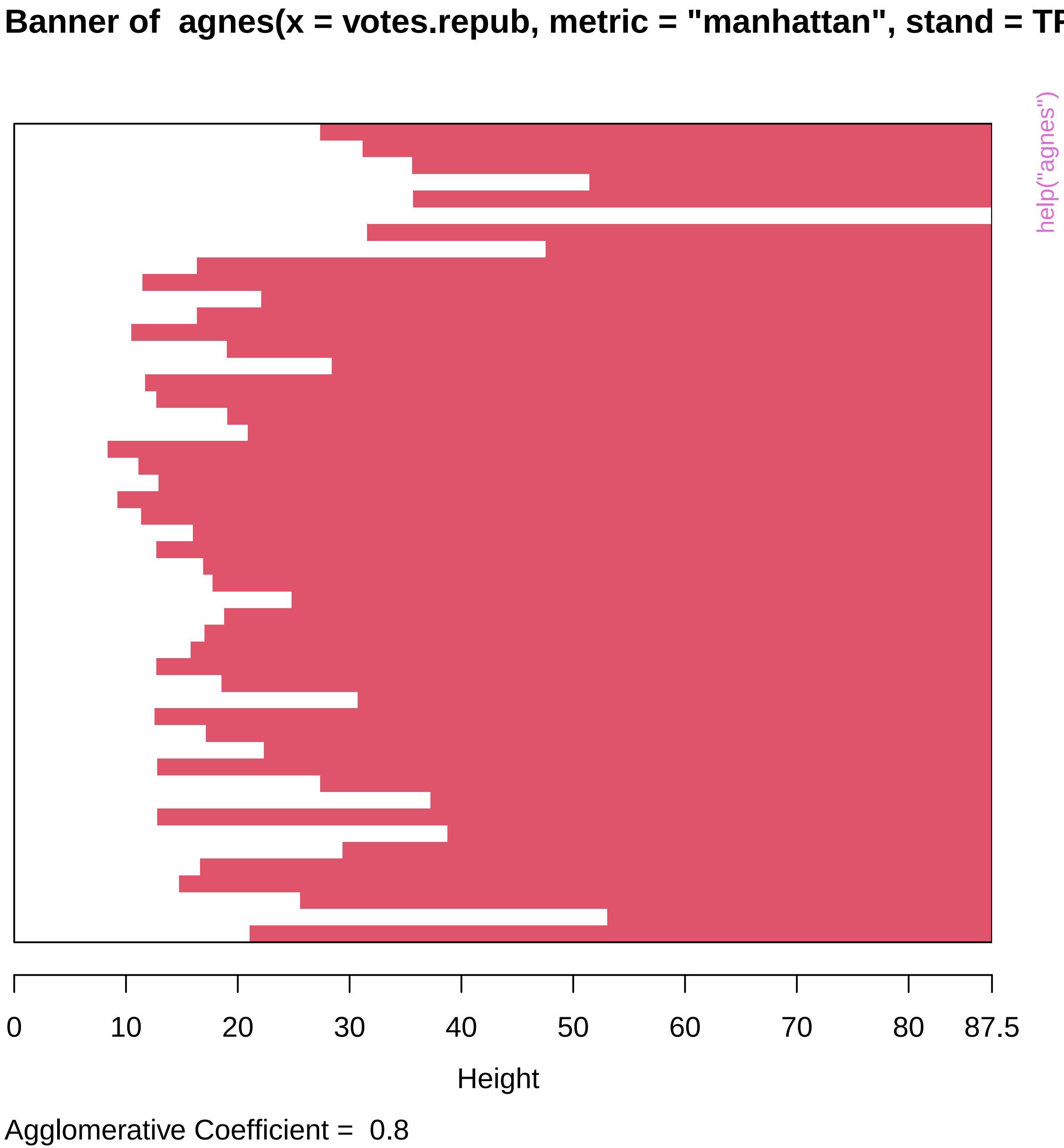
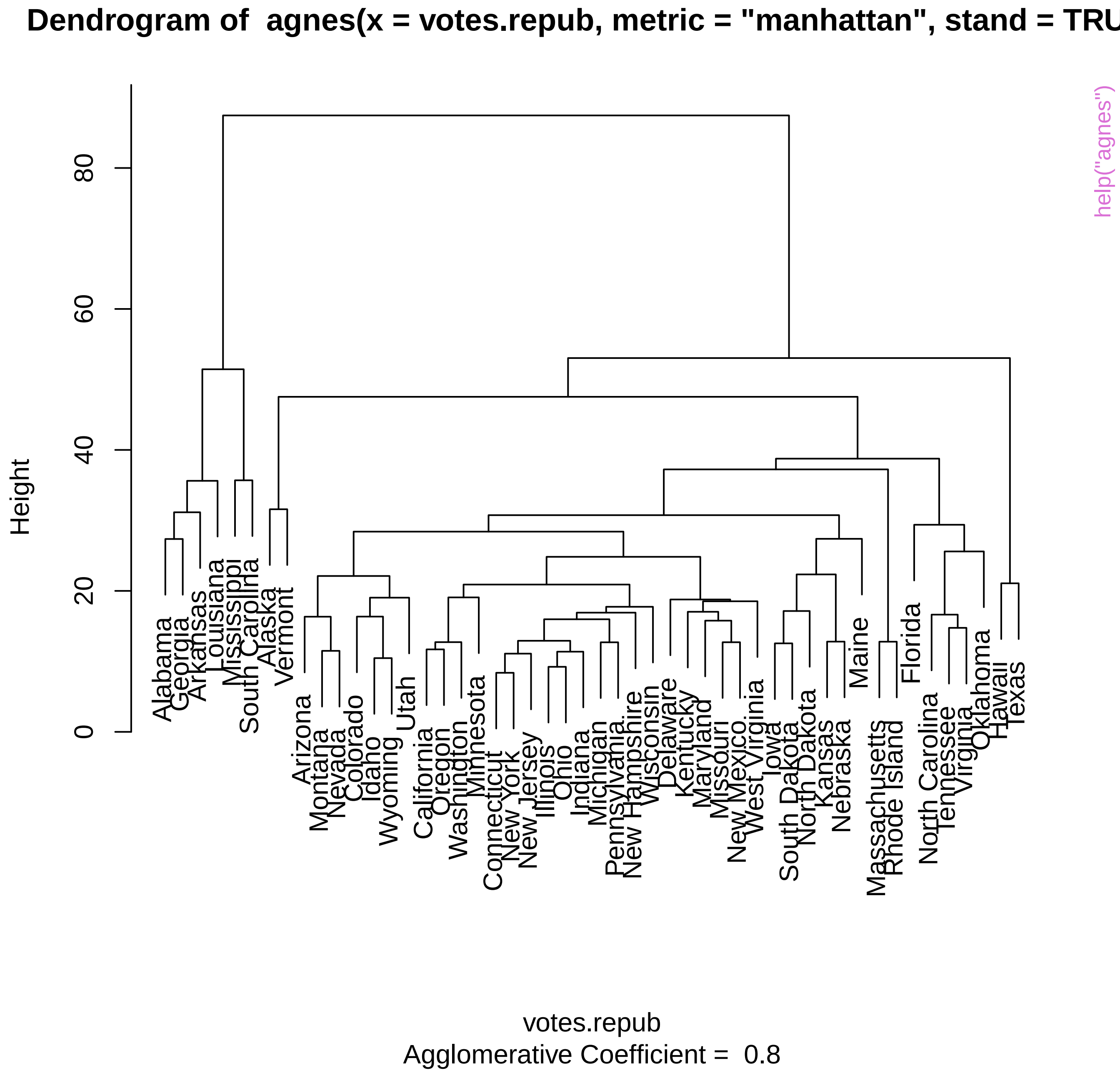
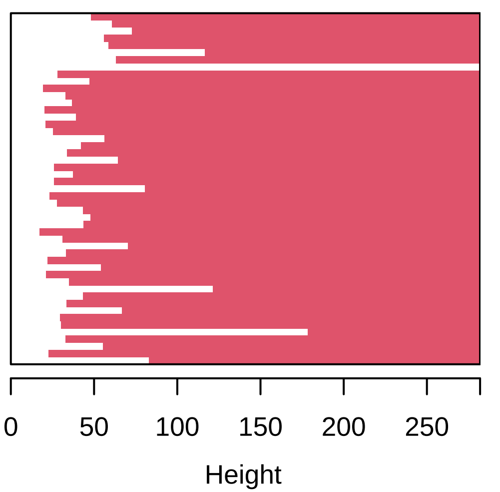
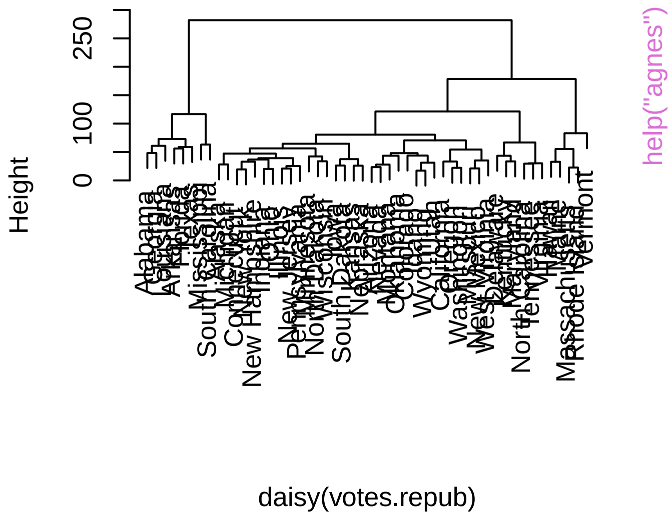

Banner of agnes(x = votes.repub, metric = "manhattan", stand = TR
help("agnes")
0
10
20
30
40
50
60
70
80
87.5
Height
Agglomerative Coefficient = 0.8



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|m of agnes(x = daisy(votes.repub), diss = T "complete") "complete")

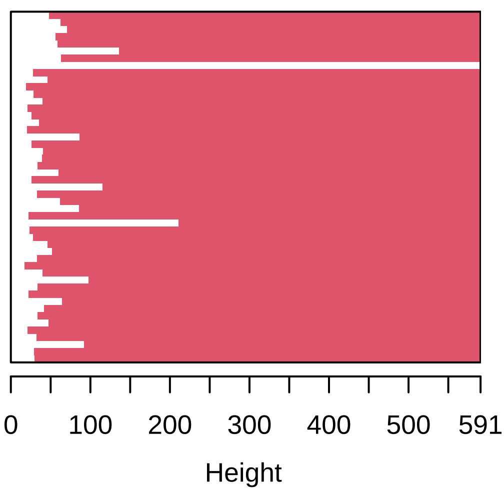


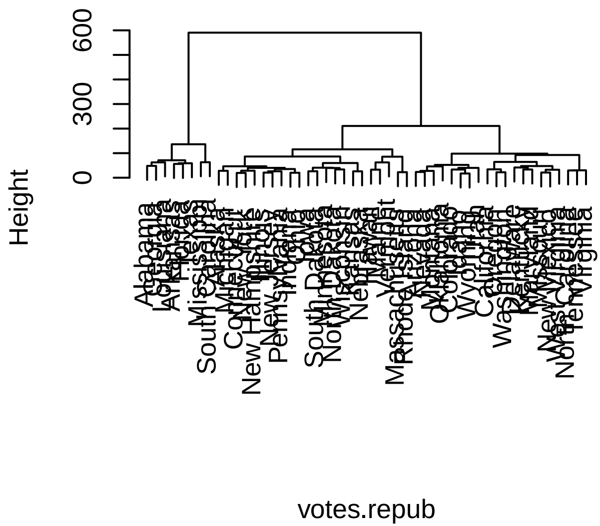


Agglomerative Coefficient = 0.88

Agglomerative Coefficient = 0.88

Banner of agnes(x = votes.repub, m of agnes(x = votes.repub, method = "flexibl 0.625) 0.625)

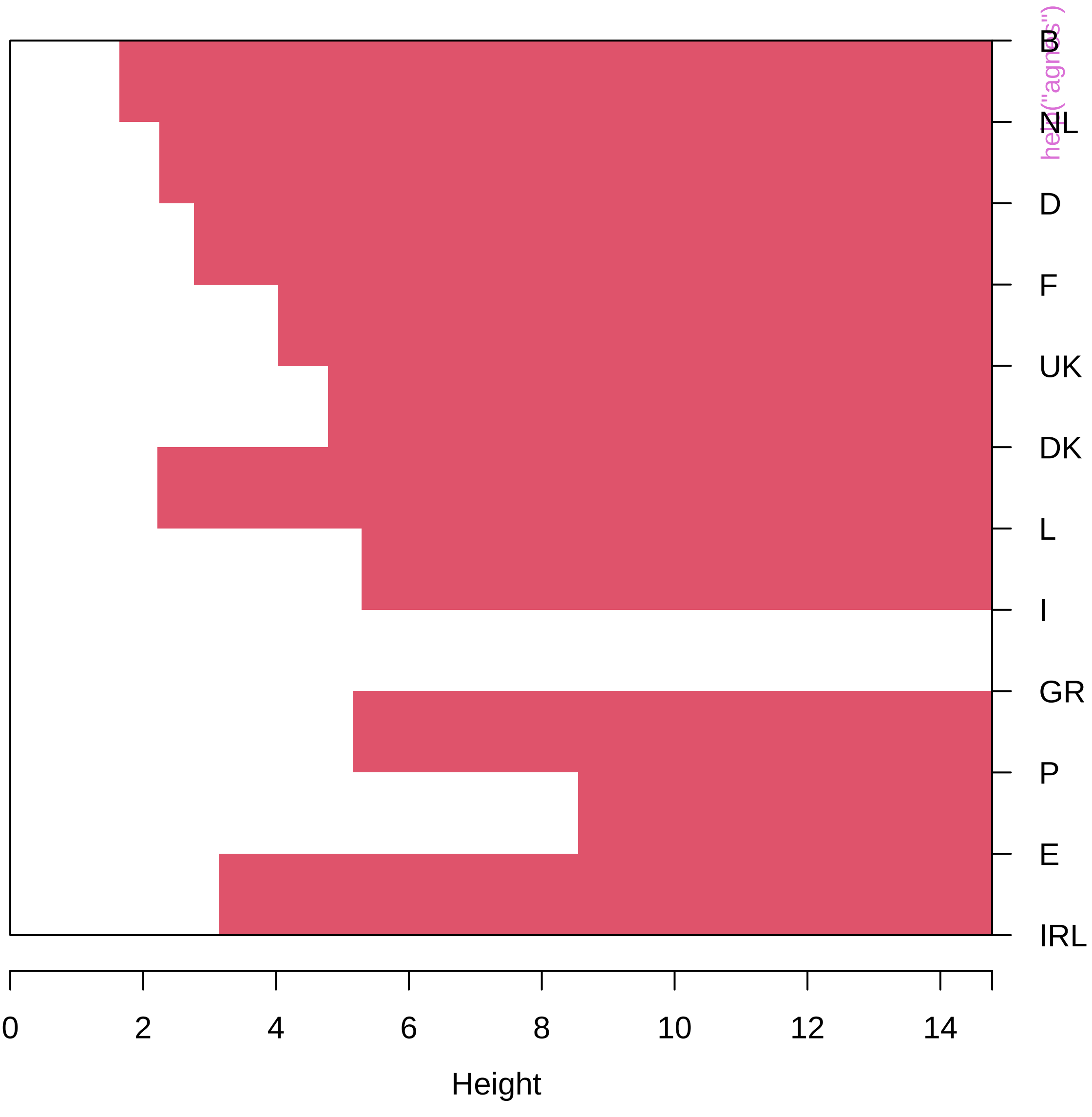




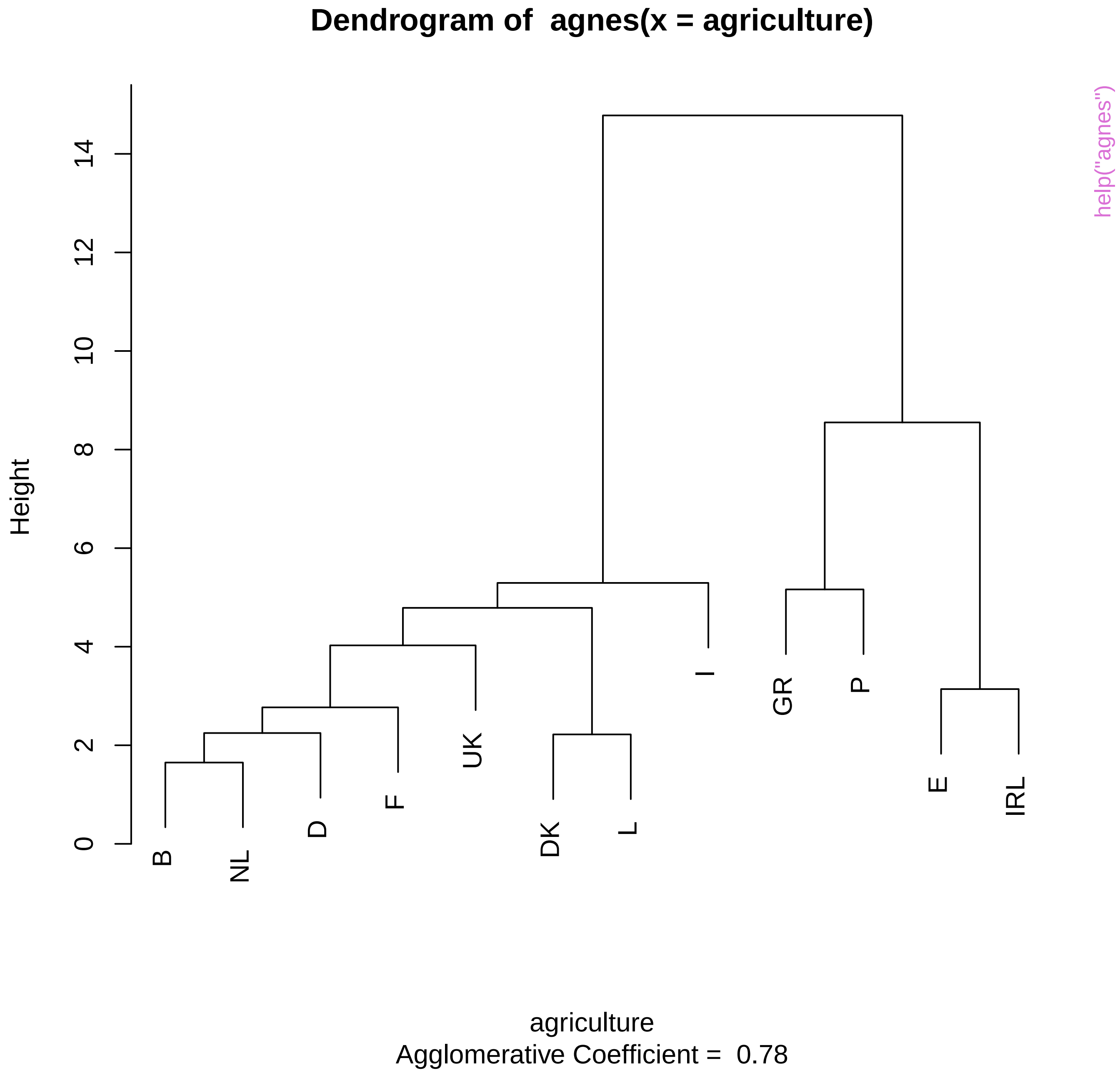
Agglomerative Coefficient = 0.94

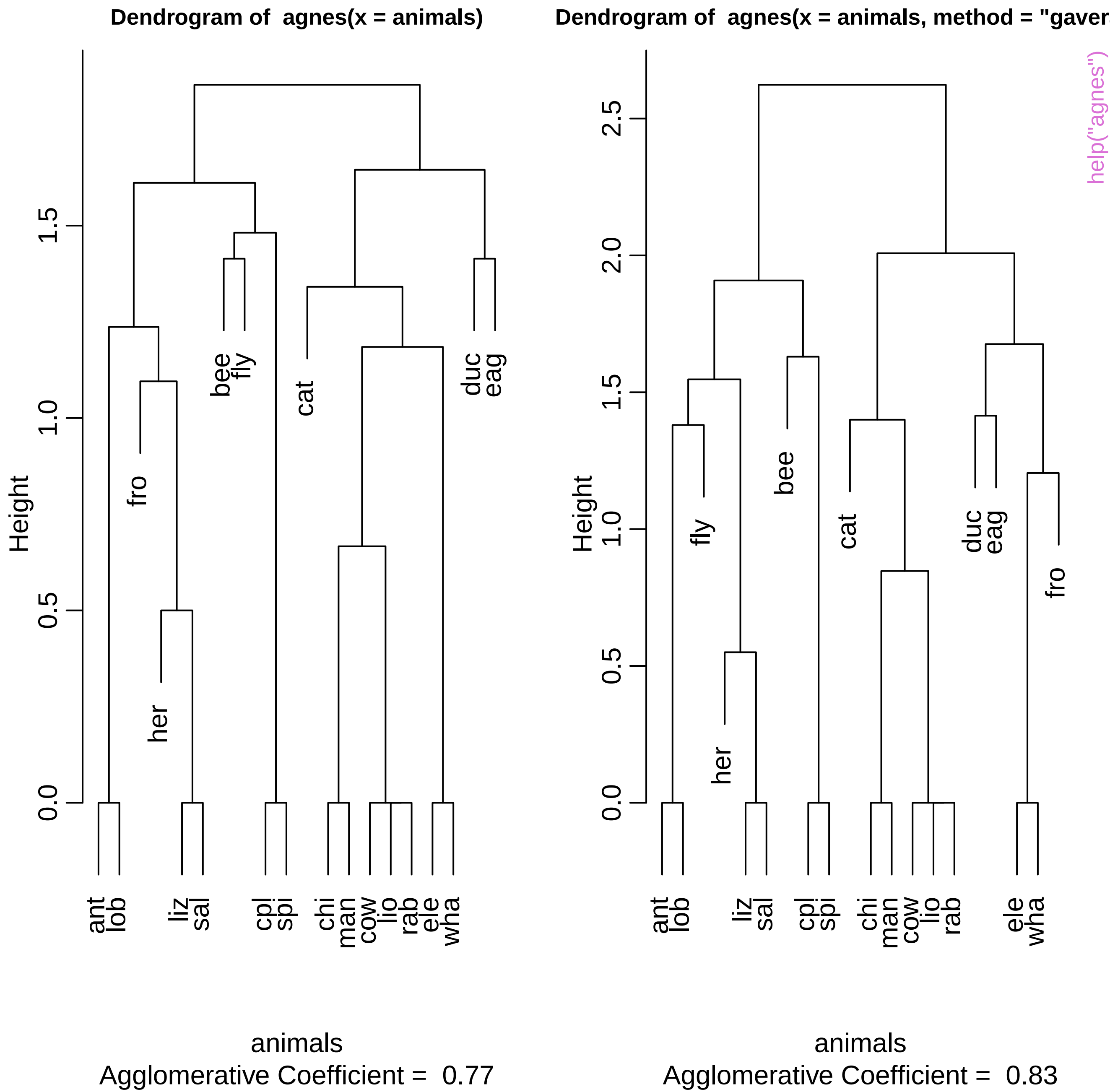
Agglomerative Coefficient = 0.94

Banner of agnes(x = agriculture)

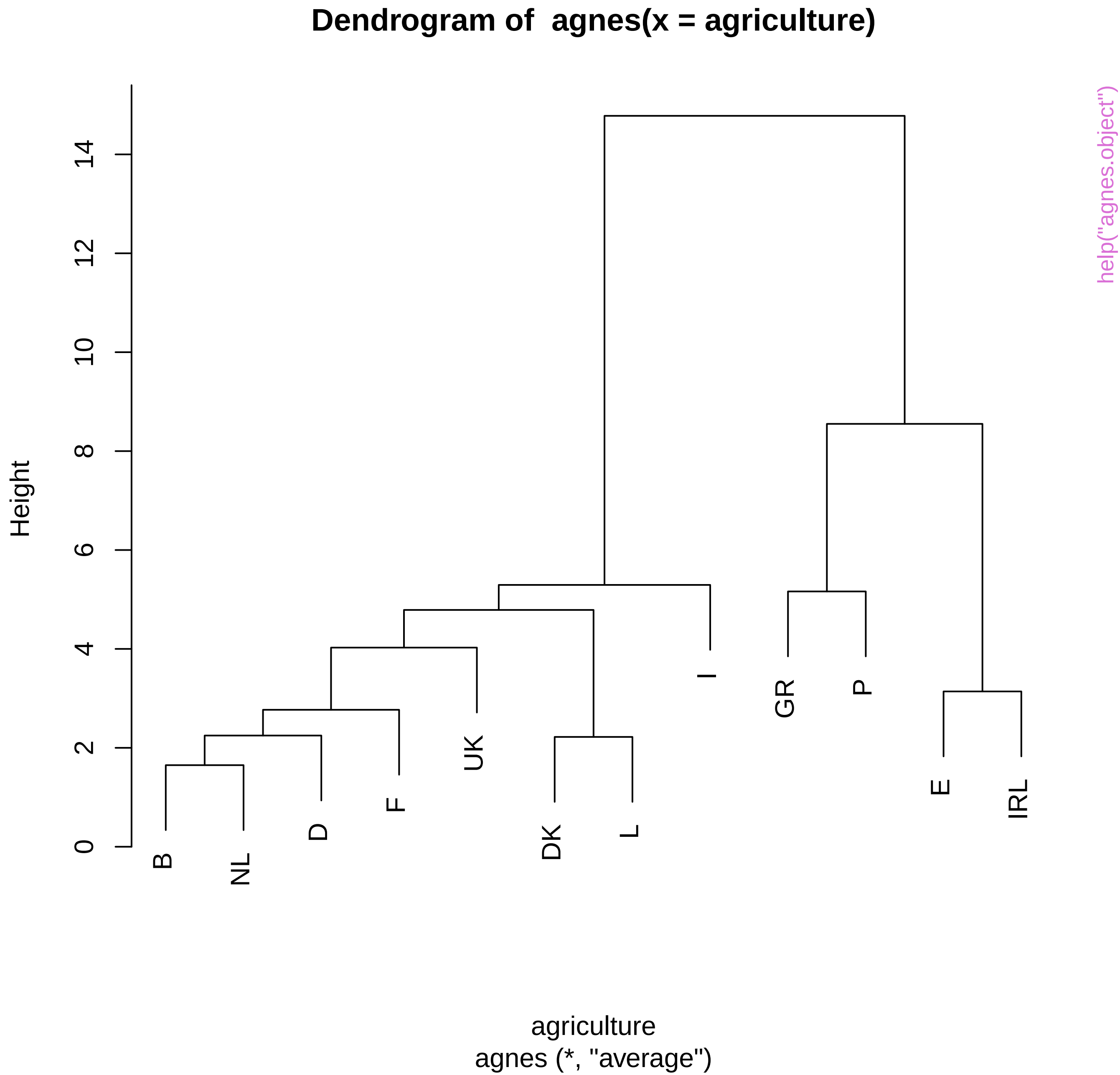


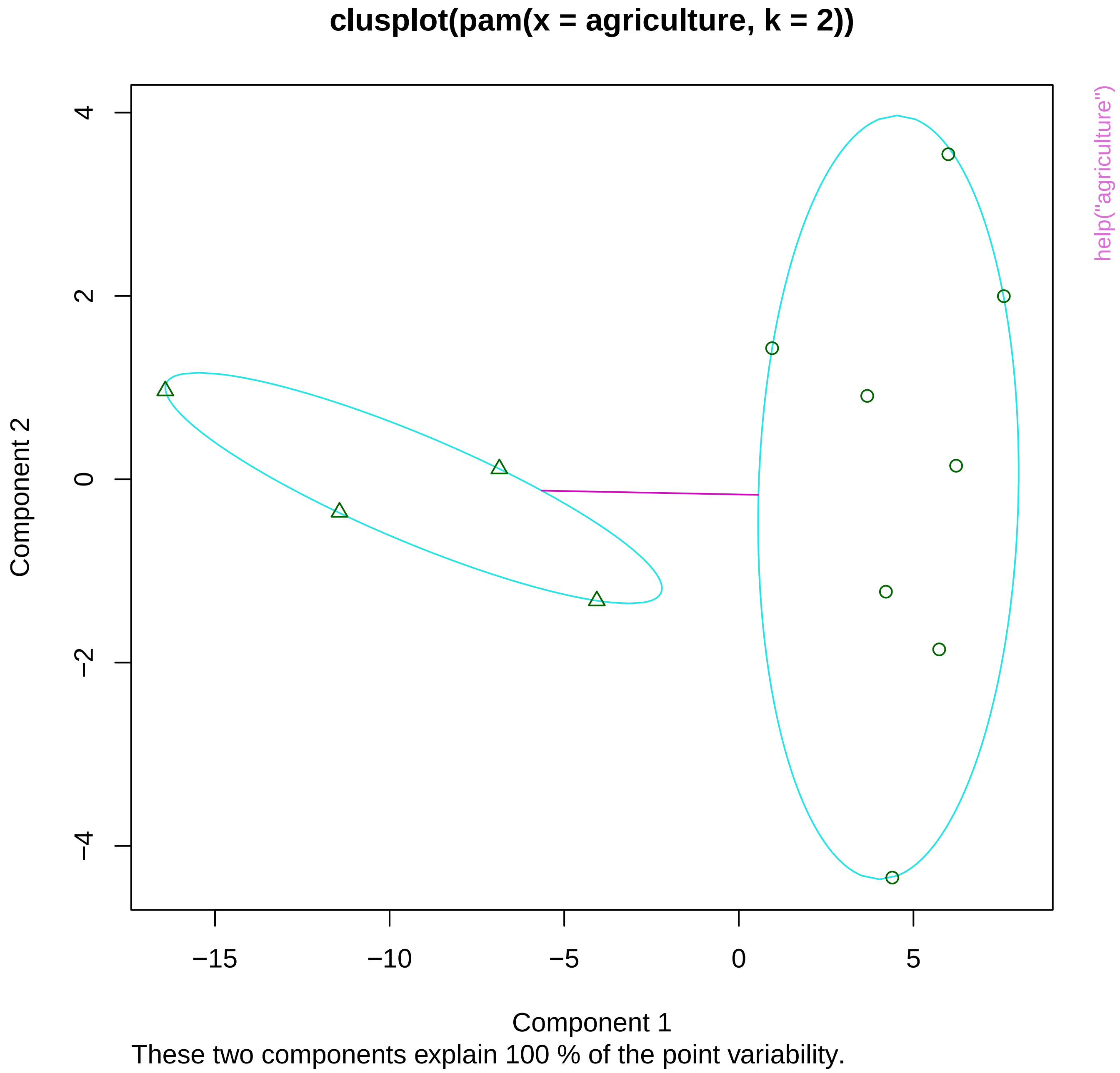
Agglomerative Coefficient = 0.78

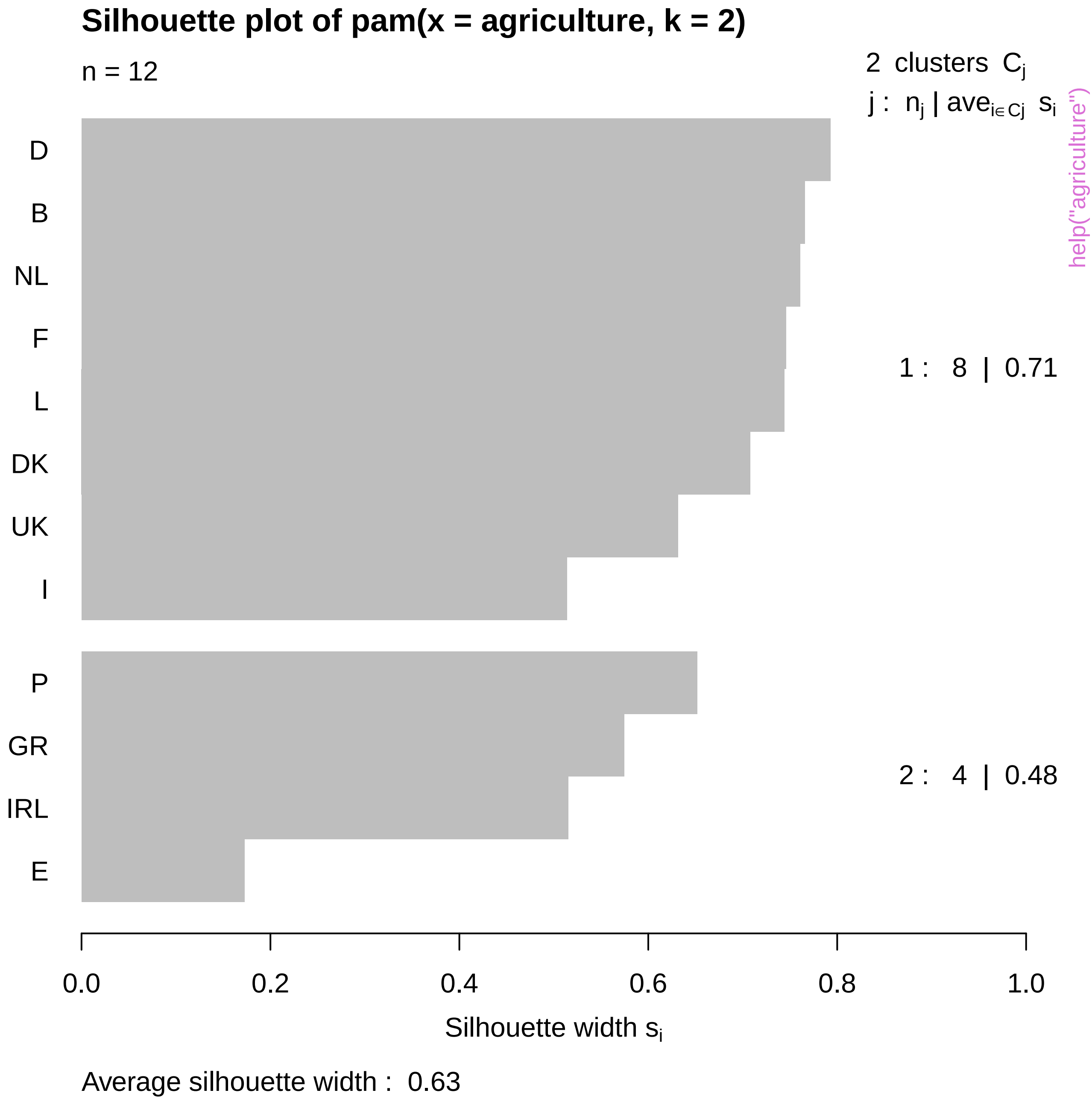

Dendrogram of agnes(x = agriculture)
Height
0
2
4
6
8
10
12
14
B
NL
D
F
UK
DK
L
I
GR
P
E
IRL
agriculture
Agglomerative Coefficient = 0.78
help("agnes")

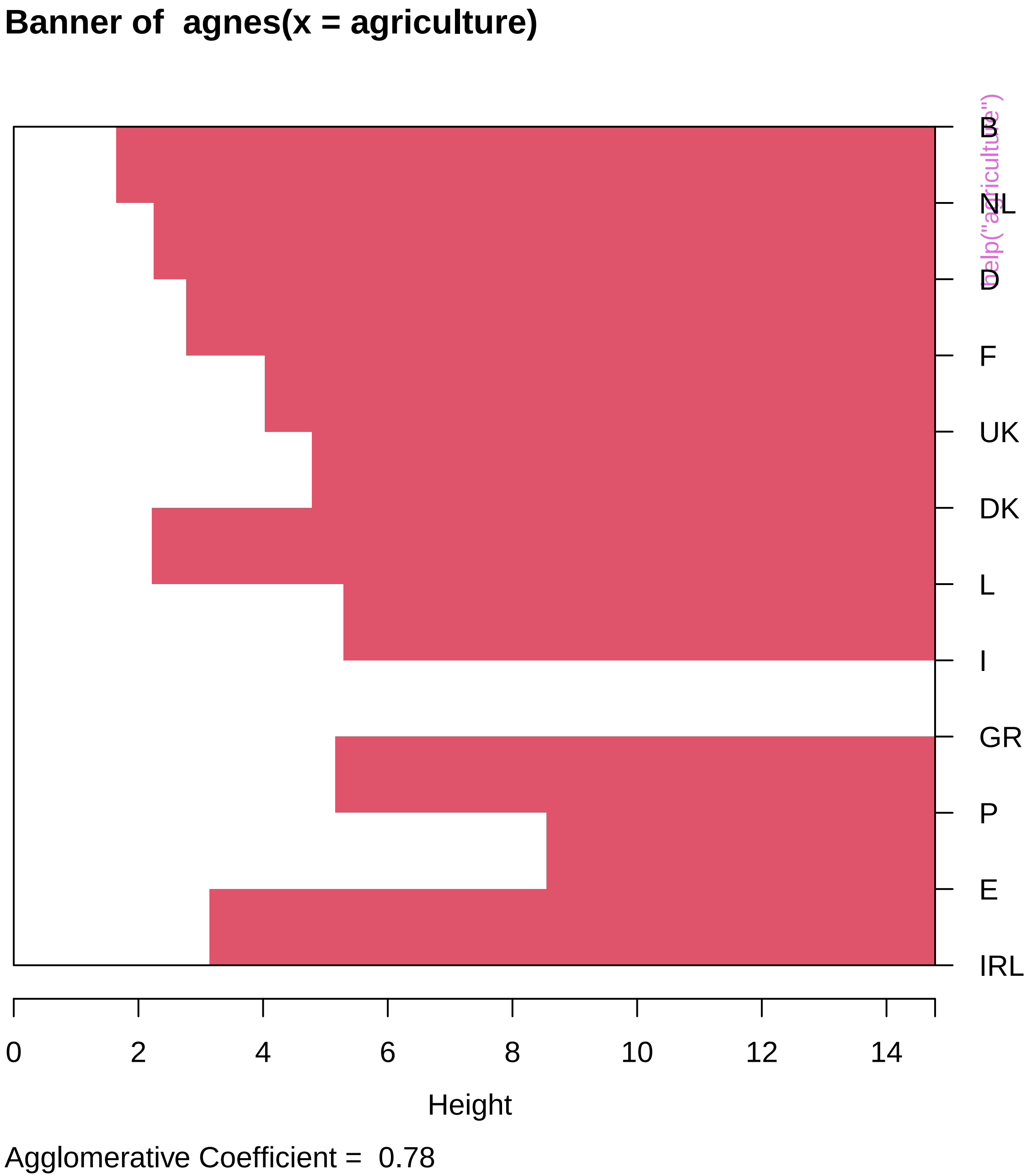


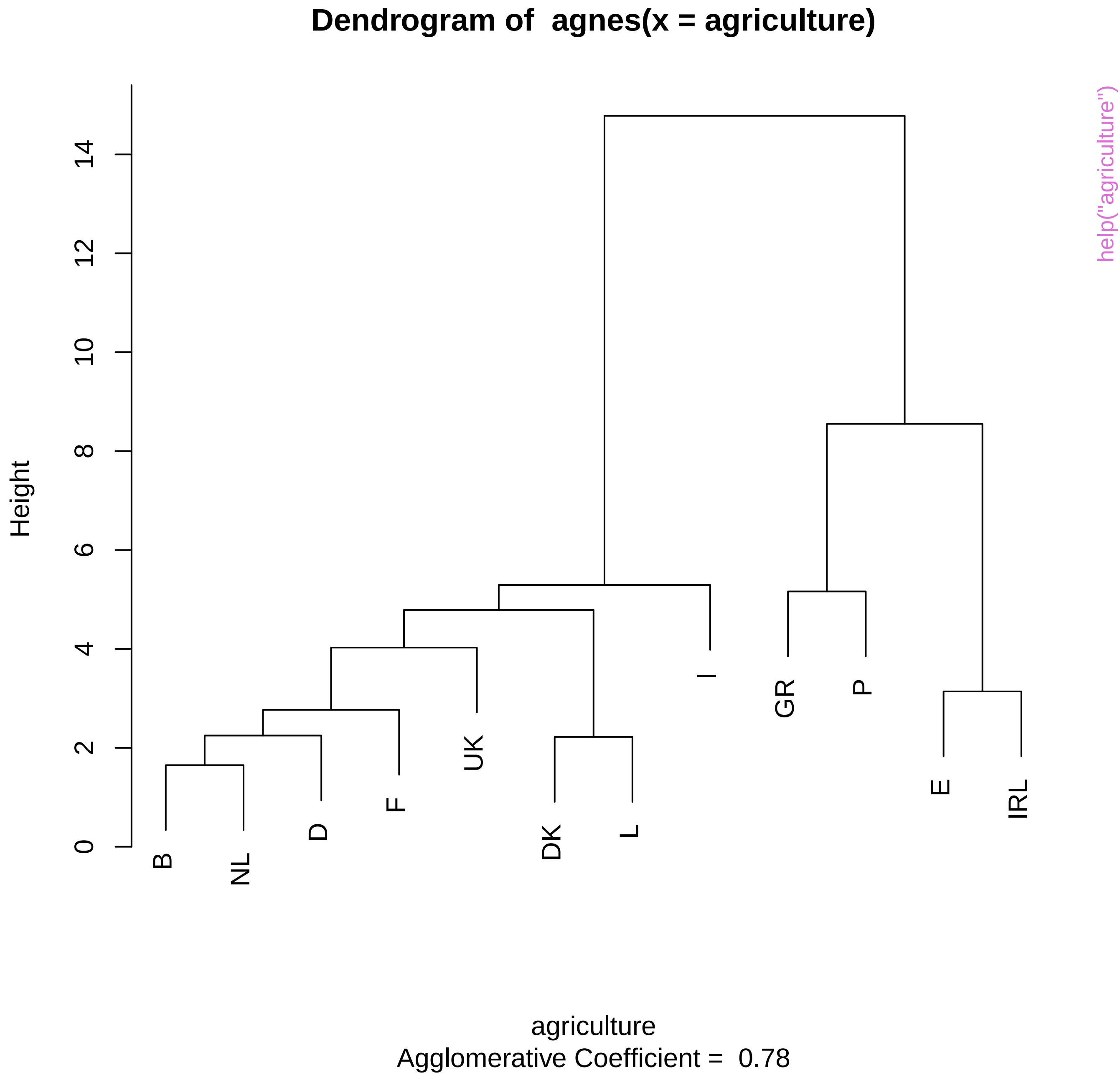
Dendrogram of agnes(x = animals)
Height
0.0
0.5
1.0
1.5
ant lob liz sal cpl spi chi man cow lio rab ele wha
her fro bee fly cat duc eag
animals
Agglomerative Coefficient = 0.77
Dendrogram of agnes(x = animals, method = "gaver
Height
0.0
0.5
1.0
1.5
2.0
2.5
ant lob liz sal cpl spi chi man cow lio rab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


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("agnes.object")
agriculture
agnes (*, "average")

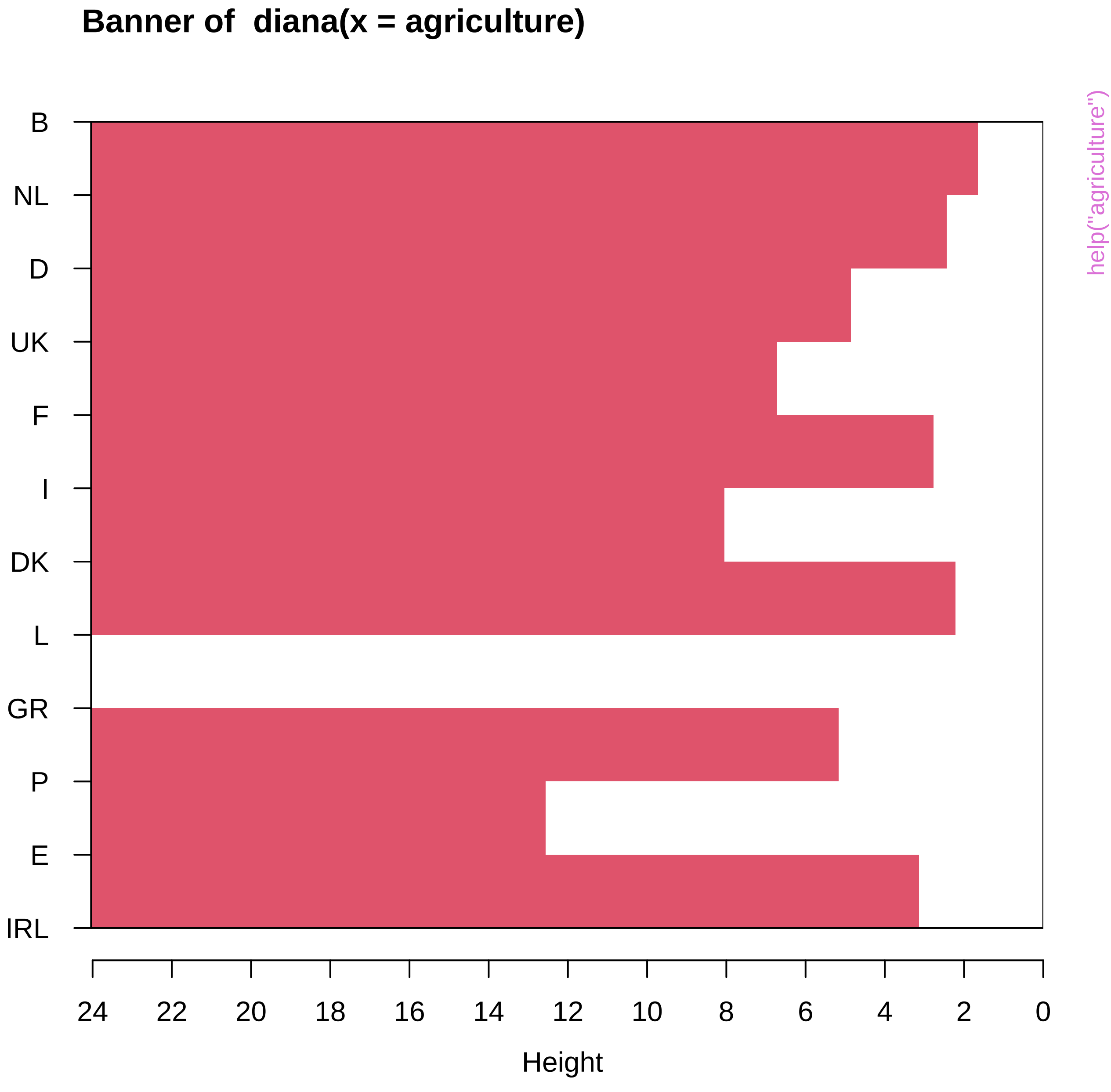

clusplot(pam(x = agriculture, k = 2))
help("agriculture")
Component 2
4
2
0
−2
−4
−15
−10
−5
0
5
Component 1
These two components explain 100 % of the point variability.


