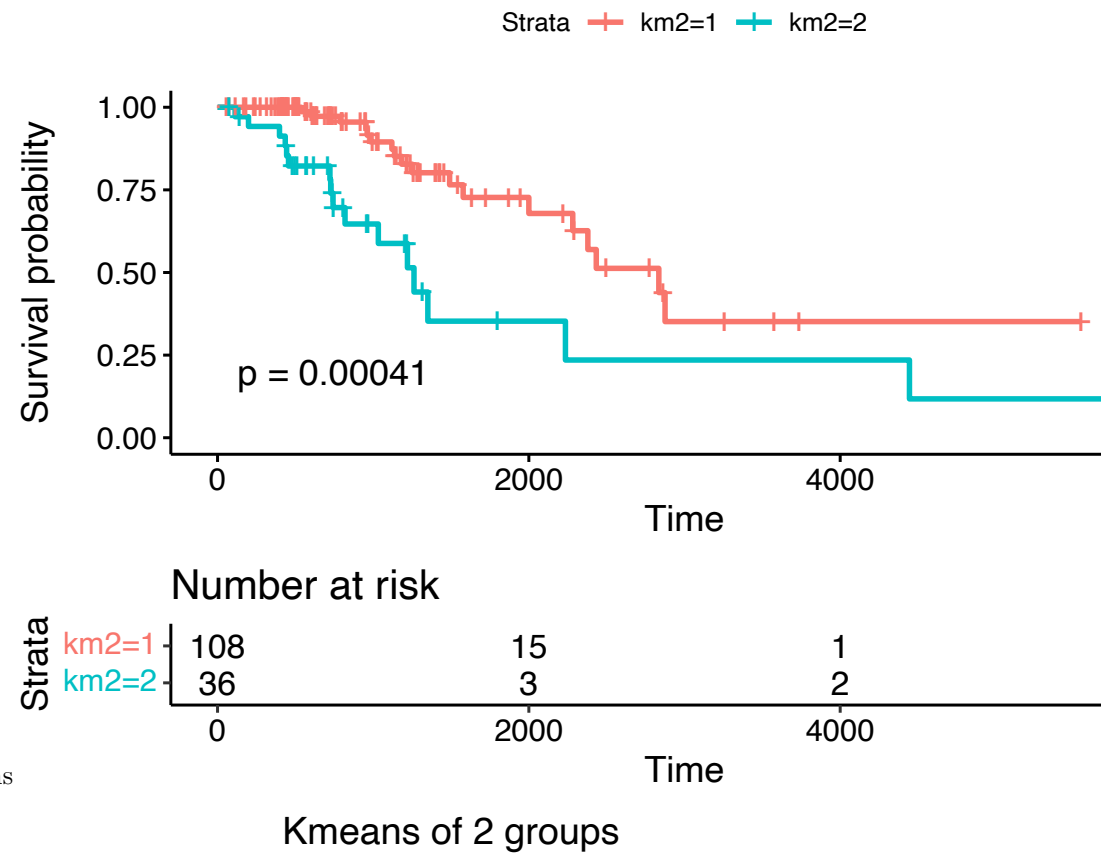
cp decomposition glioma 73 test rank5

VIVI TANG

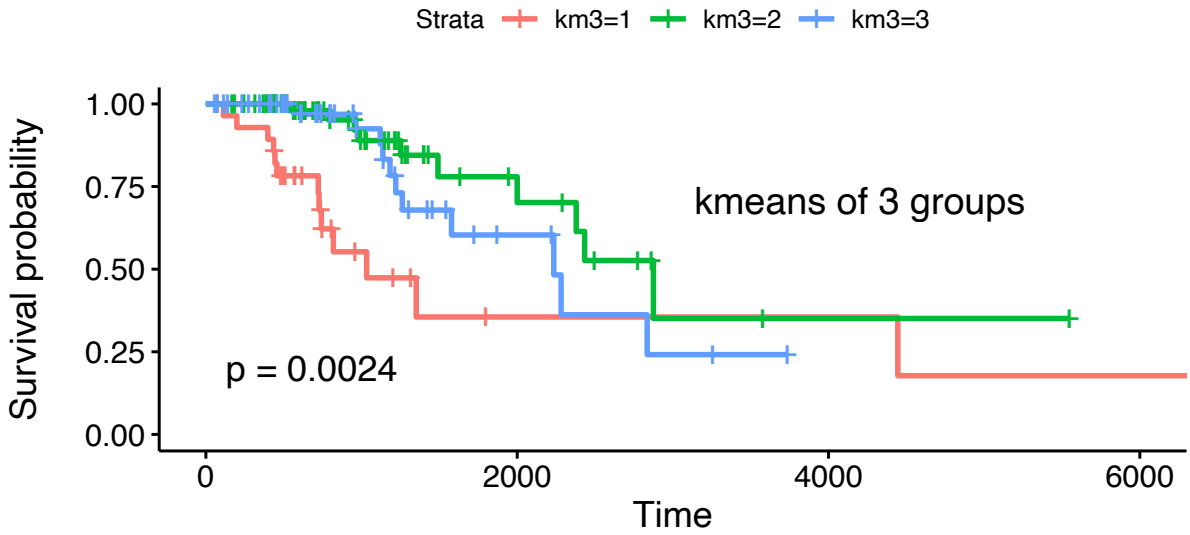
17/11/2021

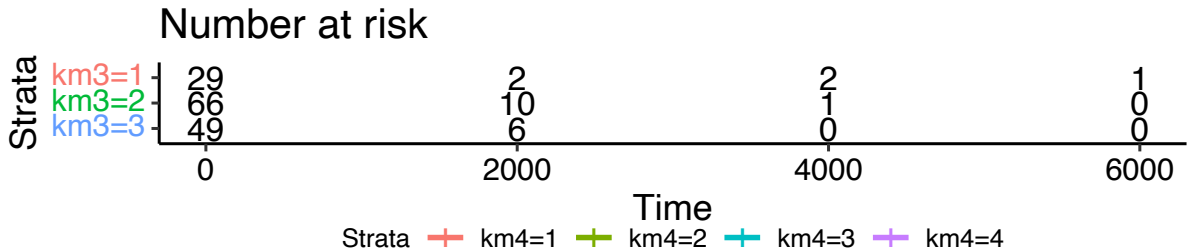
1. Kmeans

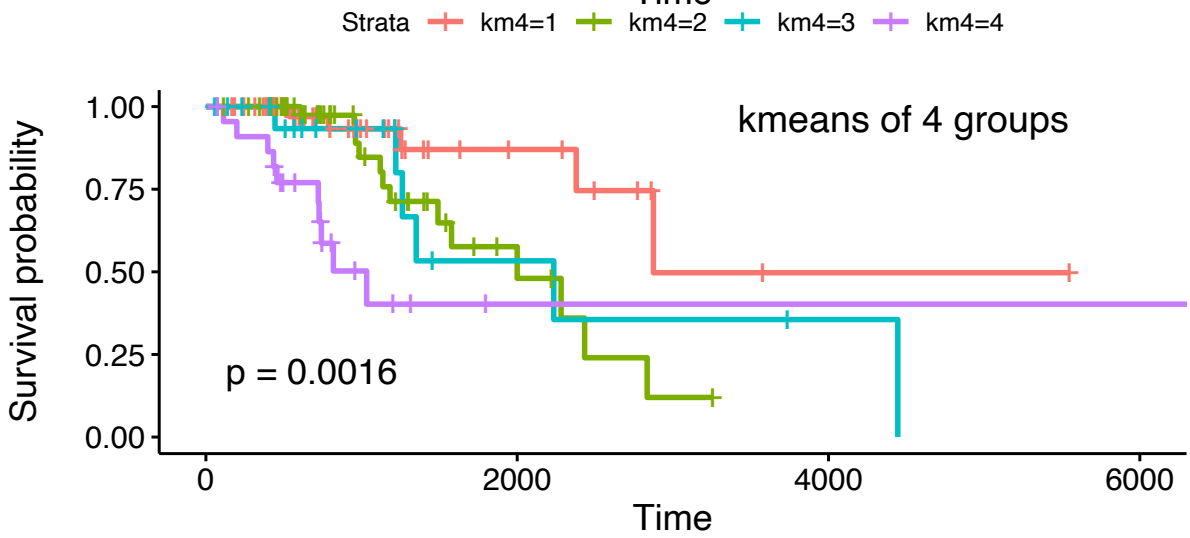
```
## Warning: package 'lattice' was built under R version 3.6.2

## Warning: package 'survival' was built under R version 3.6.2

## Warning: package 'survminer' was built under R version 3.6.2

## Warning: package 'ggplot2' was built under R version 3.6.2

## Warning: package 'ggpubr' was built under R version 3.6.2
```

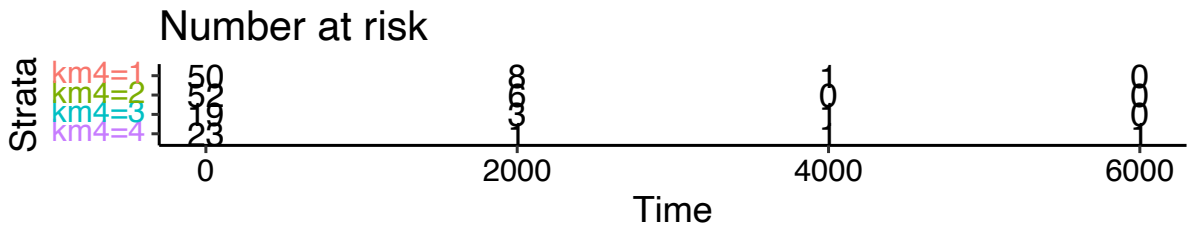


3. Fit the results of Kmeans









4. Hierarchical Clustering

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## Warning: package 'proxy' was built under R version 3.6.2
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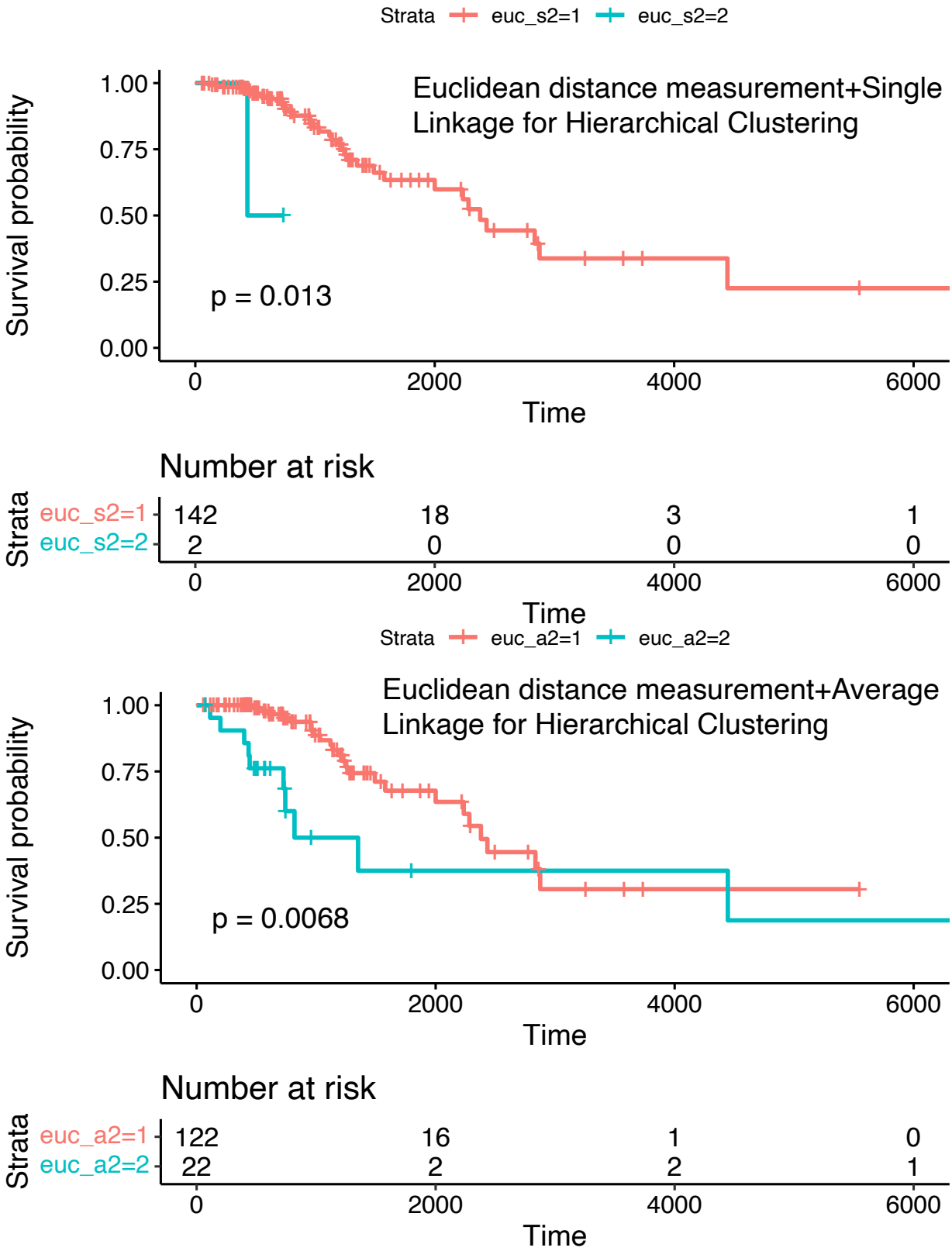
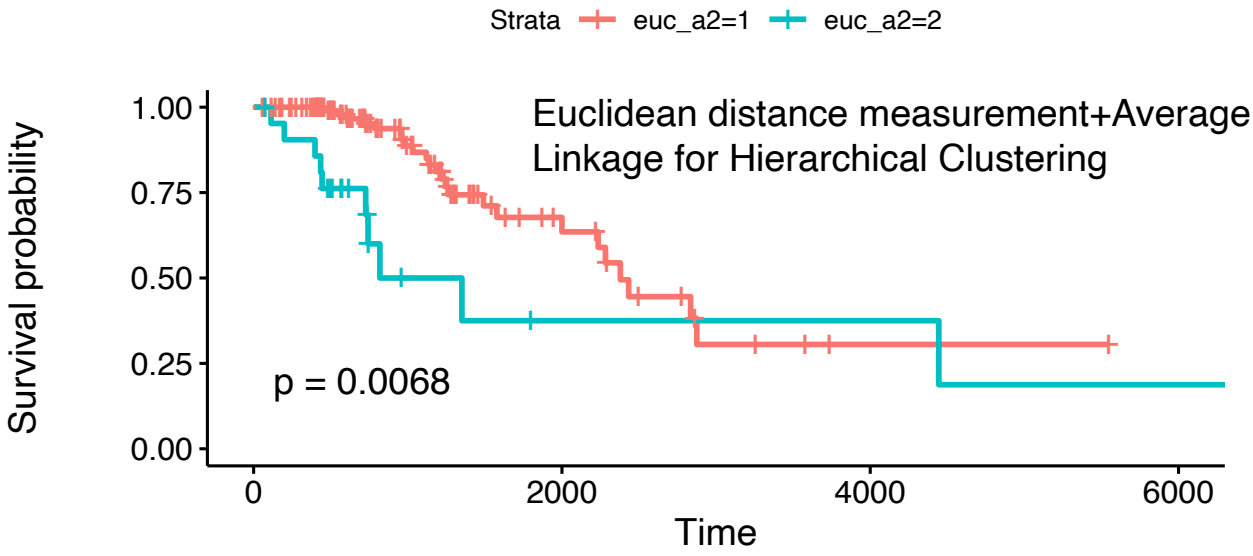
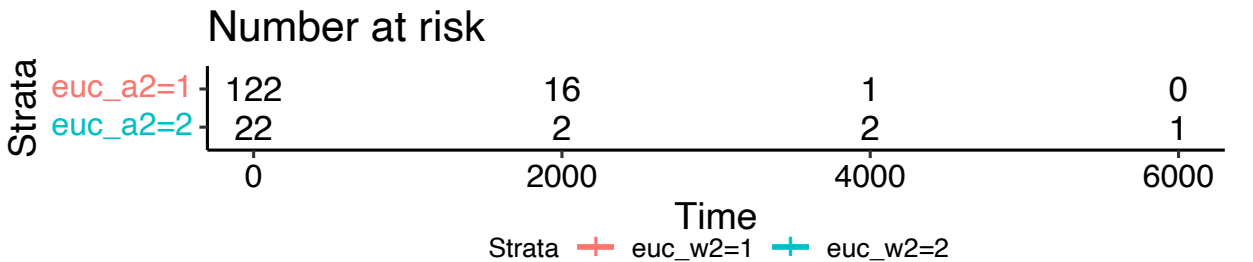
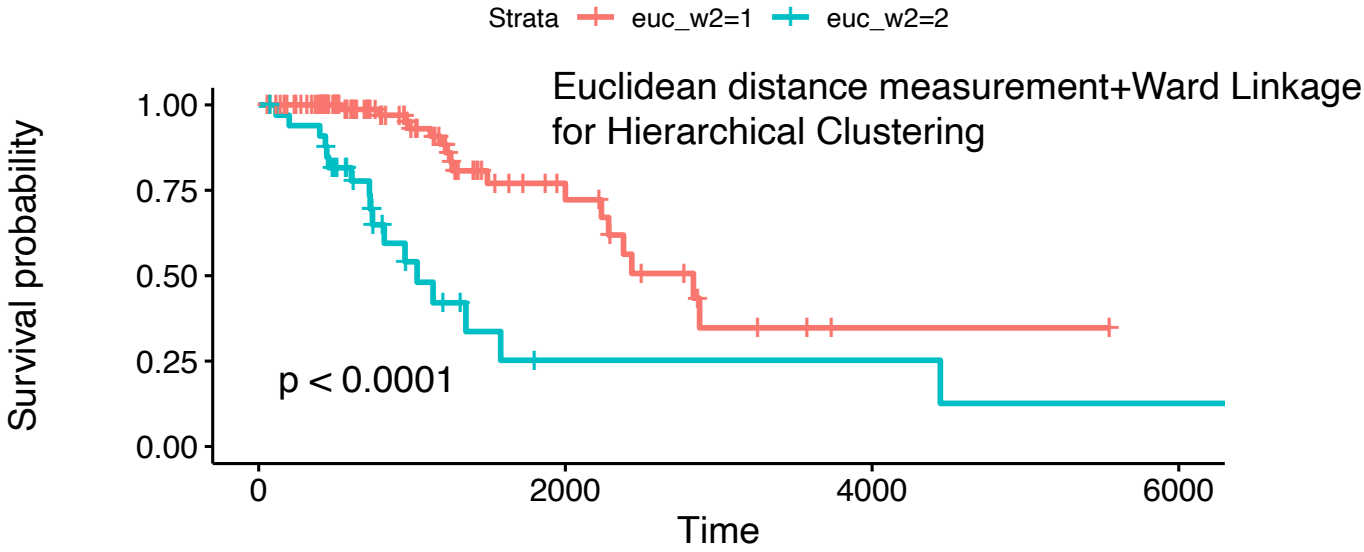
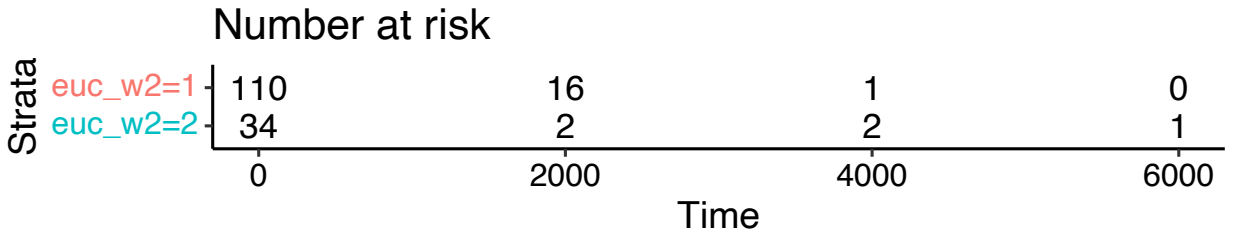
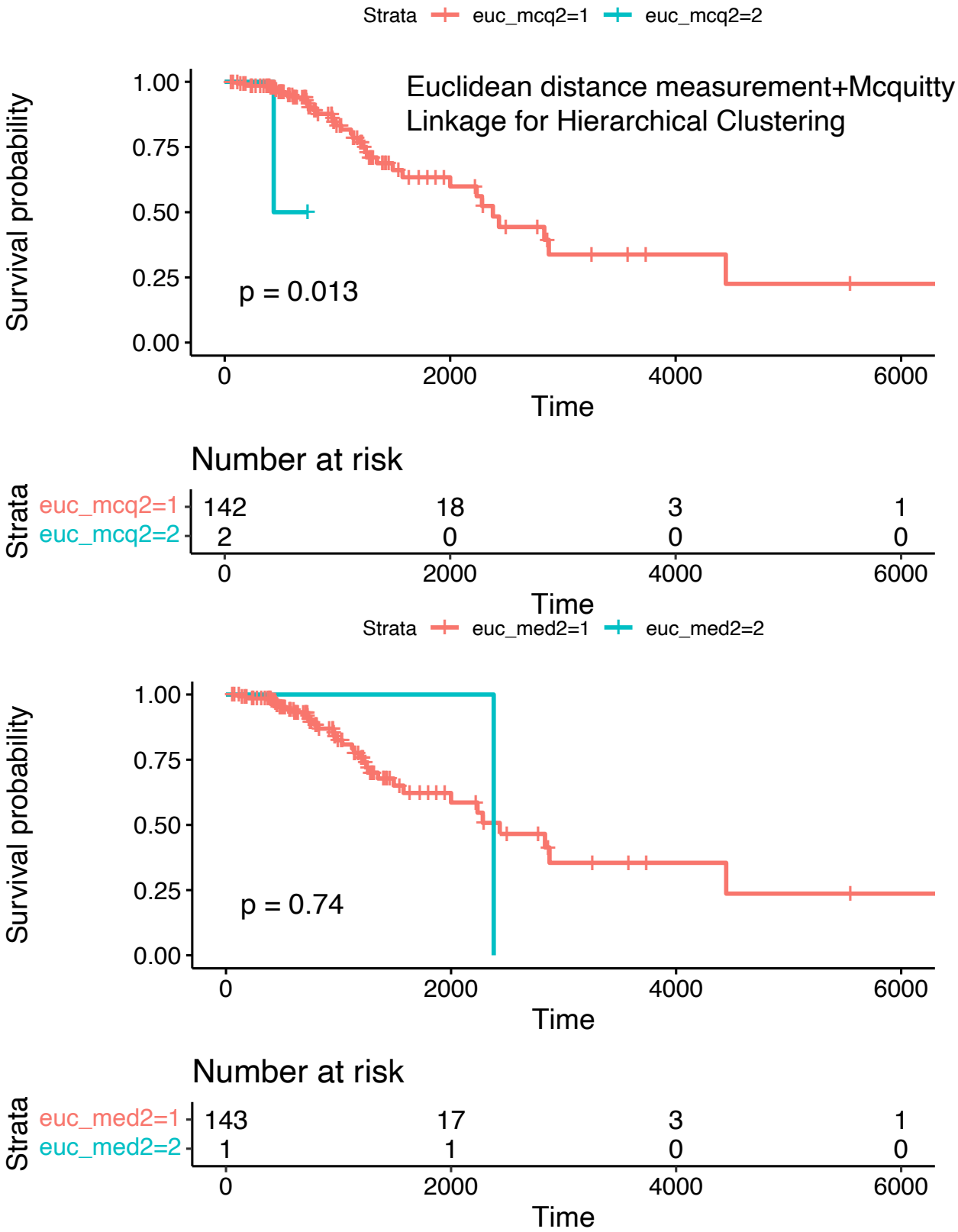

