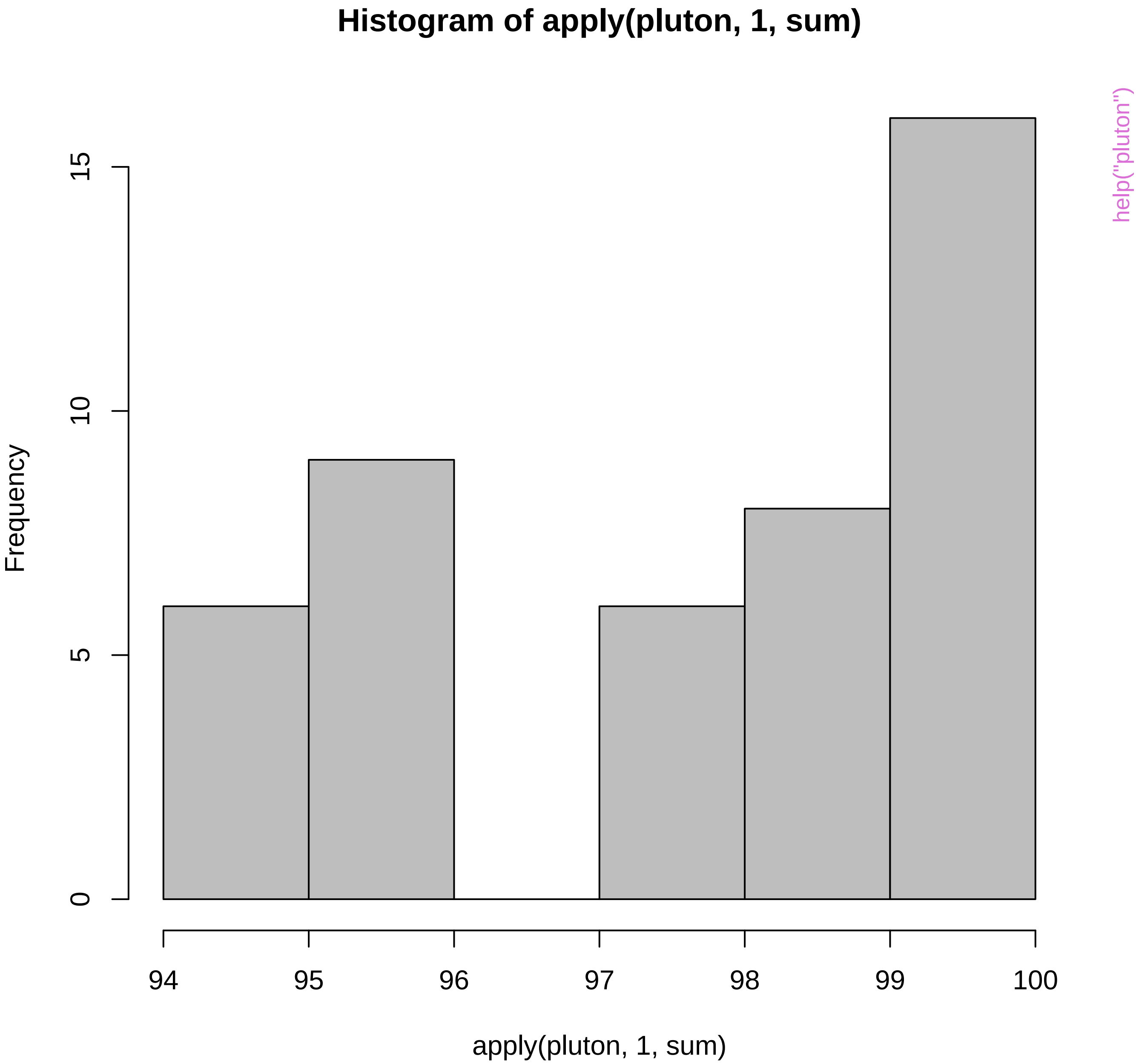


Dendrogram of agnes(x = votes.repub)
Height
0
20
40
60
80
100
120
140
Alabama
Georgia
Texas
Louisiana
Arkansas
Florida
Mississippi
South Carolina
Alaska
Michigan
Connecticut
New York
New Hampshire
Illinois
New Jersey
Pennsylvania
Indiana
Ohio
California
Oregon
Washington
Iowa
South Dakota
Kansas
Nebraska
Minnesota
North Dakota
Wisconsin
Hawaii
Maine
Massachusetts
Rhode Island
Arizona
Nevada
Montana
Colorado
Idaho
Wyoming
Utah
Oklahoma
Delaware
Missouri
New Mexico
West Virginia
Kentucky
Maryland
North Carolina
Tennessee
Virginia
Vermont
help("pltree")
votes.repub
agnes (*, "average")

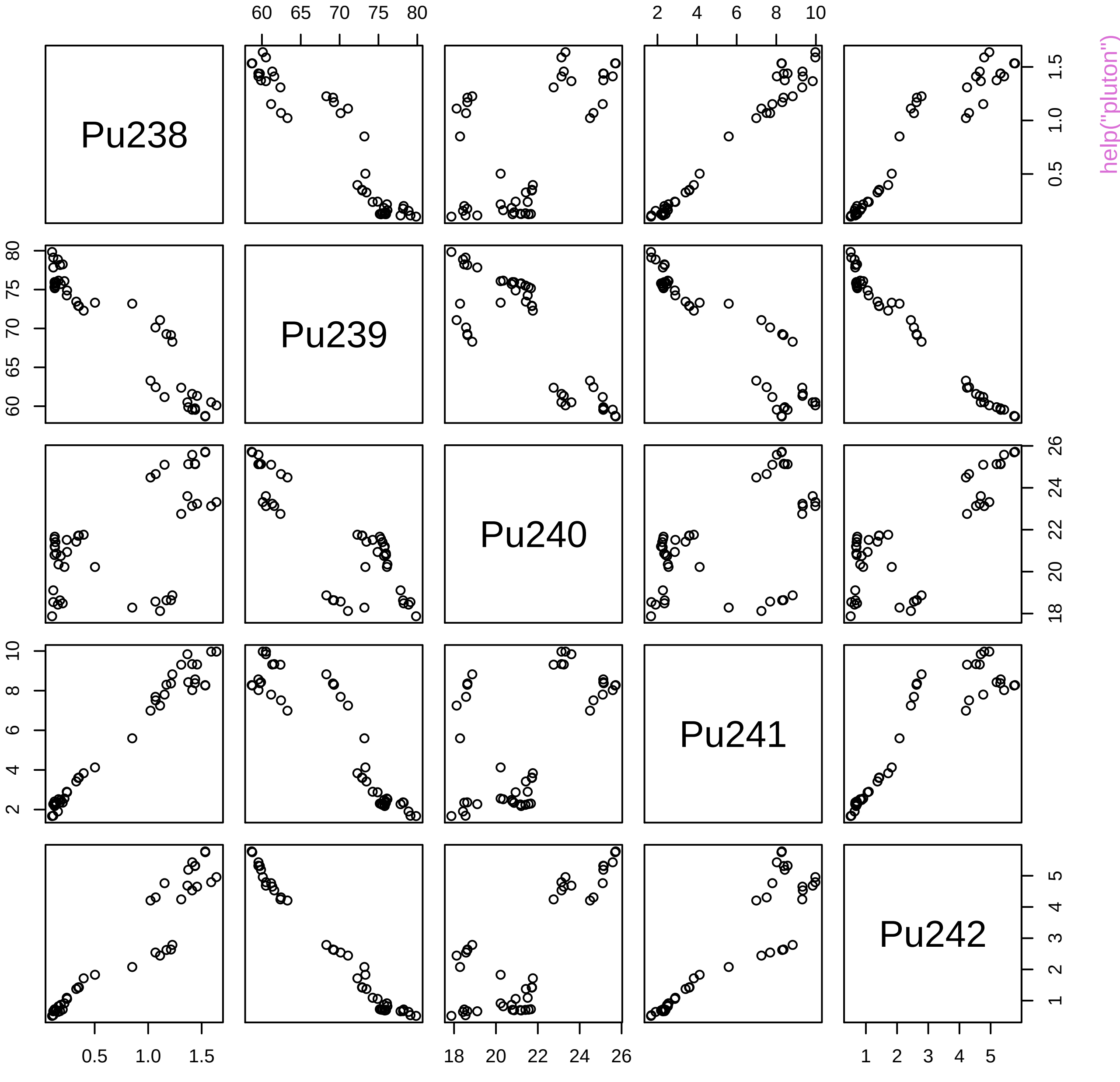

Vermont
Virginia
Tennessee
Maryland
Kentucky
West Virginia
New Mexico
Missouri
Delaware
Oklahoma
Utah
Wyoming
Idaho
Colorado
Montana
Nevada
Arizona
Maine
Hawaii
Wisconsin
North Dakota
Minnesota
Nebraska
Kansas
Iowa
Washington
Oregon
California
Ohio
Indiana
New Jersey
Illinois
New York
Connecticut
Michigan
Alaska
South Carolina
Mississippi
Florida
Arkansas
Louisiana
Texas
Georgia
Alabama
100
50
0

agnes(x = votes.repub)