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

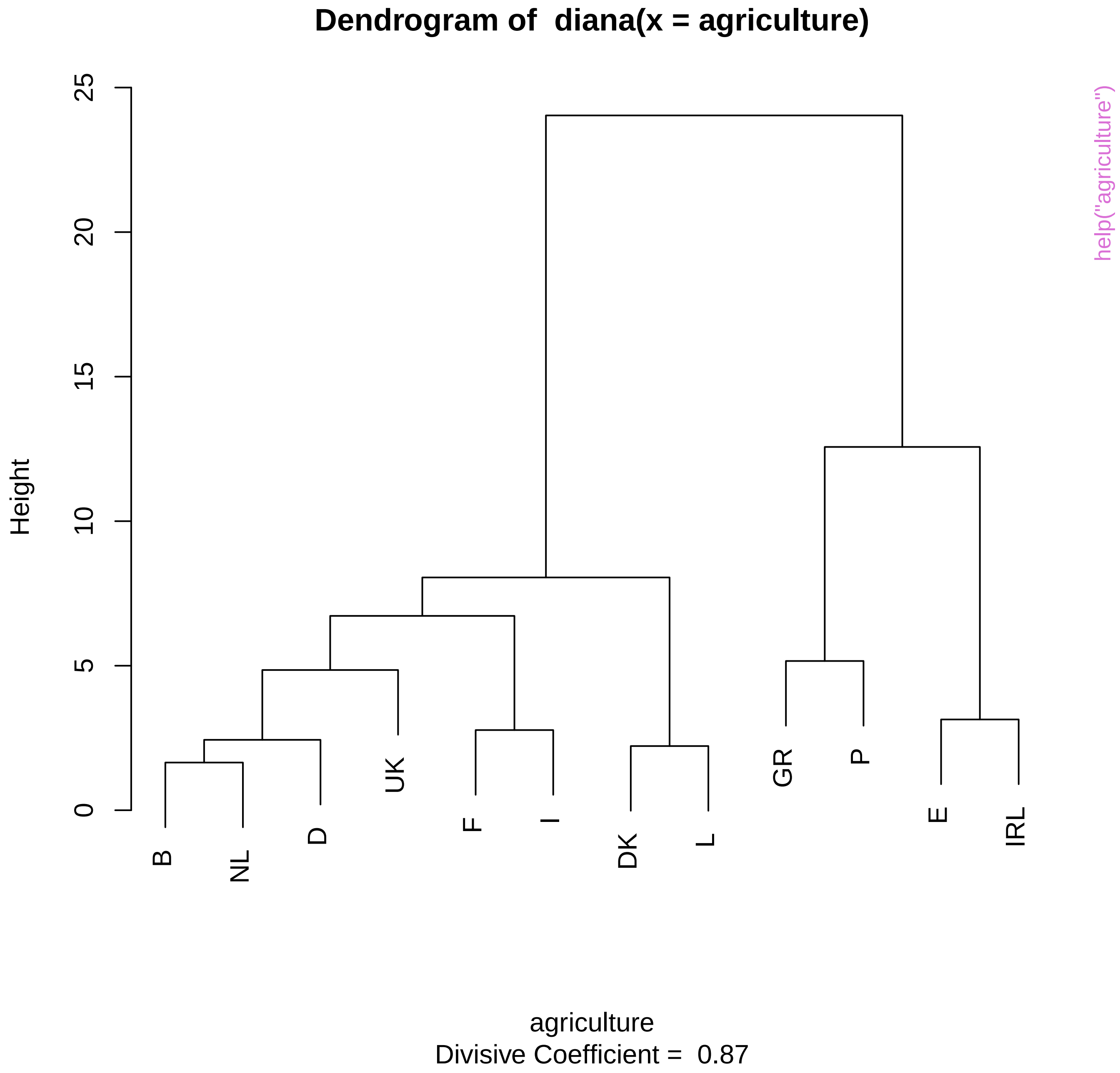

Banner of agnes(x = agriculture)
help("agriculture")
B
NL
D
F
UK
DK
L
I
GR
P
E
IRL
0
2
4
6
8
10
12
14
Height
Agglomerative Coefficient = 0.78

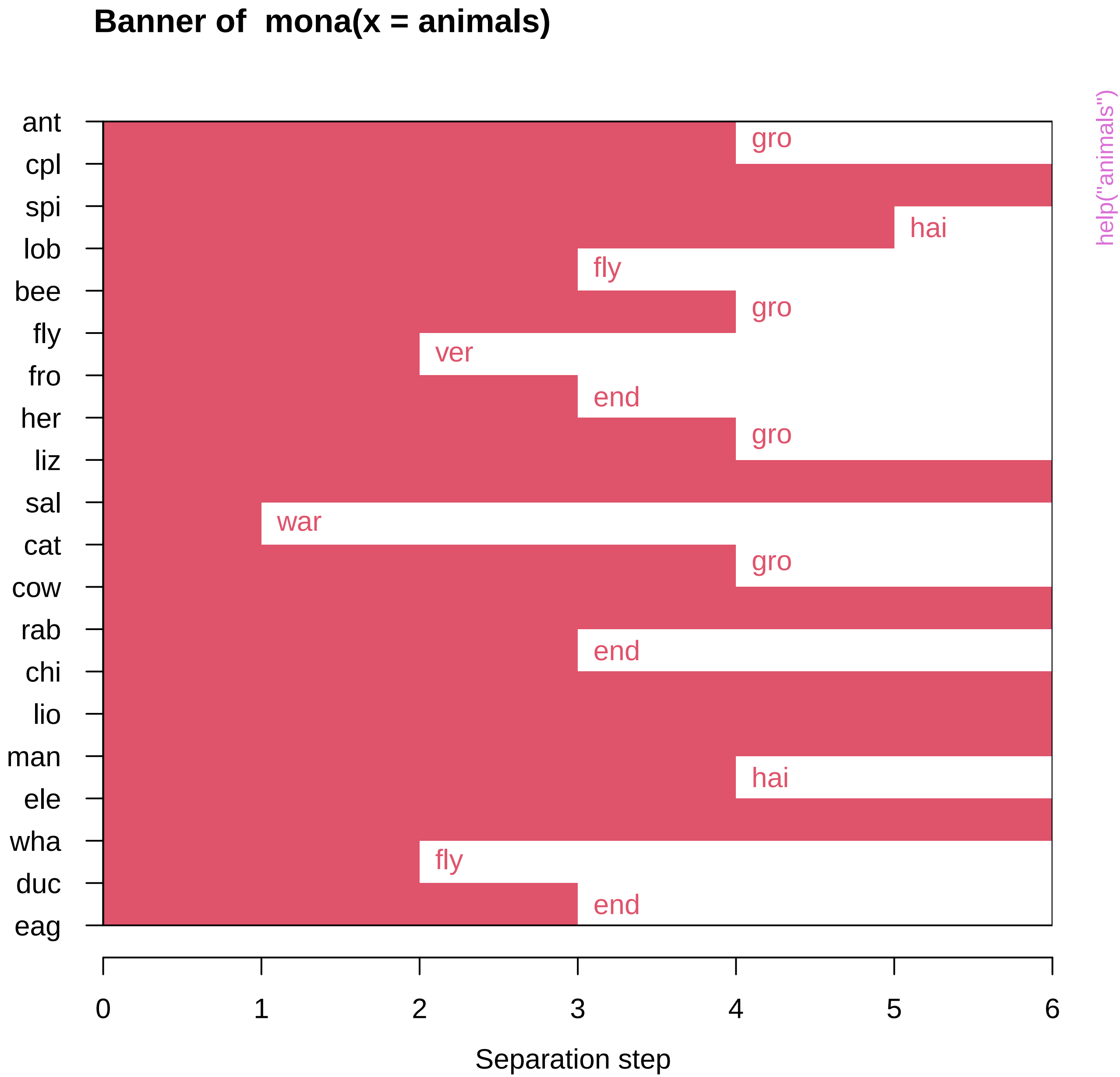


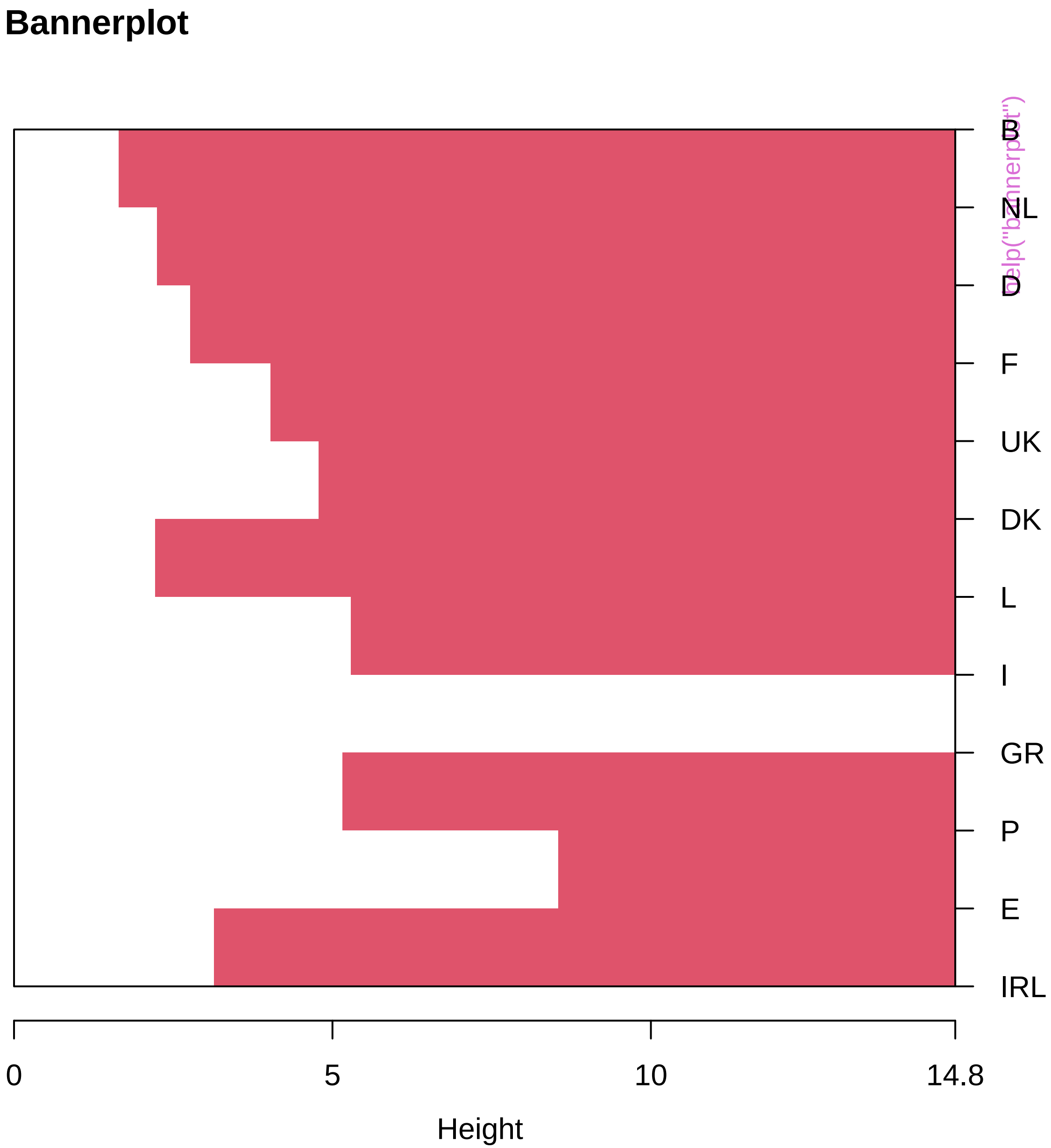
Dendrogram of agnes(x = agriculture)
Height
0
2
4
6
8
10
12
14
B
NL
D
F
UK
DK
L
I
GR
P
E
IRL
agriculture
Agglomerative Coefficient = 0.78
help("agriculture")



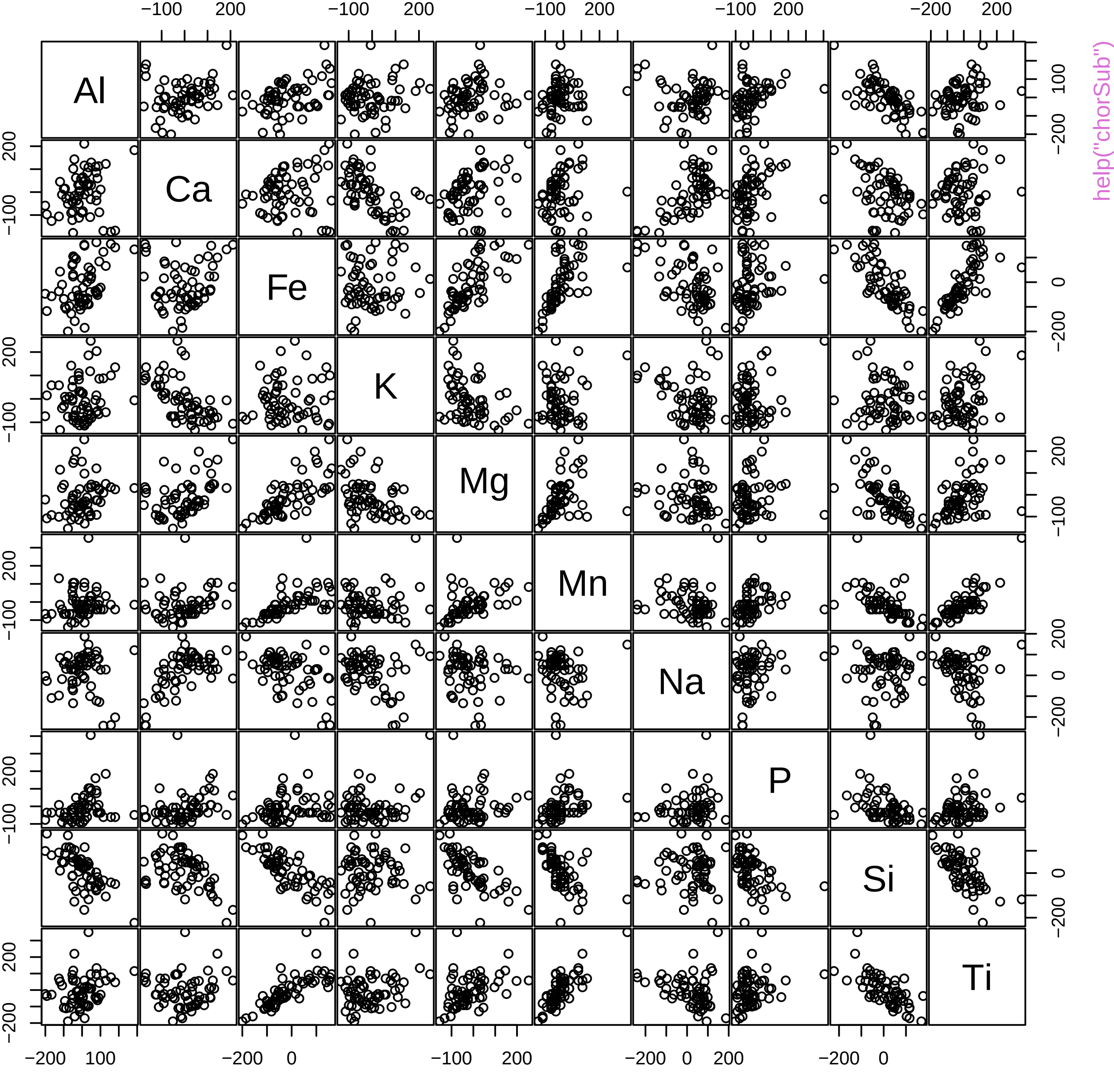
Divisive Coefficient = 0.87


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

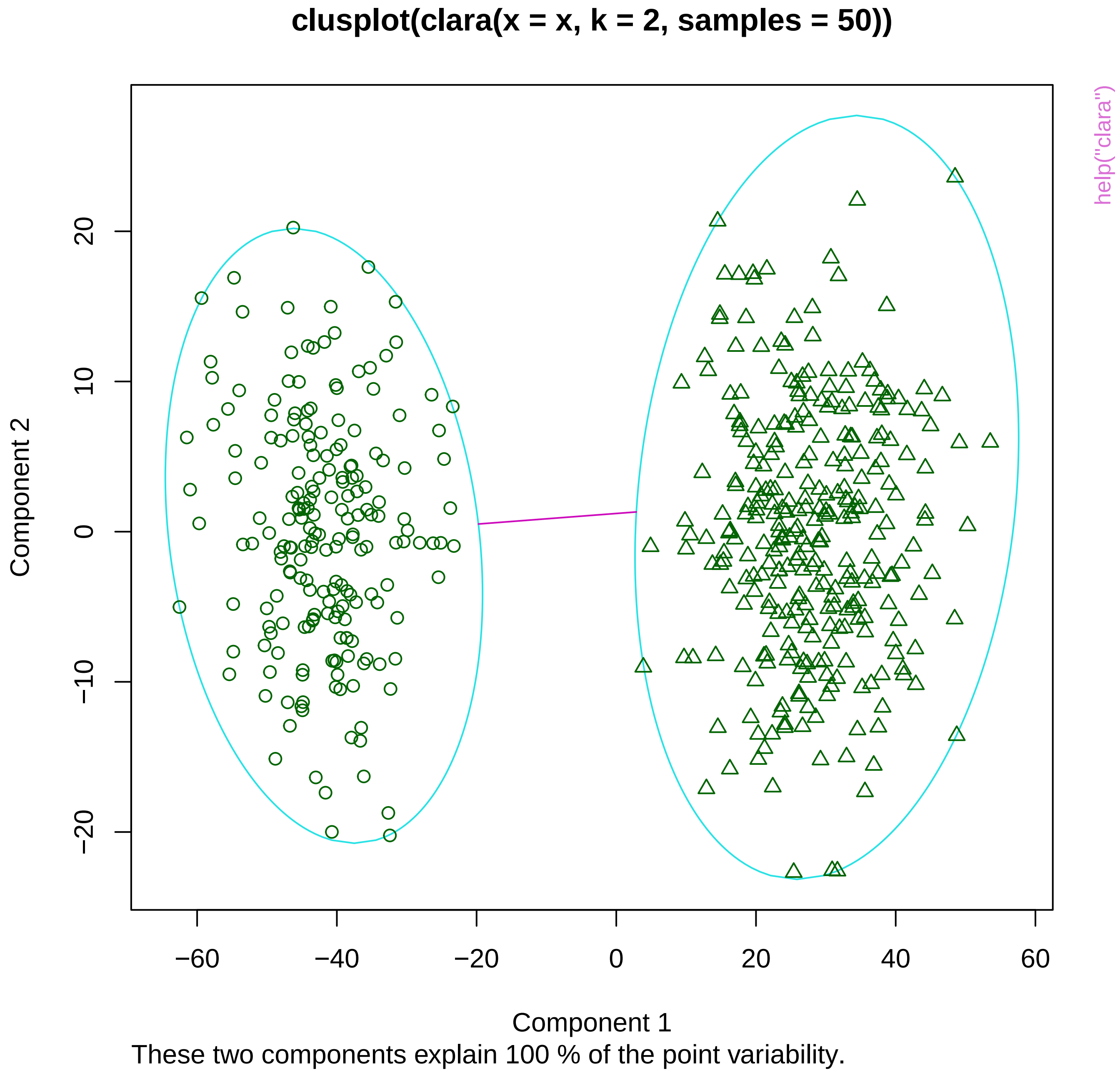

Banner of mona(x = animals)
ant
cpl
spi
lob
bee
fly
fro
her
liz
sal
cat
cow
rab
chi
lio
man
ele
wha
duc
eag
gro
hai
fly
gro
ver
end
gro
war
gro
end
hai
fly
end
0
1
2
3
4
5
6
Separation step
help("animals")

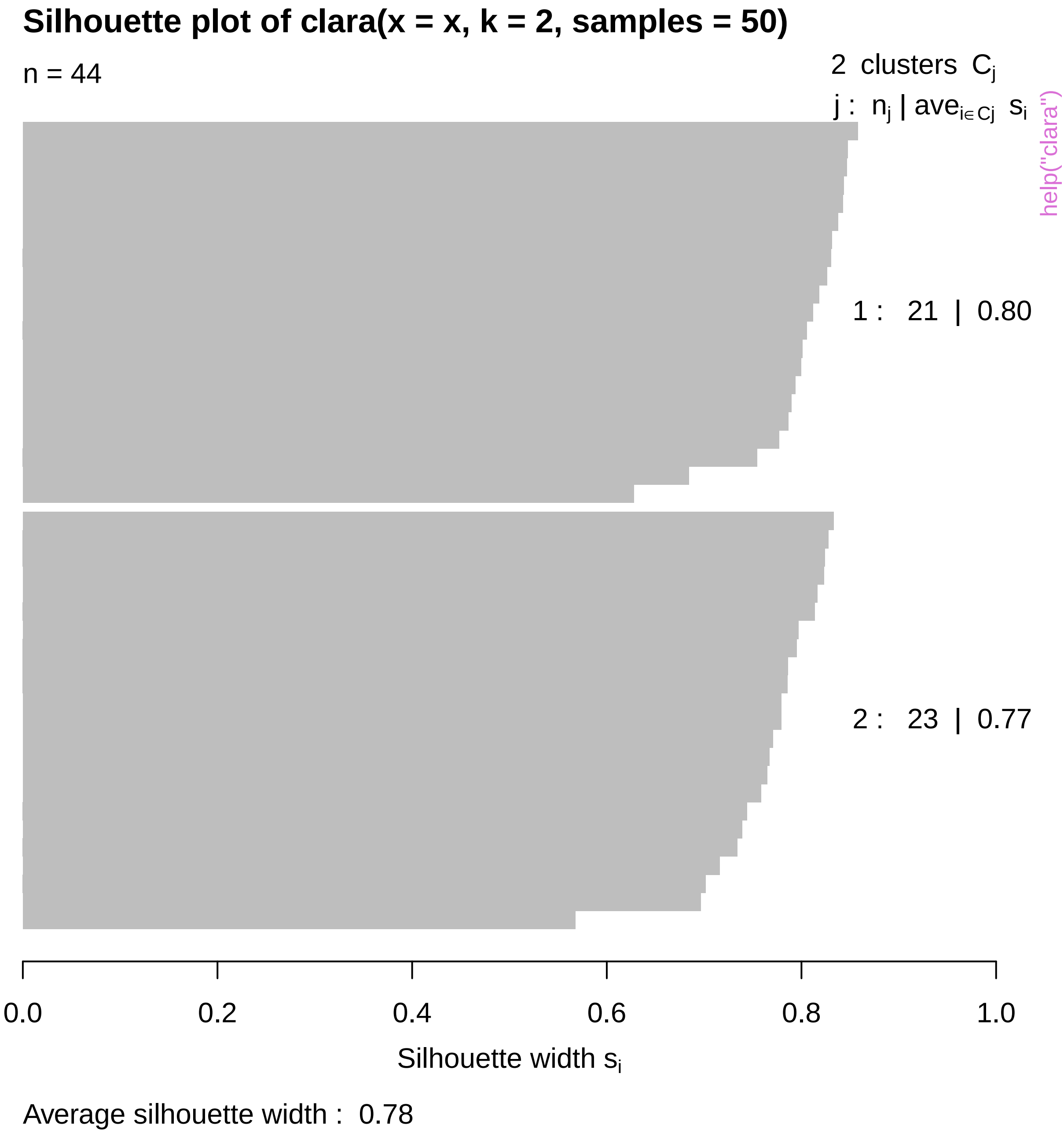


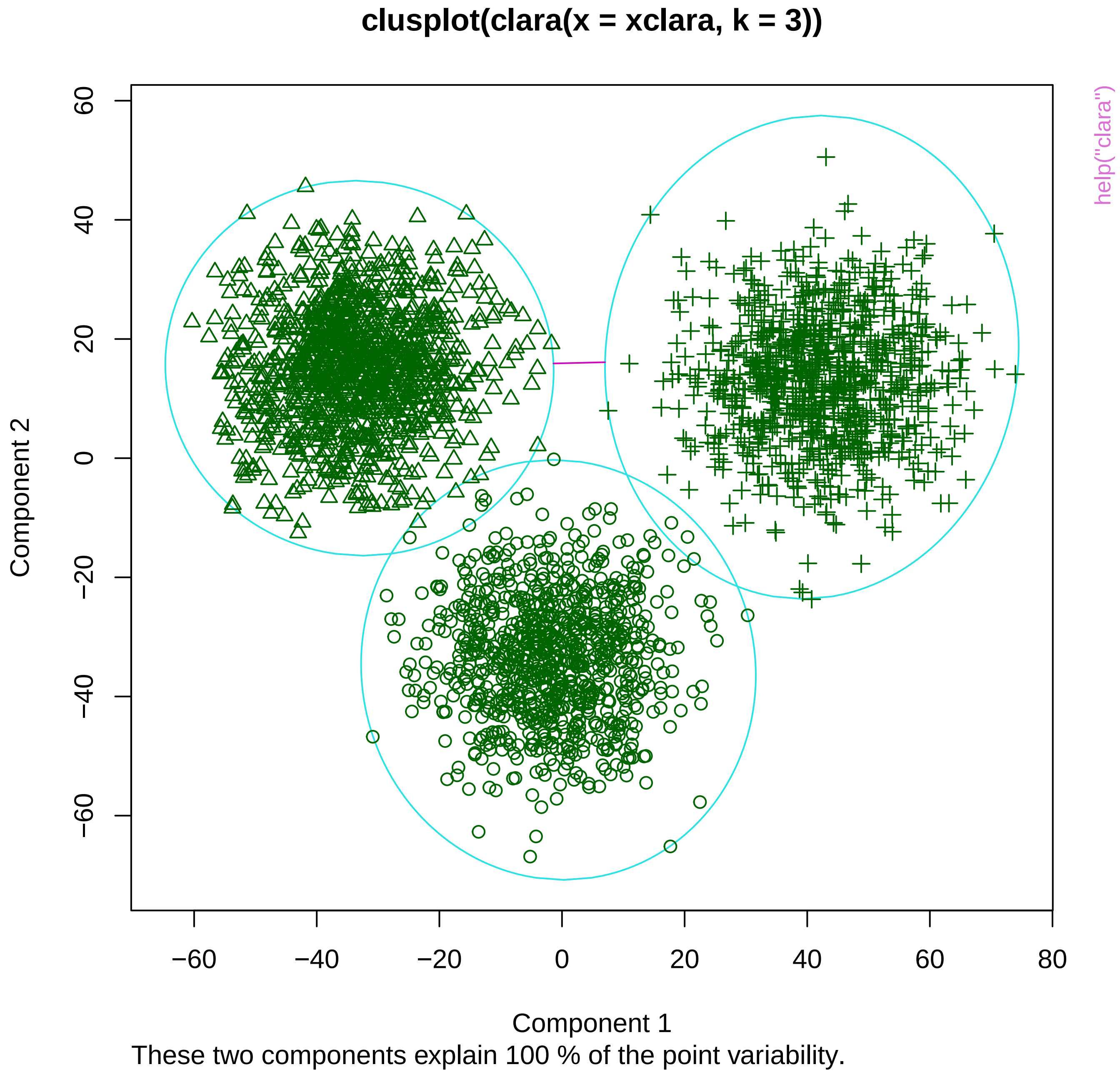
Bannerplot
B
NL
D
F
UK
DK
L
I
GR
P
E
IRL
0
5
10
14.8
Height
help("bannerplot")



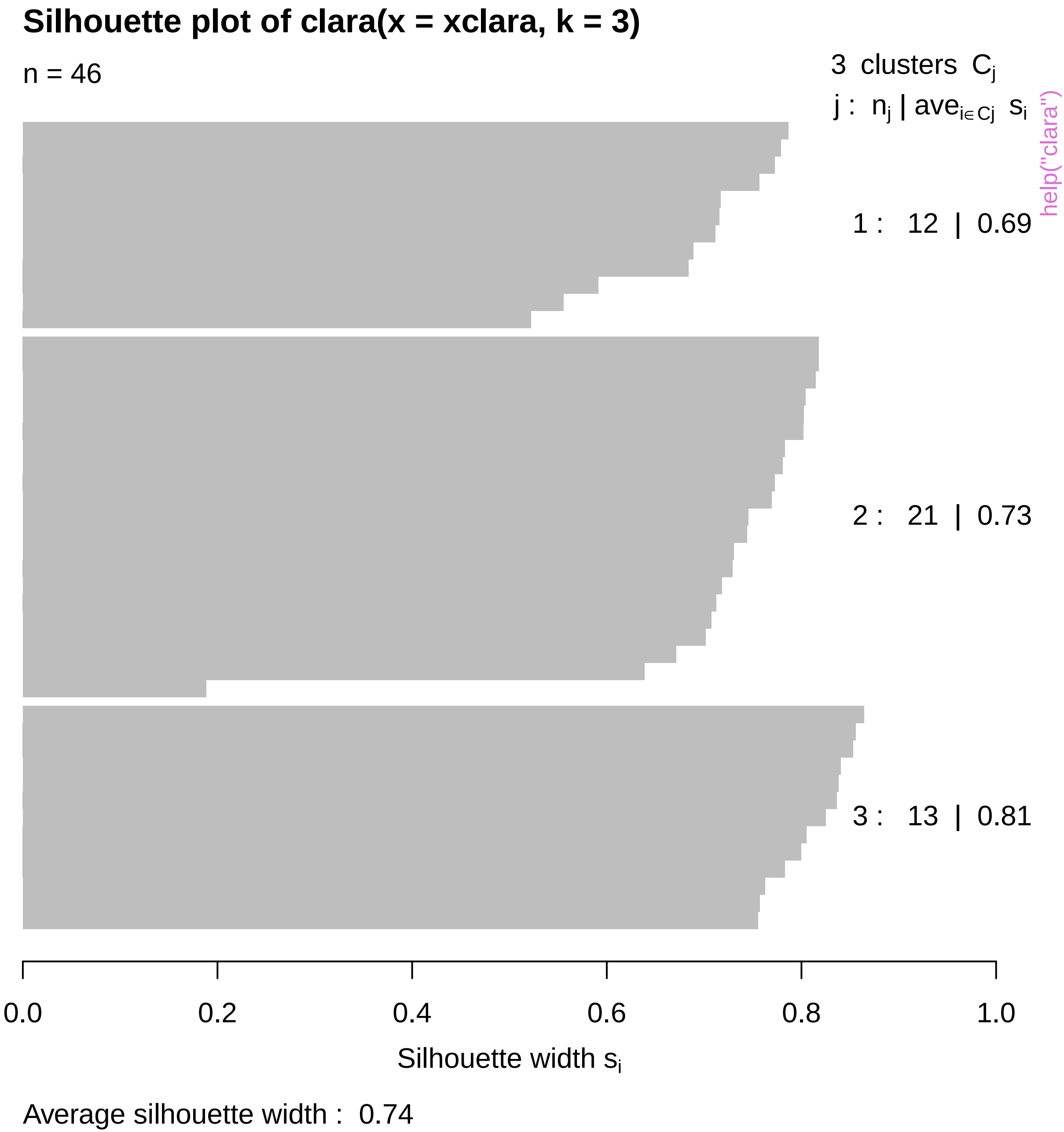
Al
Ca
Fe
K
Mg
Mn
Na
P
Si
Ti
help("chorSub")

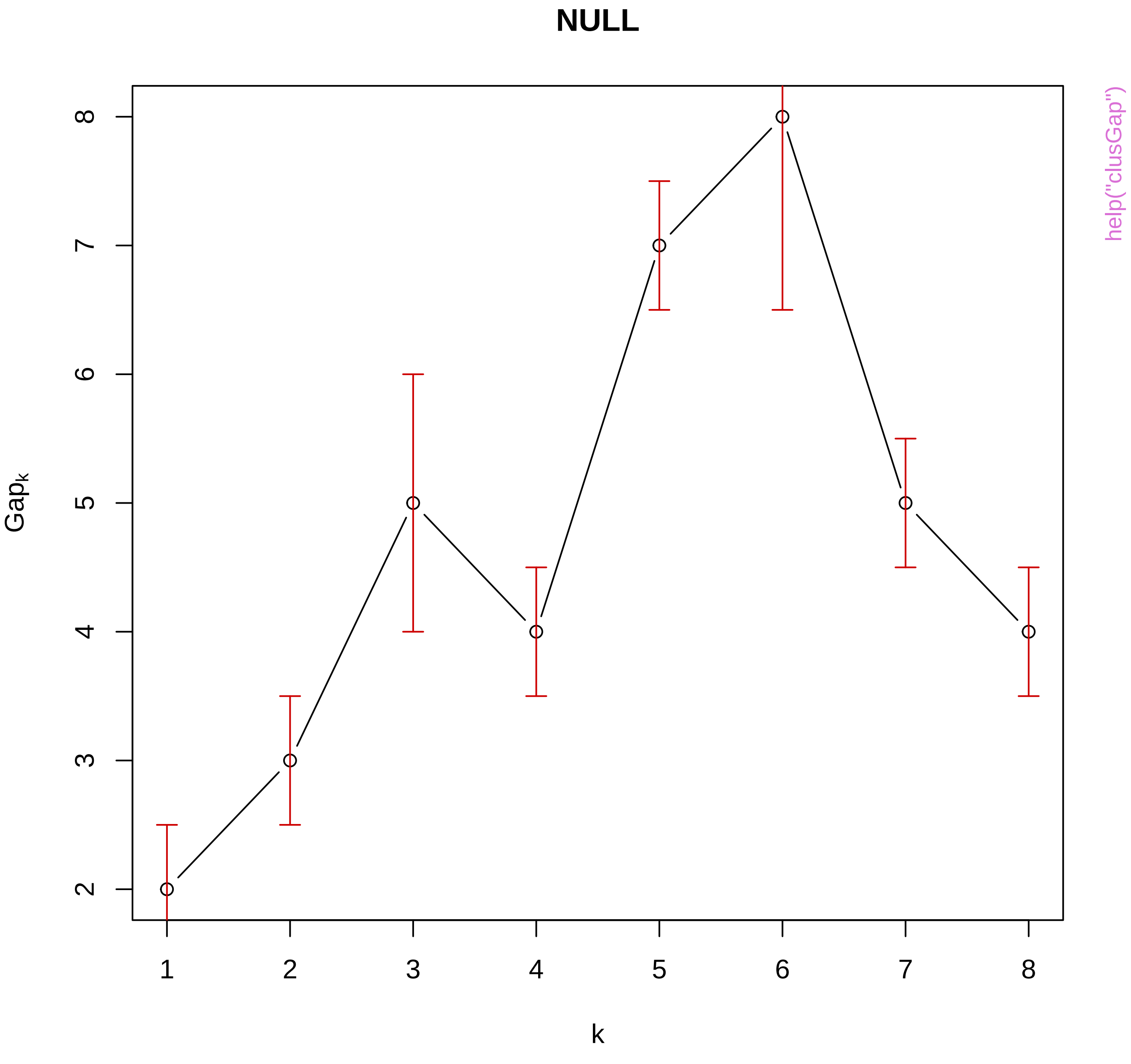

clusplot(clara(x = x, k = 2, samples = 50))
help("clara")
Component 2
Component 1
20
10
0
−10
−20
−60
−40
−20
0
20
40
60
These two components explain 100 % of the point variability.


