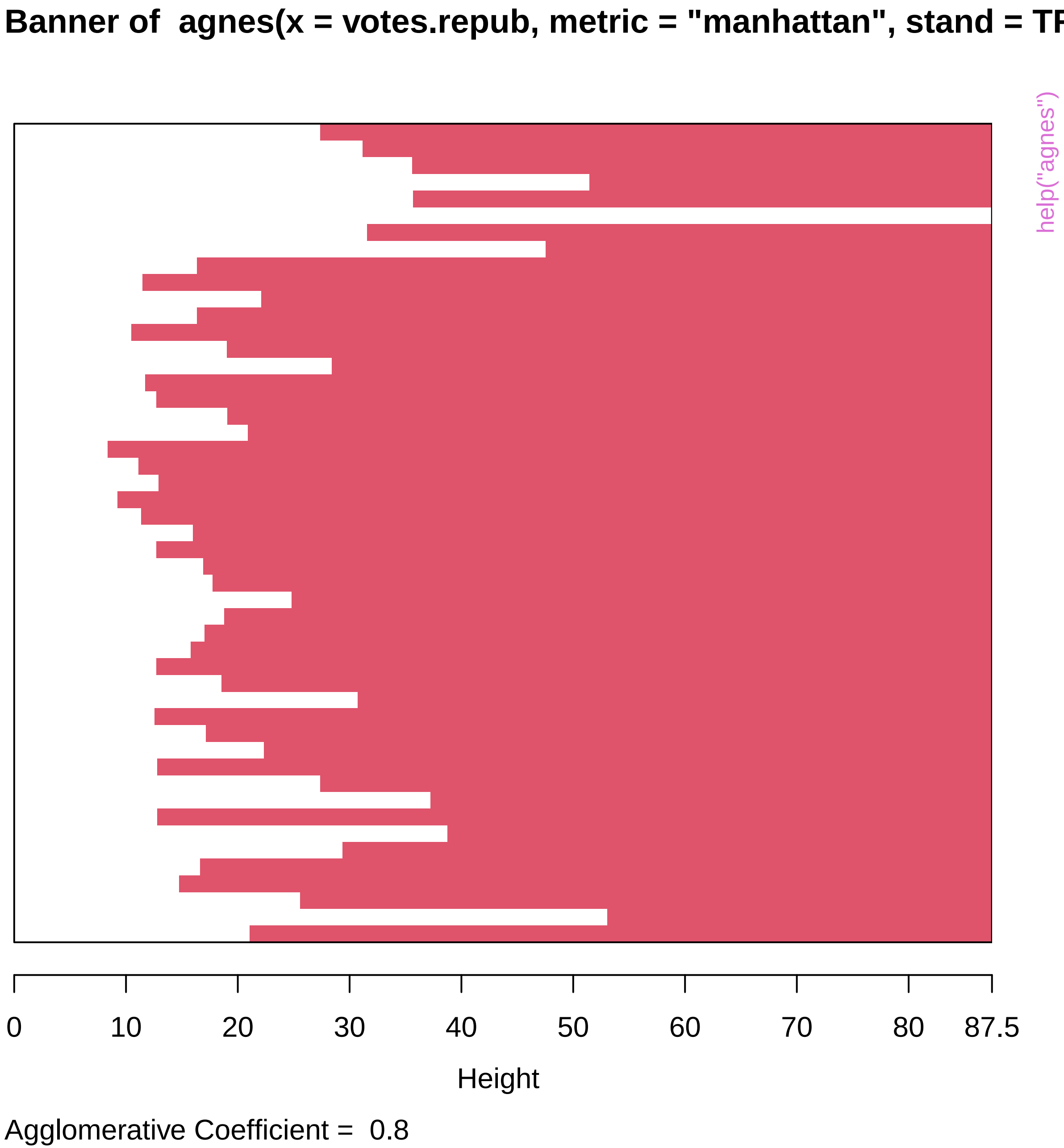
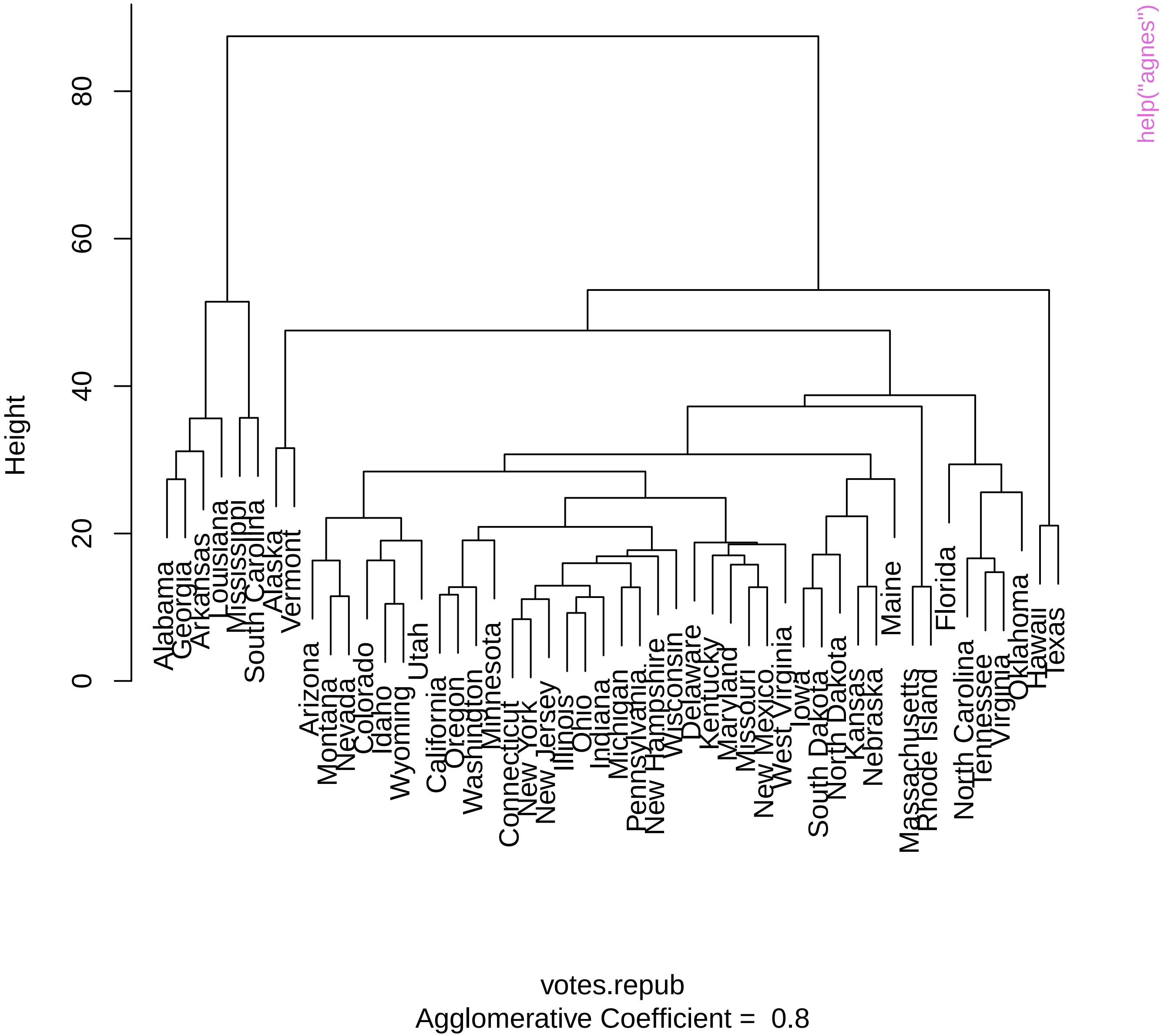
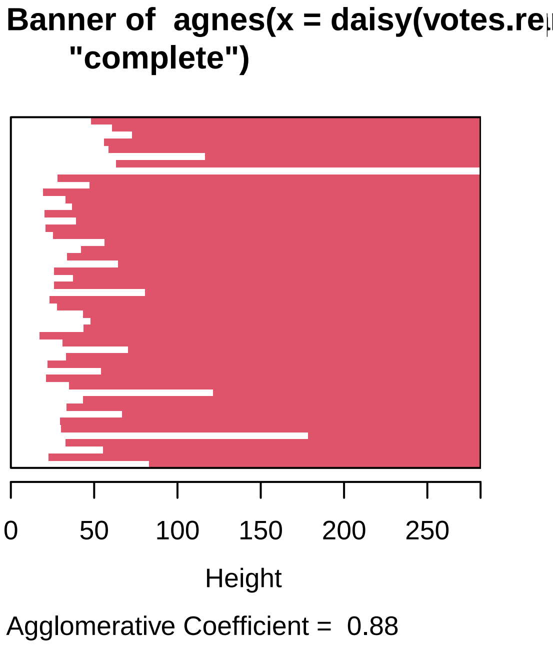
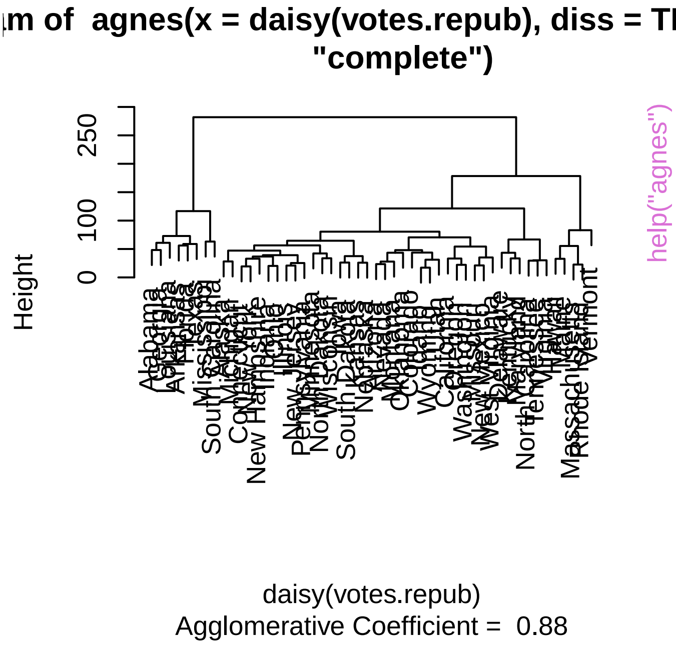


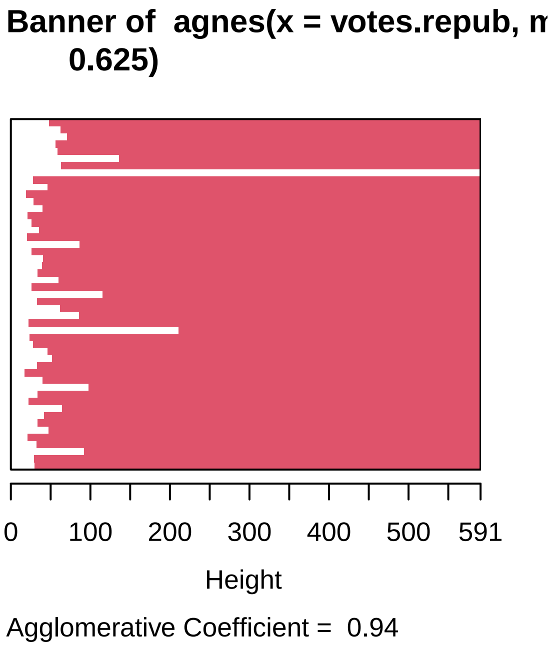
Banner of agnes(x = votes.repub, metric = "manhattan", stand = TR
help("agnes")
0
10
20
30
40
50
60
70
80
87.5
Height
Agglomerative Coefficient = 0.8

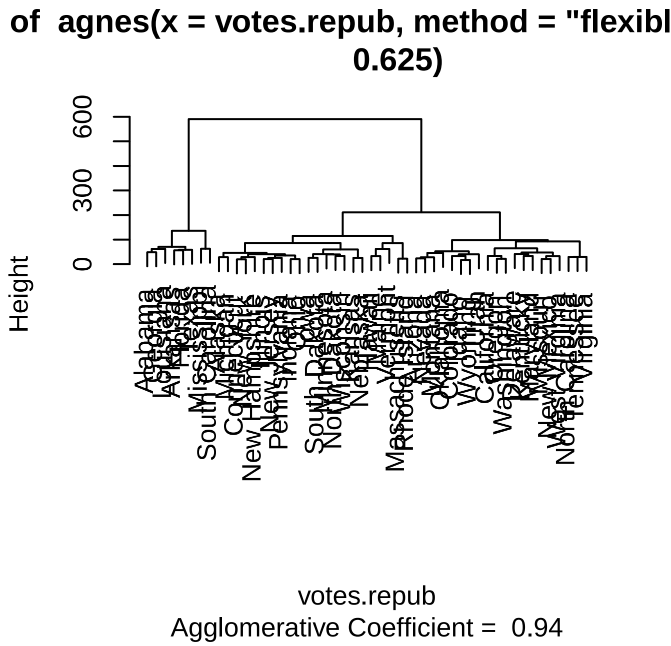
Dendrogram of agnes(x = votes.repub, metric = "manhattan", stand = TRU



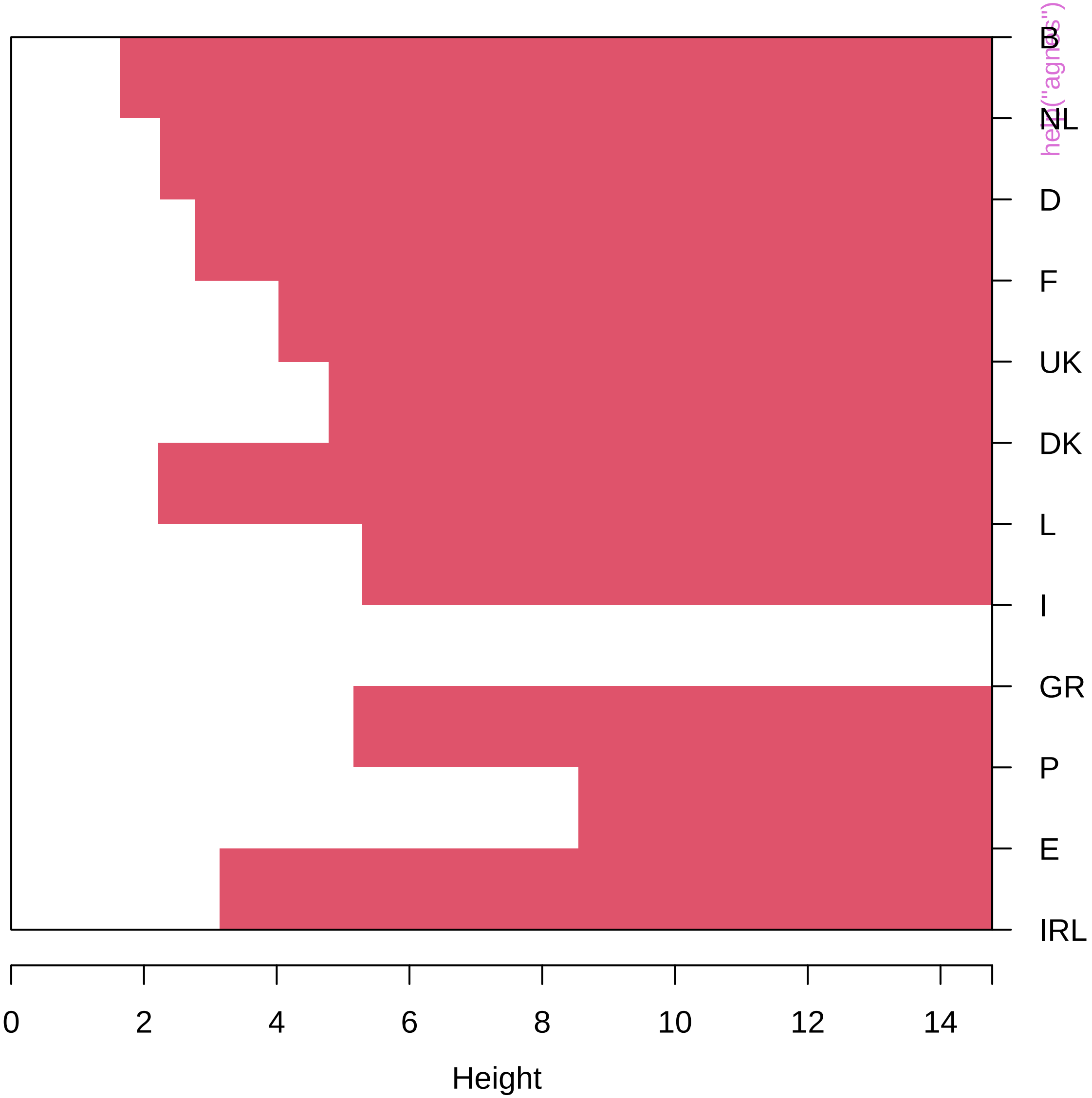

Banner of agnes(x = daisy(votes.rep
"complete")
0
50
100
150
200
250
Height
Agglomerative Coefficient = 0.88


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

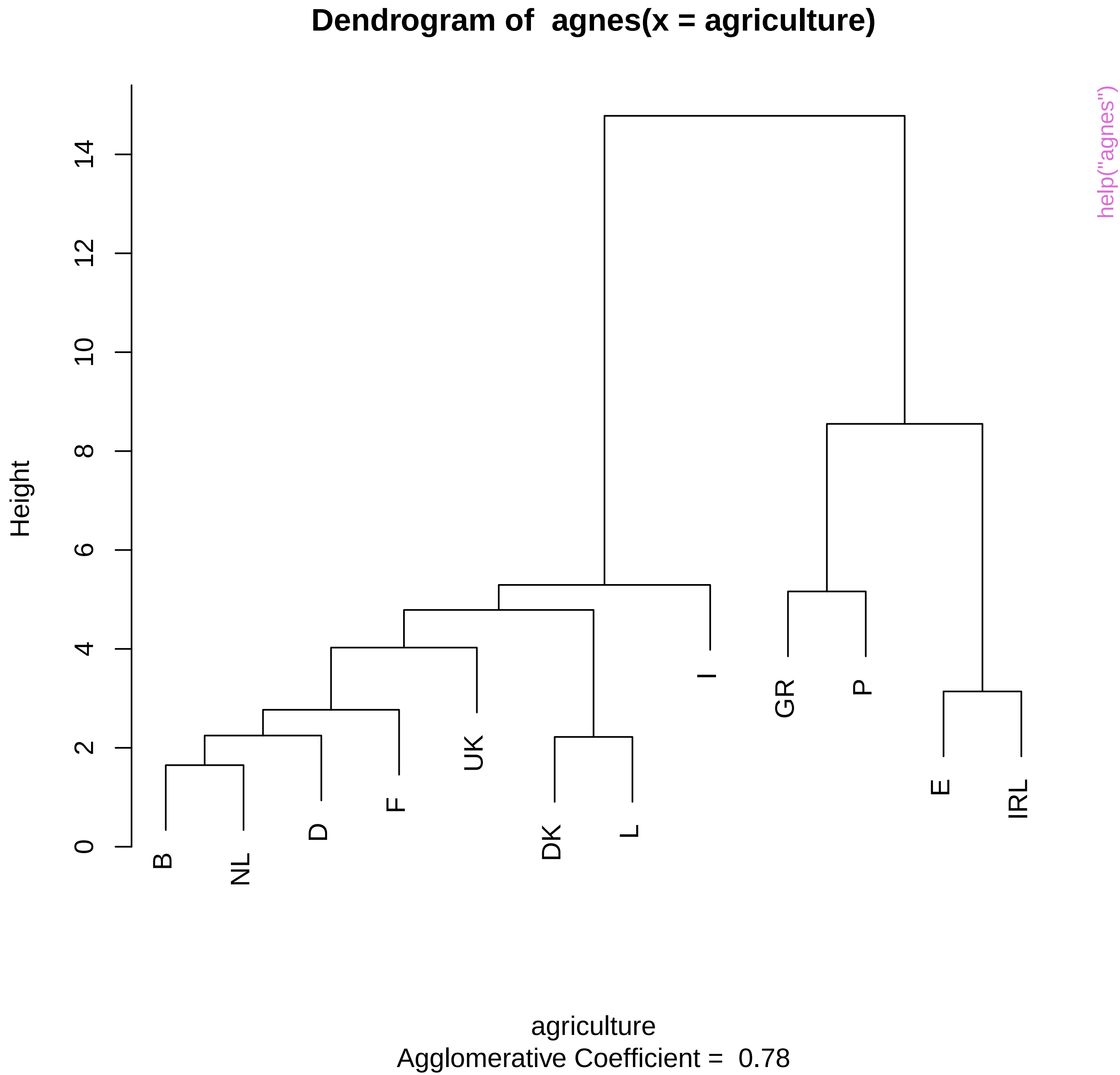

Banner of agnes(x = votes.repub, m
0.625)
0
100
200
300
400
500
591
Height
Agglomerative Coefficient = 0.94

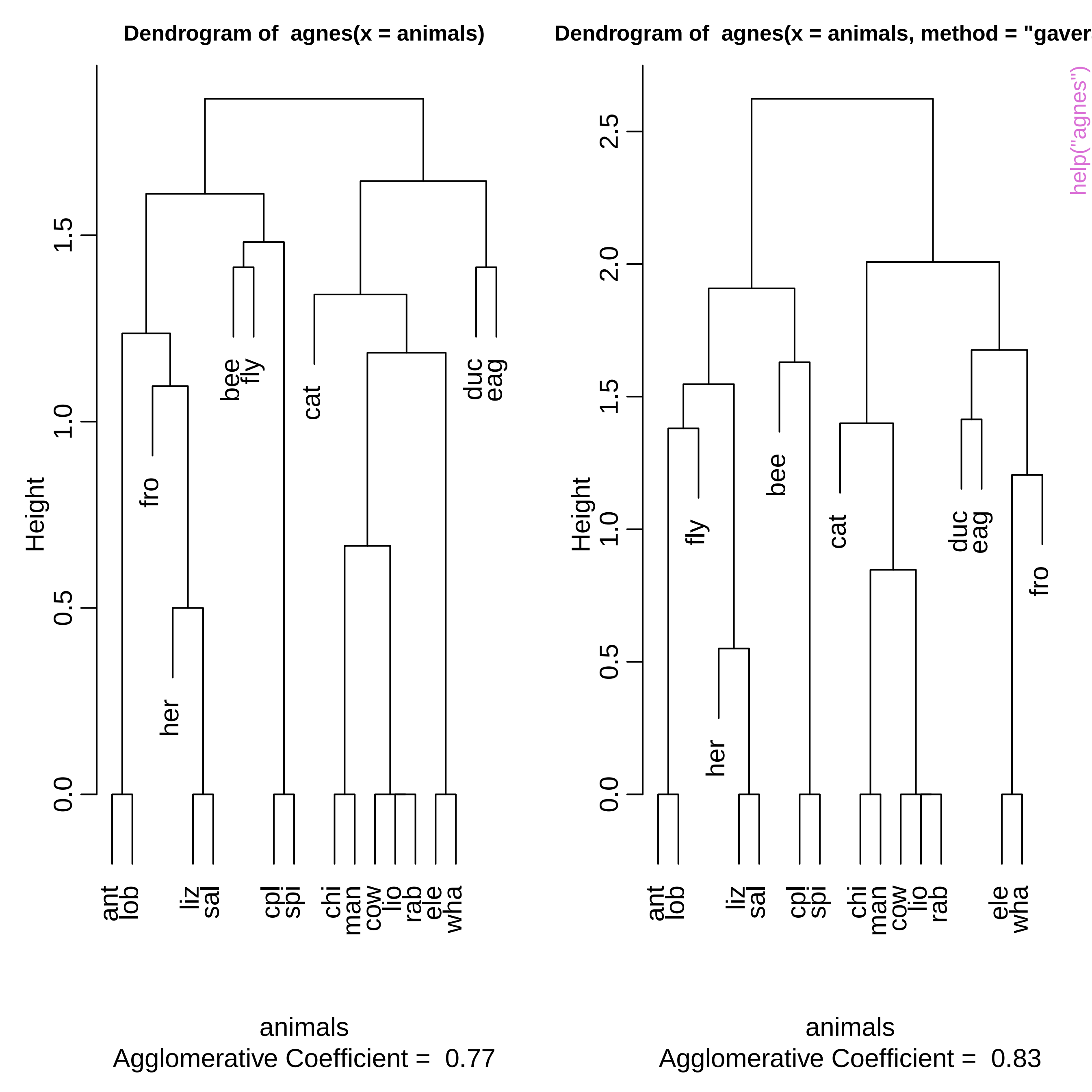

of agnes(x = votes.repub, method = "flexibl
0.625)
0
300
600
Height
votes.repub
Agglomerative Coefficient = 0.94

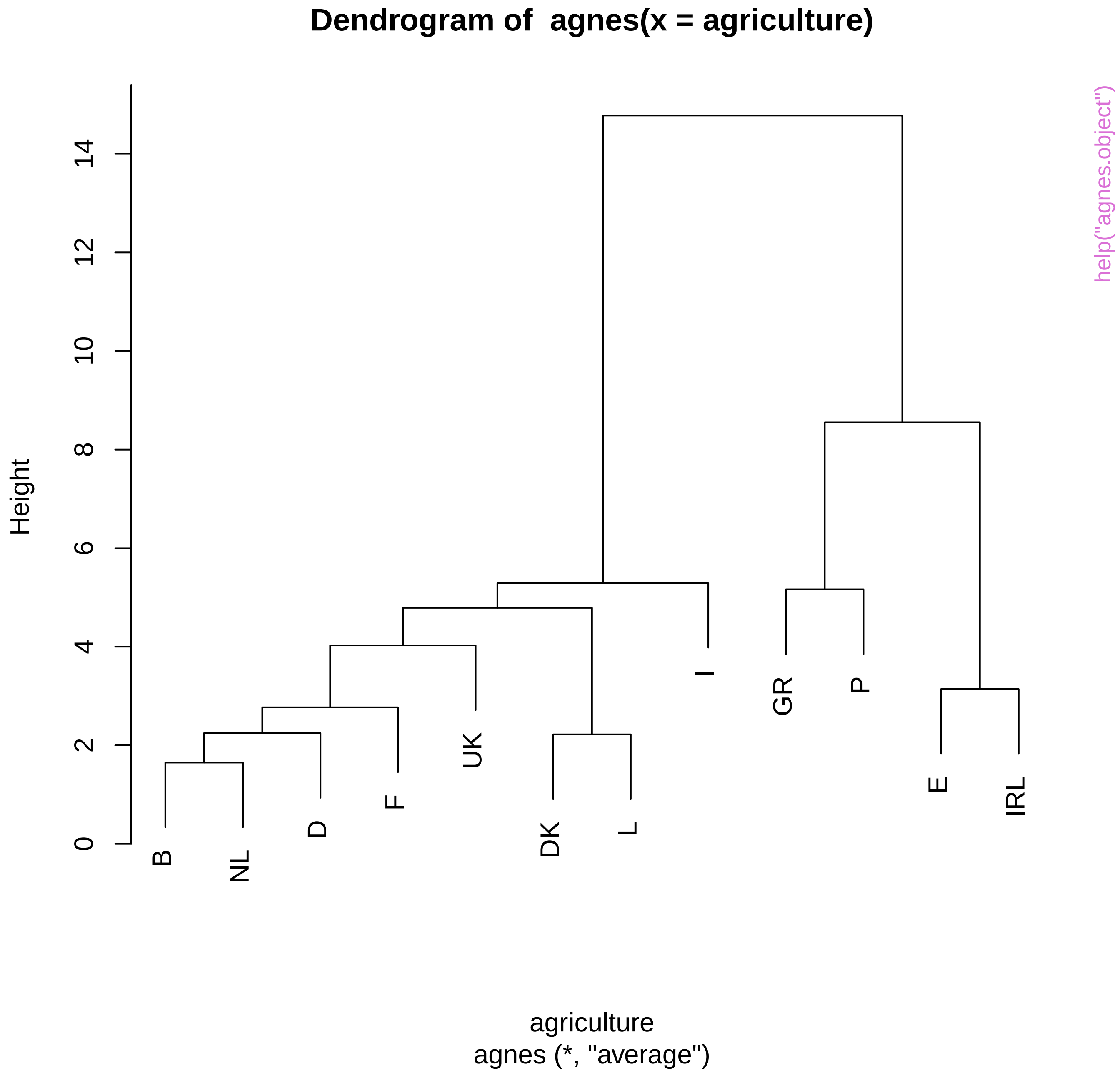
Banner of agnes(x = agriculture)

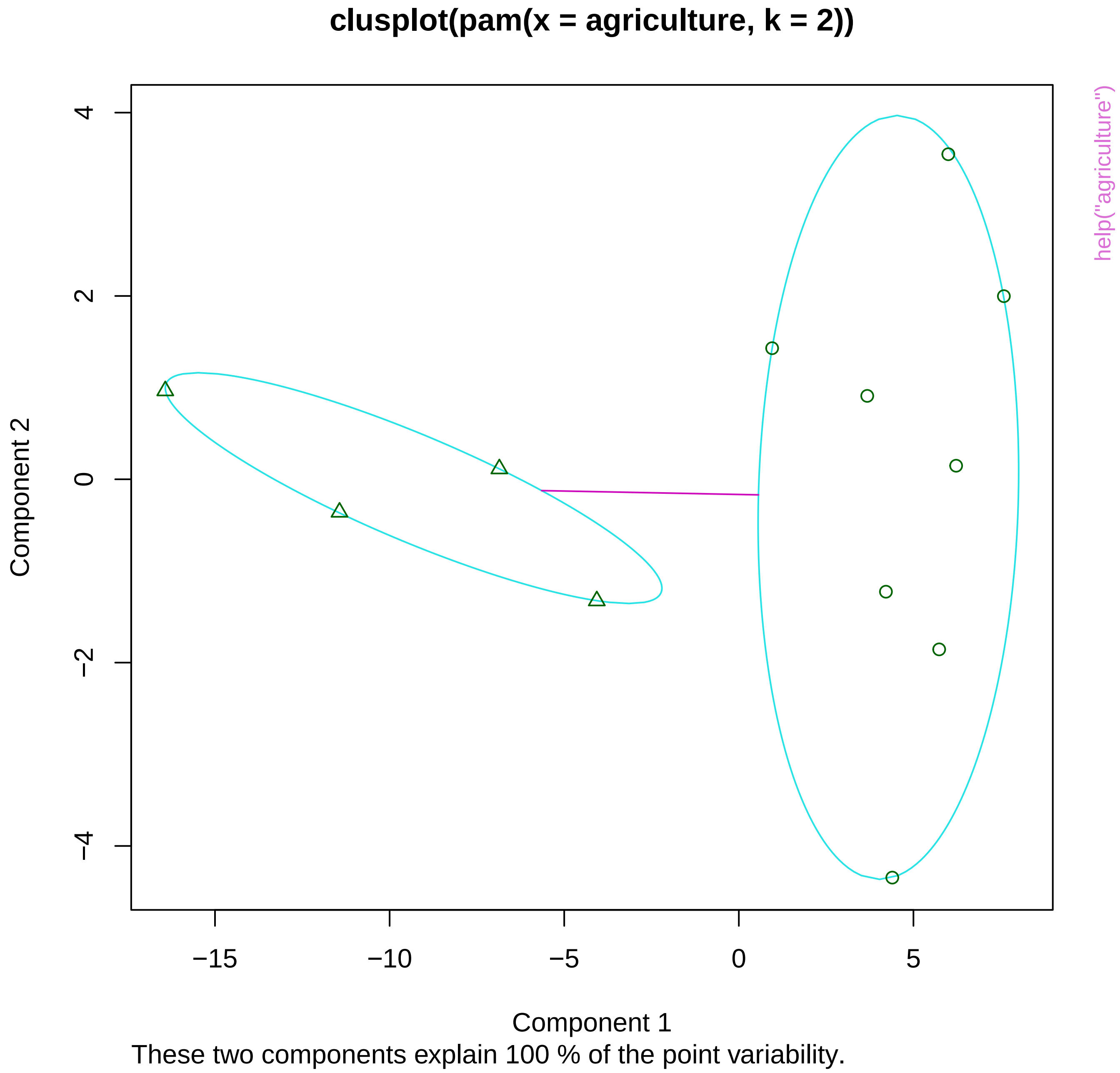


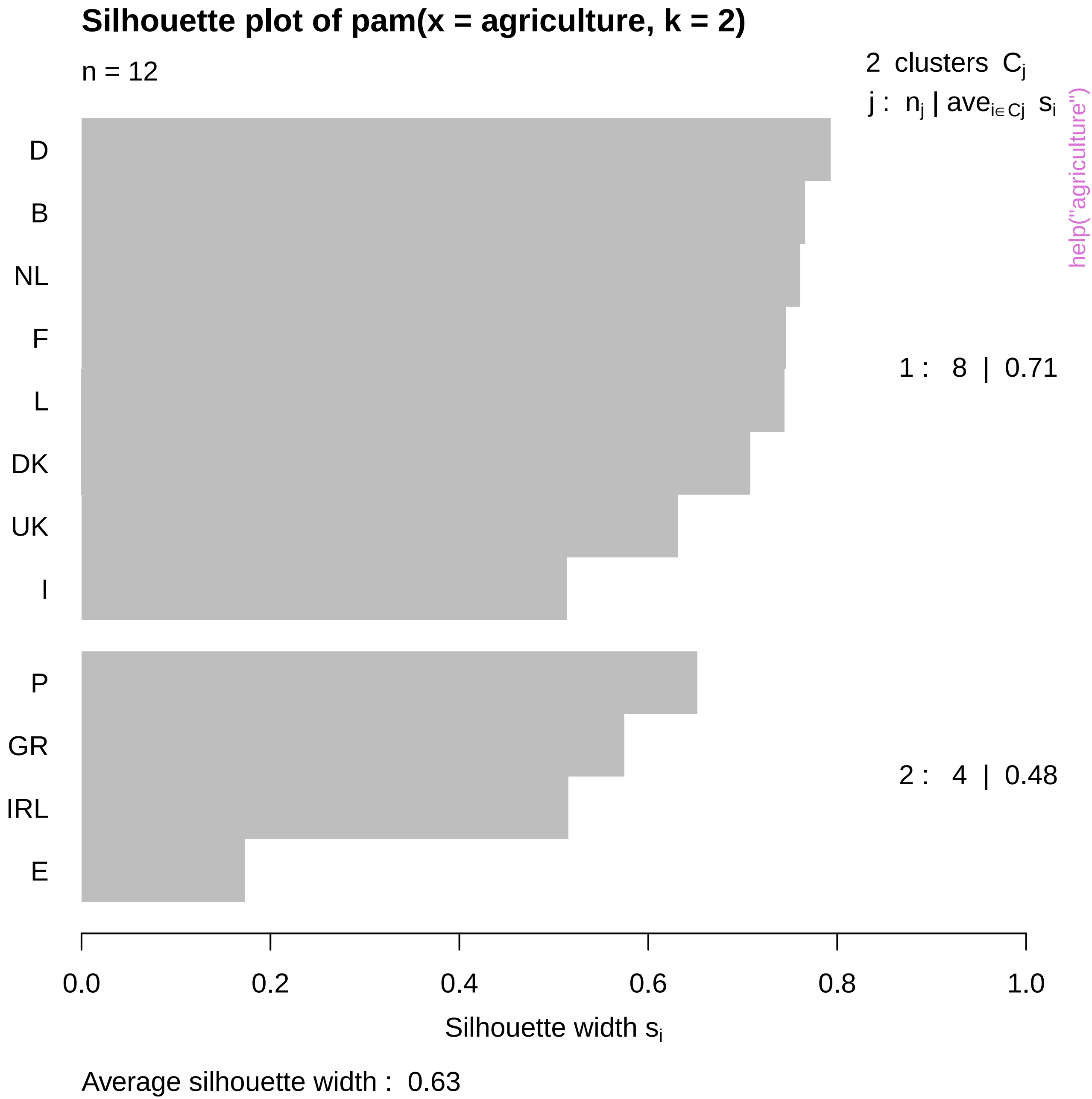
Agglomerative Coefficient = 0.78

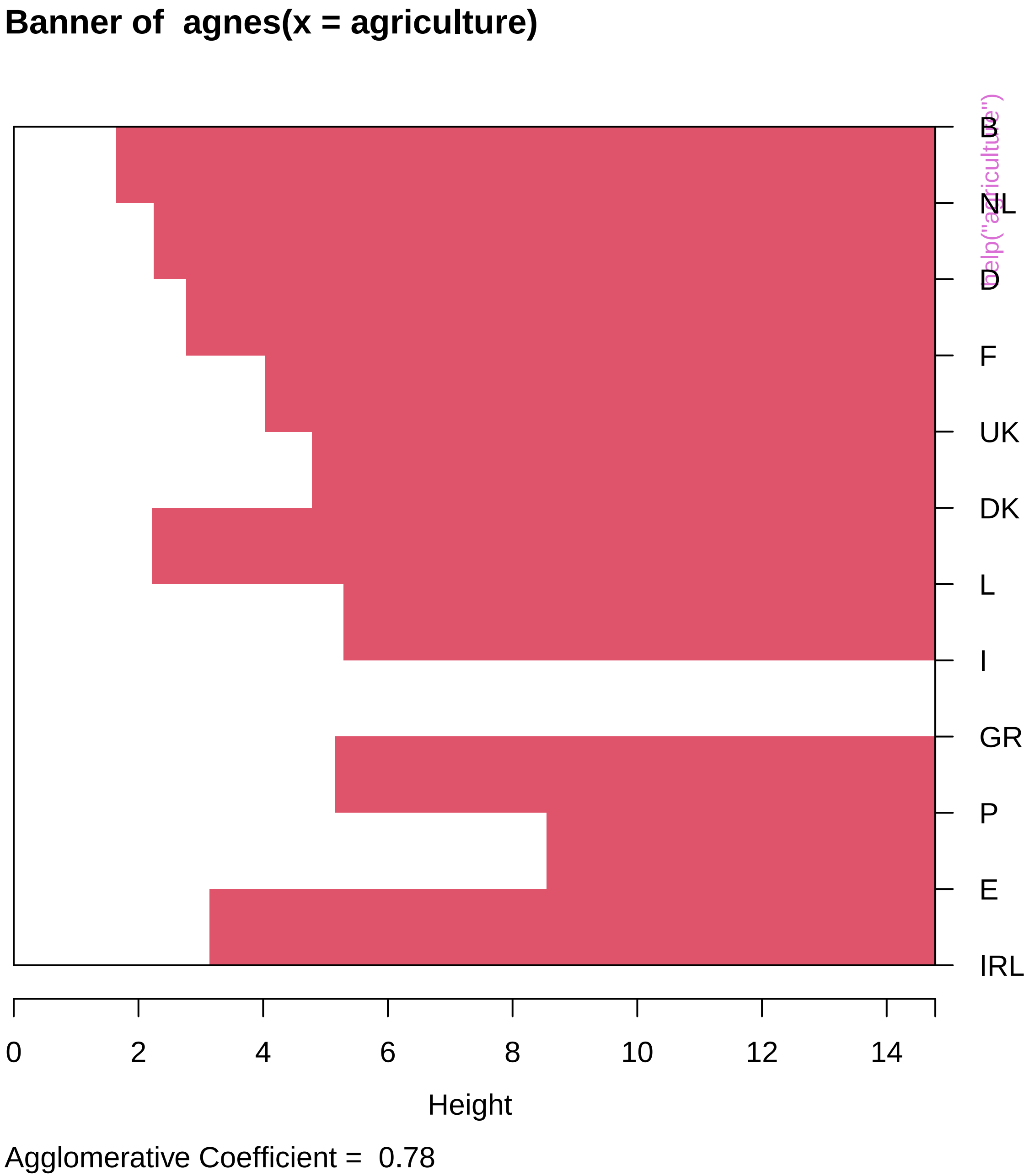

Dendrogram of agnes(x = agriculture)
Height
0
2
4
6
8
10
12
14
B
NL
D
F
UK
DK
L
I
GR
P
E
IRL
help("agnes")
agriculture
Agglomerative Coefficient = 0.78