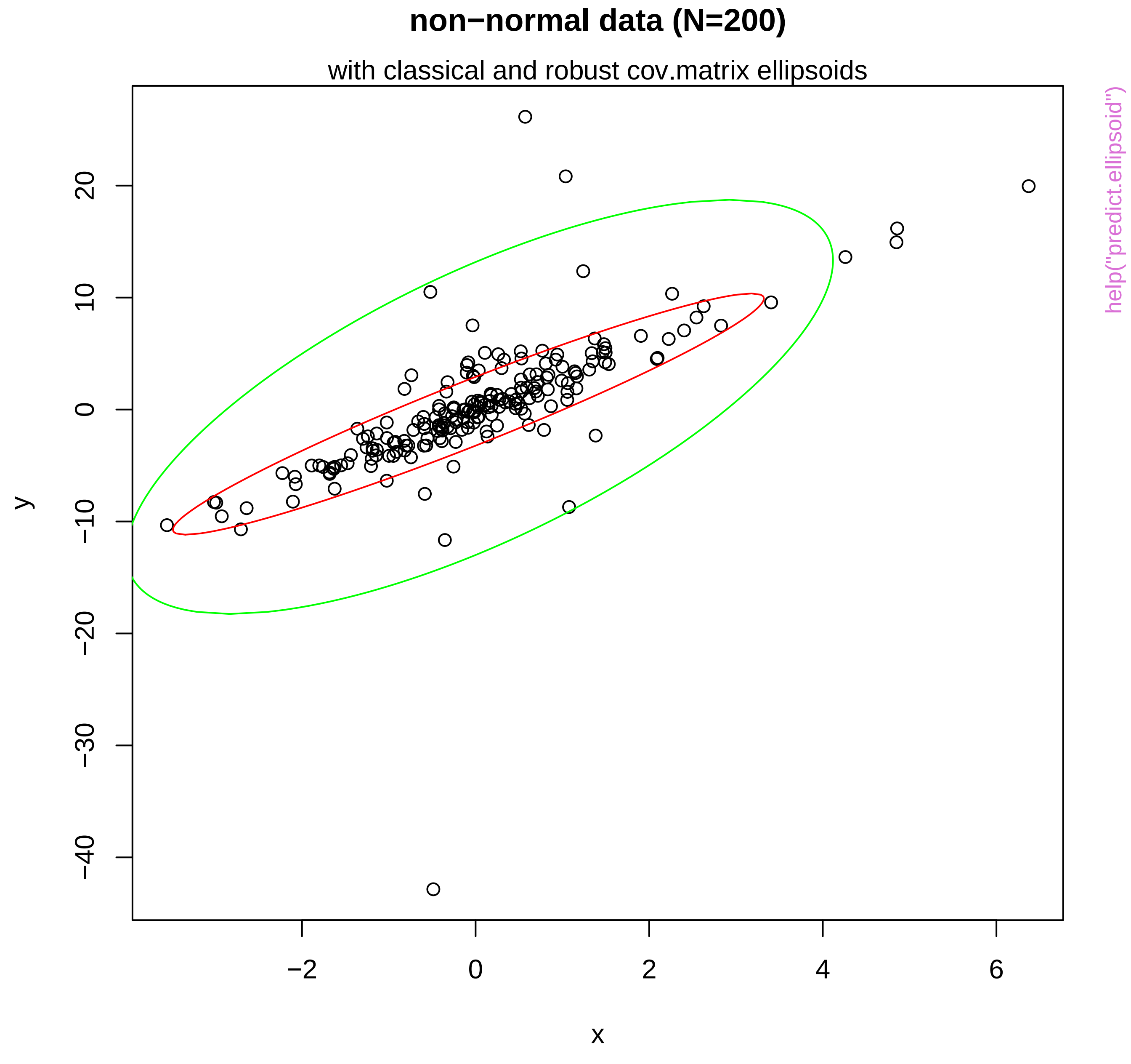




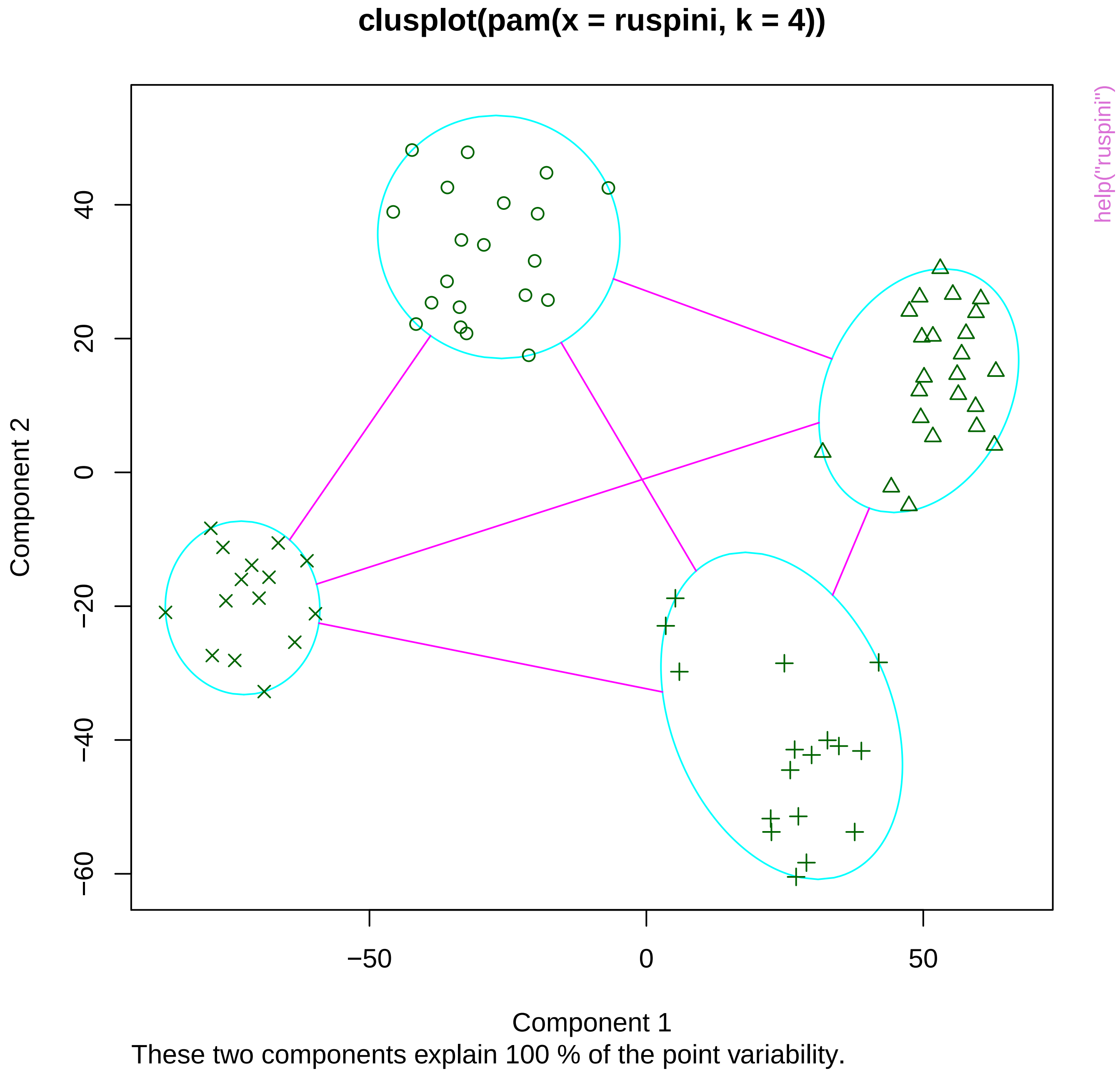
Histogram of apply(pluton, 1, sum)
Frequency
0
5
10
15
94
95
96
97
98
99
100
apply(pluton, 1, sum)
help("pluton")