Silhouette plot of clara(x = x, k = 2, samples = 50)
n = 44
2 clusters C_j
j : n_j | $ave_{i \in Cj}$ 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

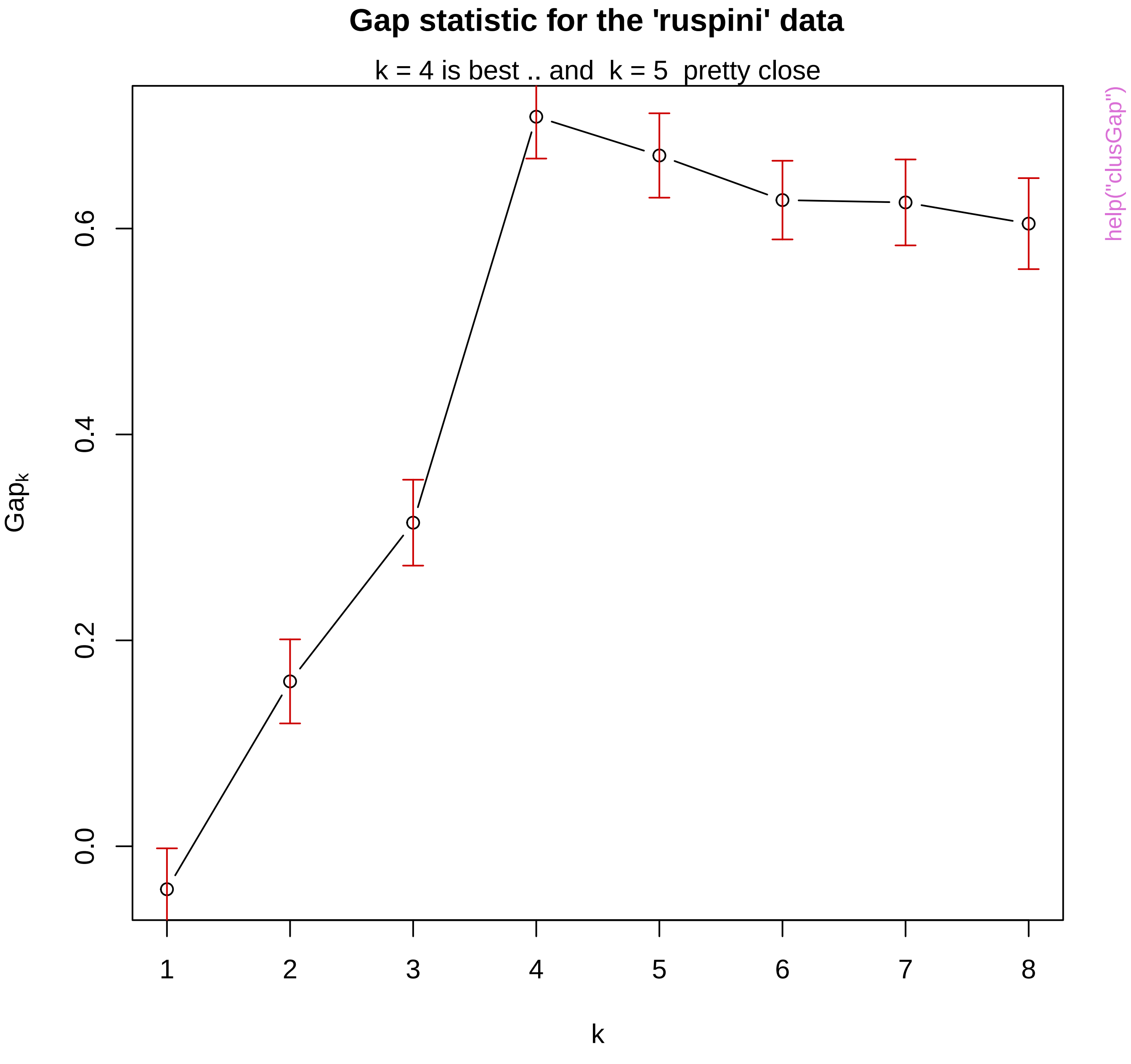


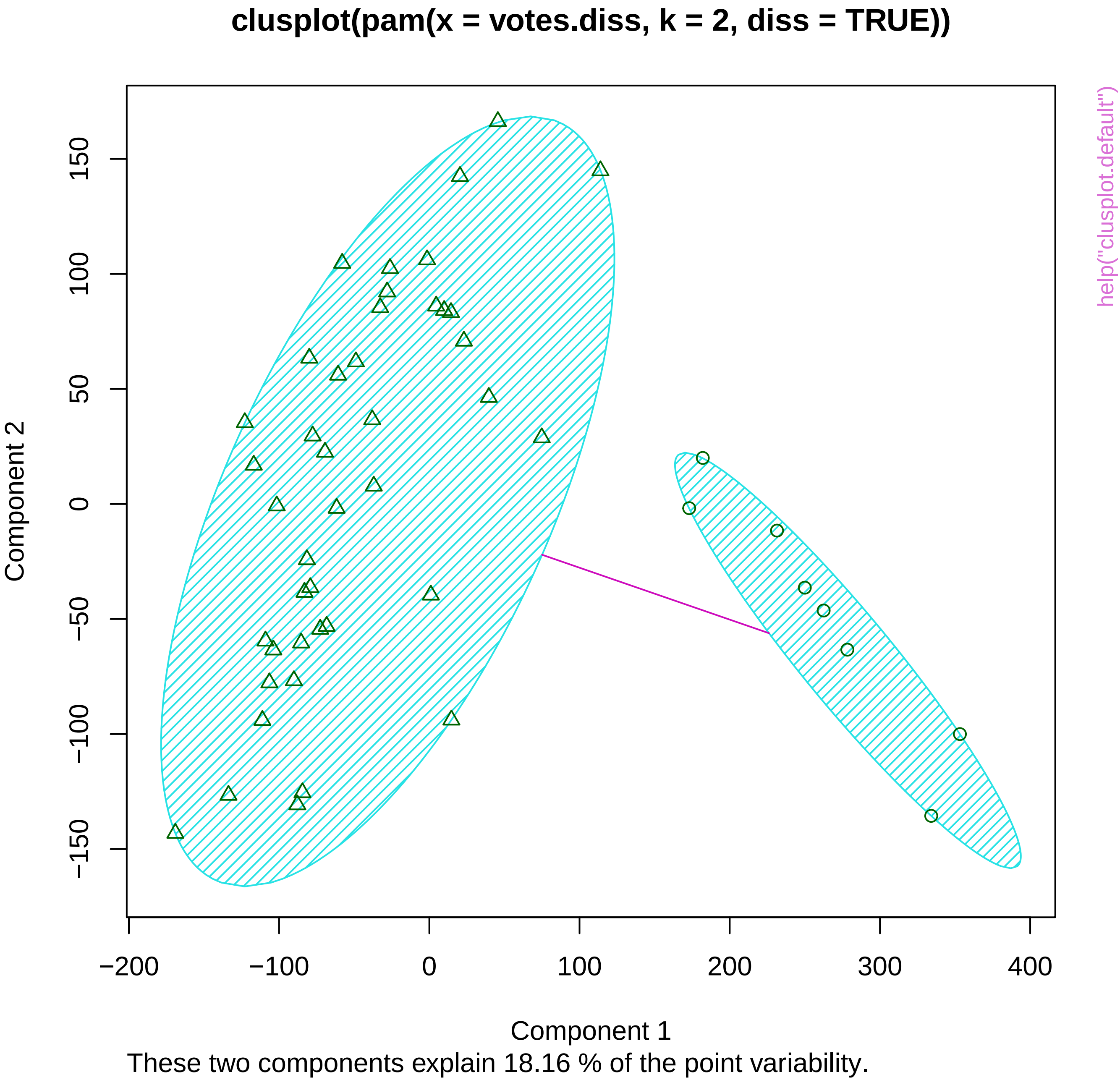
clusplot(clara(x = xclara, k = 3))
help("clara")
Component 2
60
40
20
0
−20
−40
−60
−60
−40
−20
0
20
40
60
80
Component 1
These two components explain 100 % of the point variability.

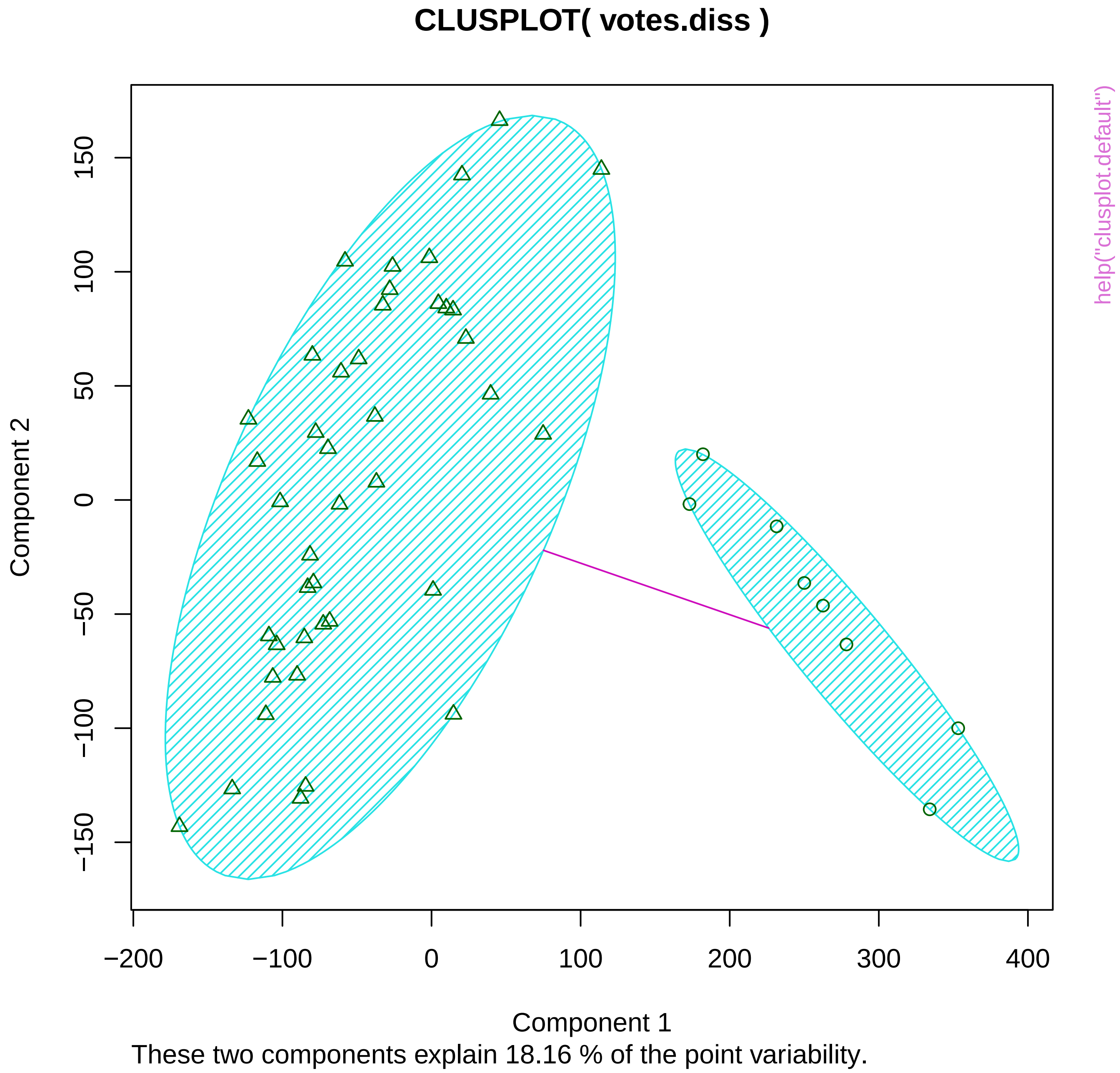

Silhouette plot of clara(x = xclara, k = 3)
n = 46
3 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
1 : 12 | 0.69
2 : 21 | 0.73
3 : 13 | 0.81
help("clara")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.74



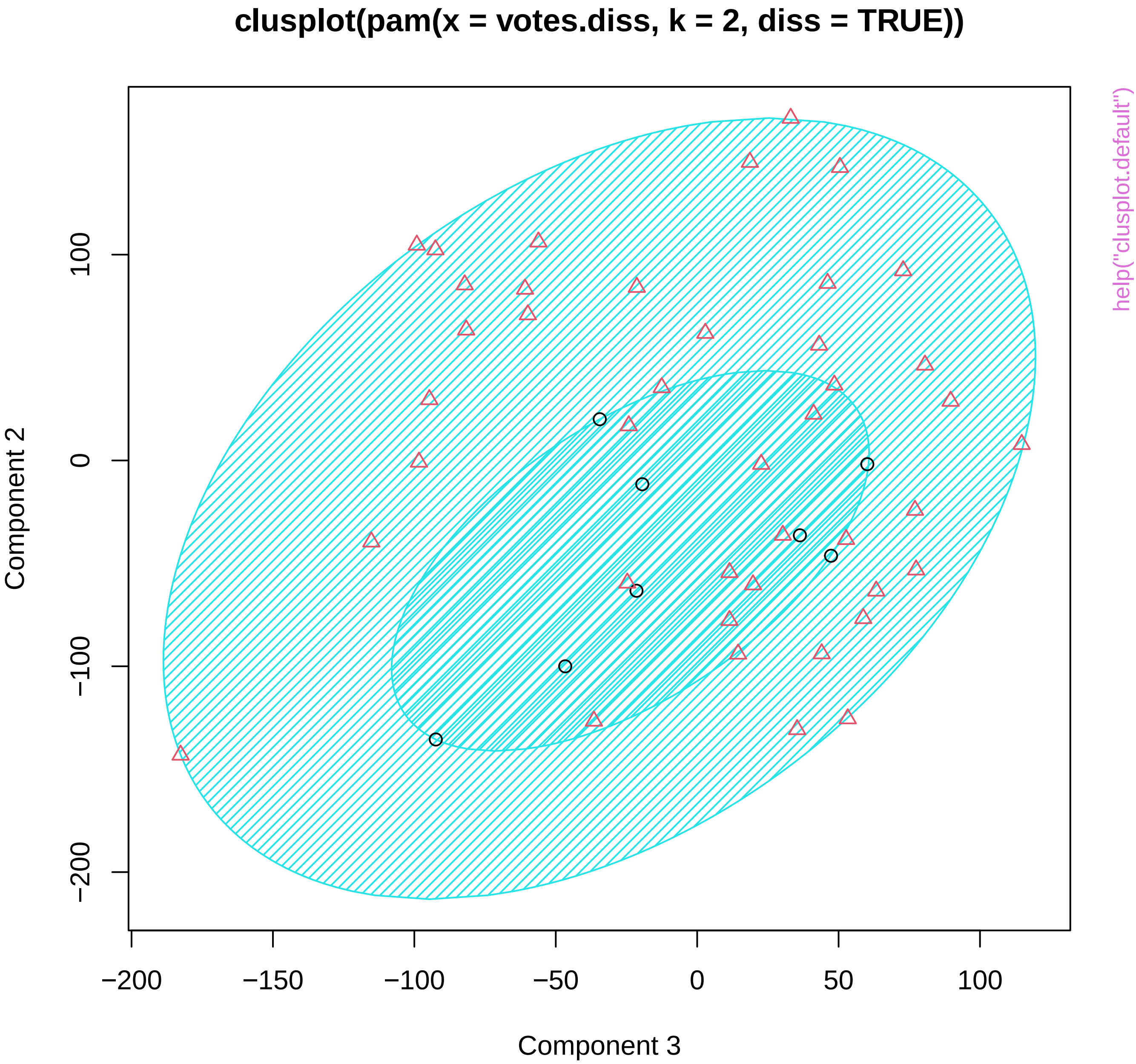
NULL
Gap$_k$
k
1
2
3
4
5
6
7
8
help("clusGap")

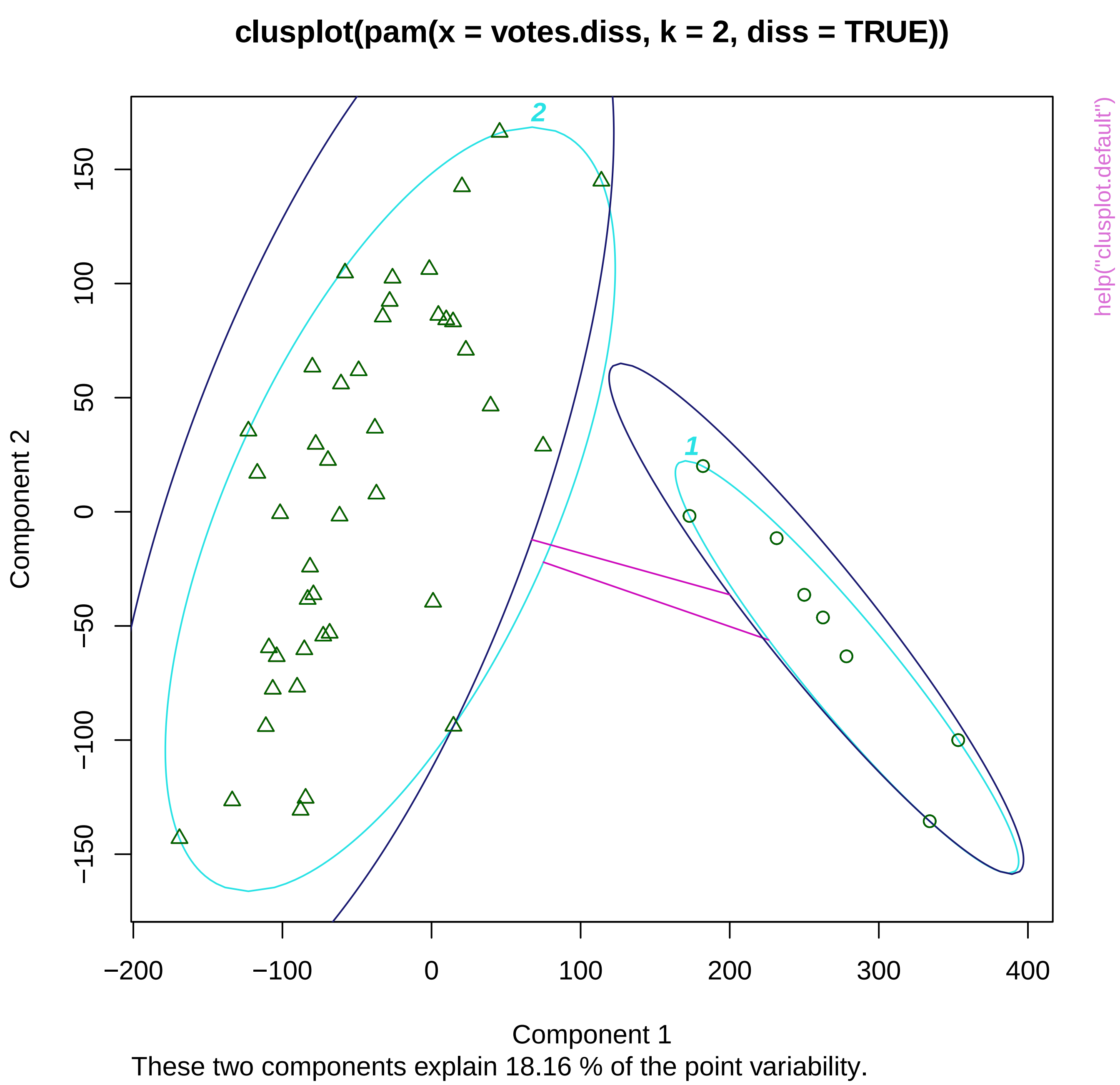

Gap statistic for the 'ruspini' data
k = 4 is best .. and k = 5 pretty close
help("clusGap")
Gap_k
0.0
0.2
0.4
0.6
1
2
3
4
5
6
7
8
k

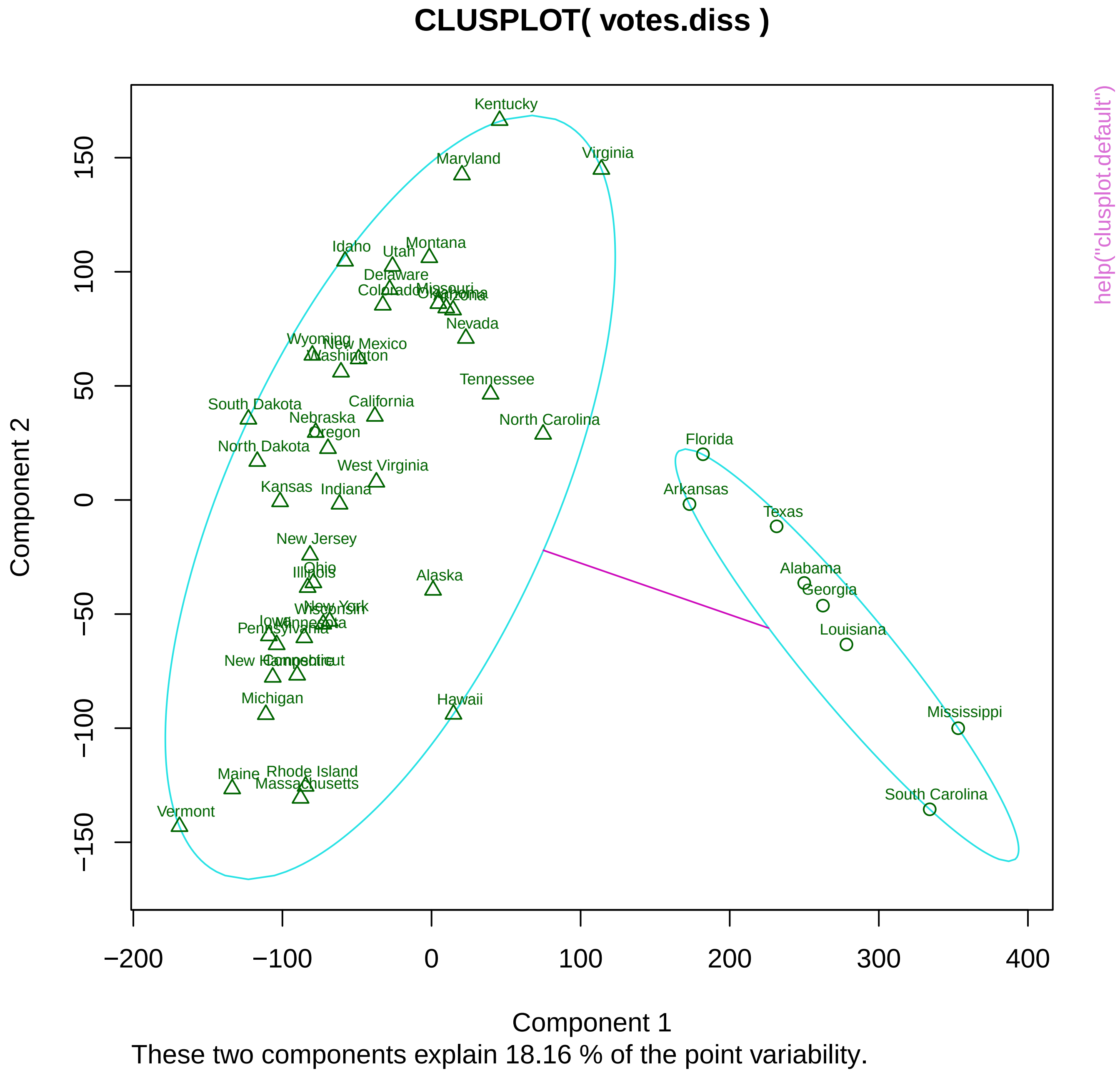

clusplot(pam(x = votes.diss, k = 2, diss = TRUE))
Component 2
150
100
50
0
−50
−100
−150
−200
−100
0
100
200
300
400
Component 1
These two components explain 18.16 % of the point variability.
help("clusplot.default")

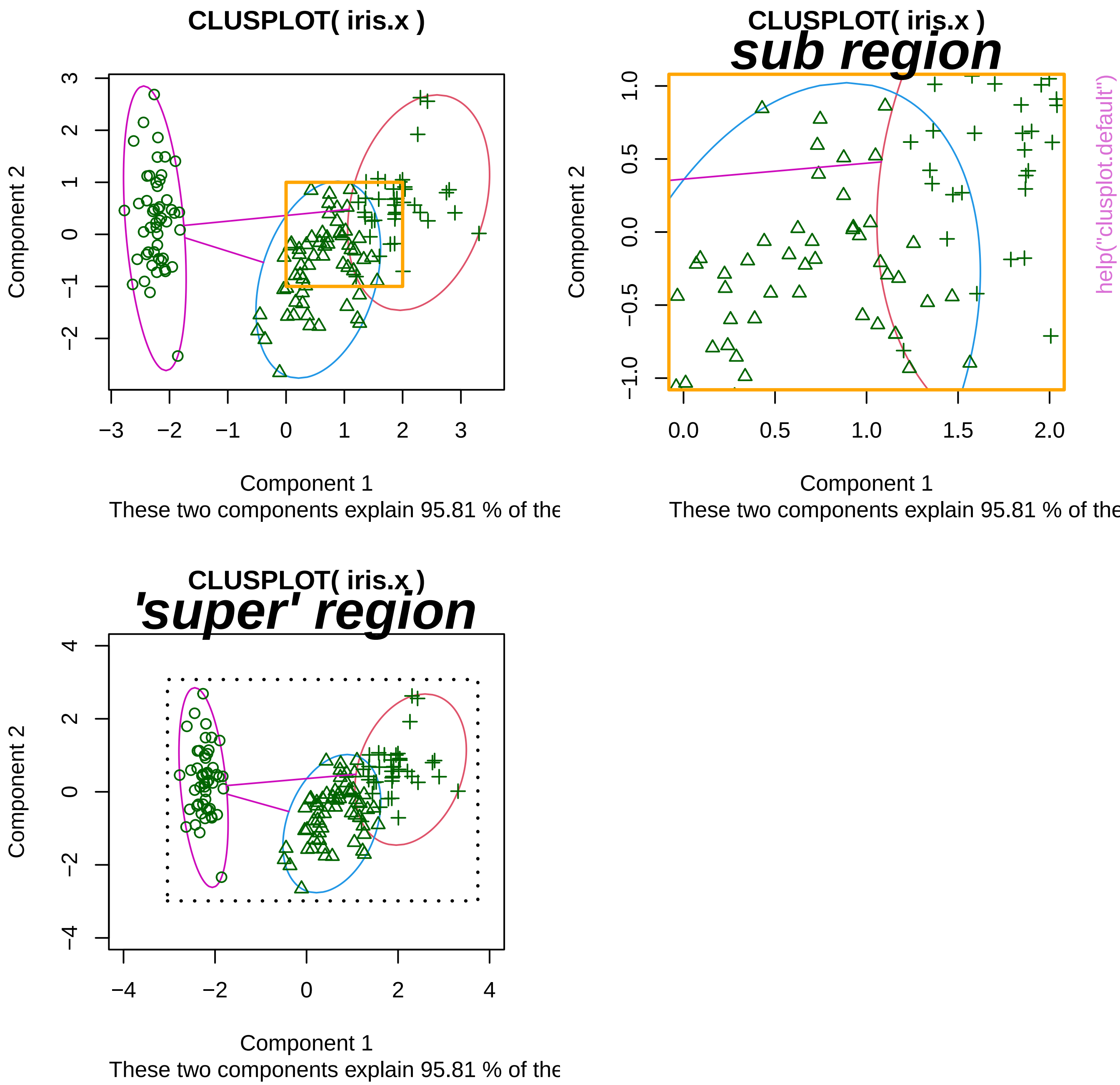


CLUSPLOT(votes.diss)
Component 2
150
100
50
0
−50
−100
−150
−200
−100
0
100
200
300
400
Component 1
These two components explain 18.16 % of the point variability.
help("clusplot.default")

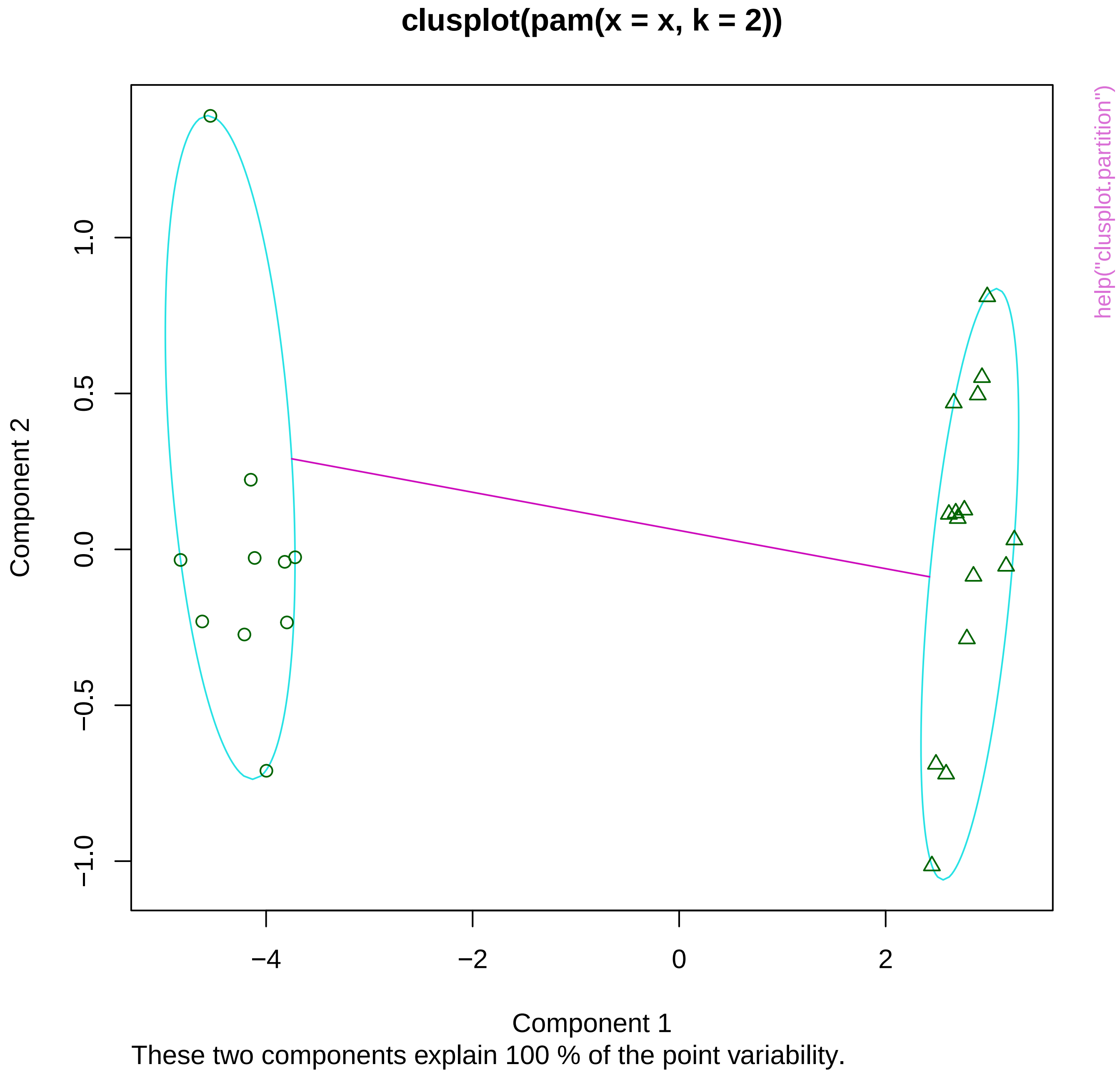

clusplot(pam(x = votes.diss, k = 2, diss = TRUE))
Component 2
Component 3
100
0
−100
−200
−200
−150
−100
−50
0
50
100
help("clusplot.default")


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

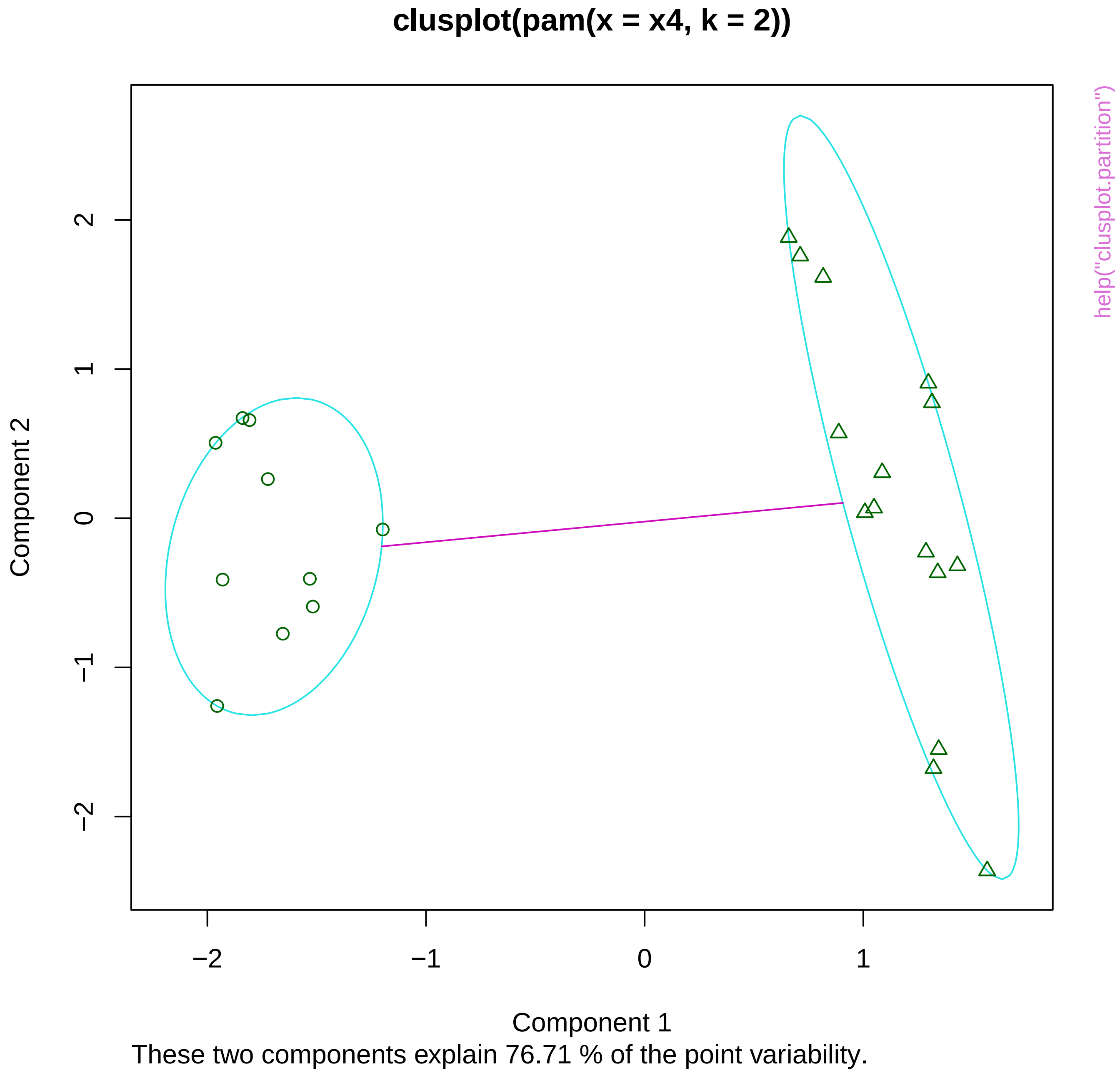

CLUSPLOT(votes.diss)
Component 1
Component 2
These two components explain 18.16 % of the point variability.
help("clusplot.default")
−200
−100
0
100
200
300
400
150
100
50
0
−50
−100
−150
Kentucky
Maryland
Virginia
Idaho
Utah
Montana
Delaware
Colorado
Missouri
Oklahoma
Arizona
Nevada
Wyoming
New Mexico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



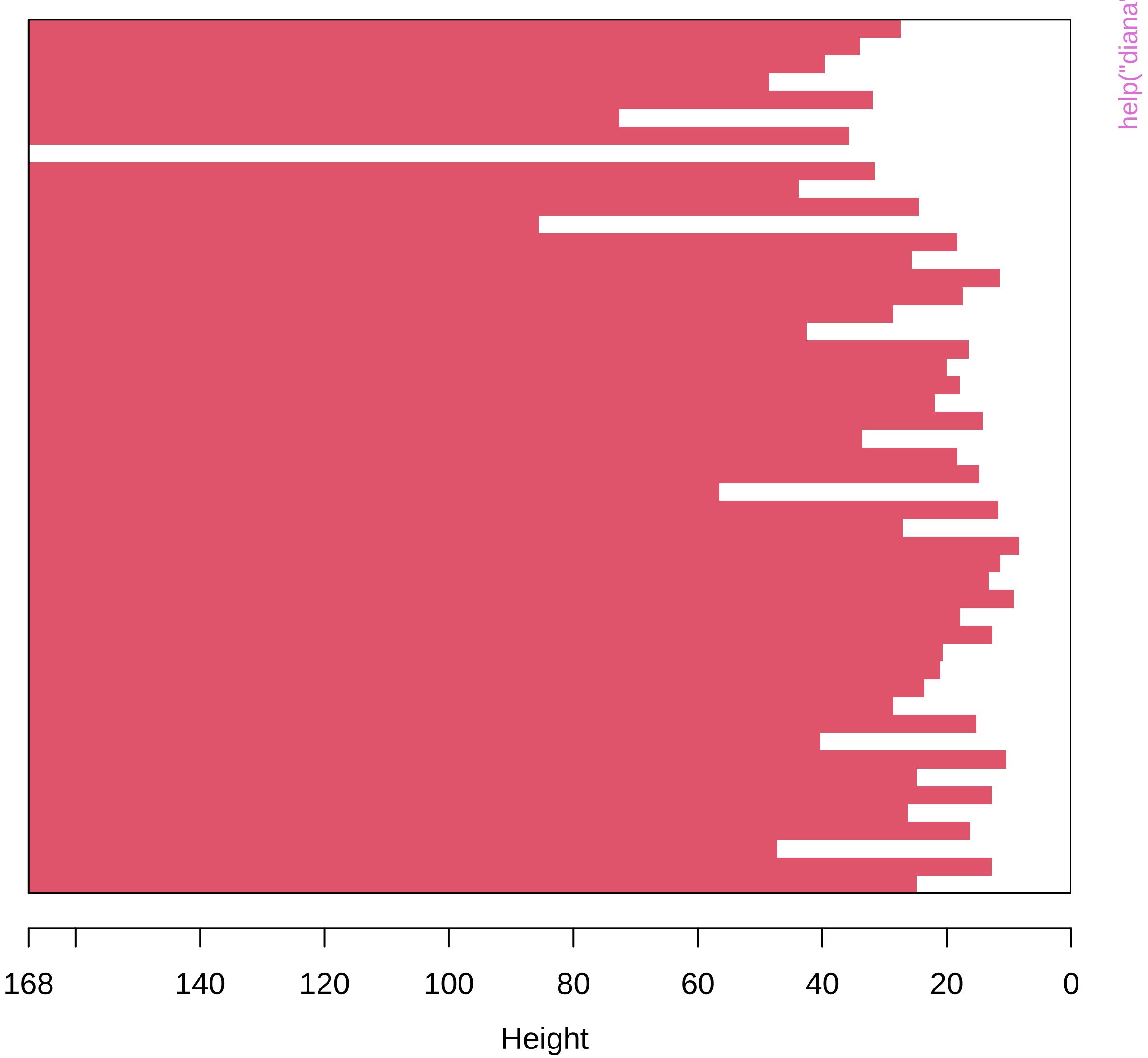
CLUSPLOT(iris.x)
Component 1
Component 2
These two components explain 95.81 % of the
CLUSPLOT(iris.x)
sub region
Component 1
Component 2
These two components explain 95.81 % of the
help("clusplot.default")
CLUSPLOT(iris.x)
'super' region
Component 1
Component 2
These two components explain 95.81 % of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



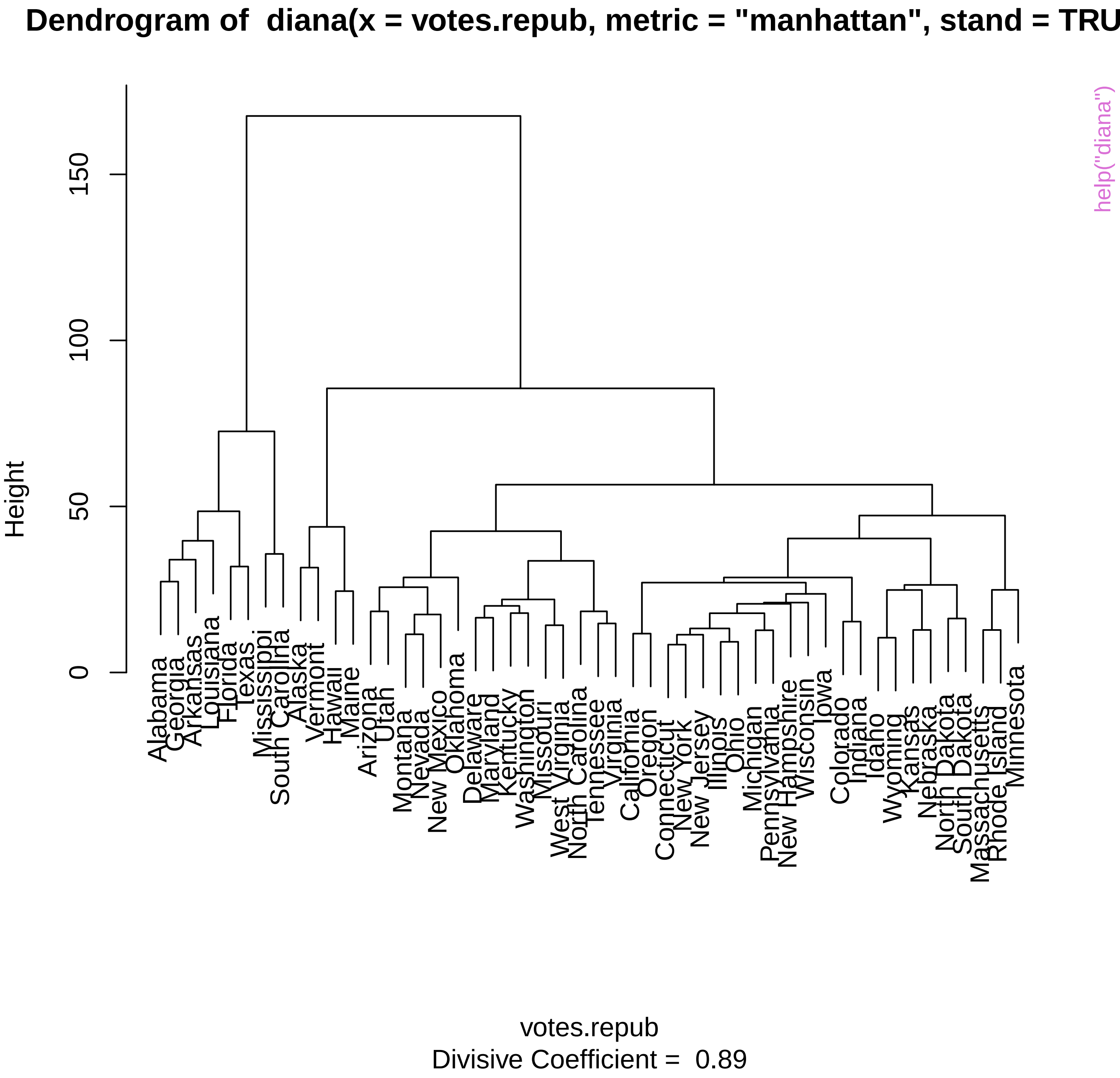
clusplot(pam(x = x, k = 2))
Component 1
Component 2
−4
−2
0
2
−1.0
−0.5
0.0
0.5
1.0
help("clusplot.partition")
These two components explain 100 % of the point variability.