Strata euc_s2=1 euc_s2=2
Euclidean distance measurement+Single Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.013
0
2000
4000
6000
Time
Number at risk
Strata
euc_s2=1
euc_s2=2
142
18
3
1
2
0
0
0
0
2000
4000
6000
Time
Strata euc_a2=1 euc_a2=2
Euclidean distance measurement+Average Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.0068
0
2000
4000
6000
Time
Number at risk
Strata
euc_a2=1
euc_a2=2
122
16
1
0
22
2
2
1
0
2000
4000
6000
Time

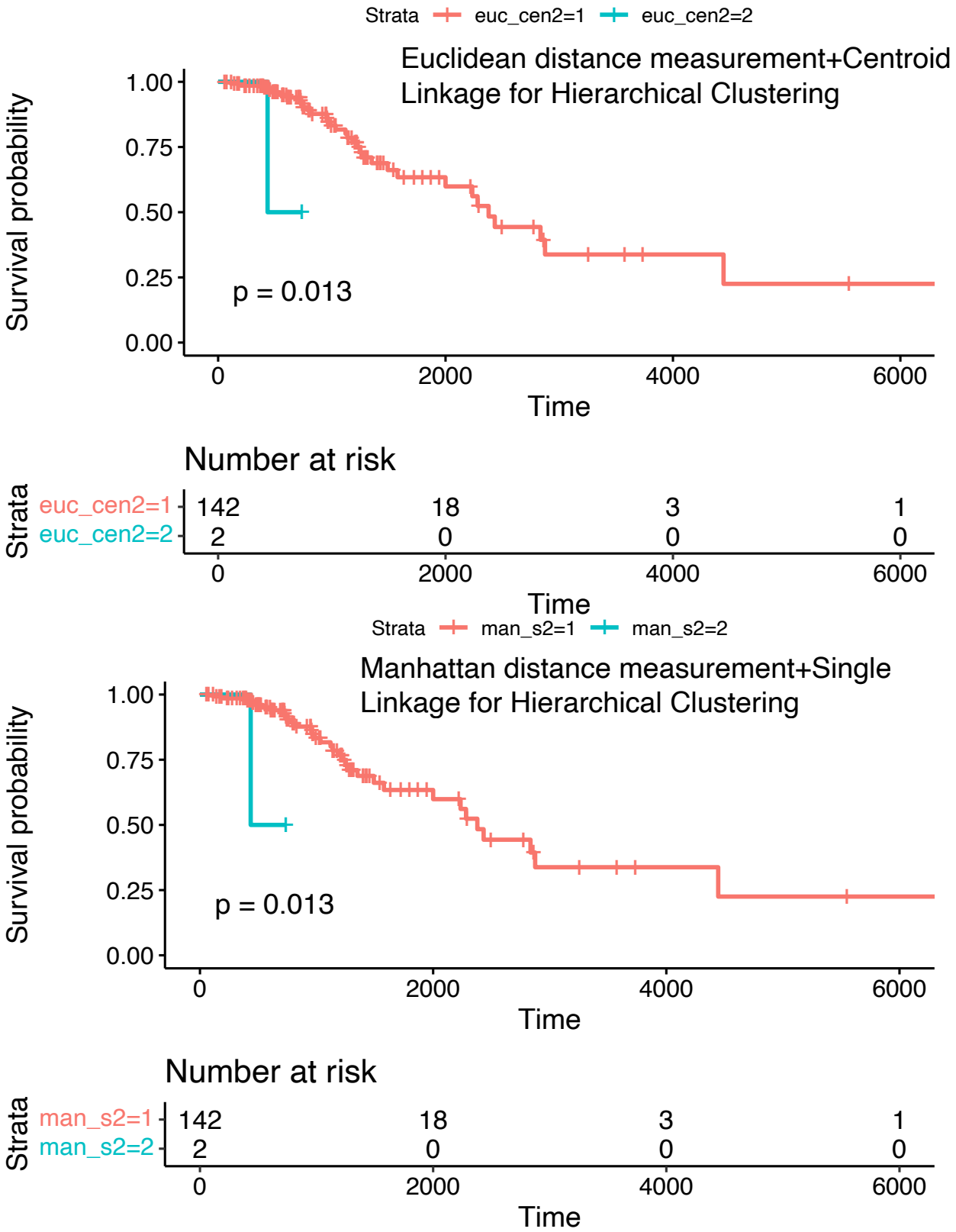

Strata euc_a2=1 euc_a2=2
Euclidean distance measurement+Average Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.0068
0
2000
4000
6000
Time

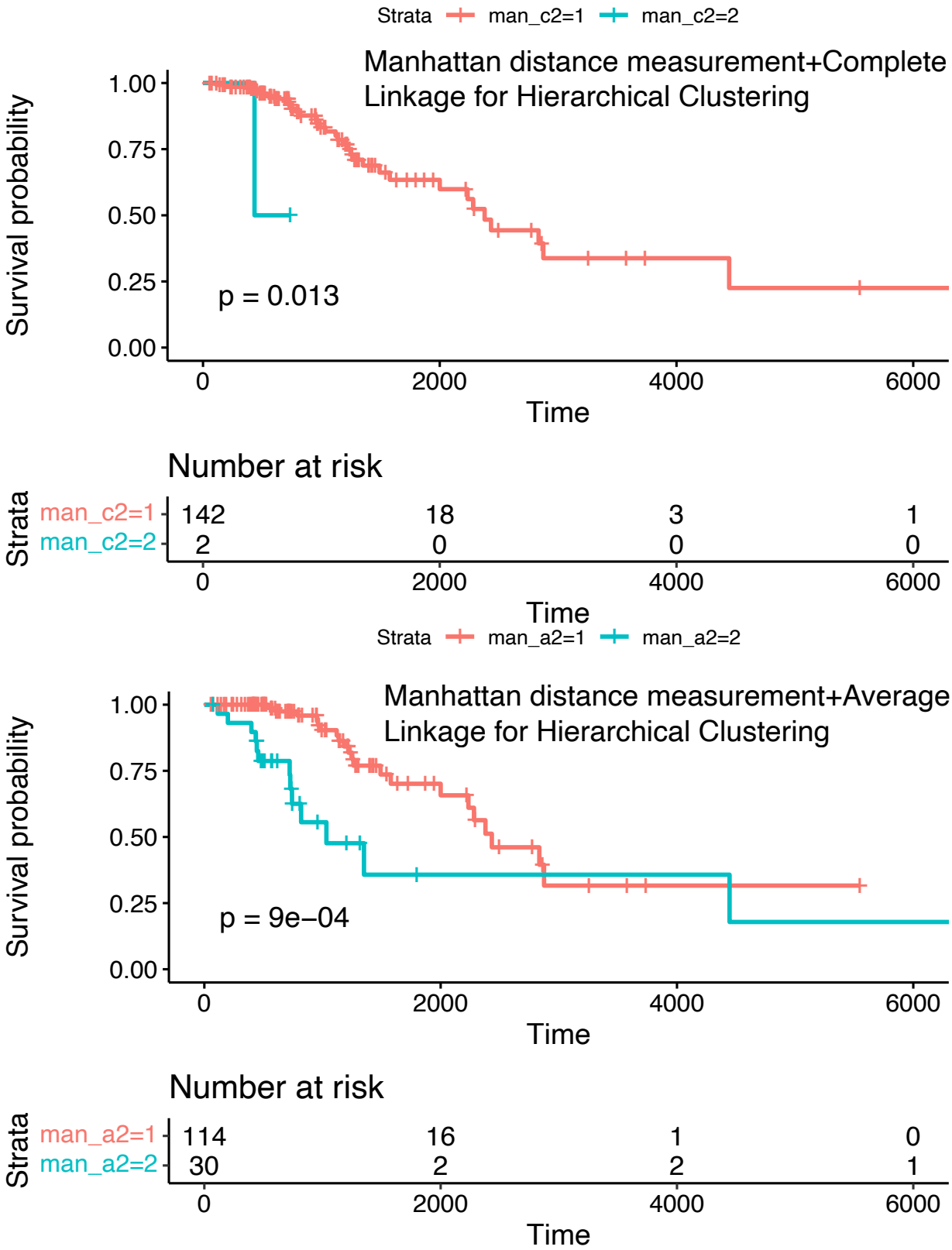

Number at risk
Strata
euc_a2=1
euc_a2=2
122
16
1
0
22
2
2
1
0
2000
4000
6000
Time

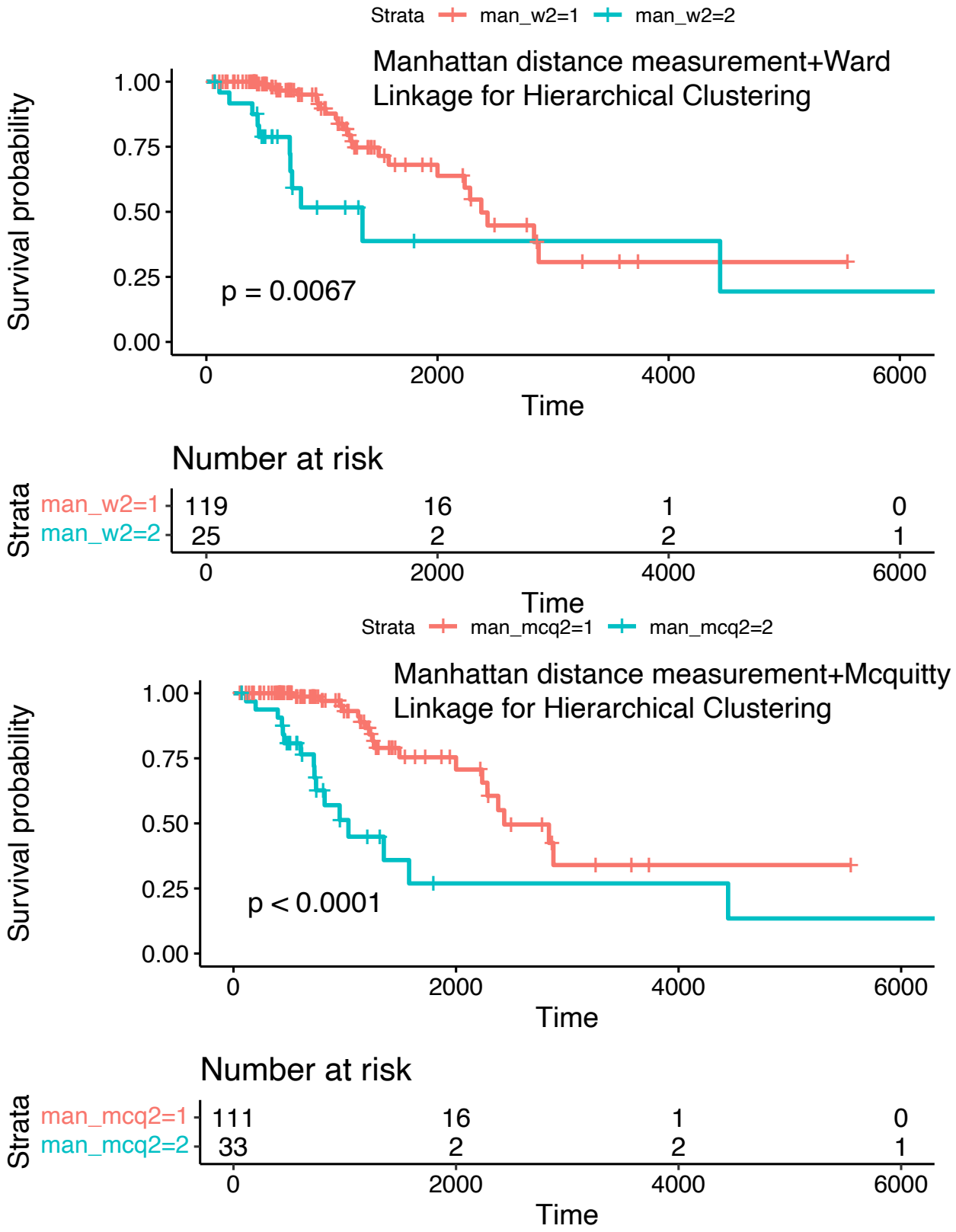

Strata euc_w2=1 euc_w2=2
Euclidean distance measurement+Ward Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
2000
4000
6000
Time

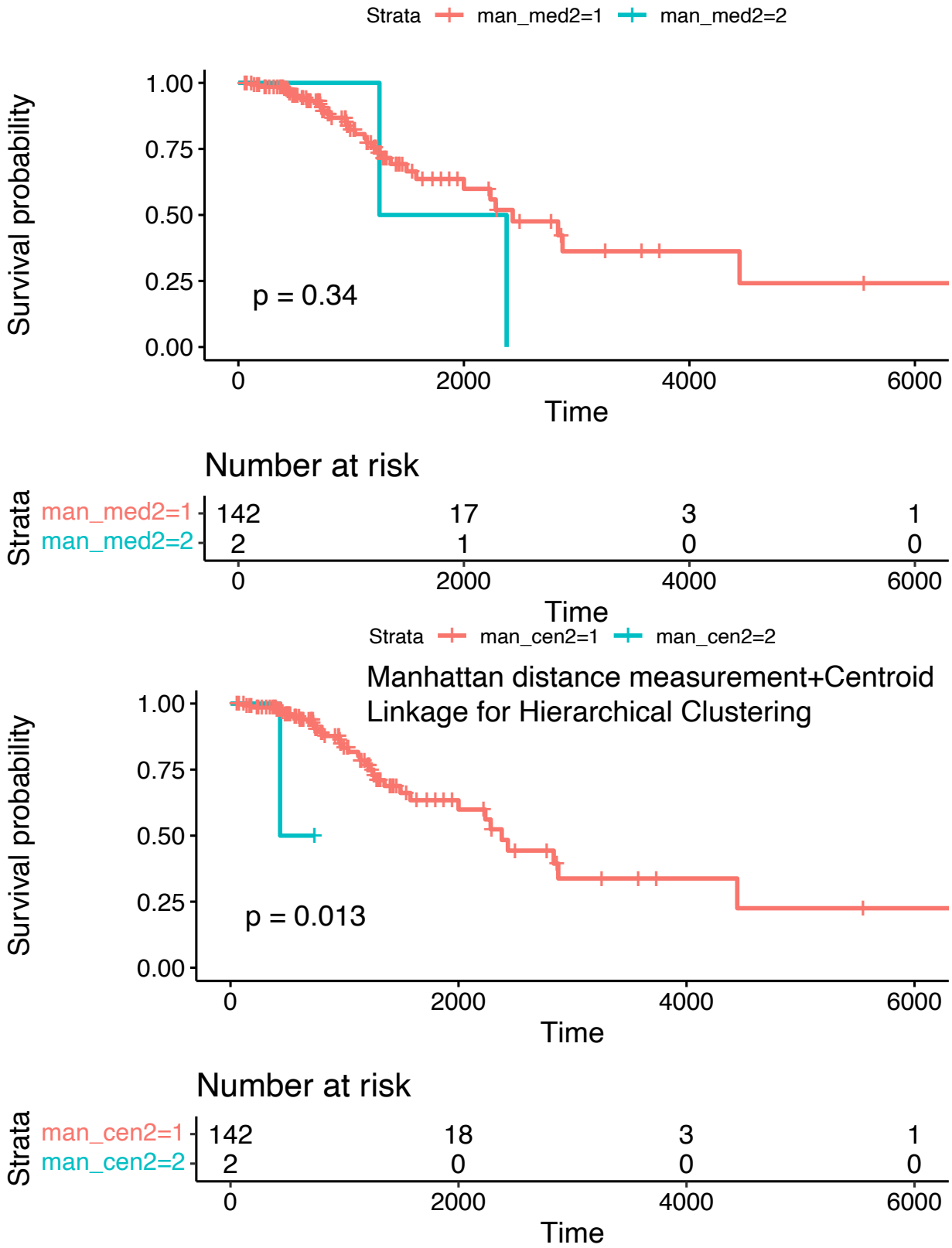

Number at risk
Strata
euc_w2=1
euc_w2=2
110
16
1
0
34
2
2
1
0
2000
4000
6000
Time