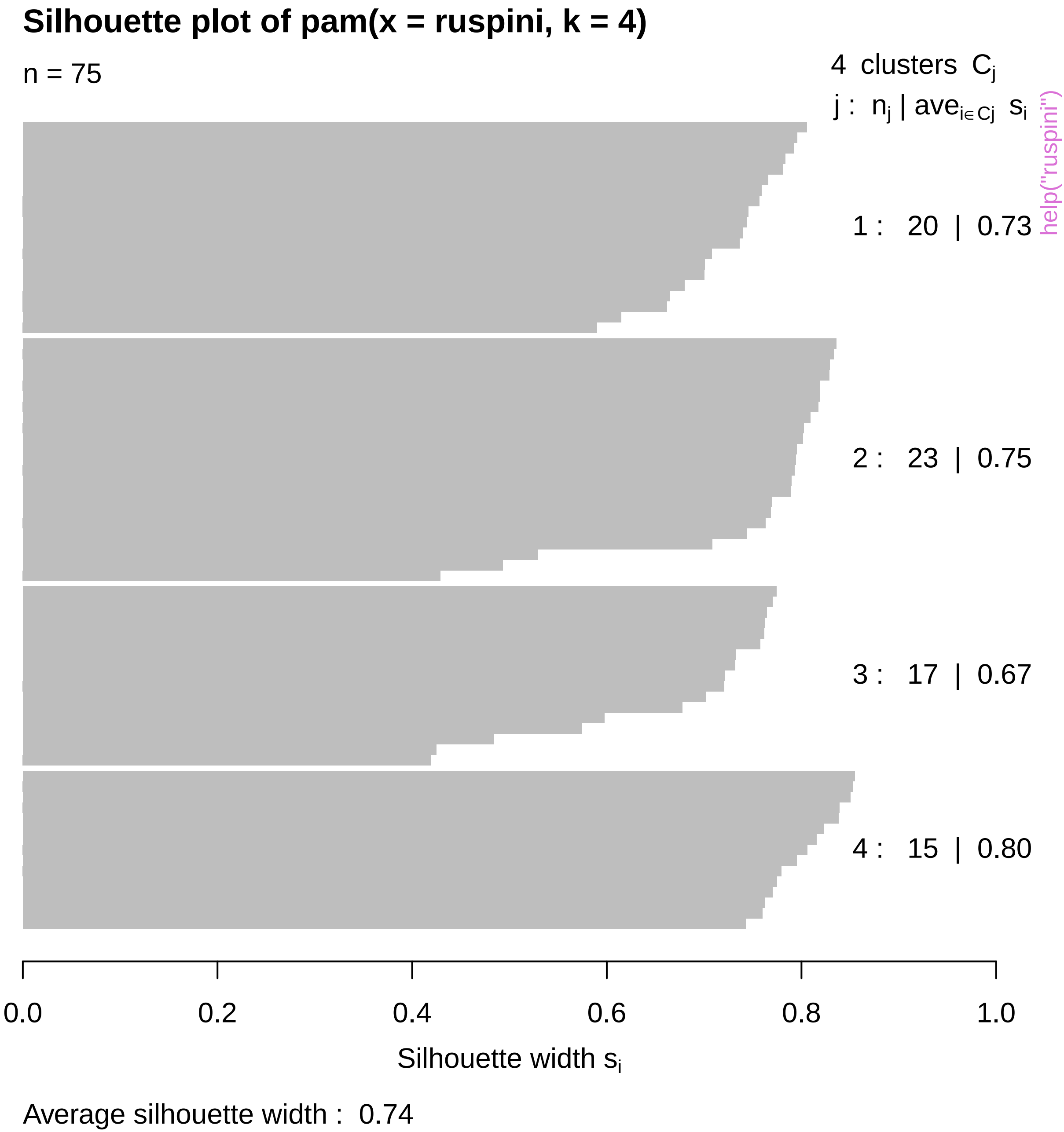


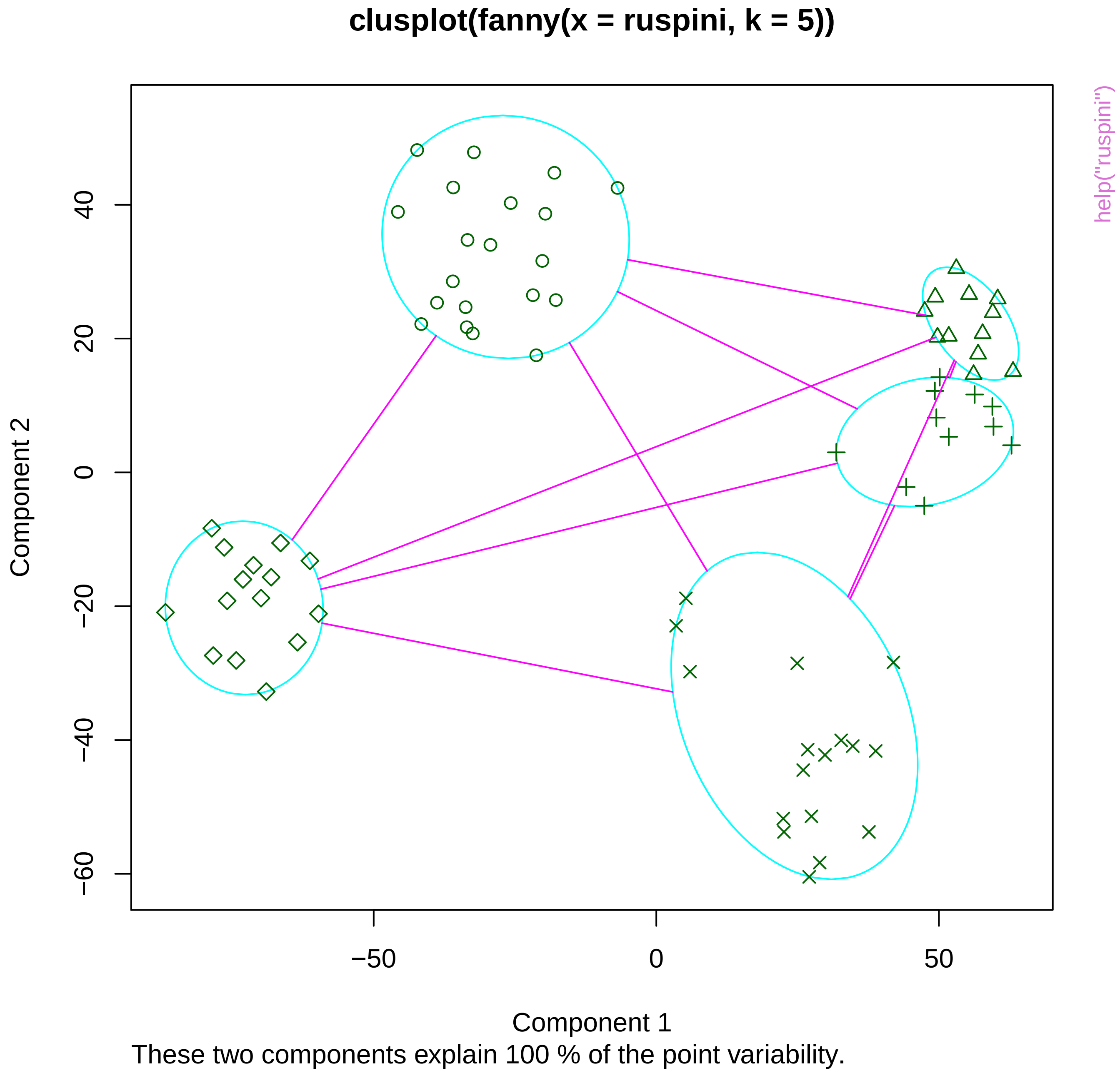
Pu238
Pu239
Pu240
Pu241
Pu242
help("pluton")

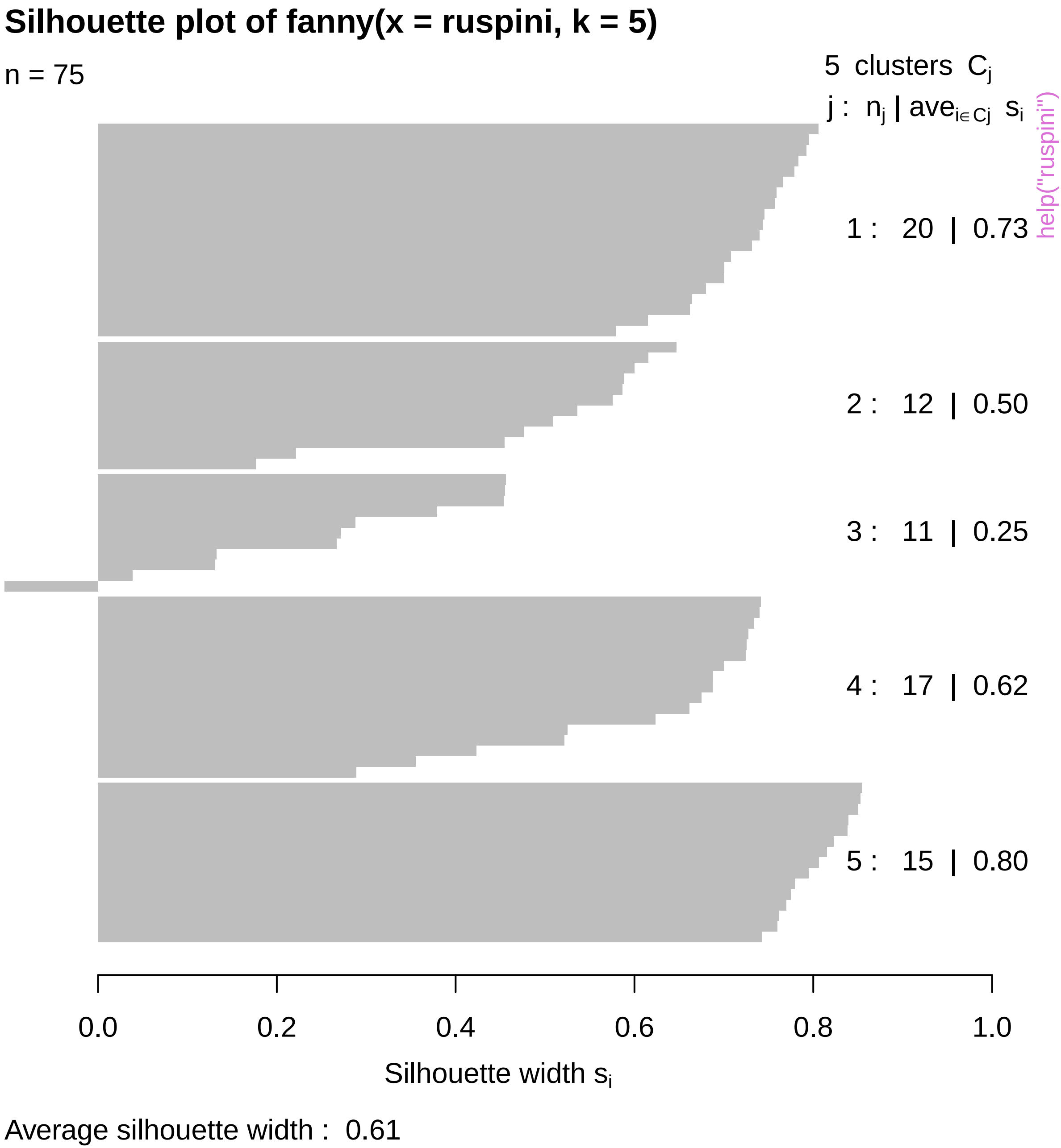


non−normal data (N=200)
with classical and robust cov.matrix ellipsoids
help("predict.ellipsoid")
y
x
20
10
0
−10
−20
−30
−40
−2
0
2
4
6