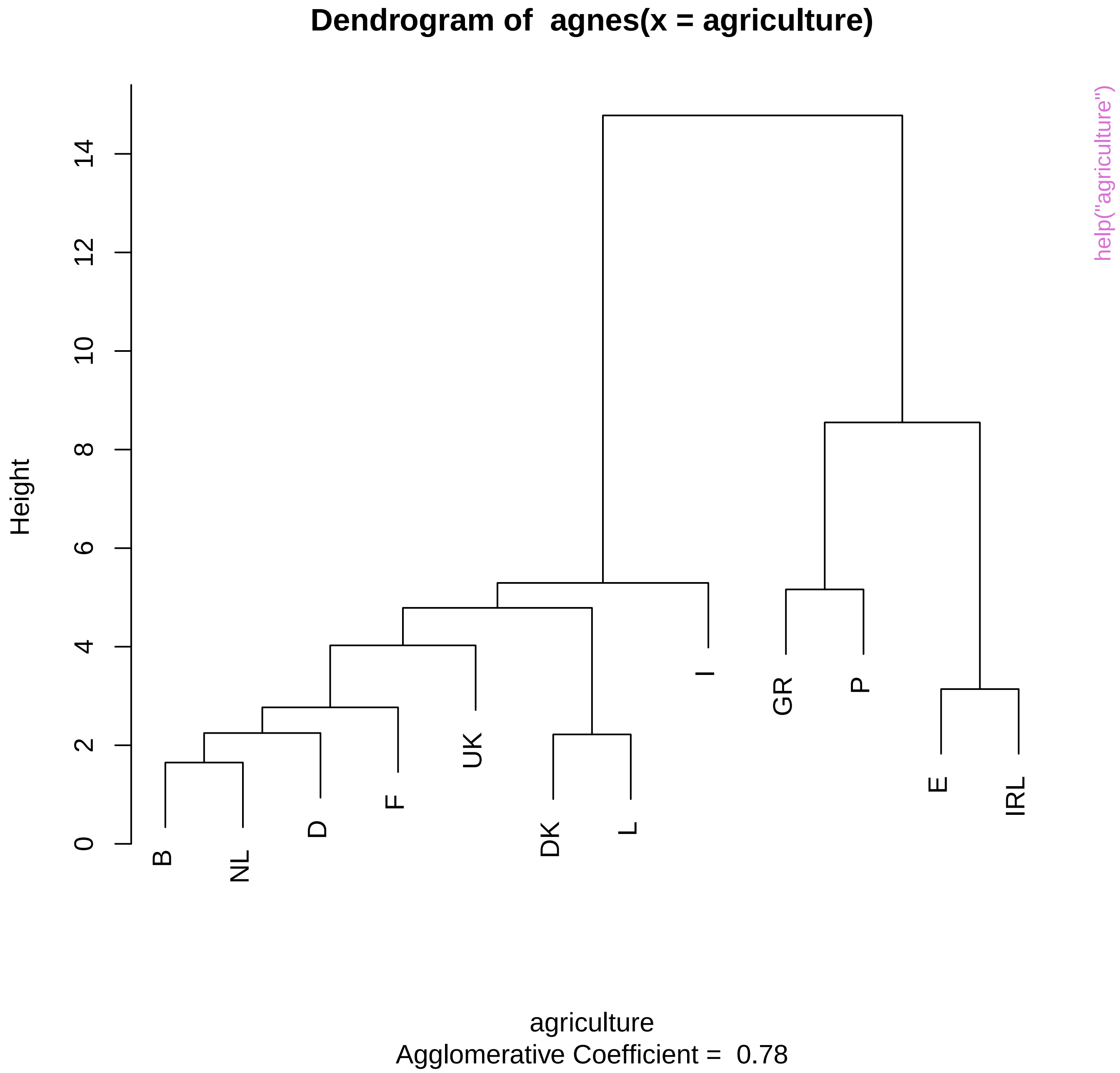

Dendrogram of agnes(x = animals)
Height
0.0
0.5
1.0
1.5
ant
lob
fro
her
liz
sal
bee
fly
cpl
spi
cat
chi
man
cow
lio
rab
ele
wha
duc
eag
animals
Agglomerative Coefficient = 0.77
Dendrogram of agnes(x = animals, method = "gaver
Height
0.0
0.5
1.0
1.5
2.0
2.5
ant
lob
fly
her
liz
sal
bee
cpl
spi
cat
chi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

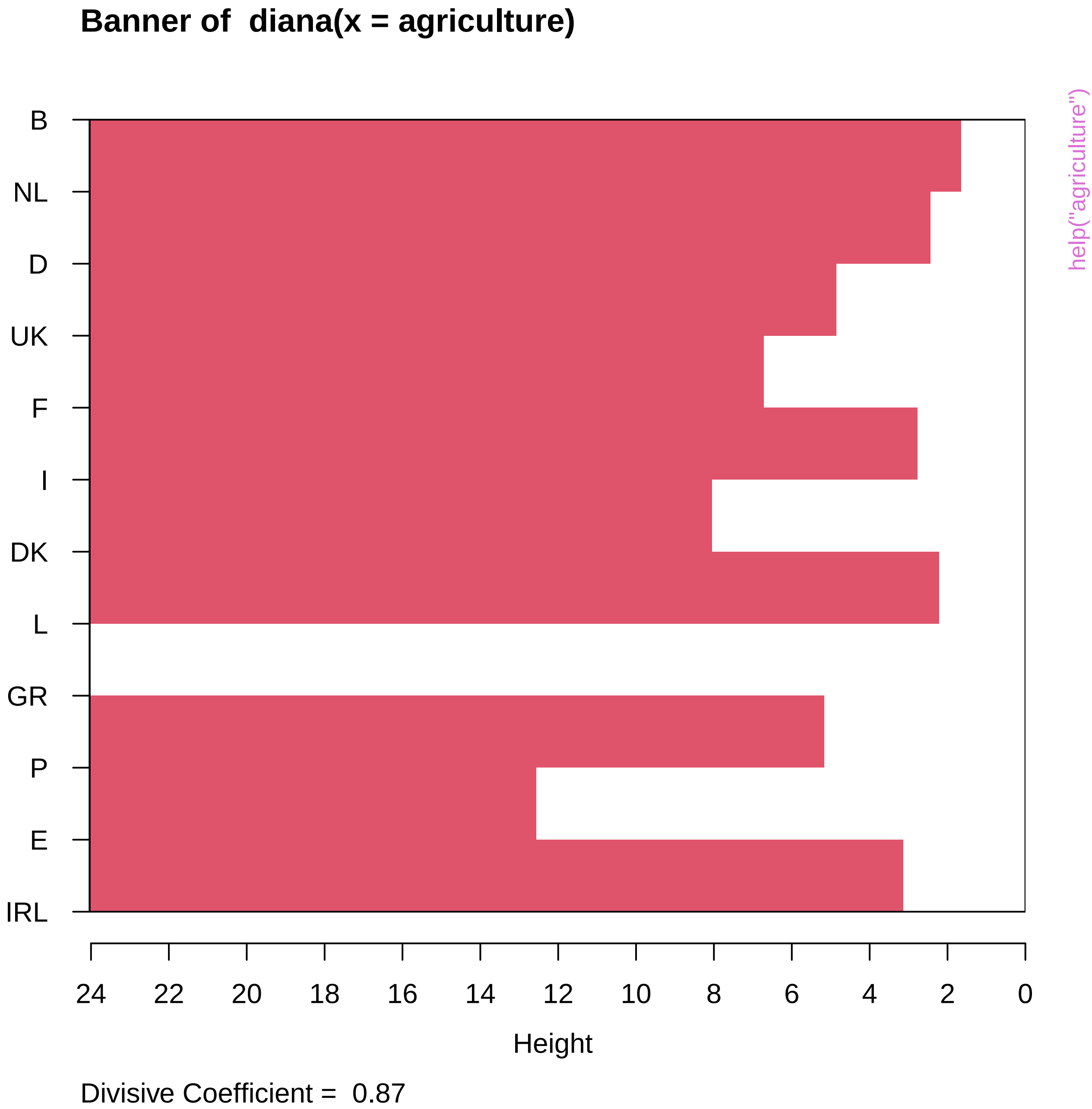

clusplot(pam(x = agriculture, k = 2))
Component 2
4
2
0
−2
−4
−15
−10
−5
0
5
Component 1
These two components explain 100 % of the point variability.
help("agriculture")

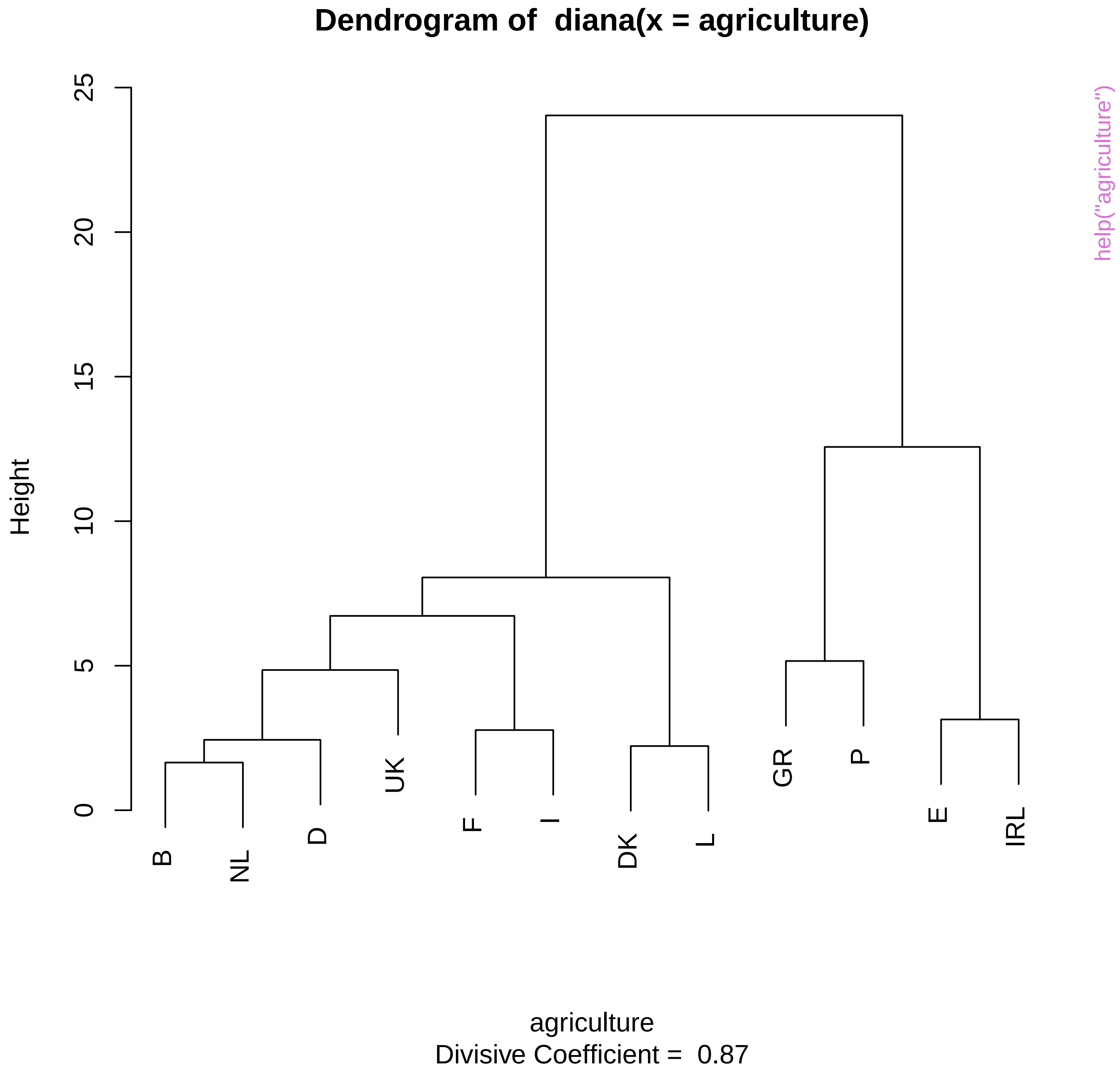

Silhouette plot of pam(x = agriculture, k = 2)
n = 12
2 clusters C_j
j : n_j | $ave_{i \in C_j}$ s_i
help("agriculture")
D
B
NL
F
L
DK
UK
I
P
GR
IRL
E
1 : 8 | 0.71
2 : 4 | 0.48
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.63

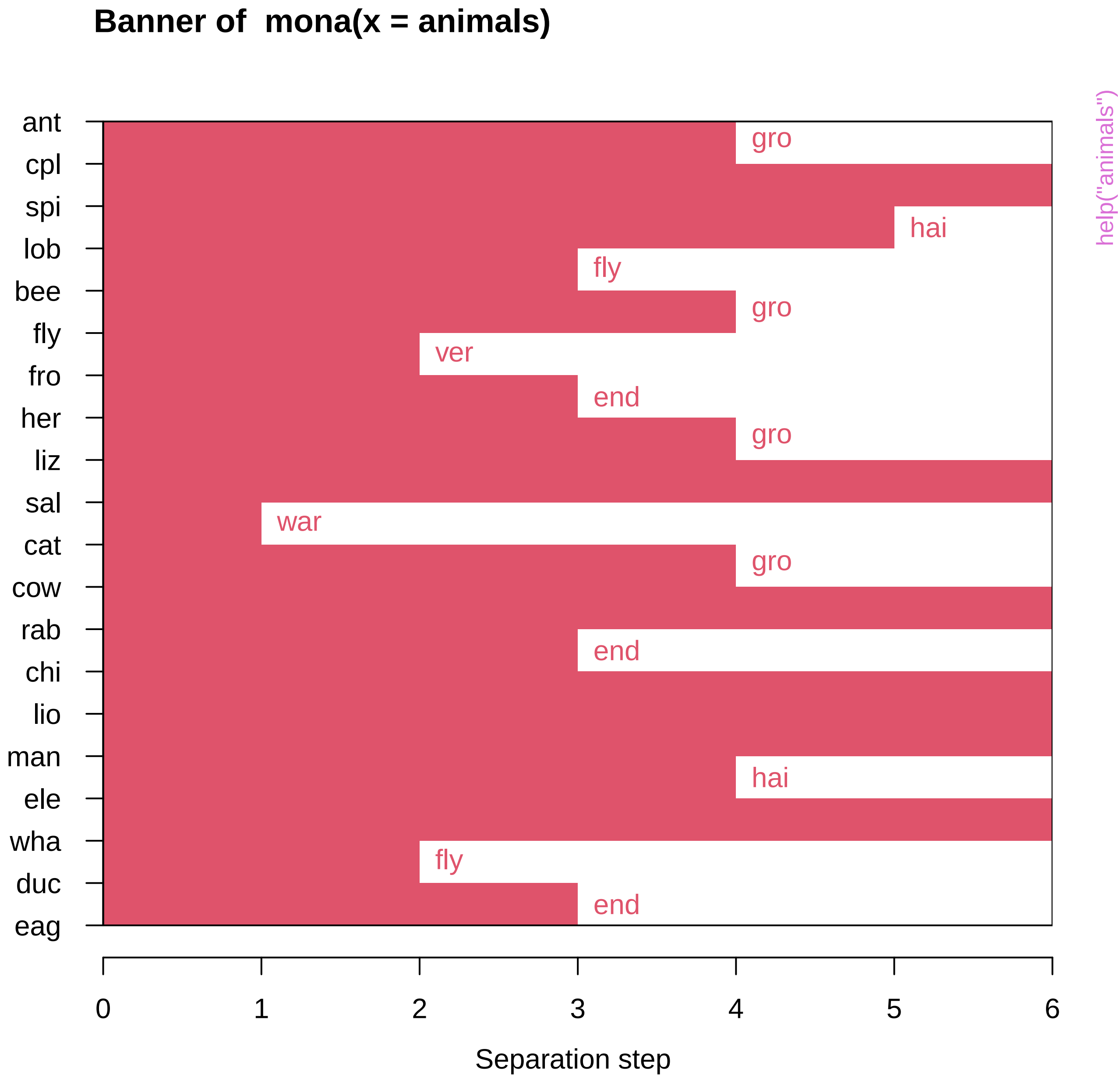

Banner of agnes(x = agriculture)
help("agriculture")
B
NL
D
F
UK
DK
L
I
GR
P
E
IRL
0
2
4
6
8
10
12
14
Height
Agglomerative Coefficient = 0.78



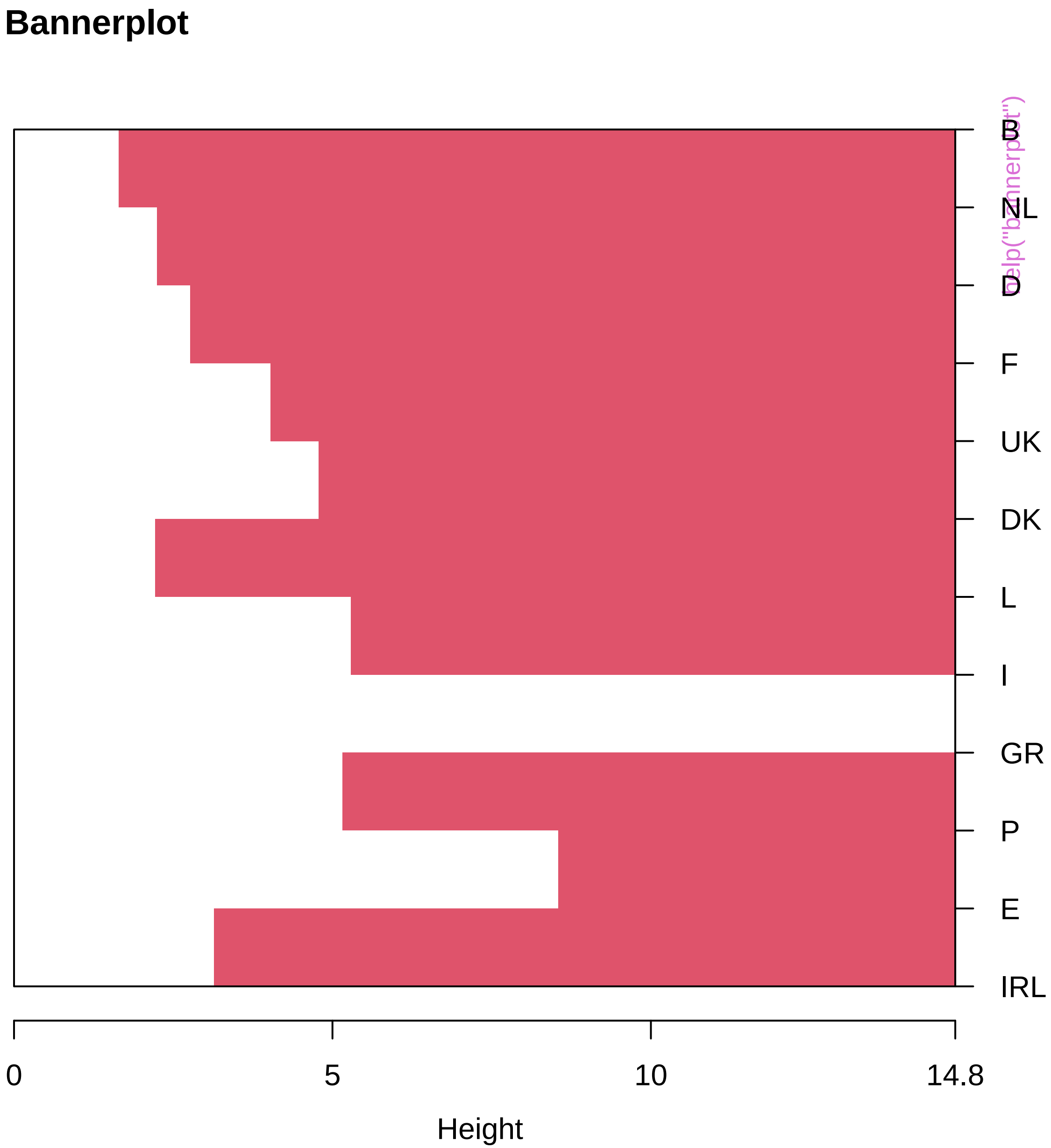
Dendrogram of agnes(x = agriculture)
Height
0
2
4
6
8
10
12
14
B
NL
D
F
UK
DK
L
I
GR
P
E
IRL
help("agriculture")
agriculture
Agglomerative Coefficient = 0.78

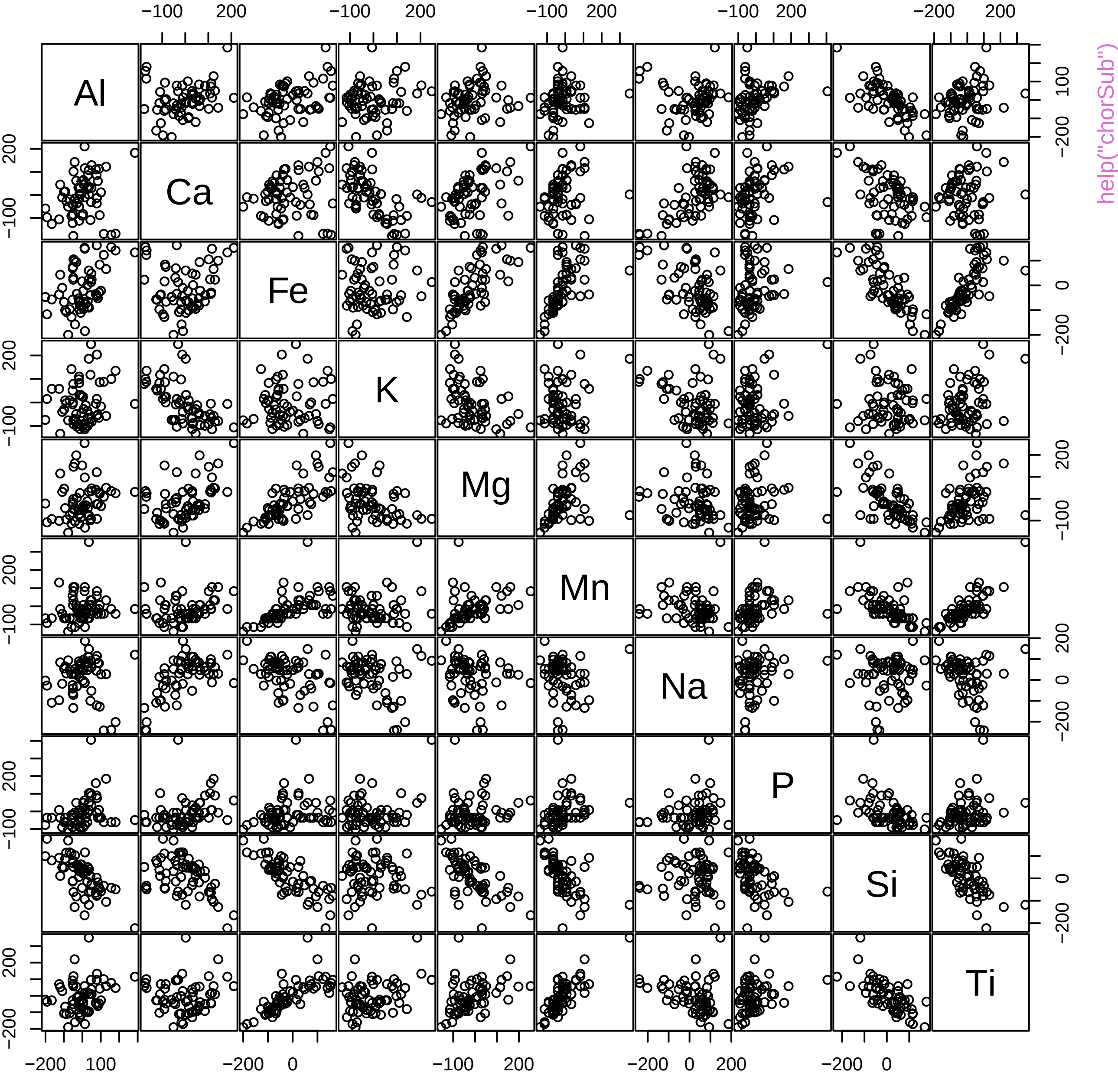

Banner of diana(x = agriculture)
B
NL
D
UK
F
I
DK
L
GR
P
E
IRL
24
22
20
18
16
14
12
10
8
6
4
2
0
Height
Divisive Coefficient = 0.87
help("agriculture")


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

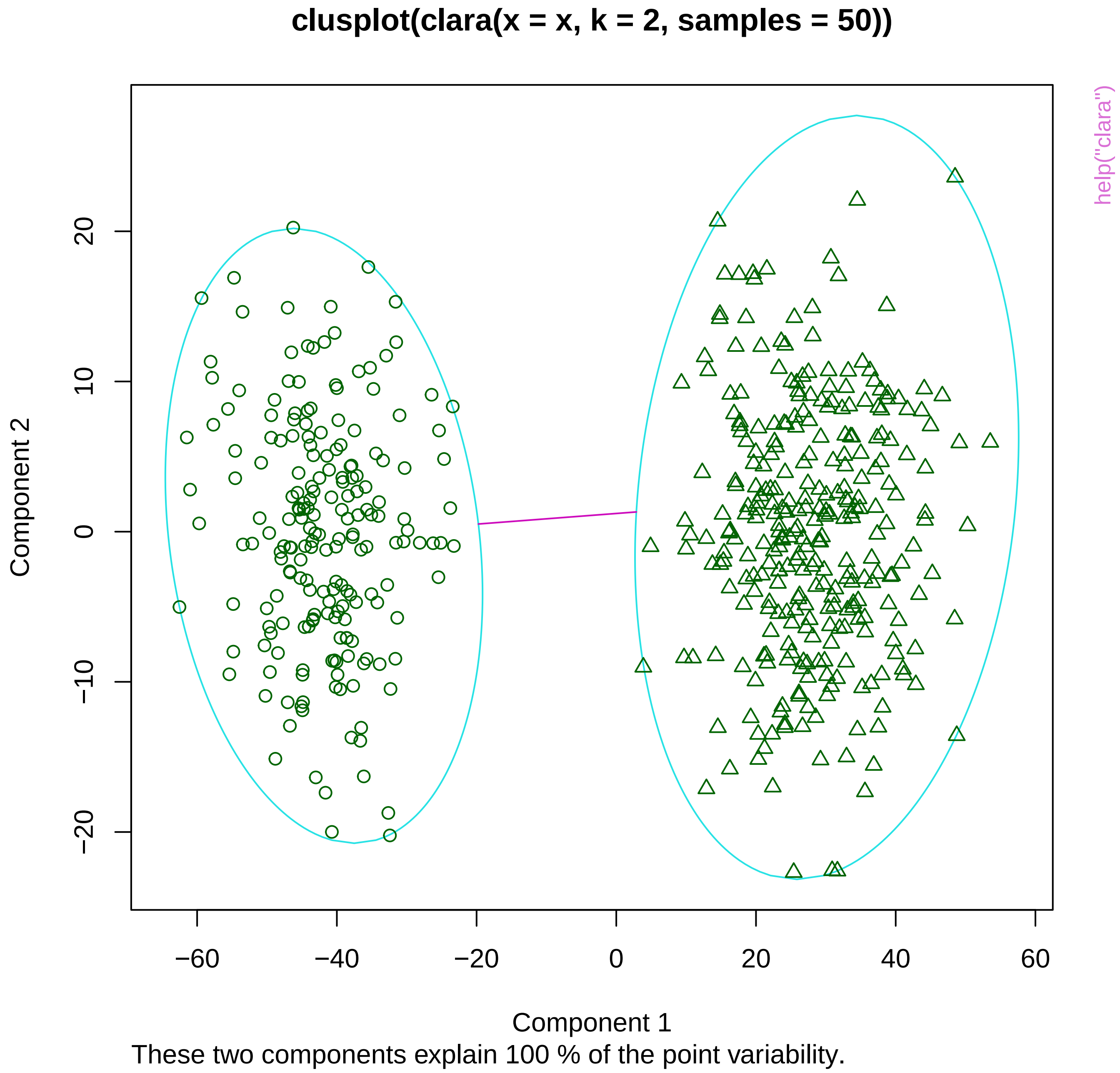


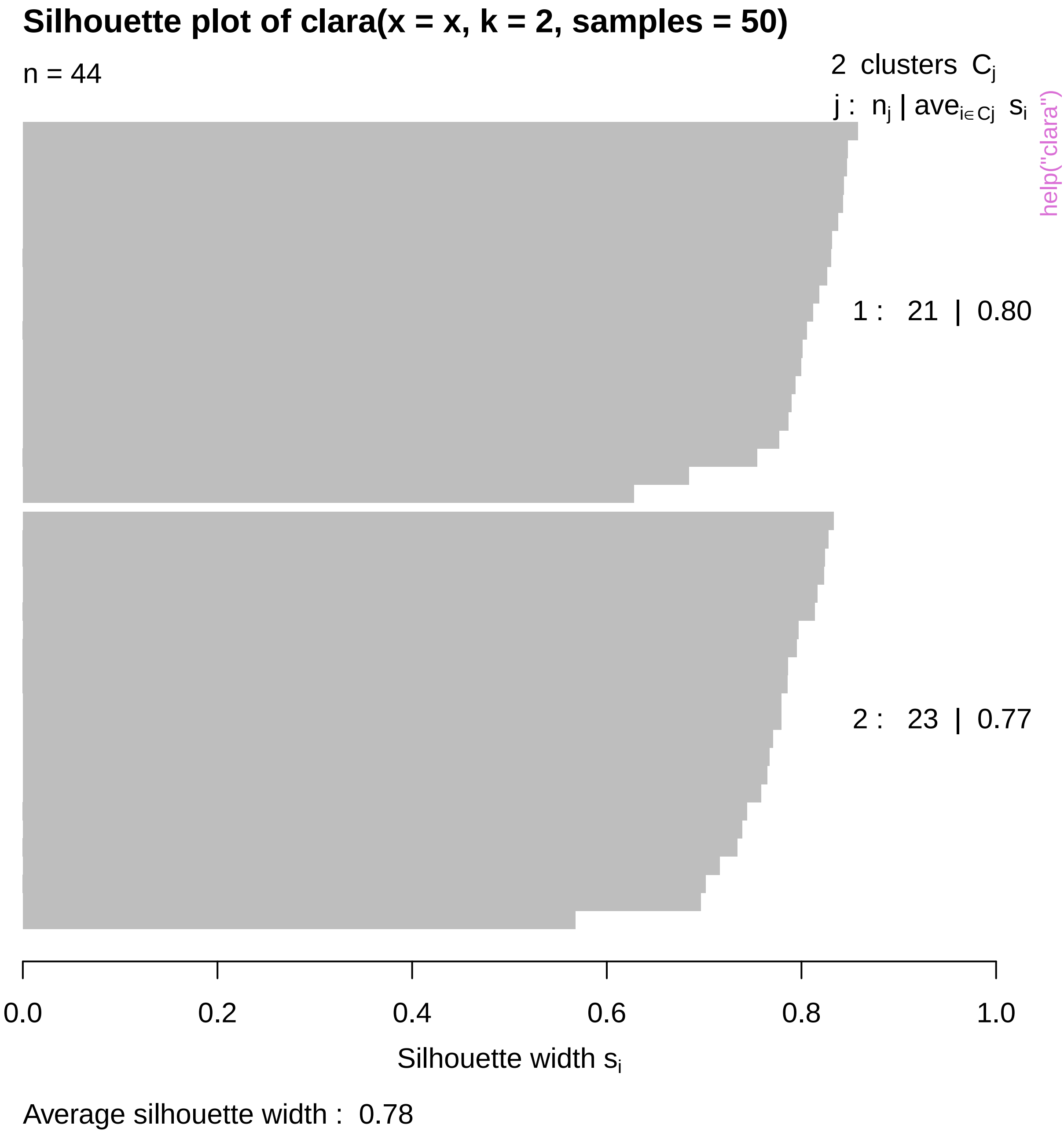
Banner of mona(x = animals)
ant
cpl
spi
lob
bee
fly
fro
her
liz
sal
cat
cow
rab
chi
lio
man
ele
wha
duc
eag
gro
hai
fly
gro
ver
end
gro
war
gro
end
hai
fly
end
0
1
2
3
4
5
6
Separation step
help("animals")


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

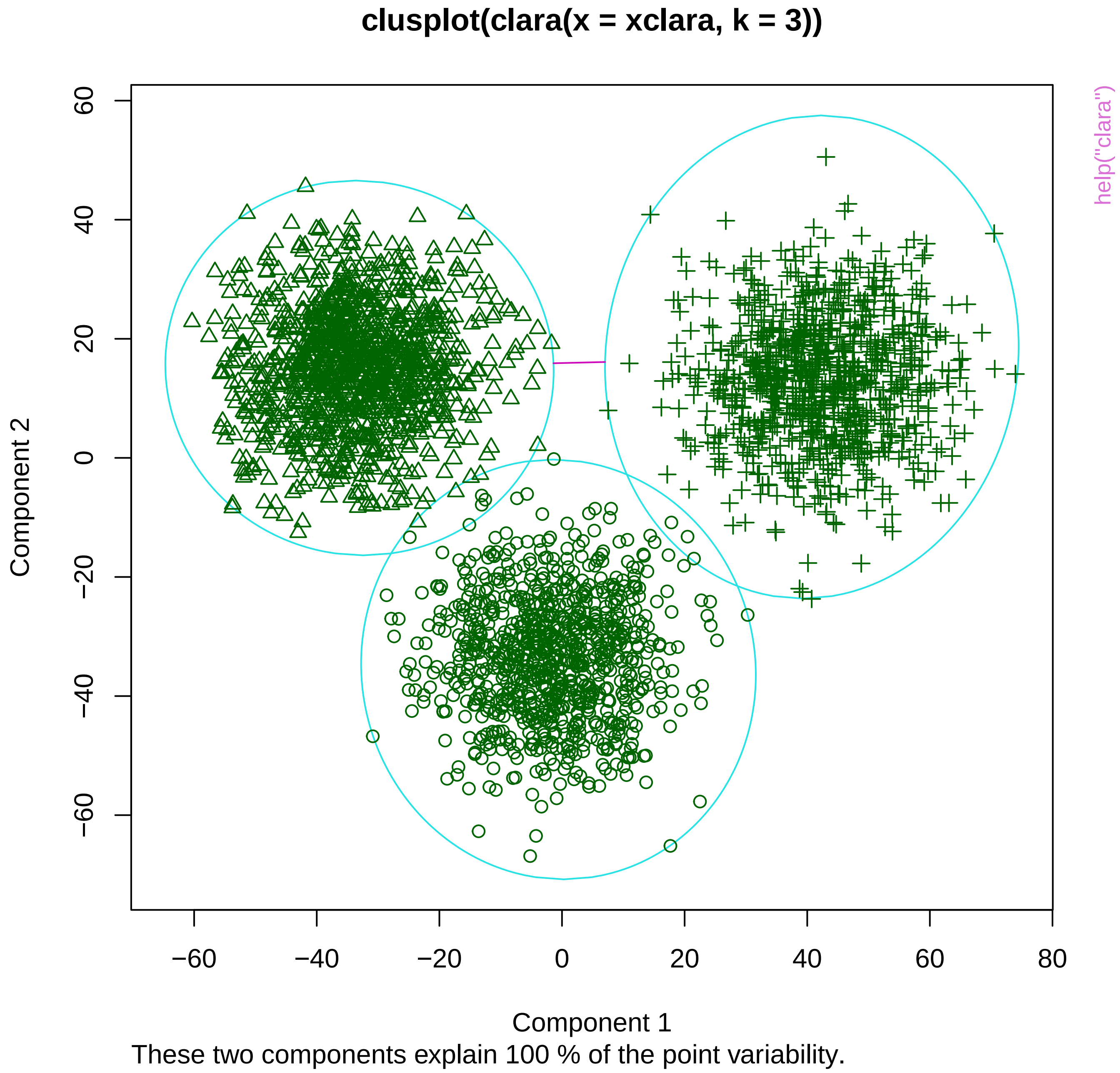


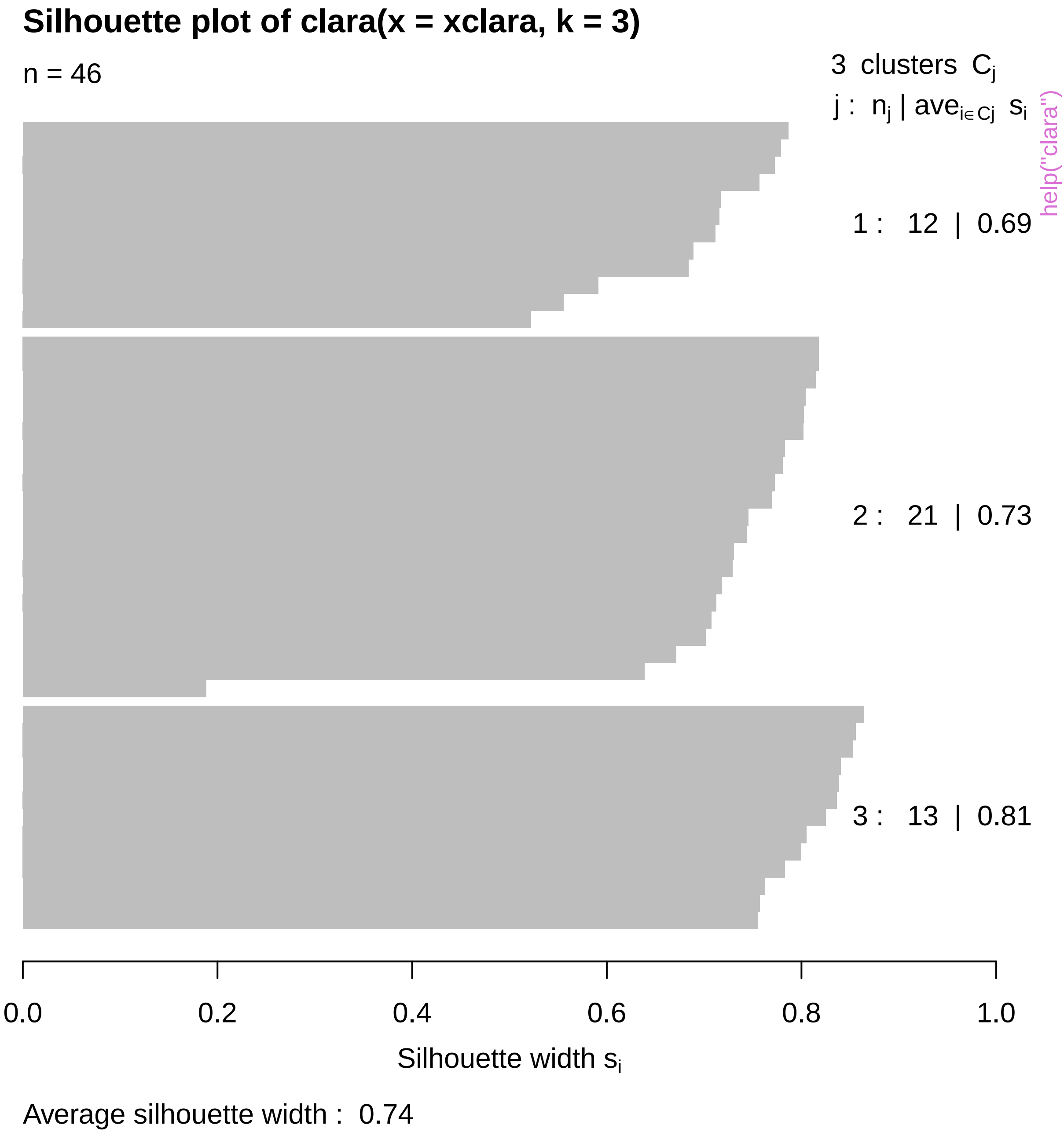
Al
Ca
Fe
K
Mg
Mn
Na
P
Si
Ti
help("chorSub")

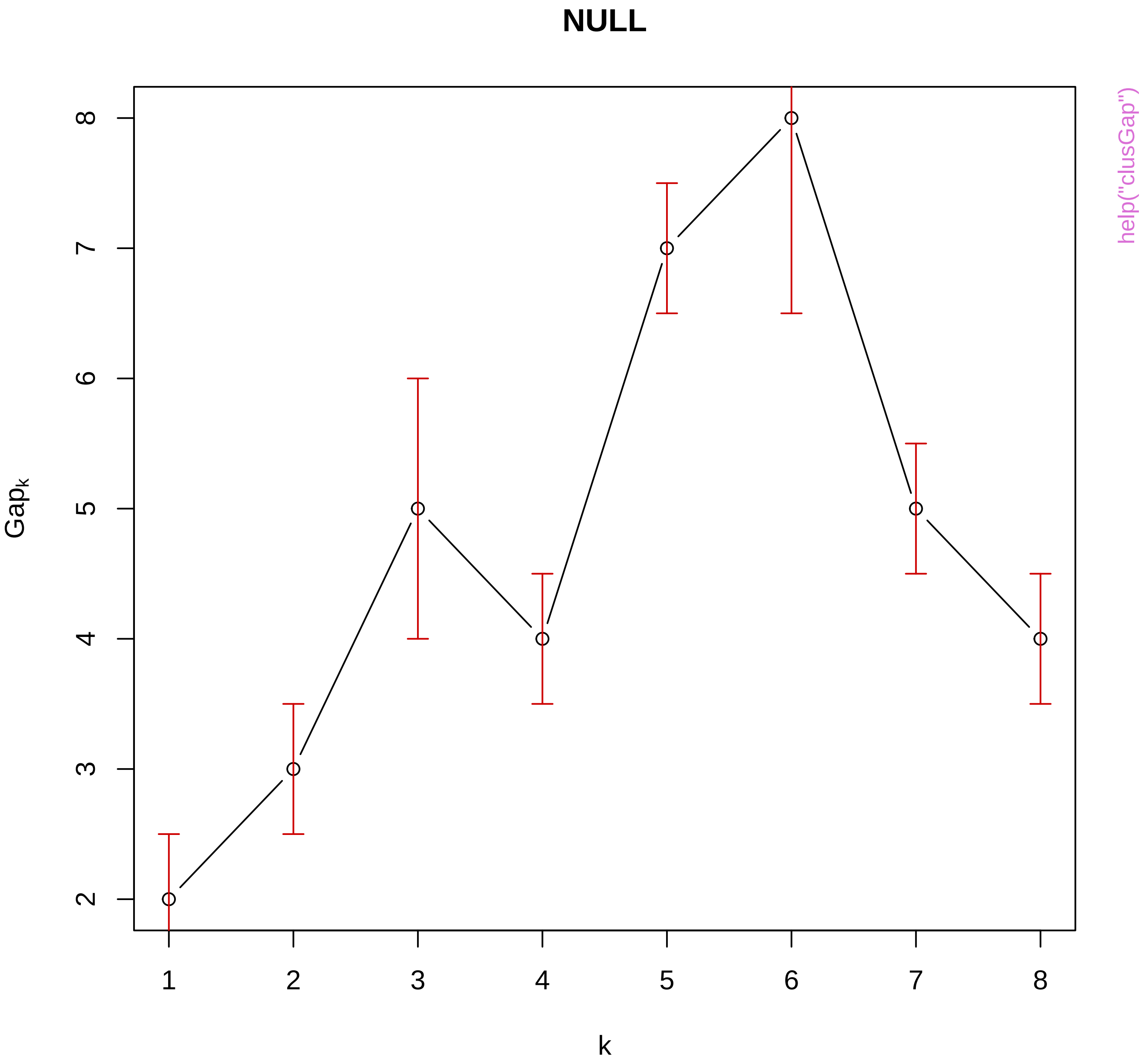

clusplot(clara(x = x, k = 2, samples = 50))
help("clara")
Component 2
20
10
0
−10
−20
−60
−40
−20
0
20
40
60
Component 1
These two components explain 100 % of the point variability.