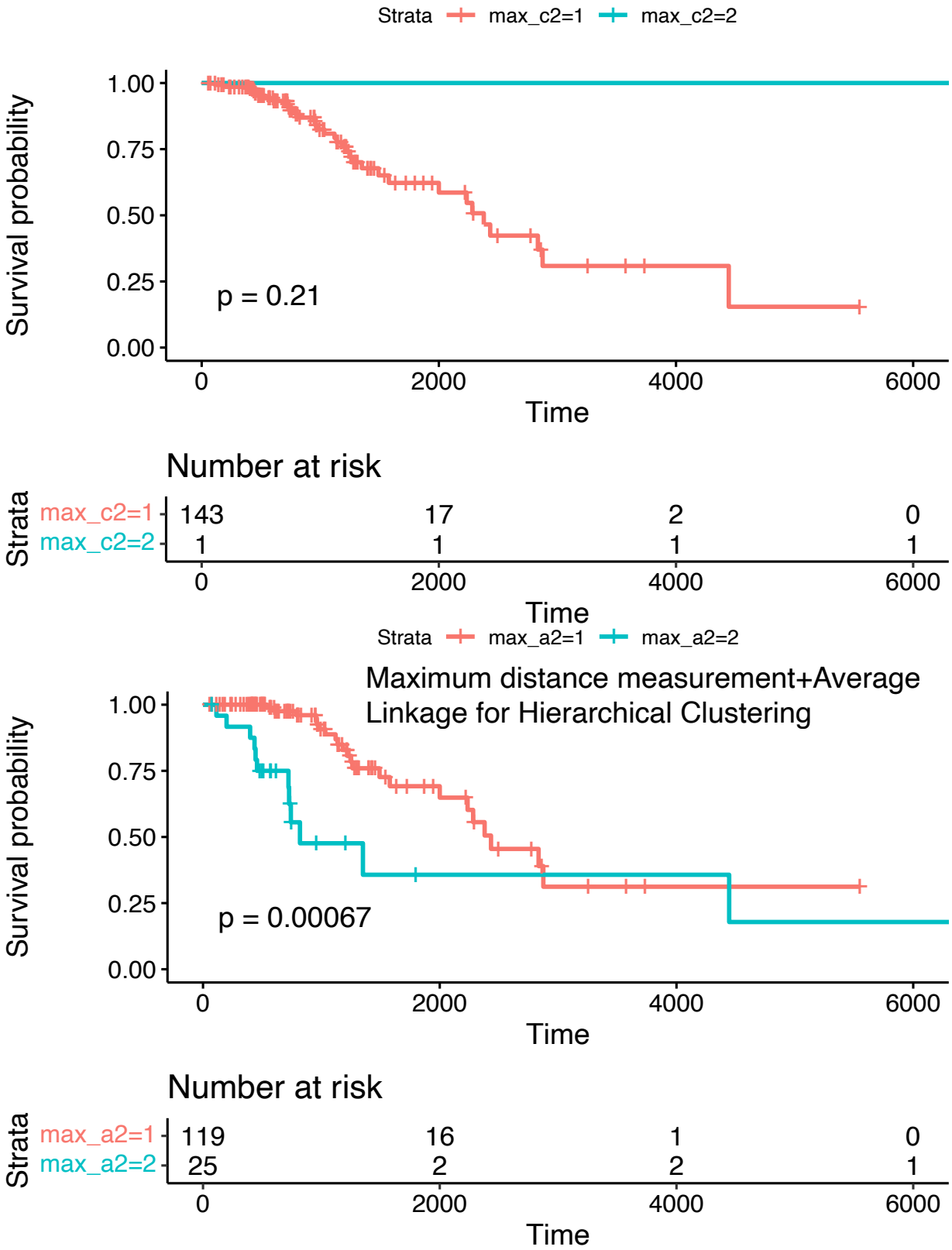

Strata euc_mcq2=1 euc_mcq2=2
Euclidean distance measurement+Mcquitty
Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.013
0
2000
4000
6000
Time
Number at risk
Strata
euc_mcq2=1
euc_mcq2=2
142 18 3 1
2 0 0 0
0
2000
4000
6000
Time
Strata euc_med2=1 euc_med2=2
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.74
0
2000
4000
6000
Time
Number at risk
Strata
euc_med2=1
euc_med2=2
143 17 3 1
1 1 0 0
0
2000
4000
6000
Time

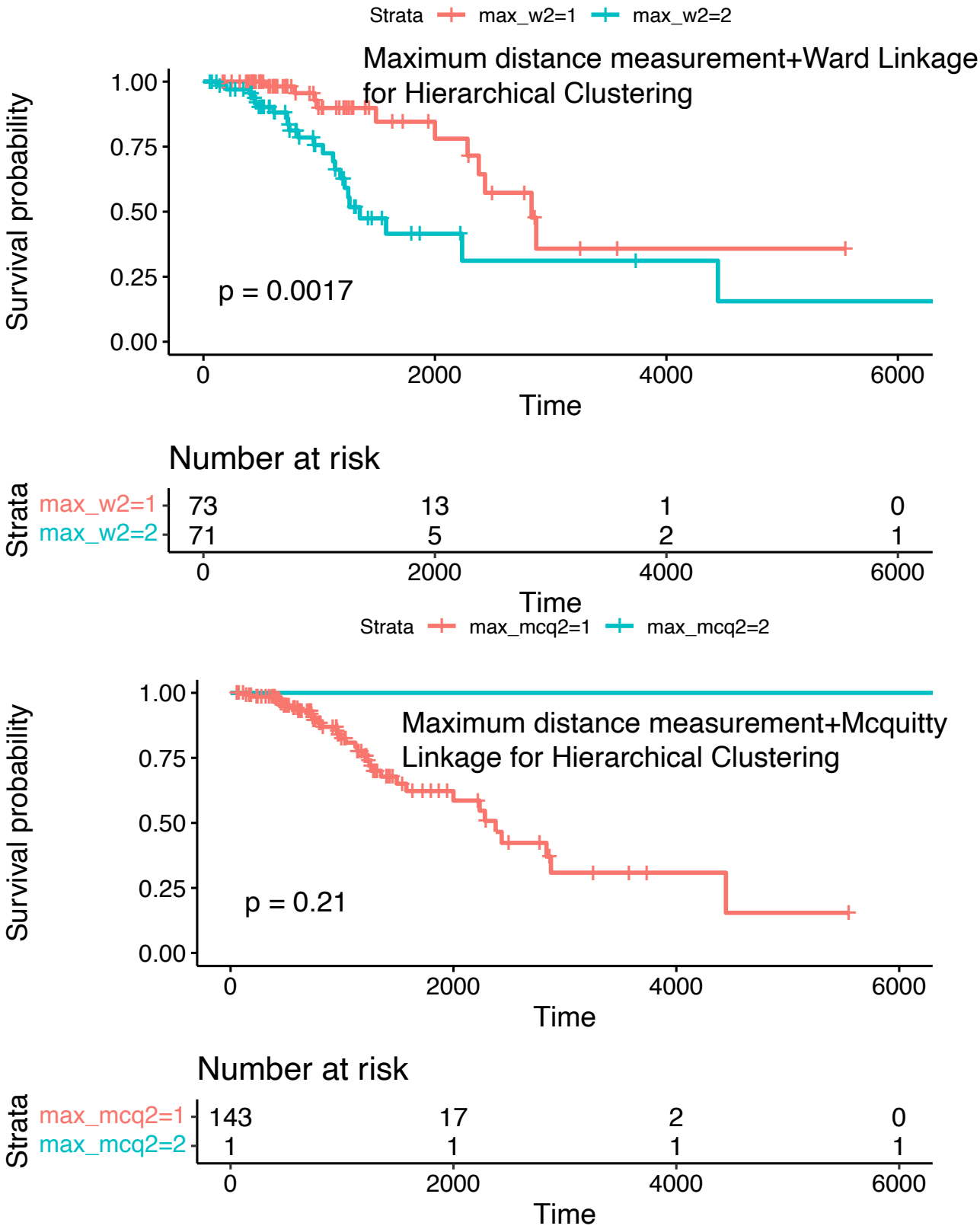

Strata euc_cen2=1 euc_cen2=2
Euclidean distance measurement+Centroid Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.013
0
2000
4000
6000
Time
Number at risk
Strata
euc_cen2=1
euc_cen2=2
142
18
3
1
2
0
0
0
0
2000
4000
6000
Time
Strata man_s2=1 man_s2=2
Manhattan distance measurement+Single Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.013
0
2000
4000
6000
Time
Number at risk
Strata
man_s2=1
man_s2=2
142
18
3
1
2
0
0
0
0
2000
4000
6000
Time


Strata man_c2=1 man_c2=2
Manhattan distance measurement+Complete Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.013
0
2000
4000
6000
Time
Number at risk
Strata
man_c2=1
man_c2=2
142 18 3 1
2 0 0 0
0
2000
4000
6000
Time
Strata man_a2=1 man_a2=2
Manhattan distance measurement+Average Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 9e−04
0
2000
4000
6000
Time
Number at risk
Strata
man_a2=1
man_a2=2
114 16 1 0
30 2 2 1
0
2000
4000
6000
Time

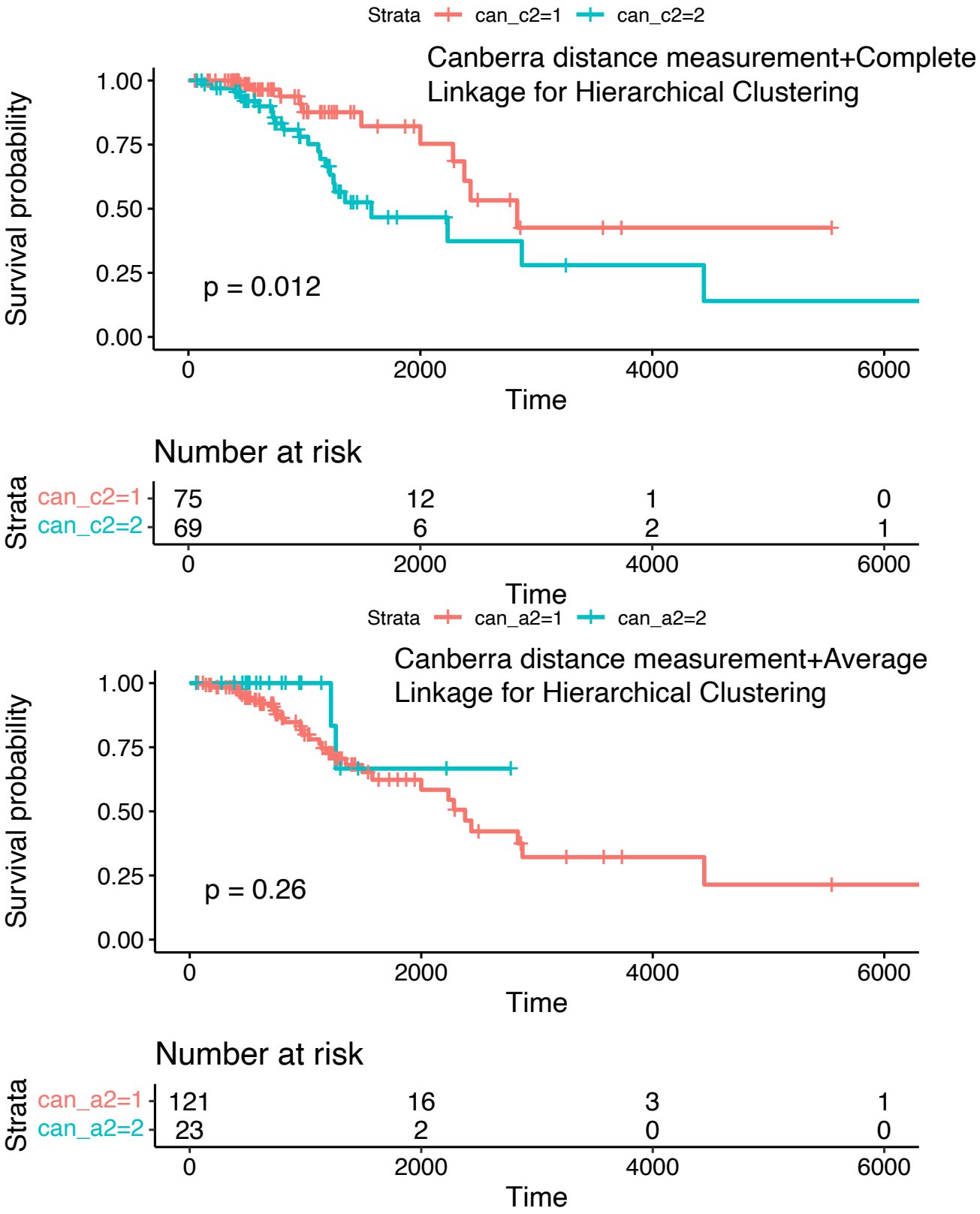

Strata man_w2=1 man_w2=2
Manhattan distance measurement+Ward
Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.0067
0
2000
4000
6000
Time
Number at risk
Strata
man_w2=1
man_w2=2
119
16
1
0
25
2
2
1
0
2000
4000
6000
Time
Strata man_mcq2=1 man_mcq2=2
Manhattan distance measurement+Mcquitty
Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
2000
4000
6000
Time
Number at risk
Strata
man_mcq2=1
man_mcq2=2
111
16
1
0
33
2
2
1
0
2000
4000
6000
Time

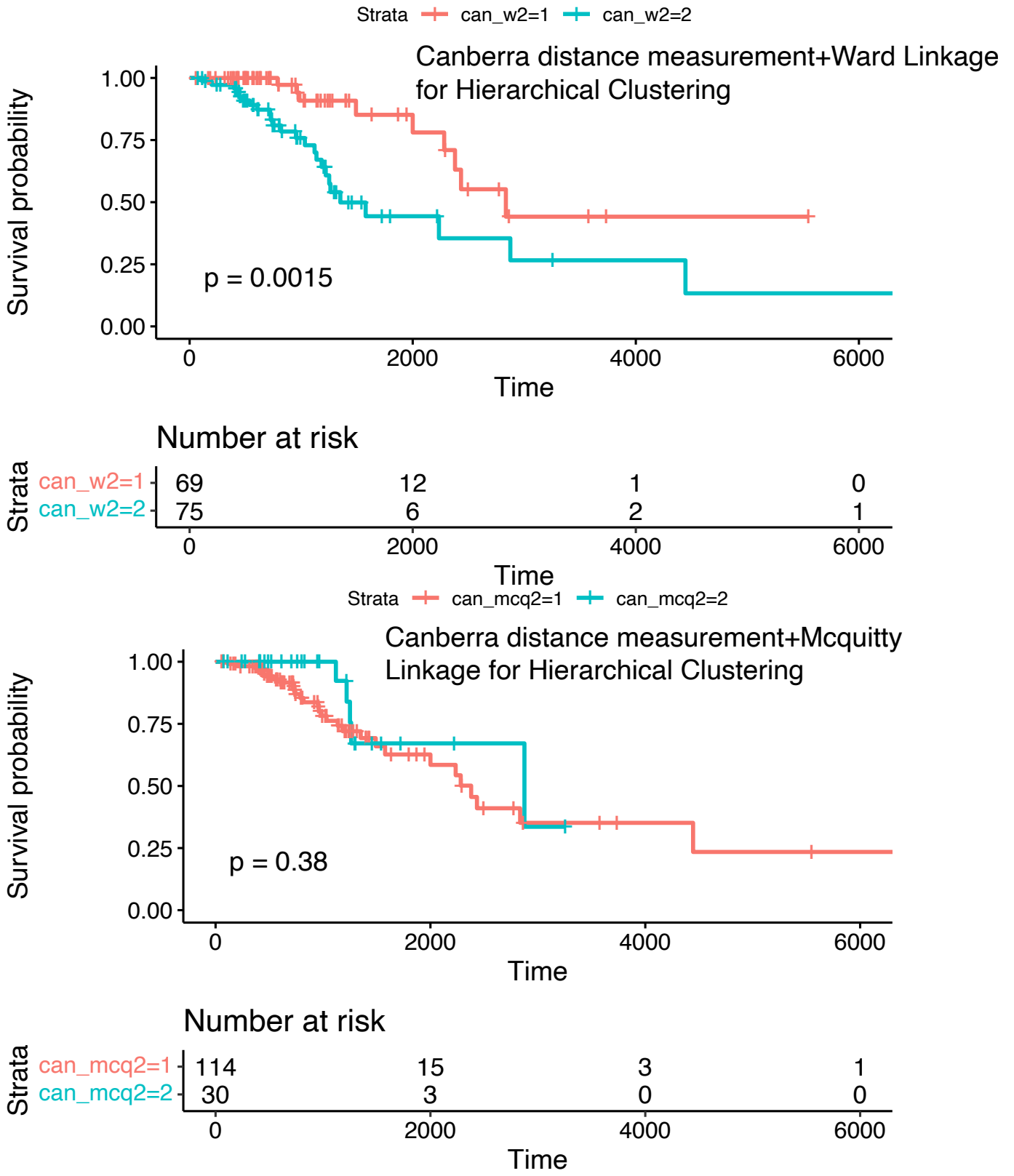

Strata
man_med2=1
man_med2=2
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.34
0
2000
4000
6000
Time
Number at risk
Strata
man_med2=1
man_med2=2
142
17
3
1
2
1
0
0
0
2000
4000
6000
Time
Strata
man_cen2=1
man_cen2=2
Manhattan distance measurement+Centroid
Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.013
0
2000
4000
6000
Time
Number at risk
Strata
man_cen2=1
man_cen2=2
142
18
3
1
2
0
0
0
0
2000
4000
6000
Time