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

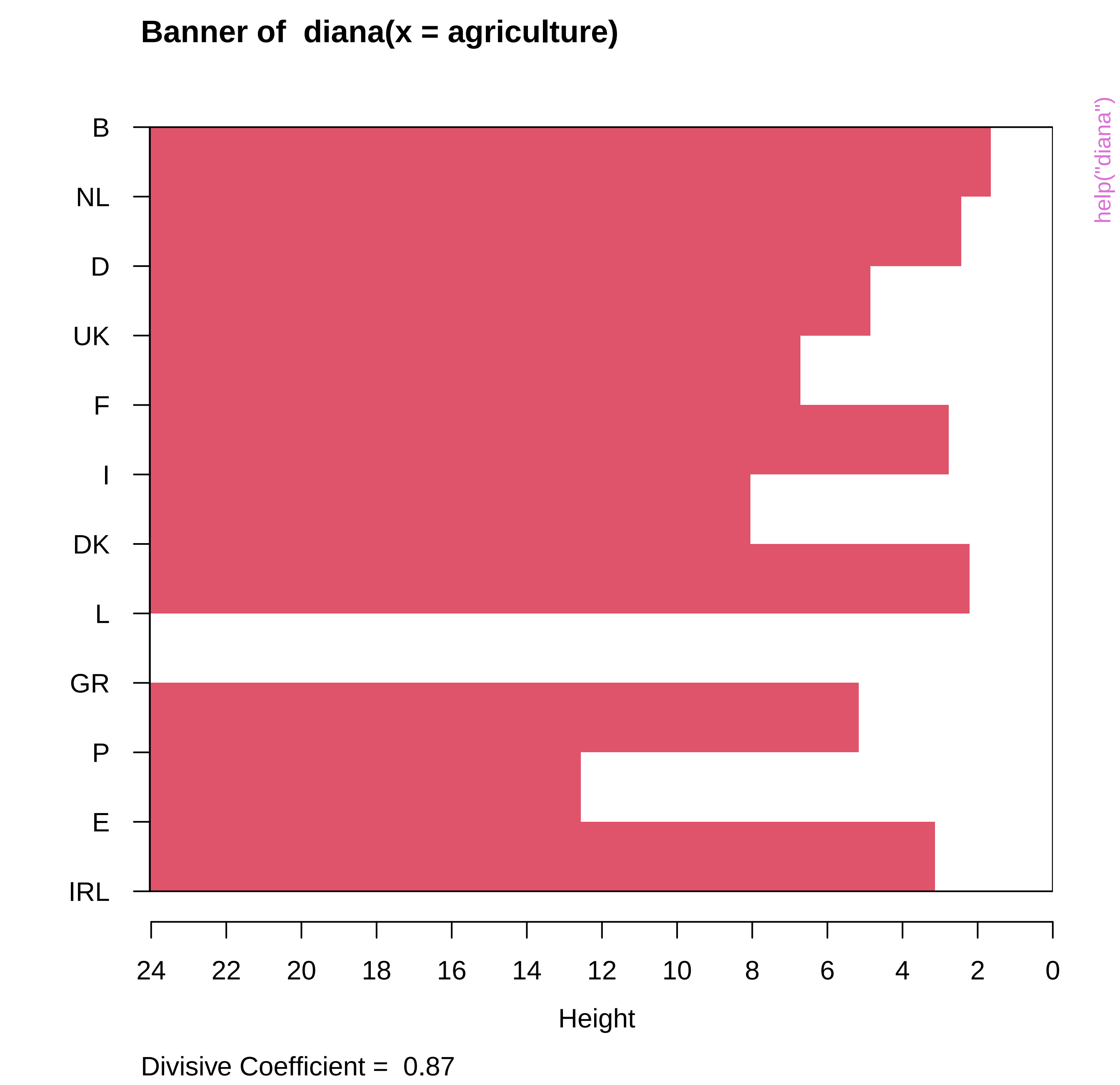
Banner of diana(x = votes.repub, metric = "manhattan", stand = TR



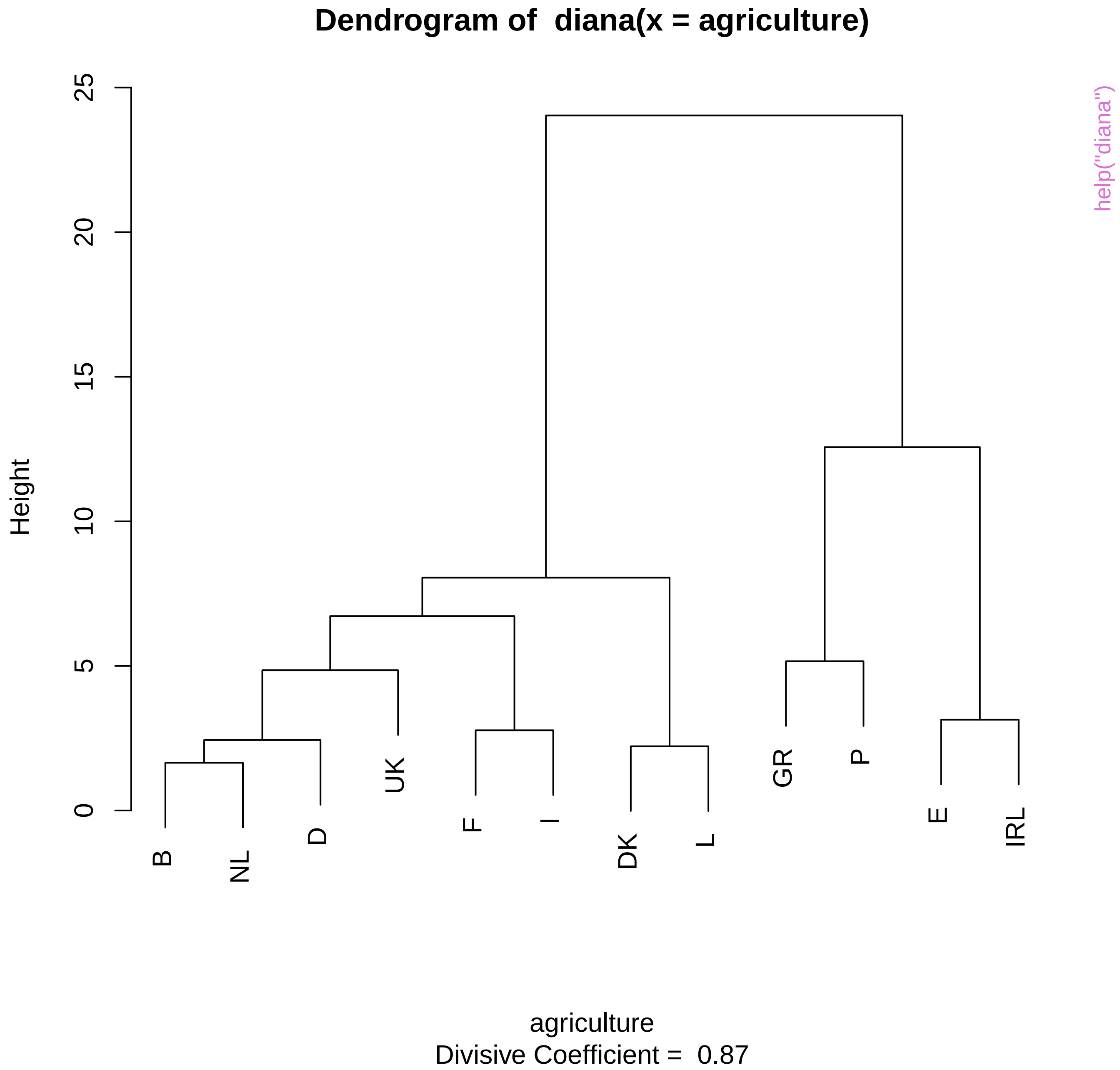
Divisive Coefficient = 0.89



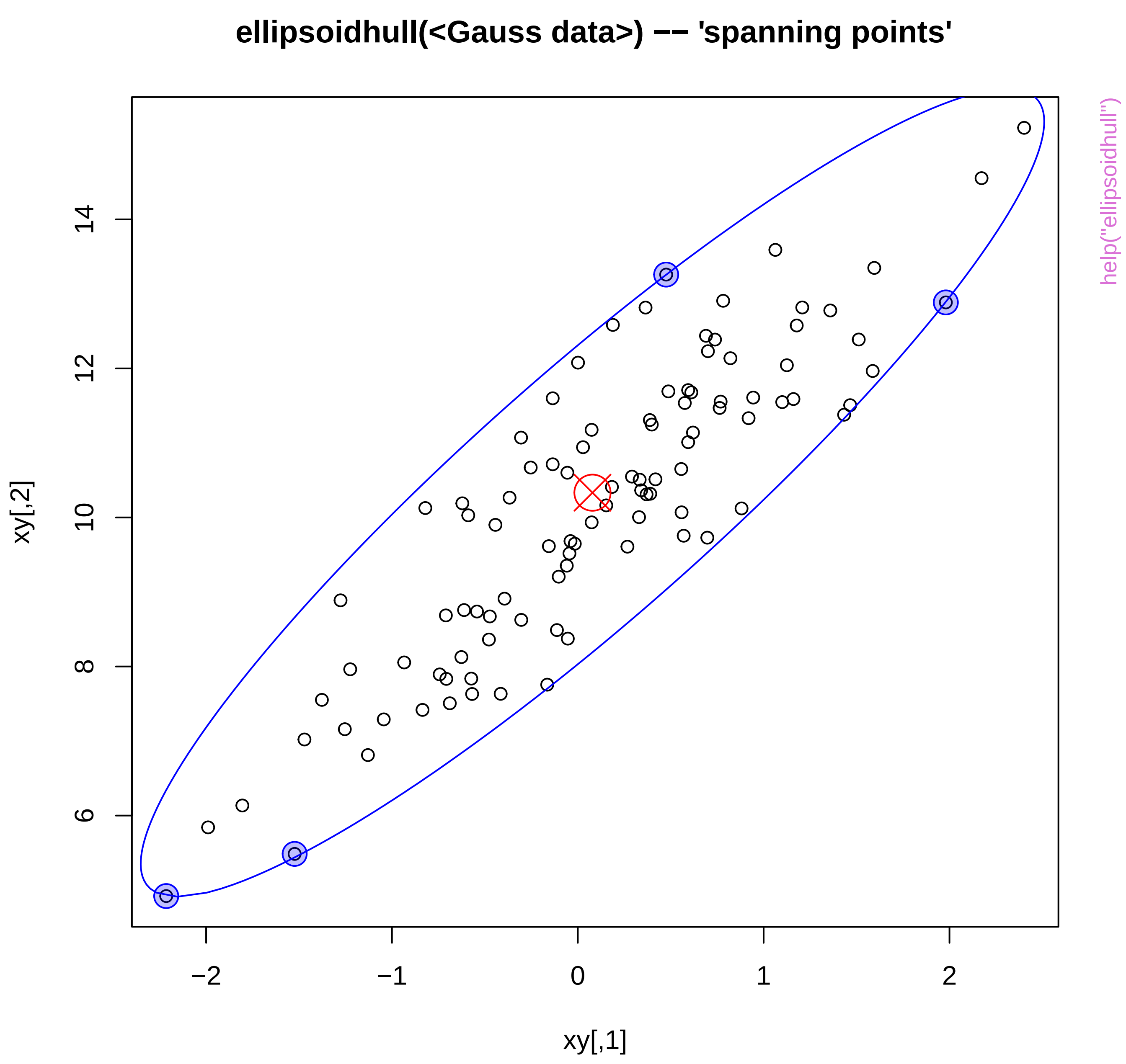
Dendrogram of diana(x = votes.repub, metric = "manhattan", stand = TRU
Height
0
50
100
150
help("diana")
Alabama
Georgia
Arkansas
Louisiana
Florida
Texas
Mississippi
South Carolina
Alaska
Vermont
Hawaii
Maine
Arizona
Utah
Montana
Nevada
New Mexico
Oklahoma
Delaware
Maryland
Kentucky
Washington
Missouri
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

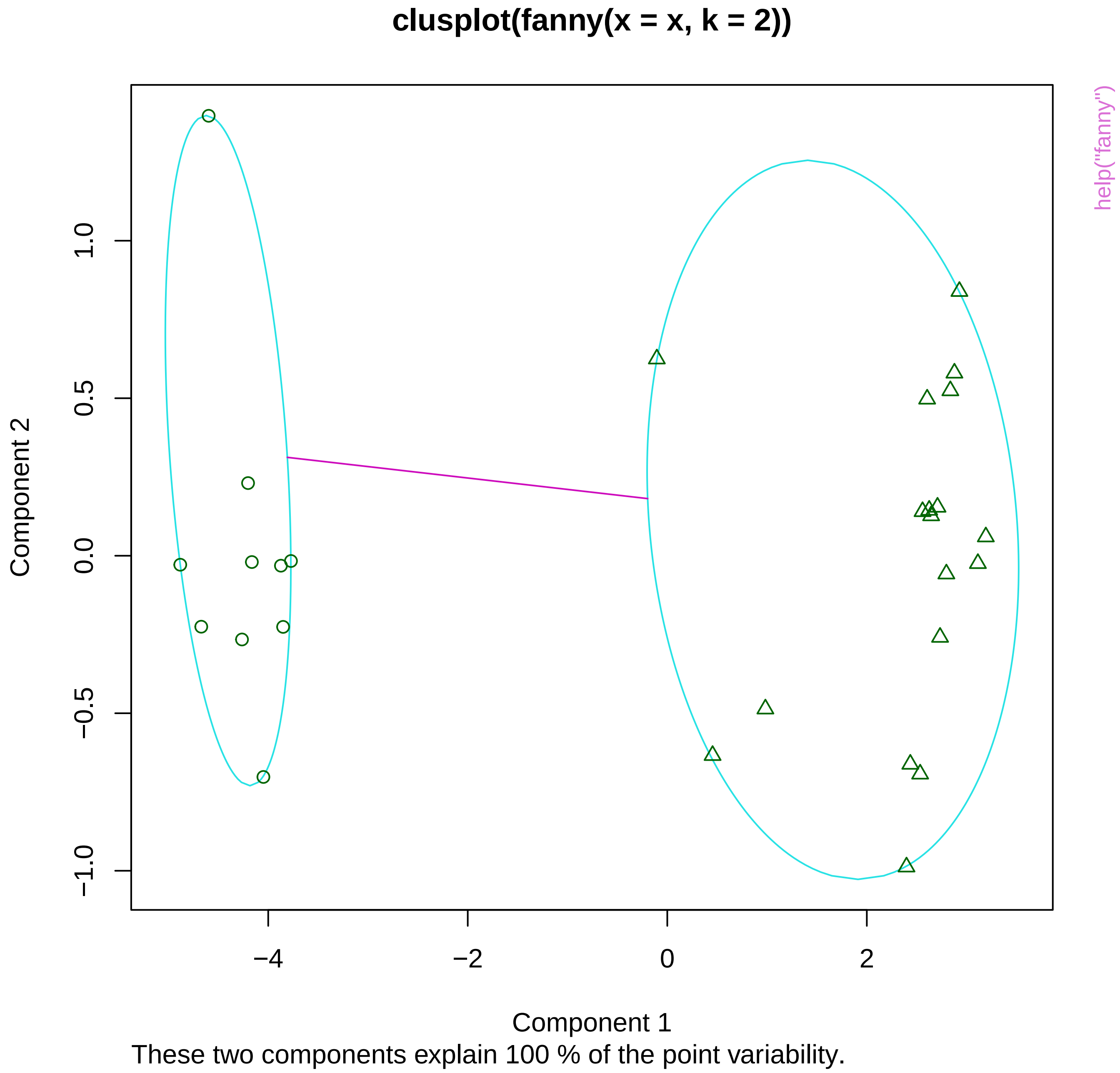


Banner of diana(x = agriculture)
B
NL
D
UK
F
I
DK
L
GR
P
E
IRL
24
22
20
18
16
14
12
10
8
6
4
2
0
Height
Divisive Coefficient = 0.87
help("diana")

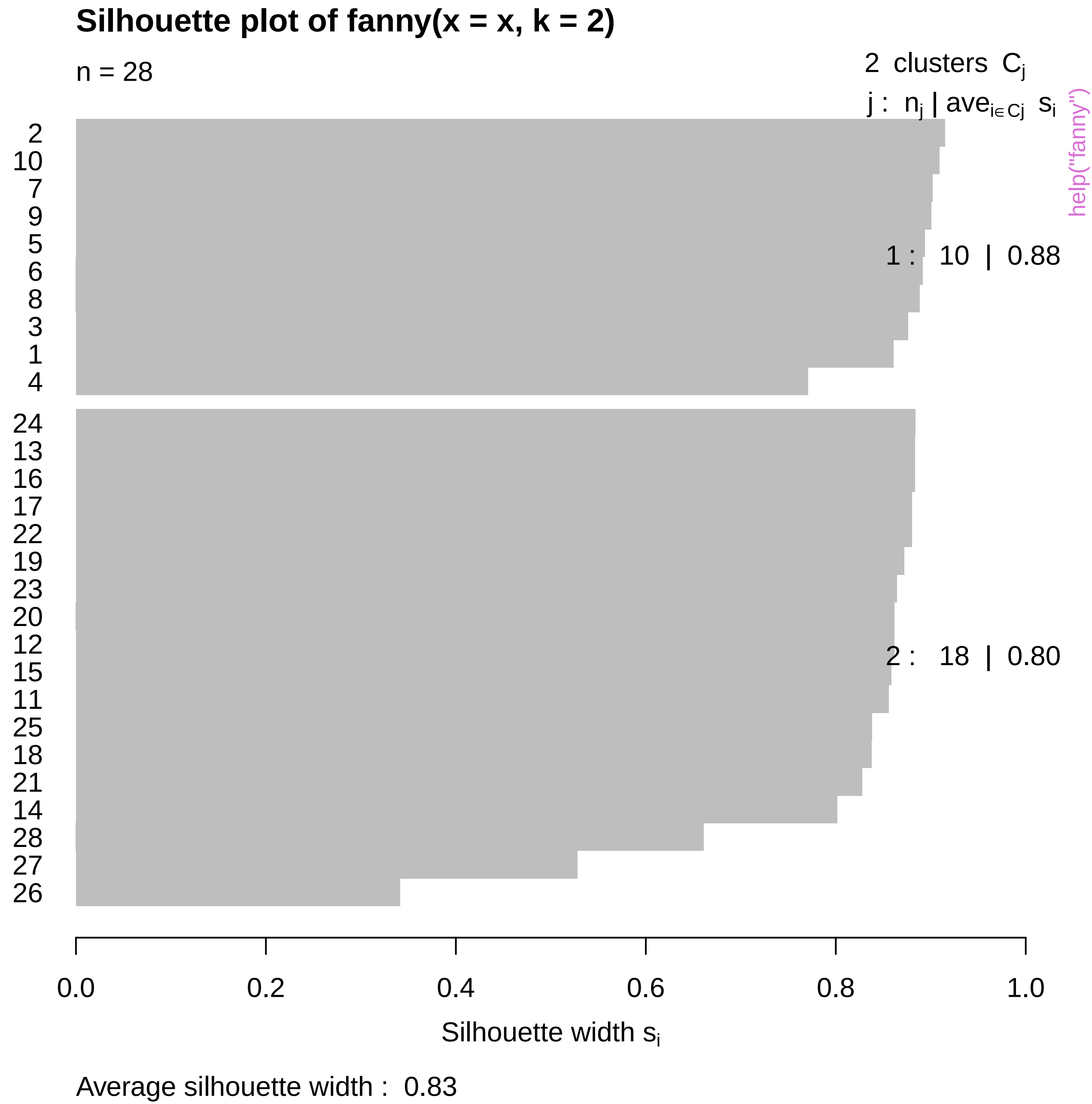


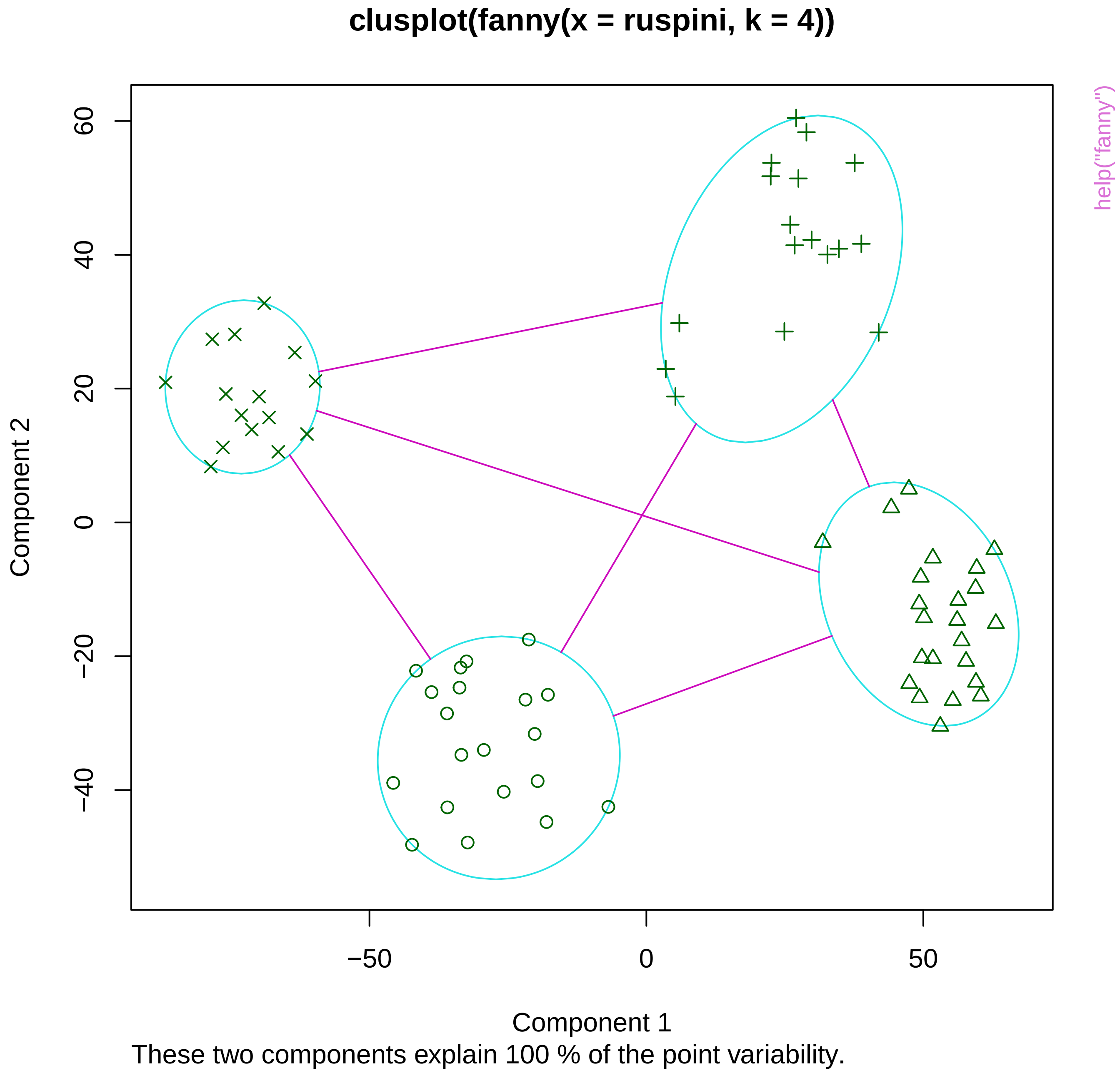
Dendrogram of diana(x = agriculture)
Height
0
5
10
15
20
25
B
NL
D
UK
F
I
DK
L
GR
P
E
IRL
help("diana")
agriculture
Divisive Coefficient = 0.87

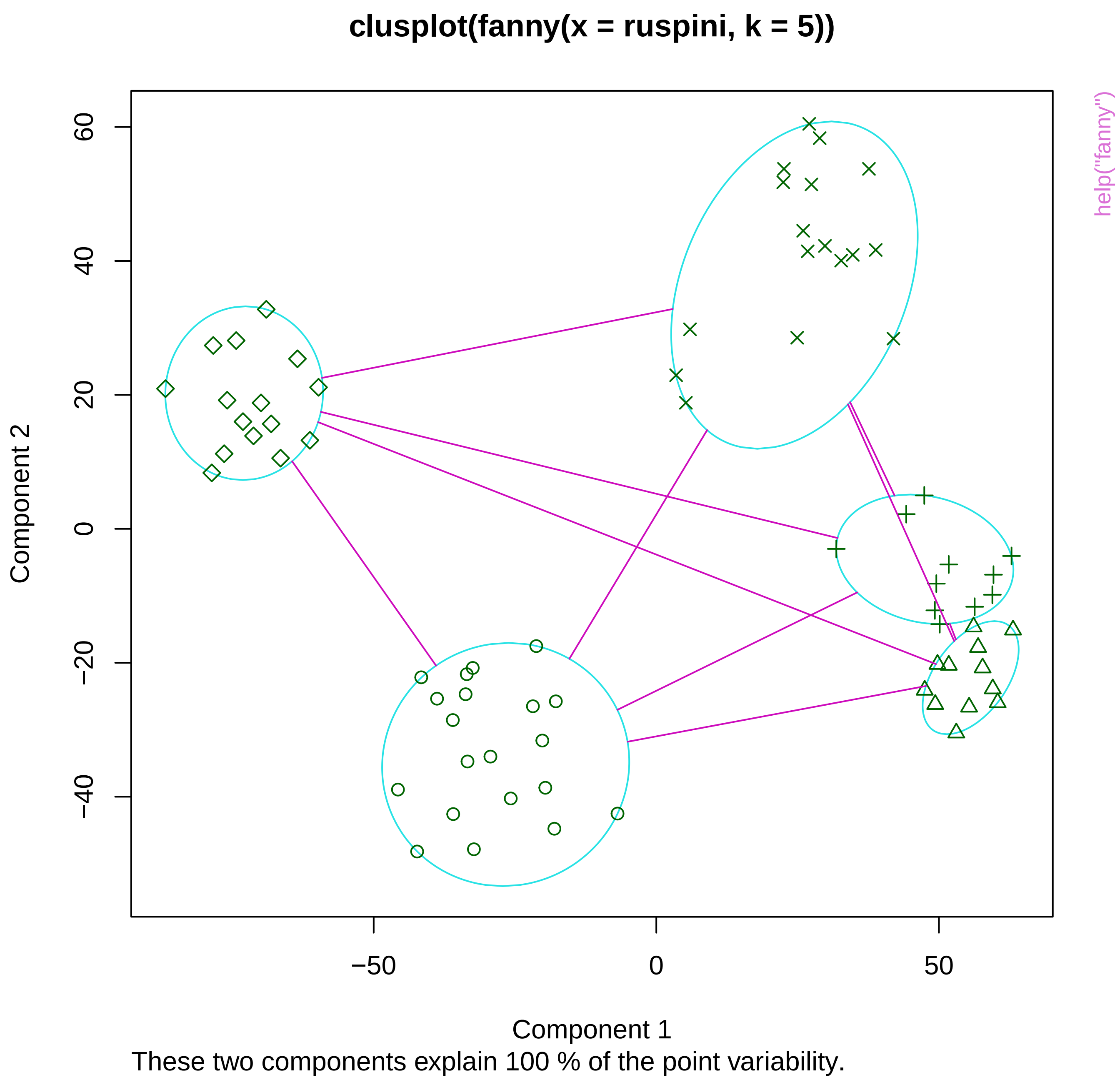

ellipsoidhull(<Gauss data>) -- 'spanning points'
help("ellipsoidhull")
xy[,2]
6
8
10
12
14
xy[,1]
−2
−1
0
1
2

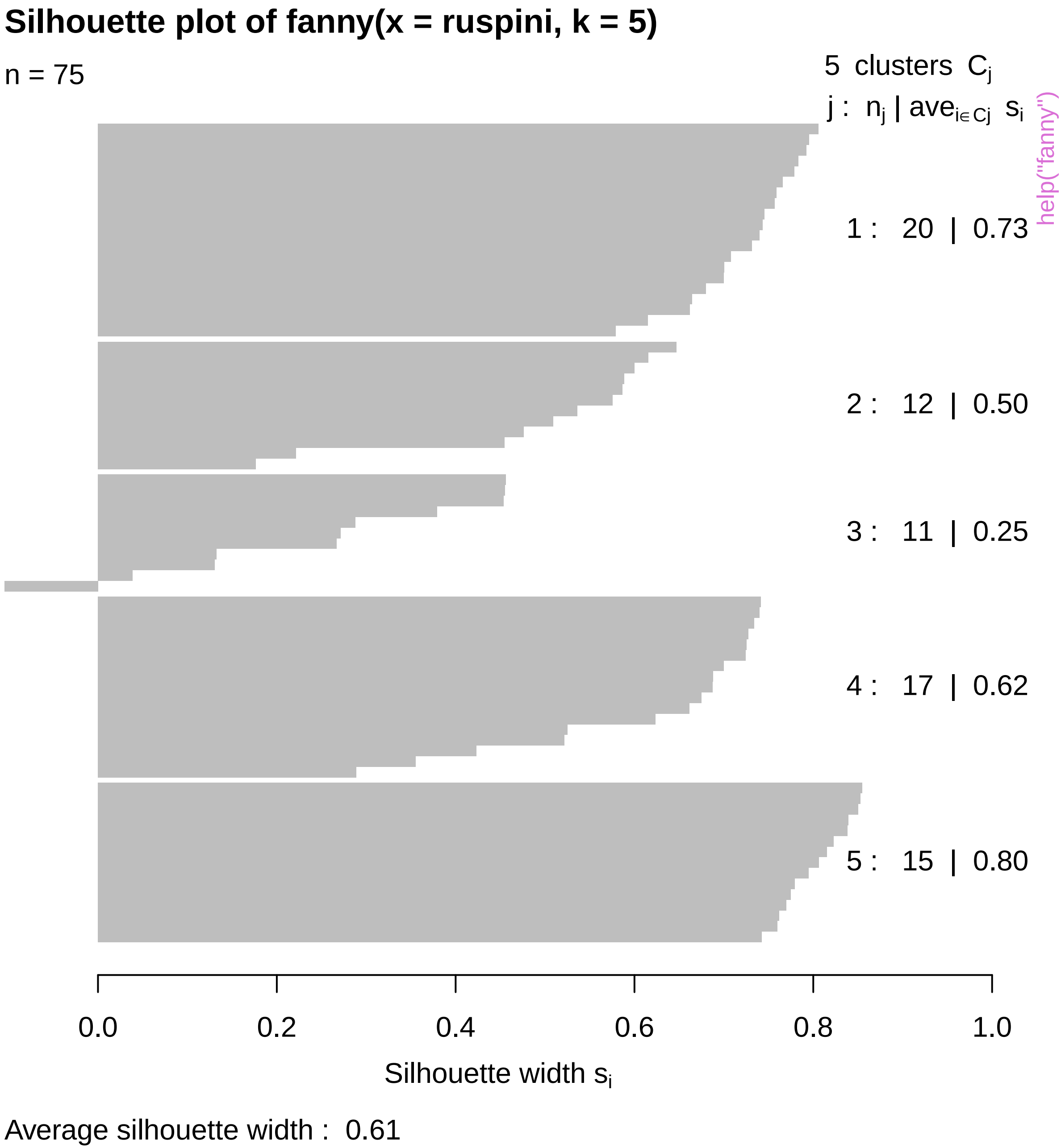


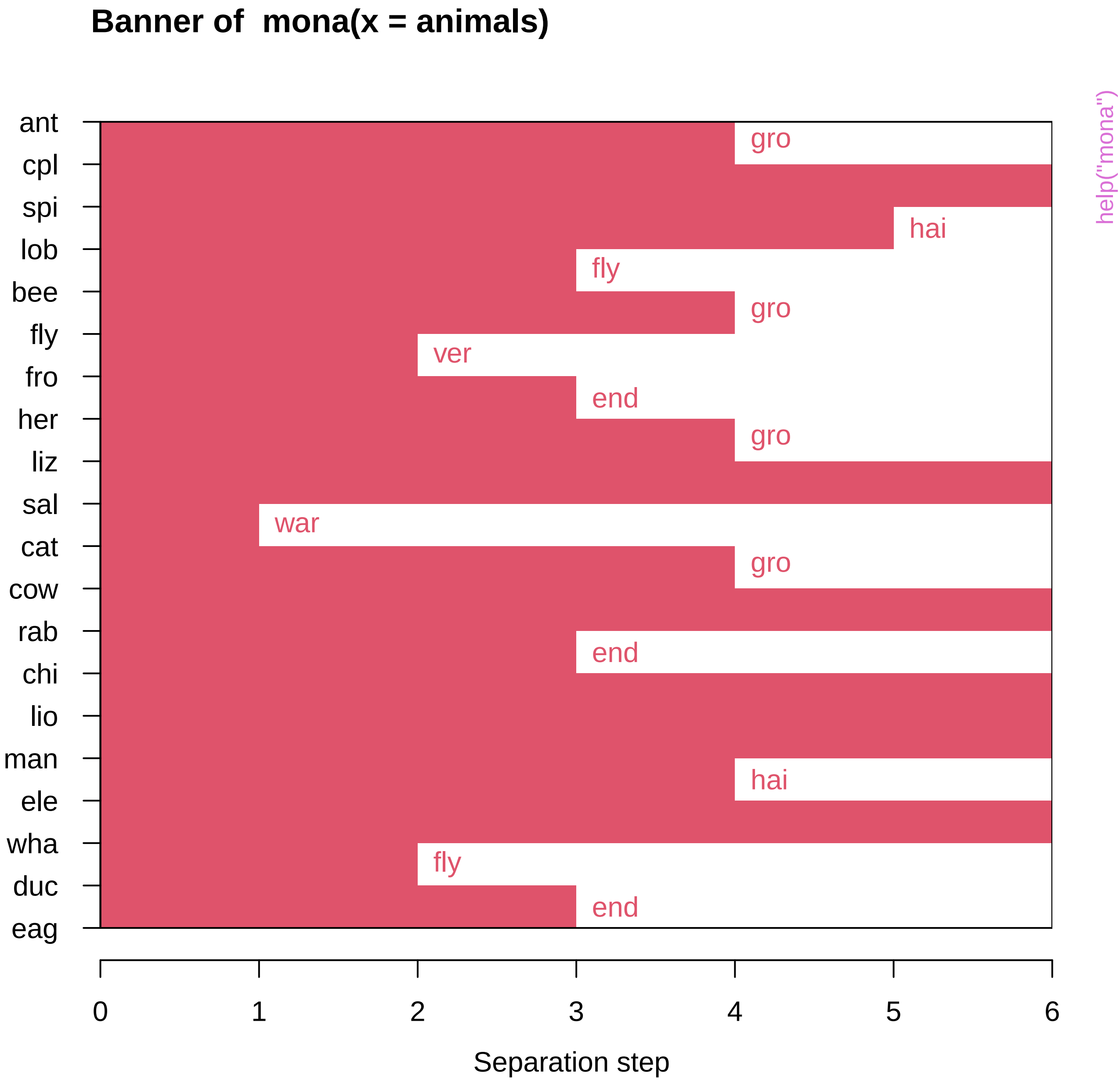
clusplot(fanny(x = x, k = 2))
help("fanny")
Component 2
1.0
0.5
0.0
−0.5
−1.0
−4
−2
0
2
Component 1
These two components explain 100 % of the point variability.


Silhouette plot of fanny(x = x, k = 2)
n = 28
2 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
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
help("fanny")
Average silhouette width : 0.83

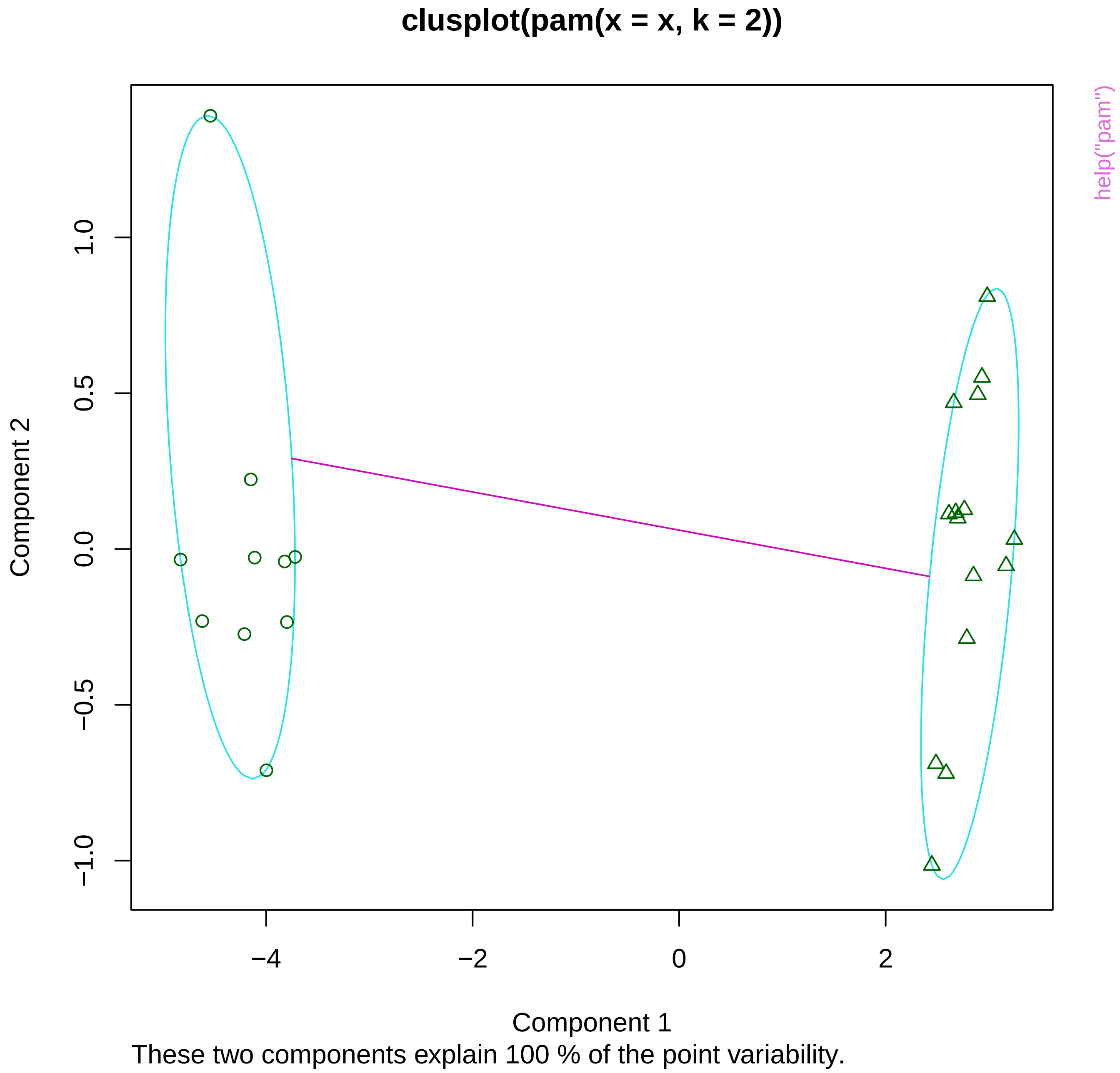

clusplot(fanny(x = ruspini, k = 4))
help("fanny")
60
40
20
0
−20
−40
Component 2
−50
0
50
Component 1
These two components explain 100 % of the point variability.