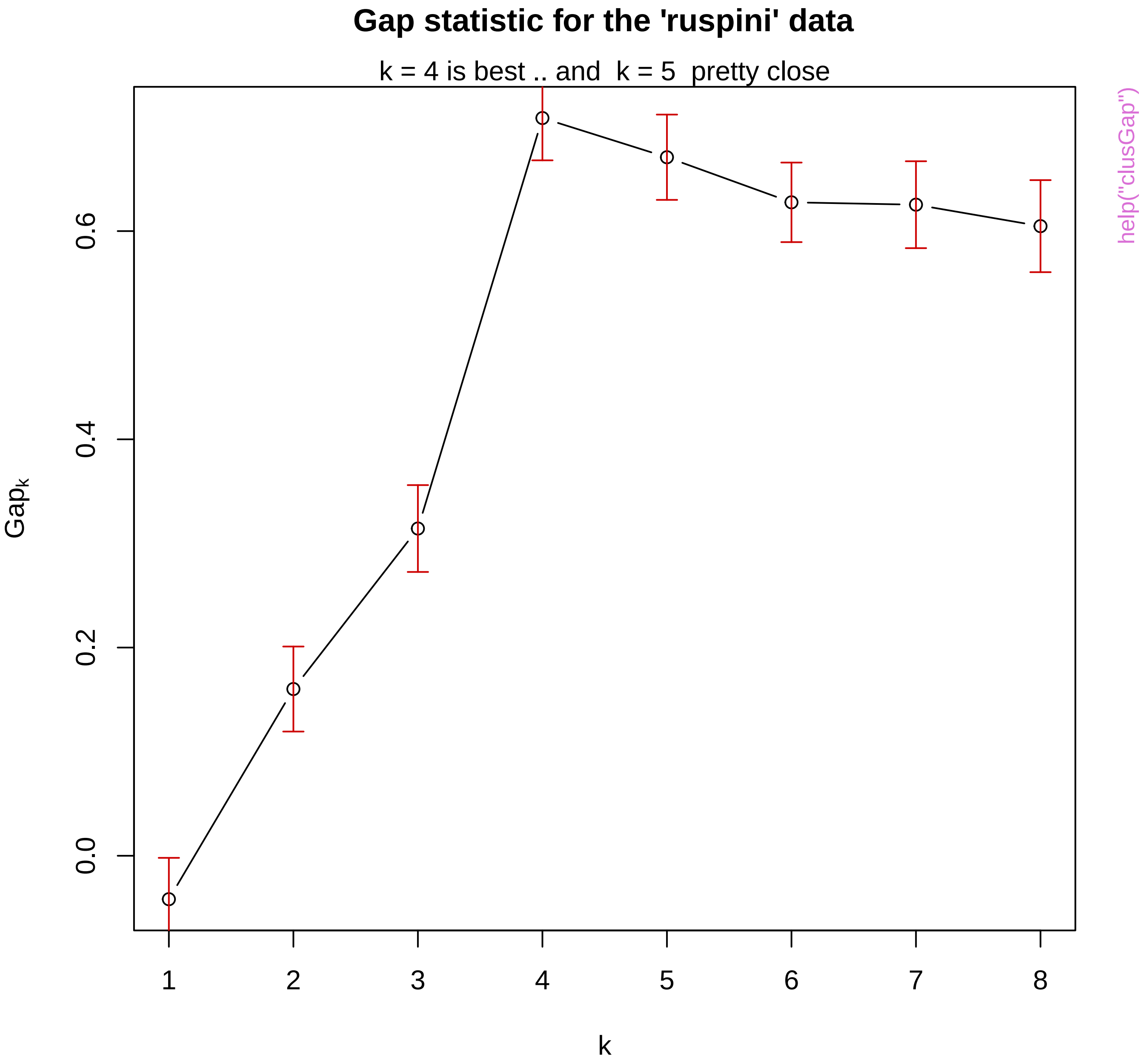
Silhouette plot of clara(x = x, k = 2, samples = 50)
n = 44
2 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("clara")
1 : 21 | 0.80
2 : 23 | 0.77
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.78

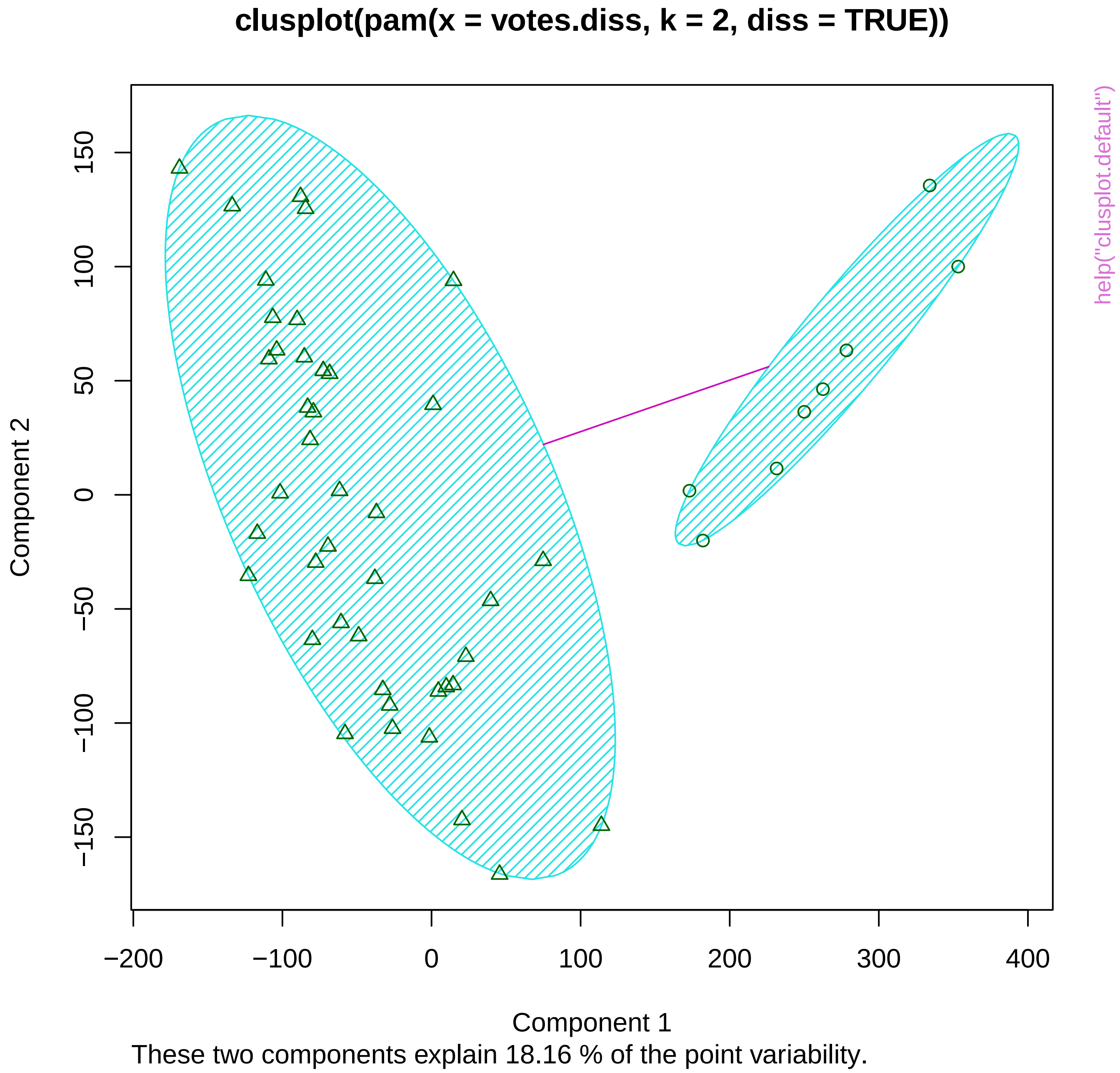

clusplot(clara(x = xclara, k = 3))
help("clara")
Component 2
60
40
20
0
−20
−40
−60
−60
−40
−20
0
20
40
60
80
Component 1
These two components explain 100 % of the point variability.


Silhouette plot of clara(x = xclara, k = 3)
n = 46
3 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("clara")
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

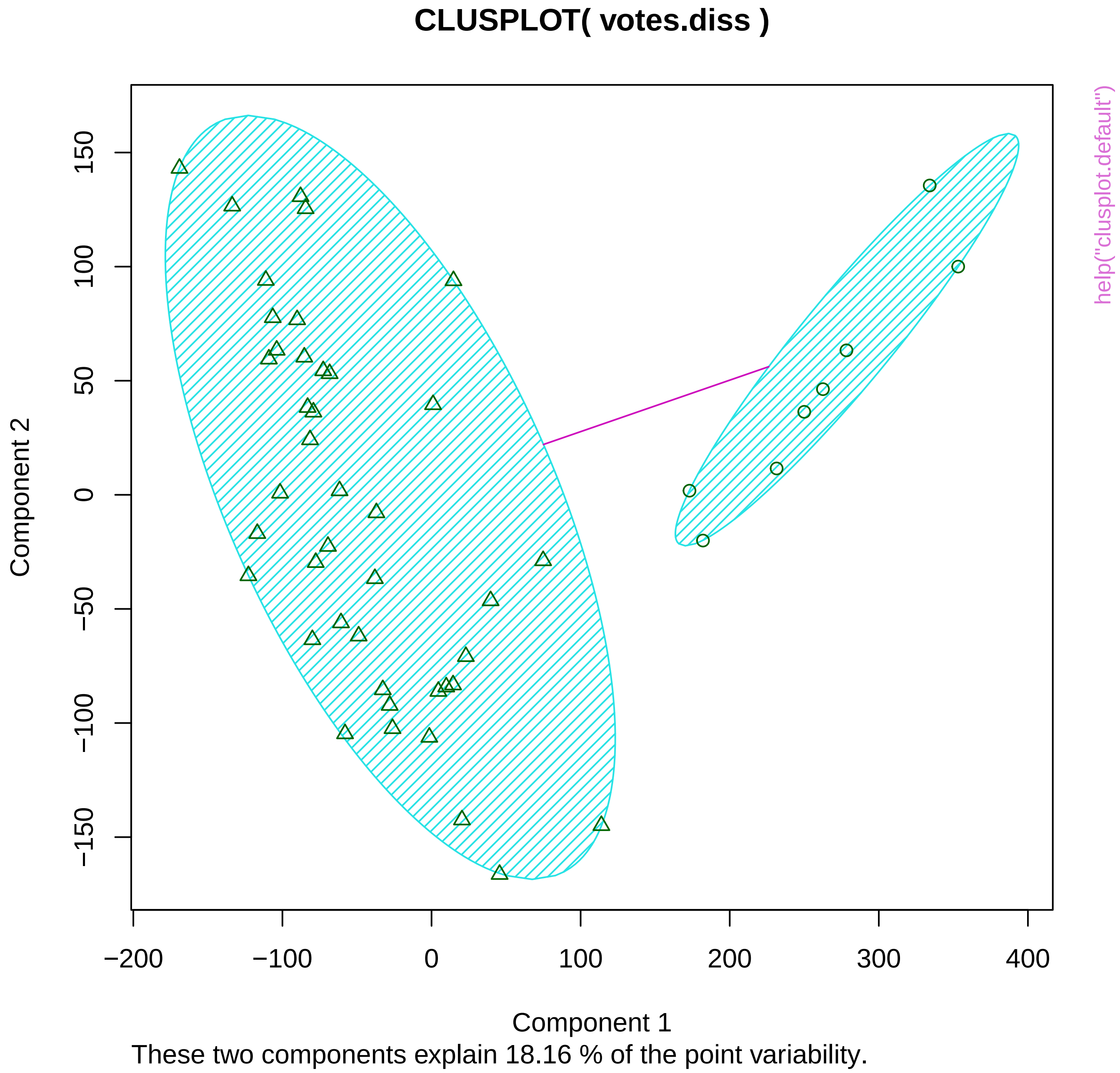


NULL
Gap$_k$
k
1
2
3
4
5
6
7
8
help("clusGap")

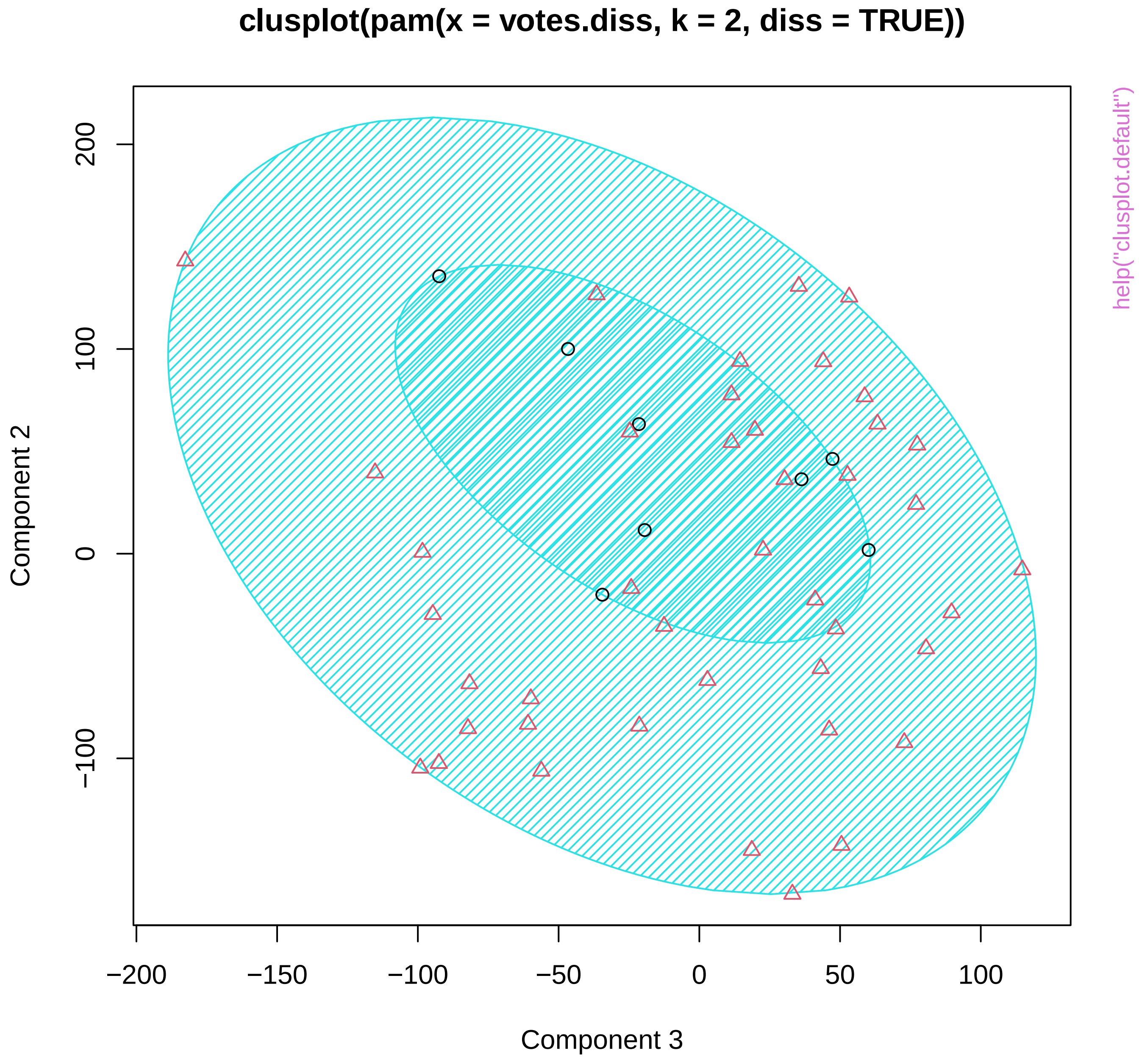

Gap statistic for the 'ruspini' data
k = 4 is best .. and k = 5 pretty close
help("clusGap")
Gap$_k$
0.0
0.2
0.4
0.6
1
2
3
4
5
6
7
8
k

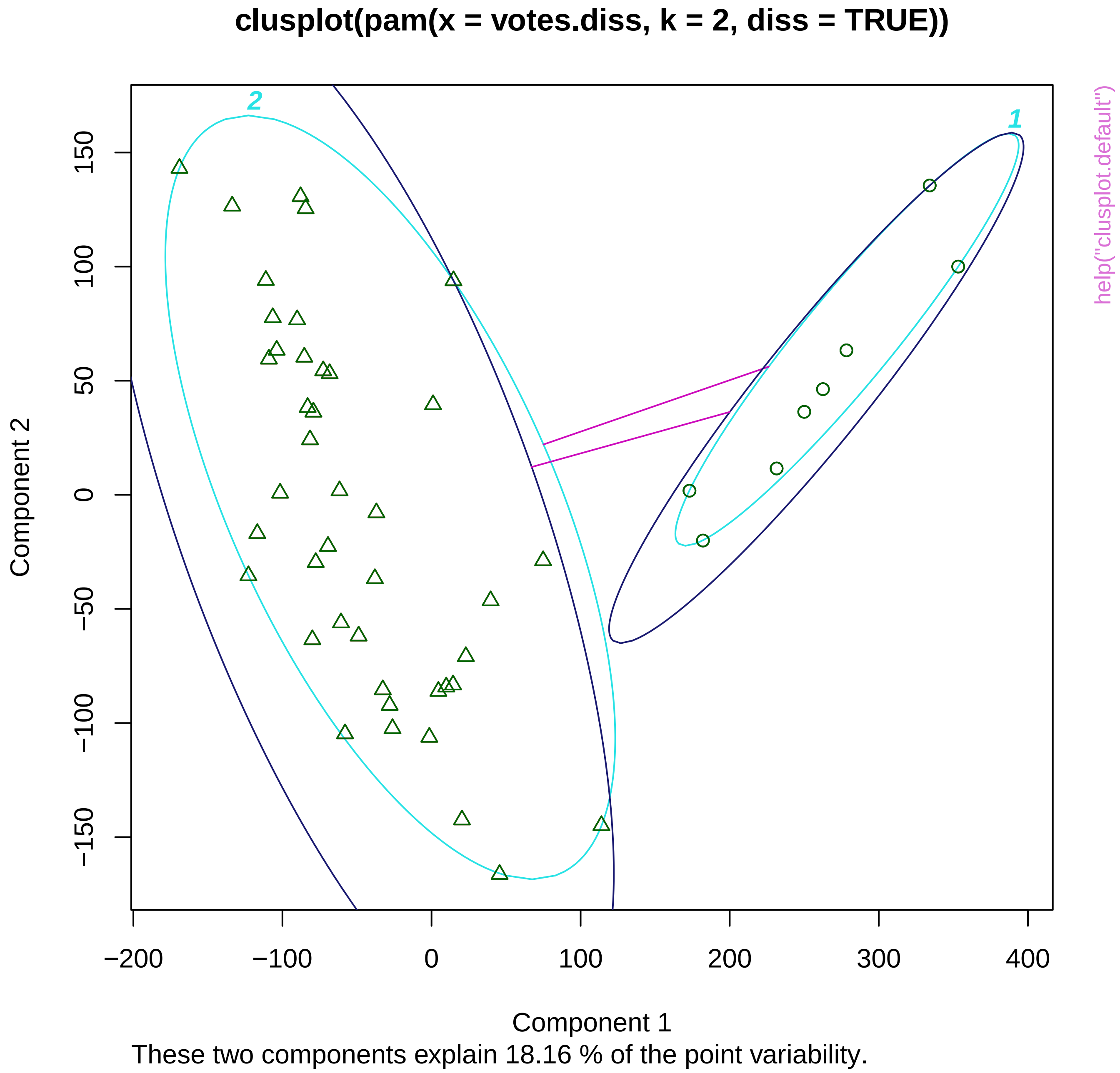


clusplot(pam(x = votes.diss, k = 2, diss = TRUE))
150
100
50
0
−50
−100
−150
Component 2
−200
−100
0
100
200
300
400
Component 1
These two components explain 18.16 % of the point variability.
help("clusplot.default")

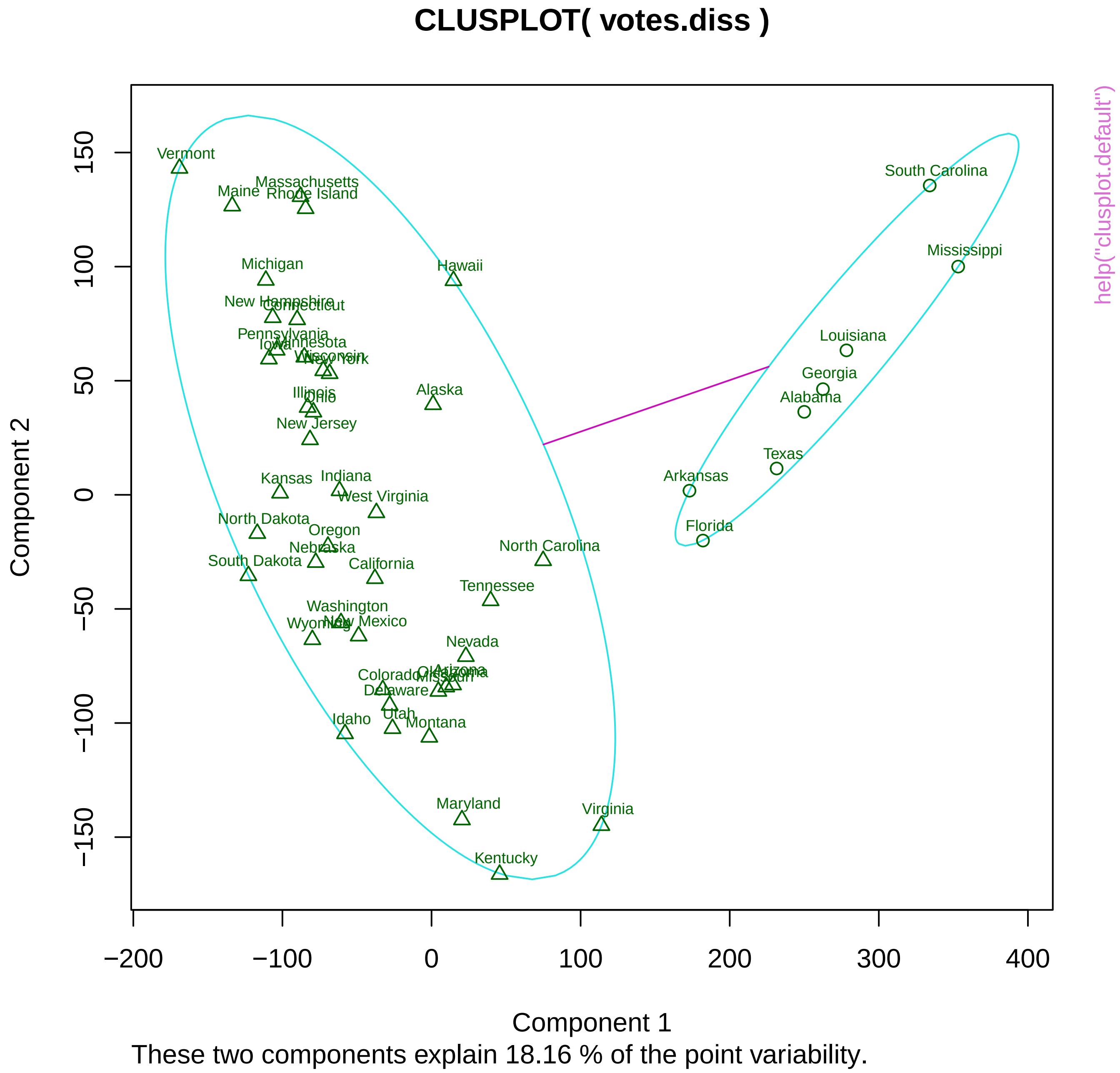


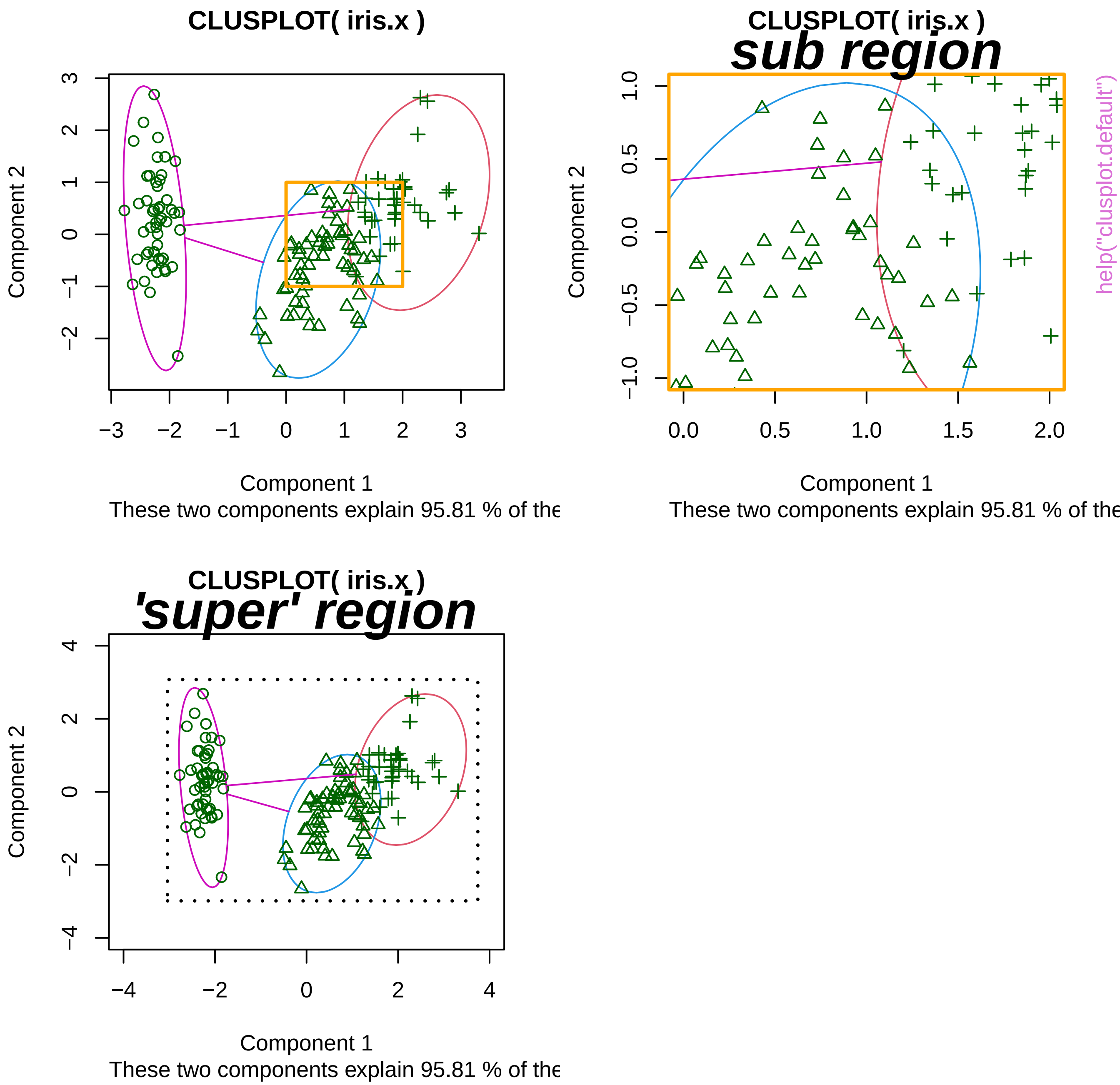
CLUSPLOT(votes.diss)
Component 1
Component 2
−200
−100
0
100
200
300
400
150
100
50
0
−50
−100
−150
These two components explain 18.16 % of the point variability.
help("clusplot.default")


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

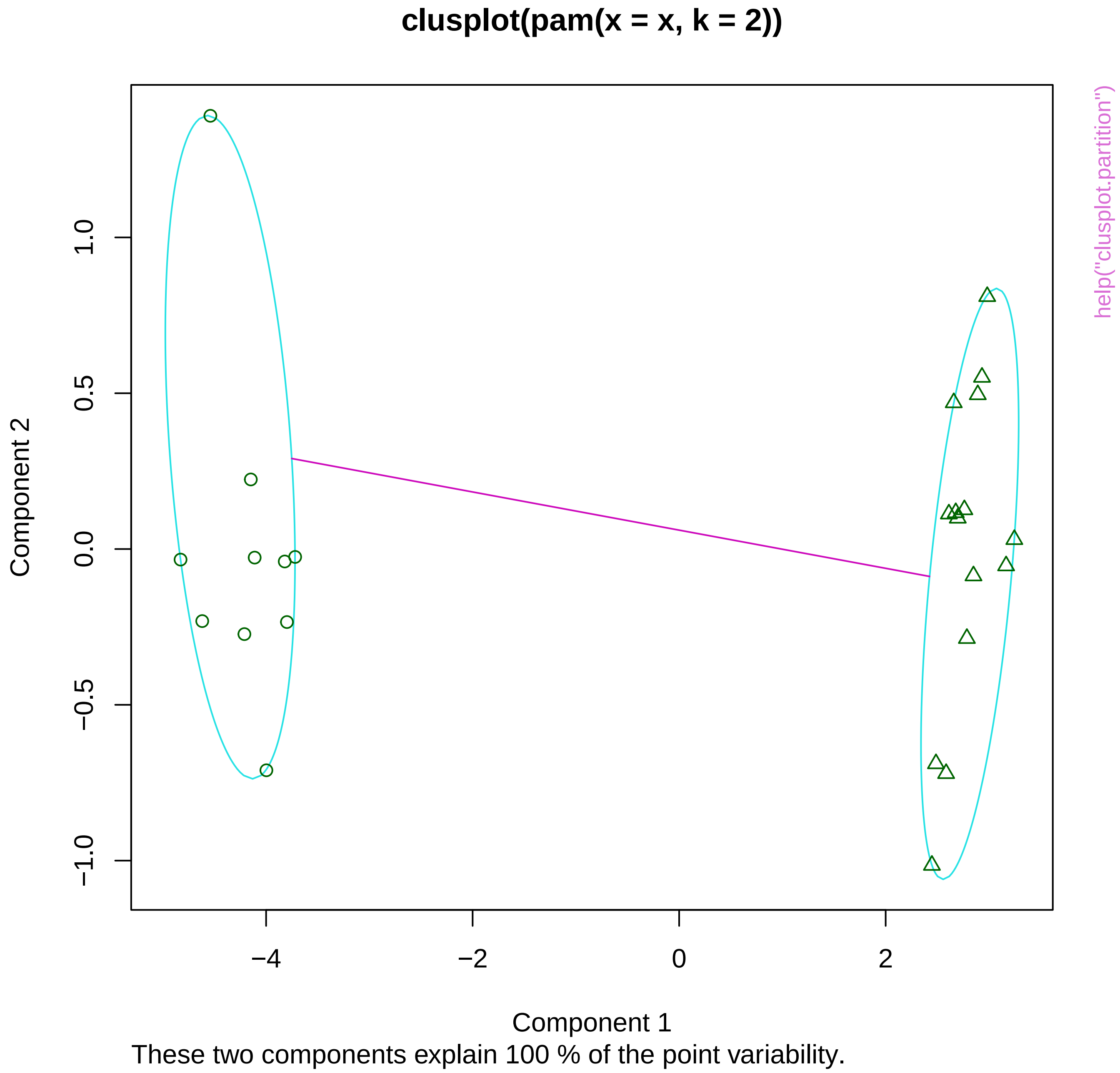


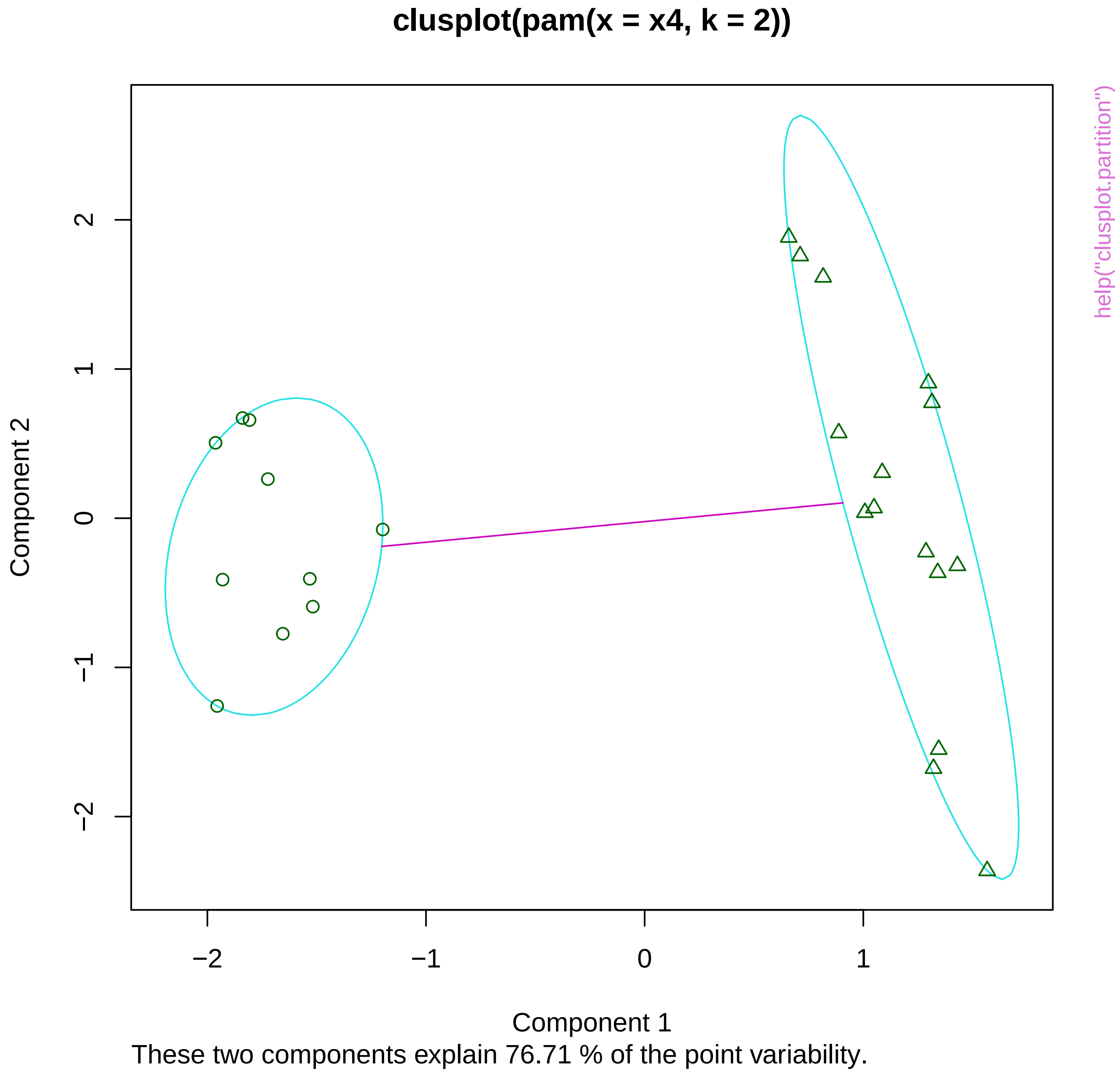
clusplot(pam(x = votes.diss, k = 2, diss = TRUE))
Component 1
Component 2
These two components explain 18.16 % of the point variability.
help("clusplot.default")
1
2
−200
−100
0
100
200
300
400
−150
−100
−50
0
50
100
150


CLUSPLOT(votes.diss)
Component 2
Component 1
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

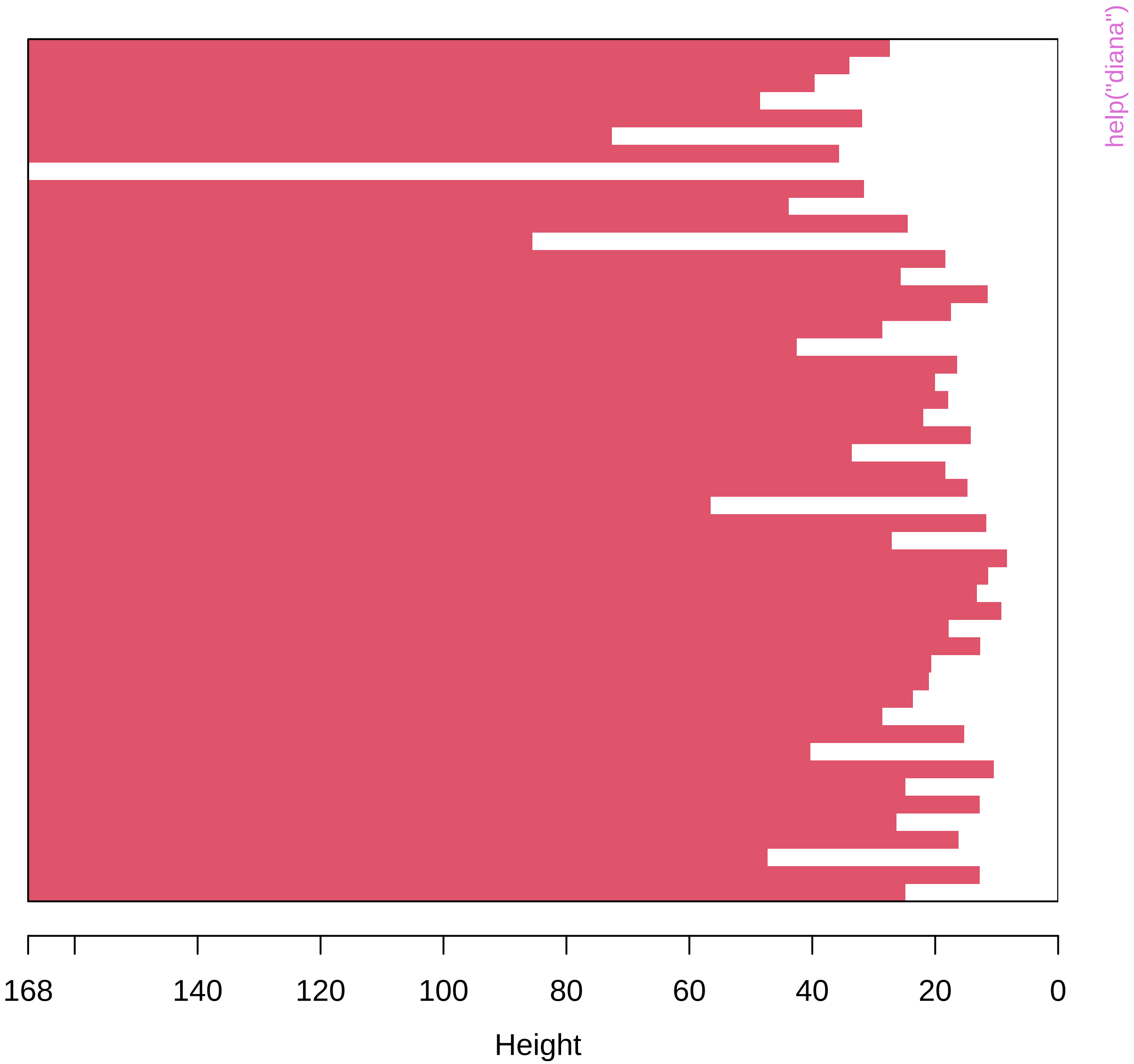


CLUSPLOT(iris.x)
Component 1
Component 2
These two components explain 95.81 % of the
CLUSPLOT(iris.x)
sub region
Component 1
Component 2
These two components explain 95.81 % of the
help("clusplot.default")
CLUSPLOT(iris.x)
'super' region
Component 1
Component 2
These two components explain 95.81 % of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

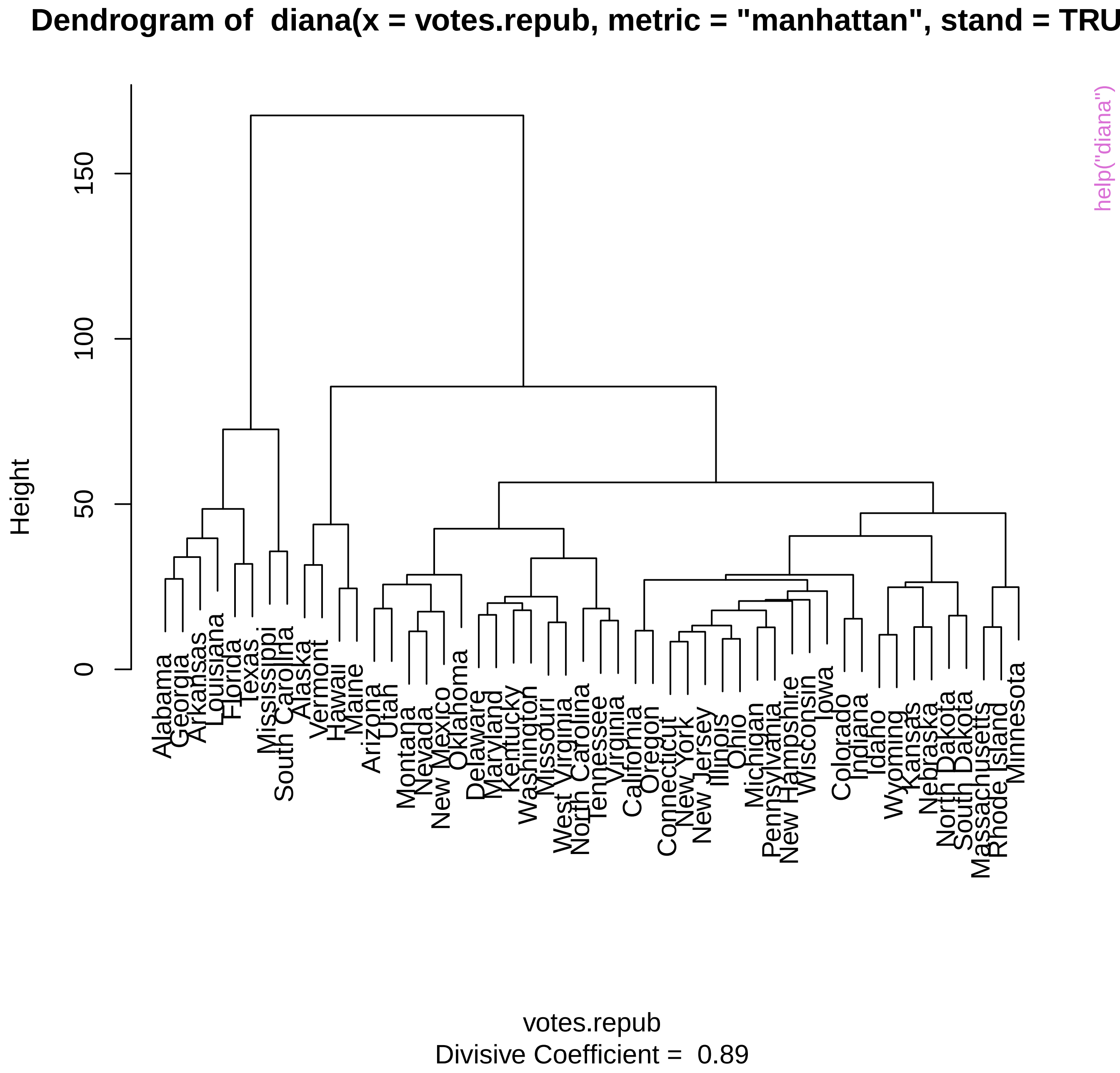

clusplot(pam(x = x, k = 2))
Component 1
Component 2
−4
−2
0
2
−1.0
−0.5
0.0
0.5
1.0
help("clusplot.partition")
These two components explain 100 % of the point variability.