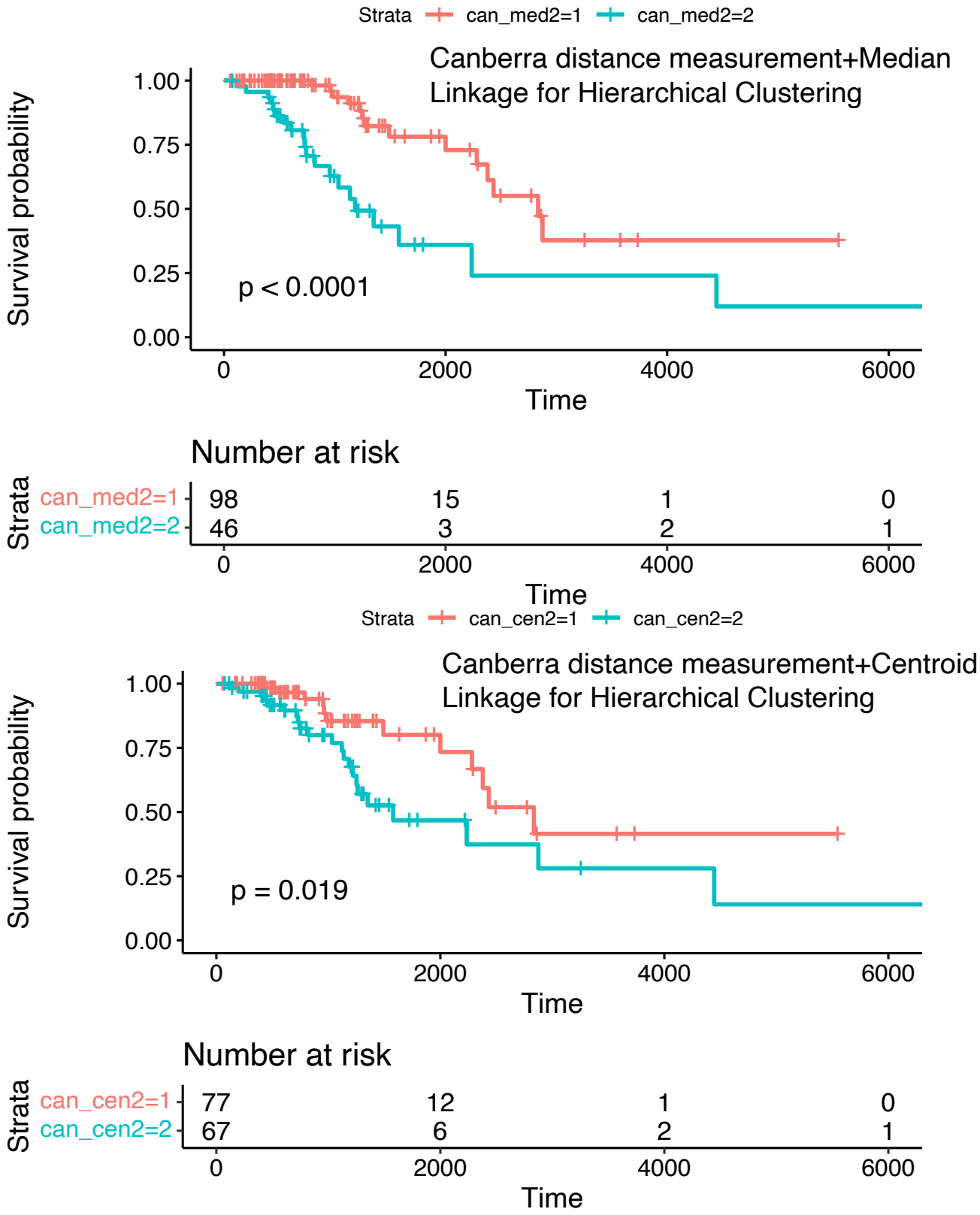

Strata max_c2=1 max_c2=2
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.21
0
2000
4000
6000
Time
Number at risk
Strata
max_c2=1
max_c2=2
143
17
2
0
1
1
1
1
0
2000
4000
6000
Time
Strata max_a2=1 max_a2=2
Maximum distance measurement+Average Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.00067
0
2000
4000
6000
Time
Number at risk
Strata
max_a2=1
max_a2=2
119
16
1
0
25
2
2
1
0
2000
4000
6000
Time

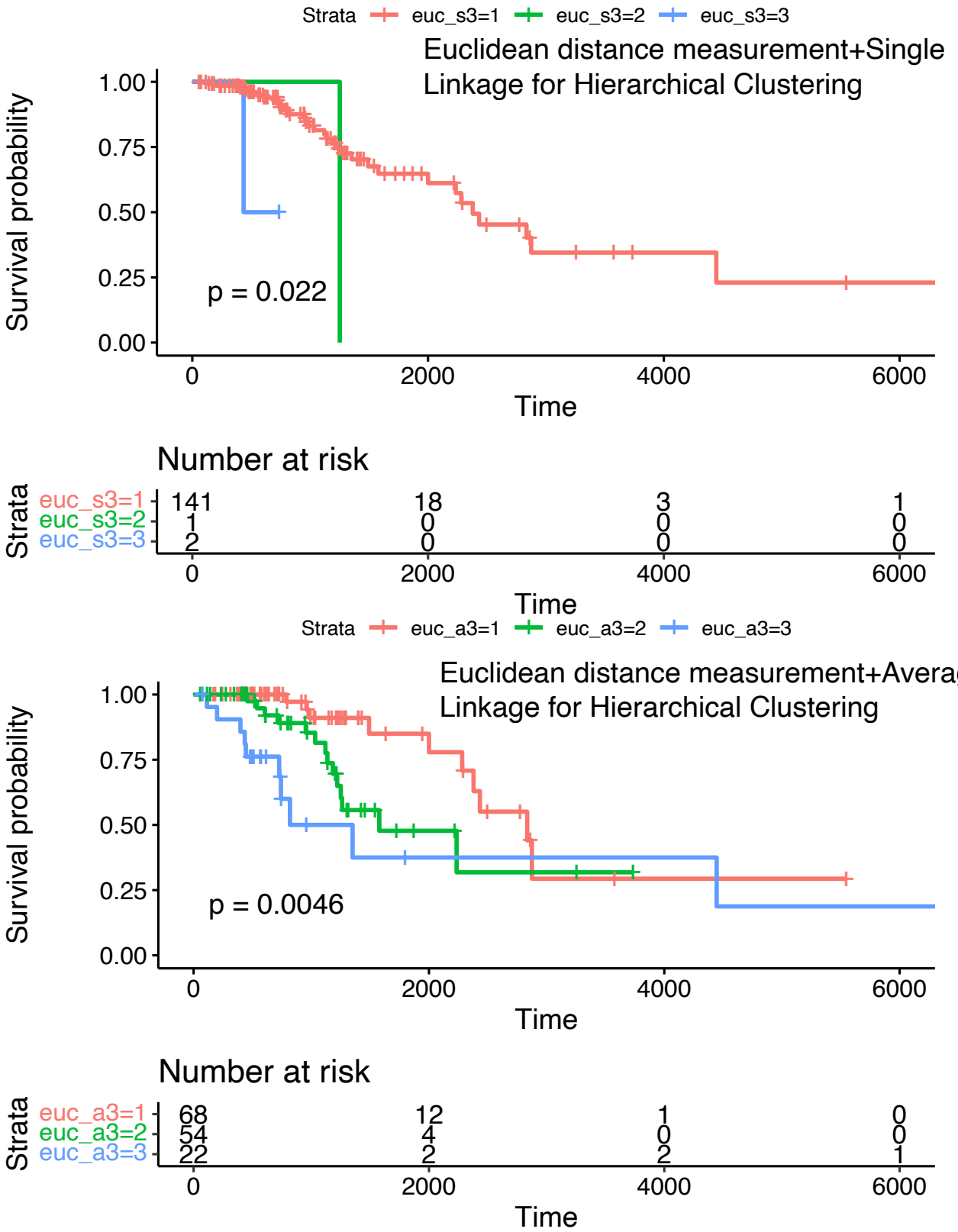


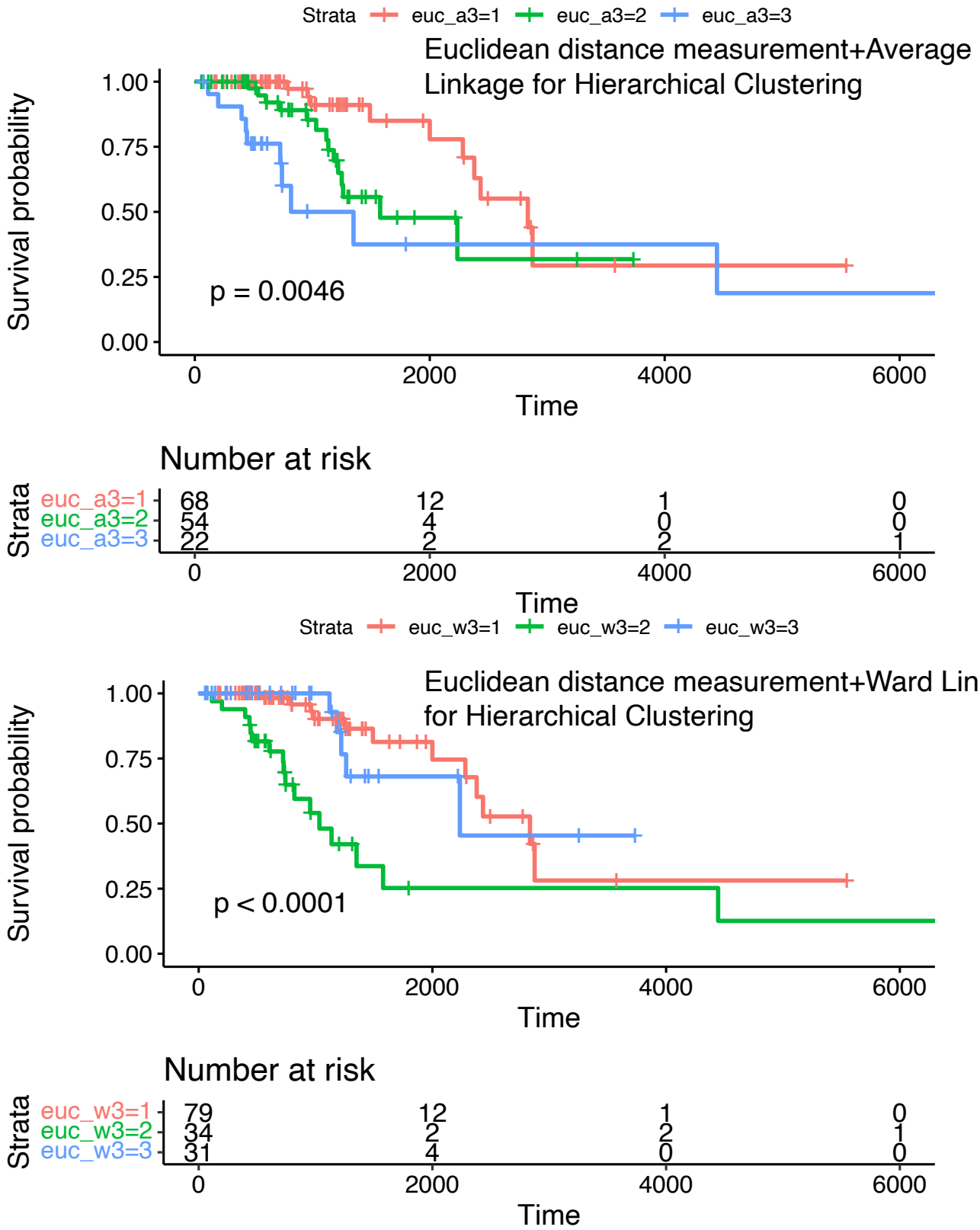

```
## Warning in .pvalue(fit, data = data, method = method, pval = pval, pval.coord = pval.coord, : There a
##  This is a null model.
```

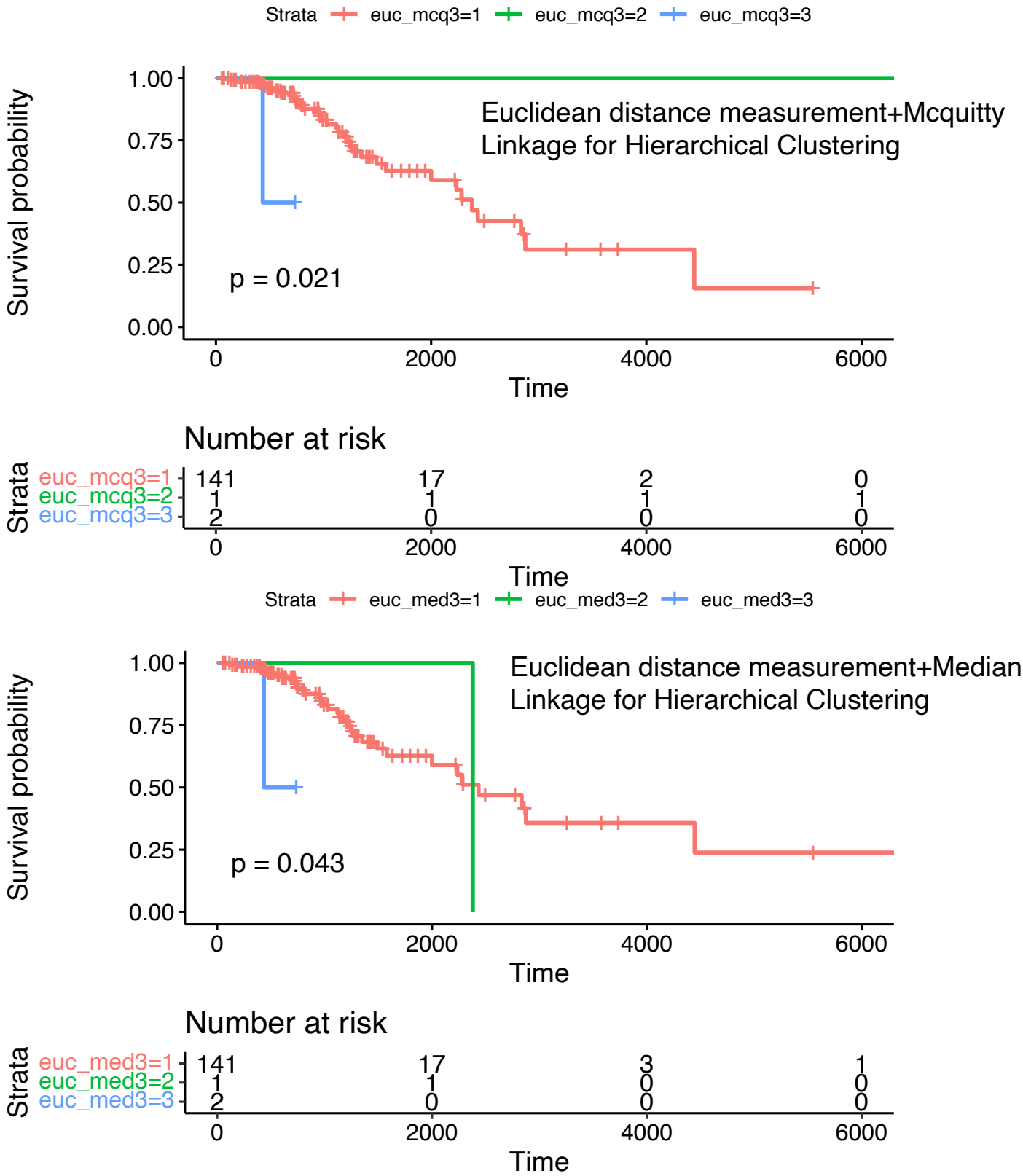

Strata can_c2=1 can_c2=2
Canberra distance measurement+Complete Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.012
0
2000
4000
6000
Time
Number at risk
Strata
can_c2=1
can_c2=2
75
12
1
0
69
6
2
1
0
2000
4000
6000
Time
Strata can_a2=1 can_a2=2
Canberra distance measurement+Average Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.26
0
2000
4000
6000
Time
Number at risk
Strata
can_a2=1
can_a2=2
121
16
3
1
23
2
0
0
0
2000
4000
6000
Time

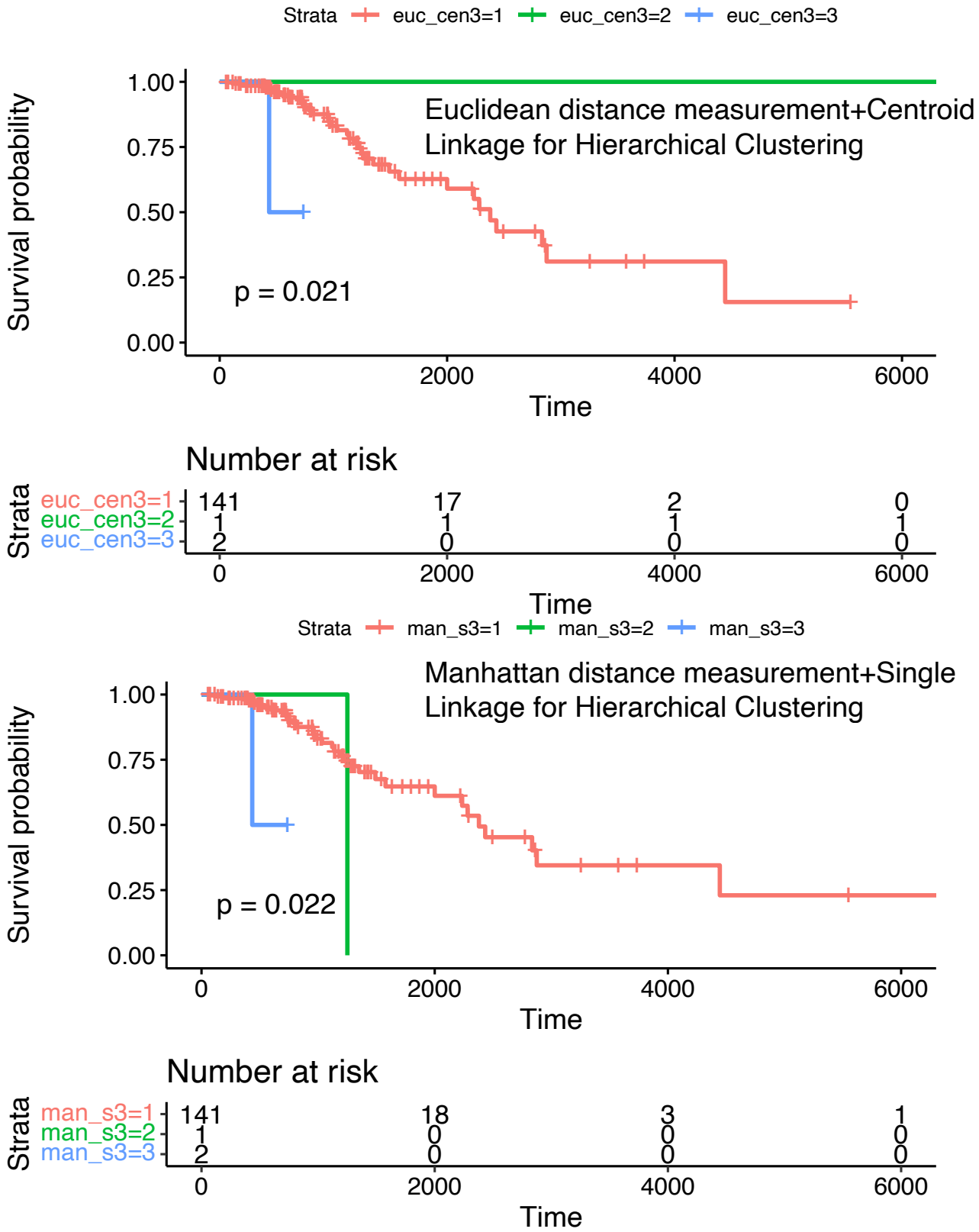

Strata
can_w2=1
can_w2=2
Canberra distance measurement+Ward Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.0015
0
2000
4000
6000
Time
Number at risk
Strata
can_w2=1
can_w2=2
69
12
1
0
75
6
2
1
0
2000
4000
6000
Time
Strata
can_mcq2=1
can_mcq2=2
Canberra distance measurement+Mcquitty Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.38
0
2000
4000
6000
Time
Number at risk
Strata
can_mcq2=1
can_mcq2=2
114
15
3
1
30
3
0
0
0
2000
4000
6000
Time