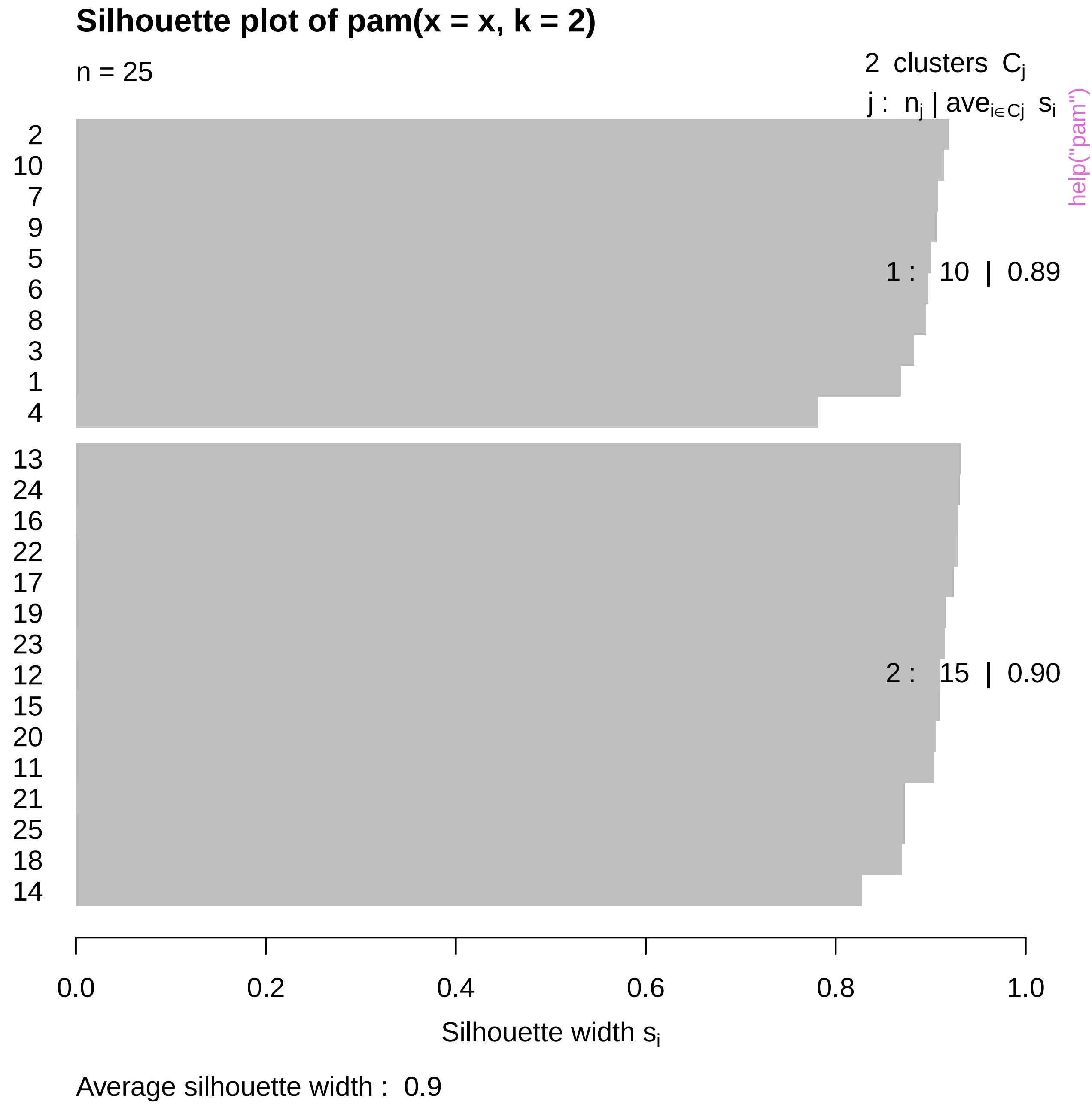

clusplot(fanny(x = ruspini, k = 5))
Component 1
Component 2
−50
0
50
−40
−20
0
20
40
60
help("fanny")
These two components explain 100 % of the point variability.

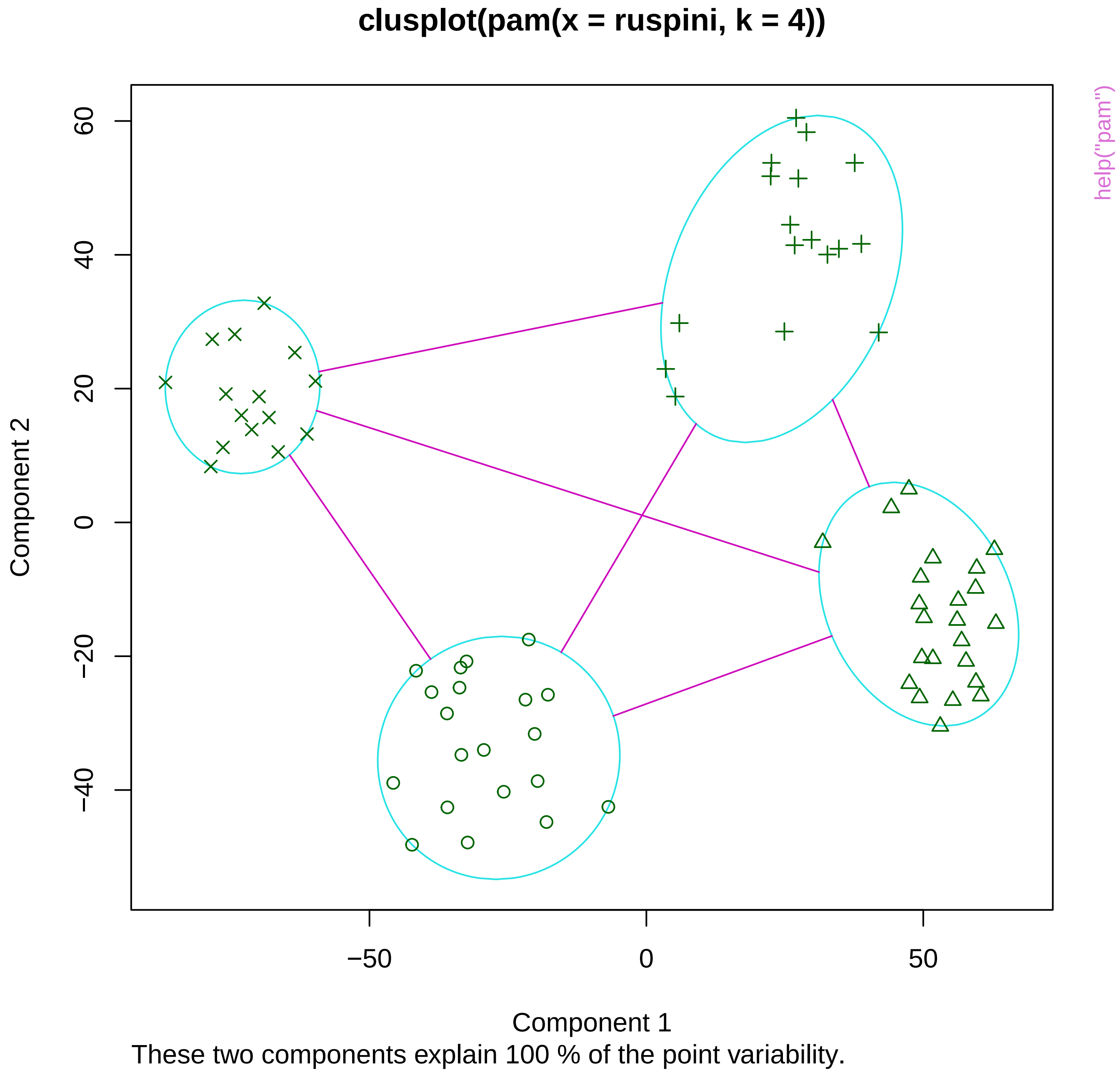

Silhouette plot of fanny(x = ruspini, k = 5)
n = 75
5 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("fanny")
1 : 20 | 0.73
2 : 12 | 0.50
3 : 11 | 0.25
4 : 17 | 0.62
5 : 15 | 0.80
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.61

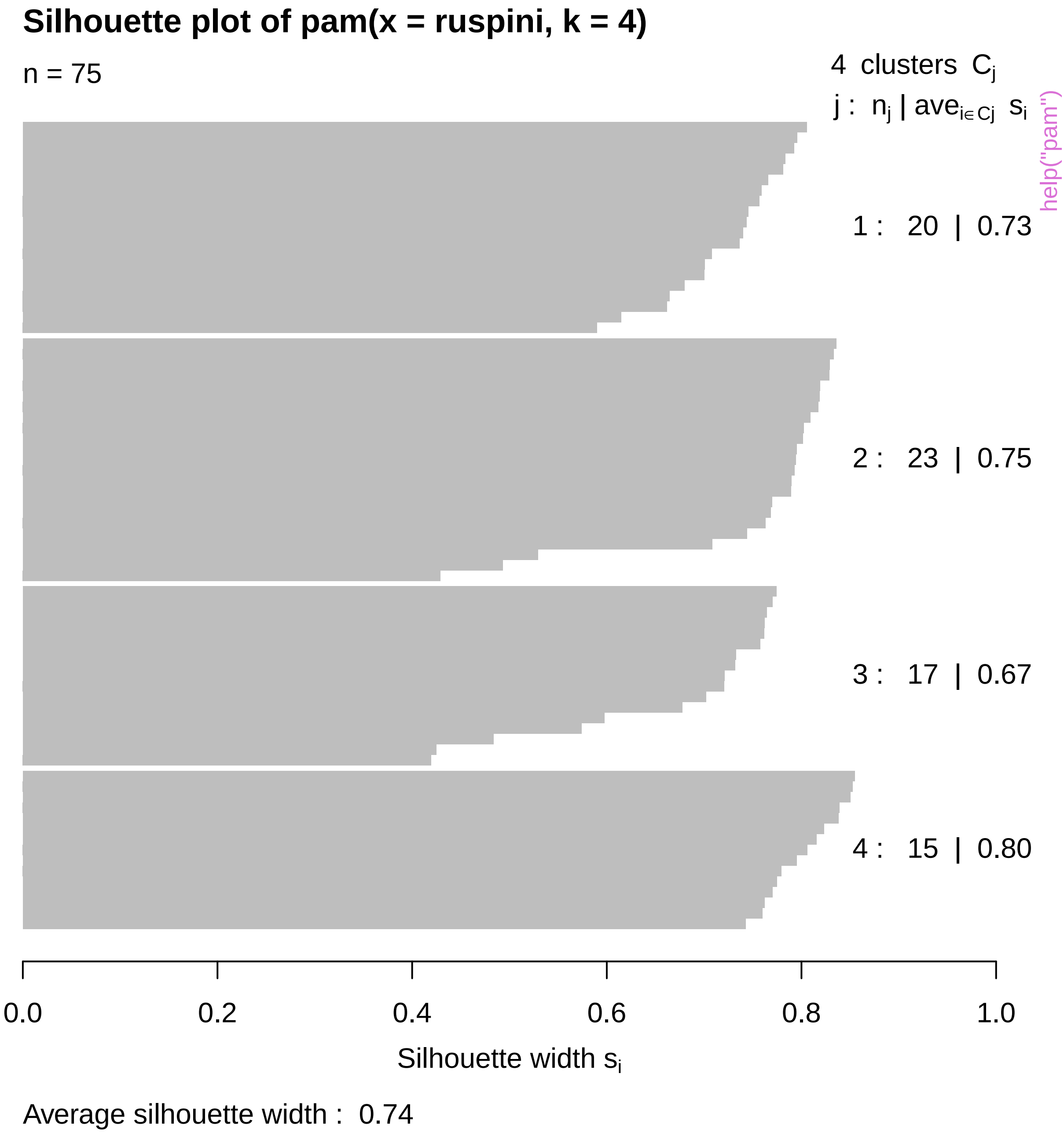


Banner of mona(x = animals)
ant
cpl
spi
lob
bee
fly
fro
her
liz
sal
cat
cow
rab
chi
lio
man
ele
wha
duc
eag
gro
hai
fly
gro
ver
end
gro
war
gro
end
hai
fly
end
0
1
2
3
4
5
6
Separation step
help("mona")

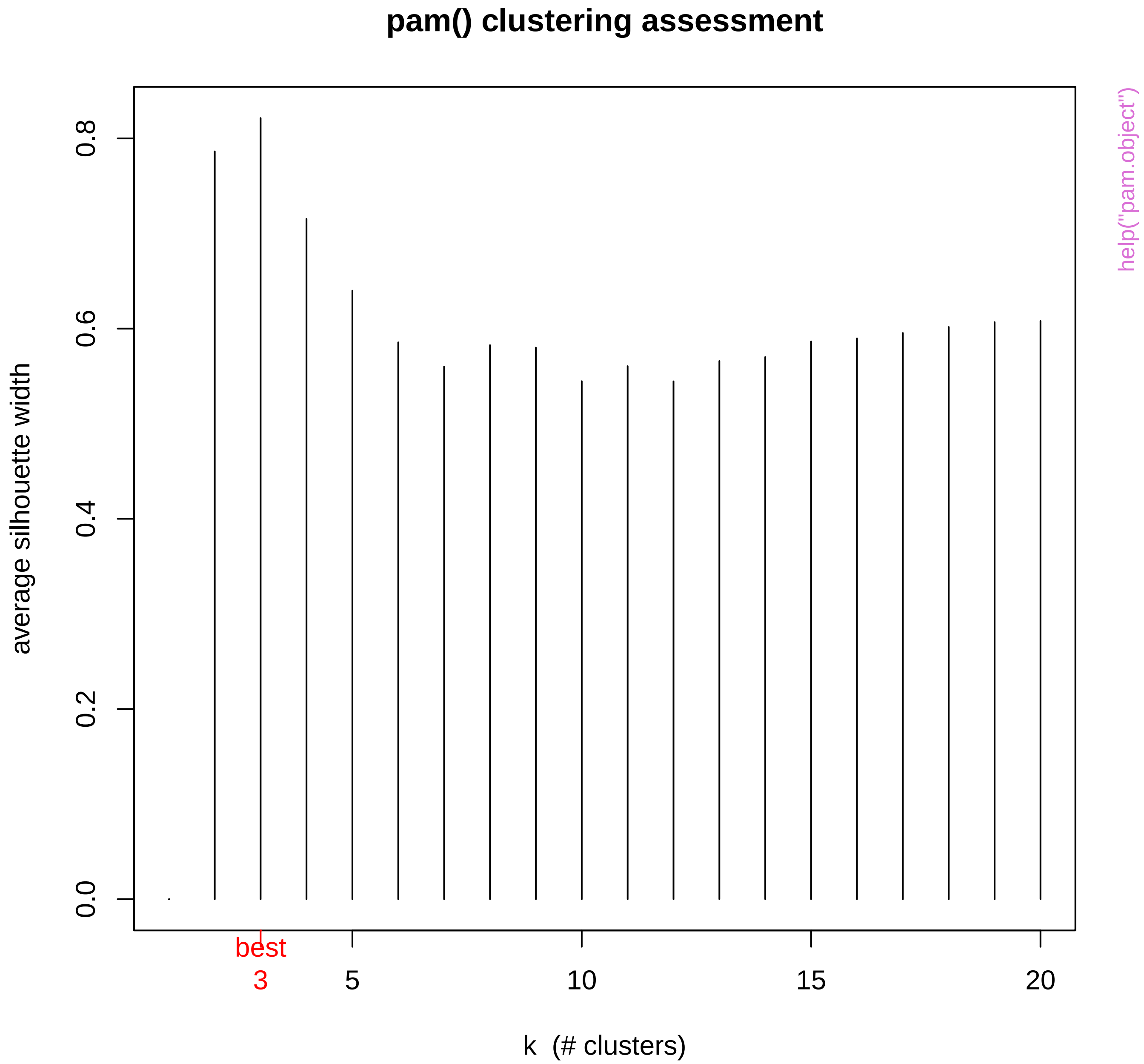

clusplot(pam(x = x, k = 2))
help("pam")
Component 2
1.0
0.5
0.0
−0.5
−1.0
−4
−2
0
2
Component 1
These two components explain 100 % of the point variability.

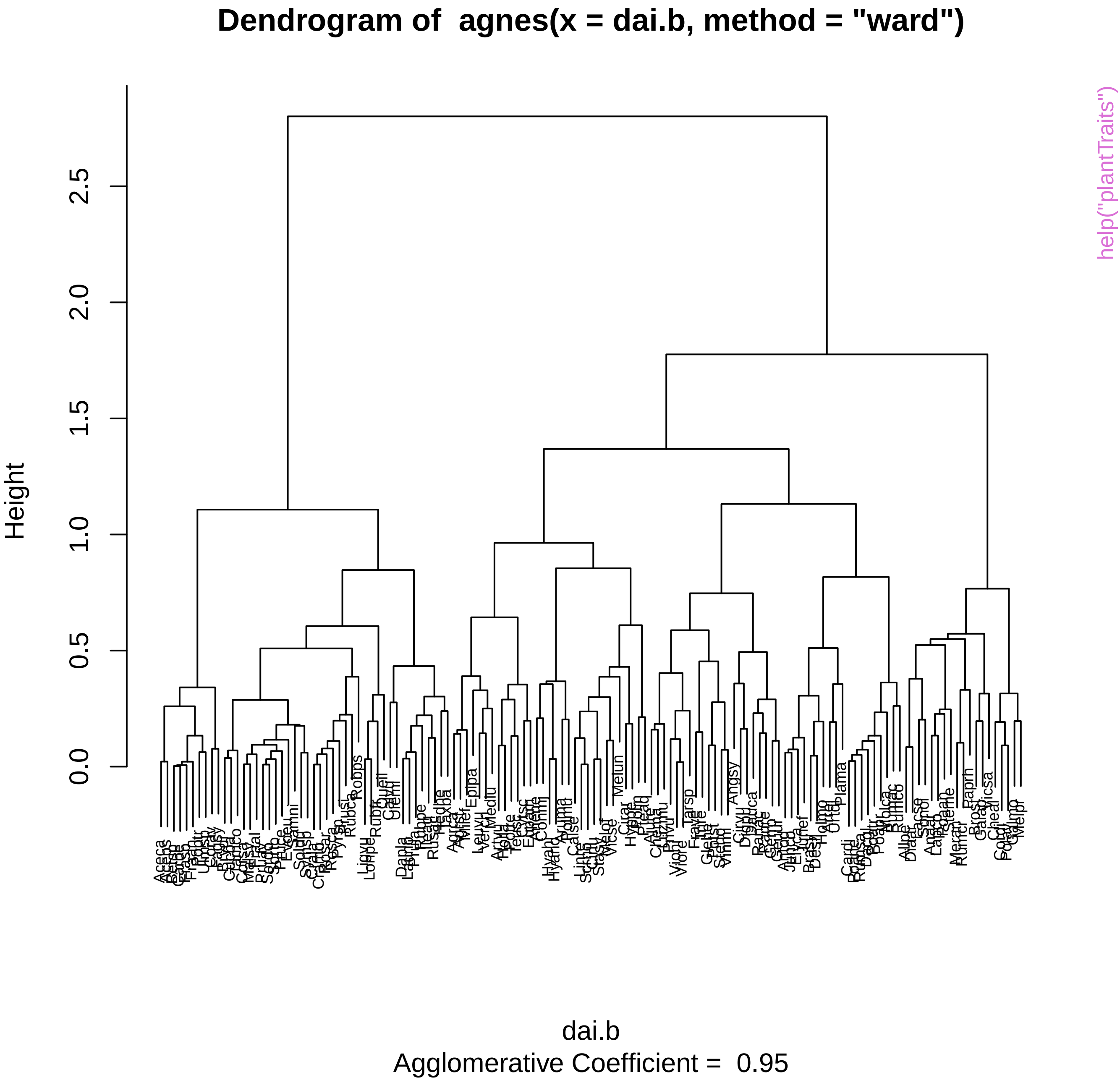

Silhouette plot of pam(x = x, k = 2)
n = 25
2 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("pam")
2
10
7
9
5
6
8
3
1
4
1 : 10 | 0.89
13
24
16
22
17
19
23
12
15
20
11
21
25
18
14
2 : 15 | 0.90
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.9


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

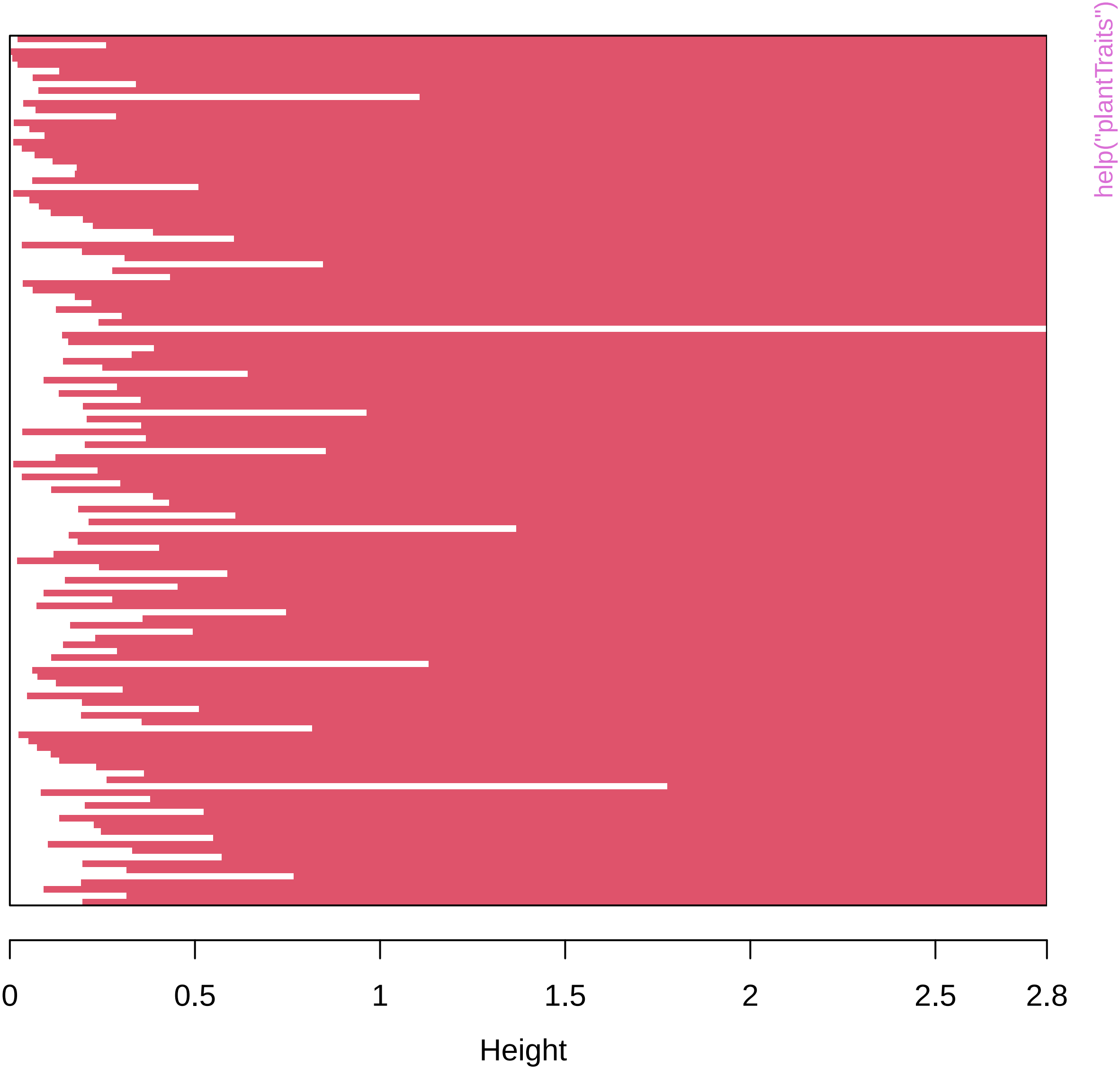


Silhouette plot of pam(x = ruspini, k = 4)
n = 75
4 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("pam")
1 : 20 | 0.73
2 : 23 | 0.75
3 : 17 | 0.67
4 : 15 | 0.80
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.74

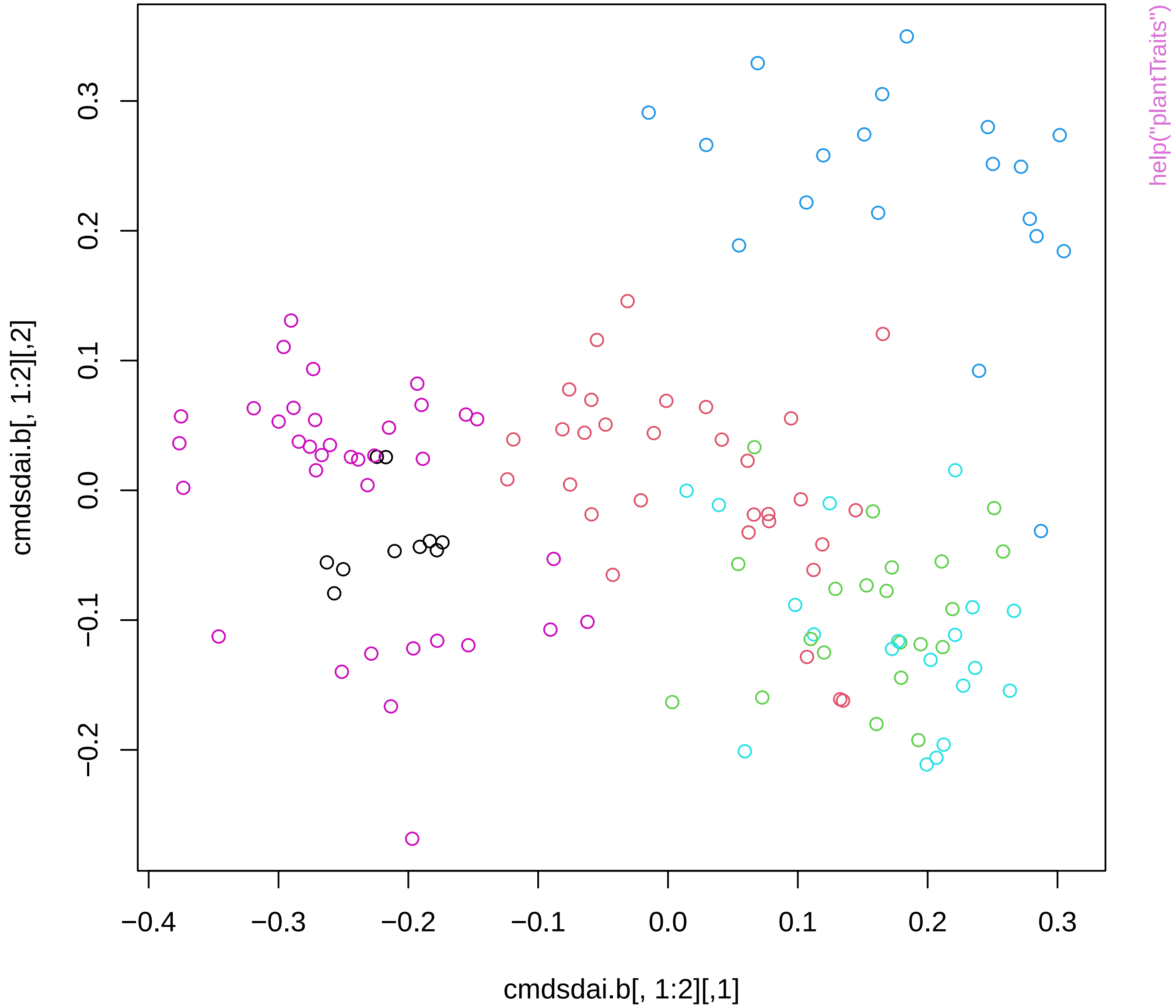

pam() clustering assessment
average silhouette width
0.0
0.2
0.4
0.6
0.8
best
3
5
10
15
20
k (# clusters)
help("pam.object")

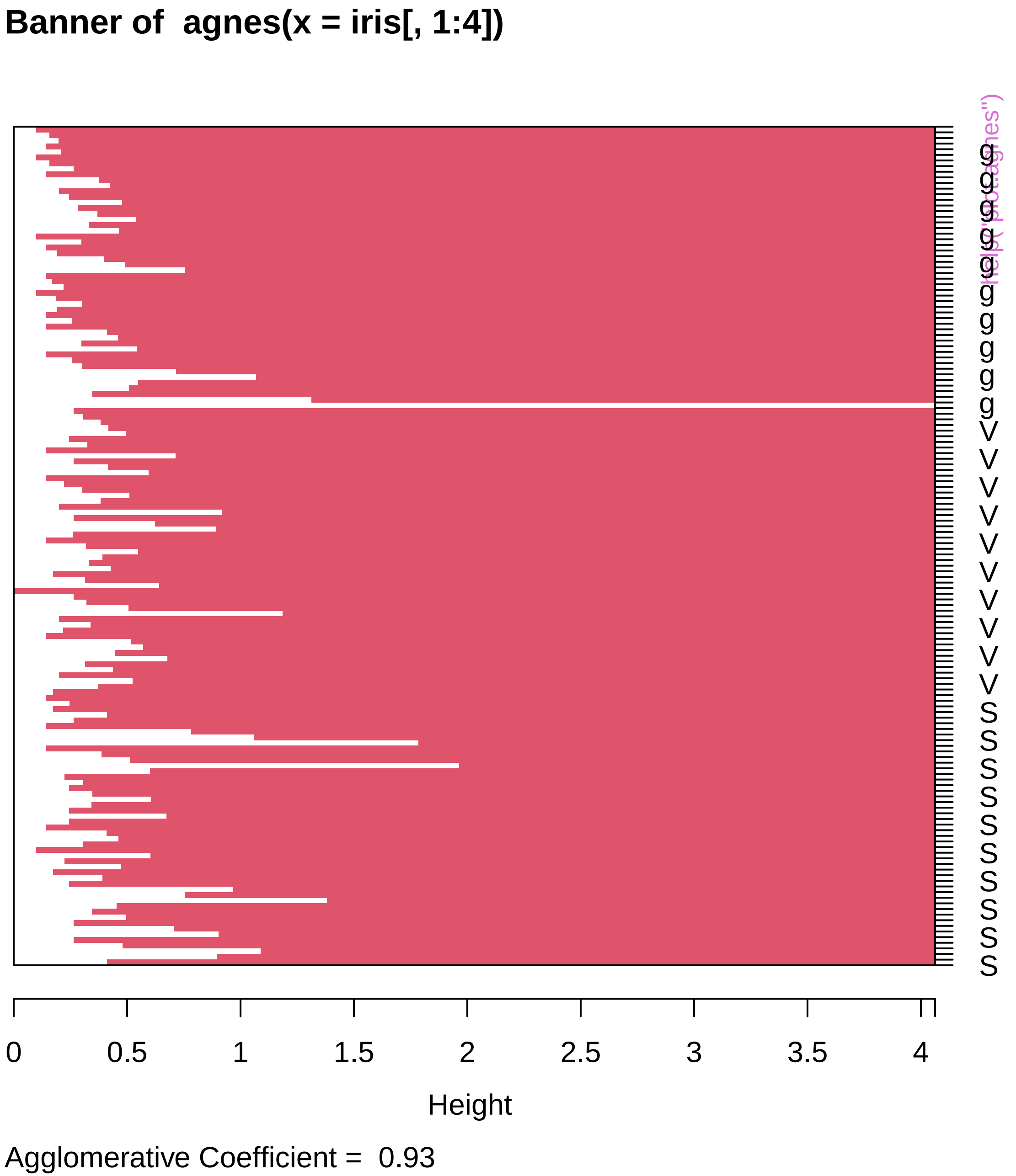

Dendrogram of agnes(x = dai.b, method = "ward")
Height
0.0
0.5
1.0
1.5
2.0
2.5
dai.b
Agglomerative Coefficient = 0.95
help("plantTraits")

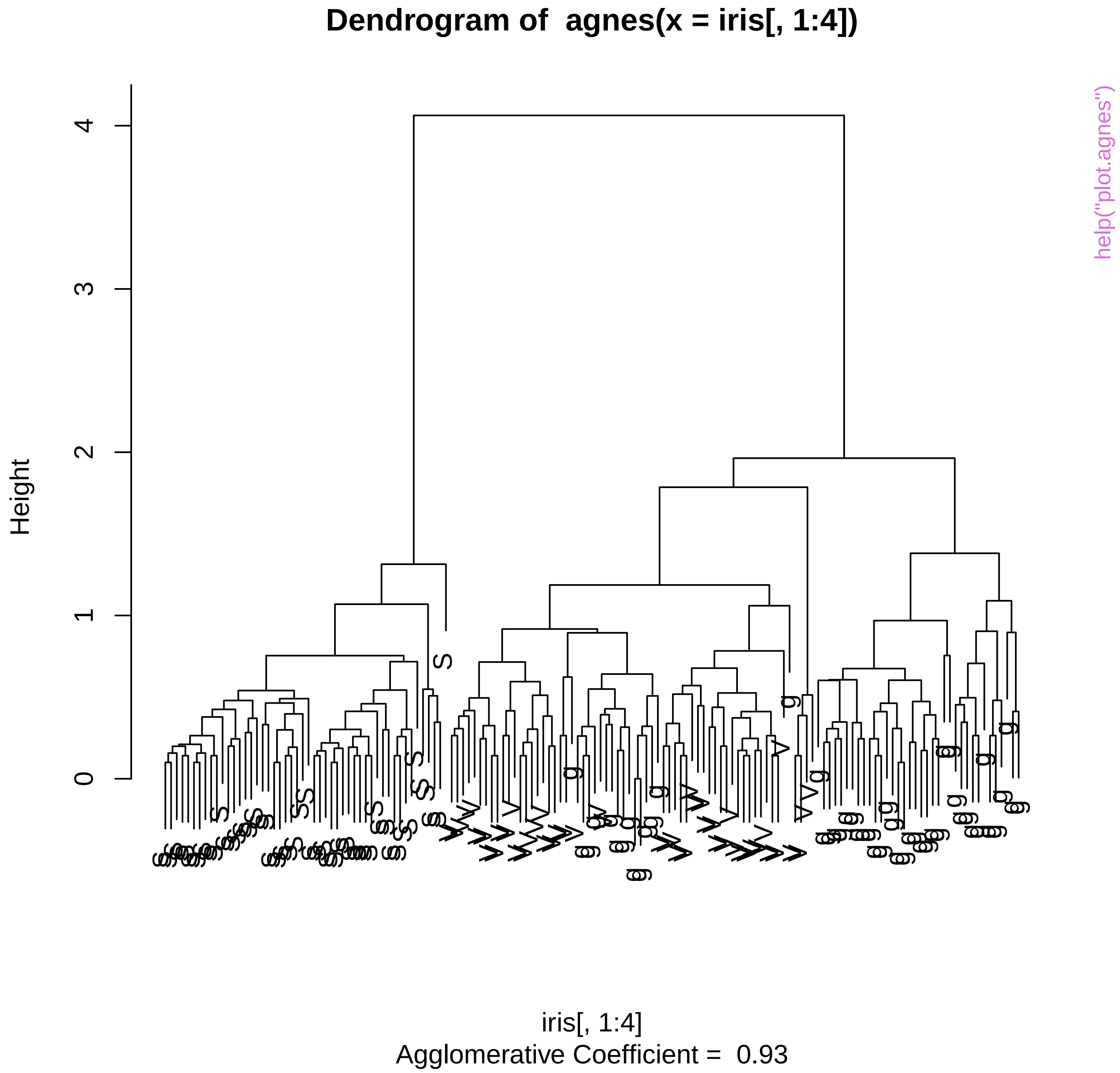
Banner of agnes(x = dai.b, method = "ward")



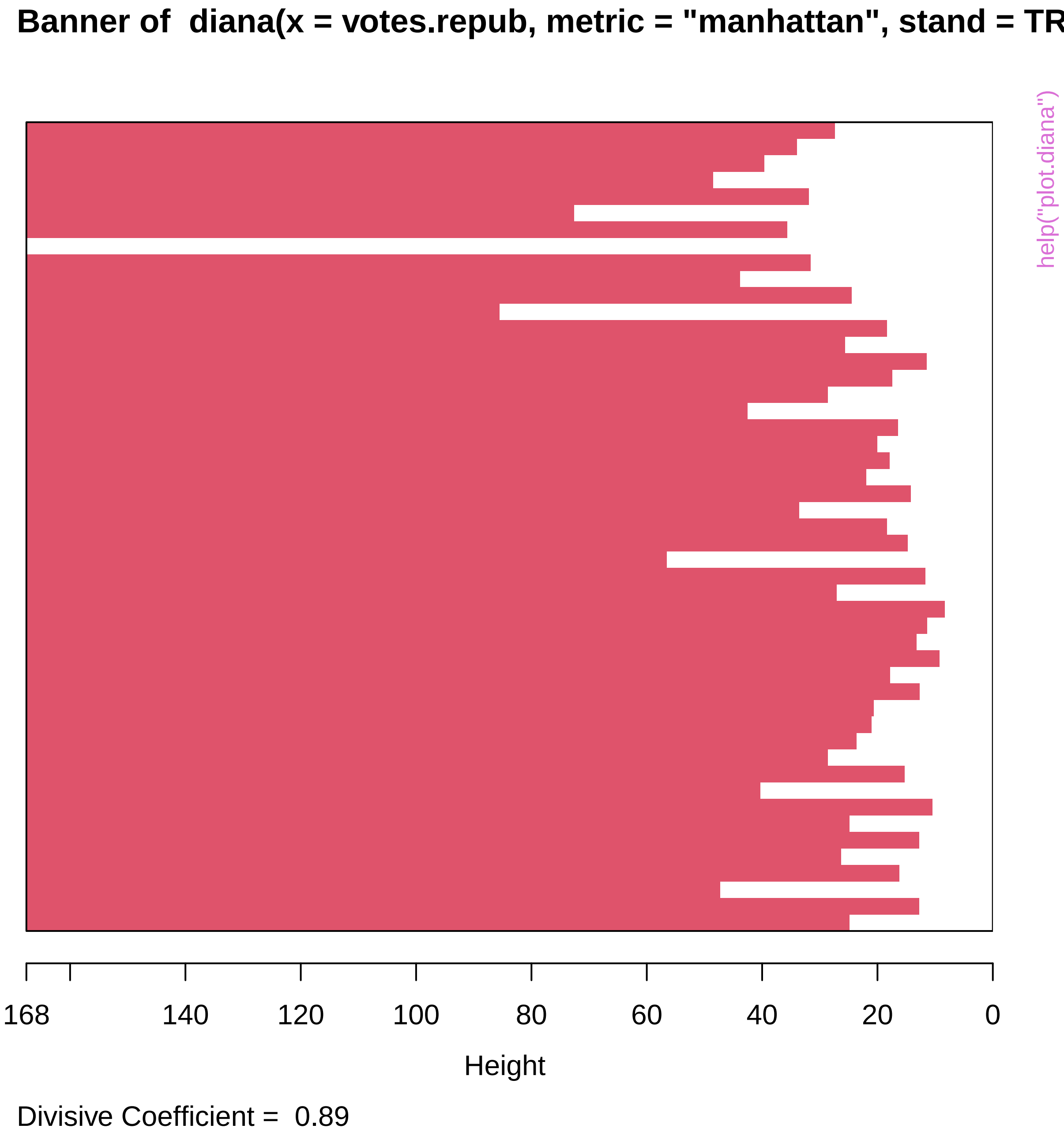
Agglomerative Coefficient = 0.95


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")