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

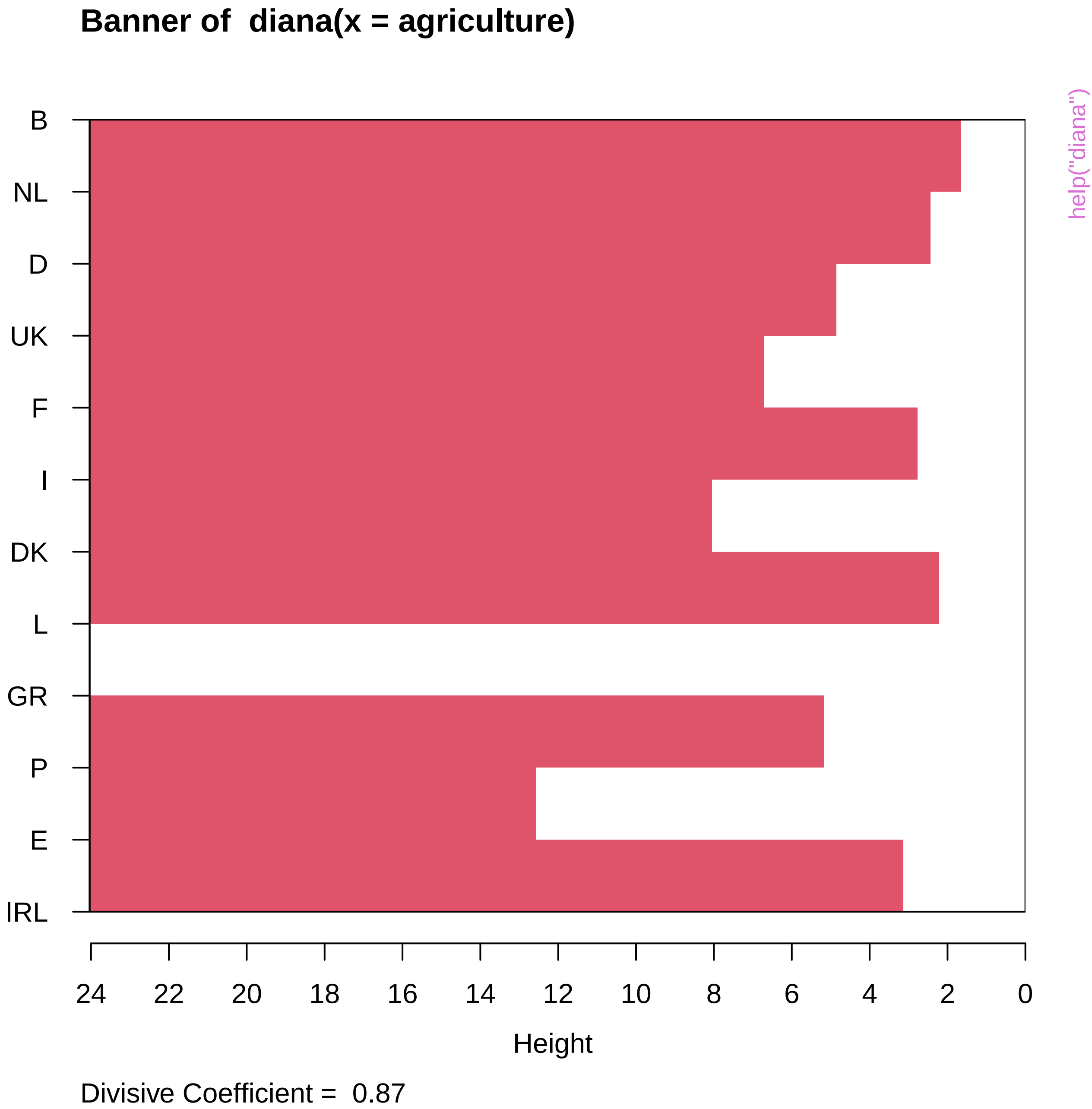
Banner of diana(x = votes.repub, metric = "manhattan", stand = TR

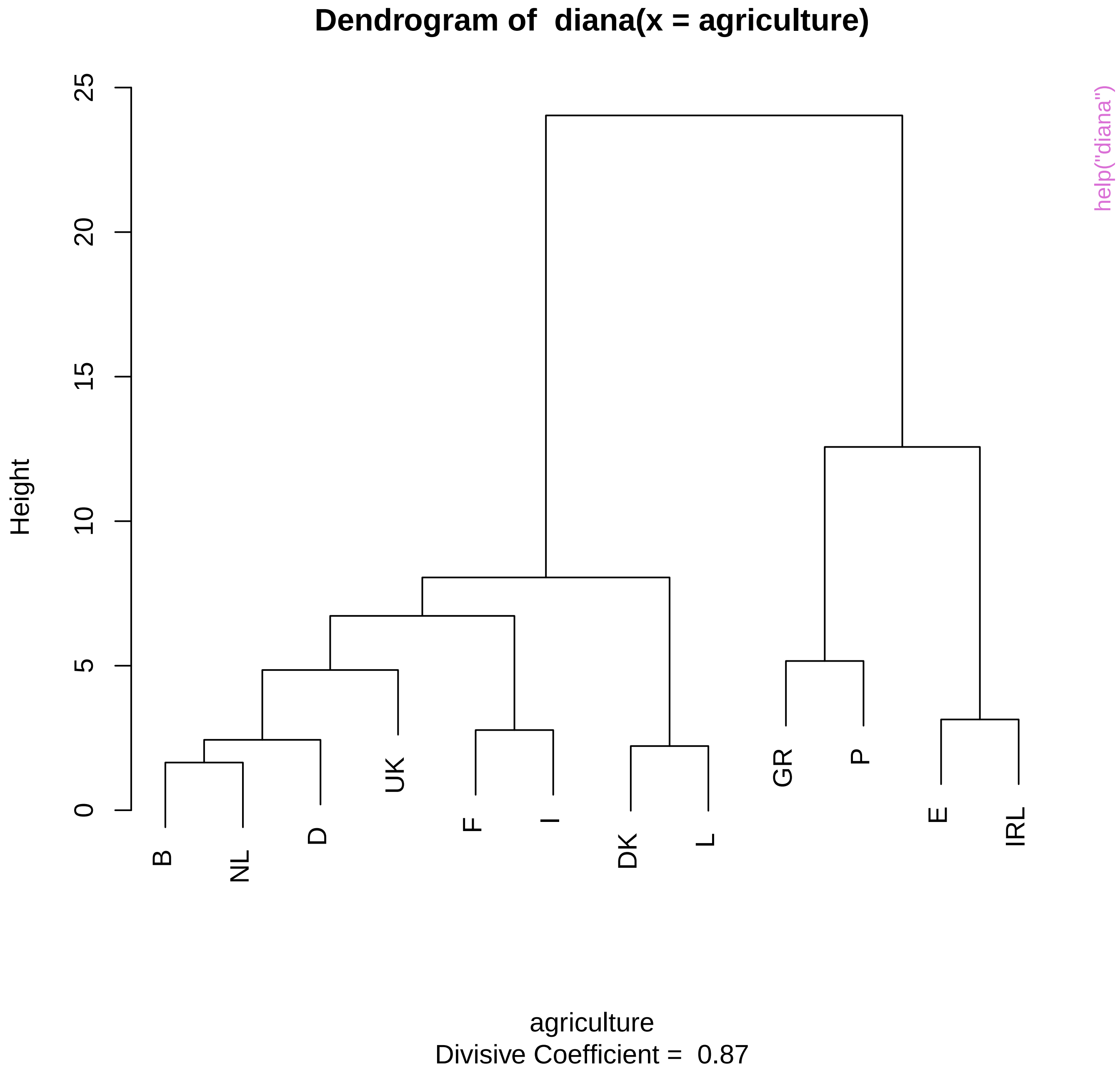


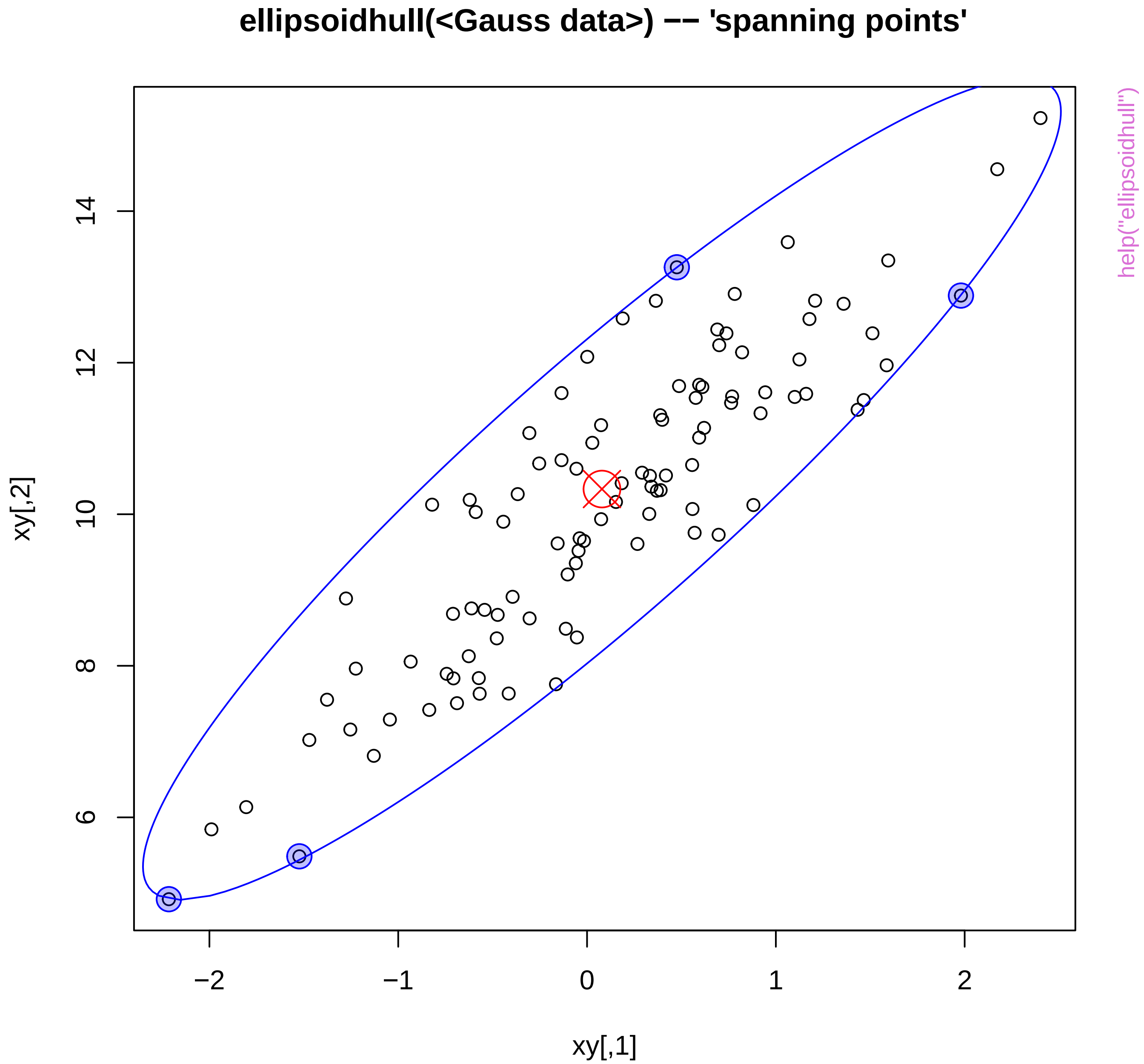
Divisive Coefficient = 0.89

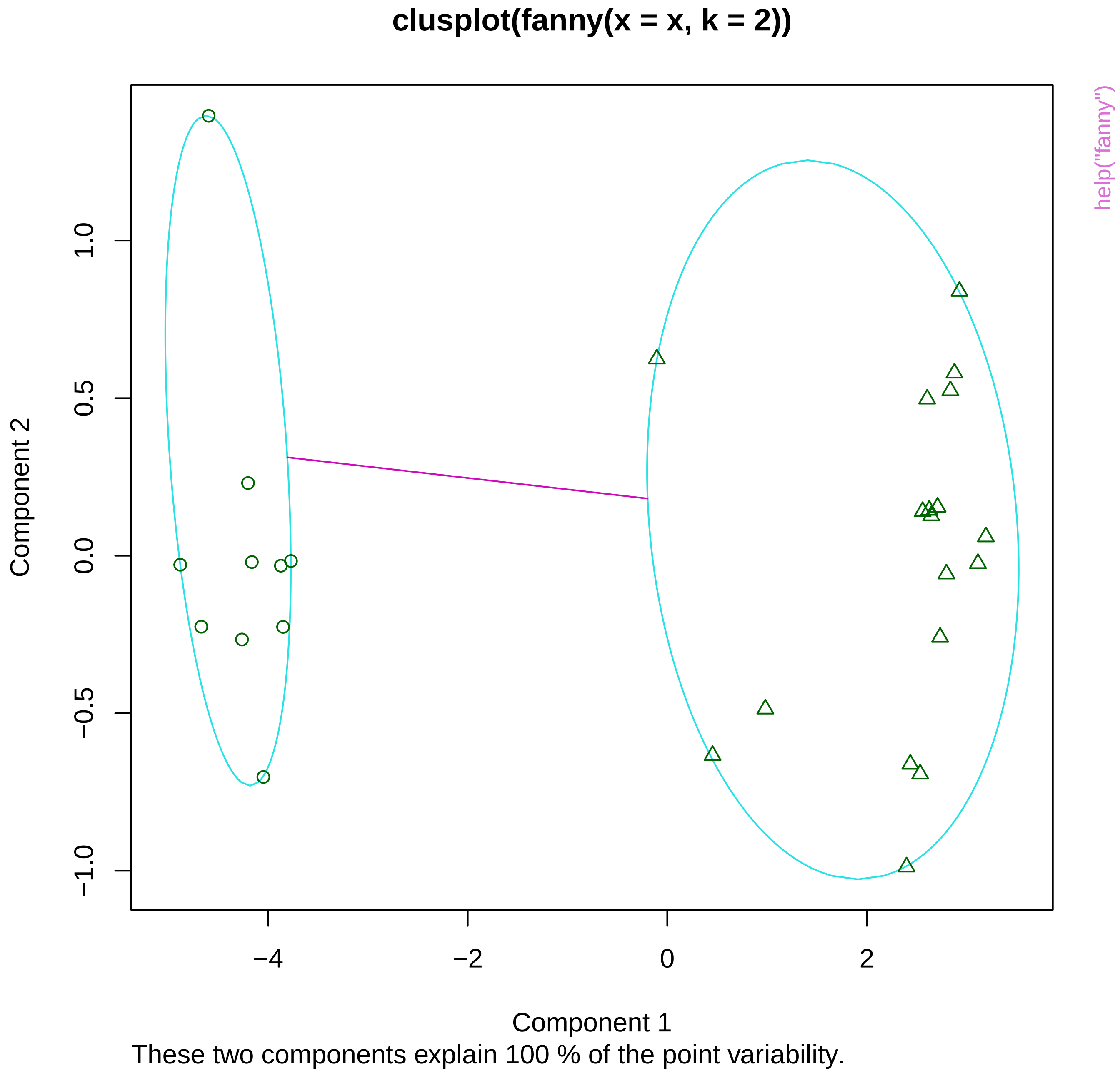


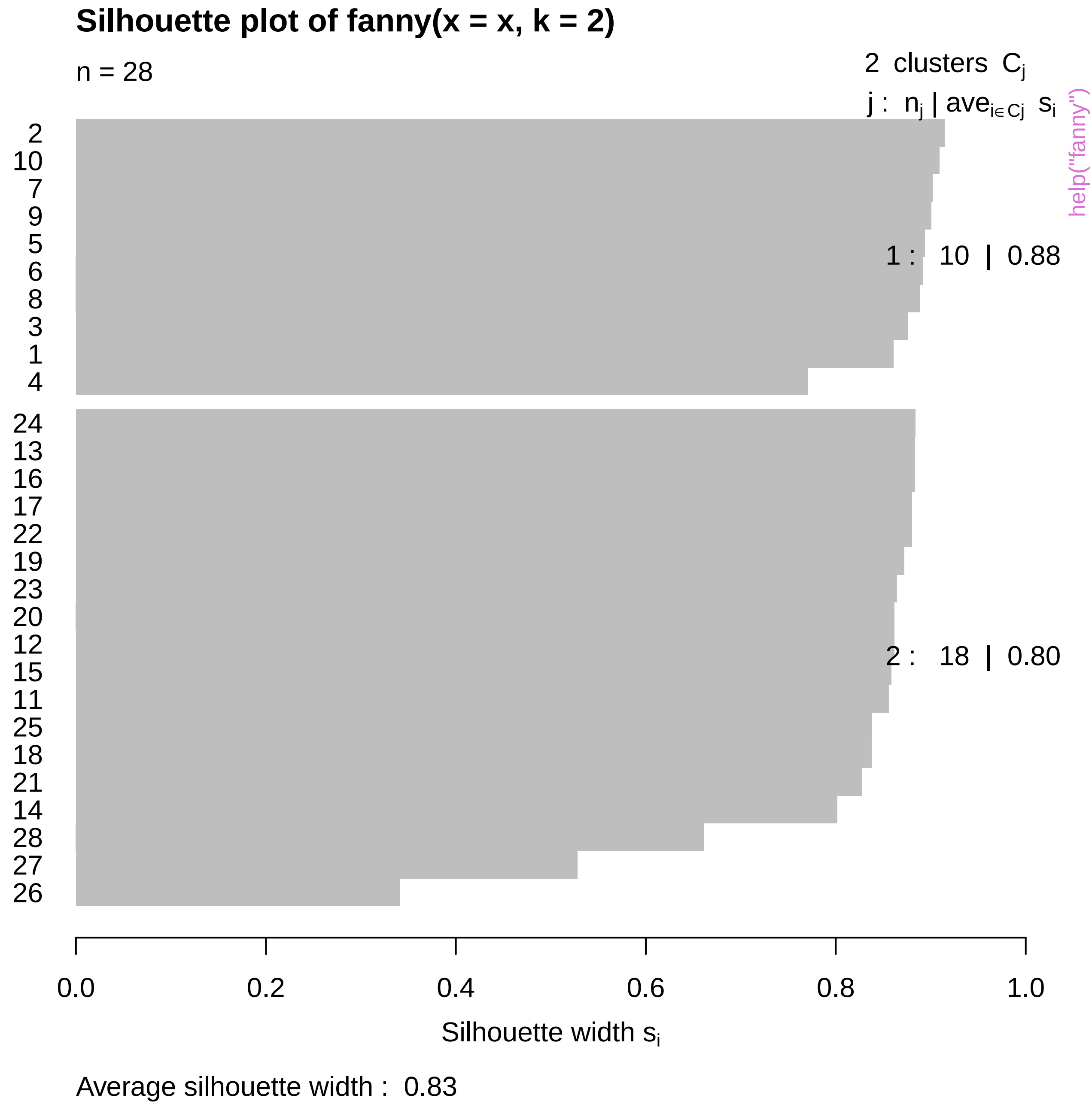
Dendrogram of diana(x = votes.repub, metric = "manhattan", stand = TRU
Height
0
50
100
150
help("diana")
Alabama
Georgia
Arkansas
Louisiana
Florida
Texas
Mississippi
South Carolina
Alaska
Vermont
Hawaii
Maine
Arizona
Utah
Montana
Nevada
New Mexico
Oklahoma
Delaware
Maryland
Kentucky
Washington
Missouri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

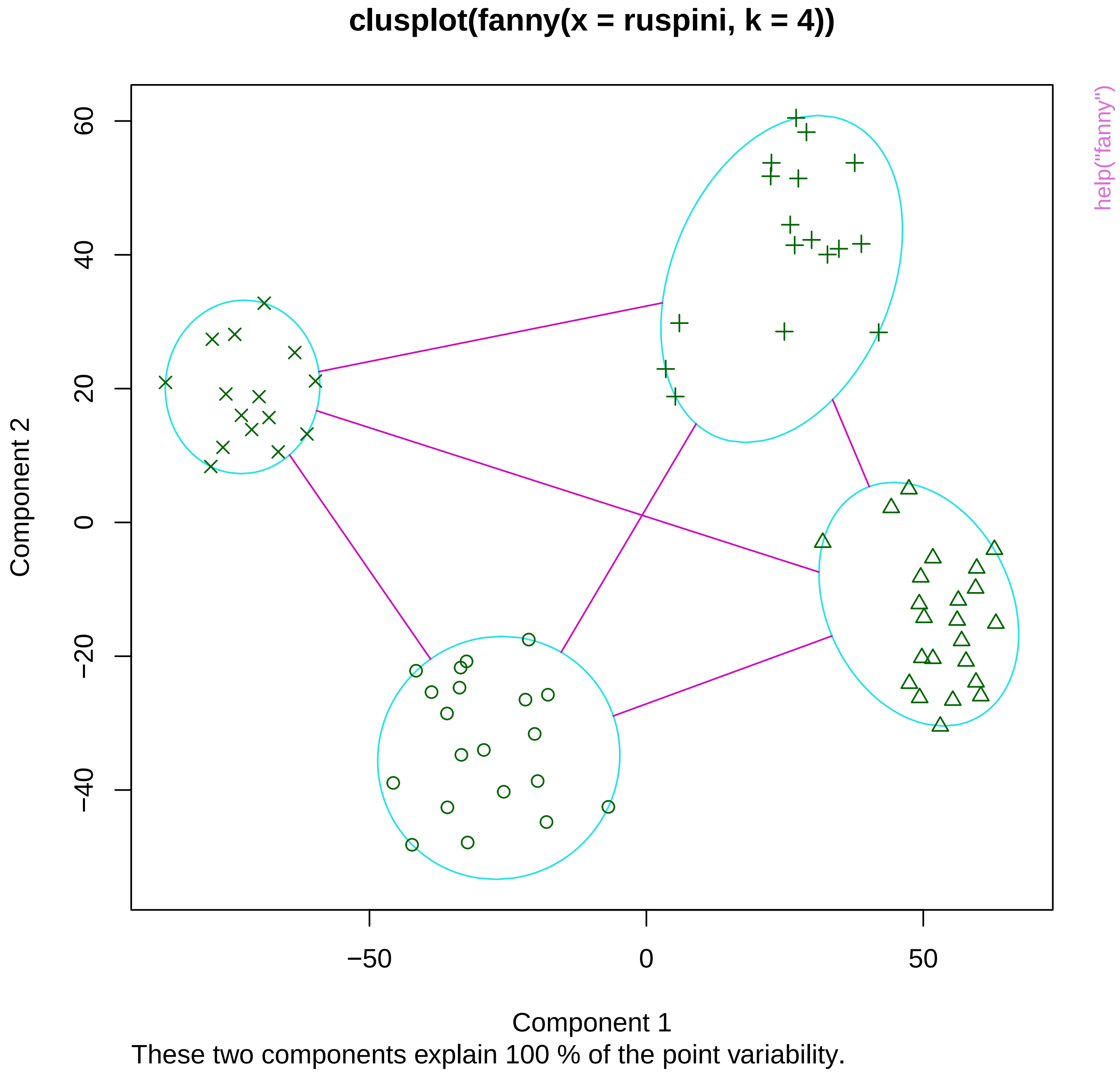

Banner of diana(x = agriculture)
B
NL
D
UK
F
I
DK
L
GR
P
E
IRL
24
22
20
18
16
14
12
10
8
6
4
2
0
Height
Divisive Coefficient = 0.87
help("diana")


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

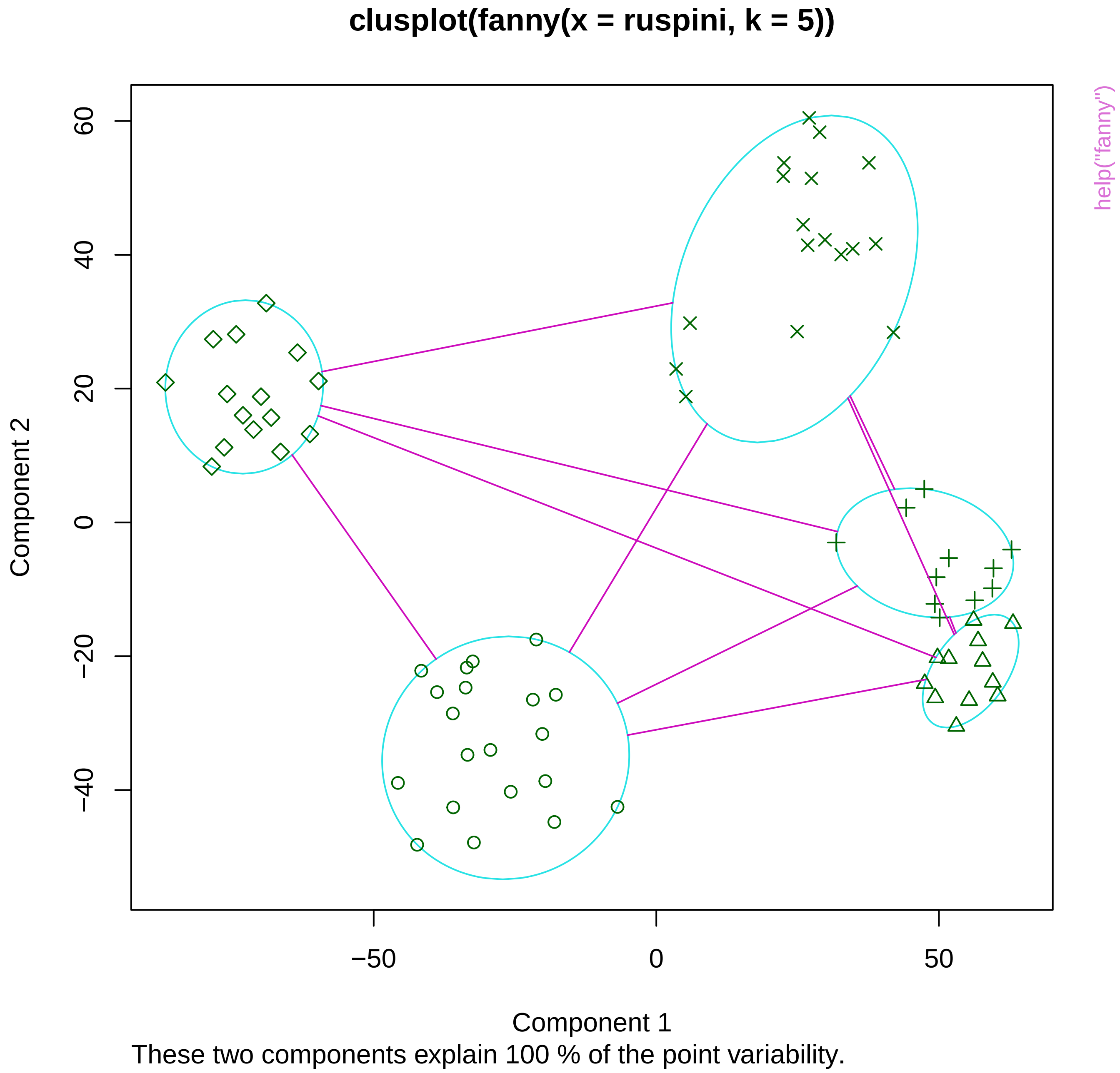

ellipsoidhull(<Gauss data>) -- 'spanning points'
help("ellipsoidhull")
xy[,2]
xy[,1]
6
8
10
12
14
−2
−1
0
1
2

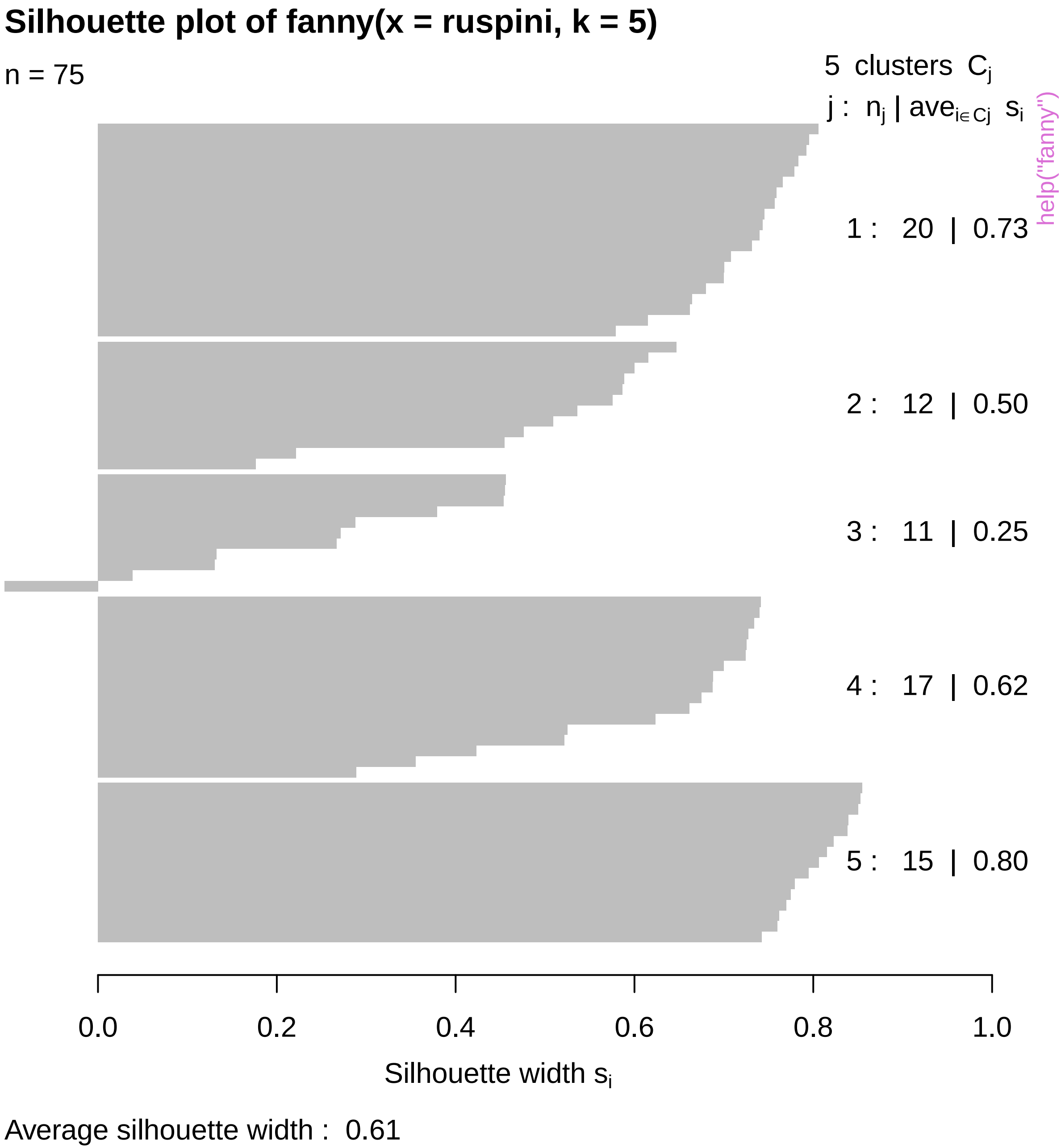

clusplot(fanny(x = x, k = 2))
help("fanny")
Component 2
1.0
0.5
0.0
−0.5
−1.0
−4
−2
0
2
Component 1
These two components explain 100 % of the point variability.