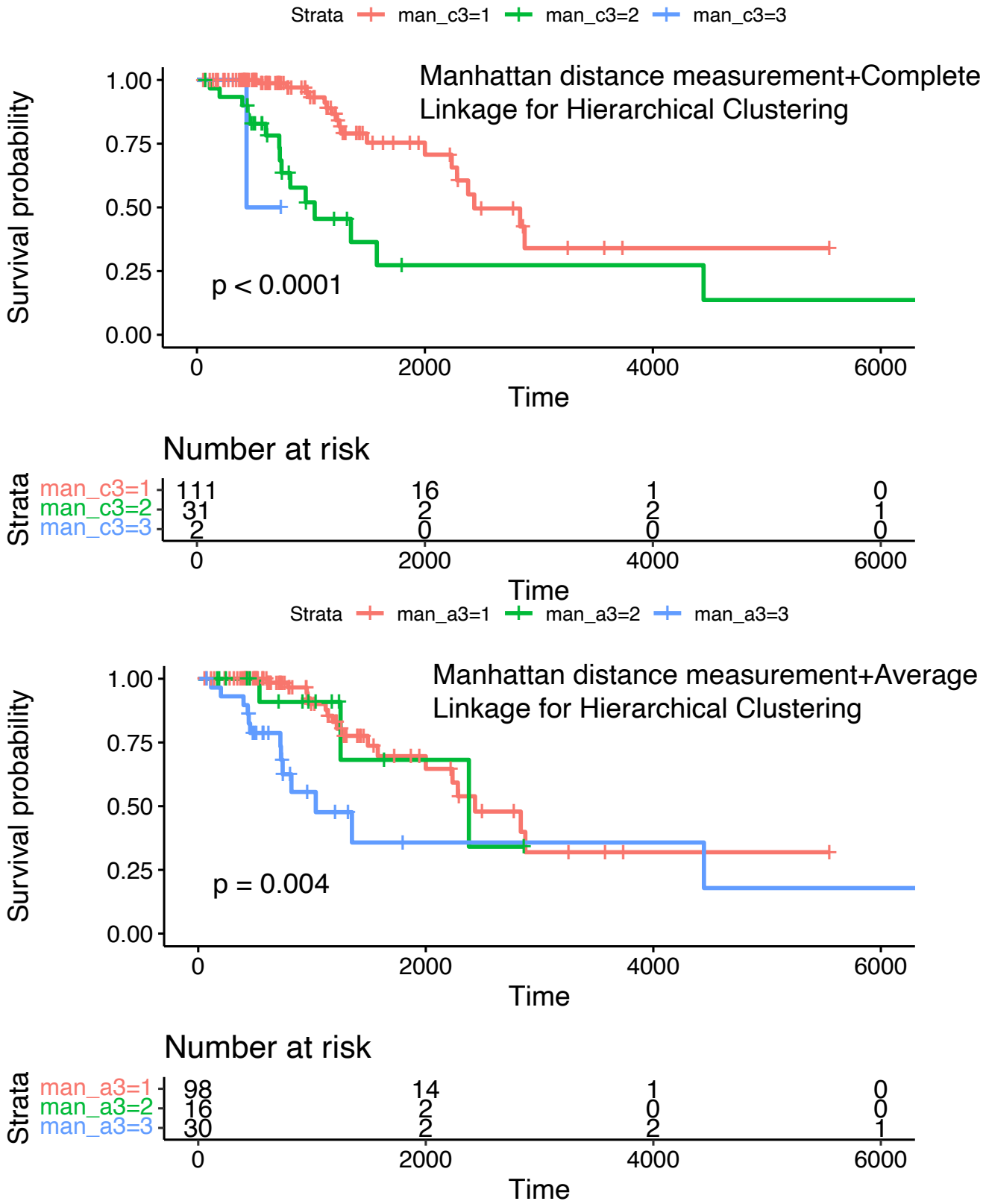

Strata
can_med2=1
can_med2=2
Canberra distance measurement+Median
Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
2000
4000
6000
Time
Number at risk
Strata
can_med2=1
can_med2=2
98
15
1
0
46
3
2
1
0
2000
4000
6000
Time
Strata
can_cen2=1
can_cen2=2
Canberra distance measurement+Centroid
Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.019
0
2000
4000
6000
Time
Number at risk
Strata
can_cen2=1
can_cen2=2
77
12
1
0
67
6
2
1
0
2000
4000
6000
Time

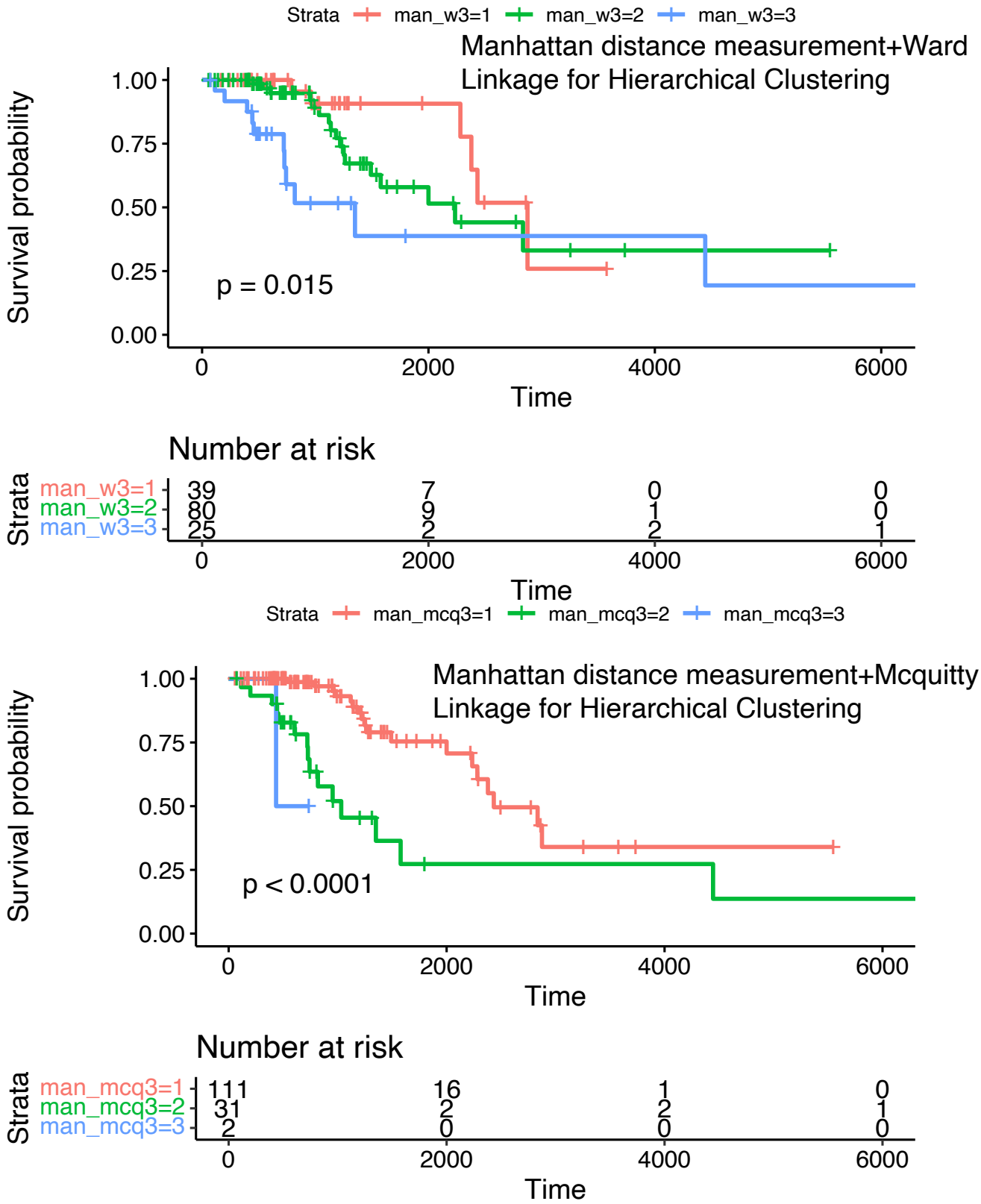

Strata euc_s3=1 euc_s3=2 euc_s3=3
Euclidean distance measurement+Single Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.022
0
2000
4000
6000
Time
Number at risk
Strata
euc_s3=1
euc_s3=2
euc_s3=3
141 18 3 1
1 0 0 0
2 0 0 0
0
2000
4000
6000
Time
Strata euc_a3=1 euc_a3=2 euc_a3=3
Euclidean distance measurement+Average Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.0046
0
2000
4000
6000
Time
Number at risk
Strata
euc_a3=1
euc_a3=2
euc_a3=3
68 12 1 0
54 4 0 0
22 2 2 1
0
2000
4000
6000
Time

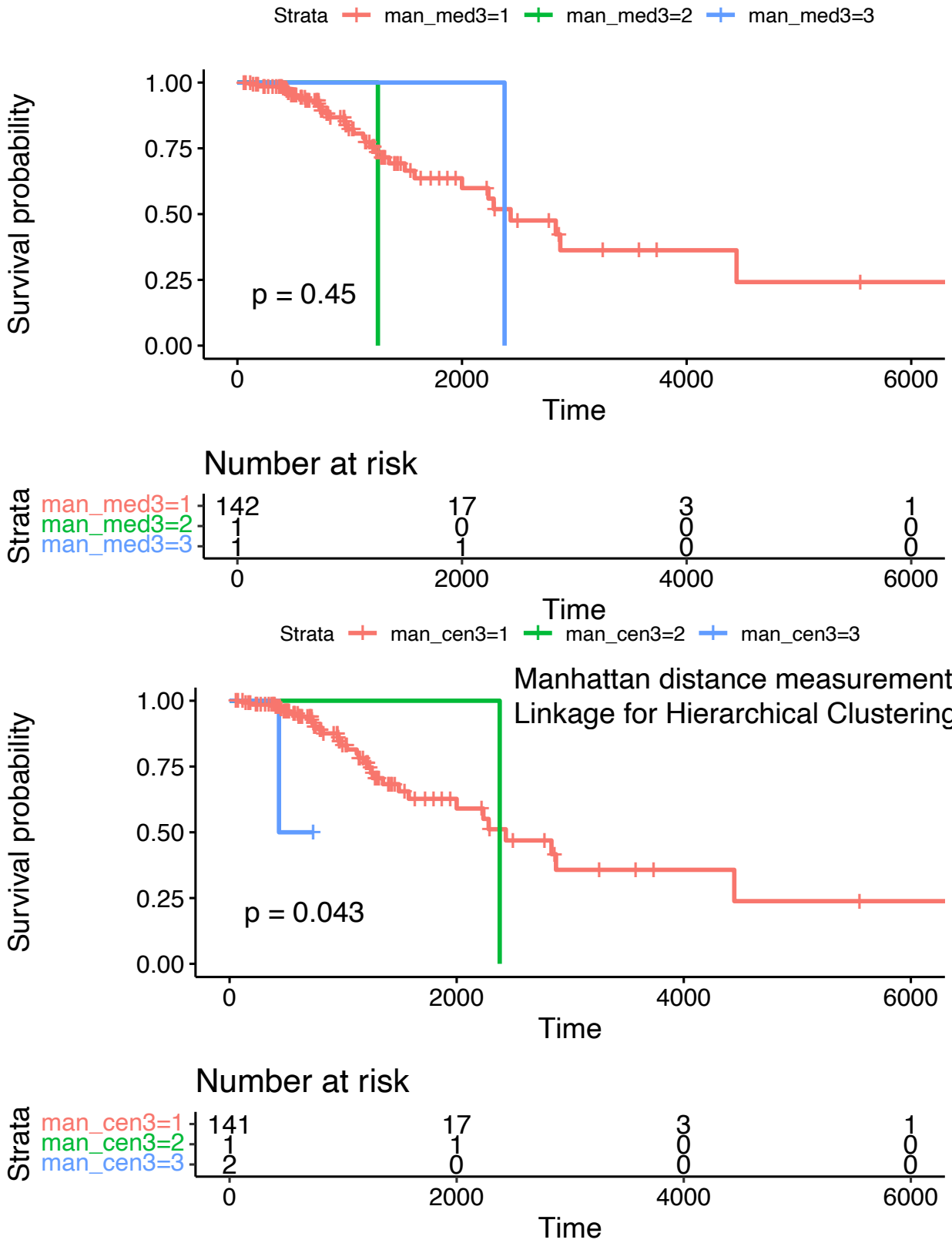

Strata euc_a3=1 euc_a3=2 euc_a3=3
Euclidean distance measurement+Average Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.0046
0
2000
4000
6000
Time
Number at risk
Strata
euc_a3=1
euc_a3=2
euc_a3=3
68 12 1 0
54 4 0 0
22 2 2 1
0
2000
4000
6000
Time
Strata euc_w3=1 euc_w3=2 euc_w3=3
Euclidean distance measurement+Ward Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
2000
4000
6000
Time
Number at risk
Strata
euc_w3=1
euc_w3=2
euc_w3=3
79 12 1 0
34 2 2 1
31 4 0 0
0
2000
4000
6000
Time

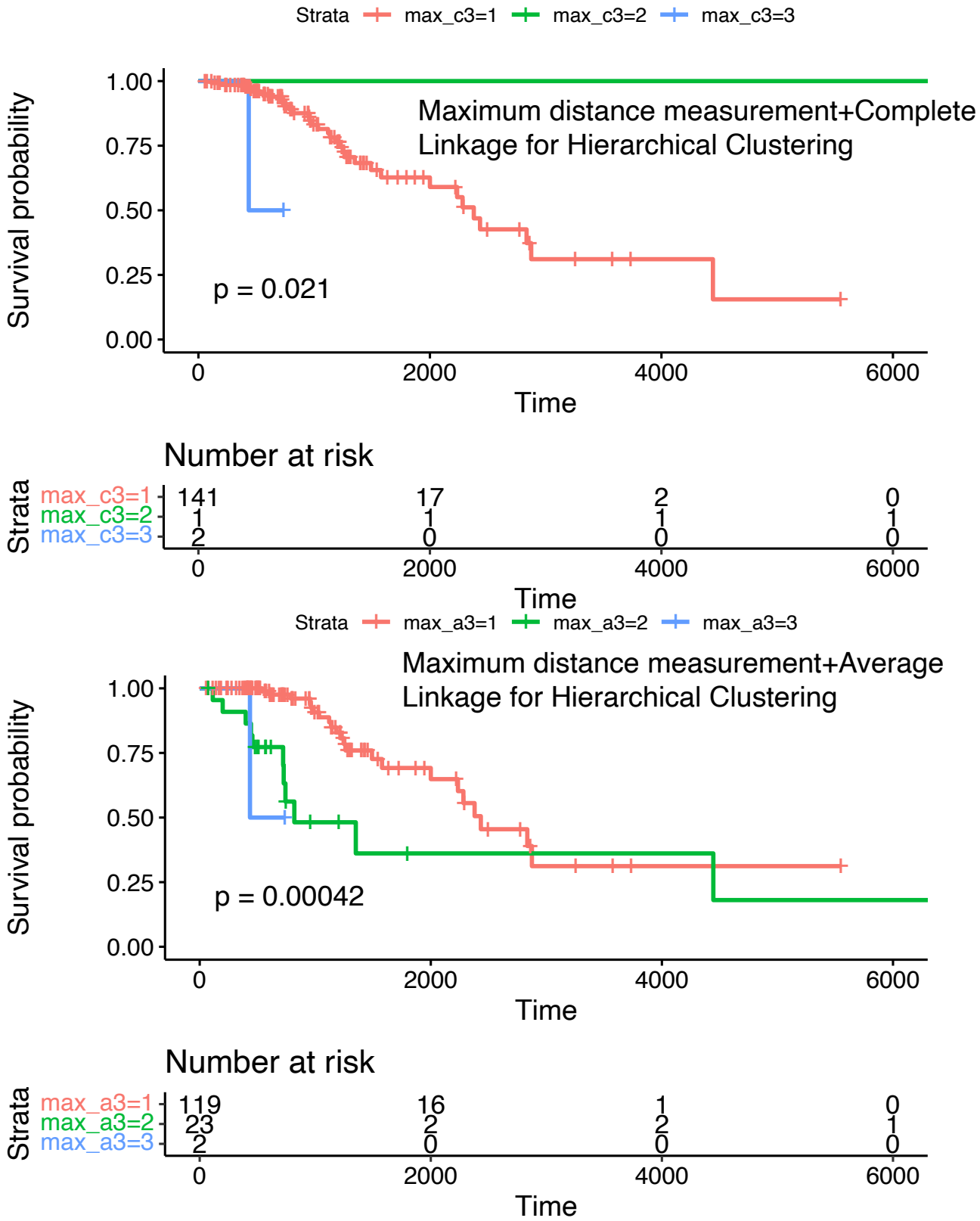

Strata euc_mcq3=1 euc_mcq3=2 euc_mcq3=3
Survival probability
1.00
0.75
0.50
0.25
0.00
Euclidean distance measurement+Mcquitty
Linkage for Hierarchical Clustering
p = 0.021
0
2000
4000
6000
Time
Number at risk
Strata
euc_mcq3=1
euc_mcq3=2
euc_mcq3=3
141
1
2
17
1
0
2
1
0
0
1
0
0
2000
4000
6000
Time
Strata euc_med3=1 euc_med3=2 euc_med3=3
Survival probability
1.00
0.75
0.50
0.25
0.00
Euclidean distance measurement+Median
Linkage for Hierarchical Clustering
p = 0.043
0
2000
4000
6000
Time
Number at risk
Strata
euc_med3=1
euc_med3=2
euc_med3=3
141
1
2
17
1
0
3
0
0
1
0
0
0
2000
4000
6000
Time