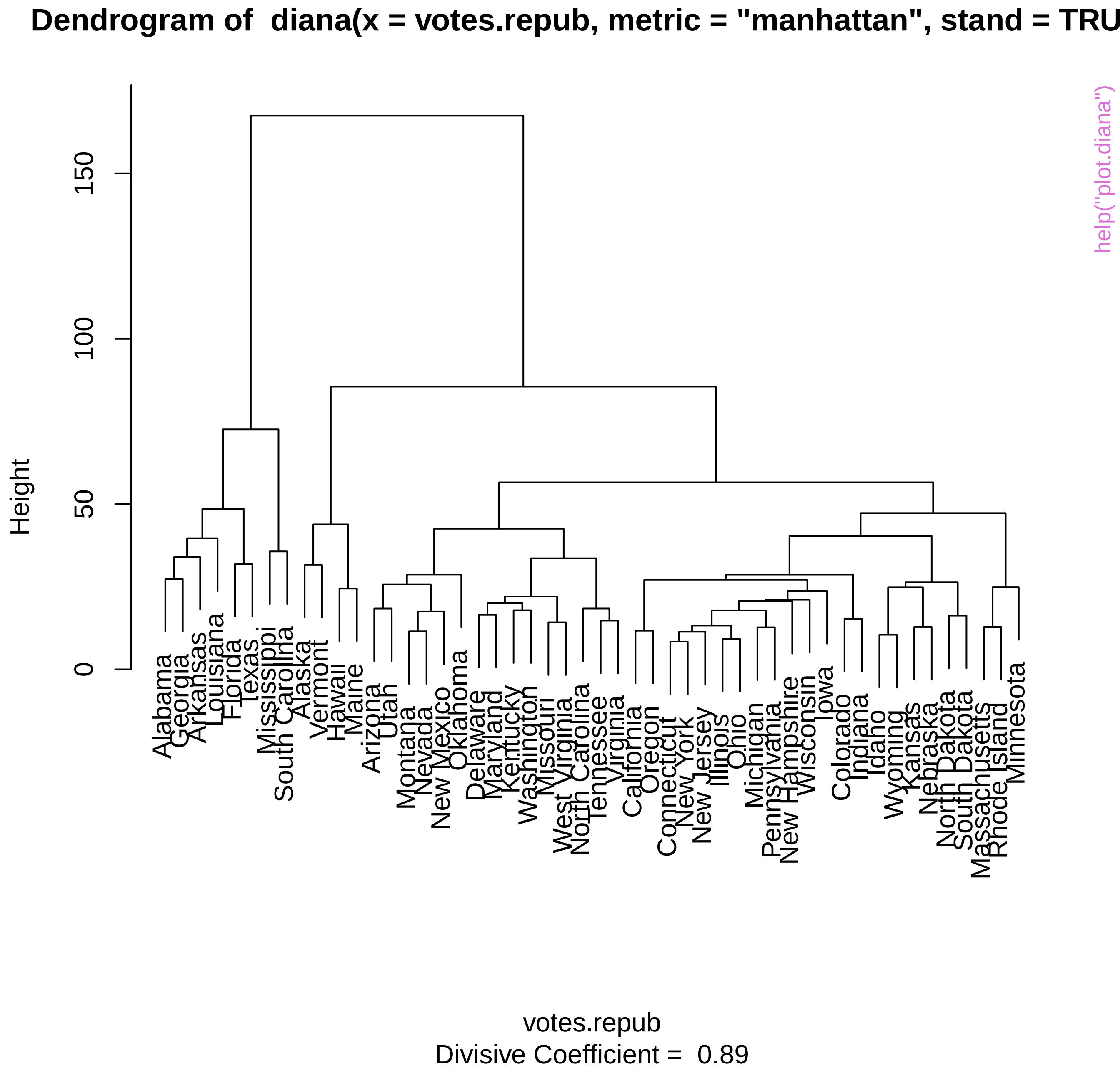

Banner of agnes(x = iris[, 1:4])
help("plot.agnes")
g
V
S
0
0.5
1
1.5
2
2.5
3
3.5
4
Height
Agglomerative Coefficient = 0.93

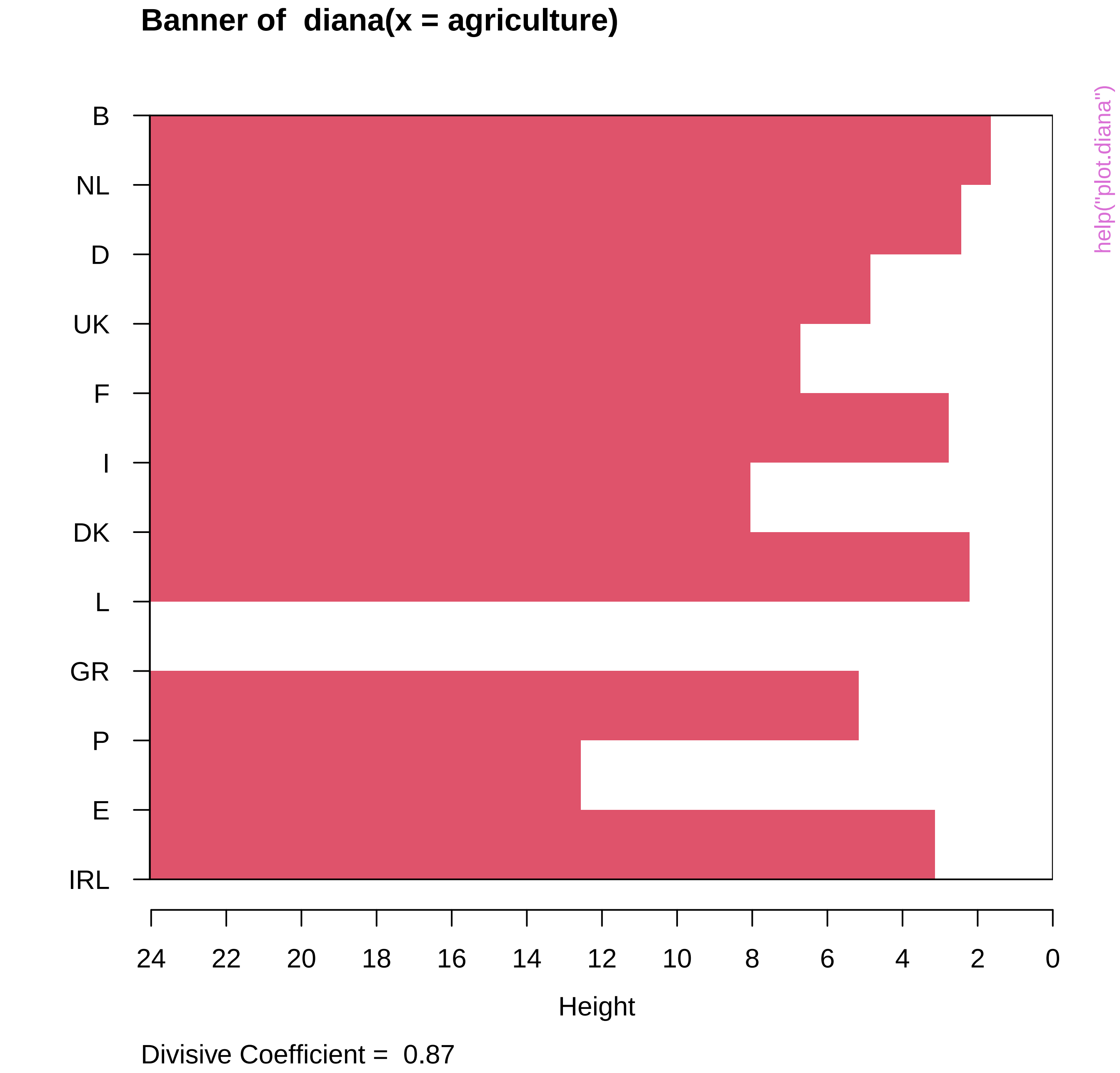


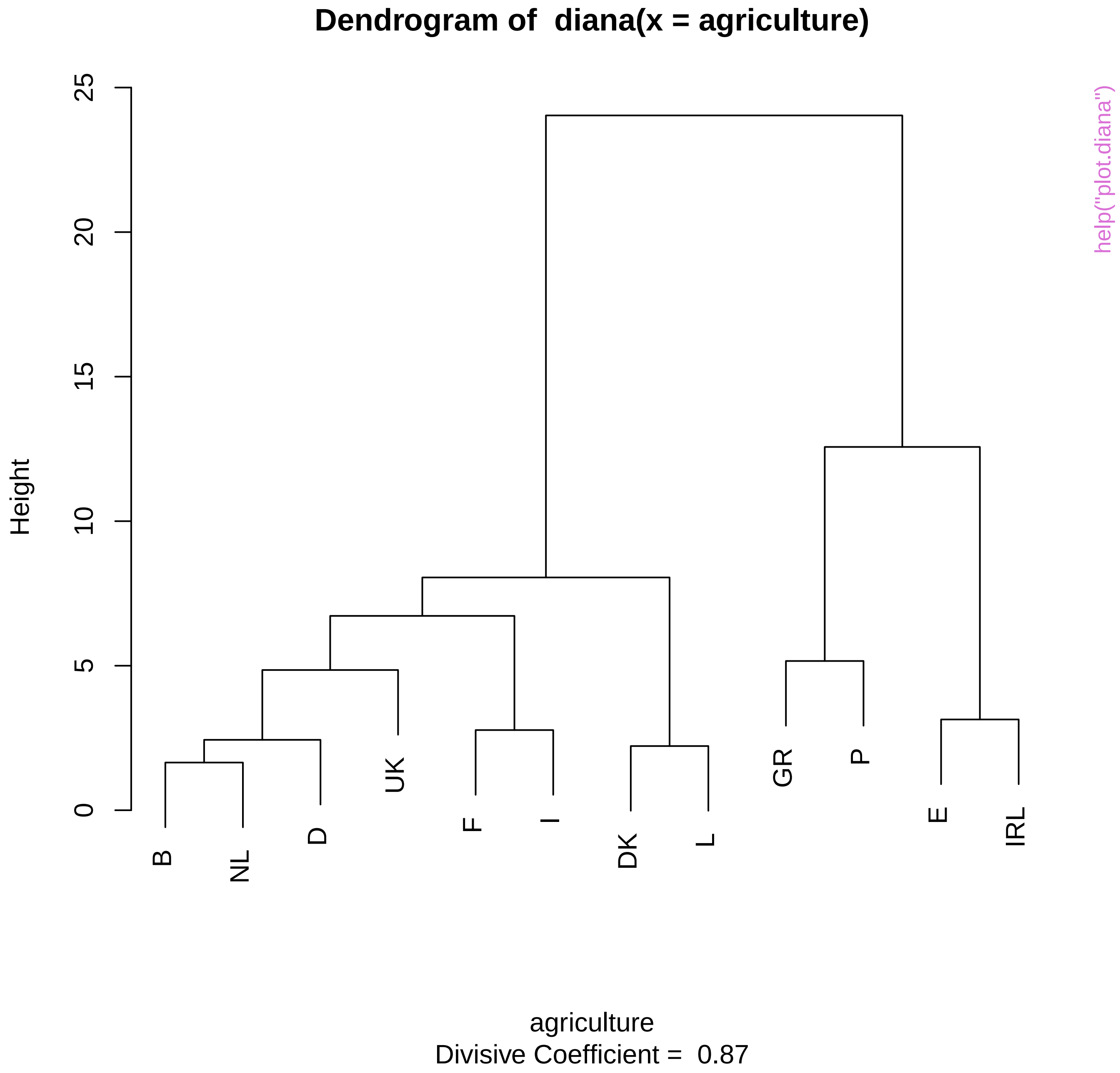
Dendrogram of agnes(x = iris[, 1:4])
Height
0
1
2
3
4
iris[, 1:4]
Agglomerative Coefficient = 0.93
help("plot.agnes")

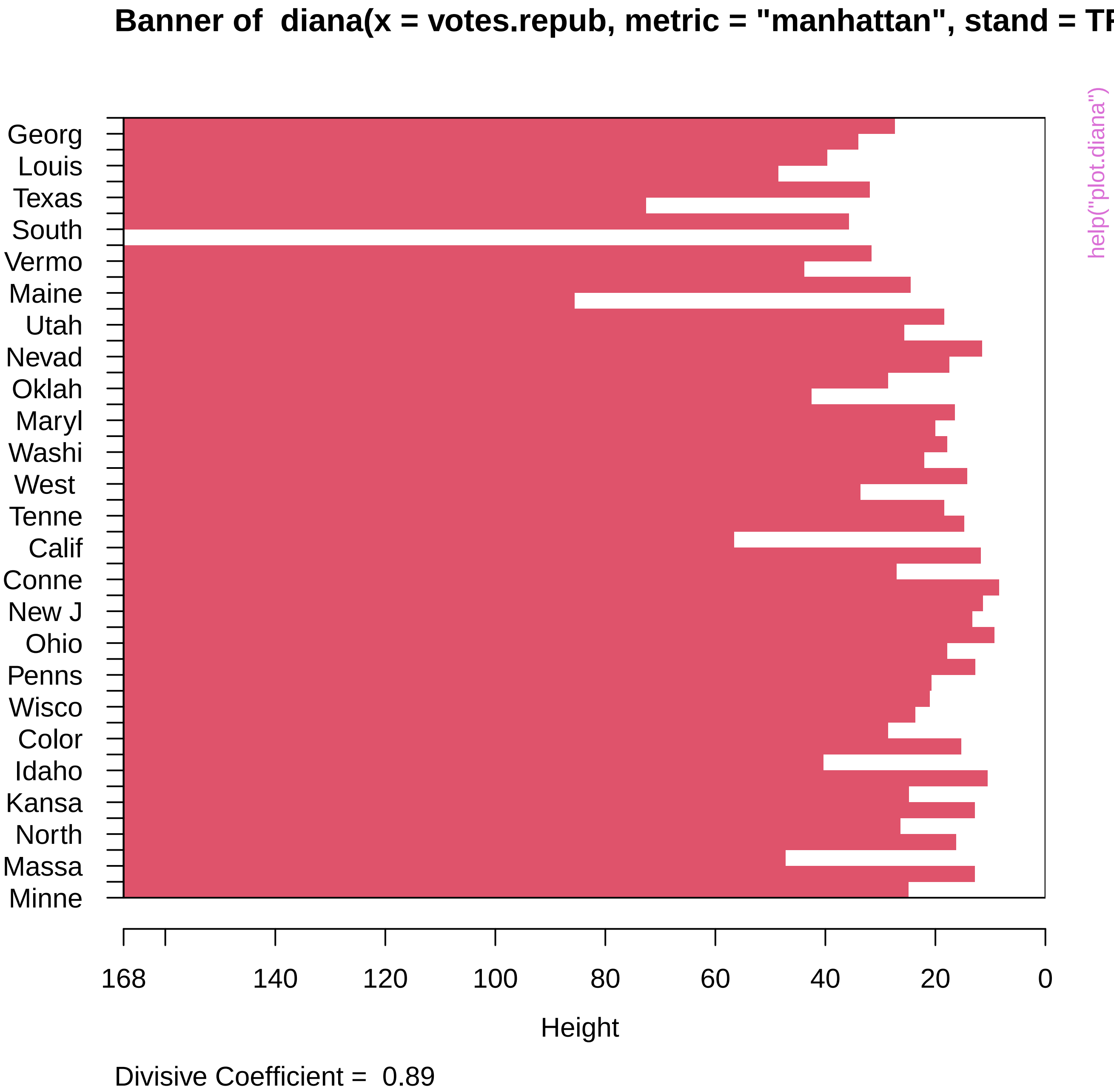


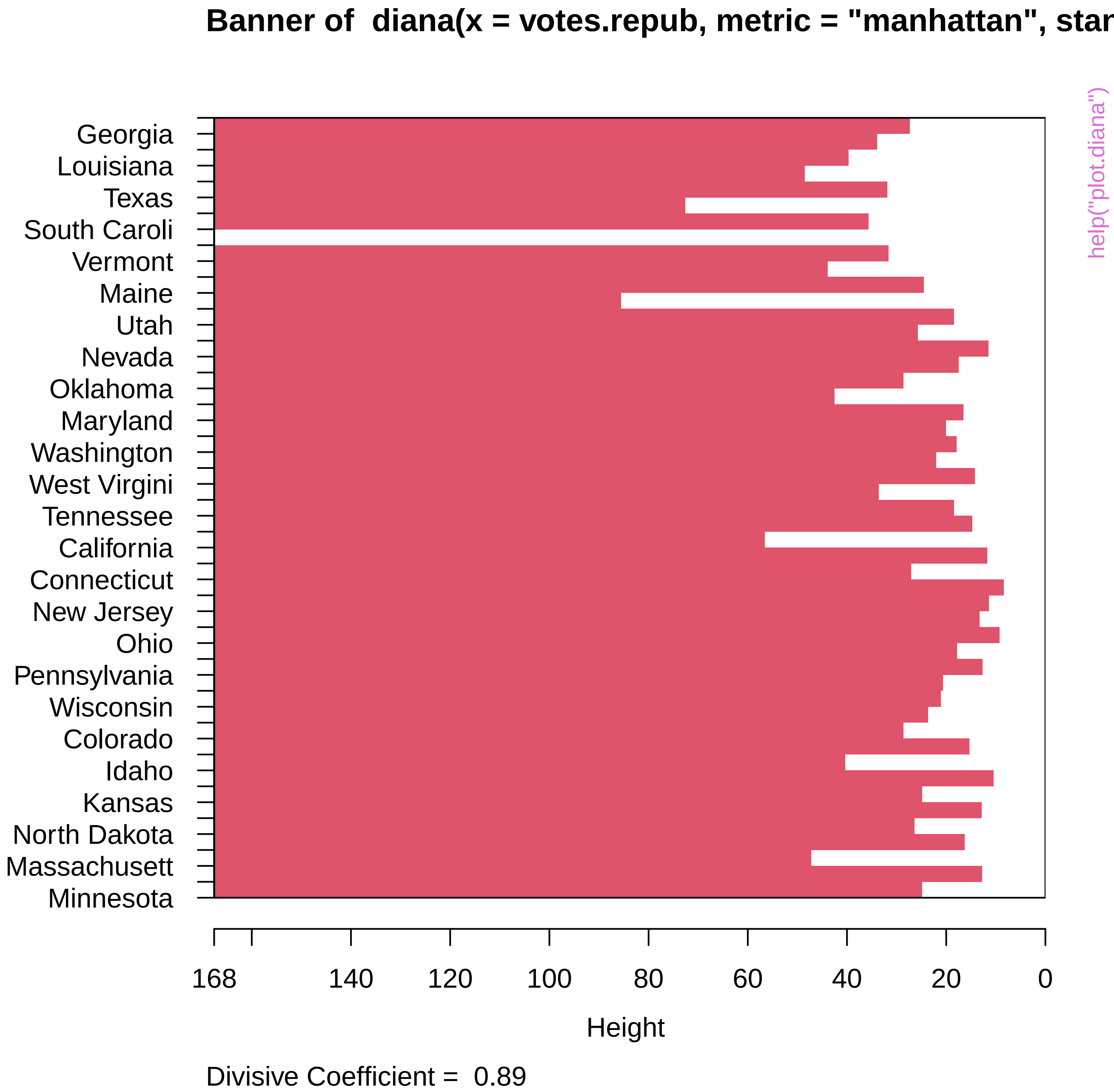
Banner of diana(x = votes.repub, metric = "manhattan", stand = TR
help("plot.diana")
168
140
120
100
80
60
40
20
0
Height
Divisive Coefficient = 0.89


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

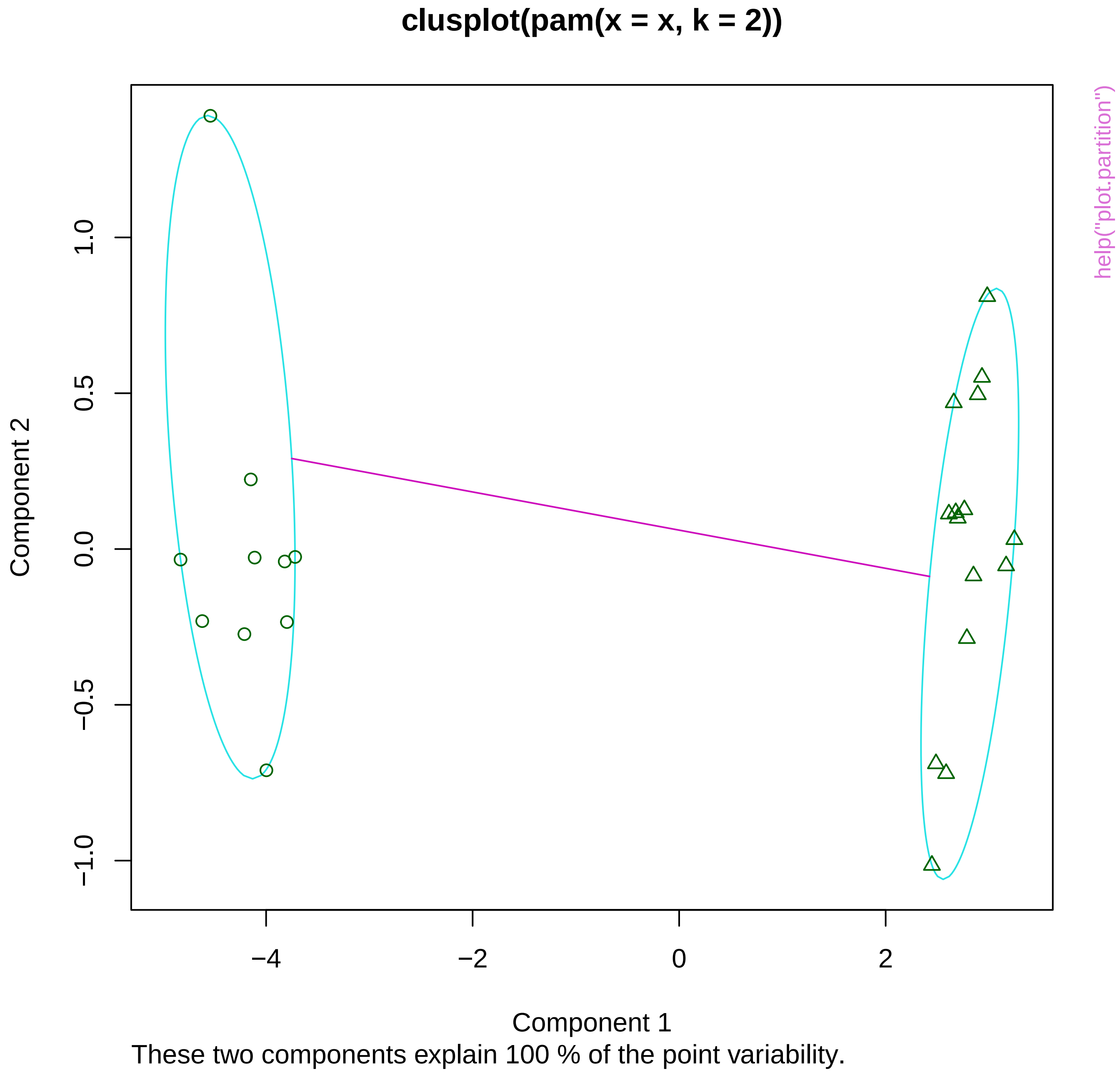

Banner of diana(x = agriculture)
B
NL
D
UK
F
I
DK
L
GR
P
E
IRL
24
22
20
18
16
14
12
10
8
6
4
2
0
Height
help("plot.diana")
Divisive Coefficient = 0.87

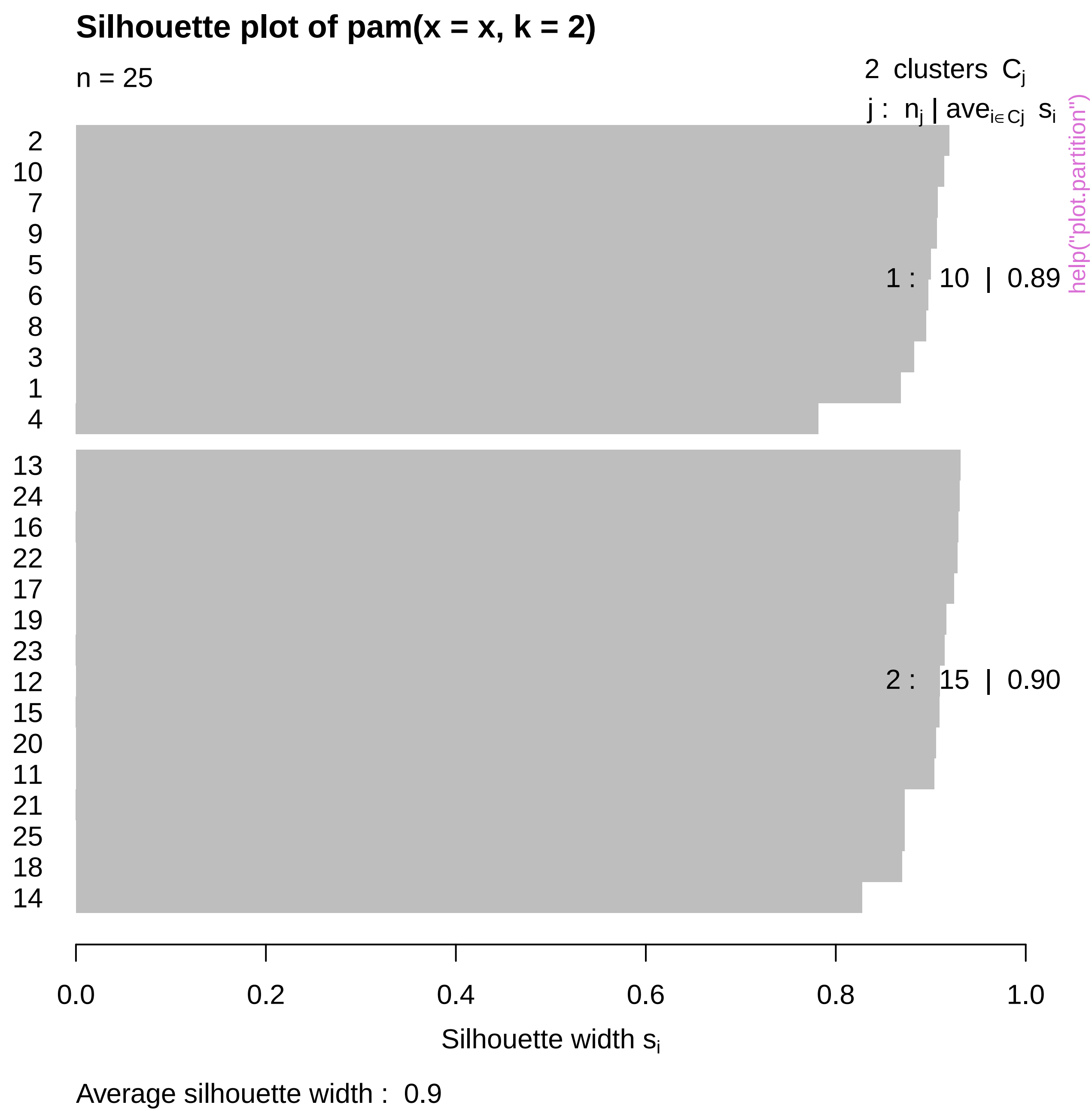

Dendrogram of diana(x = agriculture)
Height
0
5
10
15
20
25
B
NL
D
UK
F
I
DK
L
GR
P
E
IRL
help("plot.diana")
agriculture
Divisive Coefficient = 0.87

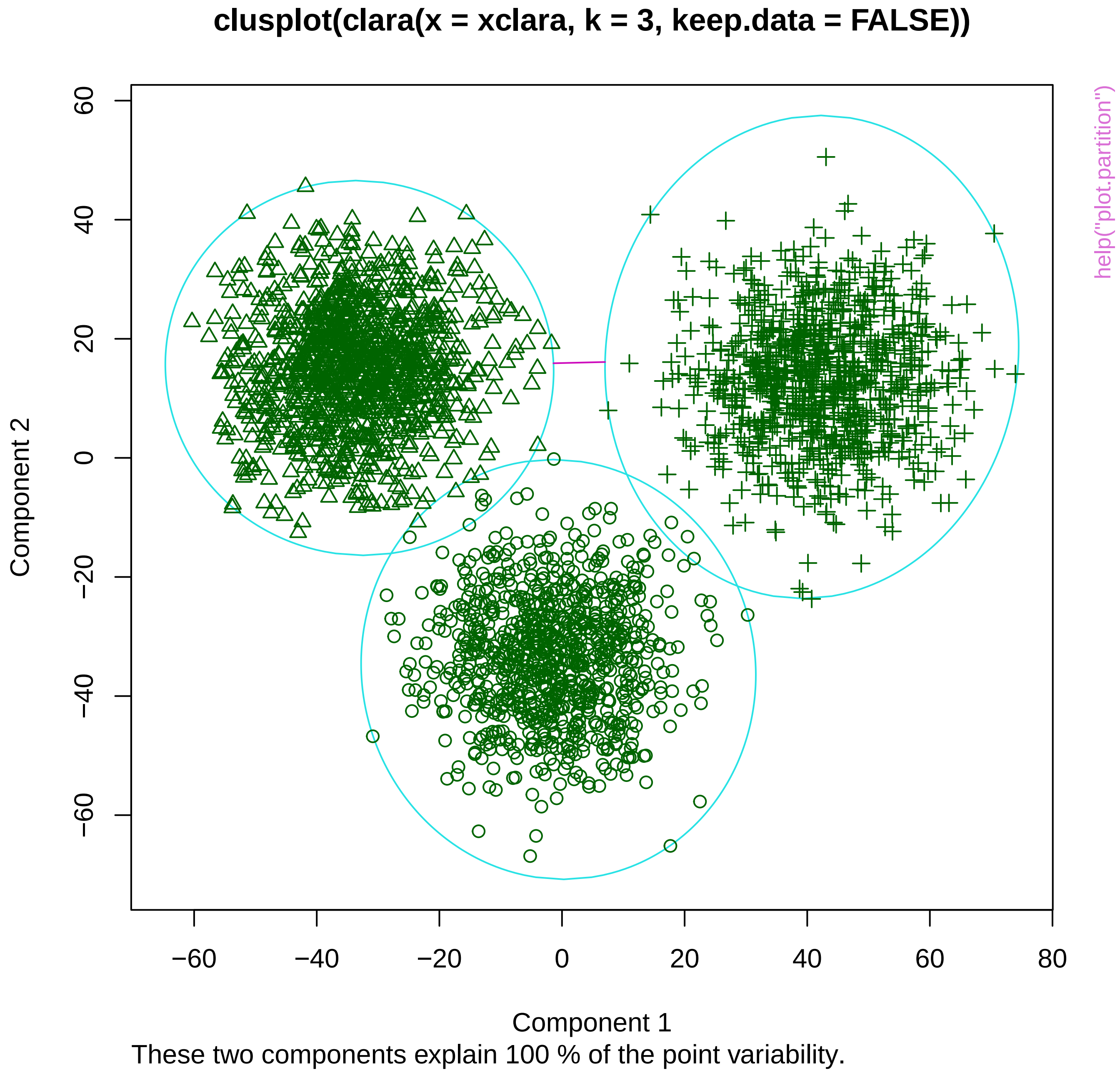

Banner of diana(x = votes.repub, metric = "manhattan", stand = TR
help("plot.diana")
Georg
Louis
Texas
South
Vermo
Maine
Utah
Nevad
Oklah
Maryl
Washi
West
Tenne
Calif
Conne
New J
Ohio
Penns
Wisco
Color
Idaho
Kansa
North
Massa
Minne
168
140
120
100
80
60
40
20
0
Height
Divisive Coefficient = 0.89

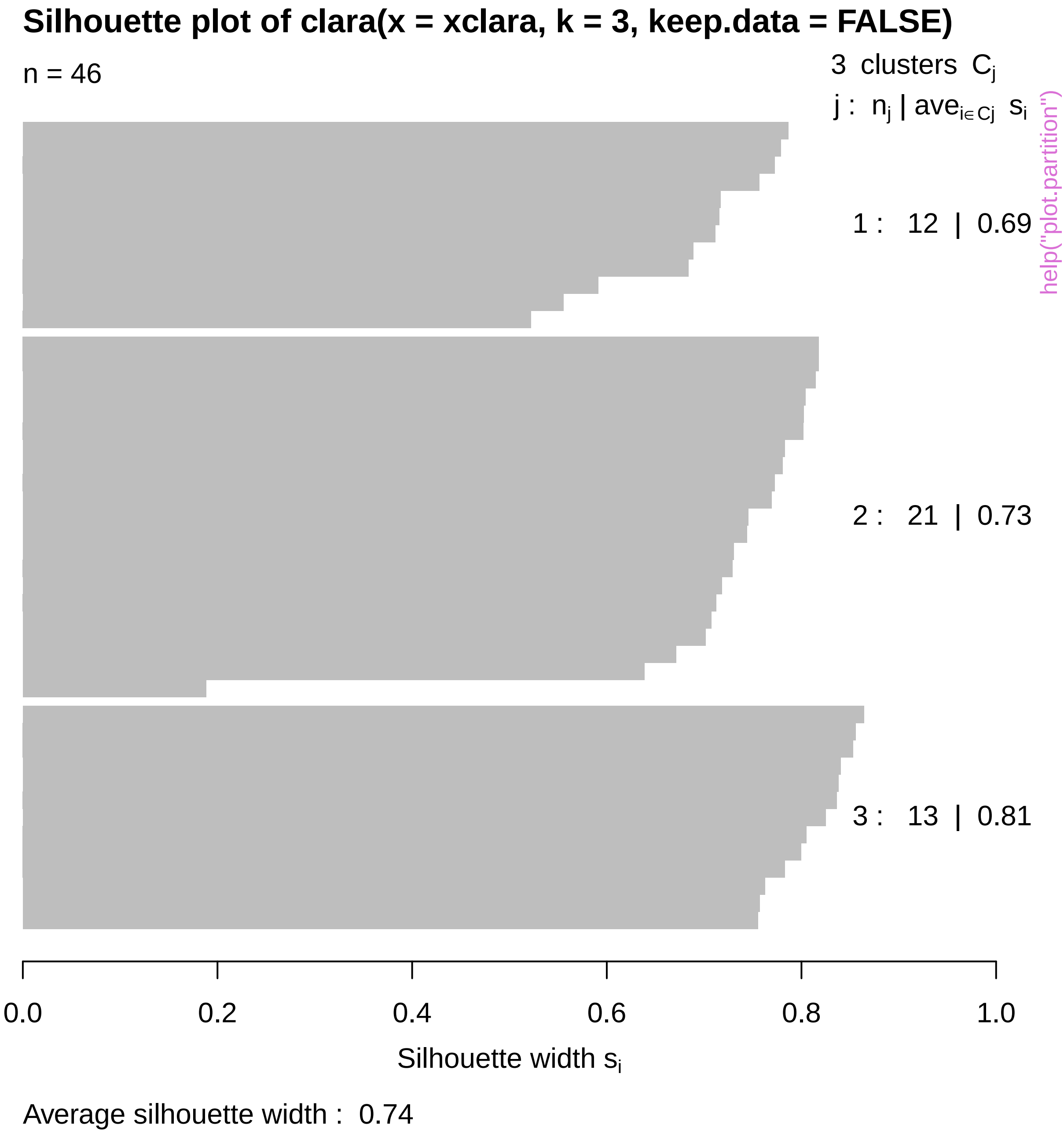


Banner of diana(x = votes.repub, metric = "manhattan", stan
help("plot.diana")
Georgia
Louisiana
Texas
South Caroli
Vermont
Maine
Utah
Nevada
Oklahoma
Maryland
Washington
West Virgini
Tennessee
California
Connecticut
New Jersey
Ohio
Pennsylvania
Wisconsin
Colorado
Idaho
Kansas
North Dakota
Massachusett
Minnesota
168
140
120
100
80
60
40
20
0
Height
Divisive Coefficient = 0.89

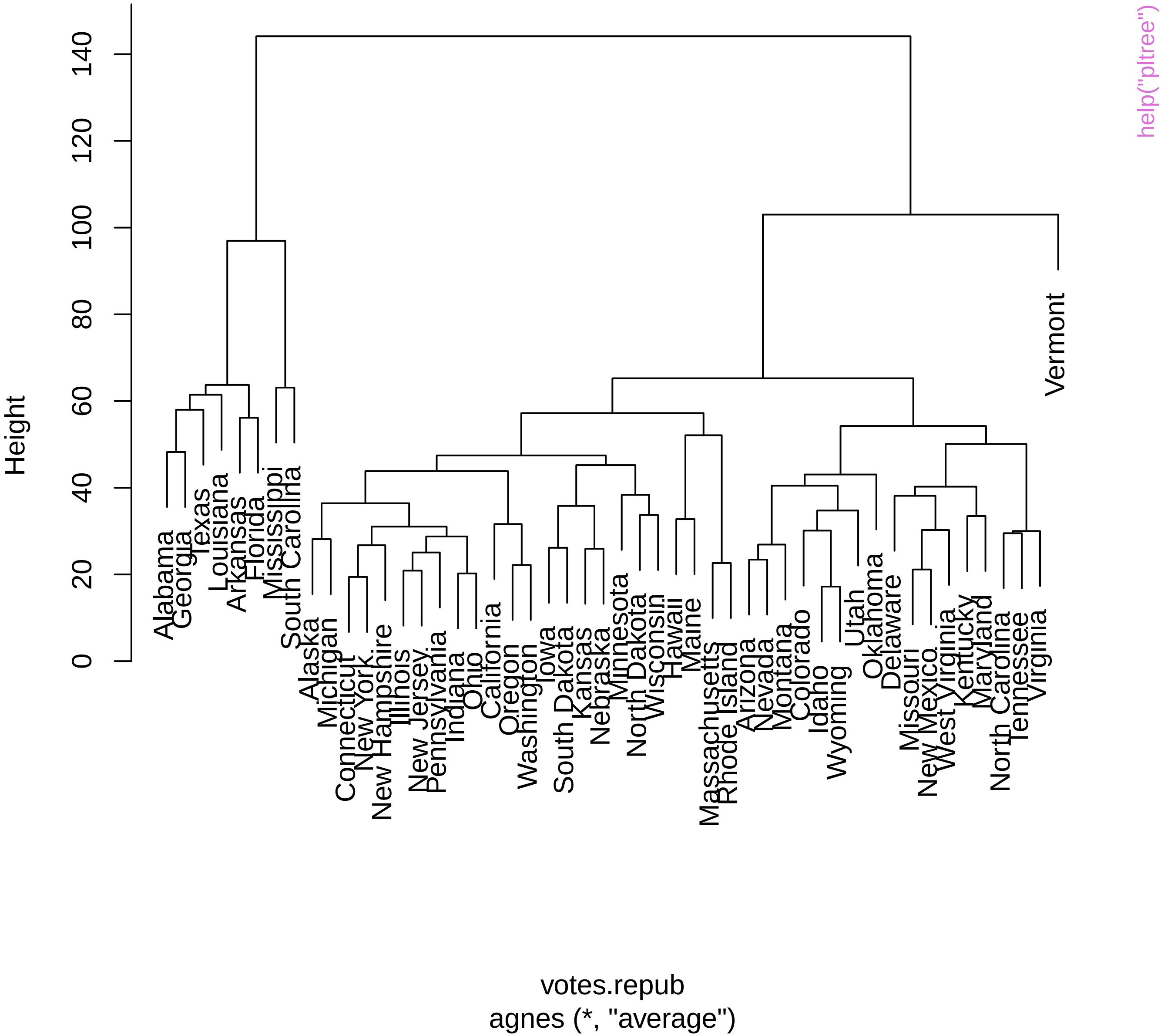

clusplot(pam(x = x, k = 2))
Component 1
Component 2
−4
−2
0
2
−1.0
−0.5
0.0
0.5
1.0
help("plot.partition")
These two components explain 100 % of the point variability.