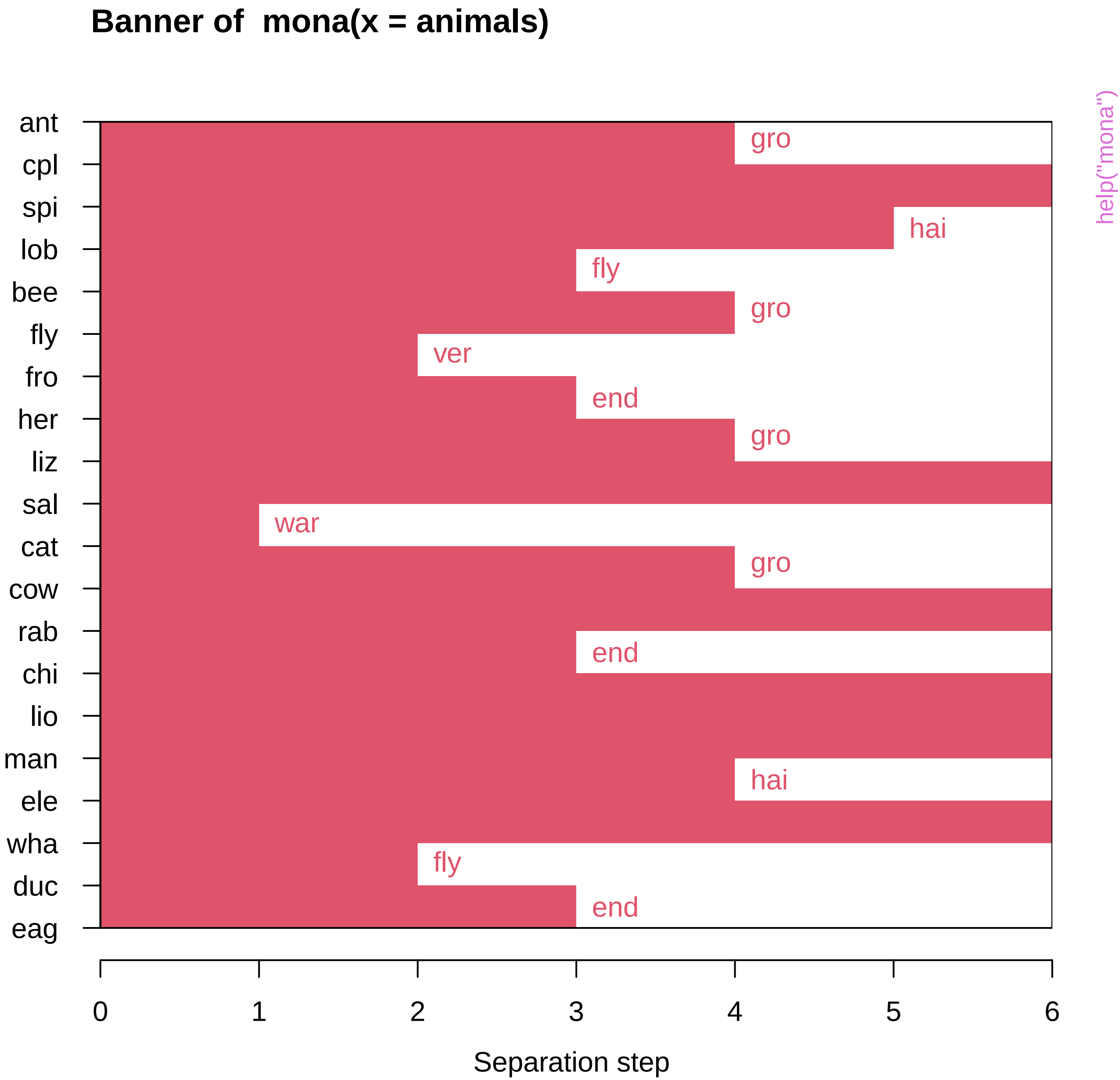

Silhouette plot of fanny(x = x, k = 2)
n = 28
2 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("fanny")
1 : 10 | 0.88
2 : 18 | 0.80
2
10
7
9
5
6
8
3
1
4
24
13
16
17
22
19
23
20
12
15
11
25
18
21
14
28
27
26
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.83

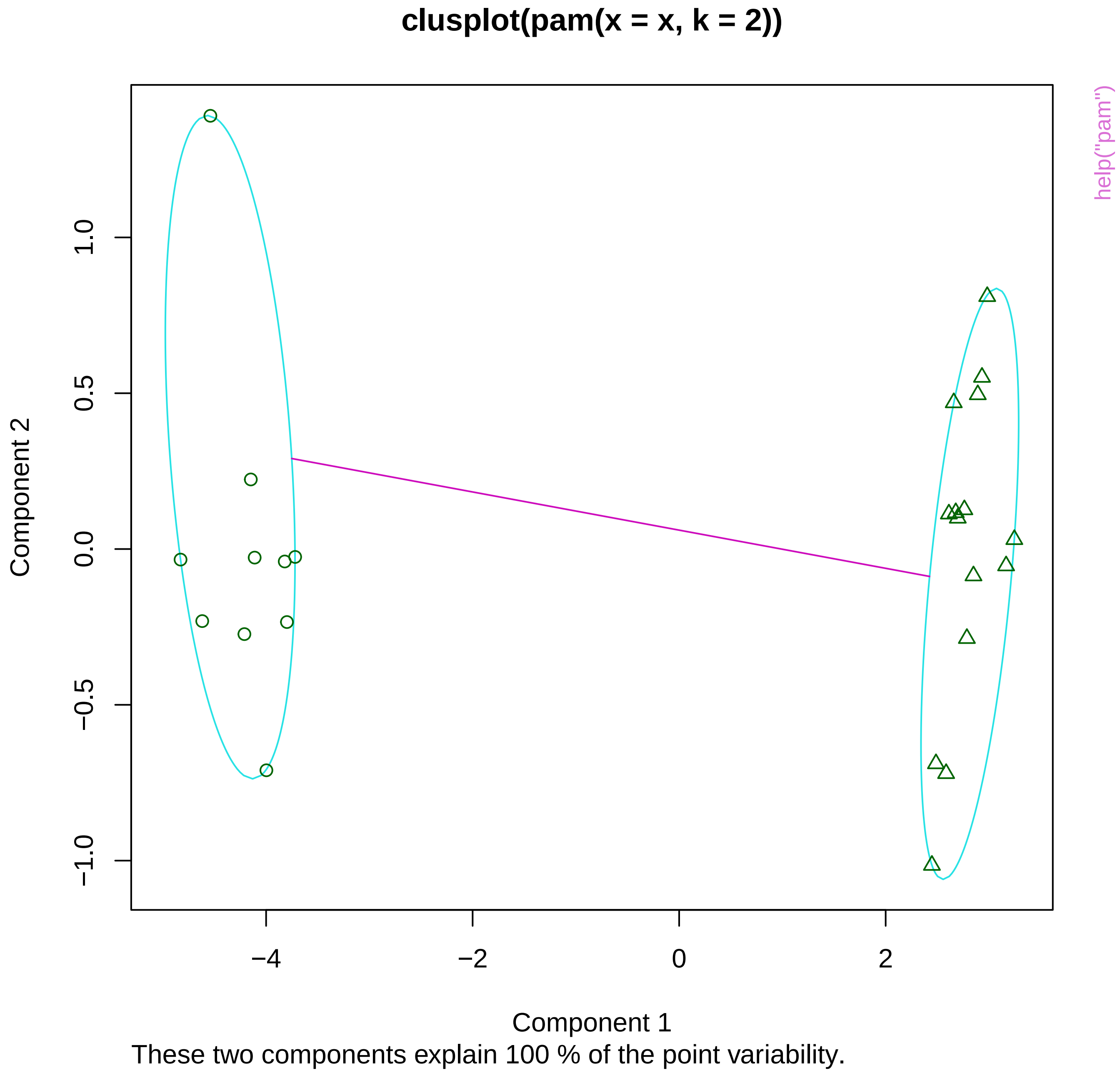


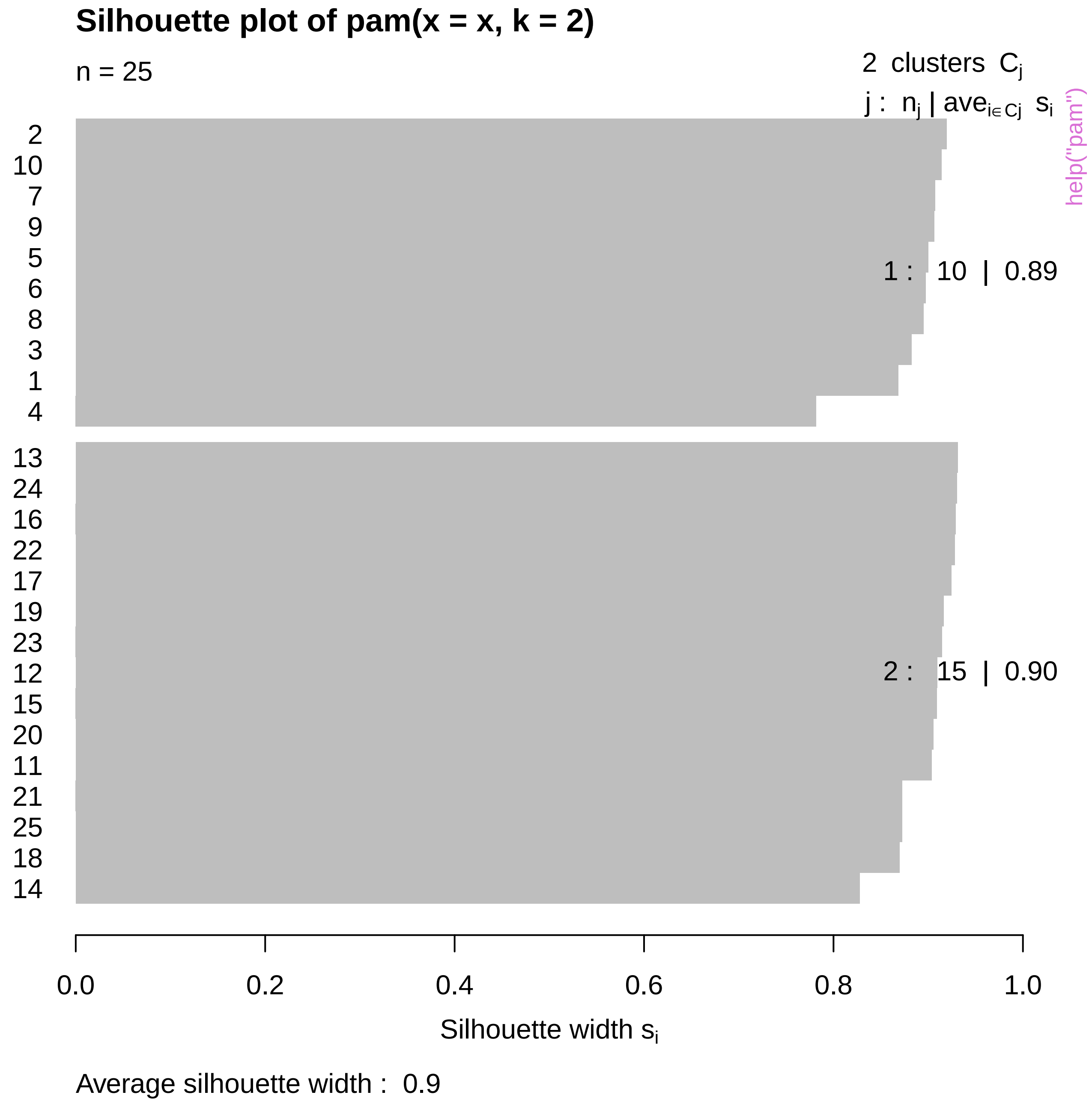
clusplot(fanny(x = ruspini, k = 4))
Component 2
Component 1
60
40
20
0
−20
−40
−50
0
50
help("fanny")
These two components explain 100 % of the point variability.

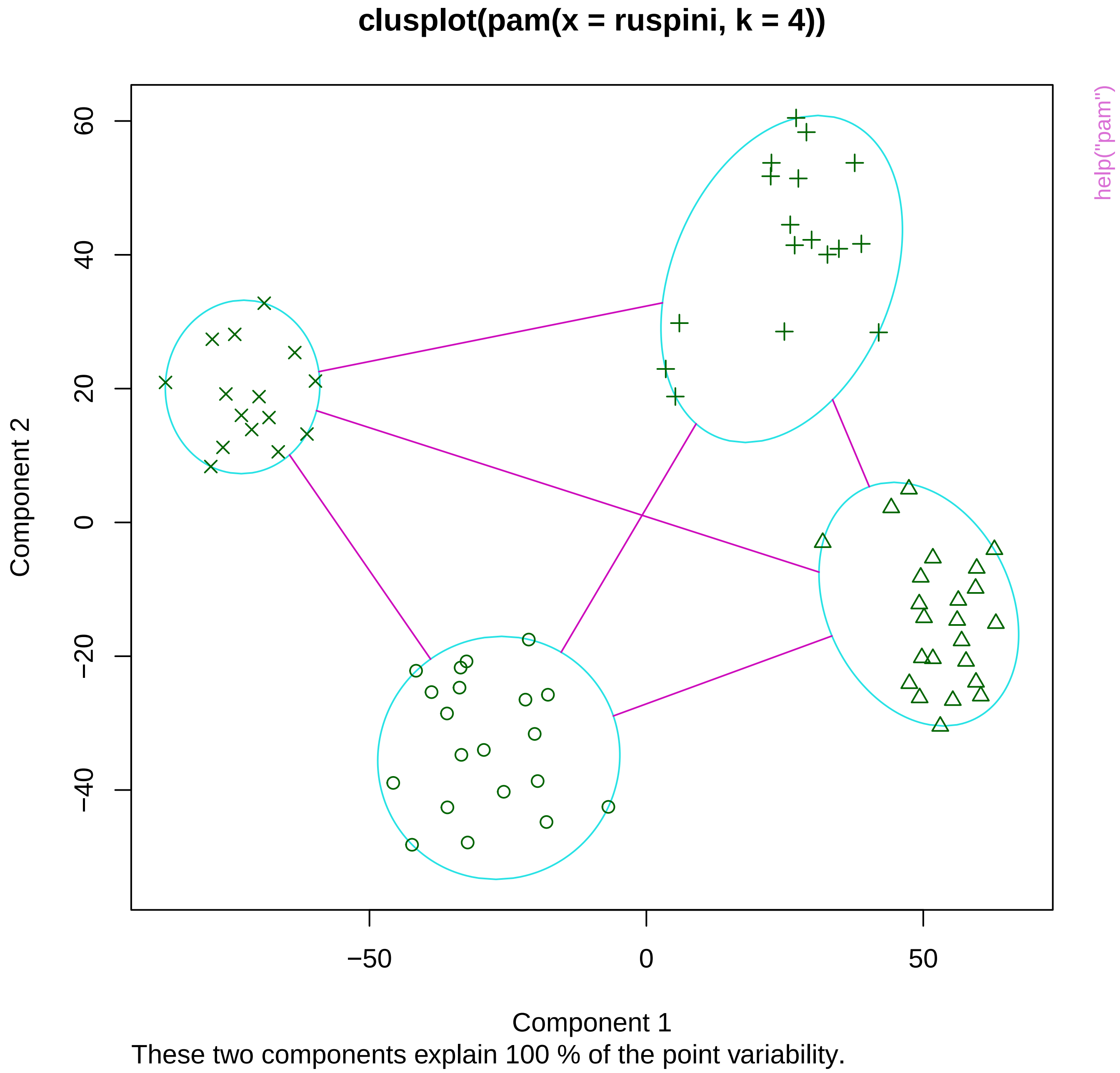

clusplot(fanny(x = ruspini, k = 5))
60
40
20
0
−20
−40
Component 2
−50
0
50
Component 1
These two components explain 100 % of the point variability.
help("fanny")


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("fanny")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.61

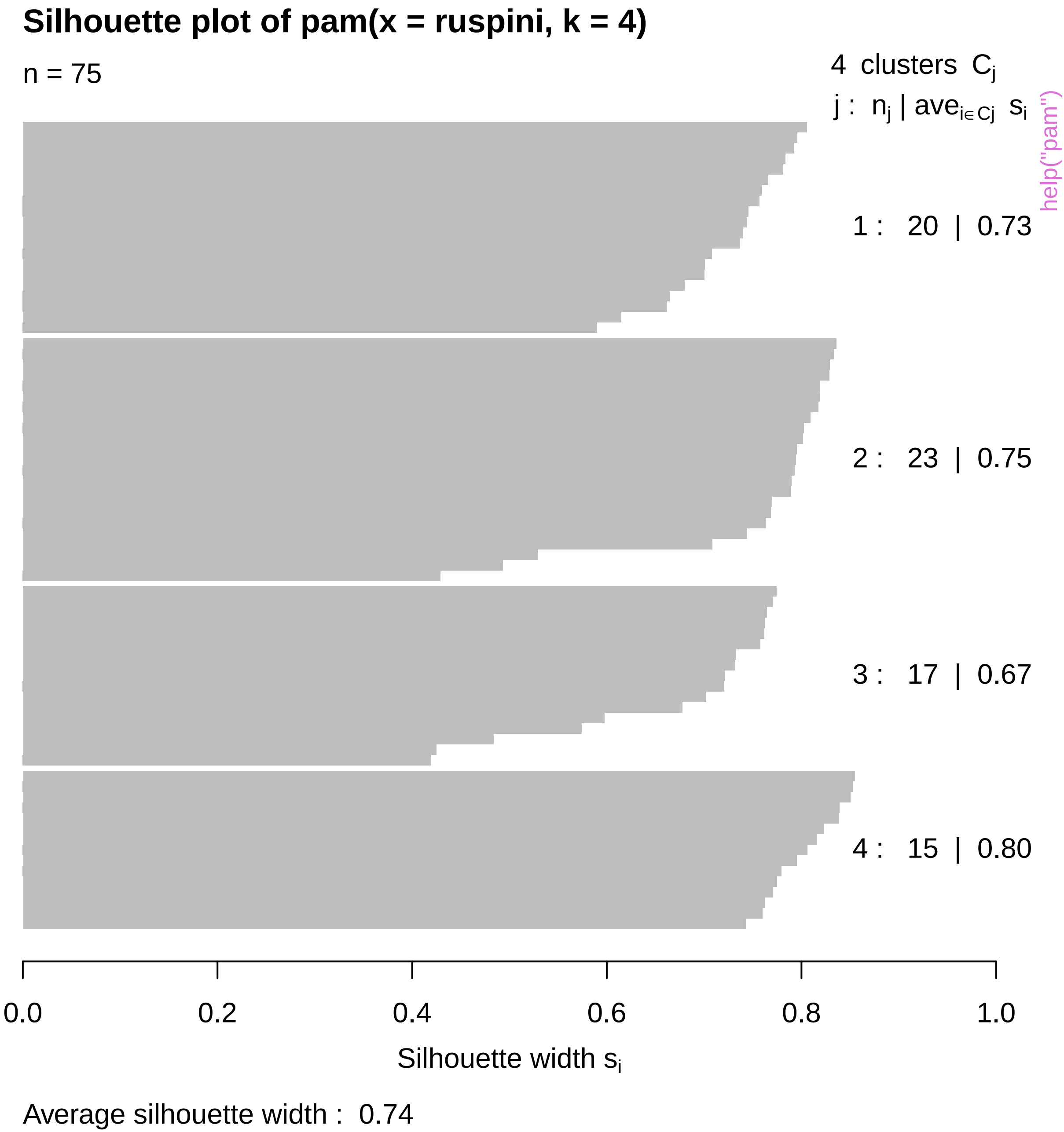

Banner of mona(x = animals)
ant
cpl
spi
lob
bee
fly
fro
her
liz
sal
cat
cow
rab
chi
lio
man
ele
wha
duc
eag
gro
hai
fly
gro
ver
end
gro
war
gro
end
hai
fly
end
0
1
2
3
4
5
6
Separation step
help("mona")

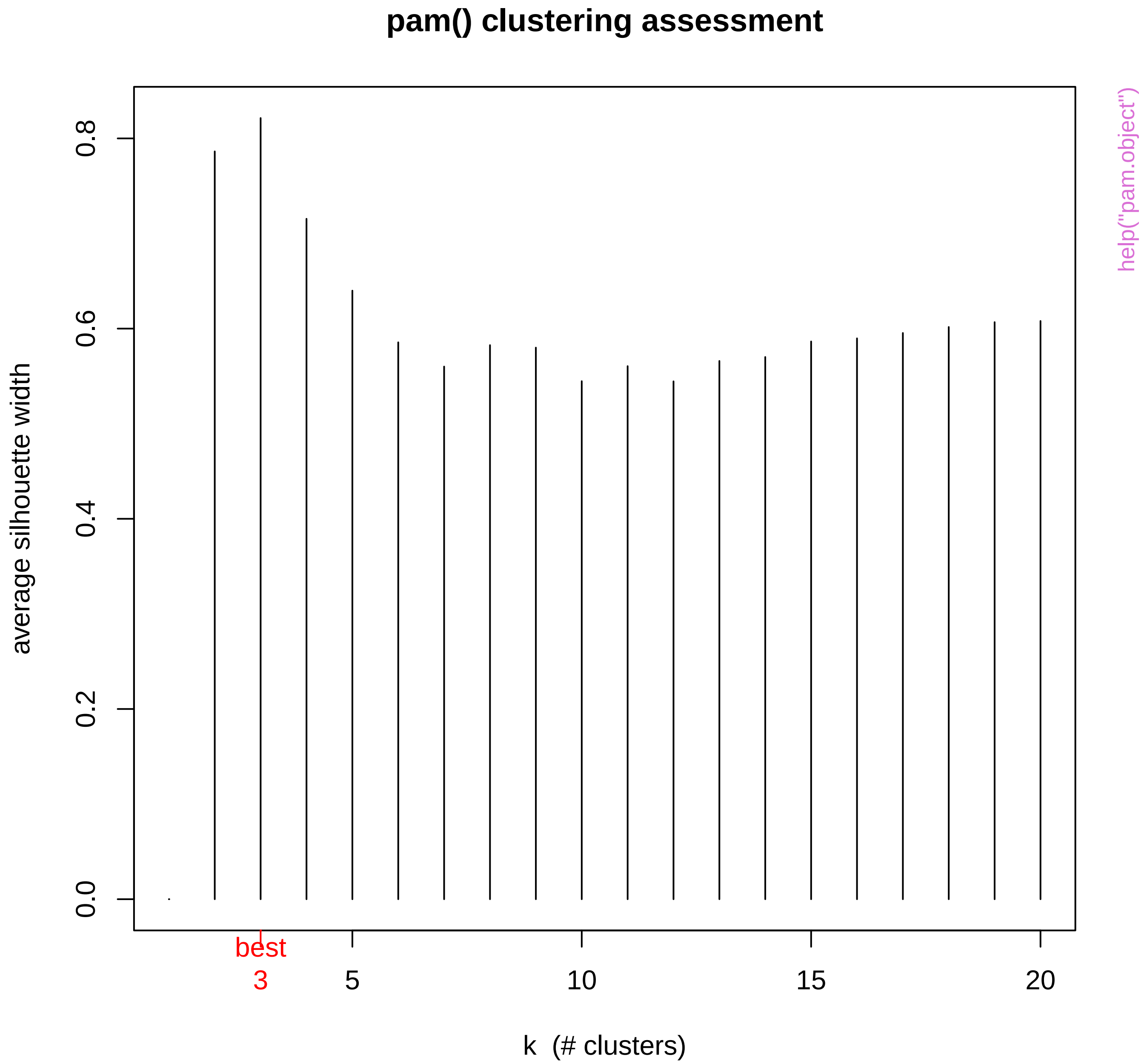

clusplot(pam(x = x, k = 2))
help("pam")
Component 2
1.0
0.5
0.0
−0.5
−1.0
−4
−2
0
2
Component 1
These two components explain 100 % of the point variability.


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

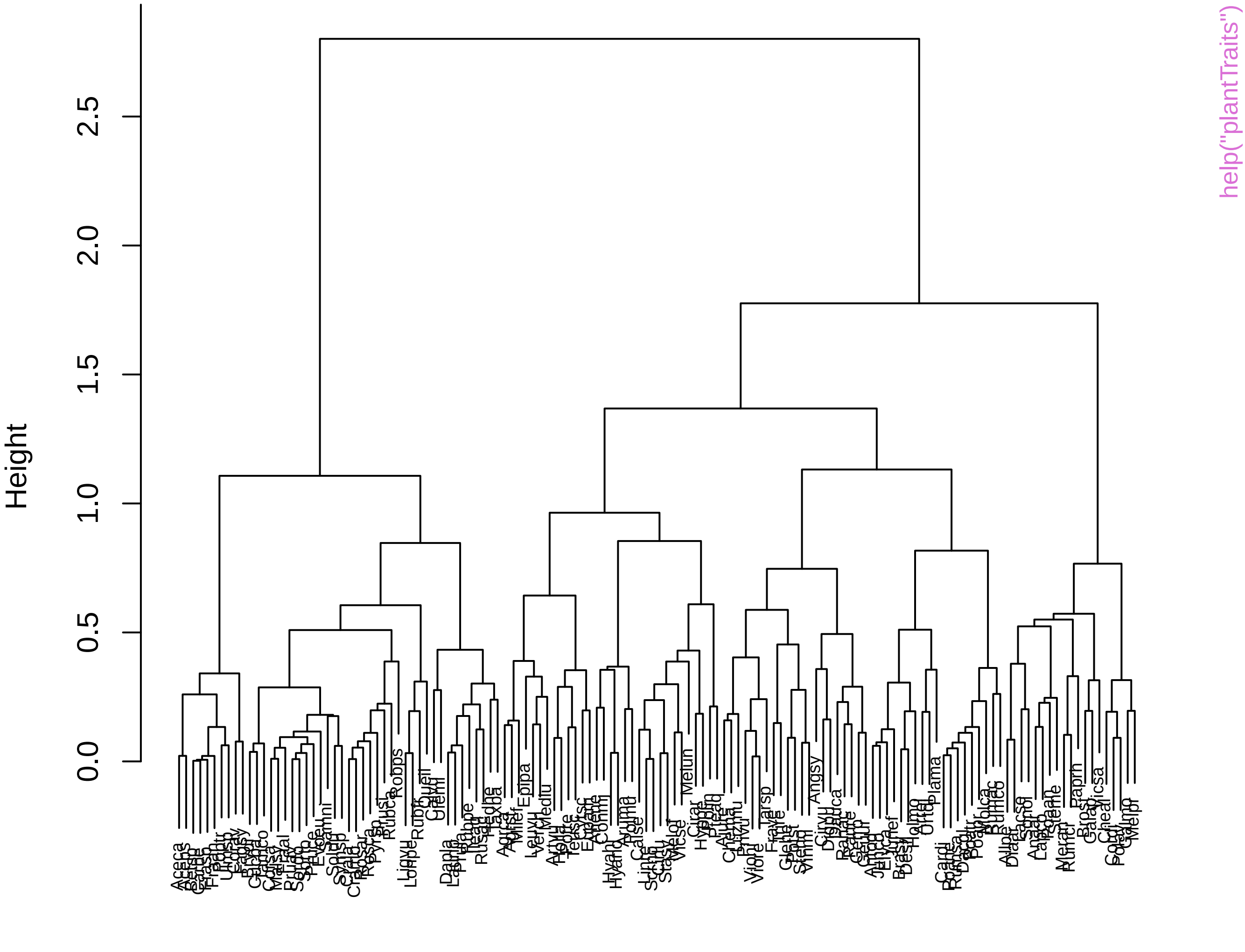


clusplot(pam(x = ruspini, k = 4))
60
40
20
0
−20
−40
−50
0
50
Component 1
Component 2
These two components explain 100 % of the point variability.
help("pam")

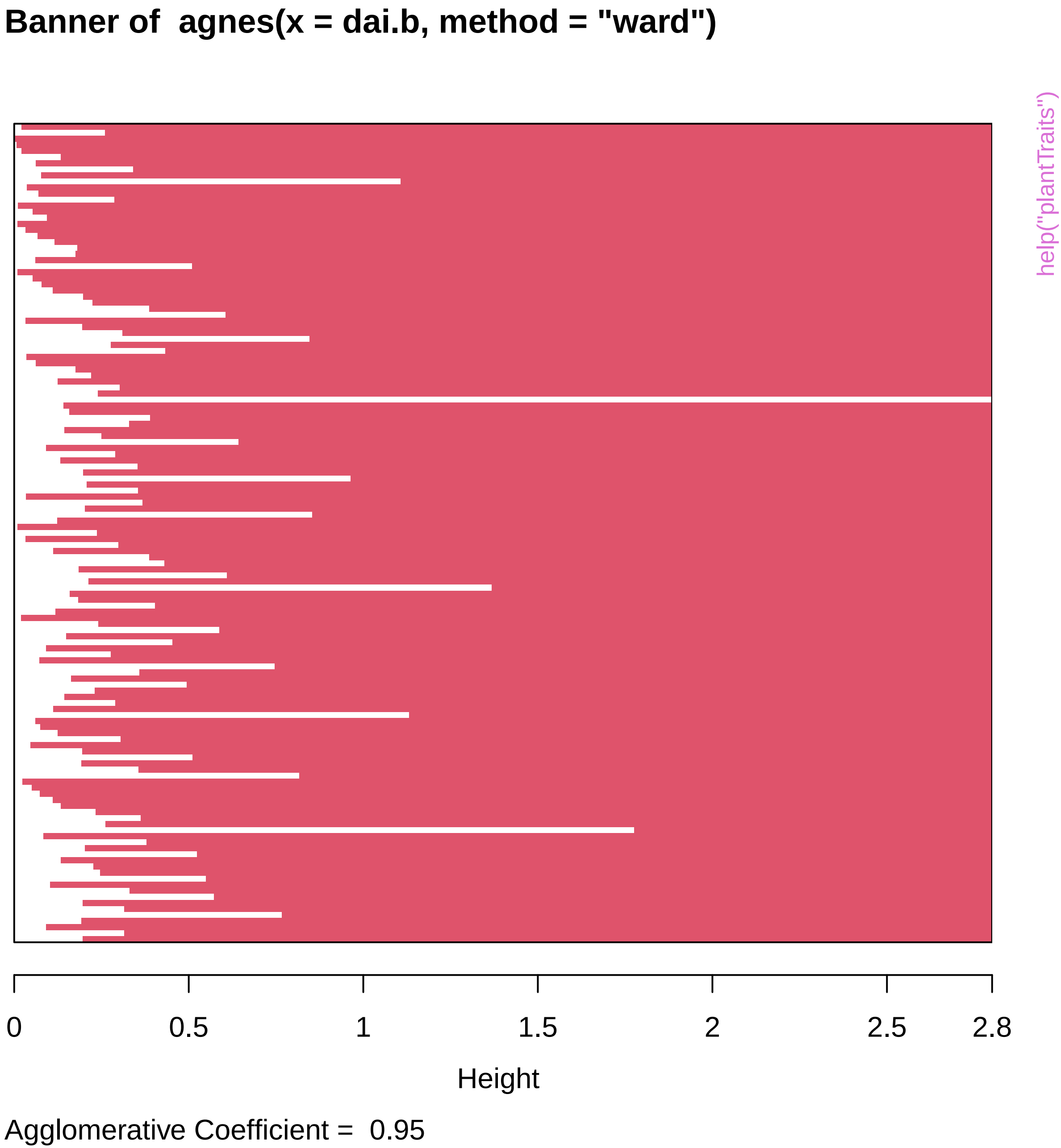

Silhouette plot of pam(x = ruspini, k = 4)
n = 75
4 clusters C_j
j : n_j | $\mathrm{ave}_{i \in C_j}$ s_i
1 : 20 | 0.73
2 : 23 | 0.75
3 : 17 | 0.67
4 : 15 | 0.80
help("pam")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.74


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")

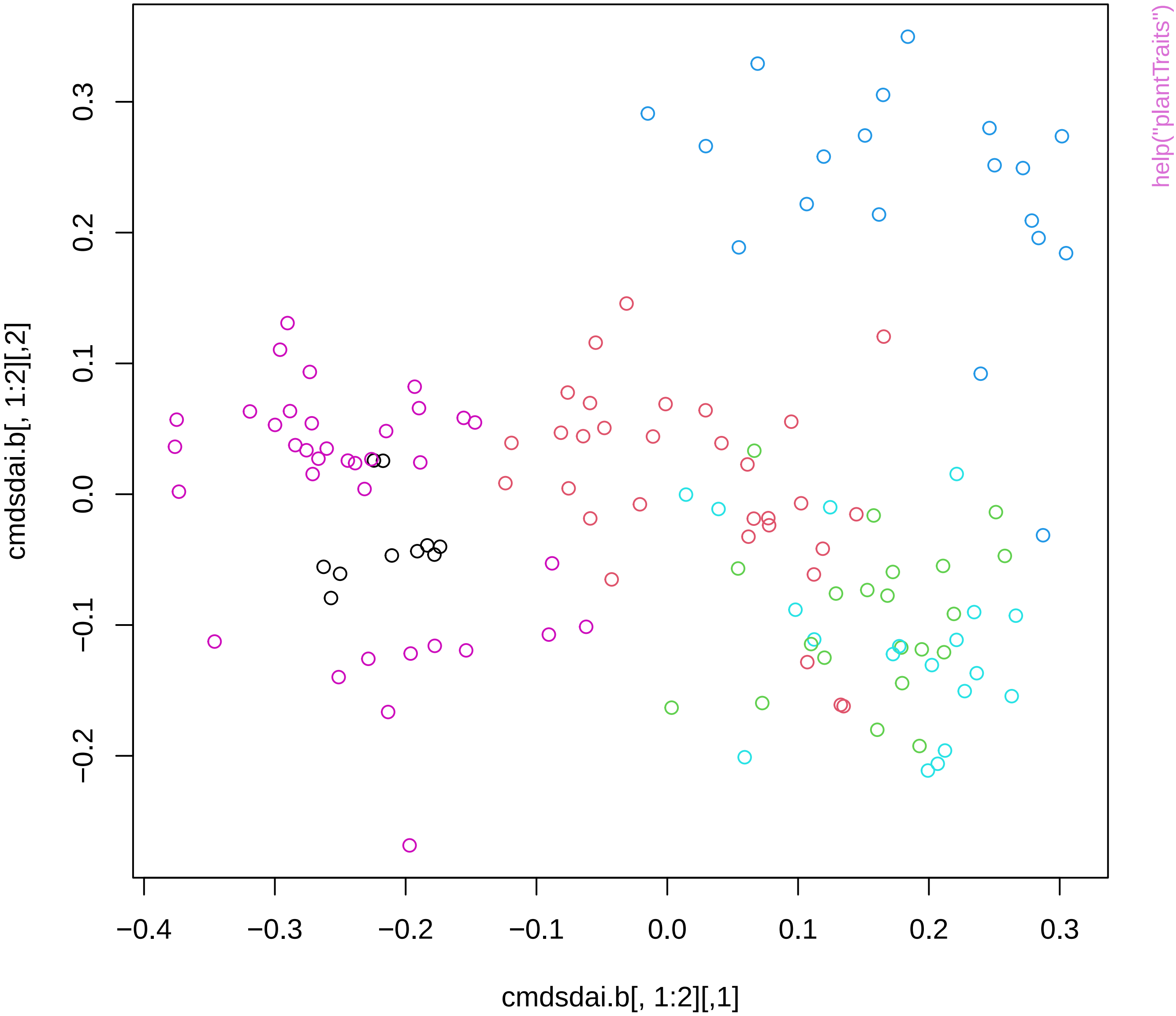
Dendrogram of agnes(x = dai.b, method = "ward")



dai.b
Agglomerative Coefficient = 0.95

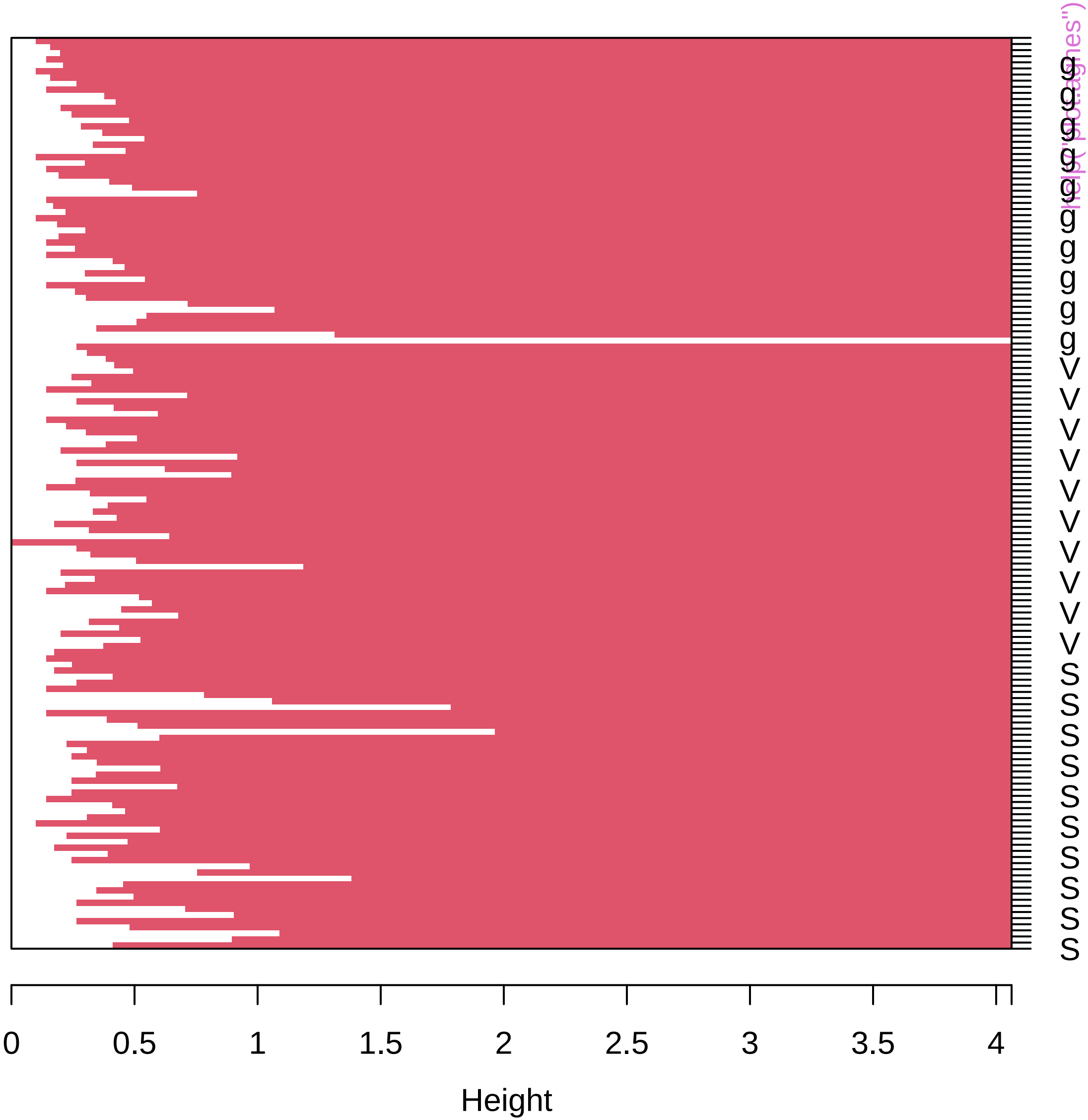


Banner of agnes(x = dai.b, method = "ward")
help("plantTraits")
0
0.5
1
1.5
2
2.5
2.8
Height
Agglomerative Coefficient = 0.95

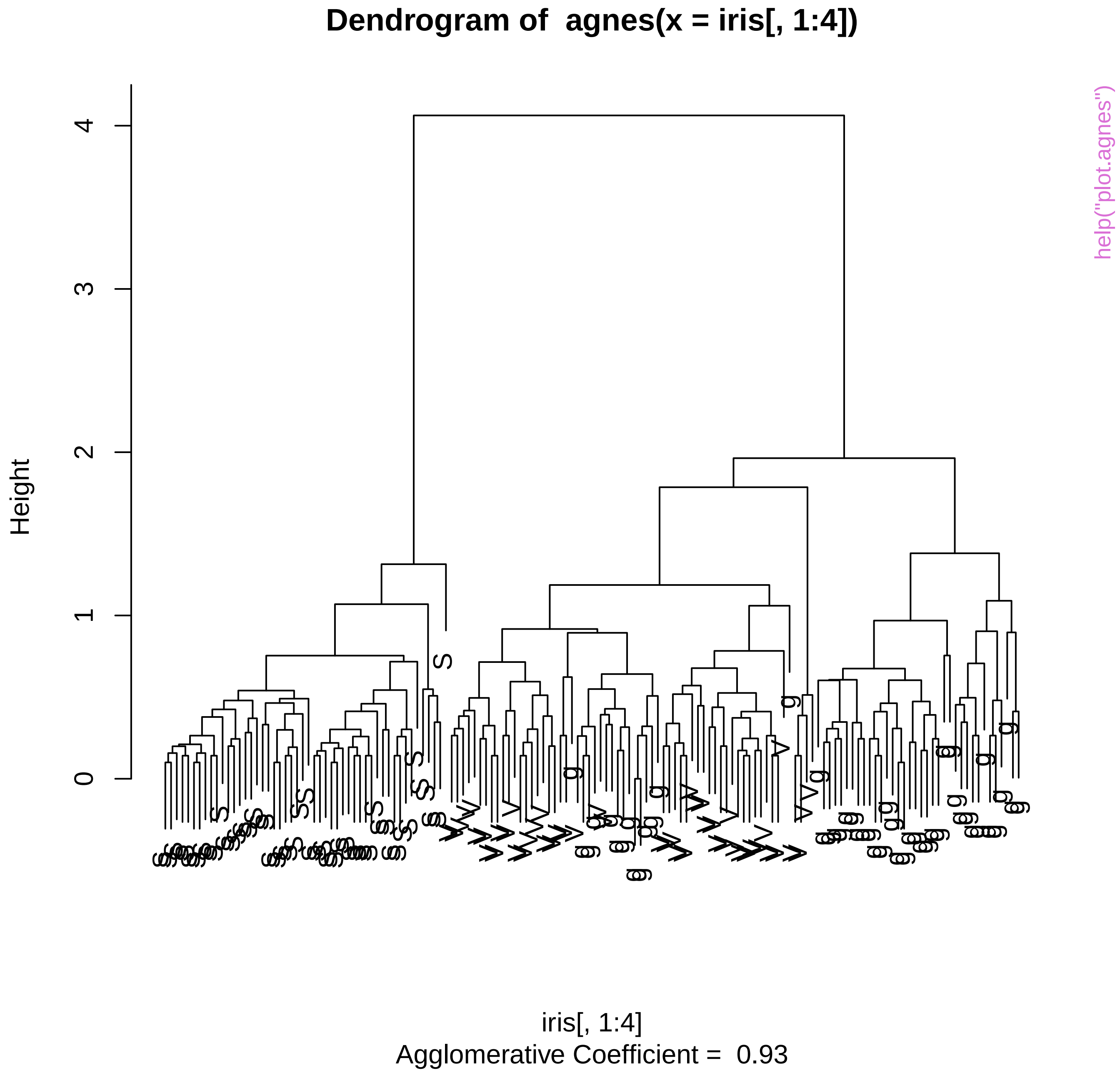


0.3
0.2
0.1
0.0
−0.1
−0.2
−0.4
−0.3
−0.2
−0.1
0.0
0.1
0.2
0.3
cmdsdai.b[, 1:2][,1]
cmdsdai.b[, 1:2][,2]
help("plantTraits")