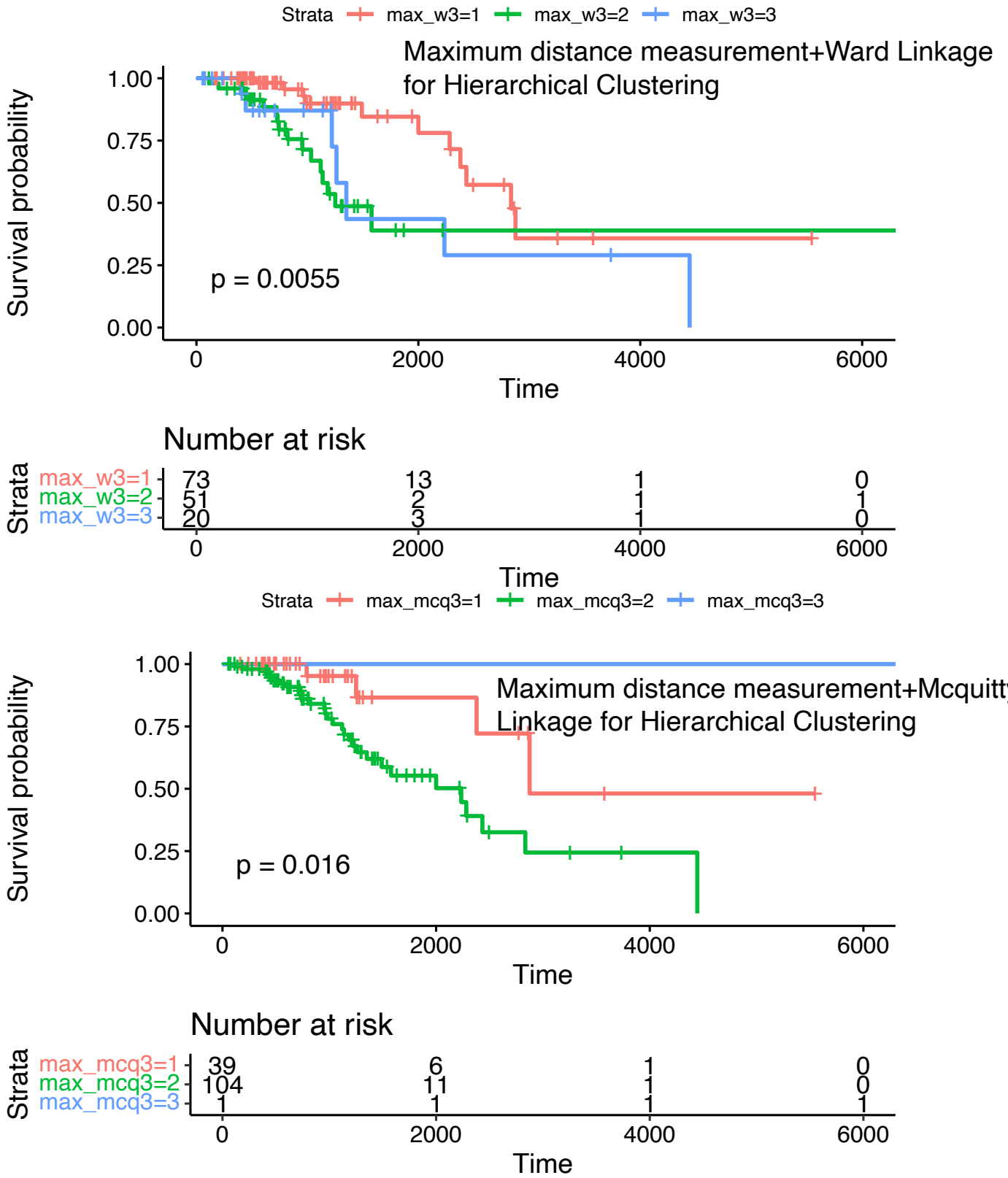

Strata euc_cen3=1 euc_cen3=2 euc_cen3=3
Survival probability
1.00
0.75
0.50
0.25
0.00
Euclidean distance measurement+Centroid
Linkage for Hierarchical Clustering
p = 0.021
0
2000
4000
6000
Time
Number at risk
Strata
euc_cen3=1 141 17 2 0
euc_cen3=2 1 1 1 1
euc_cen3=3 2 0 0 0
0
2000
4000
6000
Time
Strata man_s3=1 man_s3=2 man_s3=3
Survival probability
1.00
0.75
0.50
0.25
0.00
Manhattan distance measurement+Single
Linkage for Hierarchical Clustering
p = 0.022
0
2000
4000
6000
Time
Number at risk
Strata
man_s3=1 141 18 3 1
man_s3=2 1 0 0 0
man_s3=3 2 0 0 0
0
2000
4000
6000
Time

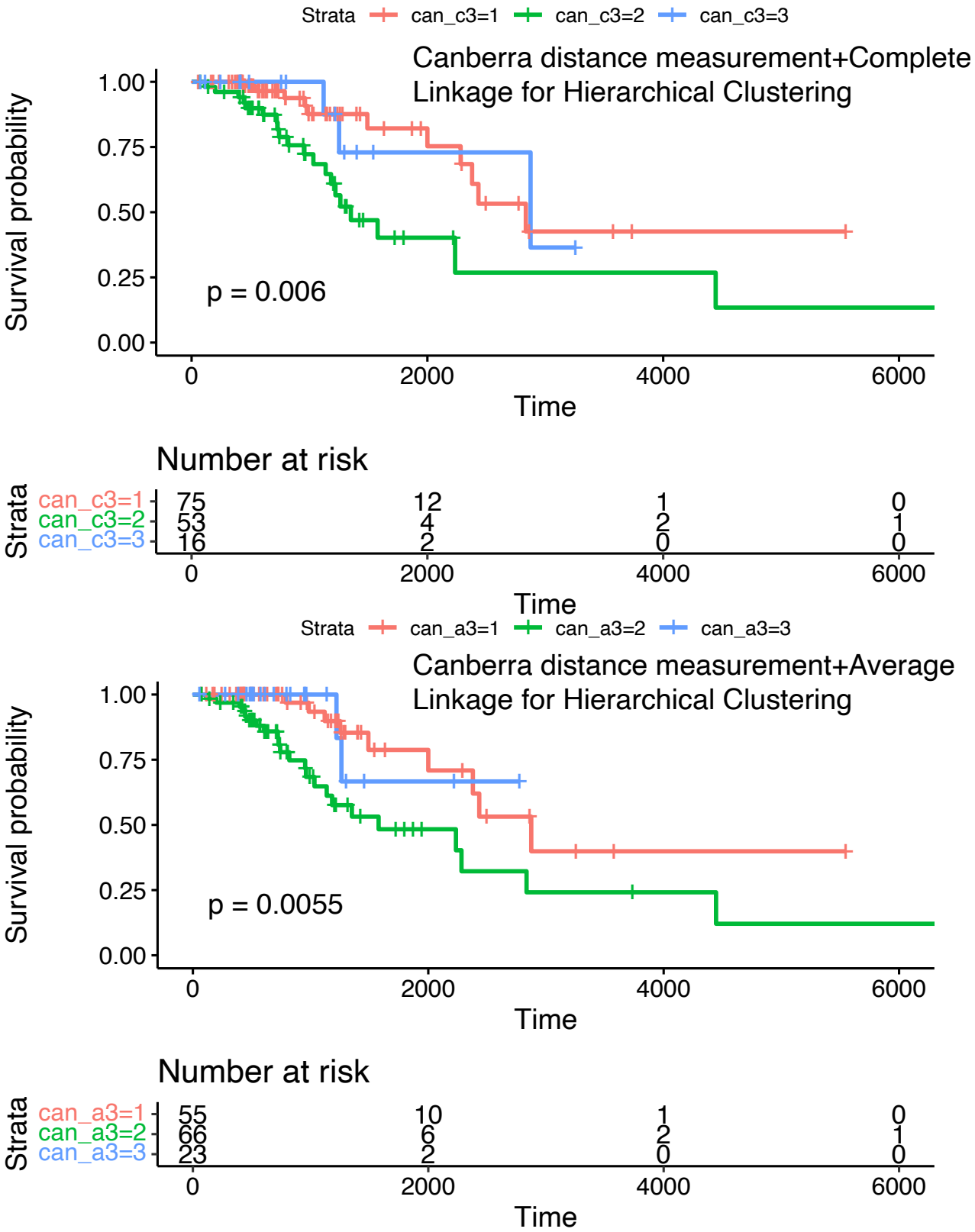

Strata man_c3=1 man_c3=2 man_c3=3
Manhattan distance measurement+Complete Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
2000
4000
6000
Time
Number at risk
Strata
man_c3=1 111 16 1 0
man_c3=2 31 2 2 1
man_c3=3 2 0 0 0
0
2000
4000
6000
Time
Strata man_a3=1 man_a3=2 man_a3=3
Manhattan distance measurement+Average Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.004
0
2000
4000
6000
Time
Number at risk
Strata
man_a3=1 98 14 1 0
man_a3=2 16 2 0 0
man_a3=3 30 2 2 1
0
2000
4000
6000
Time

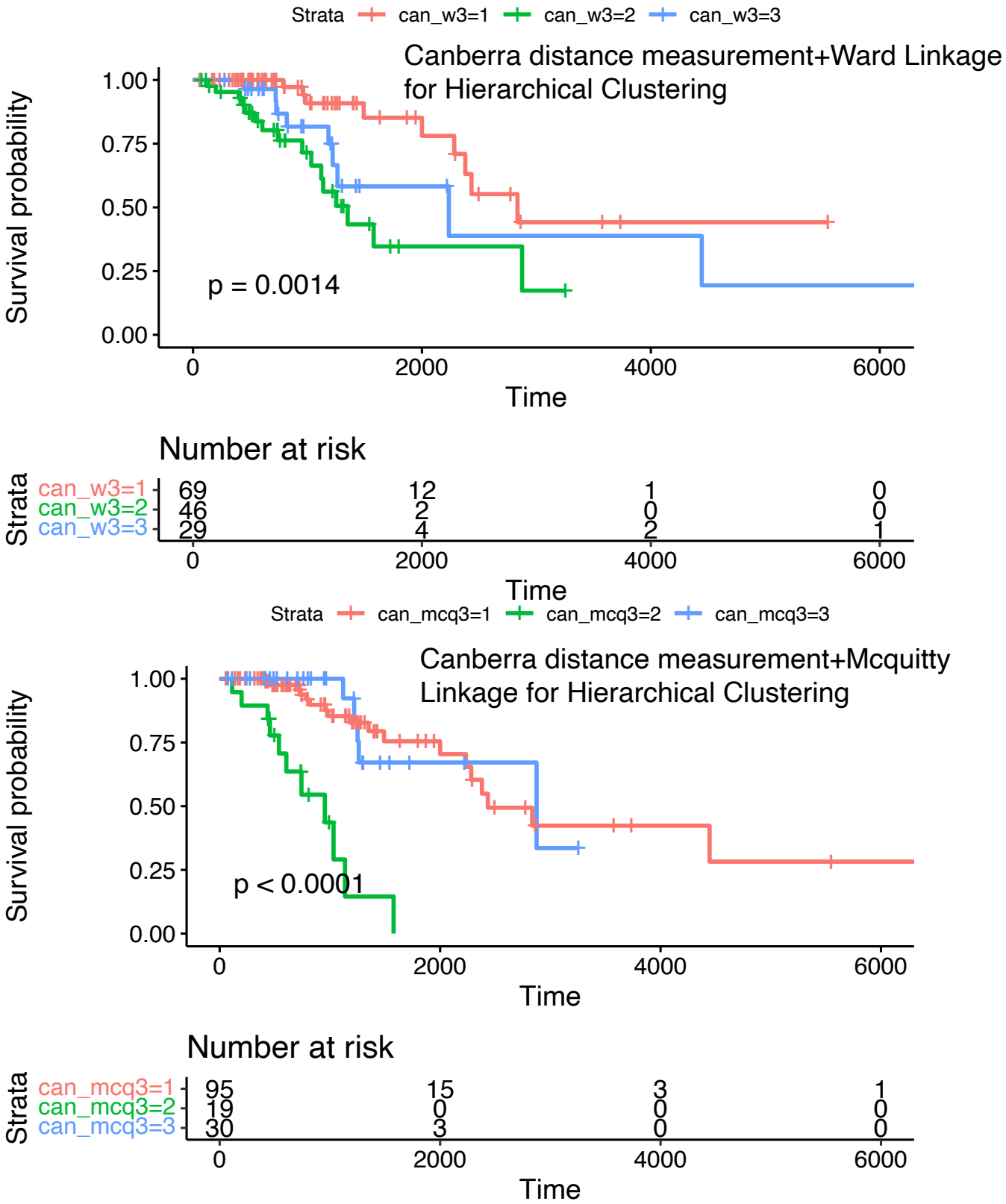

Strata man_w3=1 man_w3=2 man_w3=3
Manhattan distance measurement+Ward
Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.015
0
2000
4000
6000
Time
Number at risk
Strata
man_w3=1
man_w3=2
man_w3=3
39 7 0 0
80 9 1 0
25 2 2 1
0
2000
4000
6000
Time
Strata man_mcq3=1 man_mcq3=2 man_mcq3=3
Manhattan distance measurement+Mcquitty
Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
2000
4000
6000
Time
Number at risk
Strata
man_mcq3=1
man_mcq3=2
man_mcq3=3
111 16 1 0
31 2 2 1
2 0 0 0
0
2000
4000
6000
Time

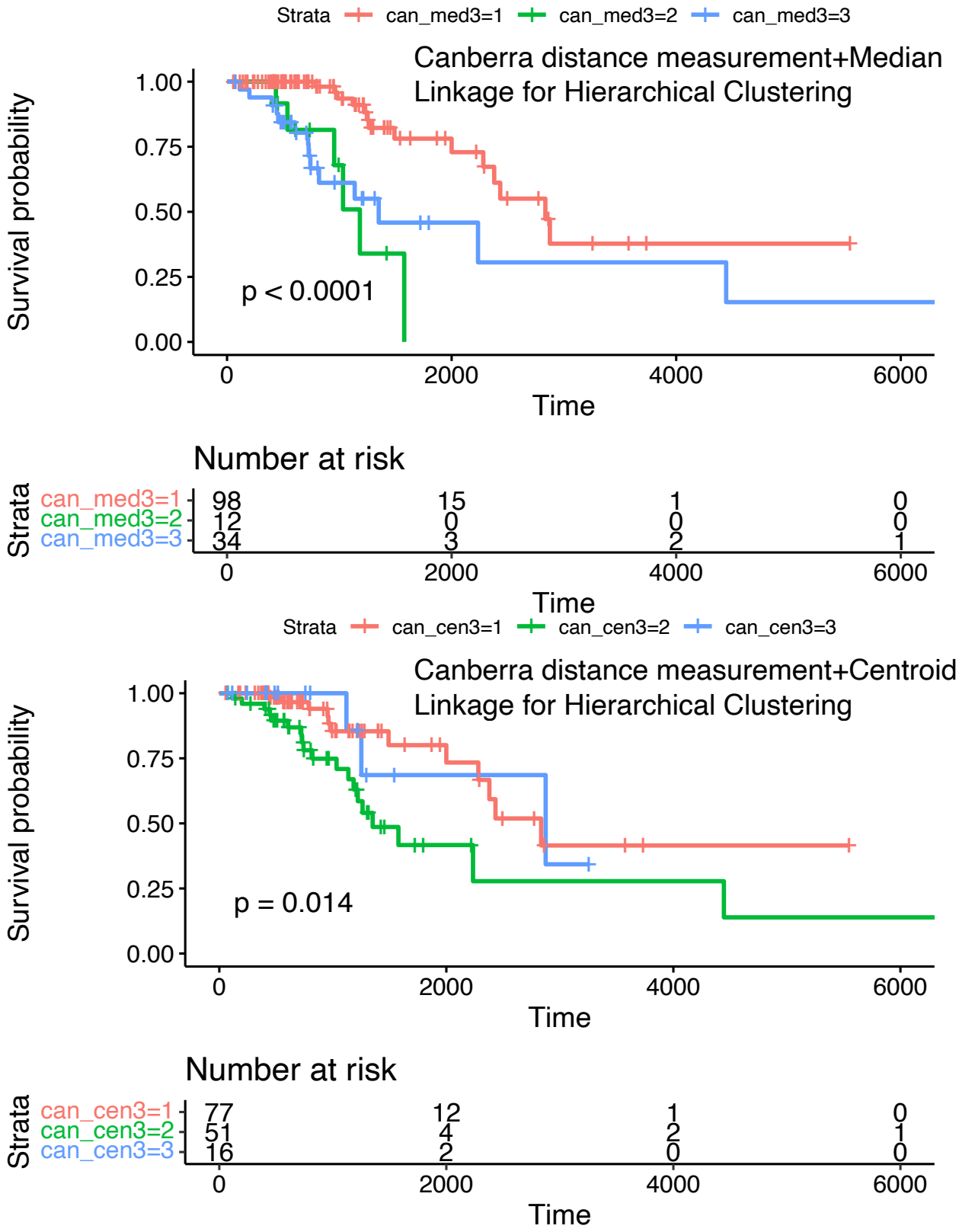

Strata man_med3=1 man_med3=2 man_med3=3
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.45
0
2000
4000
6000
Time
Number at risk
Strata
man_med3=1
man_med3=2
man_med3=3
142
1
1
17
0
1
3
0
0
1
0
0
0
2000
4000
6000
Time
Strata man_cen3=1 man_cen3=2 man_cen3=3
Manhattan distance measurement+Centroid
Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.043
0
2000
4000
6000
Time
Number at risk
Strata
man_cen3=1
man_cen3=2
man_cen3=3
141
1
2
17
1
0
3
0
0
1
0
0
0
2000
4000
6000
Time

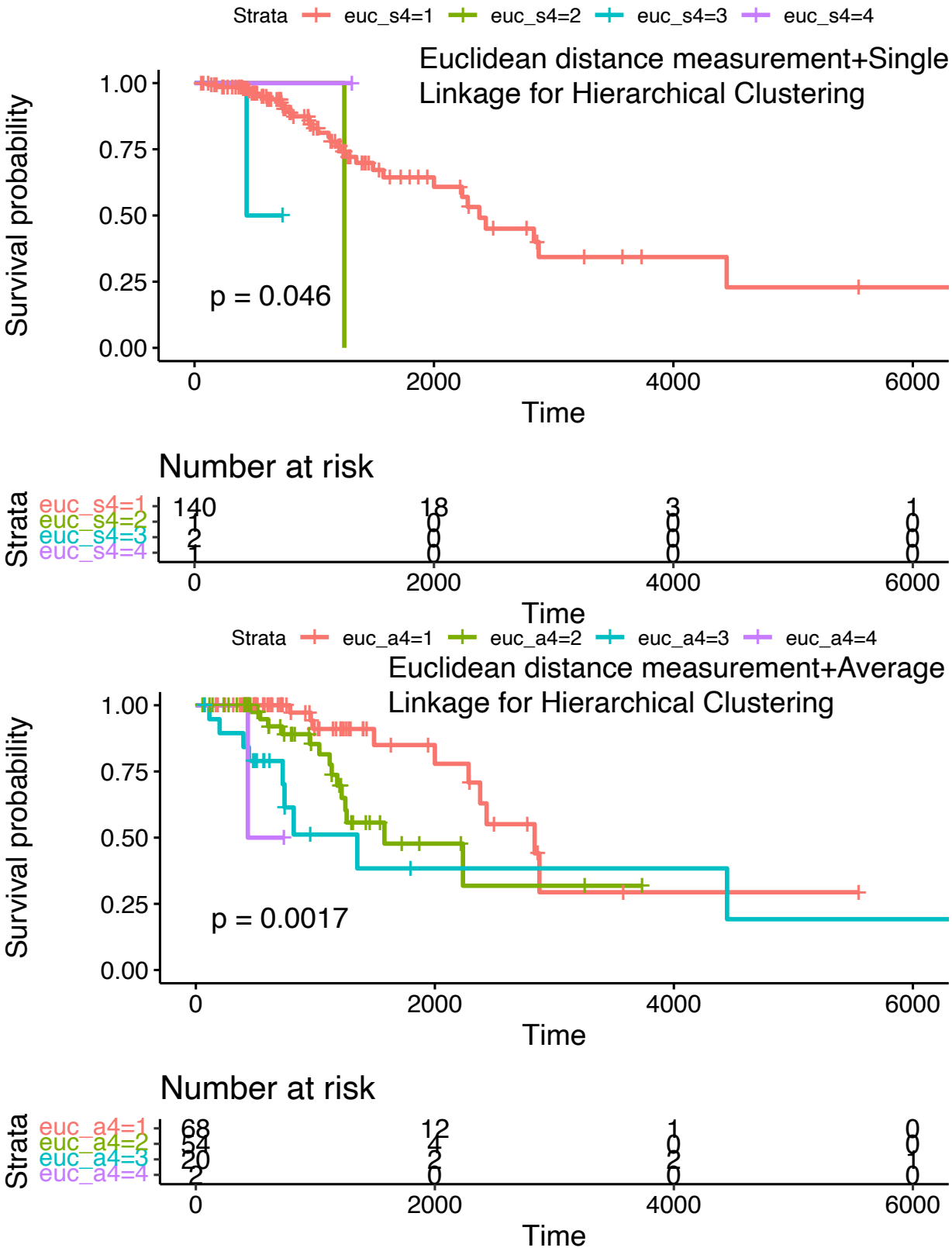

Strata max_c3=1 max_c3=2 max_c3=3
Survival probability
1.00
0.75
0.50
0.25
0.00
Maximum distance measurement+Complete Linkage for Hierarchical Clustering
p = 0.021
0
2000
4000
6000
Time
Number at risk
Strata
max_c3=1
max_c3=2
max_c3=3
141
1
2
17
1
0
2
1
0
0
1
0
0
2000
4000
6000
Time
Strata max_a3=1 max_a3=2 max_a3=3
Survival probability
1.00
0.75
0.50
0.25
0.00
Maximum distance measurement+Average Linkage for Hierarchical Clustering
p = 0.00042
0
2000
4000
6000
Time
Number at risk
Strata
max_a3=1
max_a3=2
max_a3=3
119
23
2
16
2
0
1
2
0
0
1
0
0
2000
4000
6000
Time