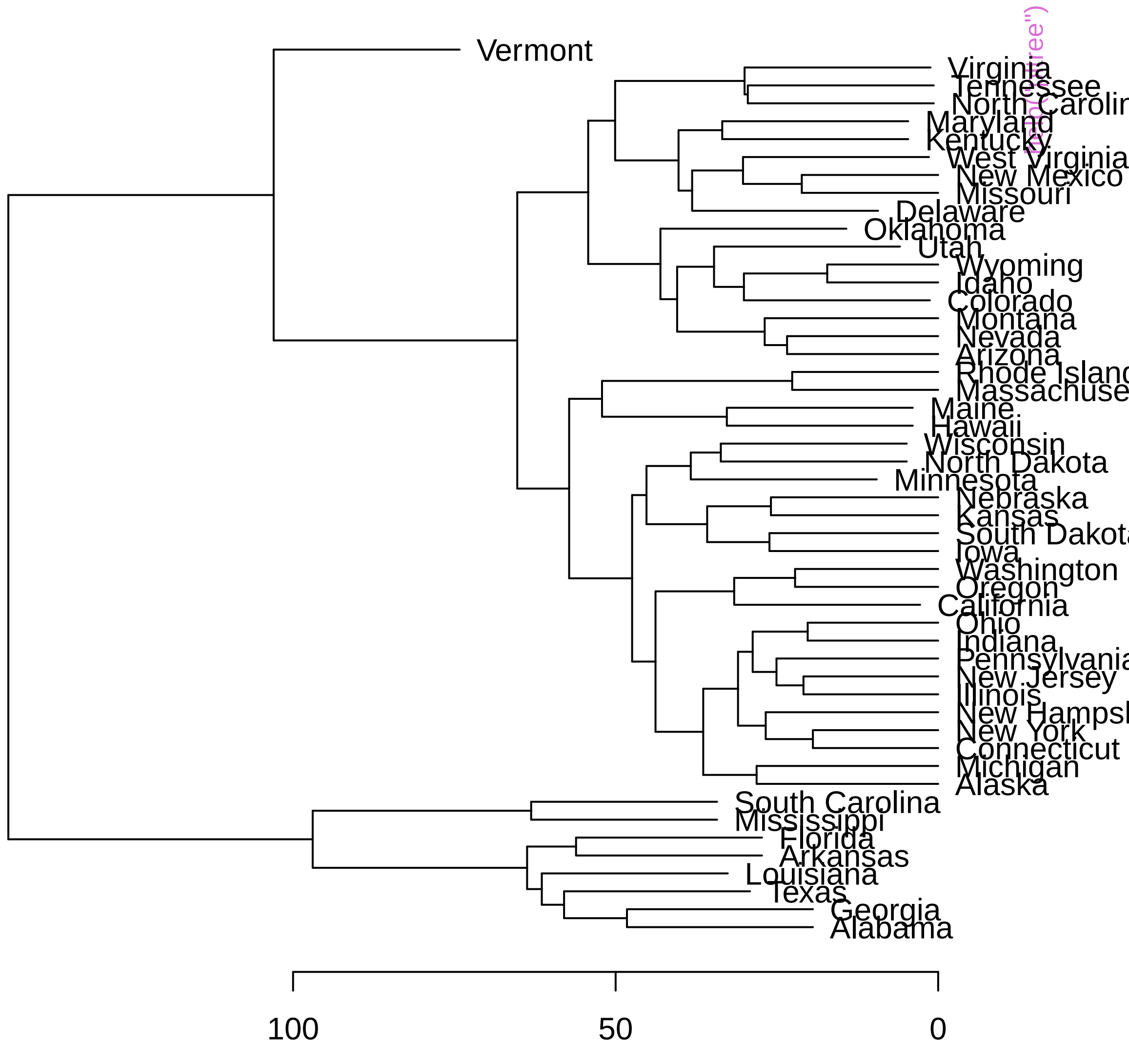

Silhouette plot of pam(x = x, k = 2)
n = 25
2 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("plot.partition")
2
10
7
9
5
6
8
3
1
4
1 : 10 | 0.89
13
24
16
22
17
19
23
12
15
20
11
21
25
18
14
2 : 15 | 0.90
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.9


clusplot(clara(x = xclara, k = 3, keep.data = FALSE))
Component 2
Component 1
60
40
20
0
−20
−40
−60
80
help("plot.partition")
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
1 : 12 | 0.69
2 : 21 | 0.73
3 : 13 | 0.81
help("plot.partition")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.74

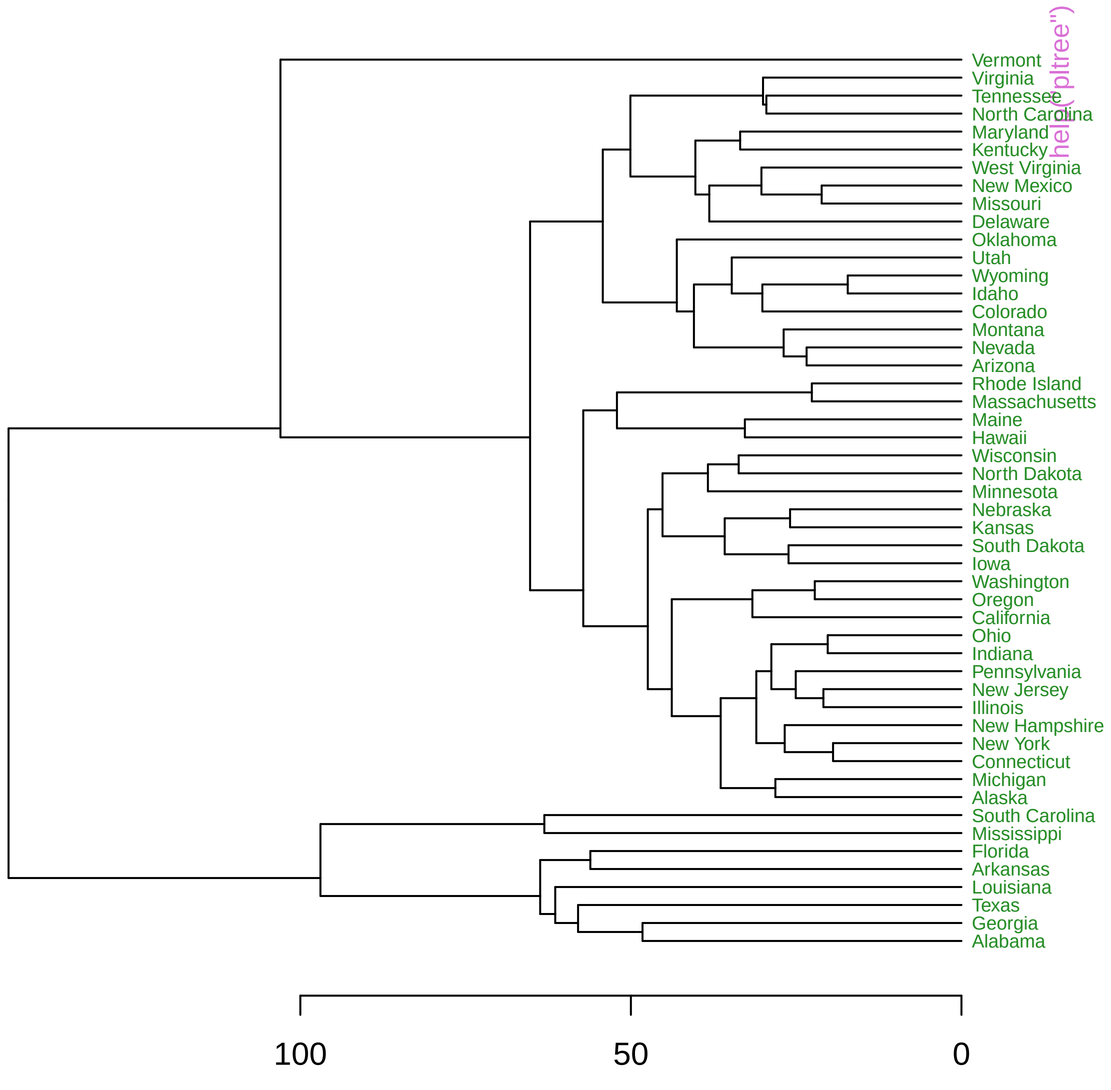
Dendrogram of agnes(x = votes.repub)

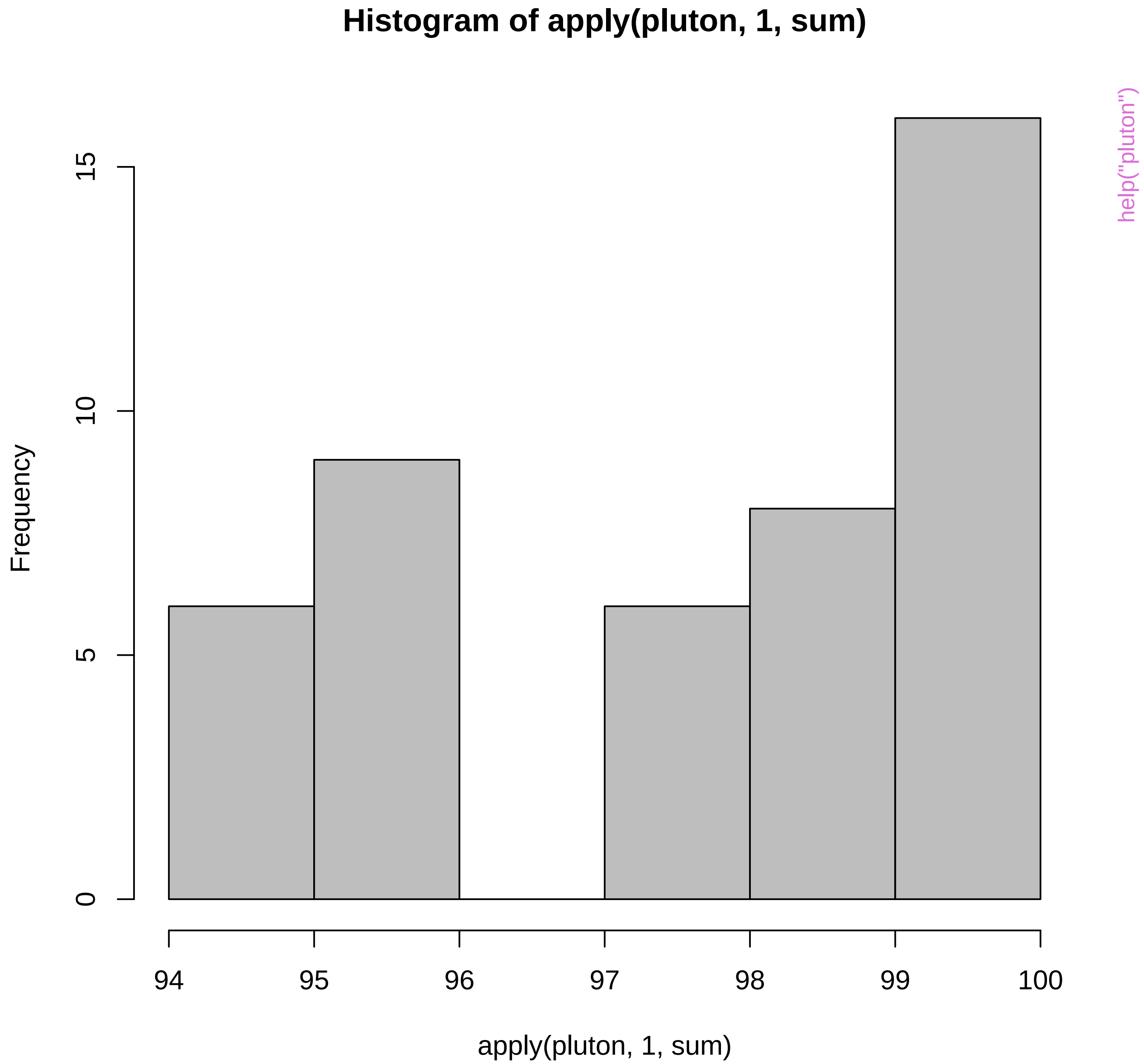


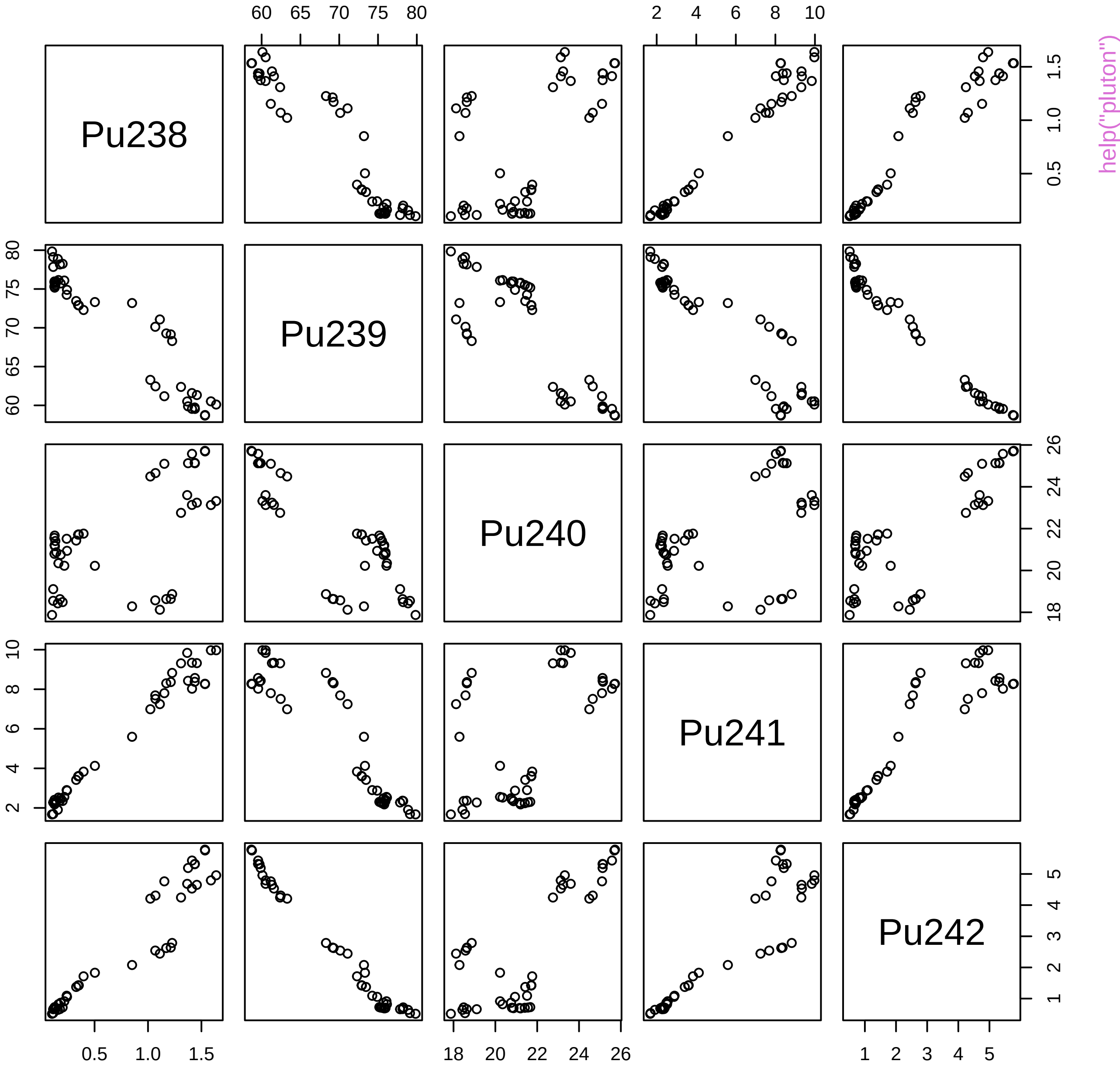


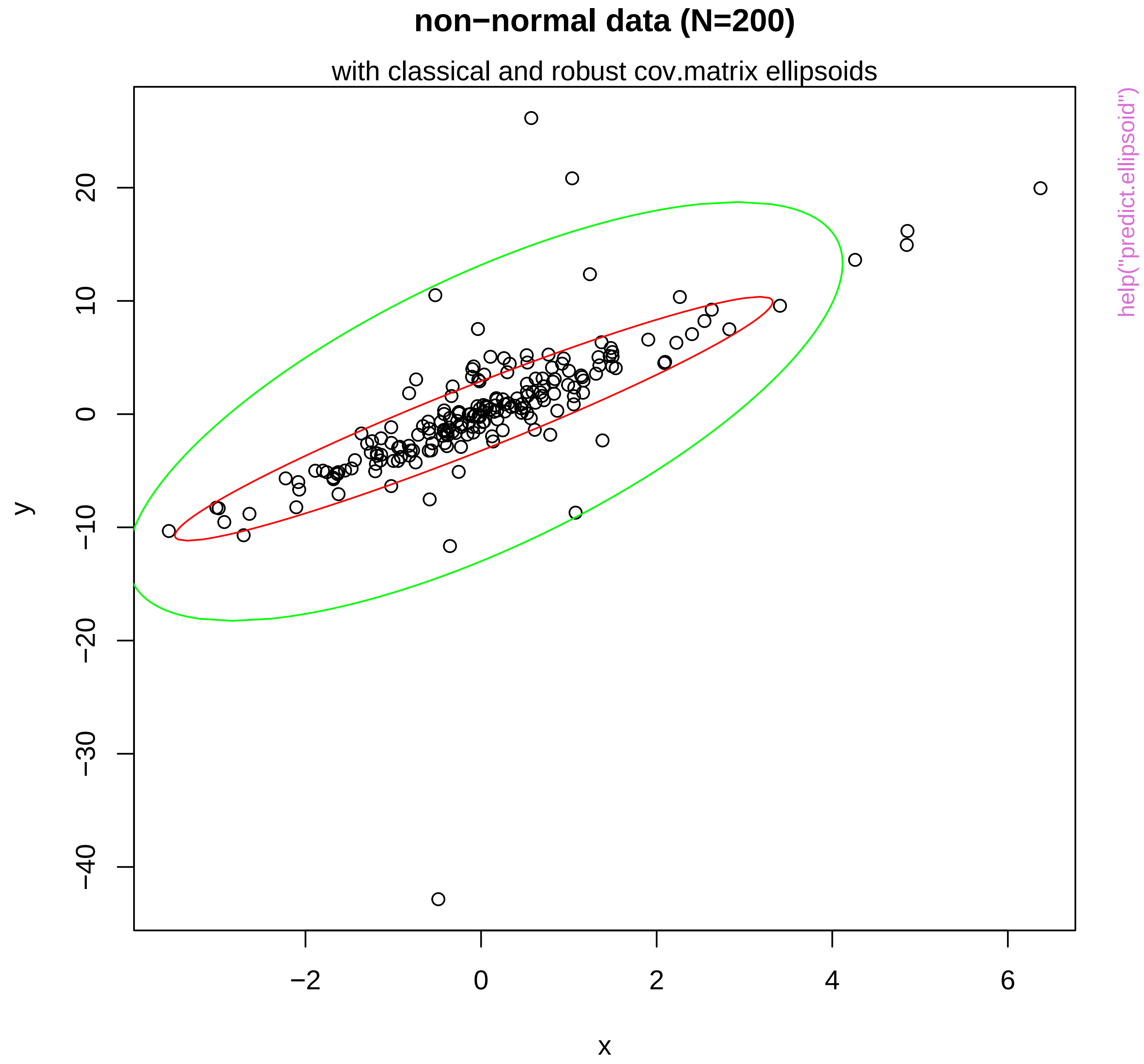
Vermont
Virginia
Tennessee
North Carolin
Maryland
Kentucky
West Virginia
New Mexico
Missouri
Delaware
Oklahoma
Utah
Wyoming
Idaho
Colorado
Montana
Nevada
Arizona
Rhode Island
Massachuse
Maine
Hawaii
Wisconsin
North Dakota
Minnesota
Nebraska
Kansas
South Dakota
Iowa
Washington
Oregon
California
Ohio
Indiana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

agnes(x = votes.repub)

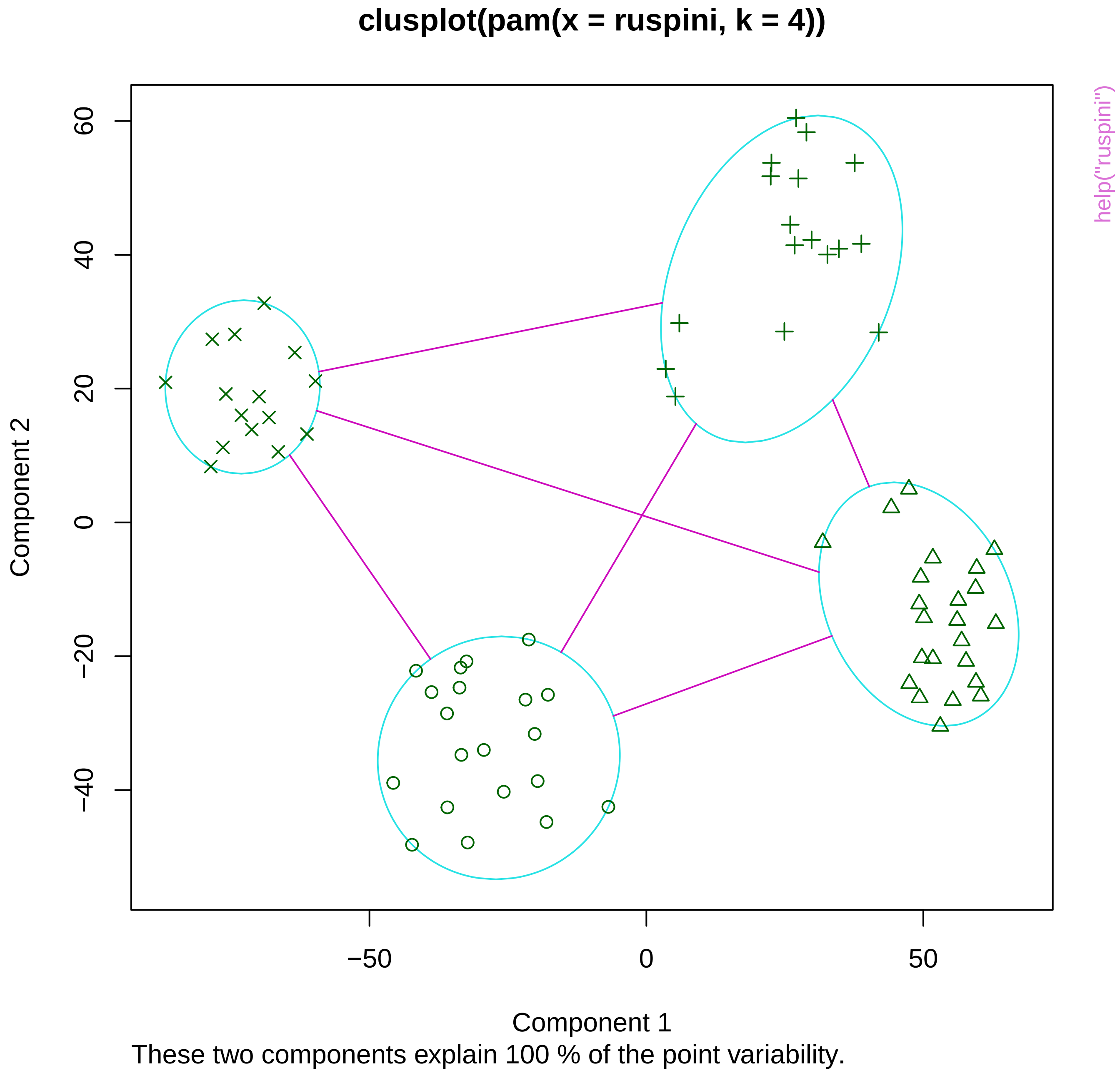


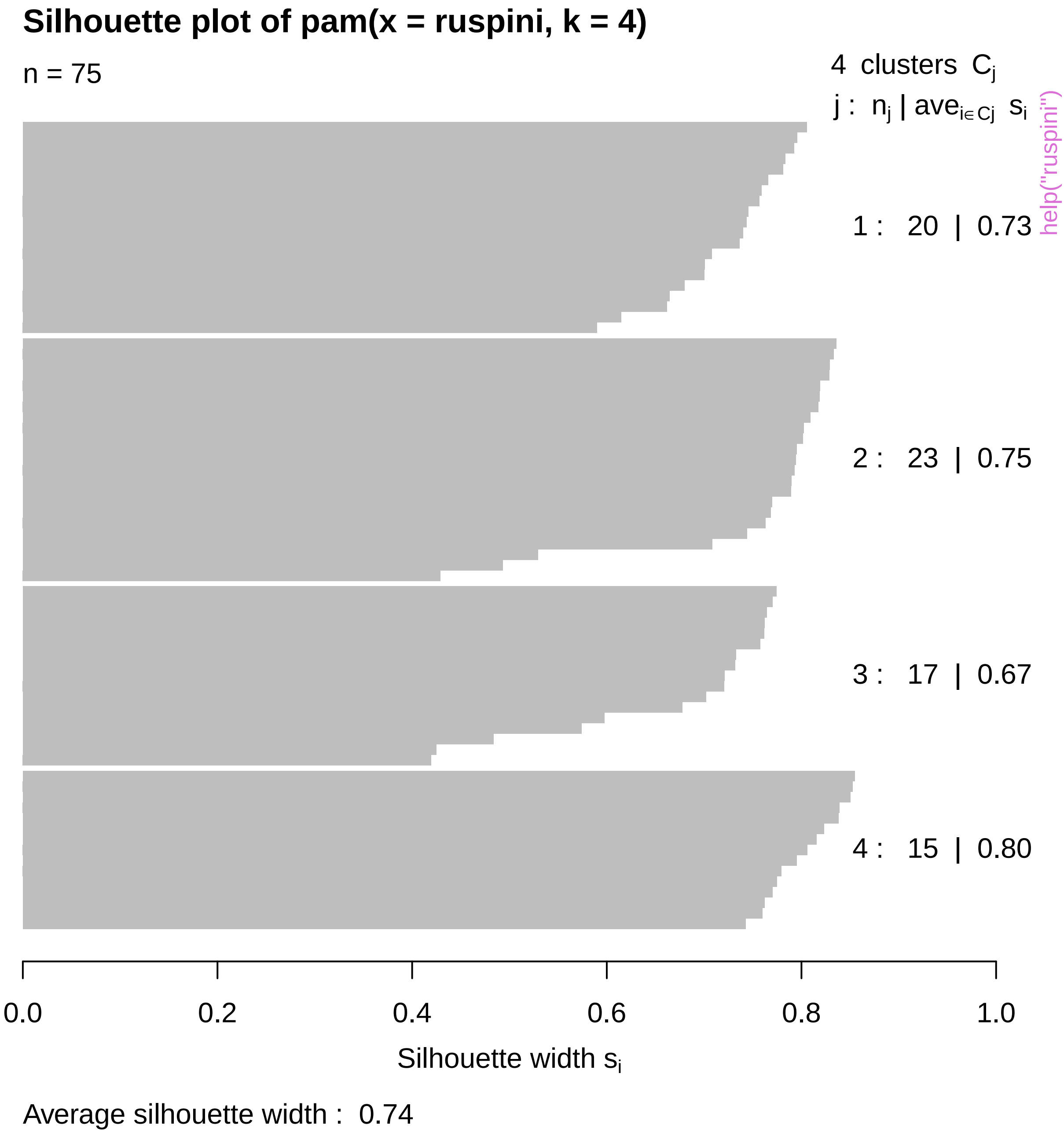

Histogram of apply(pluton, 1, sum)
Frequency
0
5
10
15
94
95
96
97
98
99
100
apply(pluton, 1, sum)
help("pluton")

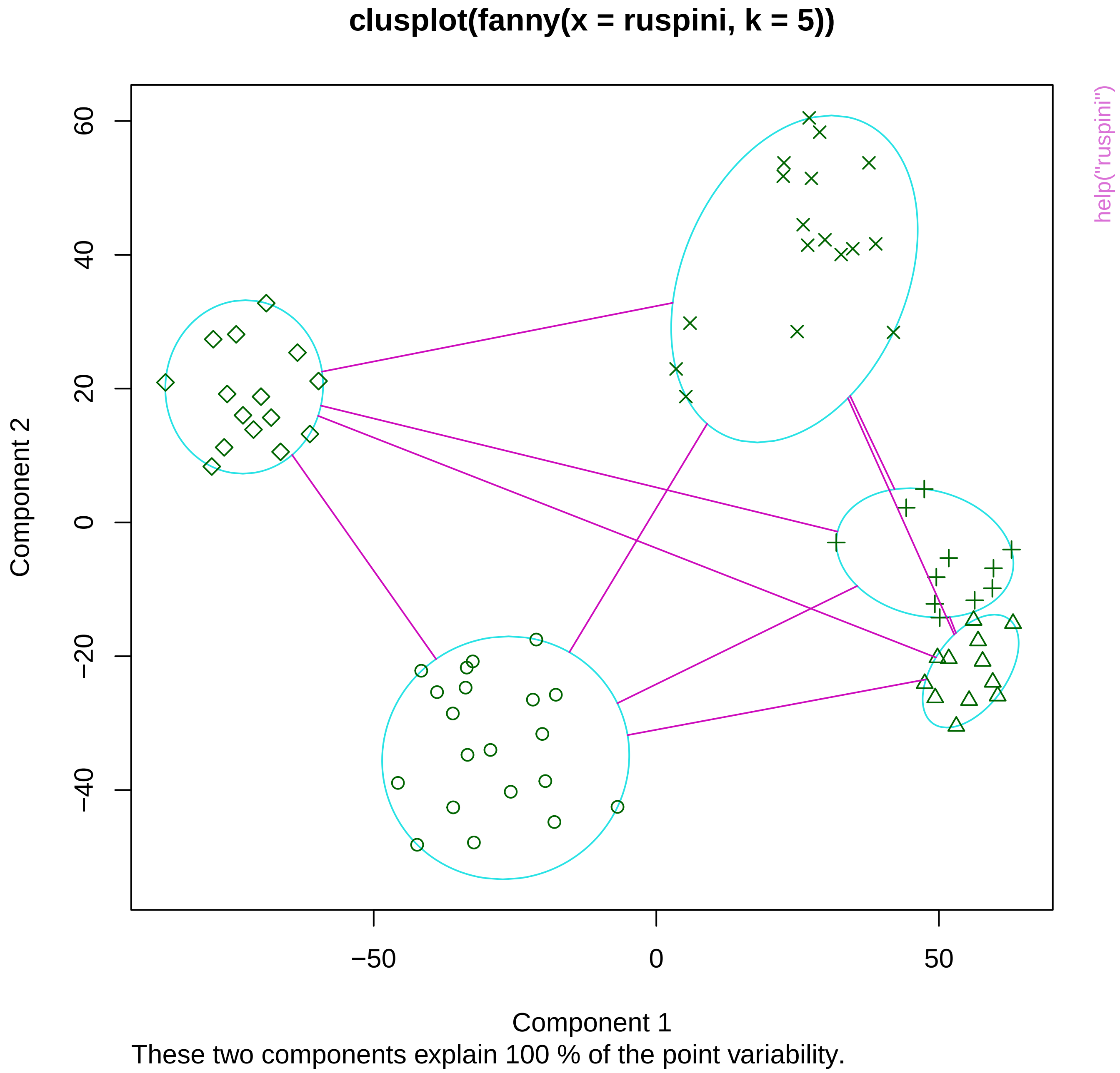

Pu238
Pu239
Pu240
Pu241
Pu242
help("pluton")

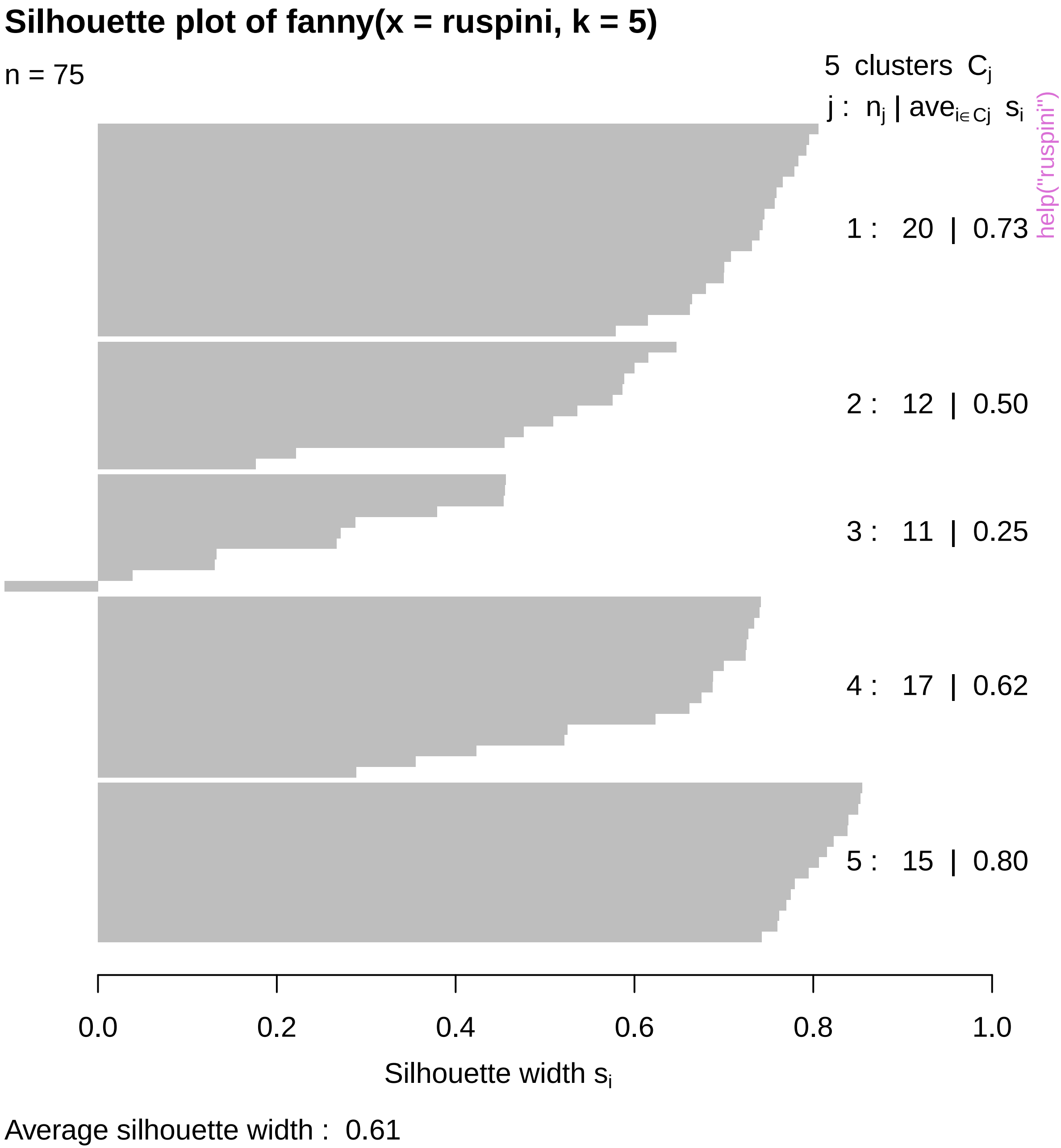


non−normal data (N=200)
with classical and robust cov.matrix ellipsoids
help("predict.ellipsoid")
y
x
−40
−30
−20
−10
0
10
20
−2
0
2
4
6

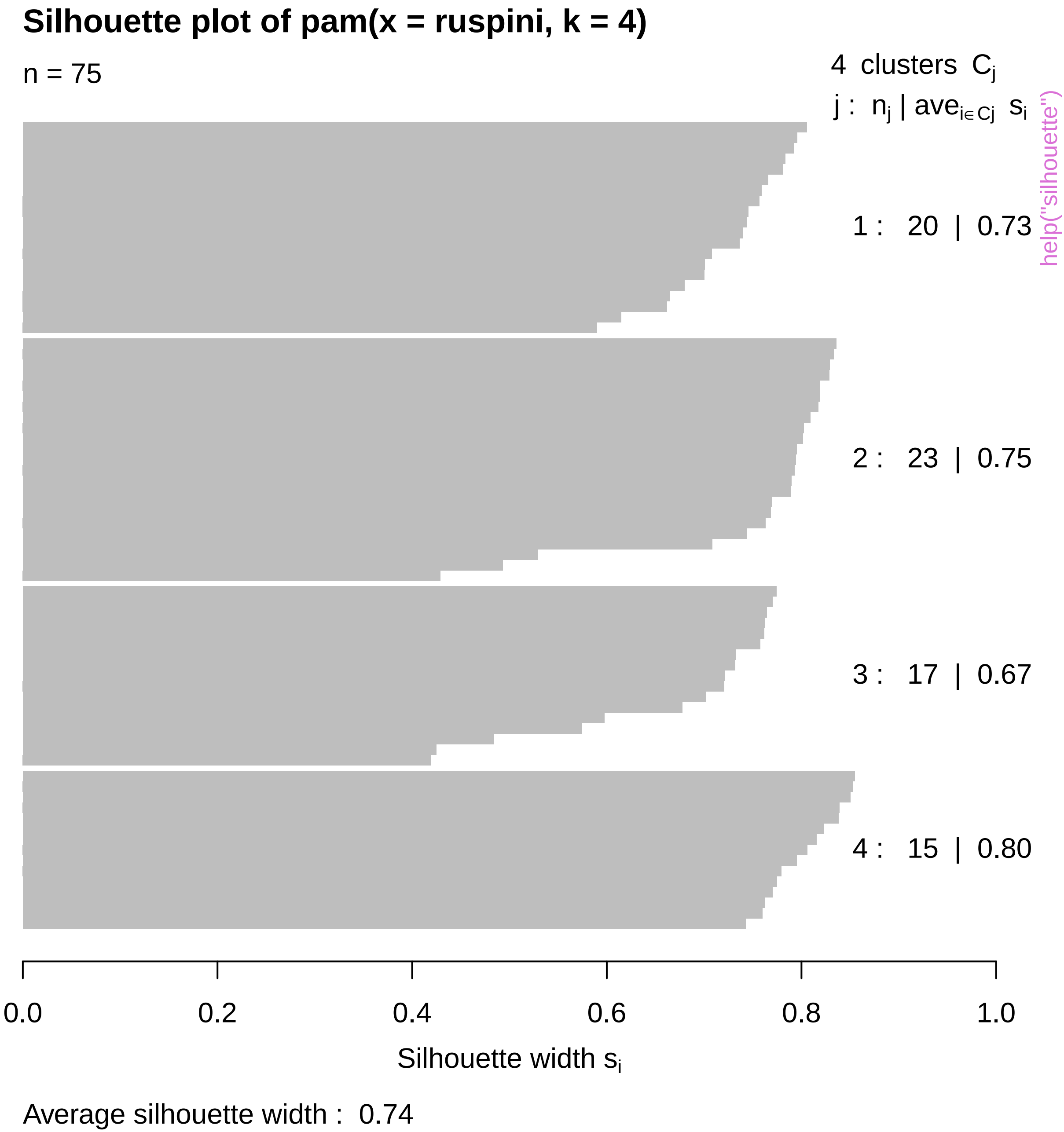

clusplot(pam(x = ruspini, k = 4))
Component 1
Component 2
These two components explain 100 % of the point variability.
help("ruspini")
60
40
20
0
−20
−40
−50
0
50