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

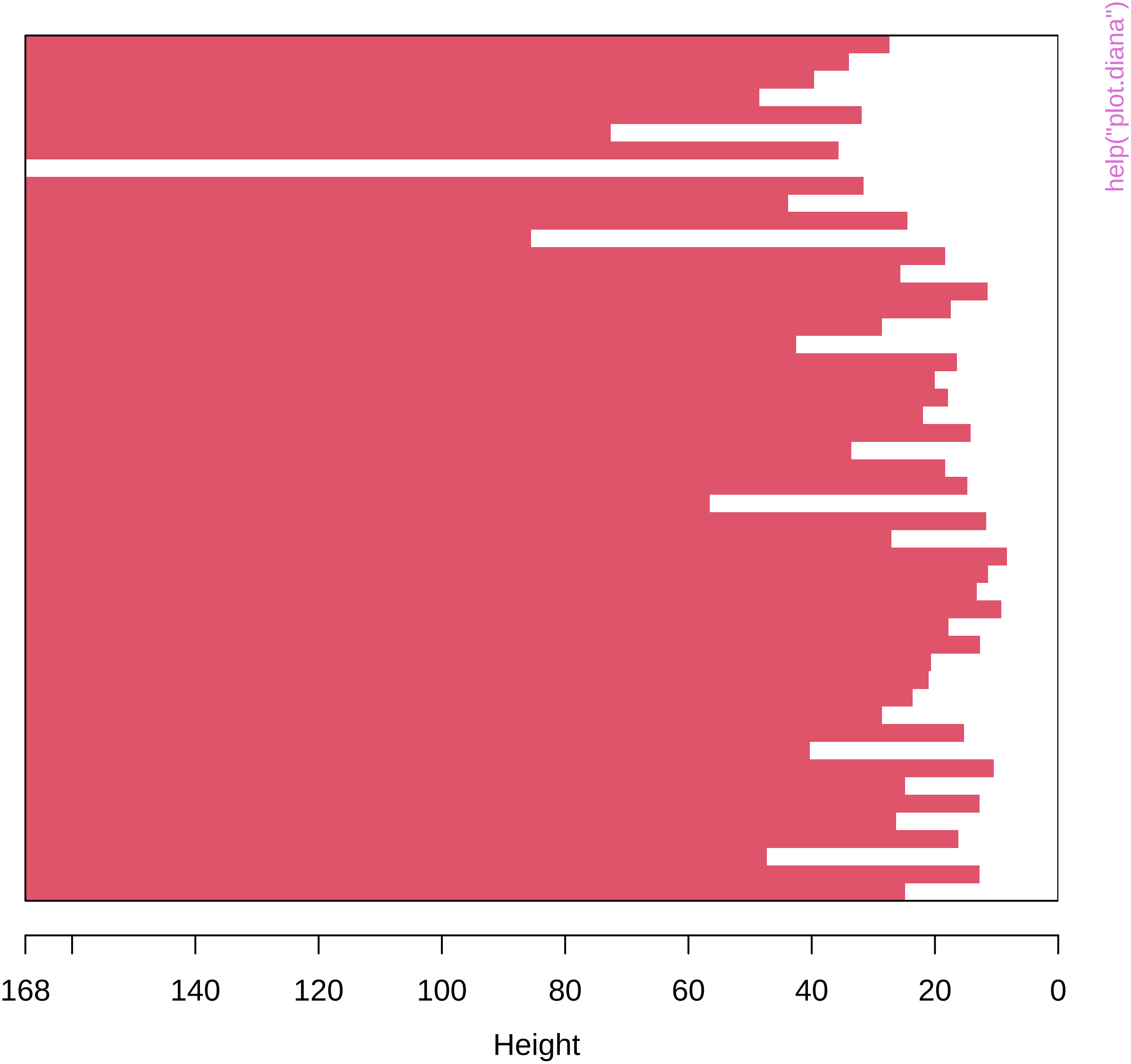


Agglomerative Coefficient = 0.93



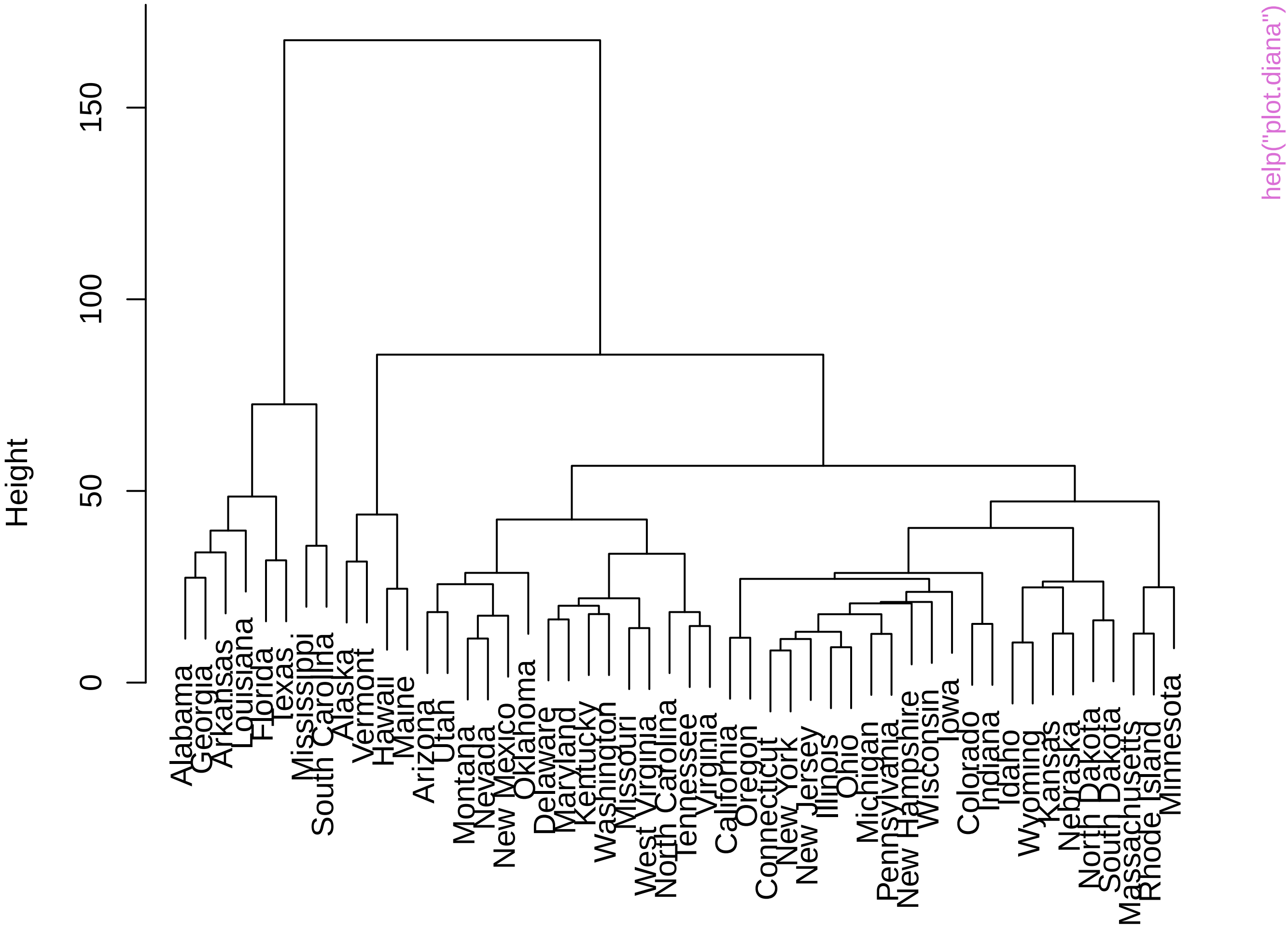
Dendrogram of agnes(x = iris[, 1:4])
Height
0
1
2
3
4
help("plot.agnes")
iris[, 1:4]
Agglomerative Coefficient = 0.93

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

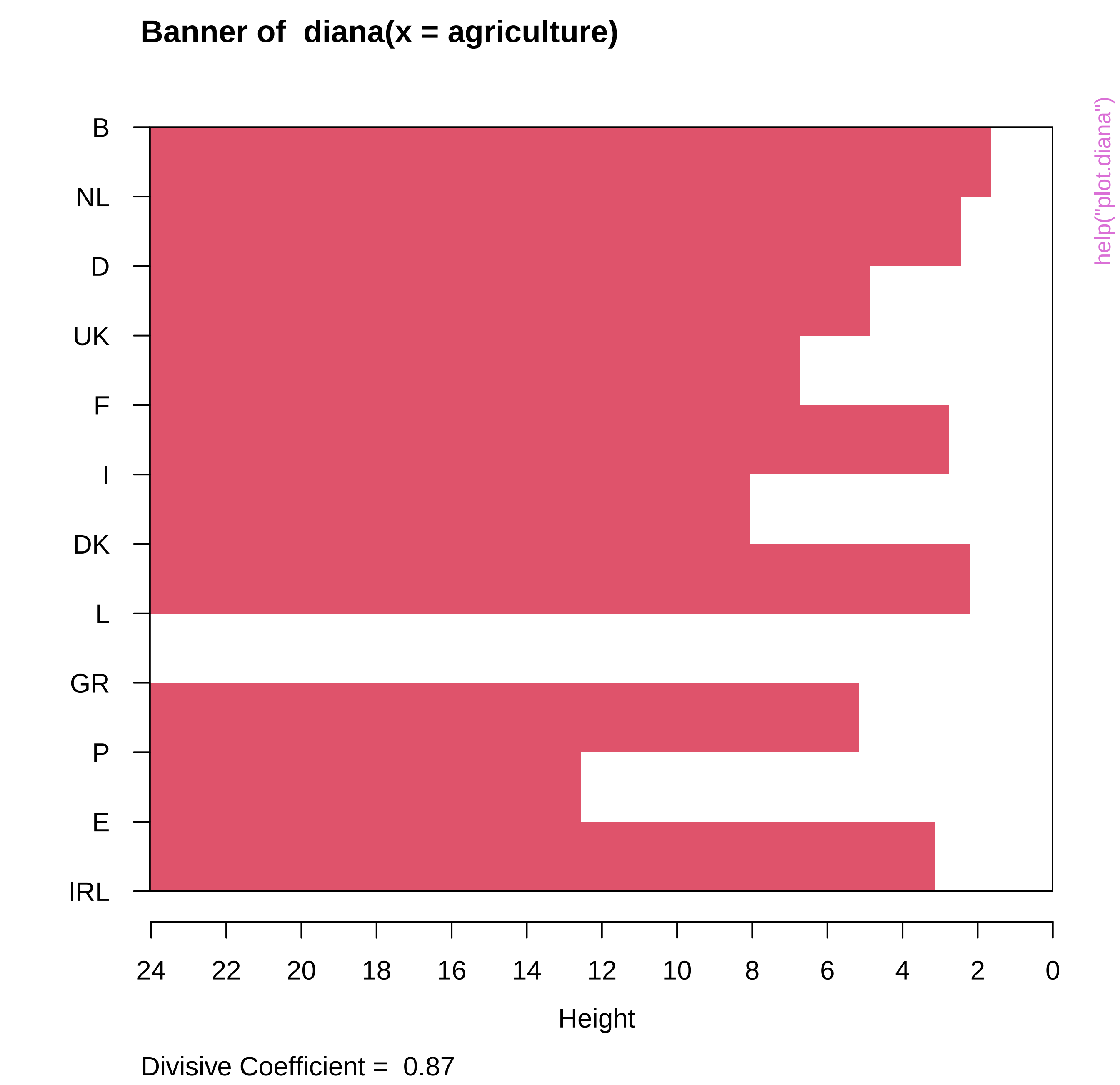


Divisive Coefficient = 0.89

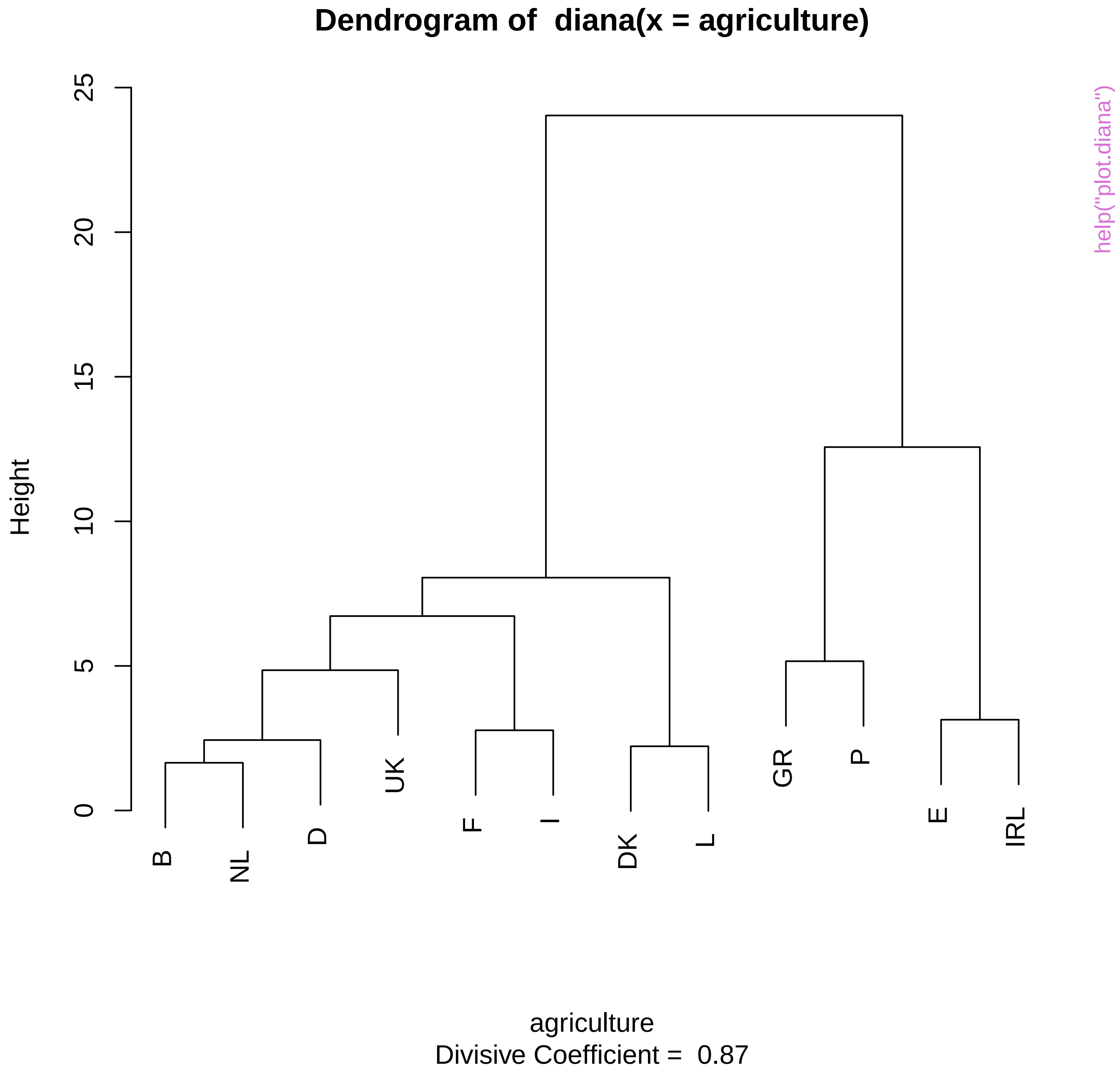
Dendrogram of diana(x = votes.repub, metric = "manhattan", stand = TRU

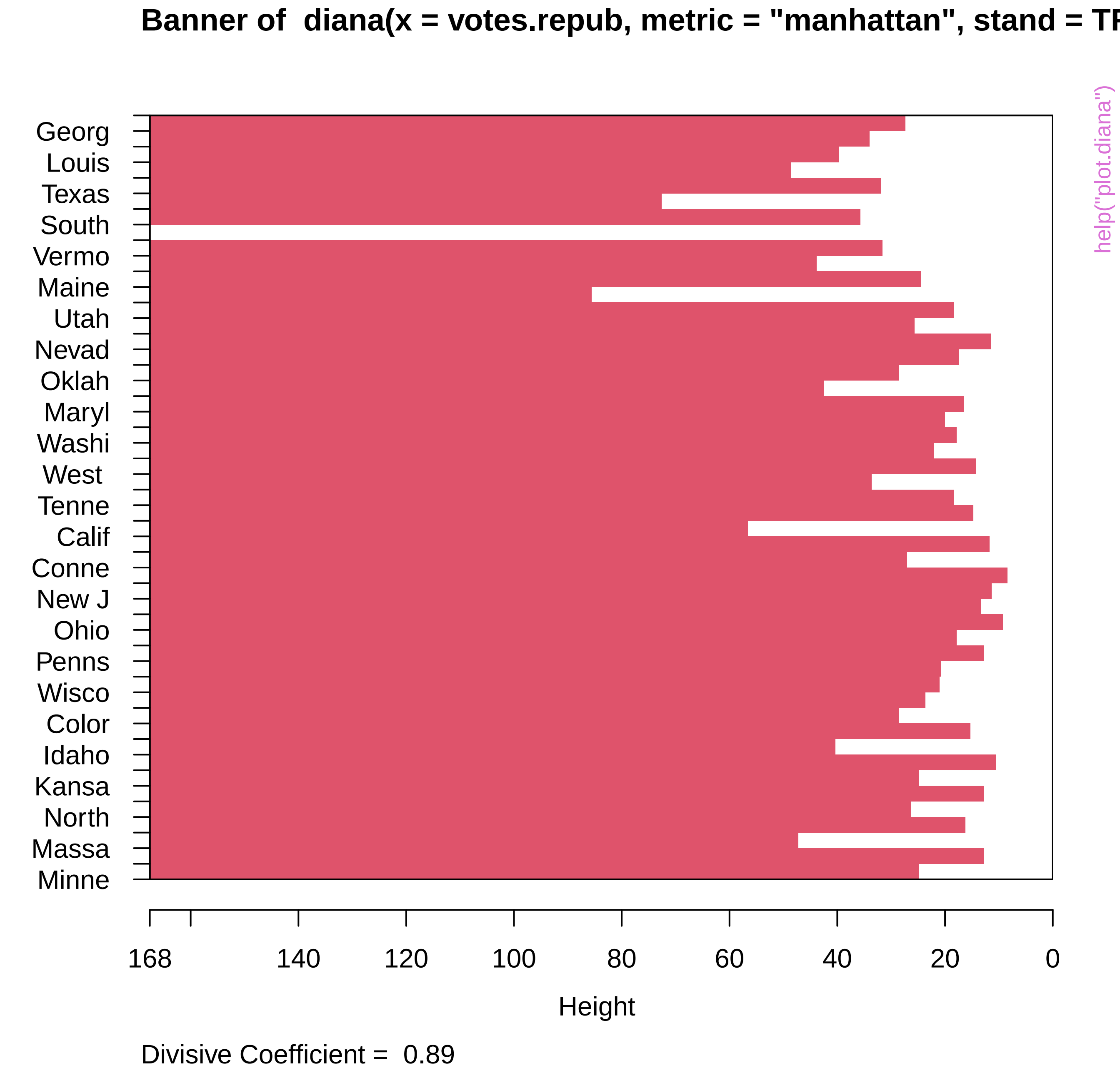


votes.repub
Divisive Coefficient = 0.89

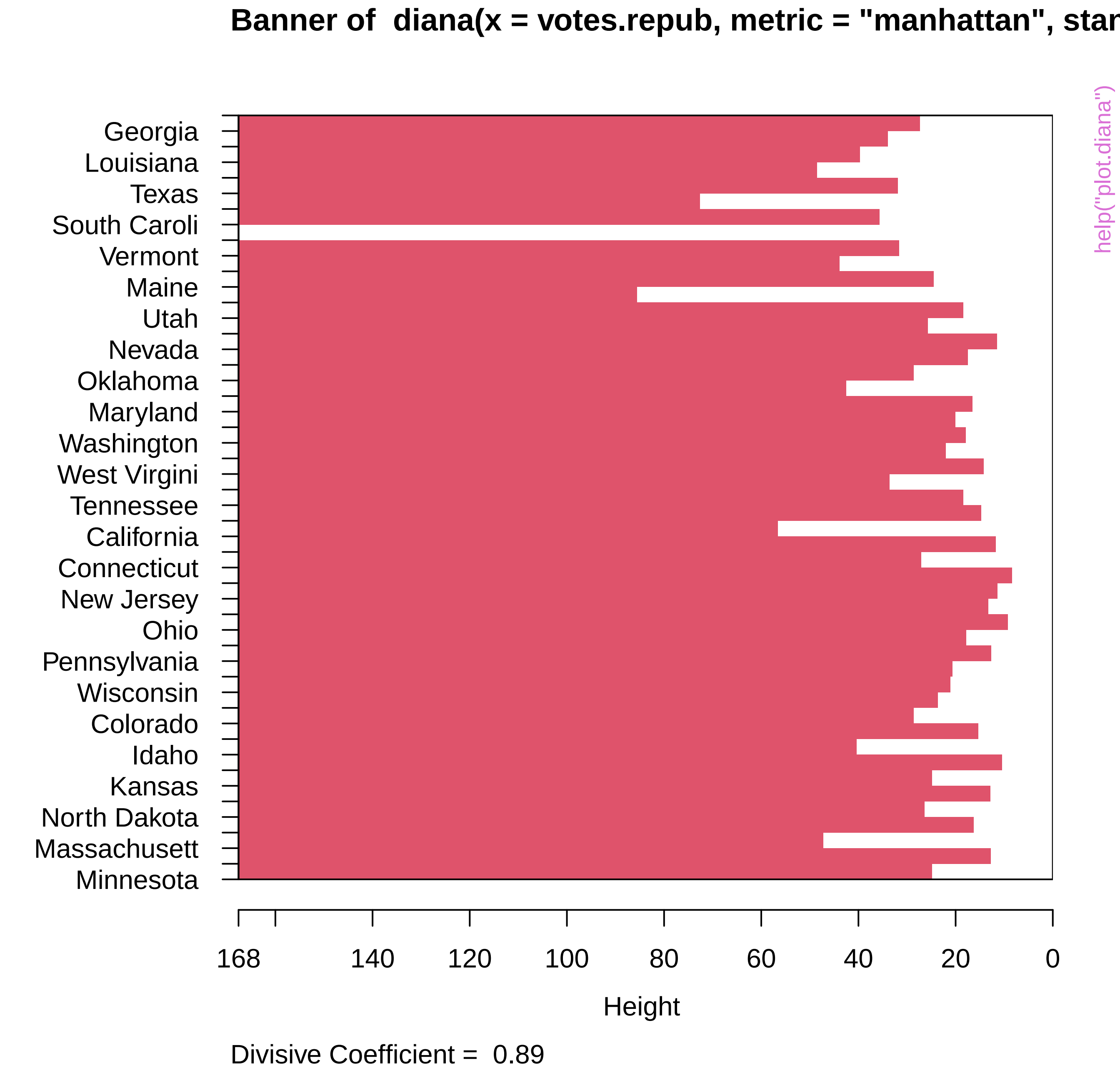


Banner of diana(x = agriculture)
B
NL
D
UK
F
I
DK
L
GR
P
E
IRL
24
22
20
18
16
14
12
10
8
6
4
2
0
Height
Divisive Coefficient = 0.87
help("plot.diana")

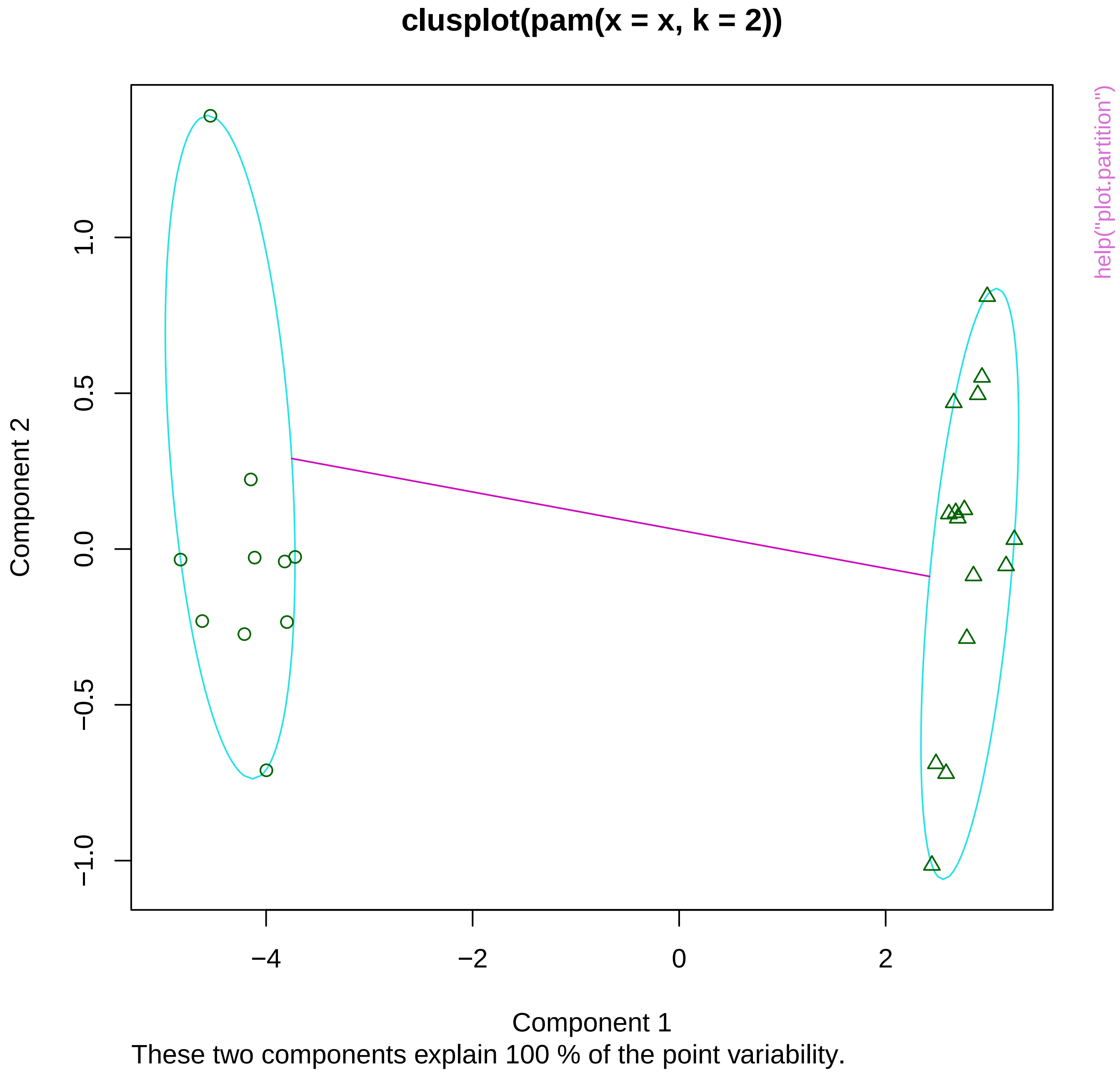

Dendrogram of diana(x = agriculture)
Height
0
5
10
15
20
25
B
NL
D
UK
F
I
DK
L
GR
P
E
IRL
help("plot.diana")
agriculture
Divisive Coefficient = 0.87

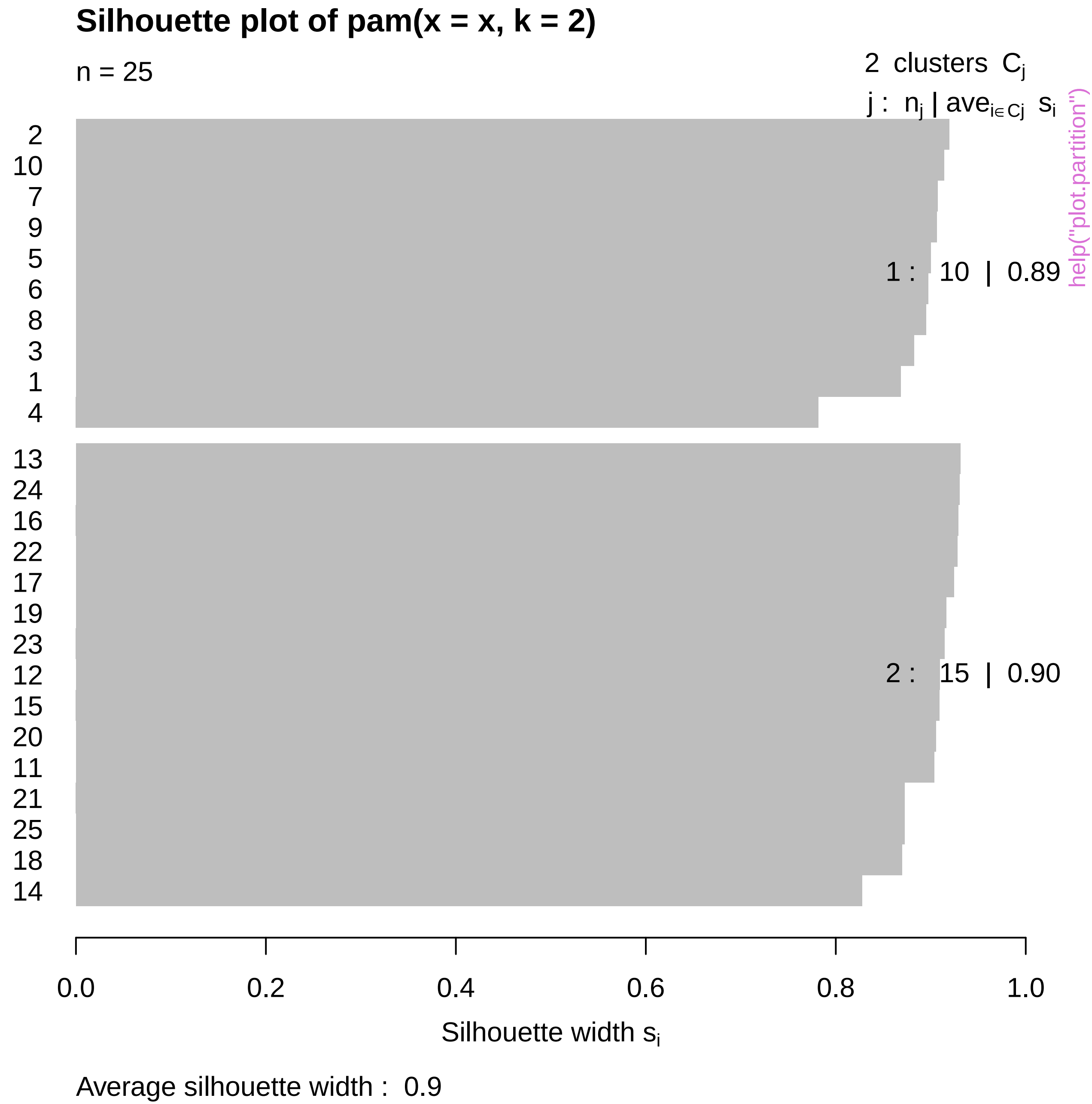


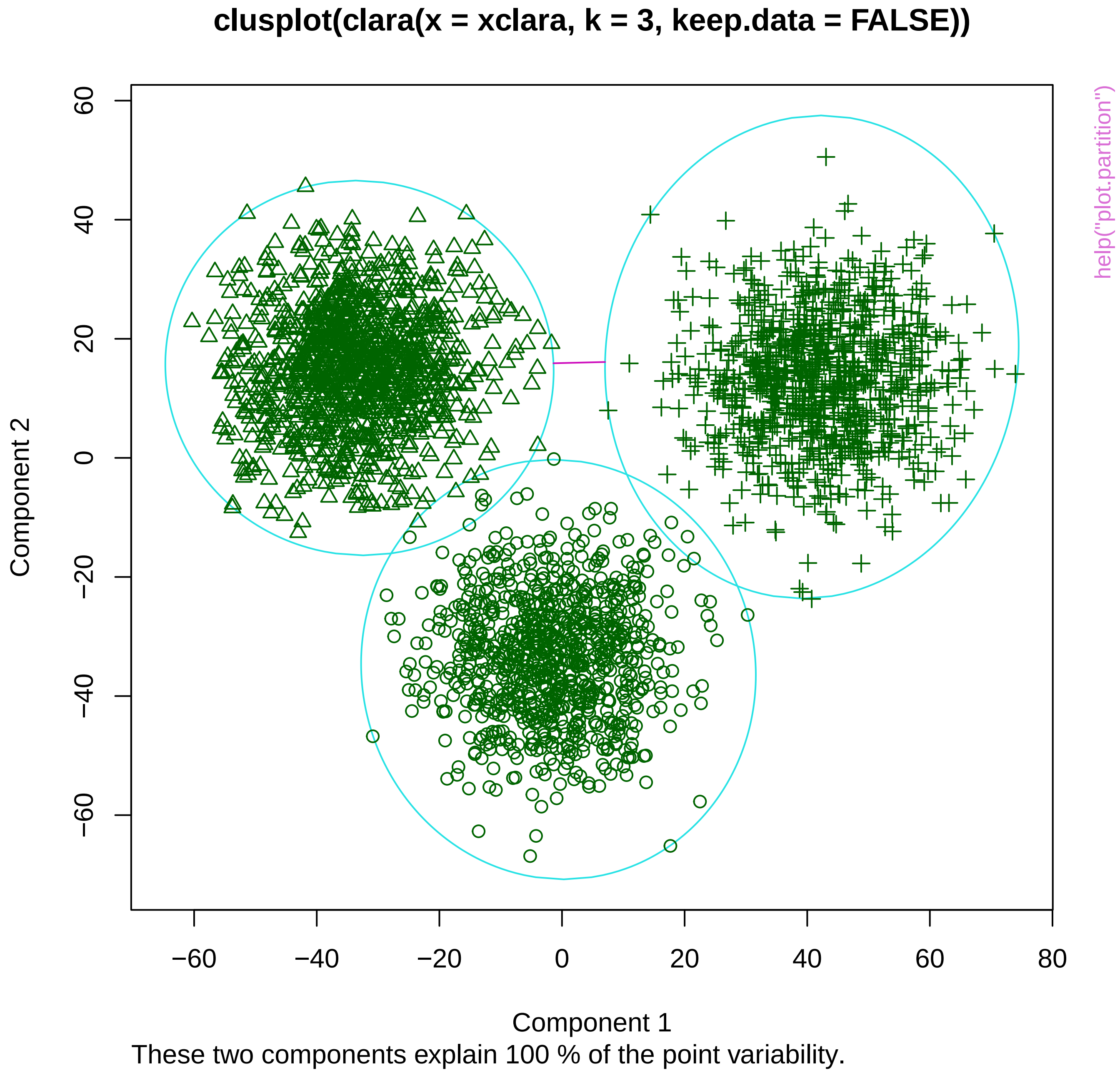
Banner of diana(x = votes.repub, metric = "manhattan", stand = TR
help("plot.diana")
Georg
Louis
Texas
South
Vermo
Maine
Utah
Nevad
Oklah
Maryl
Washi
West
Tenne
Calif
Conne
New J
Ohio
Penns
Wisco
Color
Idaho
Kansa
North
Massa
Minne
168
140
120
100
80
60
40
20
0
Height
Divisive Coefficient = 0.89

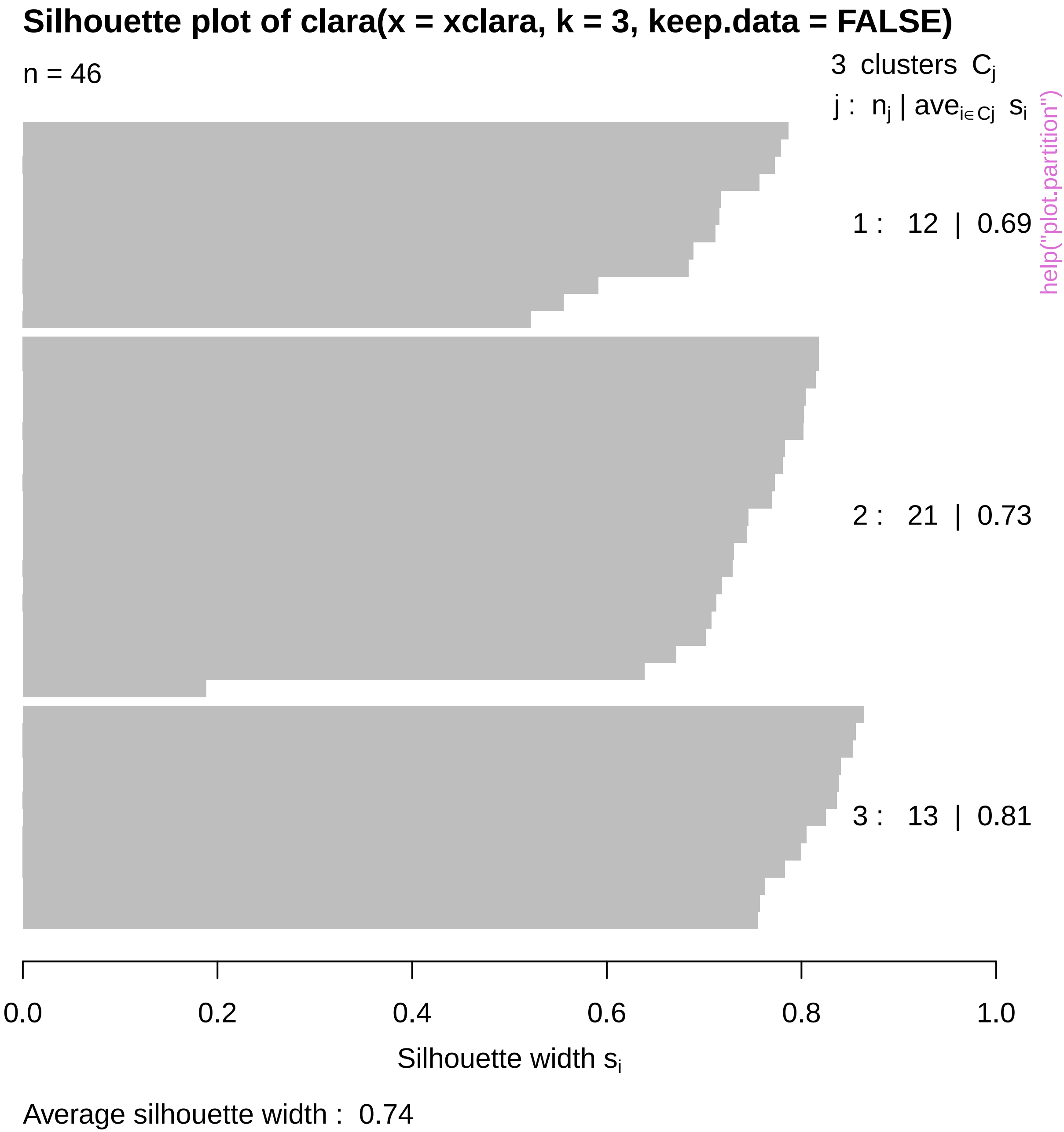


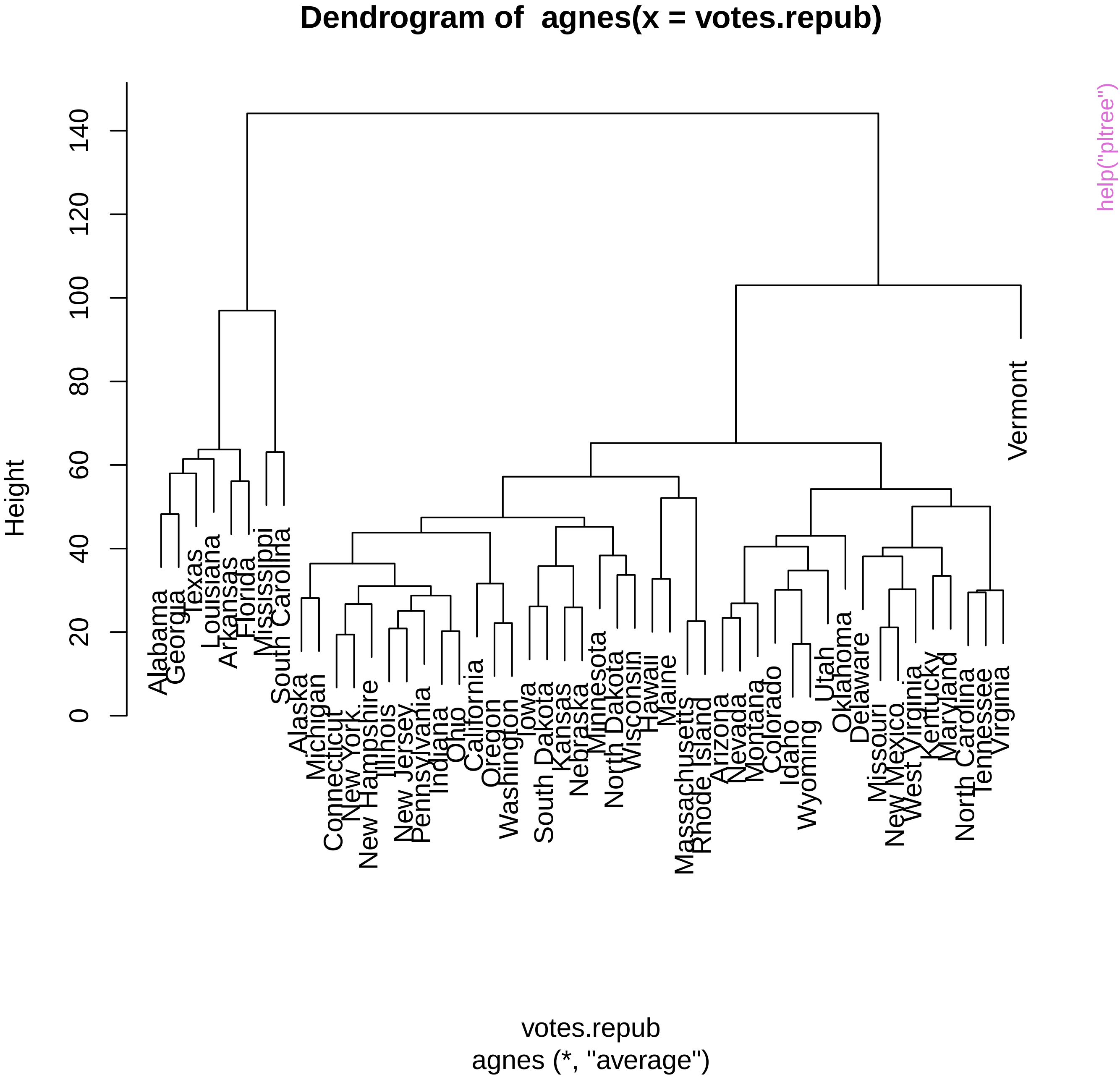
Banner of diana(x = votes.repub, metric = "manhattan", stan
help("plot.diana")
Georgia
Louisiana
Texas
South Caroli
Vermont
Maine
Utah
Nevada
Oklahoma
Maryland
Washington
West Virgini
Tennessee
California
Connecticut
New Jersey
Ohio
Pennsylvania
Wisconsin
Colorado
Idaho
Kansas
North Dakota
Massachusett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

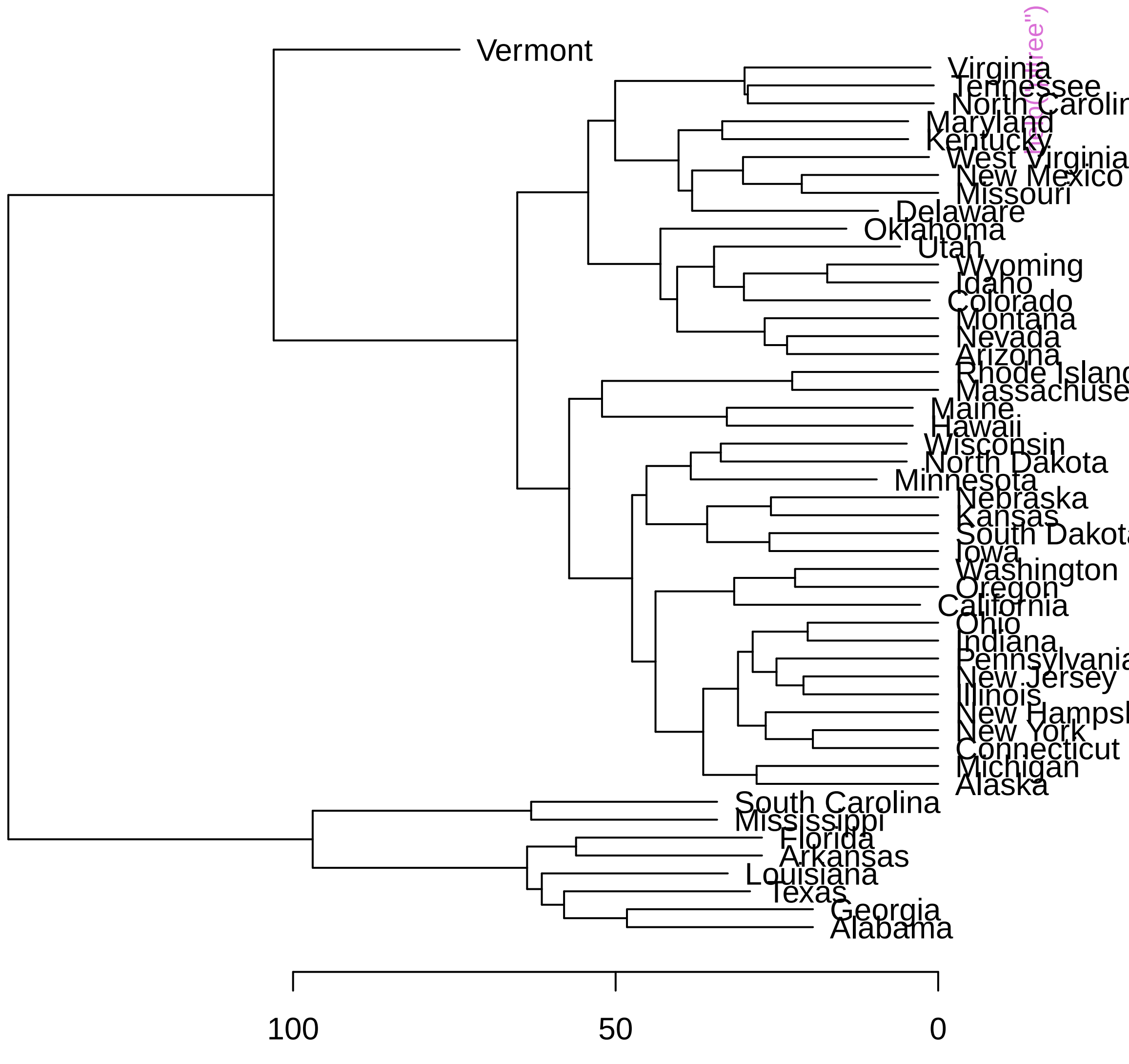

clusplot(pam(x = x, k = 2))
Component 1
Component 2
−4
−2
0
2
−1.0
−0.5
0.0
0.5
1.0
help("plot.partition")
These two components explain 100 % of the point variability.