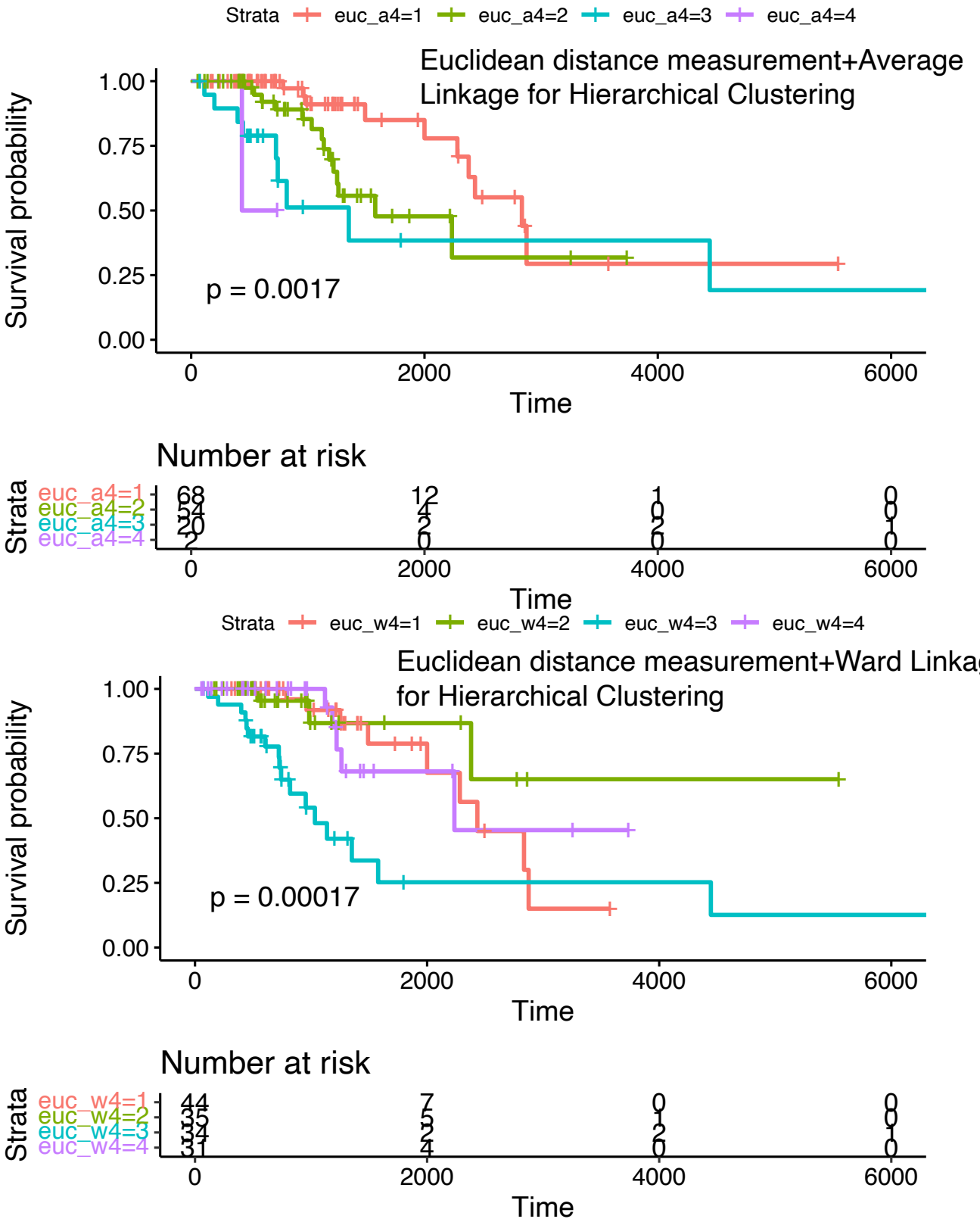

Strata max_w3=1 max_w3=2 max_w3=3
Maximum distance measurement+Ward Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.0055
0
2000
4000
6000
Time
Number at risk
Strata
max_w3=1 73 13 1 0
max_w3=2 51 2 1 1
max_w3=3 20 3 1 0
0
2000
4000
6000
Time
Strata max_mcq3=1 max_mcq3=2 max_mcq3=3
Maximum distance measurement+Mcquitty Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.016
0
2000
4000
6000
Time
Number at risk
Strata
max_mcq3=1 39 6 1 0
max_mcq3=2 104 11 1 0
max_mcq3=3 1 1 1 1
0
2000
4000
6000
Time

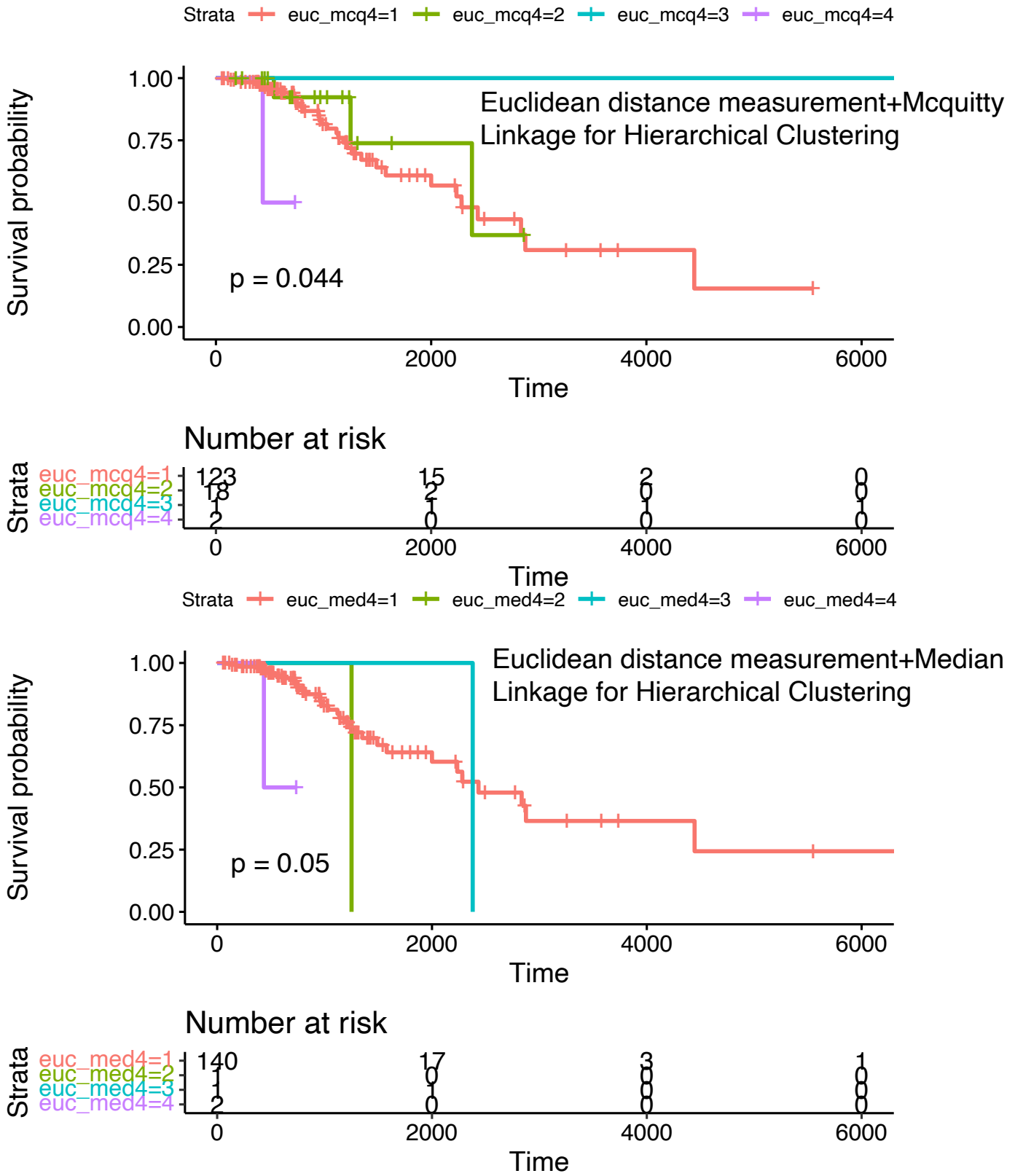

Strata can_c3=1 can_c3=2 can_c3=3
Canberra distance measurement+Complete Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.006
0
2000
4000
6000
Time
Number at risk
Strata
can_c3=1 75 12 1 0
can_c3=2 53 4 2 1
can_c3=3 16 2 0 0
0
2000
4000
6000
Time
Strata can_a3=1 can_a3=2 can_a3=3
Canberra distance measurement+Average Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.0055
0
2000
4000
6000
Time
Number at risk
Strata
can_a3=1 55 10 1 0
can_a3=2 66 6 2 1
can_a3=3 23 2 0 0
0
2000
4000
6000
Time

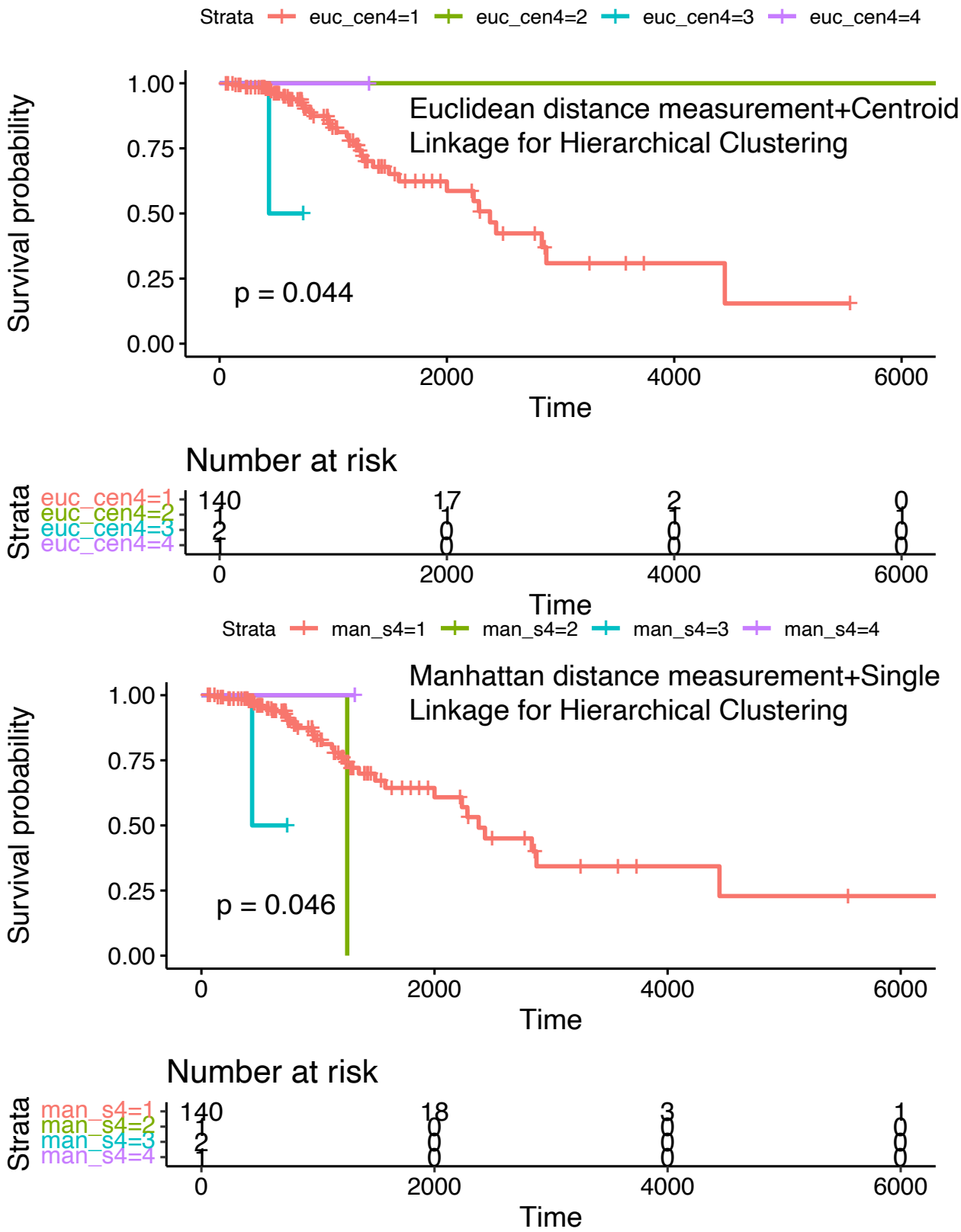

Strata can_w3=1 can_w3=2 can_w3=3
Canberra distance measurement+Ward Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.0014
0
2000
4000
6000
Time
Number at risk
Strata
can_w3=1 69 12 1 0
can_w3=2 46 2 0 0
can_w3=3 29 4 2 1
0
2000
4000
6000
Time
Strata can_mcq3=1 can_mcq3=2 can_mcq3=3
Canberra distance measurement+Mcquitty Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
2000
4000
6000
Time
Number at risk
Strata
can_mcq3=1 95 15 3 1
can_mcq3=2 19 0 0 0
can_mcq3=3 30 3 0 0
0
2000
4000
6000
Time

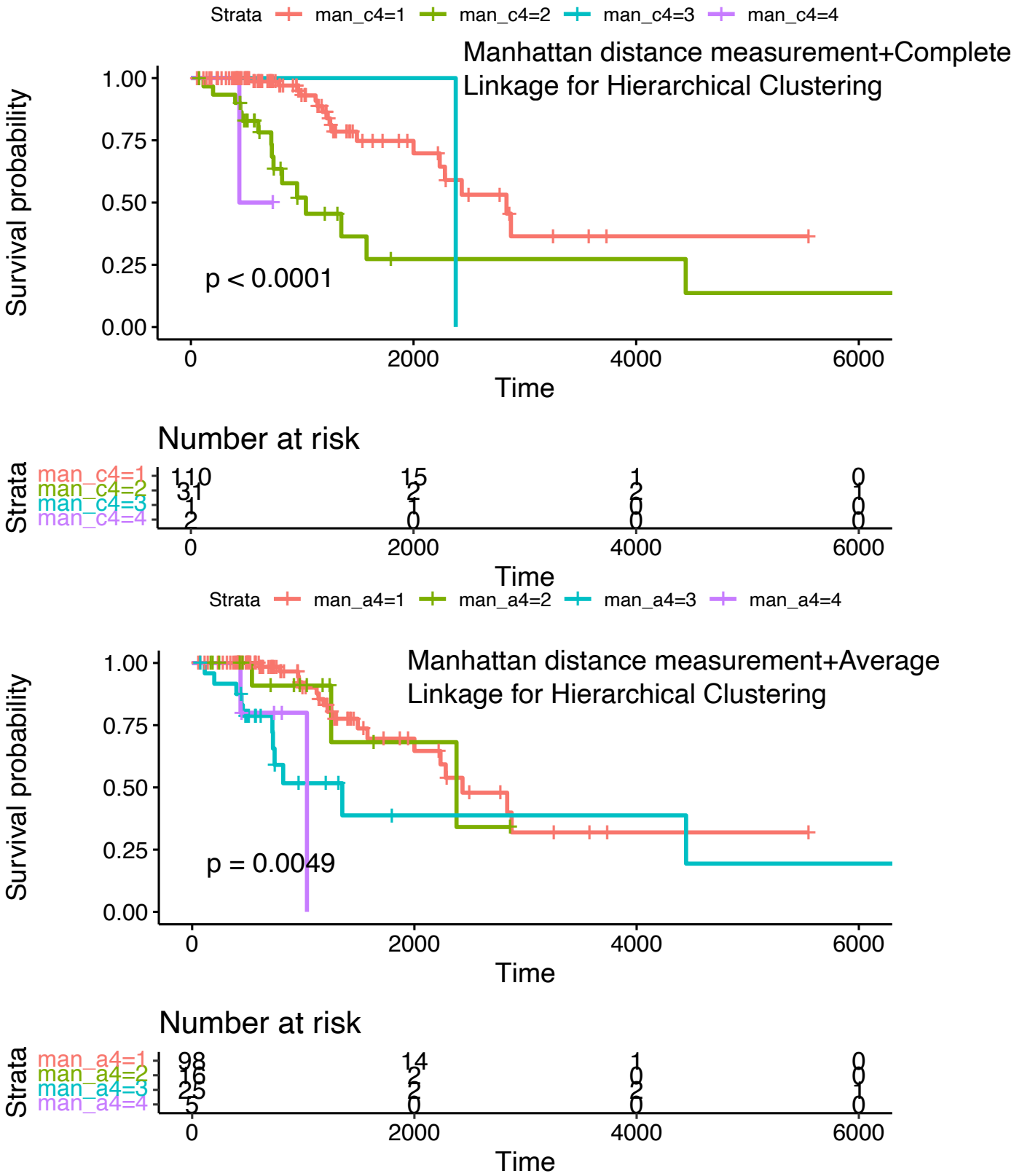

Strata
can_med3=1
can_med3=2
can_med3=3
Canberra distance measurement+Median
Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
2000
4000
6000
Time
Number at risk
Strata
can_med3=1
can_med3=2
can_med3=3
98
15
1
0
12
0
0
0
34
3
2
1
0
2000
4000
6000
Time
Strata
can_cen3=1
can_cen3=2
can_cen3=3
Canberra distance measurement+Centroid
Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.014
0
2000
4000
6000
Time
Number at risk
Strata
can_cen3=1
can_cen3=2
can_cen3=3
77
12
1
0
51
4
2
1
16
2
0
0
0
2000
4000
6000
Time