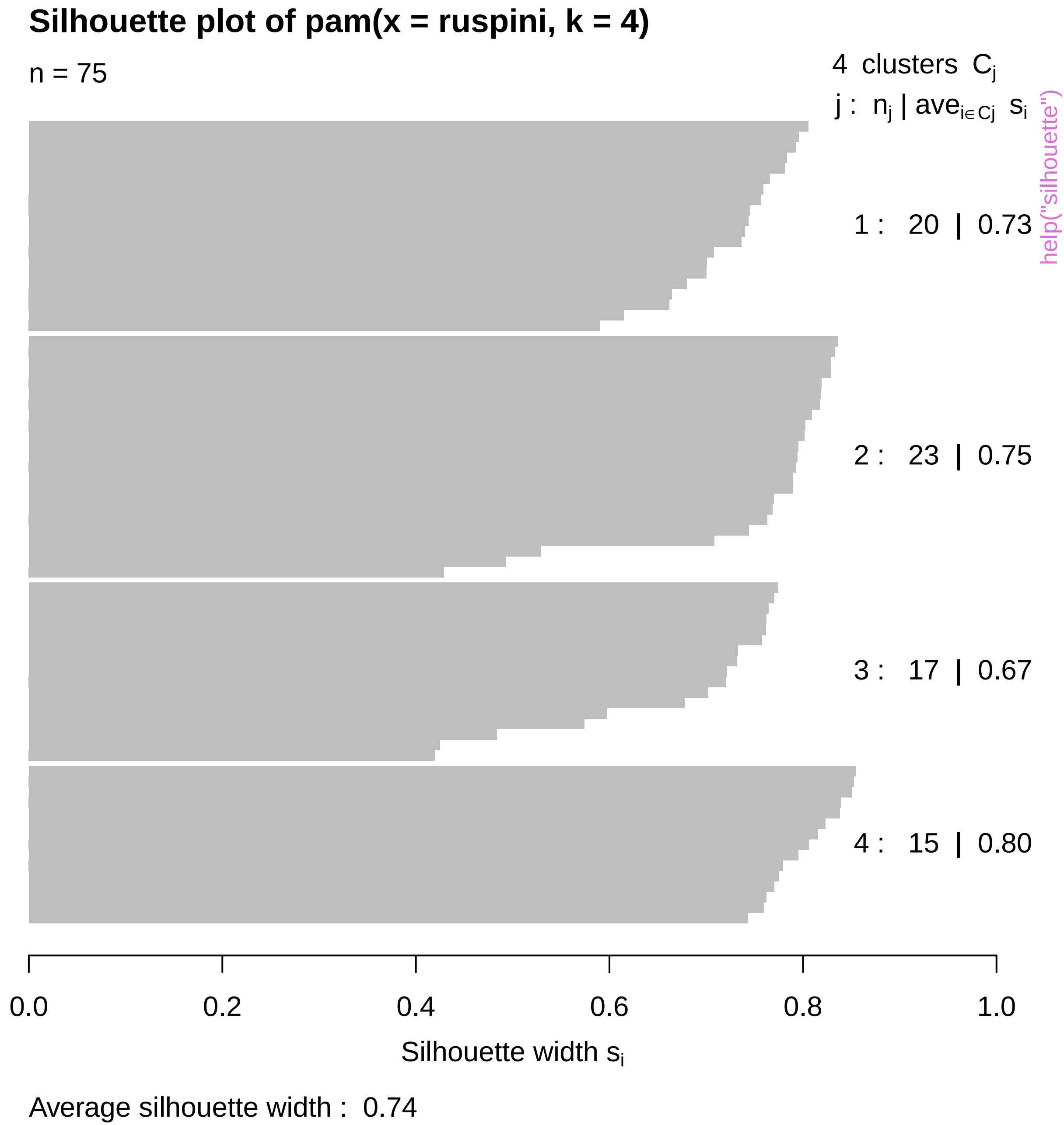

clusplot(pam(x = ruspini, k = 4))
Component 1
Component 2
−50
0
50
−60
−40
−20
0
20
40
help("ruspini")
These two components explain 100 % of the point variability.

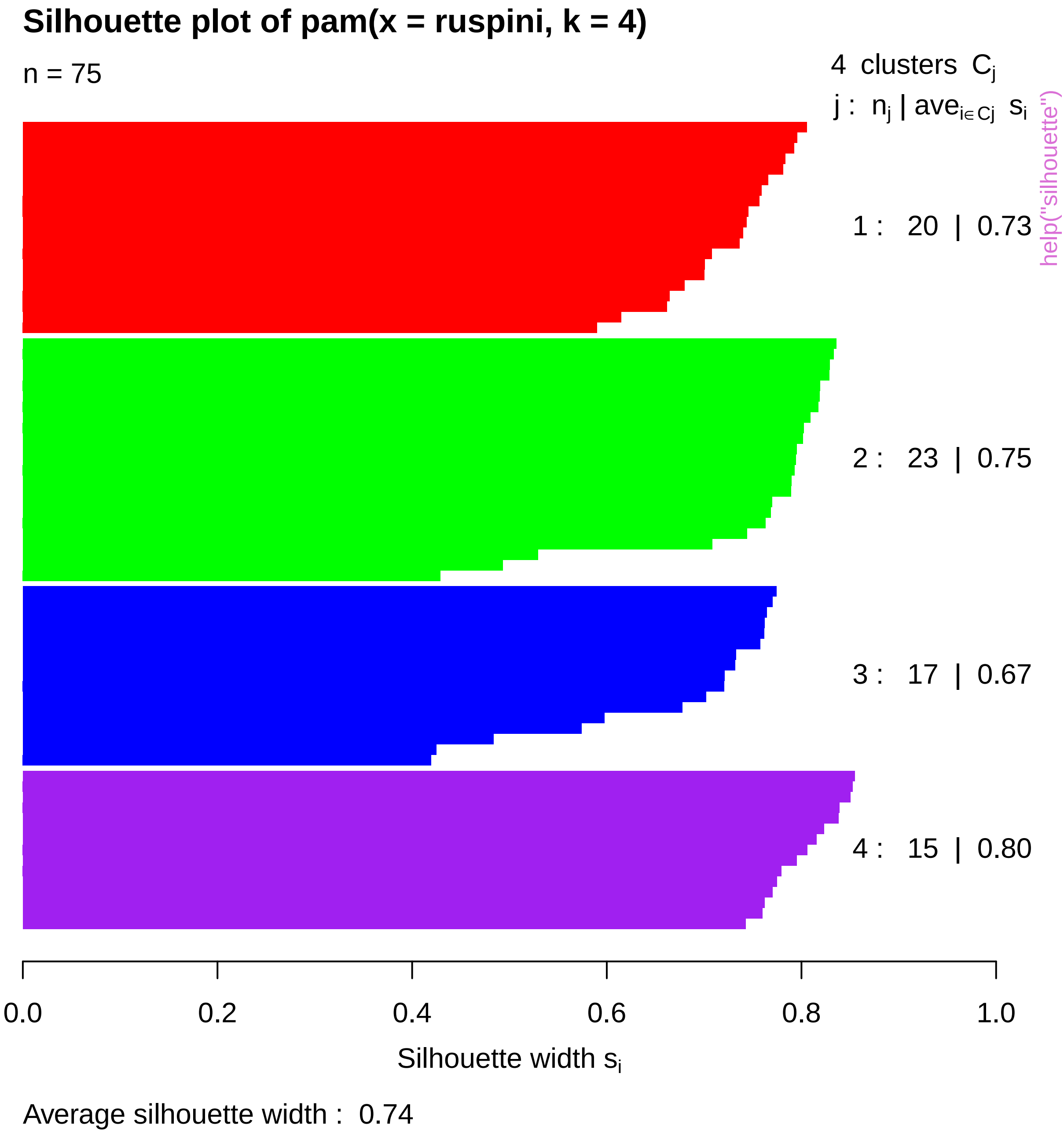

Silhouette plot of pam(x = ruspini, k = 4)
n = 75
4 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("ruspini")
1 : 20 | 0.73
2 : 23 | 0.75
3 : 17 | 0.67
4 : 15 | 0.80
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.74