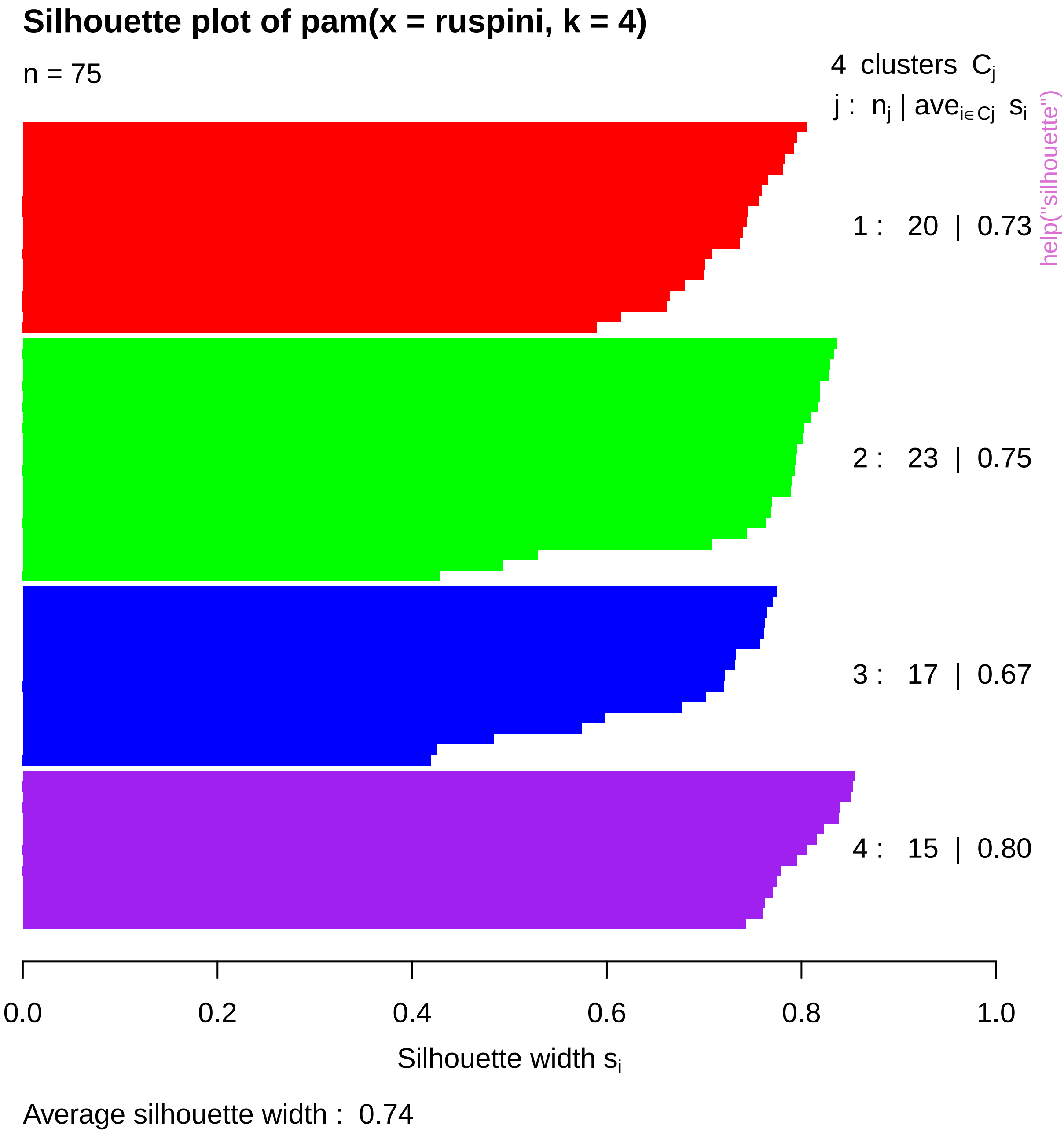

Silhouette plot of pam(x = ruspini, k = 4)
n = 75
4 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
1 : 20 | 0.73
2 : 23 | 0.75
3 : 17 | 0.67
4 : 15 | 0.80
help("ruspini")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.74


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

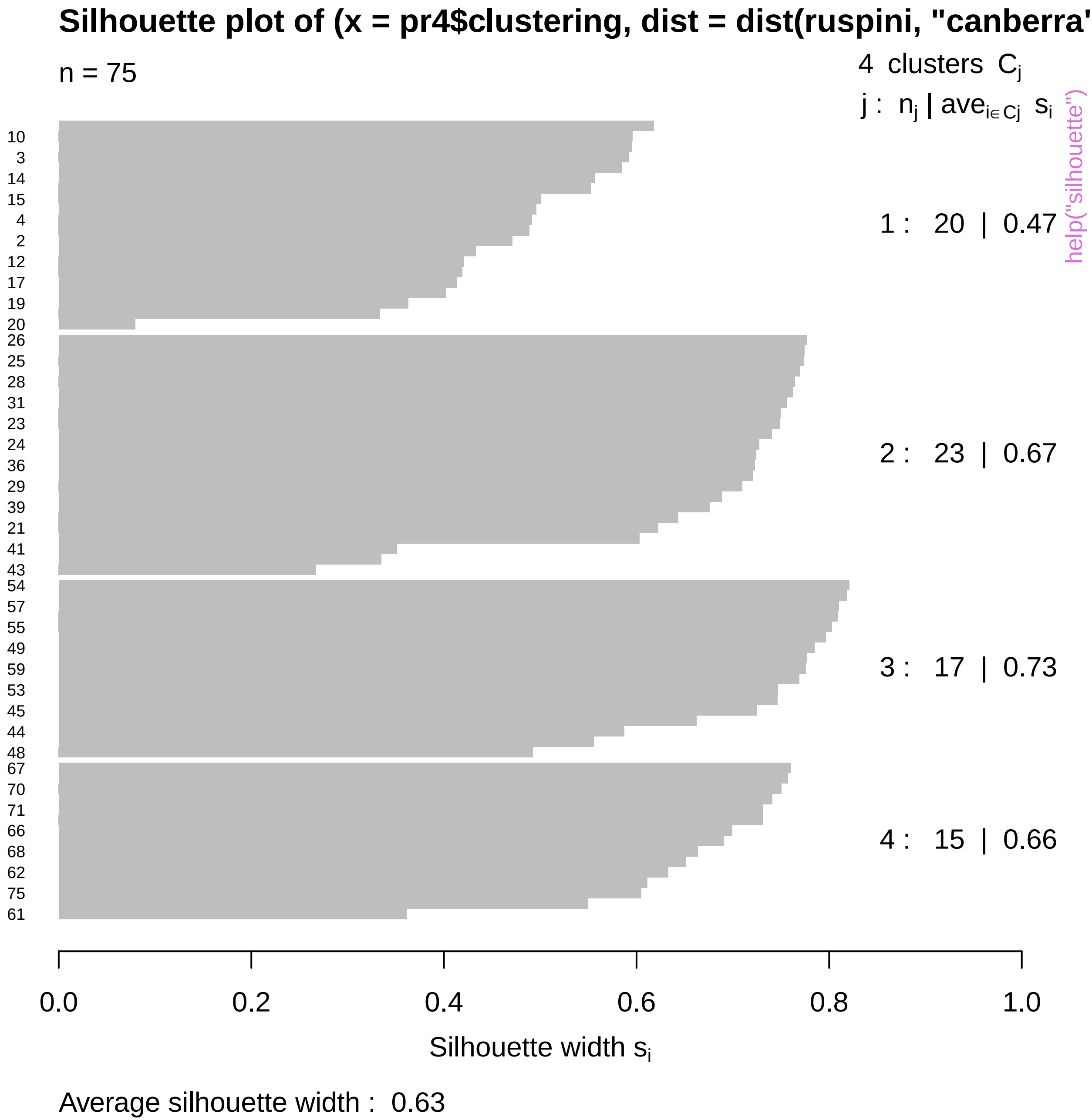


Silhouette plot of fanny(x = ruspini, k = 5)
n = 75
5 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("ruspini")
1 : 20 | 0.73
2 : 12 | 0.50
3 : 11 | 0.25
4 : 17 | 0.62
5 : 15 | 0.80
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.61

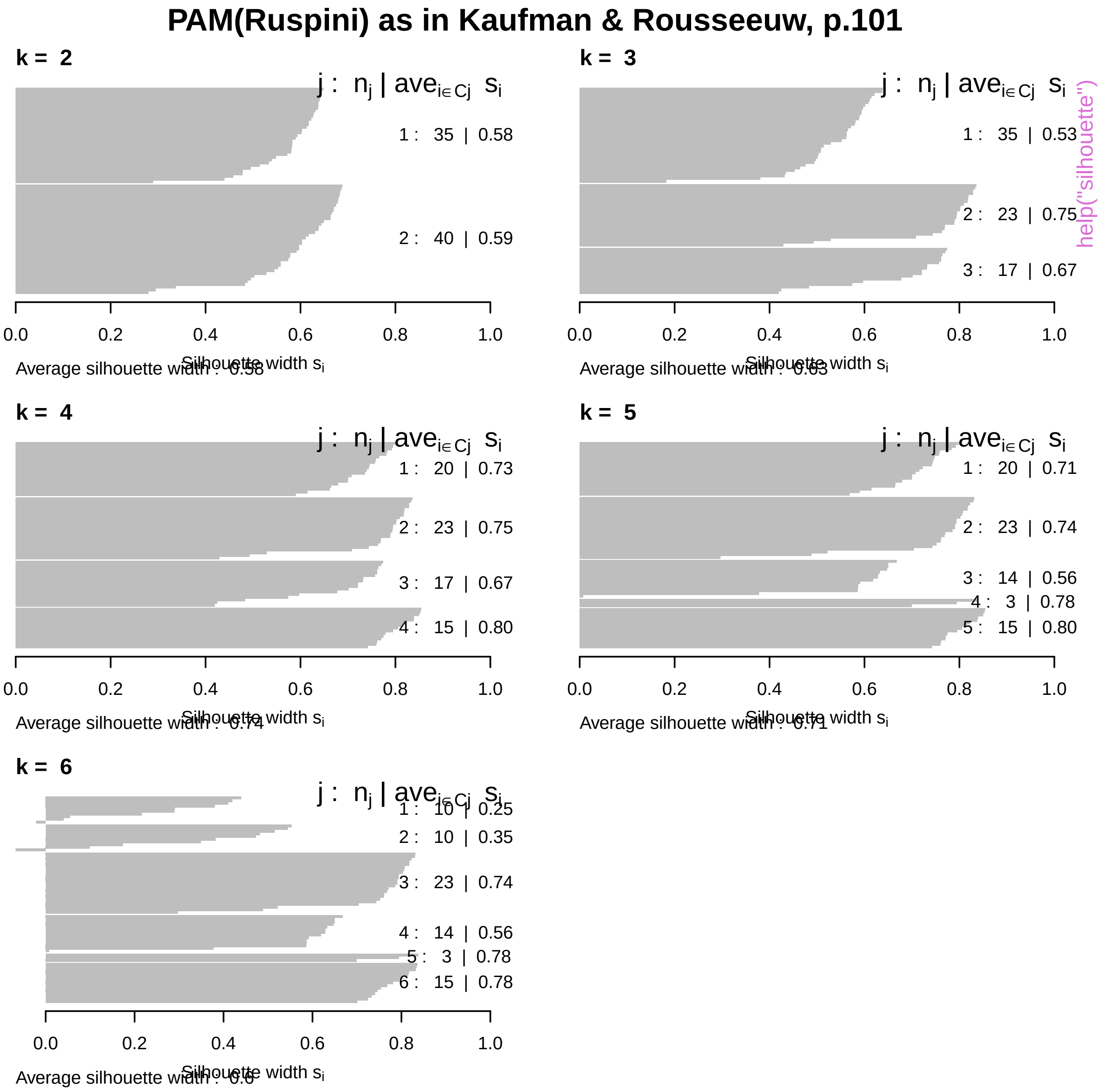

Silhouette plot of pam(x = ruspini, k = 4)
n = 75
4 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
1 : 20 | 0.73
2 : 23 | 0.75
3 : 17 | 0.67
4 : 15 | 0.80
help("silhouette")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.74

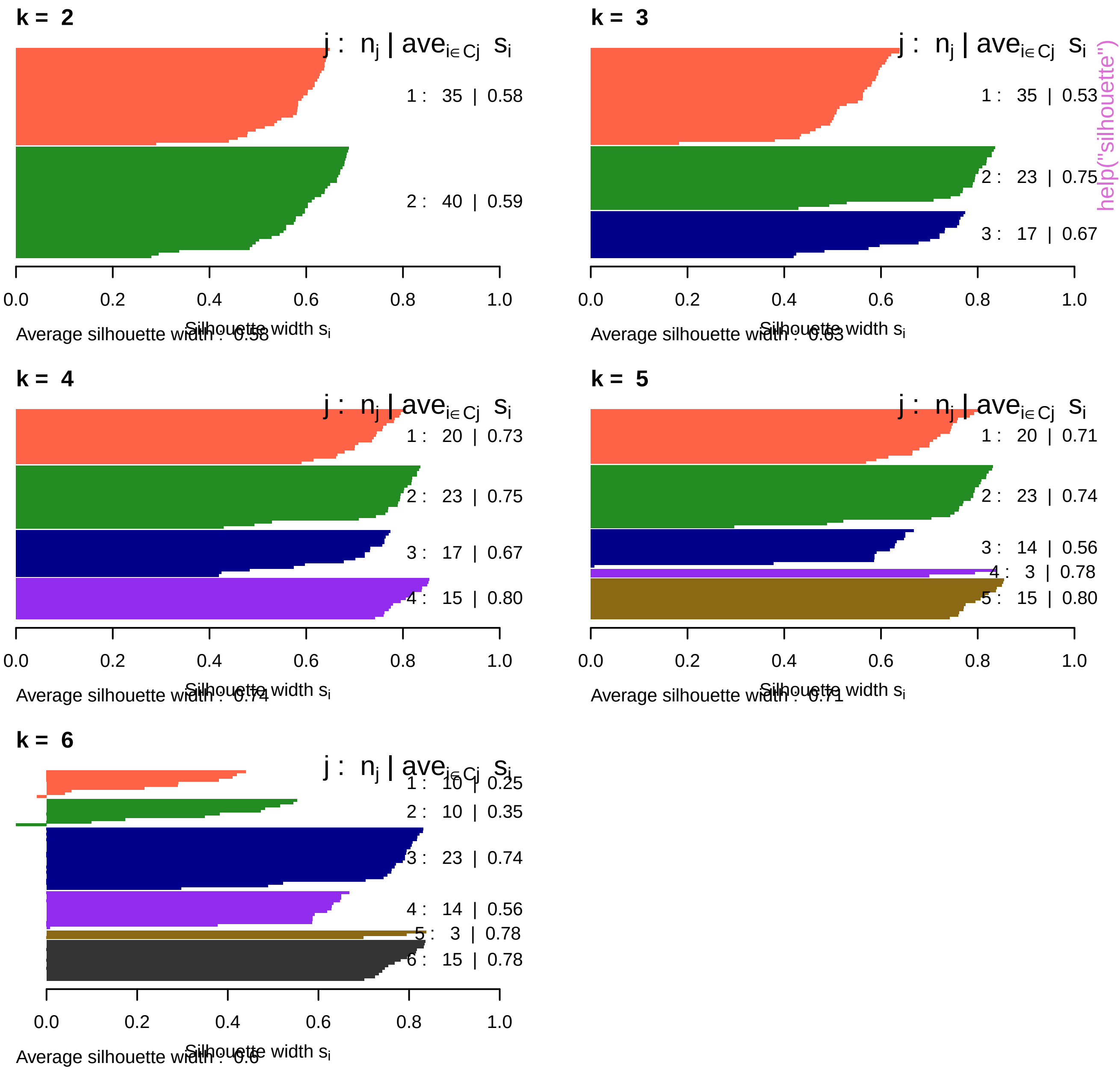


Silhouette plot of pam(x = ruspini, k = 4)
n = 75
4 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("silhouette")
1 : 20 | 0.73
2 : 23 | 0.75
3 : 17 | 0.67
4 : 15 | 0.80
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.74

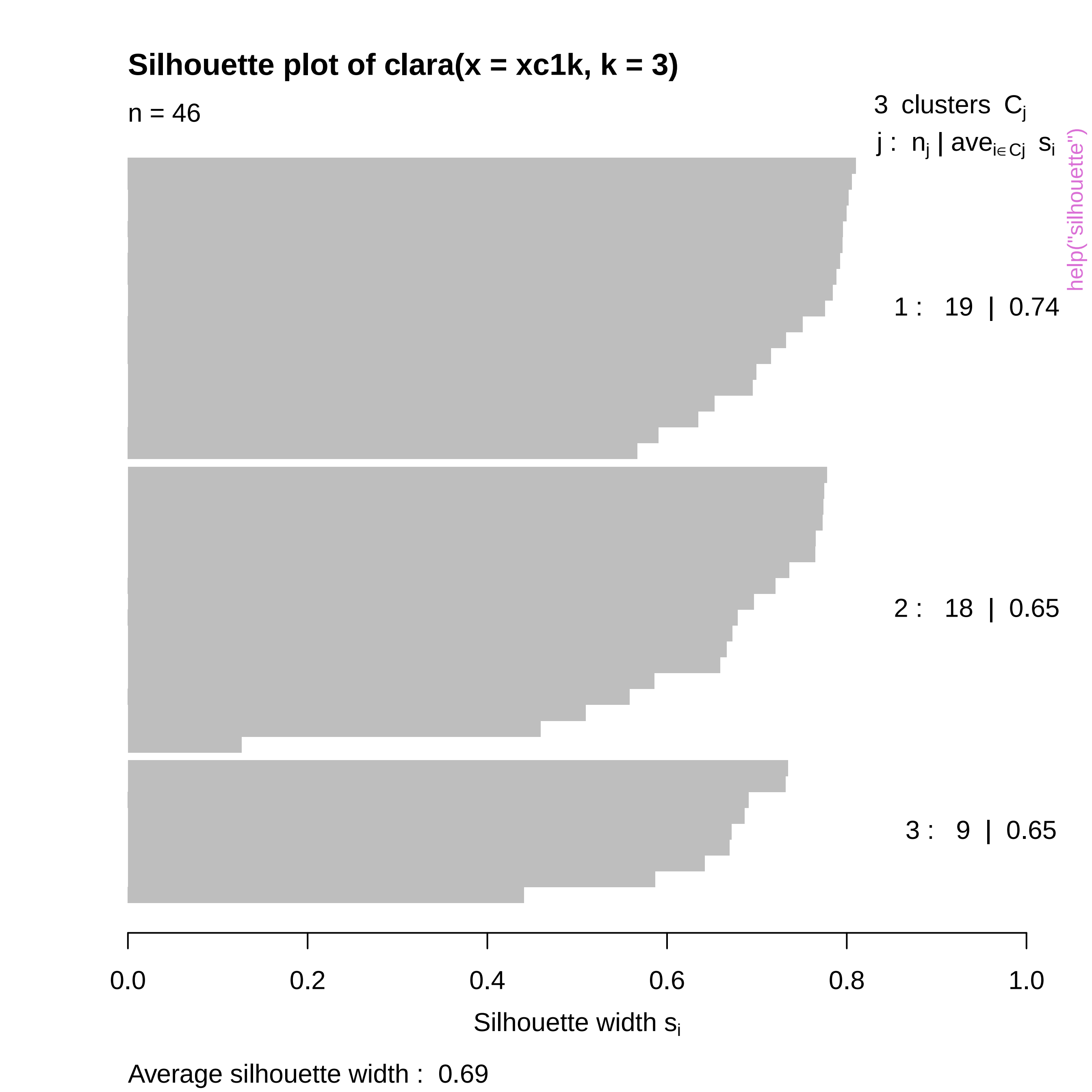


Silhouette plot of (x = pr4$clustering, dist = dist(ruspini, "canberra"
n = 75
4 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("silhouette")
10
3
14
15
4
2
12
17
19
20
26
25
28
31
23
24
36
29
39
21
41
43
54
57
55
49
59
53
45
44
48
67
70
71
66
68
62
75
61
1 : 20 | 0.47
2 : 23 | 0.67
3 : 17 | 0.73
4 : 15 | 0.66
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.63

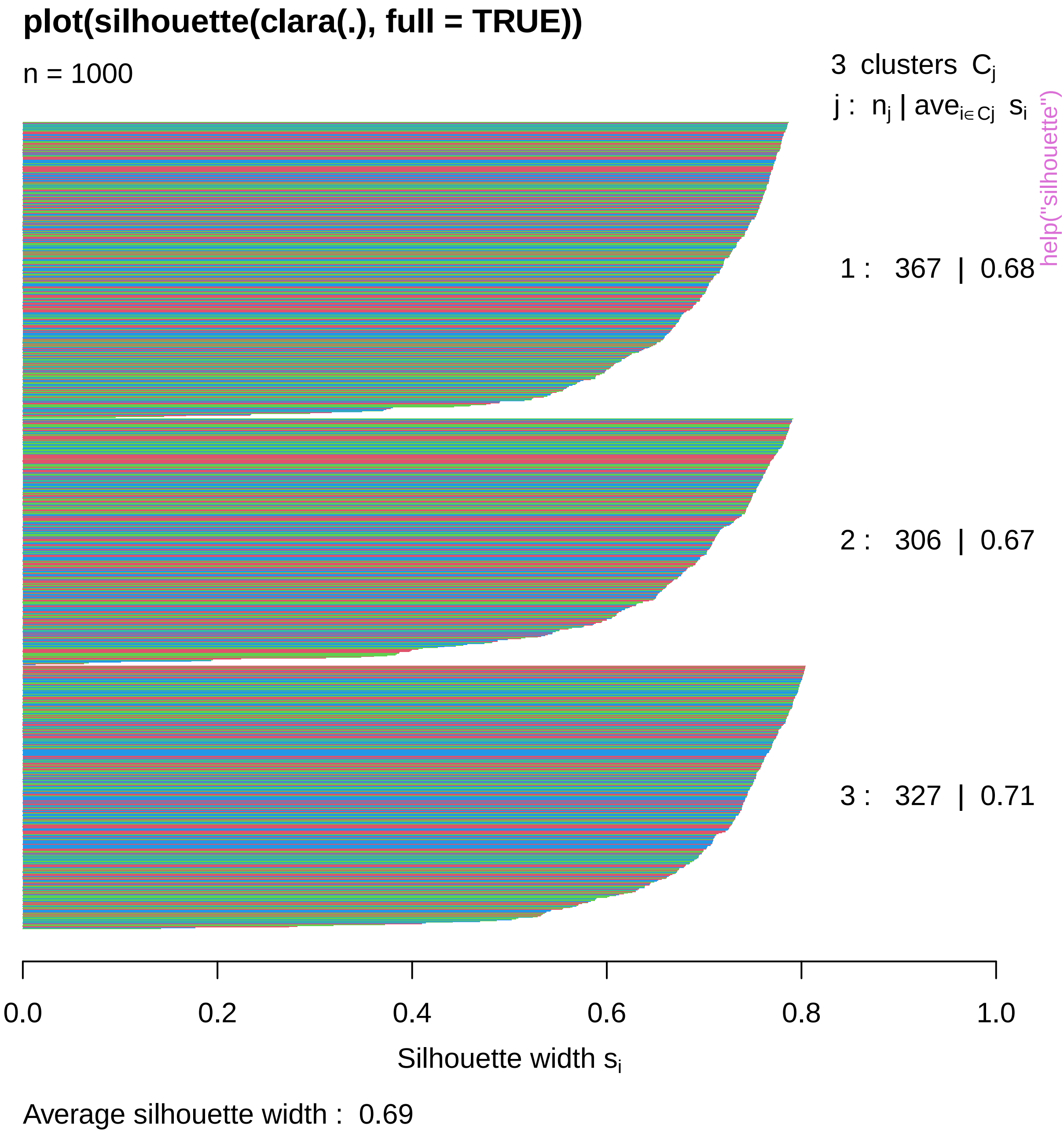

PAM(Ruspini) as in Kaufman & Rousseeuw, p.101
k = 2
j : n_j | ave_{i∈Cj} s_i
1 : 35 | 0.58
2 : 40 | 0.59
0.0 0.2 0.4 0.6 0.8 1.0
Silhouette width s_i
Average silhouette width : 0.58
k = 3
j : n_j | ave_{i∈Cj} s_i
1 : 35 | 0.53
2 : 23 | 0.75
3 : 17 | 0.67
0.0 0.2 0.4 0.6 0.8 1.0
Silhouette width s_i
Average silhouette width : 0.63
help("silhouette")
k = 4
j : n_j | ave_{i∈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∈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∈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

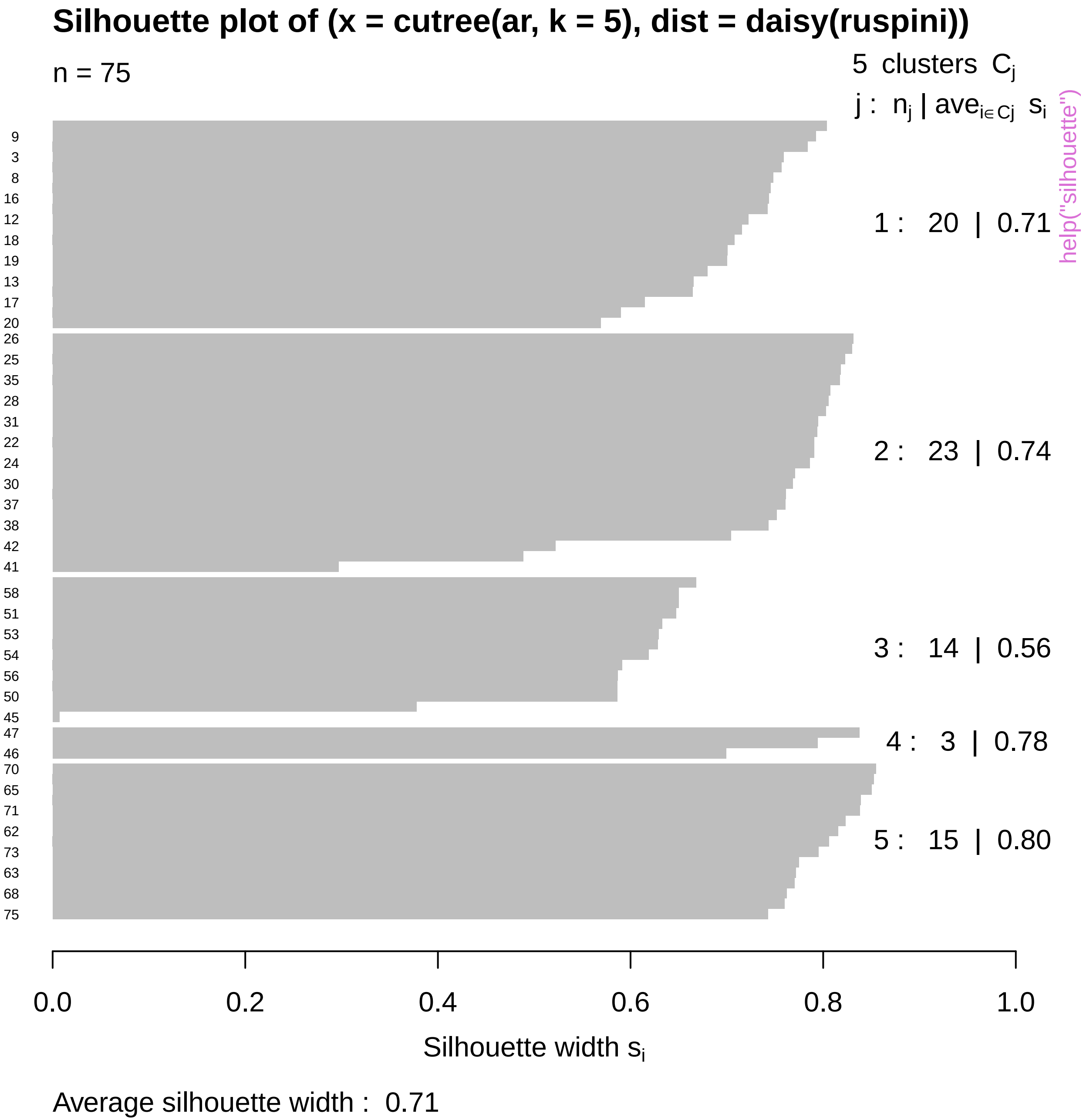


k = 2
j : n_j | $ave_{i \in Cj}$ s_i
1 : 35 | 0.58
2 : 40 | 0.59
Silhouette width s_i
Average silhouette width : 0.58
k = 3
j : n_j | $ave_{i \in Cj}$ s_i
1 : 35 | 0.53
2 : 23 | 0.75
3 : 17 | 0.67
Silhouette width s_i
Average silhouette width : 0.63
help("silhouette")
k = 4
j : n_j | $ave_{i \in Cj}$ s_i
1 : 20 | 0.73
2 : 23 | 0.75
3 : 17 | 0.67
4 : 15 | 0.80
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
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
Silhouette width s_i
Average silhouette width : 0.6

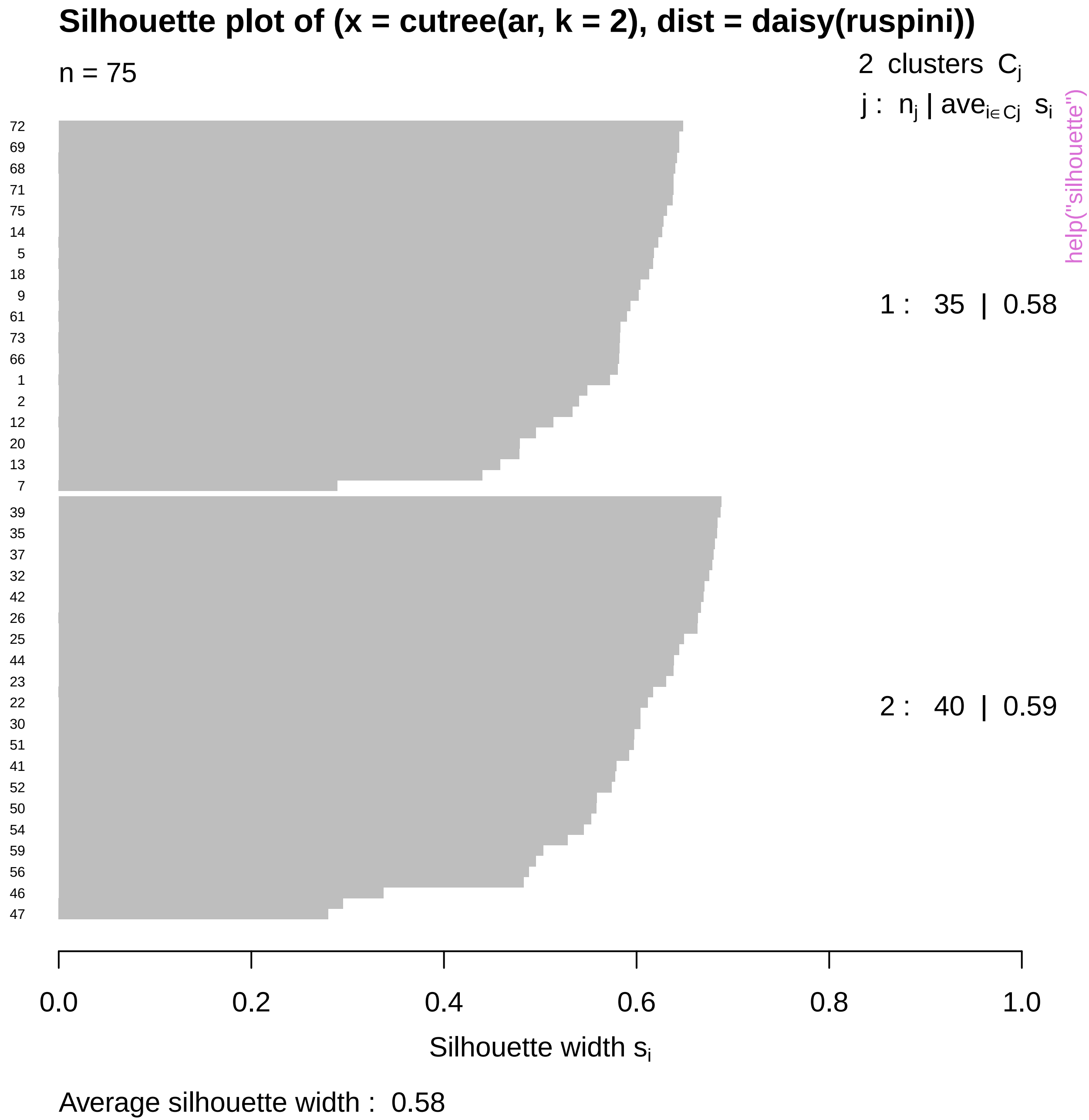


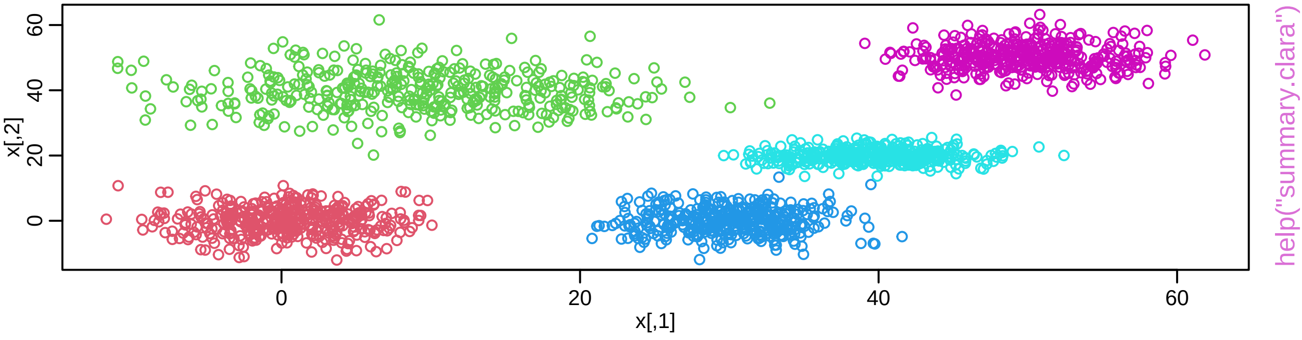
Silhouette plot of clara(x = xc1k, k = 3)
n = 46
3 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
1 : 19 | 0.74
2 : 18 | 0.65
3 : 9 | 0.65
help("silhouette")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.69

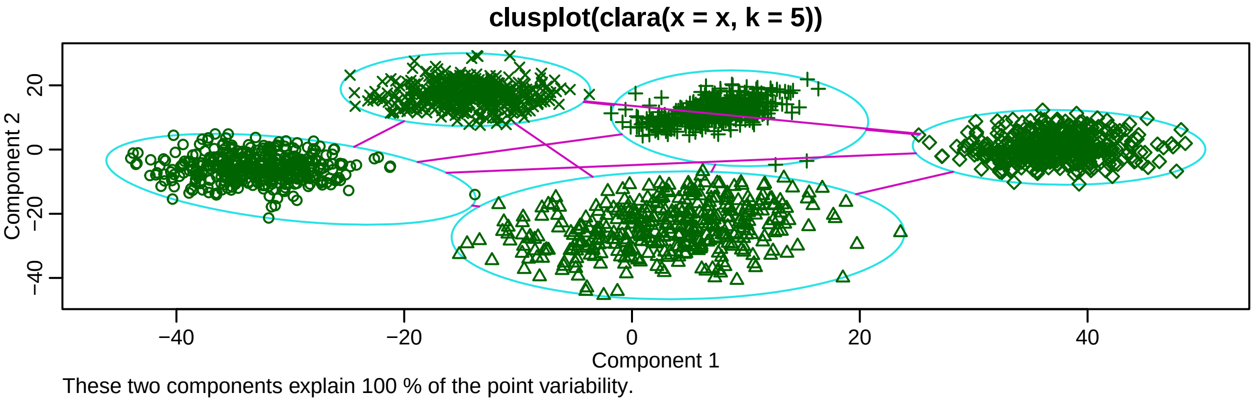

plot(silhouette(clara(.), full = TRUE))
n = 1000
3 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("silhouette")
1 : 367 | 0.68
2 : 306 | 0.67
3 : 327 | 0.71
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.69

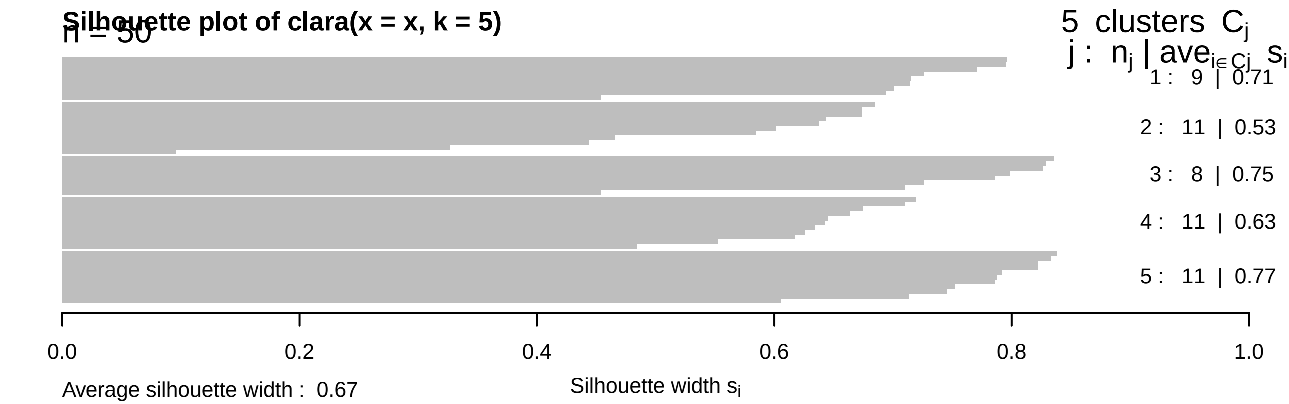


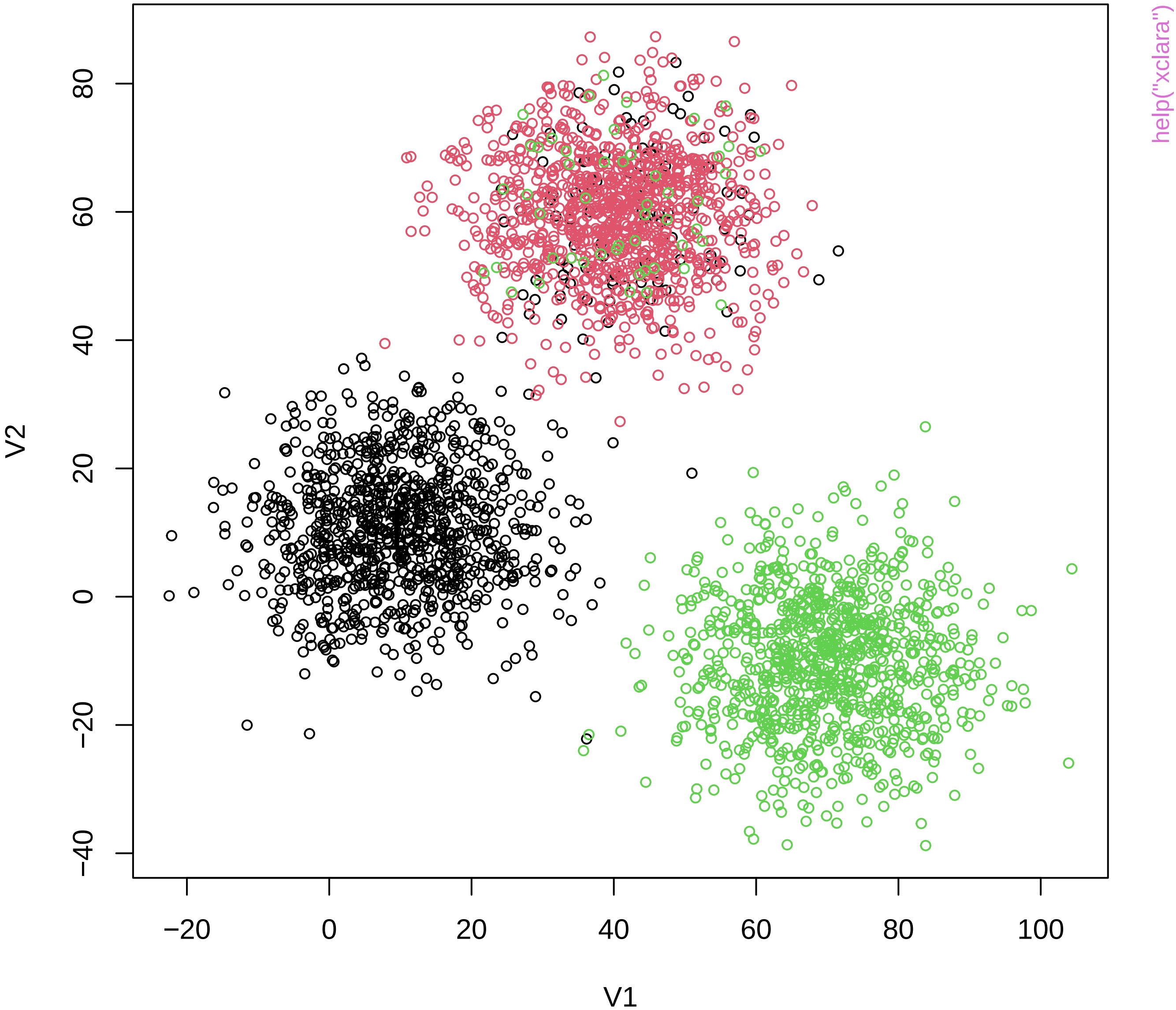
Silhouette plot of (x = cutree(ar, k = 5), dist = daisy(ruspini))
n = 75
5 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("silhouette")
9
3
8
16
12
18
19
13
17
20
26
25
35
28
31
22
24
30
37
38
42
41
58
51
53
54
56
50
45
47
46
70
65
71
62
73
63
68
75
1 : 20 | 0.71
2 : 23 | 0.74
3 : 14 | 0.56
4 : 3 | 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")
72
69
68
71
75
14
5
18
9
61
73
66
1
2
12
20
13
7
1 : 35 | 0.58
39
35
37
32
42
26
25
44
23
22
30
51
41
52
50
54
59
56
46
47
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[,1]
x[,2]
0
20
40
60
help("summary.clara")


clusplot(clara(x = x, k = 5))
Component 1
Component 2
−40
−20
0
20
40
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



V2
80
60
40
20
0
−20
−40
−20
0
20
40
60
80
100
V1
help("xclara")