Silhouette plot of pam(x = x, k = 2)
n = 25
2 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
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
help("plot.partition")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.9

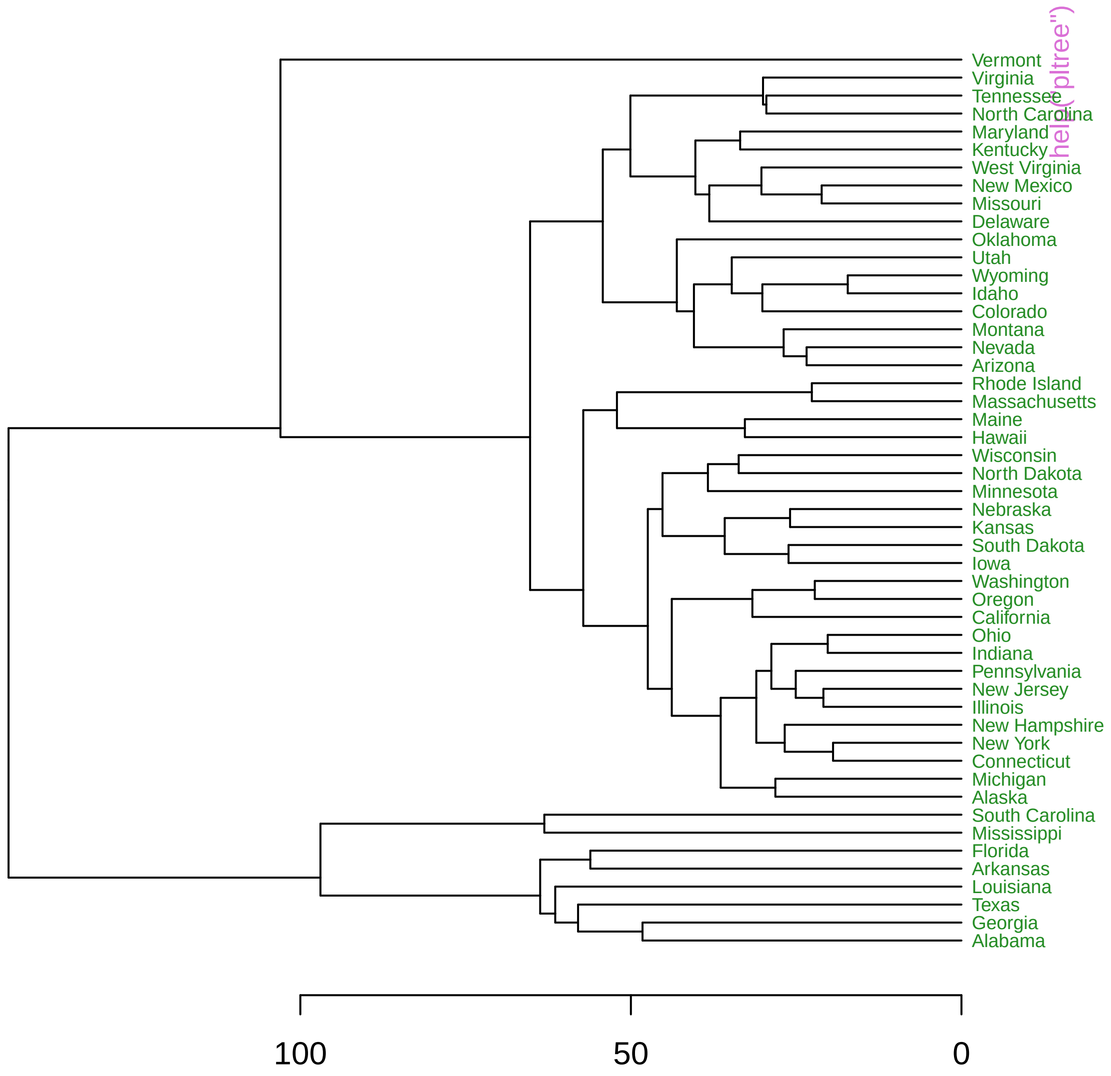

clusplot(clara(x = xclara, k = 3, keep.data = FALSE))
Component 1
Component 2
These two components explain 100 % of the point variability.
help("plot.partition")
−60
−40
−20
0
20
40
60
80

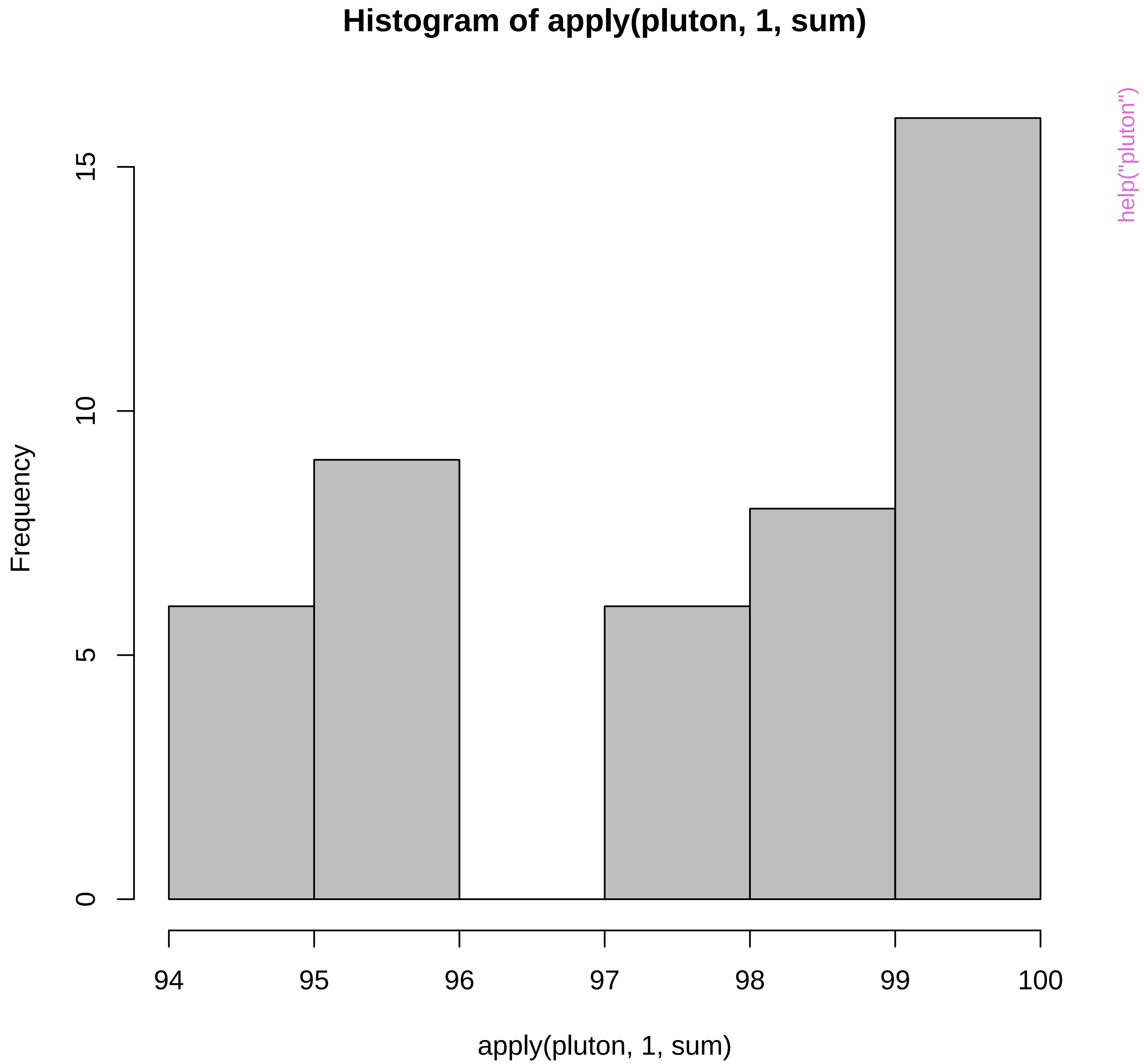

Silhouette plot of clara(x = xclara, k = 3, keep.data = FALSE)
n = 46
3 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
1 : 12 | 0.69
2 : 21 | 0.73
3 : 13 | 0.81
help("plot.partition")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.74


Dendrogram of agnes(x = votes.repub)
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")

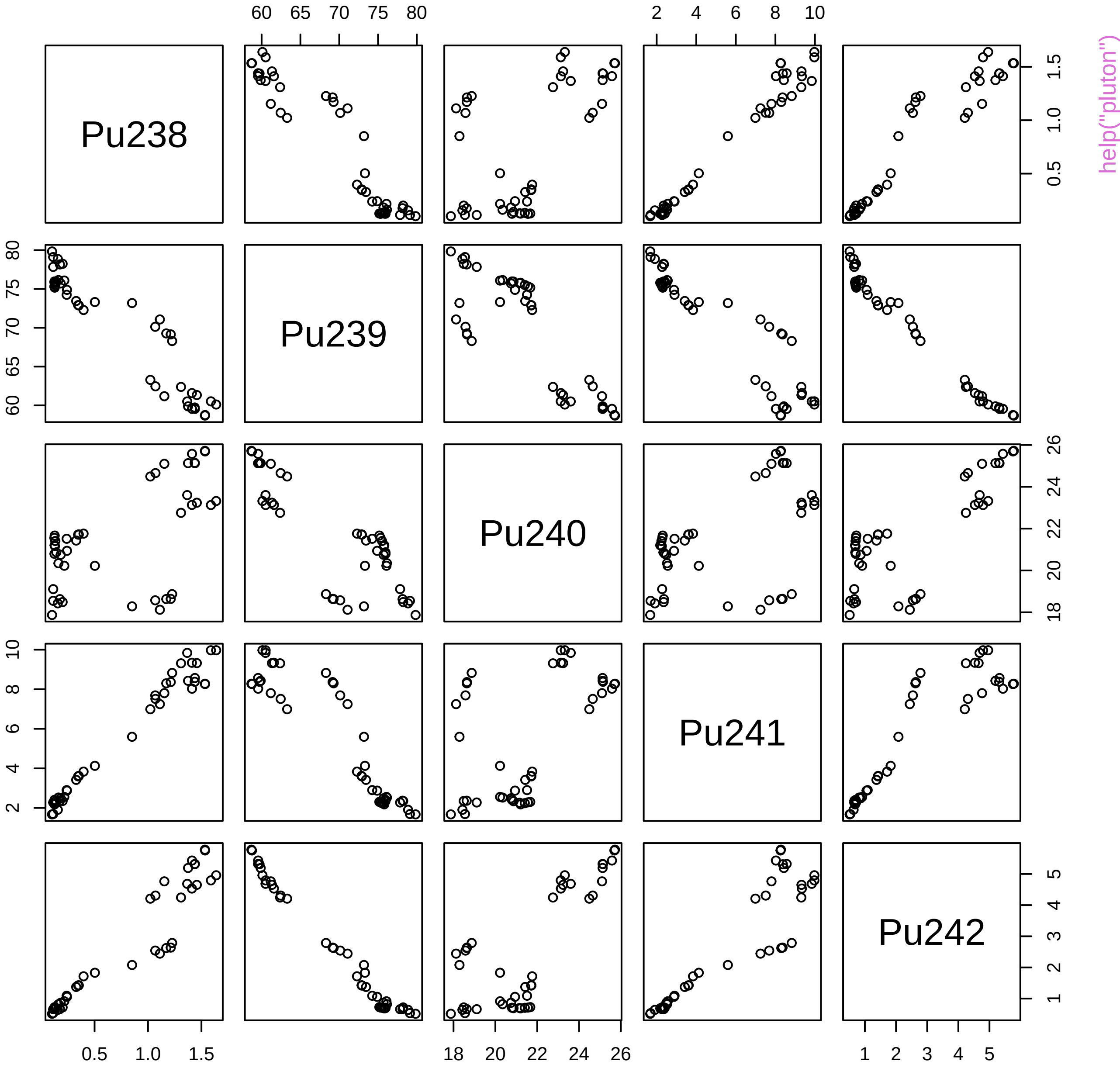

Vermont
Virginia
Tennessee
North Carolin
Maryland
Kentucky
West Virginia
New Mexico
Missouri
Delaware
Oklahoma
Utah
Wyoming
Idaho
Colorado
Montana
Nevada
Arizona
Rhode Islan
Massachuse
Maine
Hawaii
Wisconsin
North Dakota
Minnesota
Nebraska
Kansas
South Dakot
Iowa
Washington
Oregon
California
Ohio
Indiana
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)

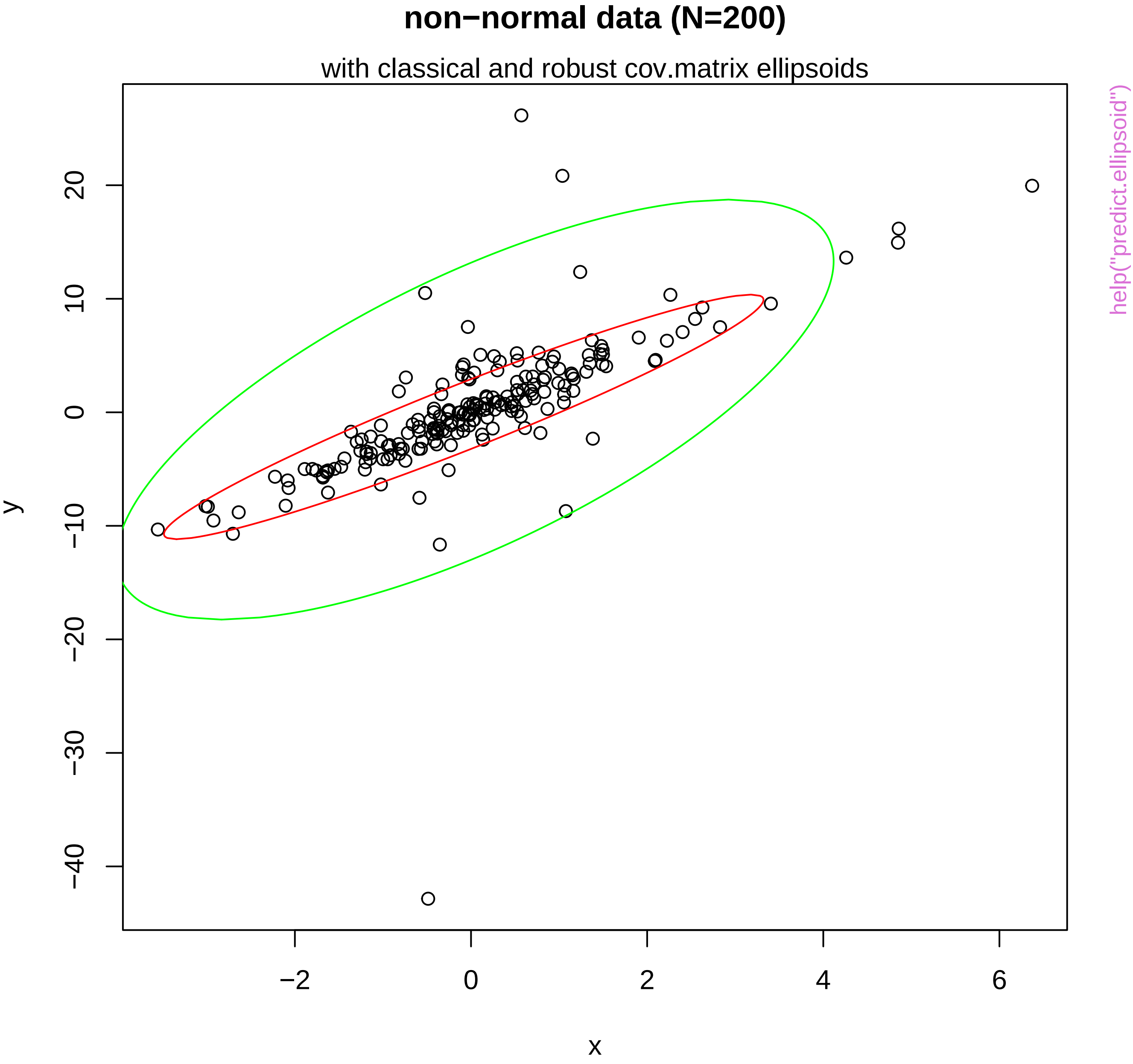


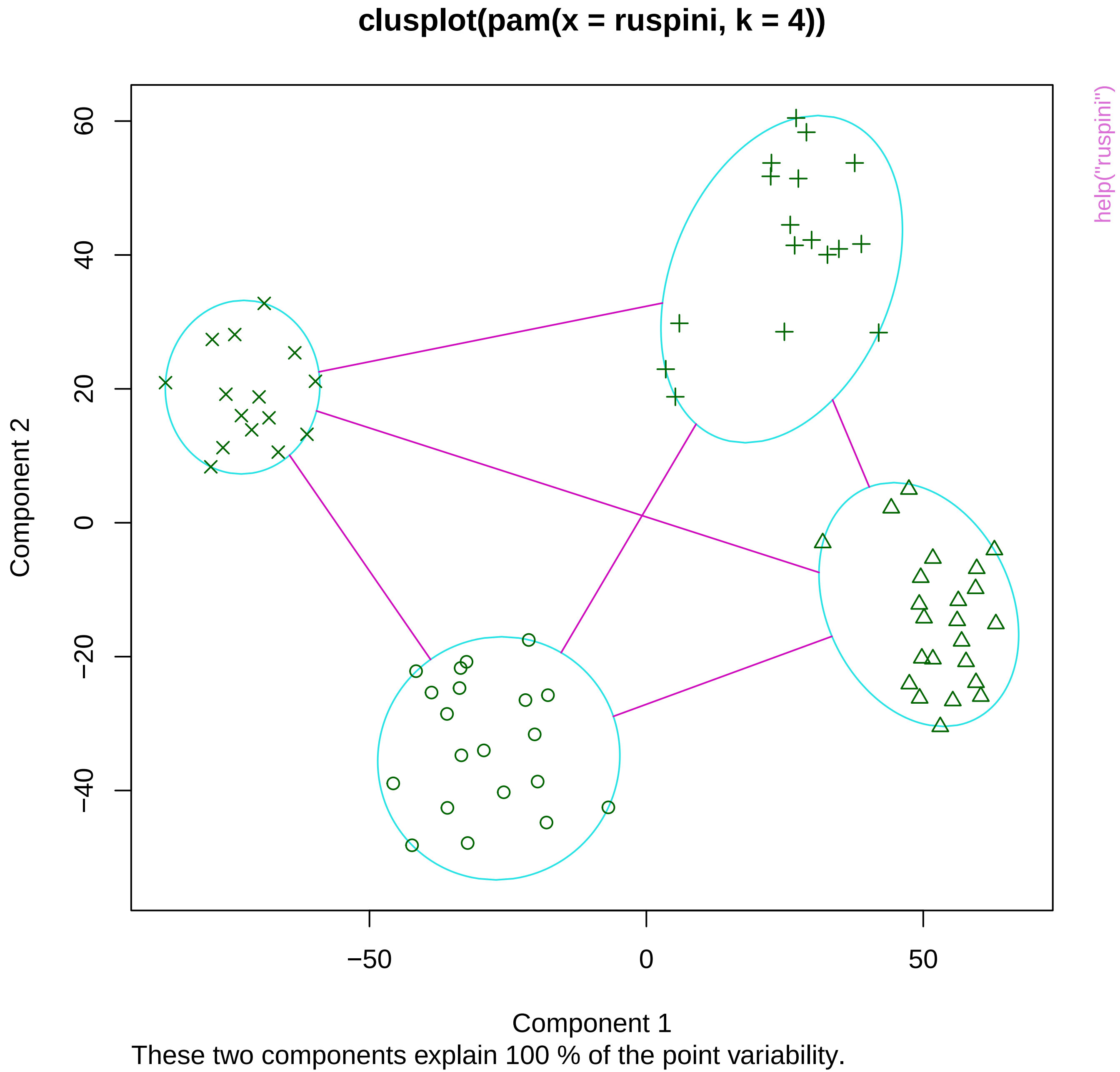


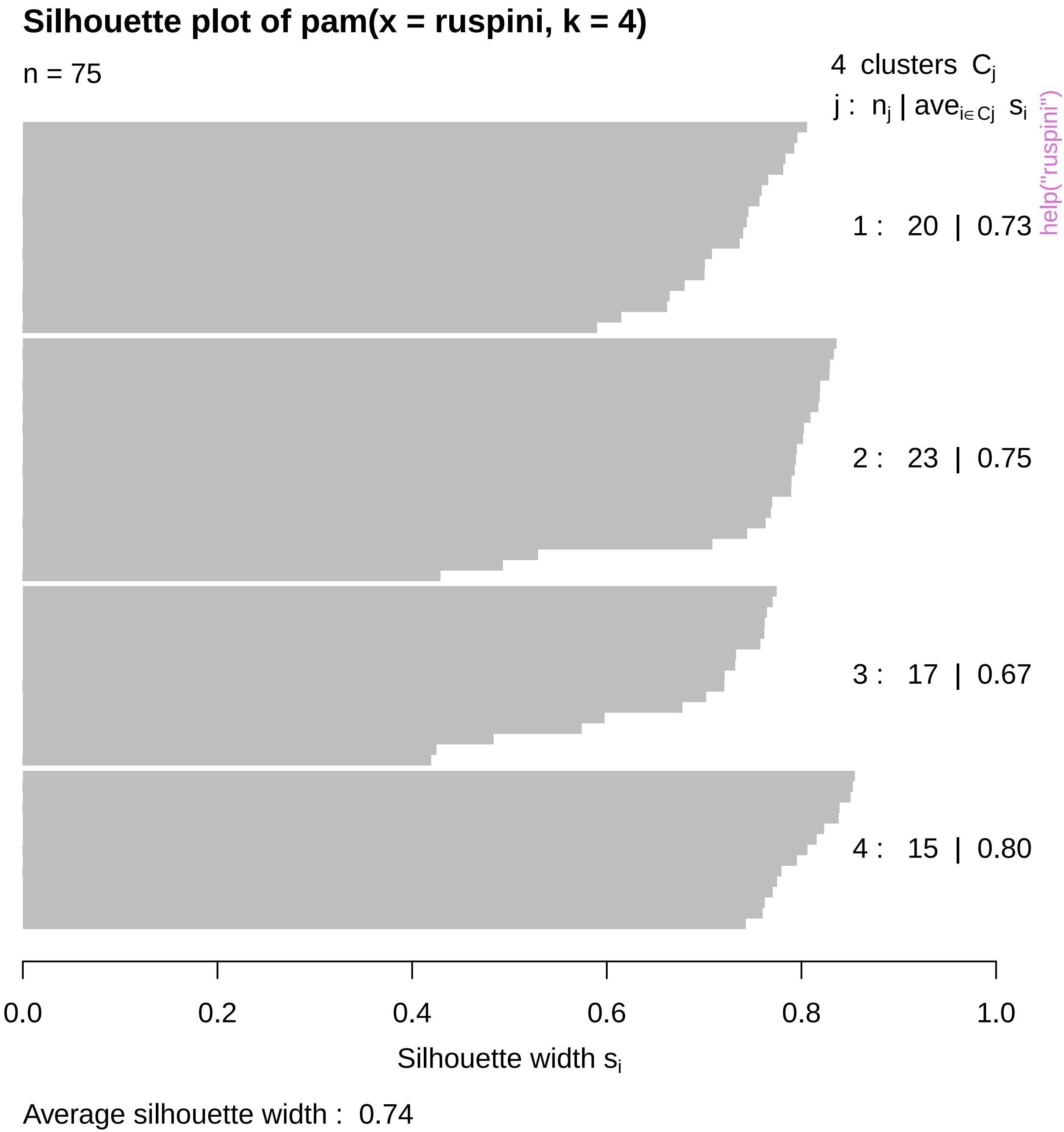
Histogram of apply(pluton, 1, sum)
Frequency
0
5
10
15
94
95
96
97
98
99
100
apply(pluton, 1, sum)
help("pluton")



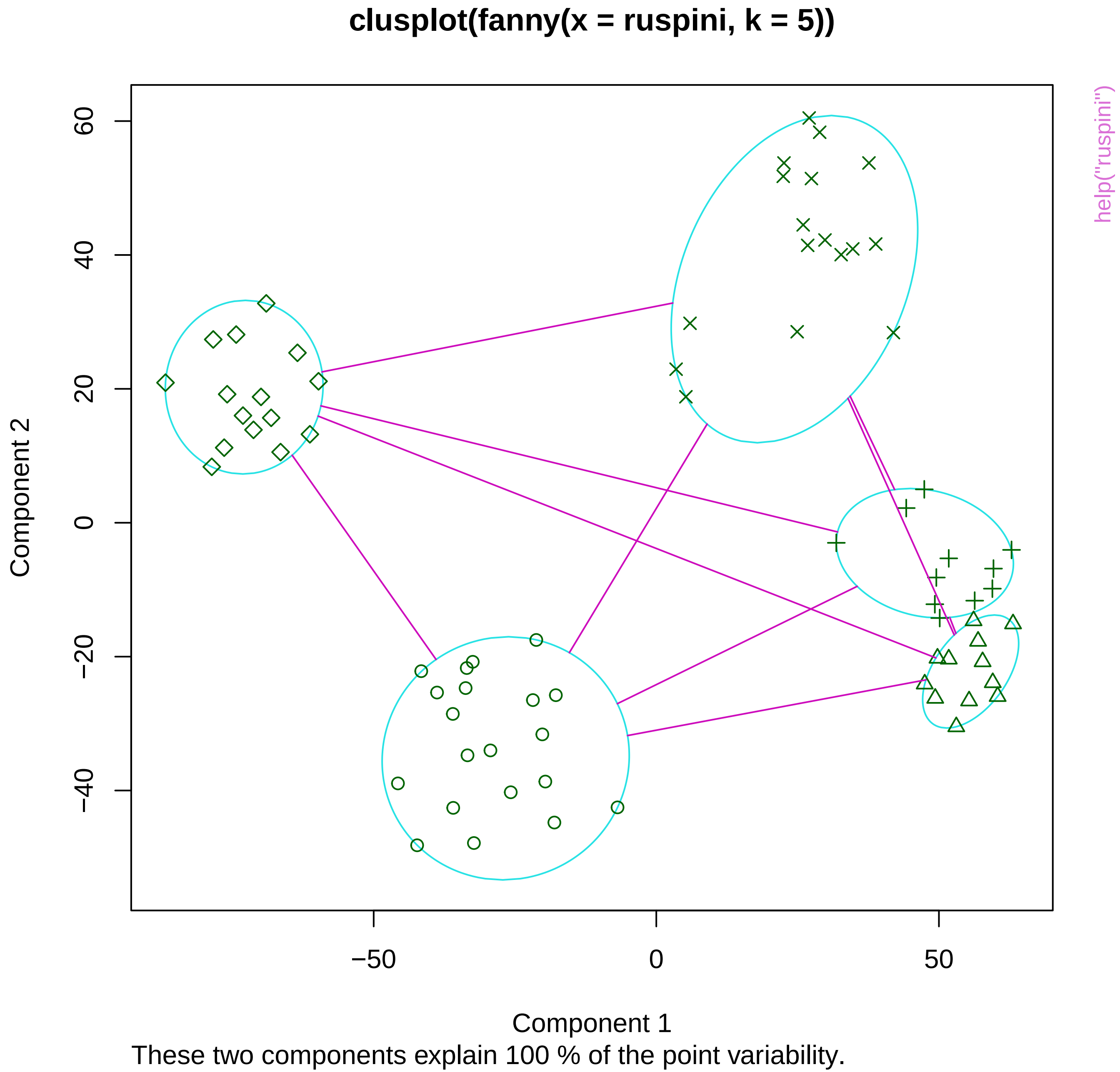
Pu238
Pu239
Pu240
Pu241
Pu242
help("pluton")


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

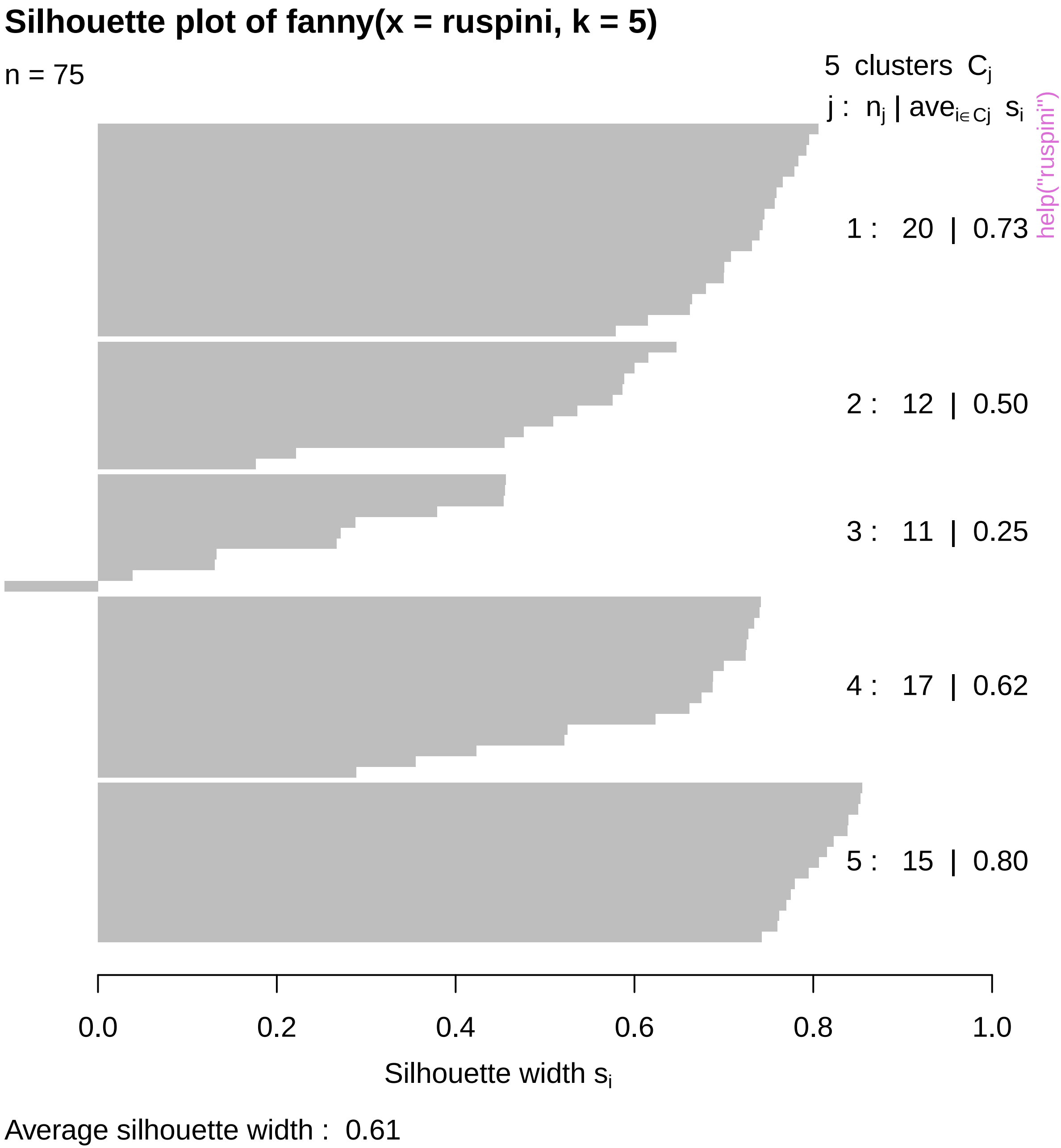

clusplot(pam(x = ruspini, k = 4))
60
40
20
0
−20
−40
Component 2
−50
0
50
Component 1
These two components explain 100 % of the point variability.
help("ruspini")

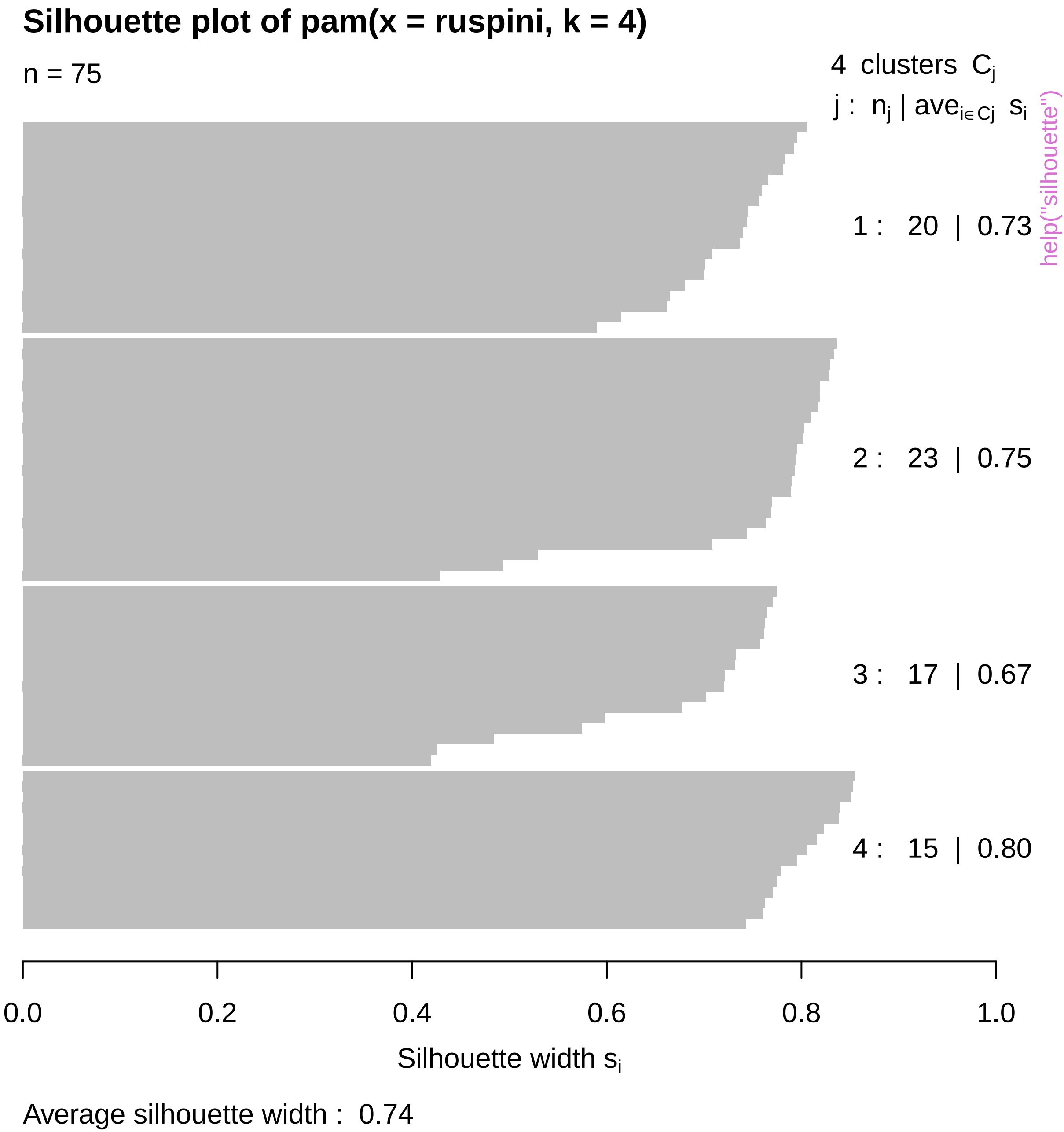


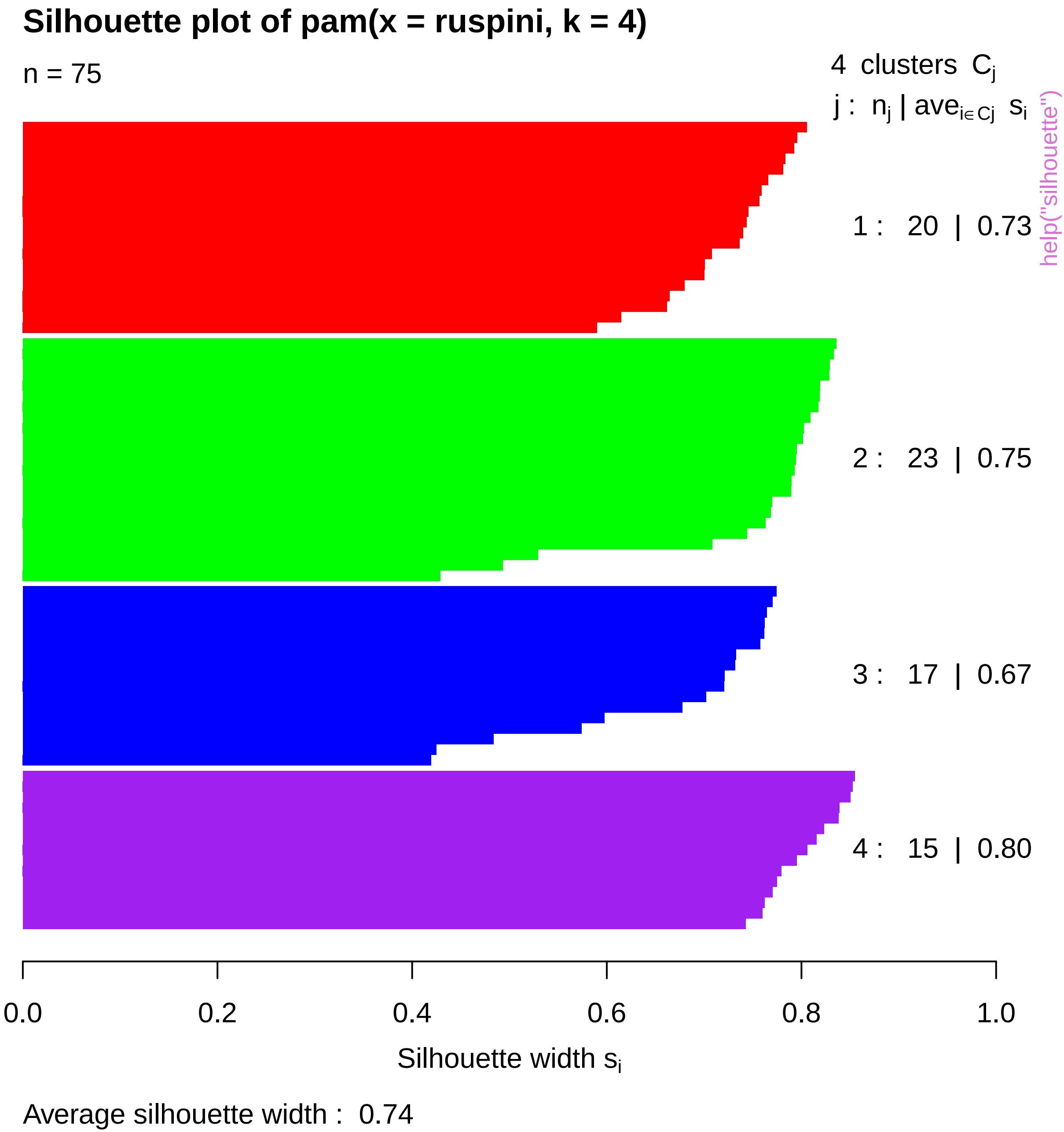
Silhouette plot of pam(x = ruspini, k = 4)
n = 75
4 clusters C_j
j : n_j | $ave_{i \in C_j}$ s_i
1 : 20 | 0.73
2 : 23 | 0.75
3 : 17 | 0.67
4 : 15 | 0.80
help("ruspini")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.74