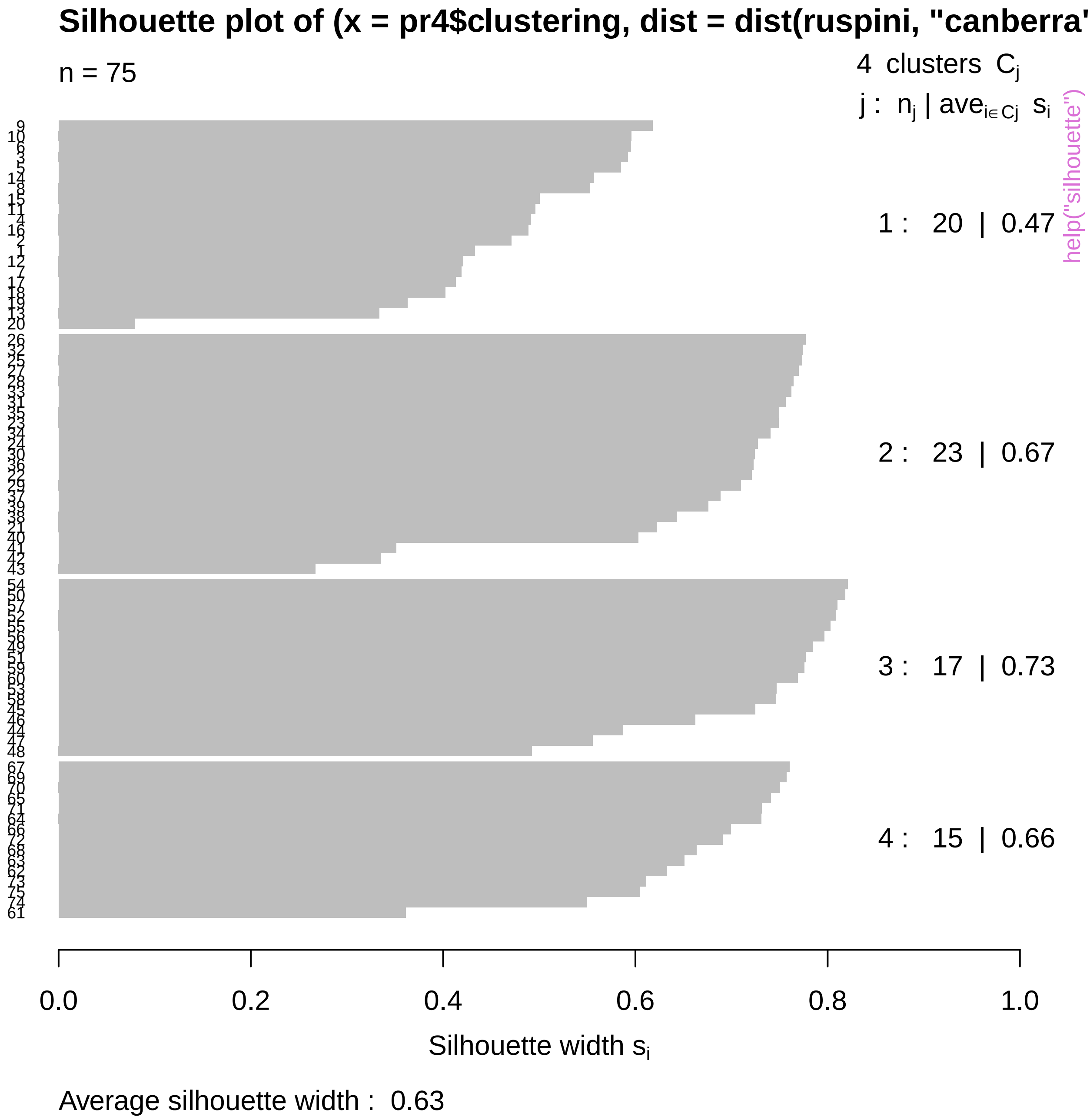

clusplot(fanny(x = ruspini, k = 5))
help("ruspini")
Component 2
40
20
0
−20
−40
−60
−50
0
50
Component 1
These two components explain 100 % of the point variability.



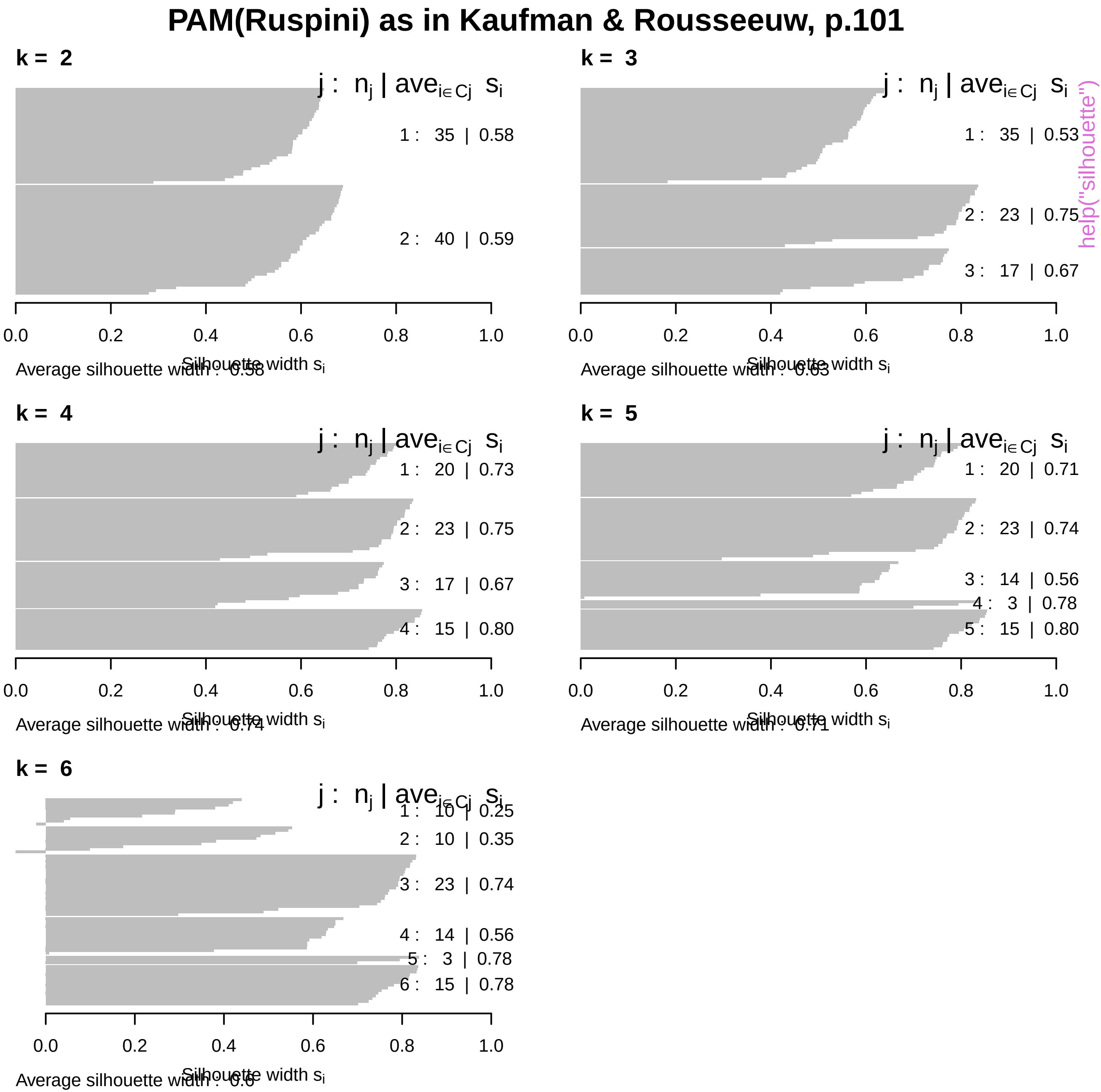
Silhouette plot of fanny(x = ruspini, k = 5)
n = 75
5 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
1 : 20 | 0.73
2 : 12 | 0.50
3 : 11 | 0.25
4 : 17 | 0.62
5 : 15 | 0.80
help("ruspini")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.61

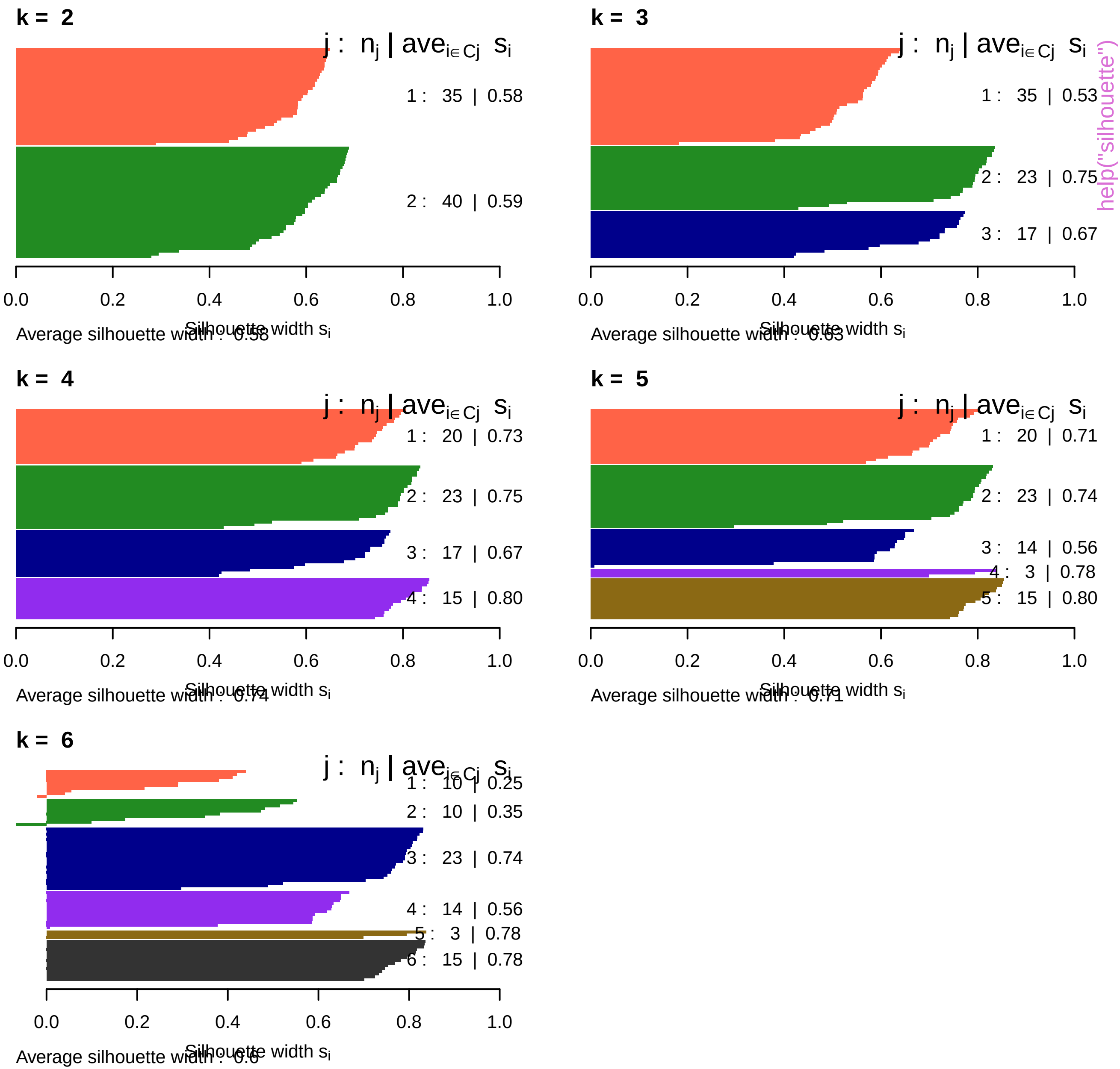

Silhouette plot of pam(x = ruspini, k = 4)
n = 75
4 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
1 : 20 | 0.73
2 : 23 | 0.75
3 : 17 | 0.67
4 : 15 | 0.80
help("silhouette")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.74


Silhouette plot of pam(x = ruspini, k = 4)
n = 75
4 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
1 : 20 | 0.73
2 : 23 | 0.75
3 : 17 | 0.67
4 : 15 | 0.80
help("silhouette")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.74

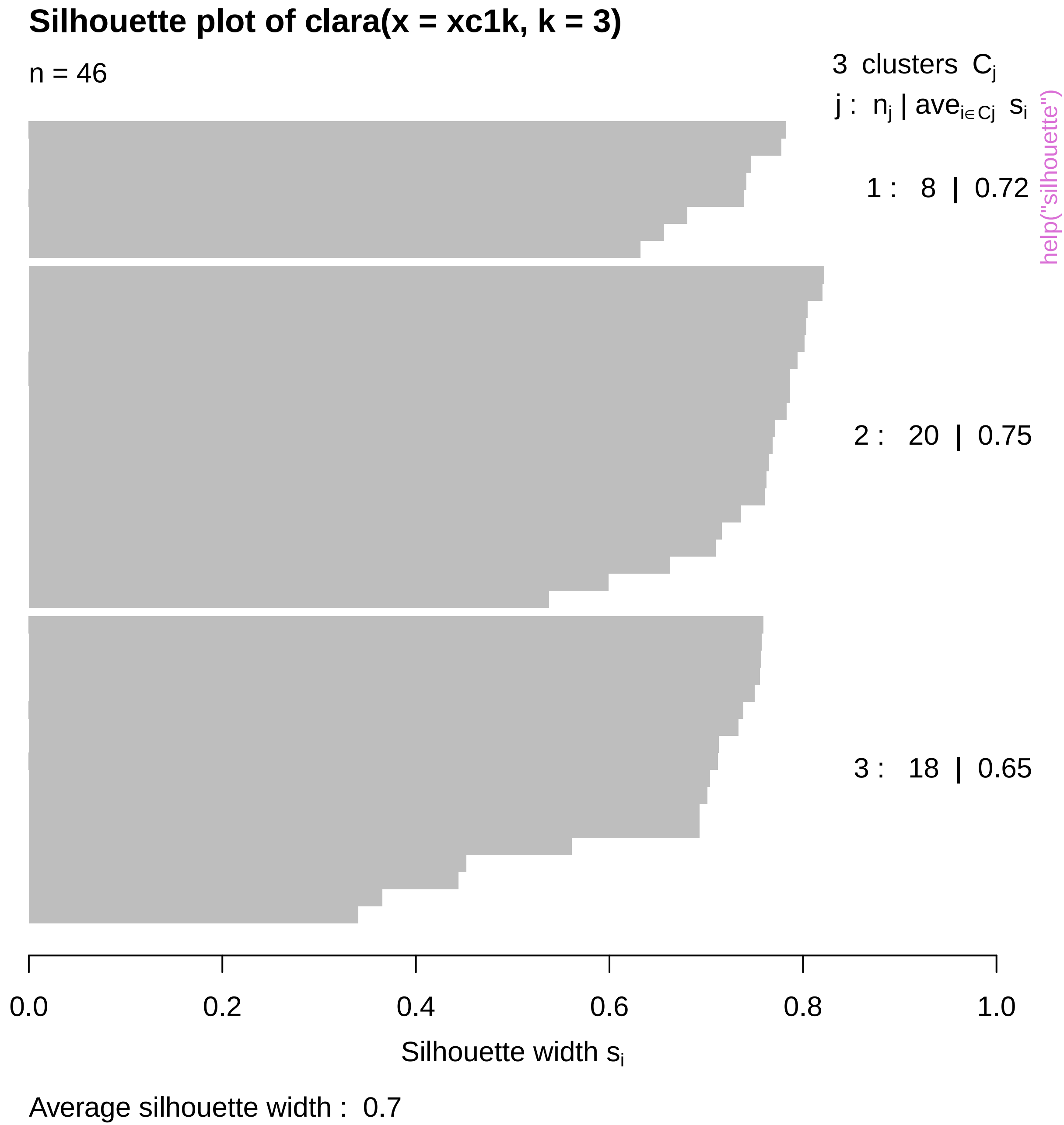


Silhouette plot of (x = pr4$clustering, dist = dist(ruspini, "canberra"
n = 75
4 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
1 : 20 | 0.47
2 : 23 | 0.67
3 : 17 | 0.73
4 : 15 | 0.66
help("silhouette")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.63