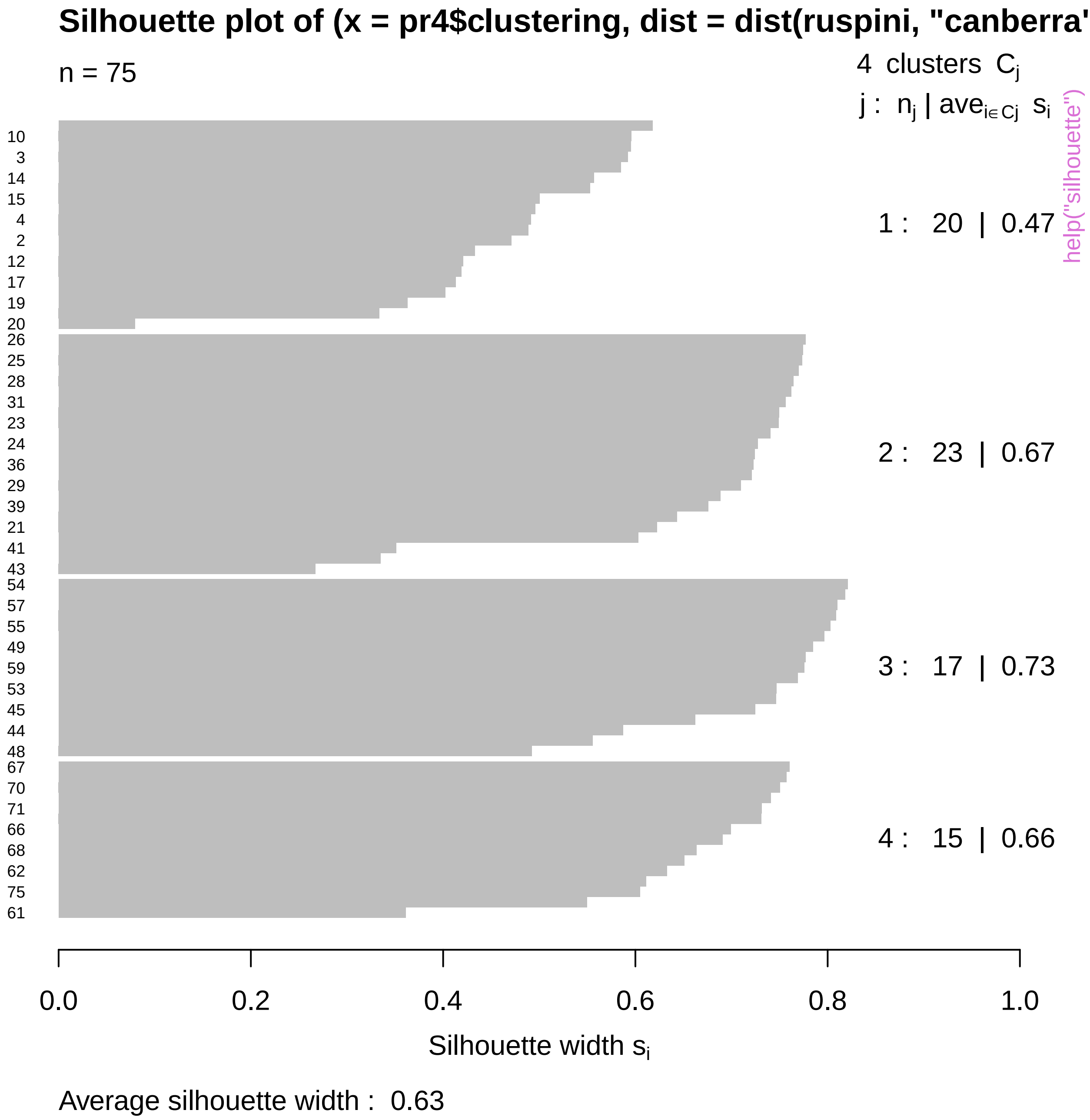
clusplot(fanny(x = ruspini, k = 5))
60
40
20
0
−20
−40
Component 2
−50
0
50
Component 1
These two components explain 100 % of the point variability.
help("ruspini")


Silhouette plot of fanny(x = ruspini, k = 5)
n = 75
5 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
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

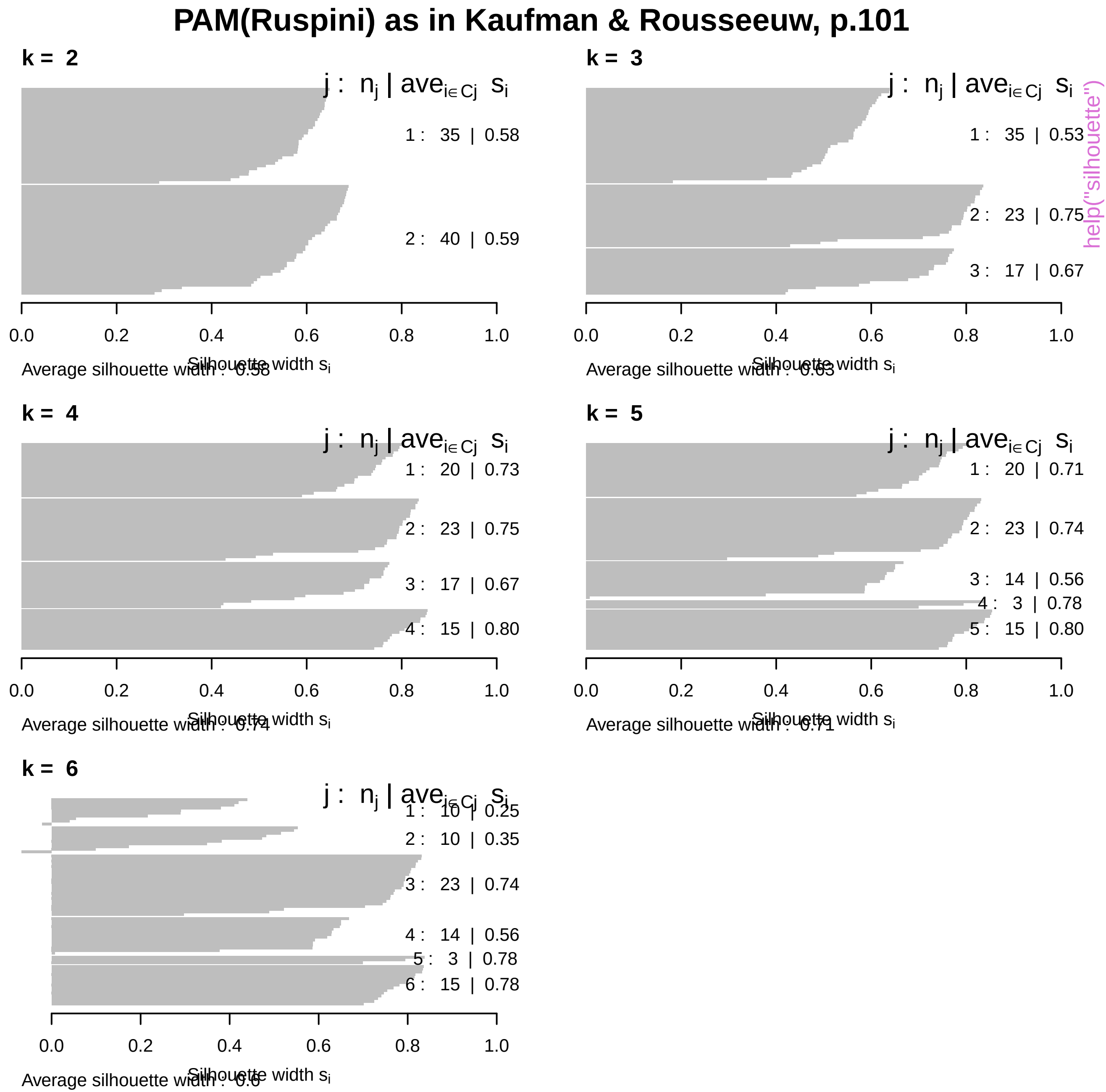

Silhouette plot of pam(x = ruspini, k = 4)
n = 75
4 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
1 : 20 | 0.73
2 : 23 | 0.75
3 : 17 | 0.67
4 : 15 | 0.80
help("silhouette")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.74

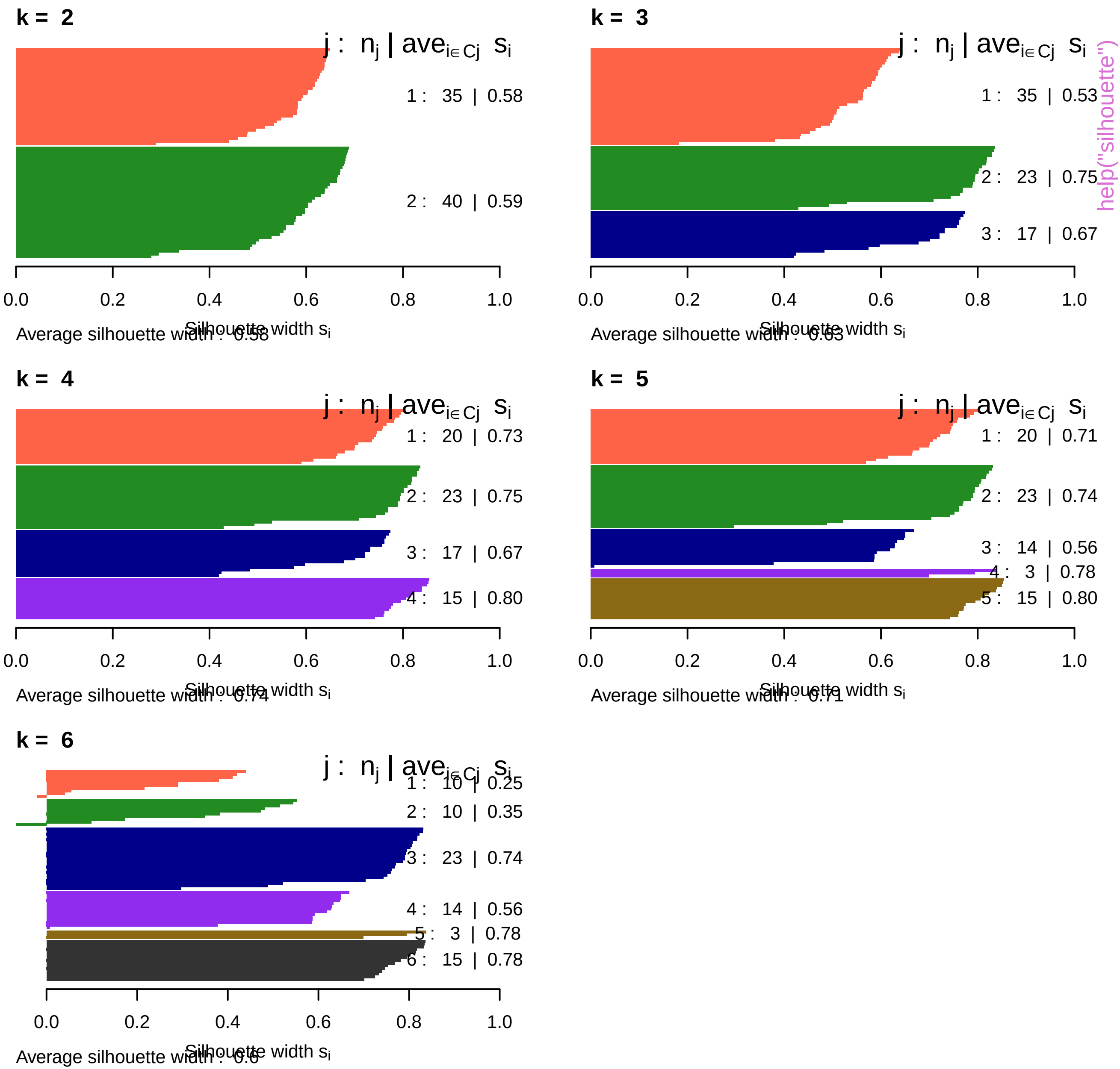


Silhouette plot of pam(x = ruspini, k = 4)
n = 75
4 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
1 : 20 | 0.73
2 : 23 | 0.75
3 : 17 | 0.67
4 : 15 | 0.80
help("silhouette")
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.74

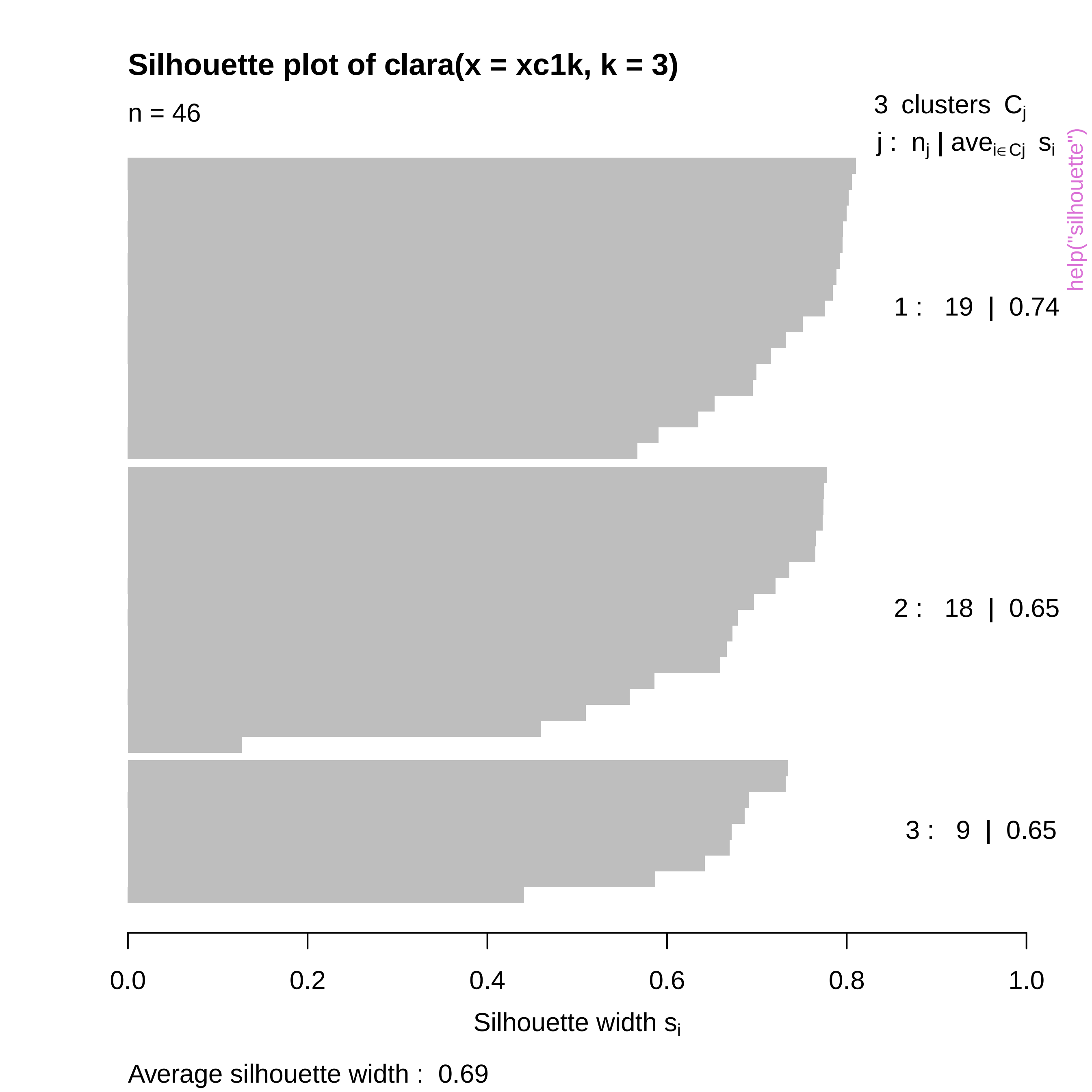


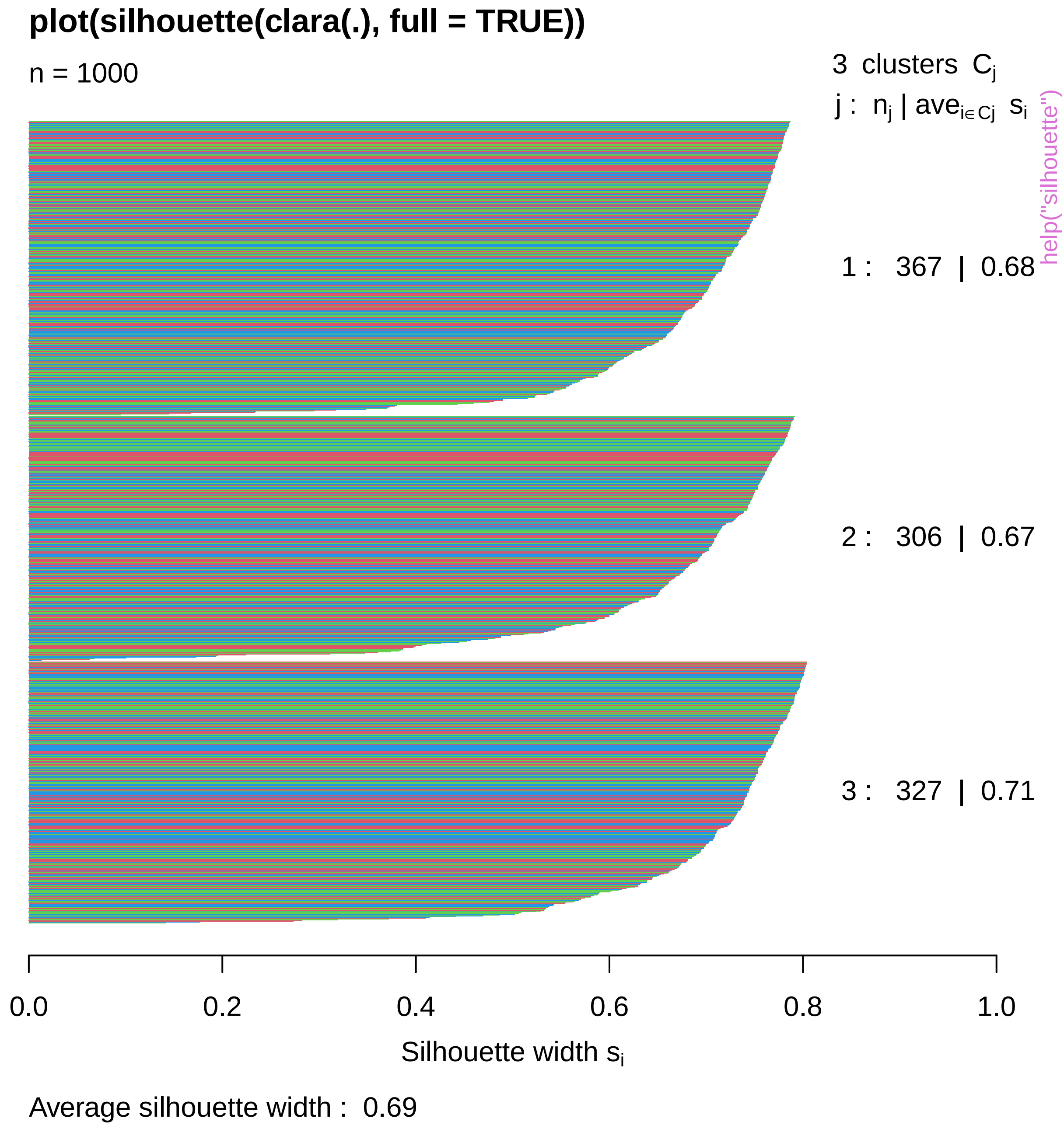
Silhouette plot of (x = pr4$clustering, dist = dist(ruspini, "canberra"
n = 75
4 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
1 : 20 | 0.47
2 : 23 | 0.67
3 : 17 | 0.73
4 : 15 | 0.66
help("silhouette")
10
3
14
15
4
2
12
17
19
20
26
25
28
31
23
24
36
29
39
21
41
43
54
57
55
49
59
53
45
44
48
67
70
71
66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

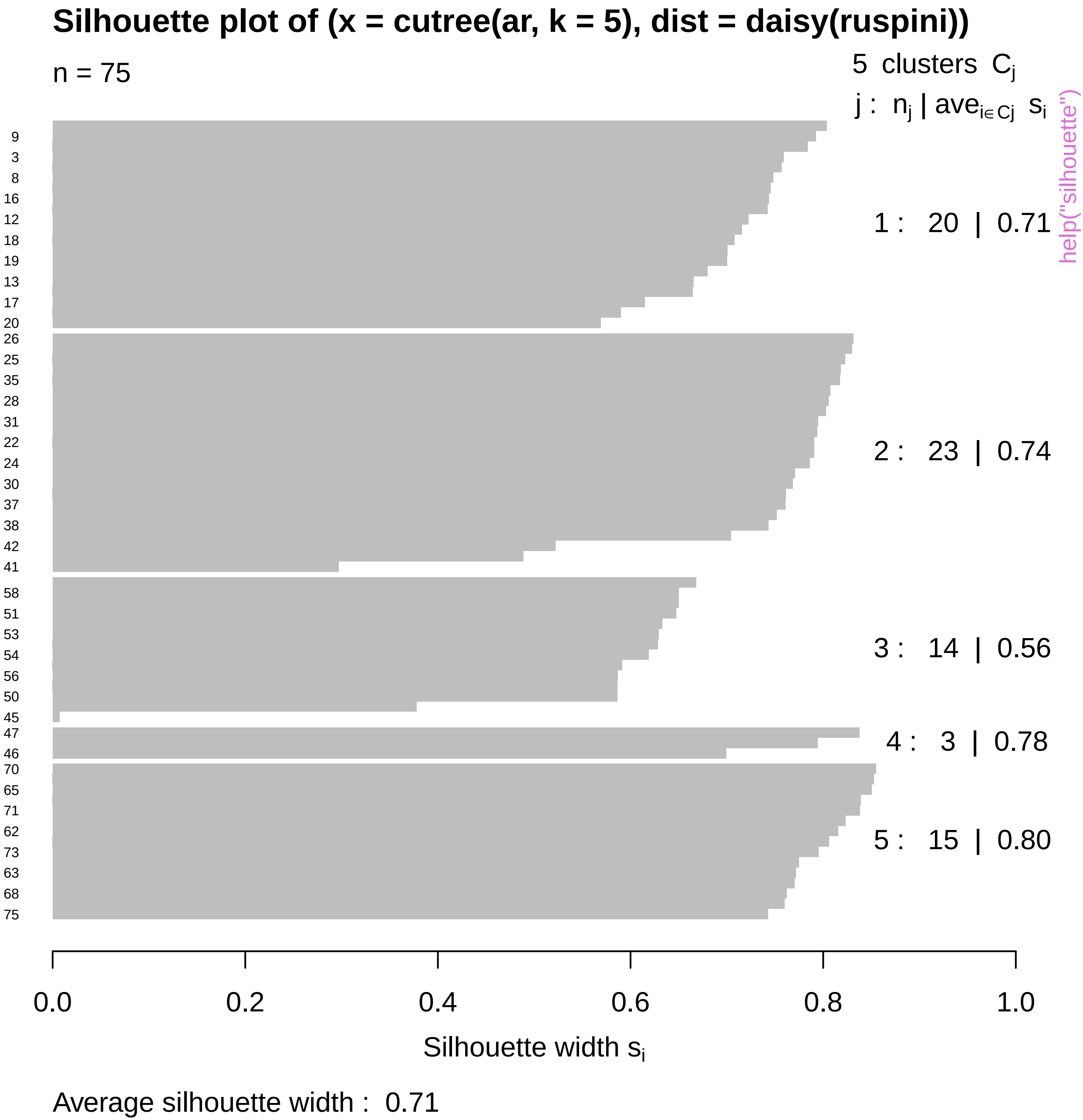

PAM(Ruspini) as in Kaufman & Rousseeuw, p.101
k = 2
j : n_j | ave_{i∈Cj} s_i
1 : 35 | 0.58
2 : 40 | 0.59
0.0 0.2 0.4 0.6 0.8 1.0
Silhouette width s_i
Average silhouette width : 0.58
k = 3
j : n_j | ave_{i∈Cj} s_i
1 : 35 | 0.53
2 : 23 | 0.75
3 : 17 | 0.67
0.0 0.2 0.4 0.6 0.8 1.0
Silhouette width s_i
Average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

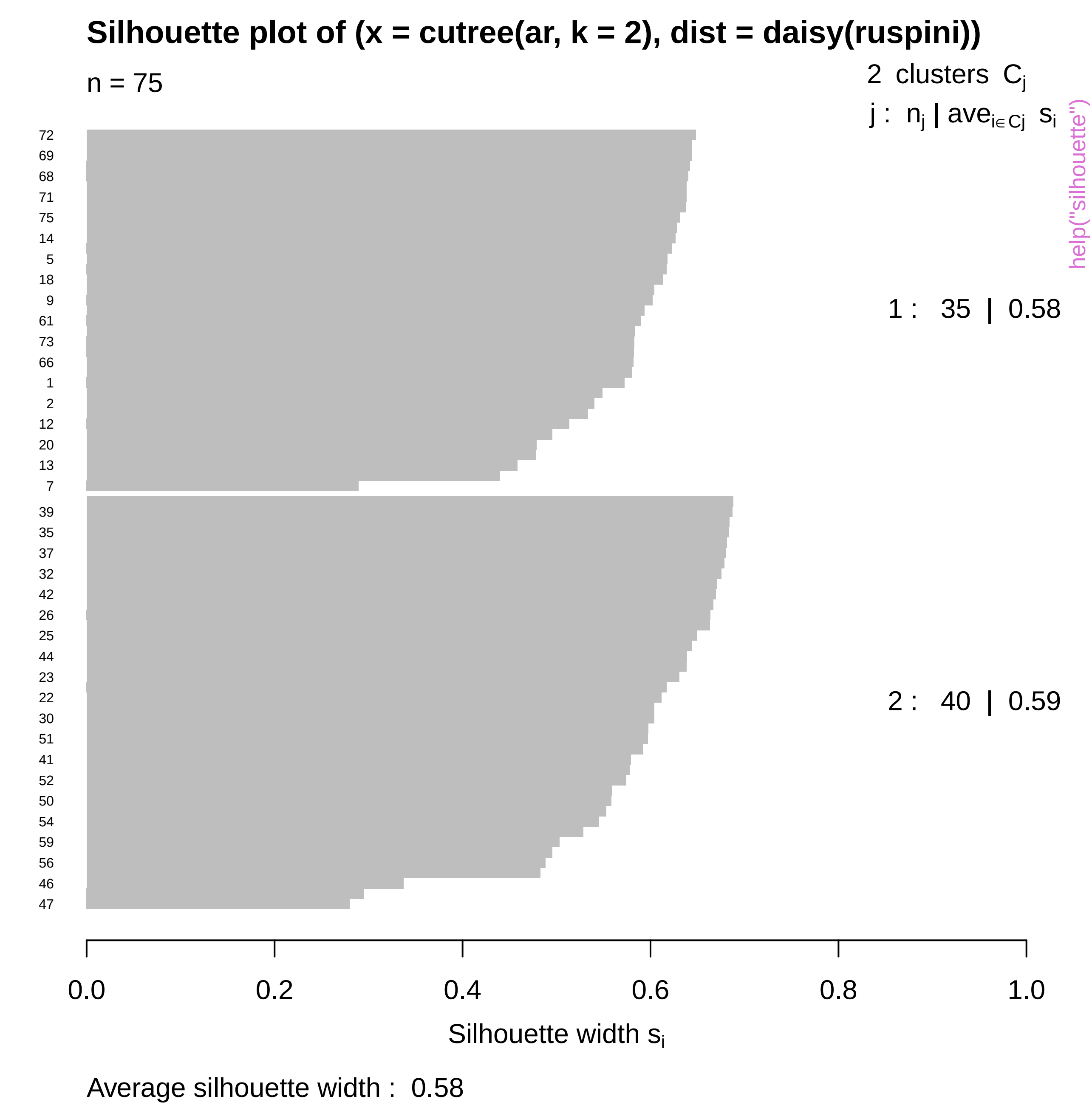


k = 2
j : n_j | $ave_{i \in Cj}$ s_i
1 : 35 | 0.58
2 : 40 | 0.59
Silhouette width s_i
Average silhouette width : 0.58
k = 3
j : n_j | $ave_{i \in Cj}$ s_i
1 : 35 | 0.53
2 : 23 | 0.75
3 : 17 | 0.67
Silhouette width s_i
Average silhouette width : 0.63
help("silhouette")
k = 4
j : n_j | $ave_{i \in Cj}$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

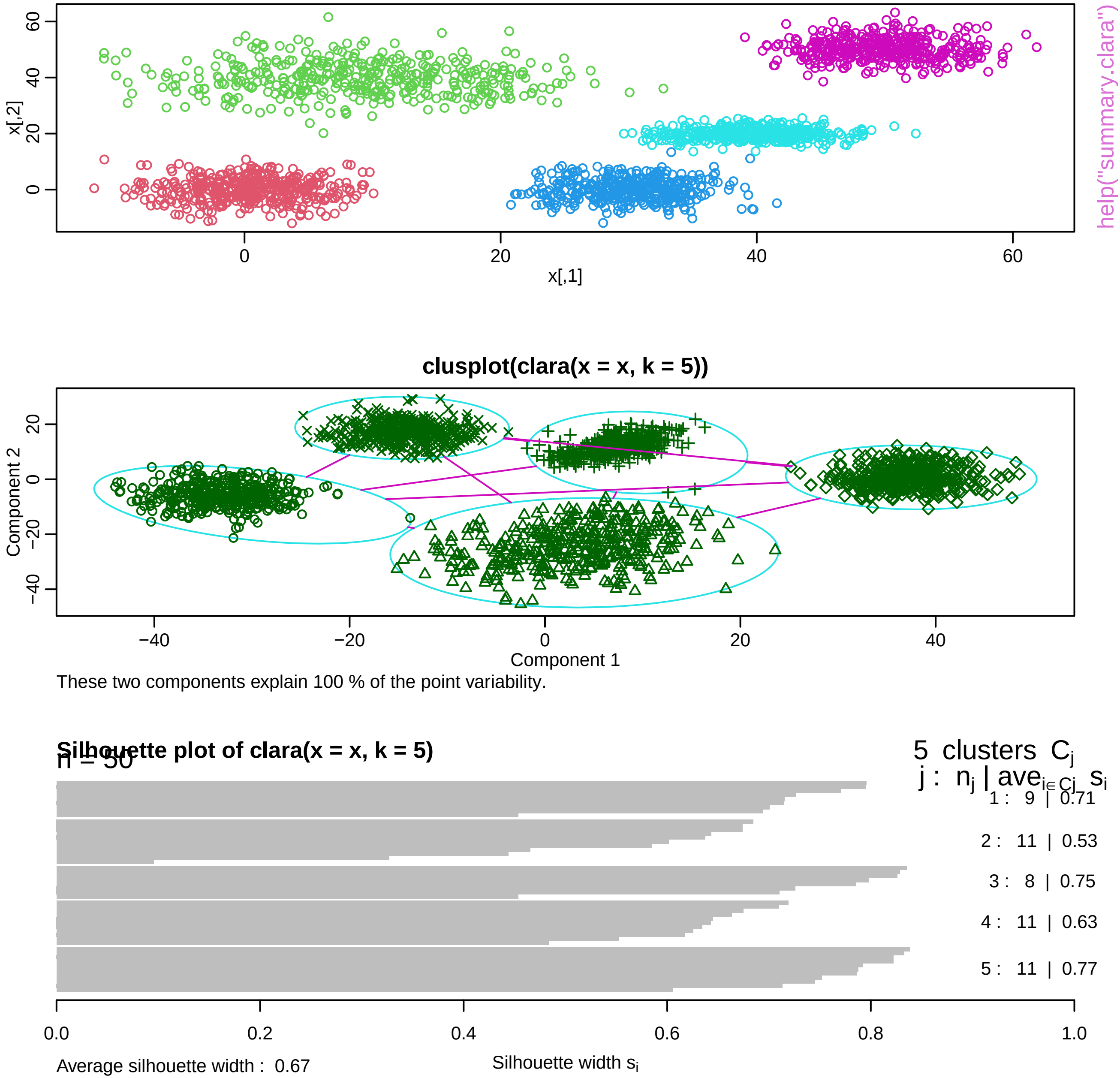

Silhouette plot of clara(x = xc1k, k = 3)
n = 46
3 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
help("silhouette")
1 : 19 | 0.74
2 : 18 | 0.65
3 : 9 | 0.65
0.0
0.2
0.4
0.6
0.8
1.0
Silhouette width s_i
Average silhouette width : 0.69


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

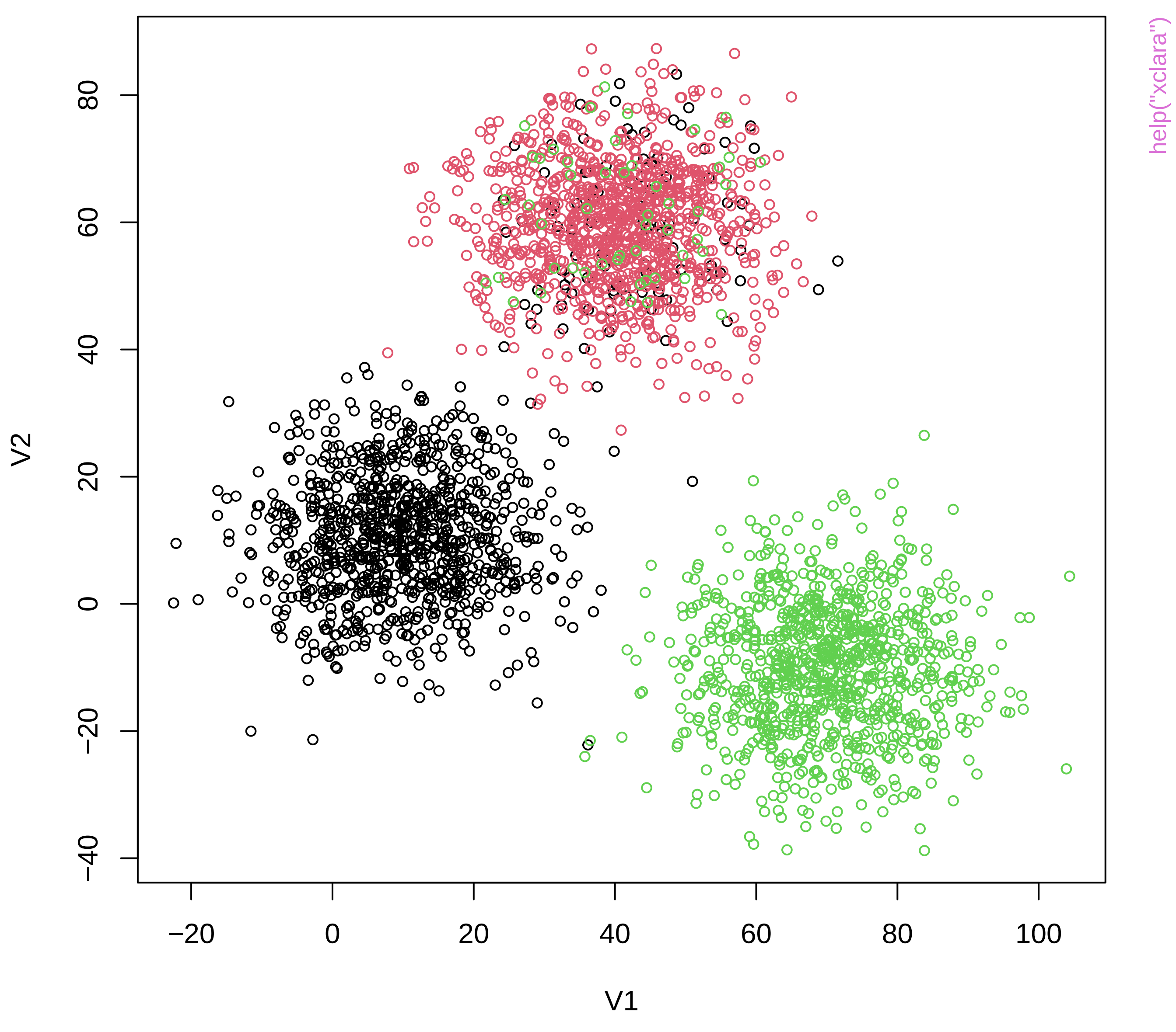

Silhouette plot of (x = cutree(ar, k = 5), dist = daisy(ruspini))
n = 75
5 clusters C_j
j : n_j | $ave_{i \in Cj}$ s_i
1 : 20 | 0.71
2 : 23 | 0.74
3 : 14 | 0.56
4 : 3 | 0.78
5 : 15 | 0.80
help("silhouette")
9
3
8
16
12
18
19
13
17
20
26
25
35
28
31
22
24
30
37
38
42
41
58
51
53
54
56
50
45
47
46
70
65
71
62
73
63
68
75
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
39
35
37
32
42
26
25
44
23
22
30
51
41
52
50
54
59
56
46
47
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



help("summary.clara")
x[,2]
x[,1]
0
20
40
60
clusplot(clara(x = x, k = 5))
Component 2
Component 1
−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
Average silhouette width : 0.67
Silhouette width s_i



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