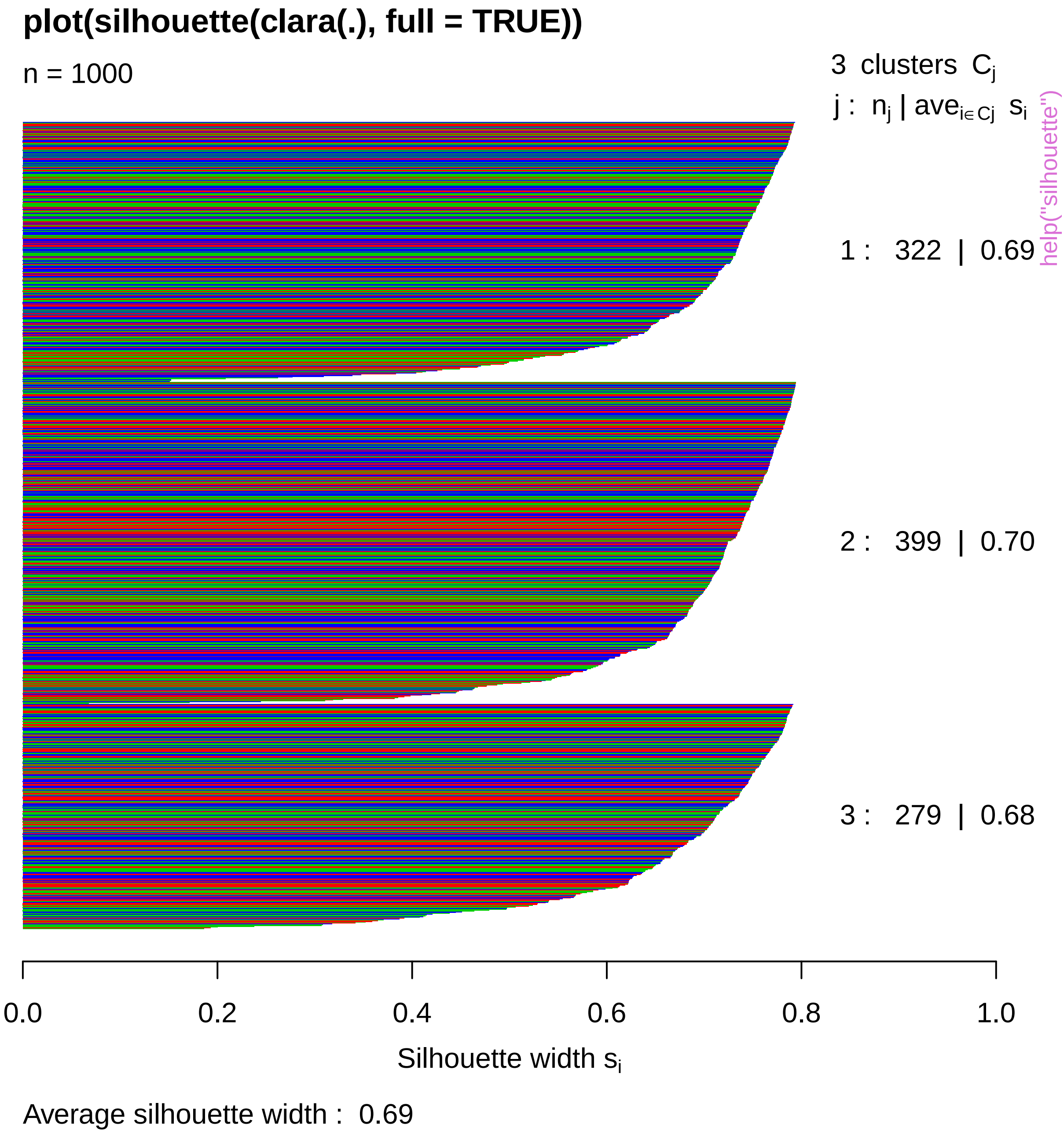

PAM(Ruspini) as in Kaufman & Rousseeuw, p.101
k = 2
j : n_j | $ave_{i \in Cj}$ s_i
1 : 35 | 0.58
2 : 40 | 0.59
Silhouette width s_i
Average silhouette width : 0.58
k = 3
1 : 35 | 0.53
2 : 23 | 0.75
3 : 17 | 0.67
Average silhouette width : 0.63
help("silhouette")
k = 4
1 : 20 | 0.73
2 : 23 | 0.75
3 : 17 | 0.67
4 : 15 | 0.80
Average silhouette width : 0.74
k = 5
1 : 20 | 0.71
2 : 23 | 0.74
3 : 14 | 0.56
4 : 3 | 0.78
5 : 15 | 0.80
Average silhouette width : 0.71
k = 6
1 : 10 | 0.25
2 : 10 | 0.35
3 : 23 | 0.74
4 : 14 | 0.56
5 : 3 | 0.78
6 : 15 | 0.78
Average silhouette width : 0.6

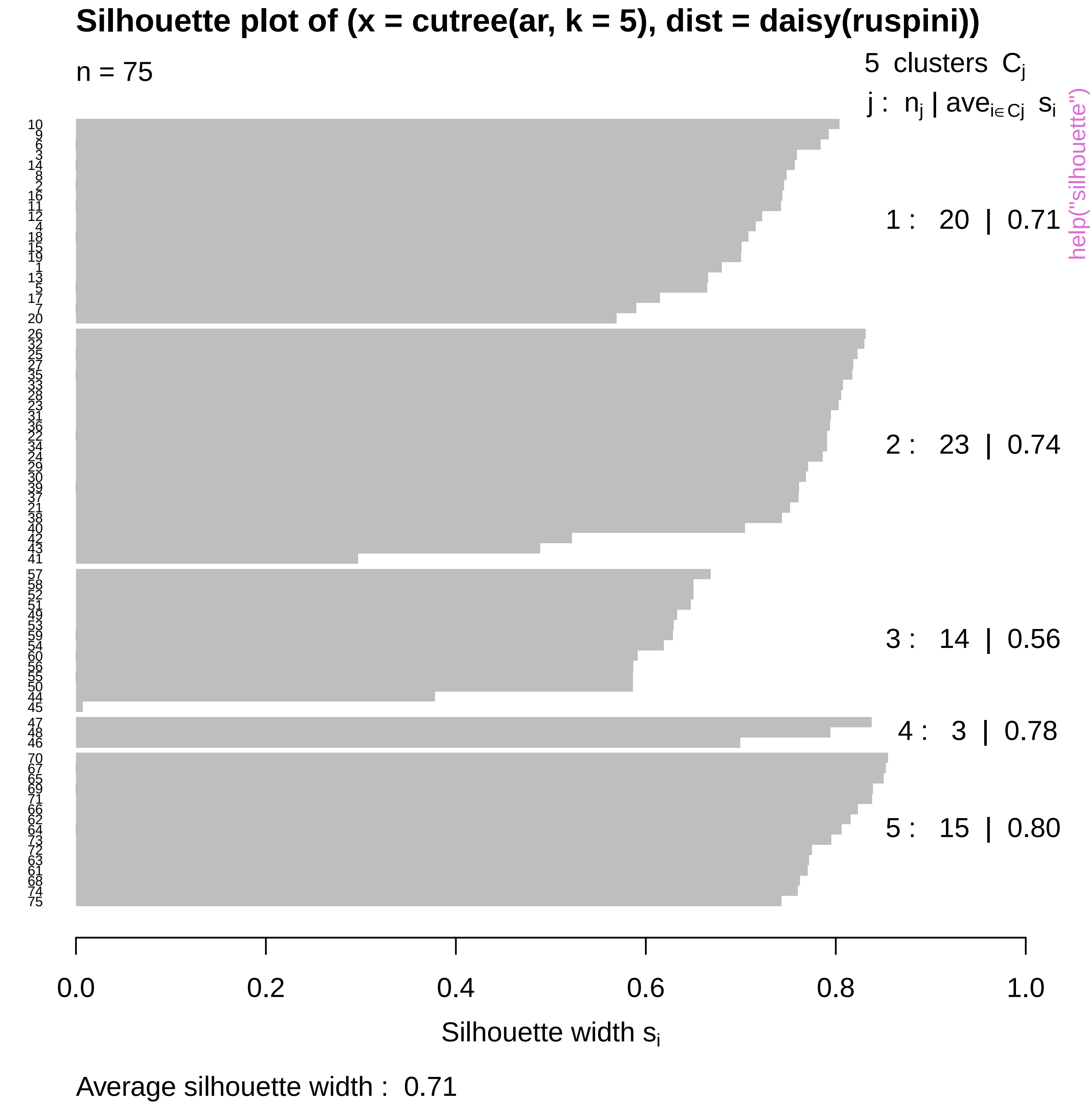


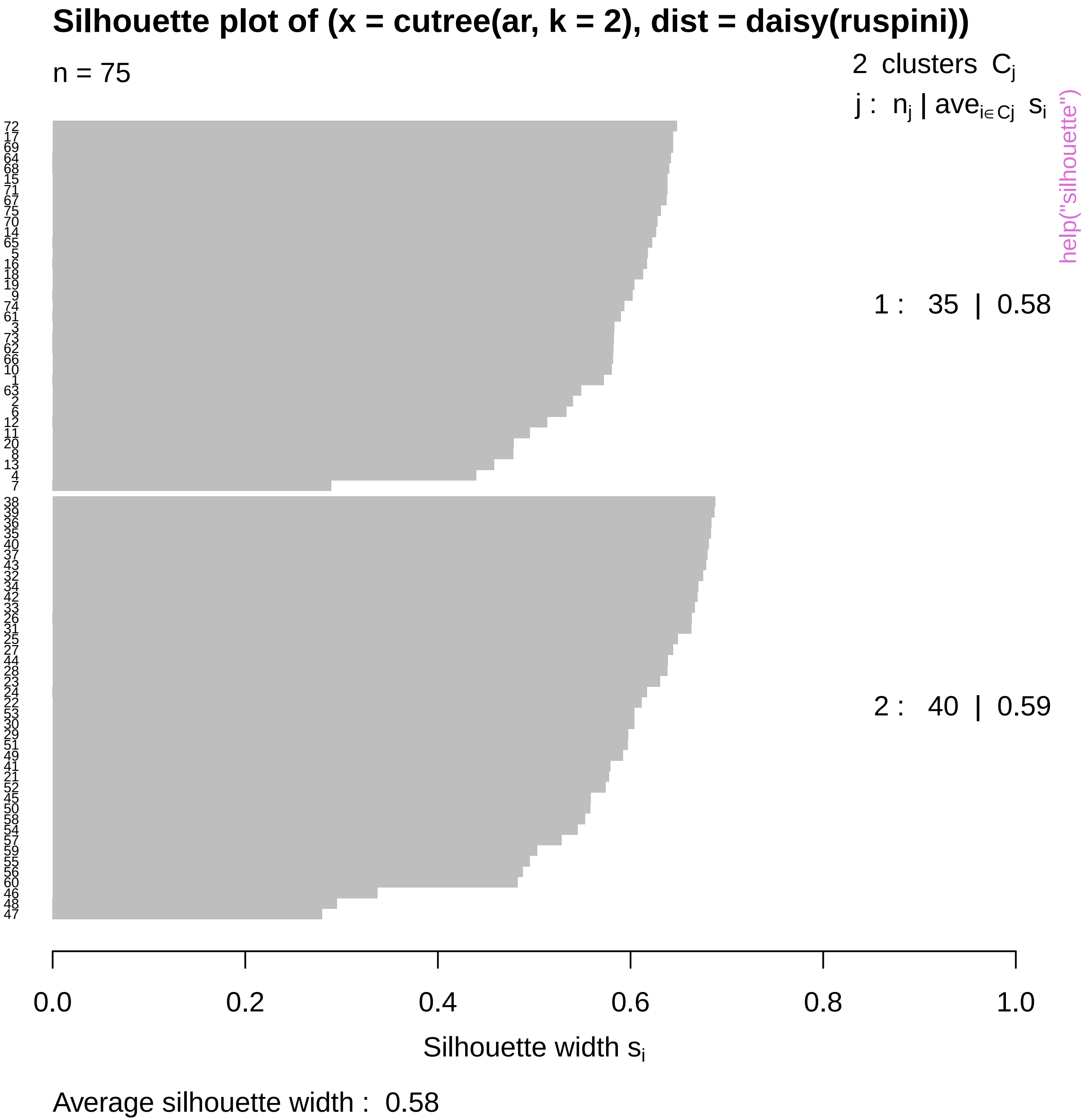
k = 2
j : n_j | $ave_{i \in Cj}$ s_i
1 : 35 | 0.58
2 : 40 | 0.59
0.0 0.2 0.4 0.6 0.8 1.0
Silhouette width s_i
Average silhouette width : 0.58
k = 3
j : n_j | $ave_{i \in Cj}$ s_i
1 : 35 | 0.53
2 : 23 | 0.75
3 : 17 | 0.67
0.0 0.2 0.4 0.6 0.8 1.0
Silhouette width s_i
Average silhouette width : 0.63
help("silhouette")
k = 4
j : n_j | $ave_{i \in Cj}$ s_i
1 : 20 | 0.73
2 : 23 | 0.75
3 : 17 | 0.67
4 : 15 | 0.80
0.0 0.2 0.4 0.6 0.8 1.0
Silhouette width s_i
Average silhouette width : 0.74
k = 5
j : n_j | $ave_{i \in Cj}$ s_i
1 : 20 | 0.71
2 : 23 | 0.74
3 : 14 | 0.56
4 : 3 | 0.78
5 : 15 | 0.80
0.0 0.2 0.4 0.6 0.8 1.0
Silhouette width s_i
Average silhouette width : 0.71
k = 6
j : n_j | $ave_{i \in Cj}$ s_i
1 : 10 | 0.25
2 : 10 | 0.35
3 : 23 | 0.74
4 : 14 | 0.56
5 : 3 | 0.78
6 : 15 | 0.78
0.0 0.2 0.4 0.6 0.8 1.0
Silhouette width s_i
Average silhouette width : 0.6



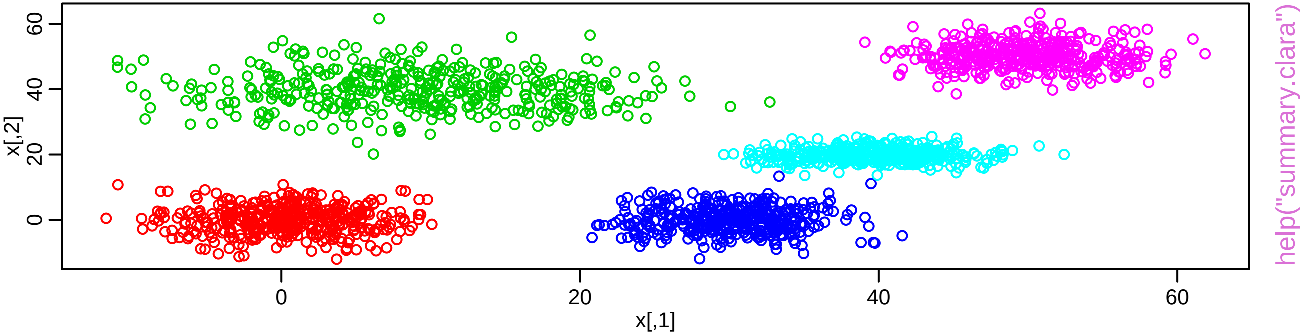
Silhouette plot of clara(x = xc1k, k = 3)
n = 46
3 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
1 : 8 | 0.72
2 : 20 | 0.75
3 : 18 | 0.65
help("silhouette")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.7


plot(silhouette(clara(.), full = TRUE))
n = 1000
3 clusters C_j
j : n_j | $ave_{i \in C_j}$ s_i
1 : 322 | 0.69
2 : 399 | 0.70
3 : 279 | 0.68
help("silhouette")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.69

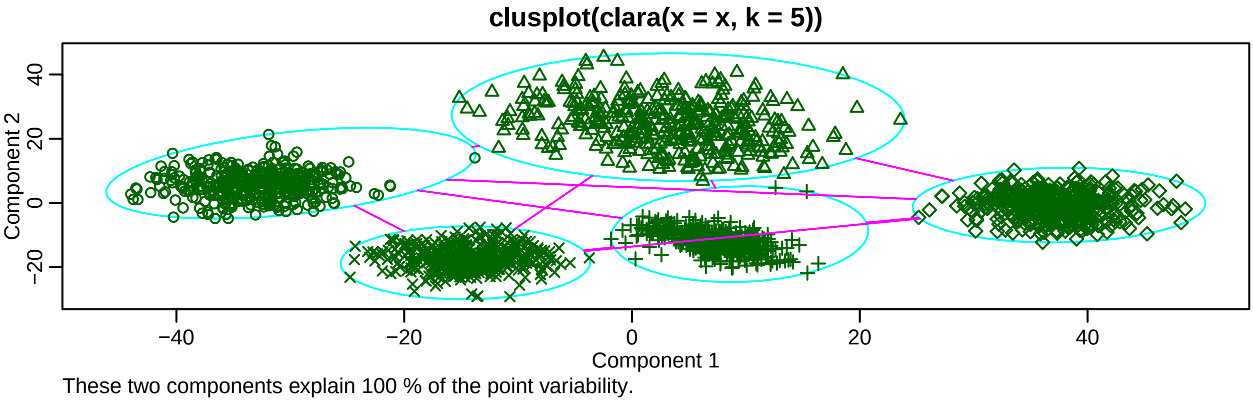

Silhouette plot of (x = cutree(ar, k = 5), dist = daisy(ruspini))
n = 75
5 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("silhouette")
1 : 20 | 0.71
2 : 23 | 0.74
3 : 14 | 0.56
4 : 3 | 0.78
5 : 15 | 0.80
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.71



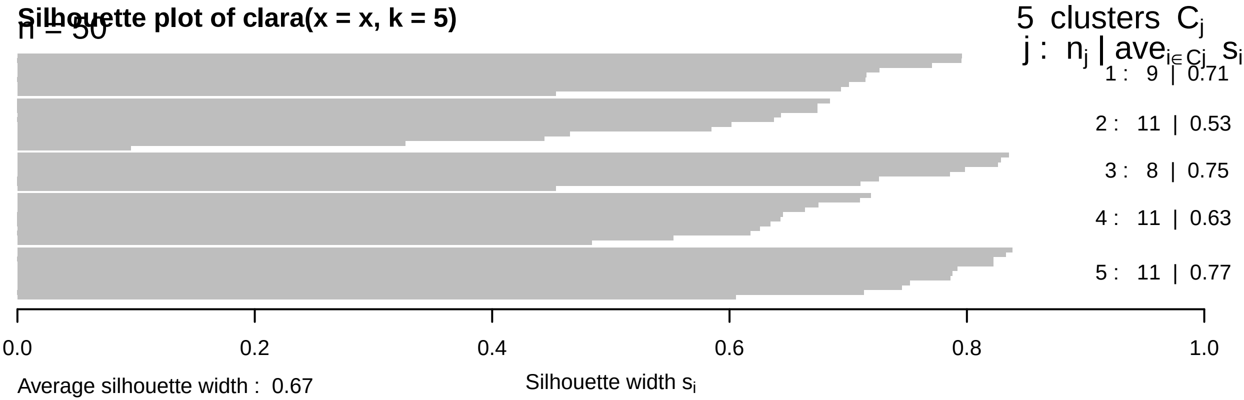
Silhouette plot of (x = cutree(ar, k = 2), dist = daisy(ruspini))
n = 75
2 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("silhouette")
1 : 35 | 0.58
2 : 40 | 0.59
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.58



x[,2]
60
40
20
0
0
20
40
60
x[,1]
help("summary.clara")



clusplot(clara(x = x, k = 5))
Component 2
40
20
0
−20
−40
−20
0
20
40
Component 1
These two components explain 100 % of the point variability.



Silhouette plot of clara(x = x, k = 5)
n = 50
5 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
1 : 9 | 0.71
2 : 11 | 0.53
3 : 8 | 0.75
4 : 11 | 0.63
5 : 11 | 0.77
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.67