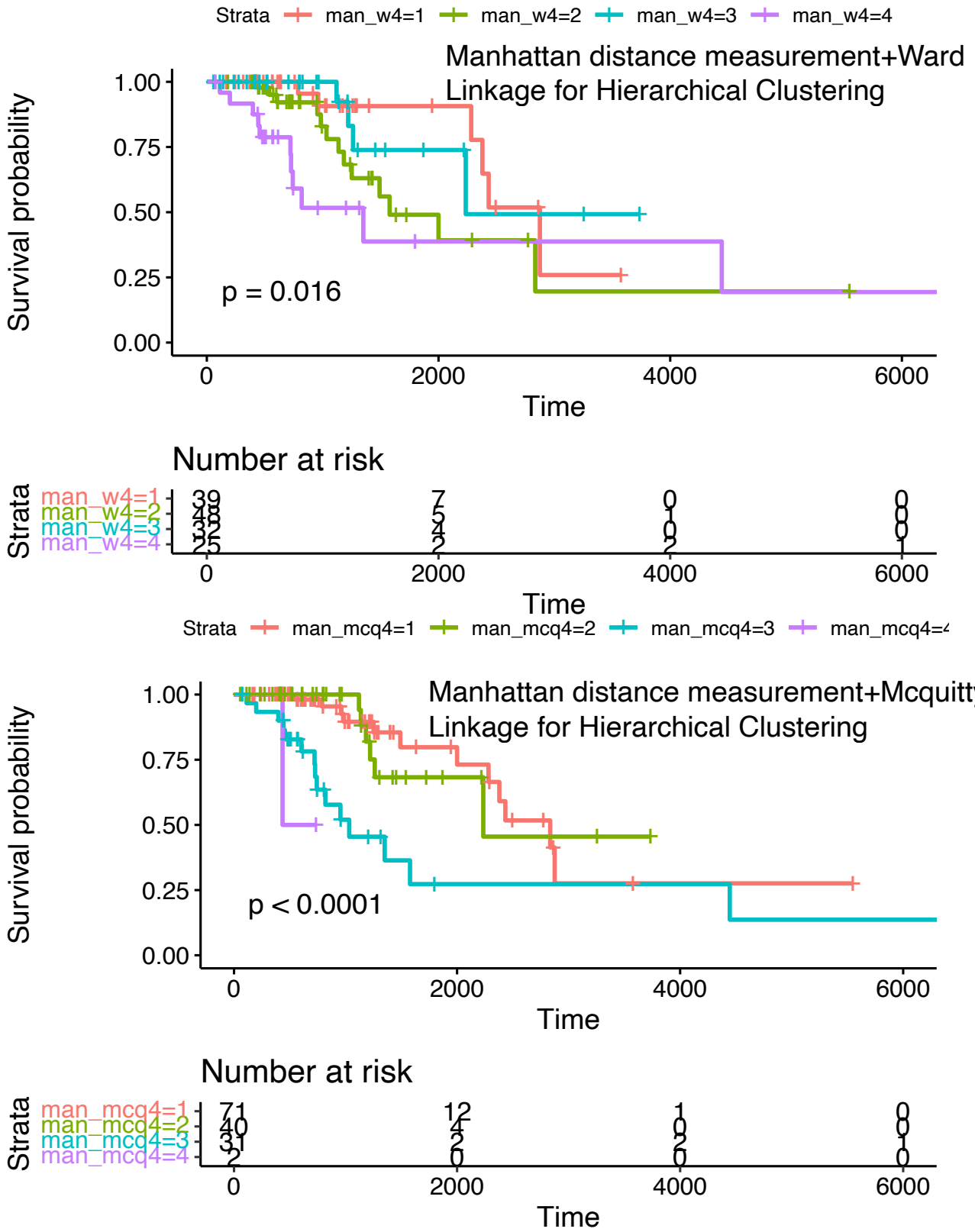

Strata euc_s4=1 euc_s4=2 euc_s4=3 euc_s4=4
Euclidean distance measurement+Single Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.046
0
2000
4000
6000
Time
Number at risk
Strata
euc_s4=1
euc_s4=2
euc_s4=3
euc_s4=4
140
1
2
1
18
0
0
0
3
0
0
0
1
0
0
0
0
2000
4000
6000
Time
Strata euc_a4=1 euc_a4=2 euc_a4=3 euc_a4=4
Euclidean distance measurement+Average Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.0017
0
2000
4000
6000
Time
Number at risk
Strata
euc_a4=1
euc_a4=2
euc_a4=3
euc_a4=4
68
54
20
2
12
4
2
0
1
0
2
0
0
1
0
0
2000
4000
6000
Time

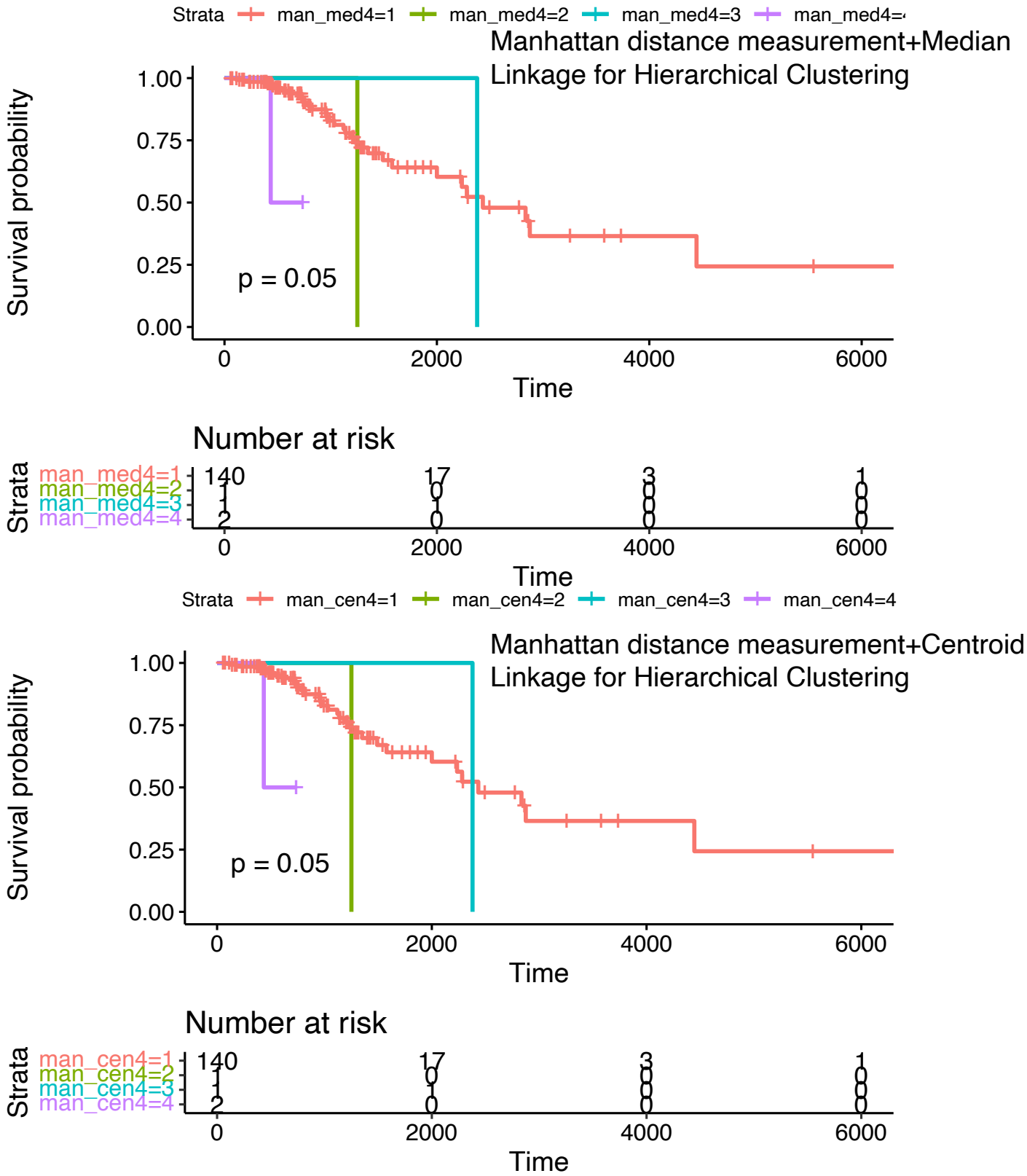

Strata euc_a4=1 euc_a4=2 euc_a4=3 euc_a4=4
Euclidean distance measurement+Average Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.0017
0
2000
4000
6000
Time
Number at risk
Strata
euc_a4=1
euc_a4=2
euc_a4=3
euc_a4=4
68 12 1 0
54 4 0 0
20 2 2 1
2 0 0 0
0
2000
4000
6000
Time
Strata euc_w4=1 euc_w4=2 euc_w4=3 euc_w4=4
Euclidean distance measurement+Ward Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.00017
0
2000
4000
6000
Time
Number at risk
Strata
euc_w4=1
euc_w4=2
euc_w4=3
euc_w4=4
44 7 0 0
35 5 1 0
32 3 2 1
31 4 0 0
0
2000
4000
6000
Time

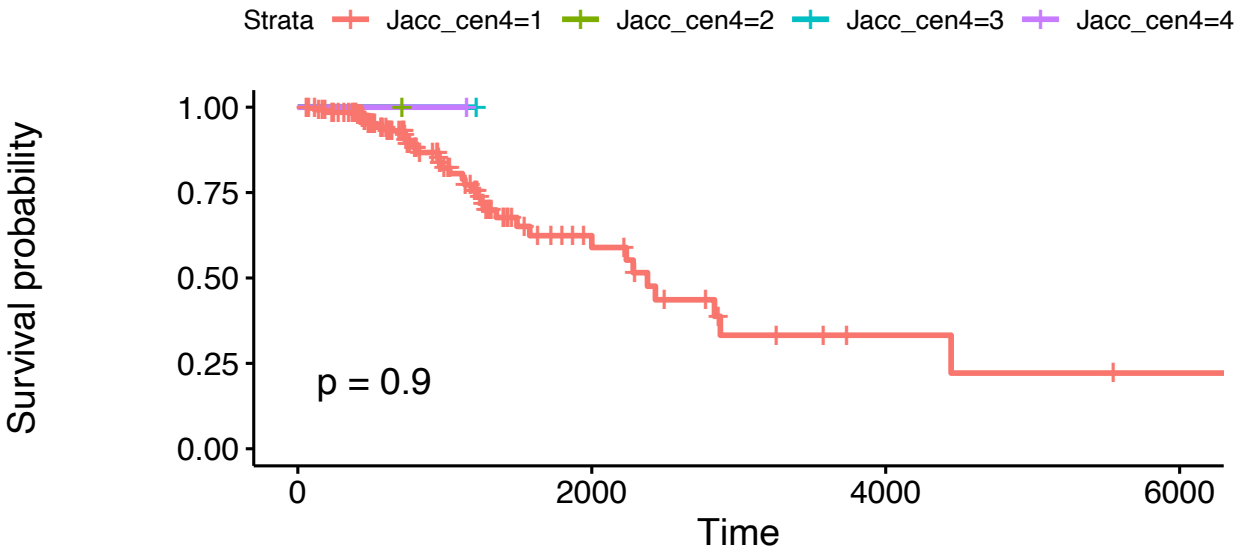

Strata euc_mcq4=1 euc_mcq4=2 euc_mcq4=3 euc_mcq4=4
Survival probability
1.00
0.75
0.50
0.25
0.00
Euclidean distance measurement+Mcquitty
Linkage for Hierarchical Clustering
p = 0.044
0
2000
4000
6000
Time
Number at risk
Strata
euc_mcq4=1
euc_mcq4=2
euc_mcq4=3
euc_mcq4=4
123
15
2
0
18
2
0
0
1
1
0
1
2
0
0
0
0
2000
4000
6000
Time
Strata euc_med4=1 euc_med4=2 euc_med4=3 euc_med4=4
Survival probability
1.00
0.75
0.50
0.25
0.00
Euclidean distance measurement+Median
Linkage for Hierarchical Clustering
p = 0.05
0
2000
4000
6000
Time
Number at risk
Strata
euc_med4=1
euc_med4=2
euc_med4=3
euc_med4=4
140
17
3
1
1
0
0
0
1
1
0
0
2
0
0
0
0
2000
4000
6000
Time

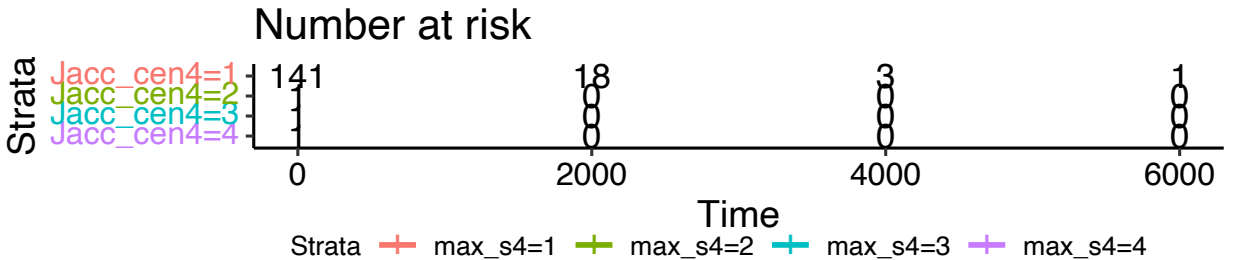

Strata euc_cen4=1 euc_cen4=2 euc_cen4=3 euc_cen4=4
Survival probability
1.00
0.75
0.50
0.25
0.00
Euclidean distance measurement+Centroid
Linkage for Hierarchical Clustering
p = 0.044
0
2000
4000
6000
Time
Number at risk
Strata
euc_cen4=1
euc_cen4=2
euc_cen4=3
euc_cen4=4
140
1
2
1
17
1
0
0
2
1
0
0
0
1
0
0
0
2000
4000
6000
Time
Strata man_s4=1 man_s4=2 man_s4=3 man_s4=4
Survival probability
1.00
0.75
0.50
0.25
0.00
Manhattan distance measurement+Single
Linkage for Hierarchical Clustering
p = 0.046
0
2000
4000
6000
Time
Number at risk
Strata
man_s4=1
man_s4=2
man_s4=3
man_s4=4
140
1
2
1
18
0
0
0
3
0
0
0
1
0
0
0
0
2000
4000
6000
Time

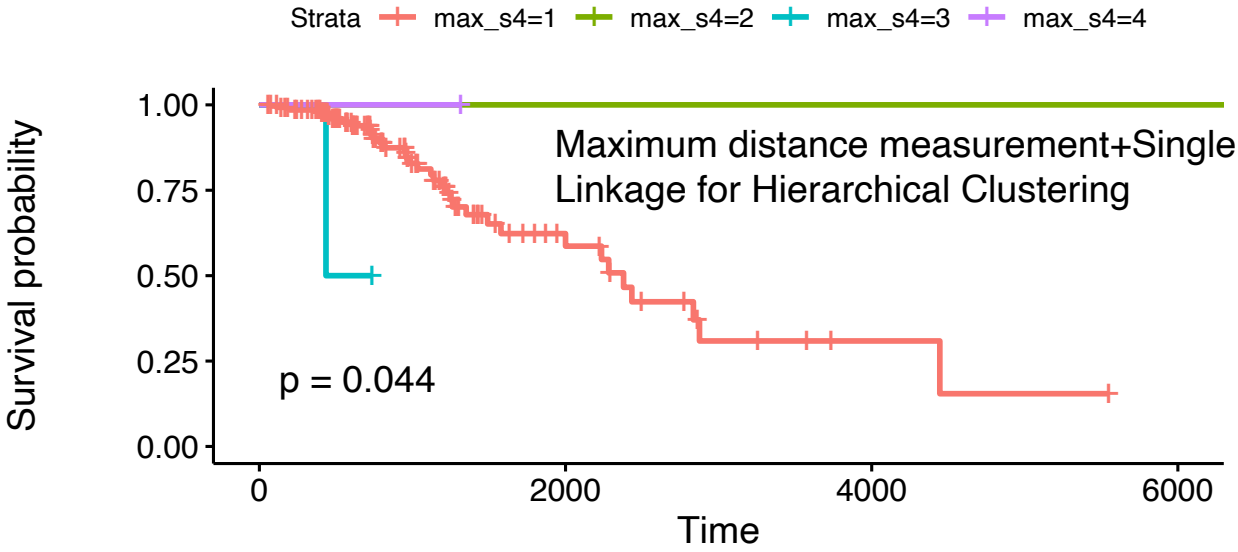

Strata man_c4=1 man_c4=2 man_c4=3 man_c4=4
Manhattan distance measurement+Complete Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
2000
4000
6000
Time
Number at risk
Strata
man_c4=1 110 15 1 0
man_c4=2 31 2 2 1
man_c4=3 1 1 0 0
man_c4=4 2 0 0 0
0
2000
4000
6000
Time
Strata man_a4=1 man_a4=2 man_a4=3 man_a4=4
Manhattan distance measurement+Average Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.0049
0
2000
4000
6000
Time
Number at risk
Strata
man_a4=1 98 14 1 0
man_a4=2 16 2 0 0
man_a4=3 25 2 2 1
man_a4=4 5 0 0 0
0
2000
4000
6000
Time

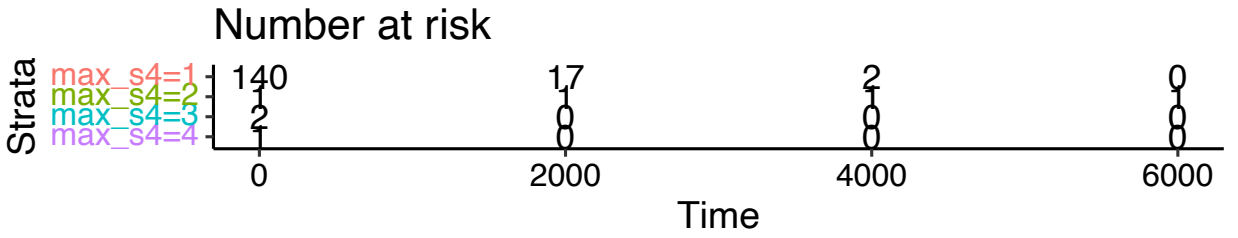

Strata man_w4=1 man_w4=2 man_w4=3 man_w4=4
Manhattan distance measurement+Ward
Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.016
0
2000
4000
6000
Time
Number at risk
Strata
man_w4=1
man_w4=2
man_w4=3
man_w4=4
39 7 0 0
48 5 1 0
32 4 0 0
25 2 2 1
0
2000
4000
6000
Time
Strata man_mcq4=1 man_mcq4=2 man_mcq4=3 man_mcq4=4
Manhattan distance measurement+Mcquitty
Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
2000
4000
6000
Time
Number at risk
Strata
man_mcq4=1
man_mcq4=2
man_mcq4=3
man_mcq4=4
71 12 1 0
40 4 0 0
31 2 2 1
2 0 0 0
0
2000
4000
6000
Time

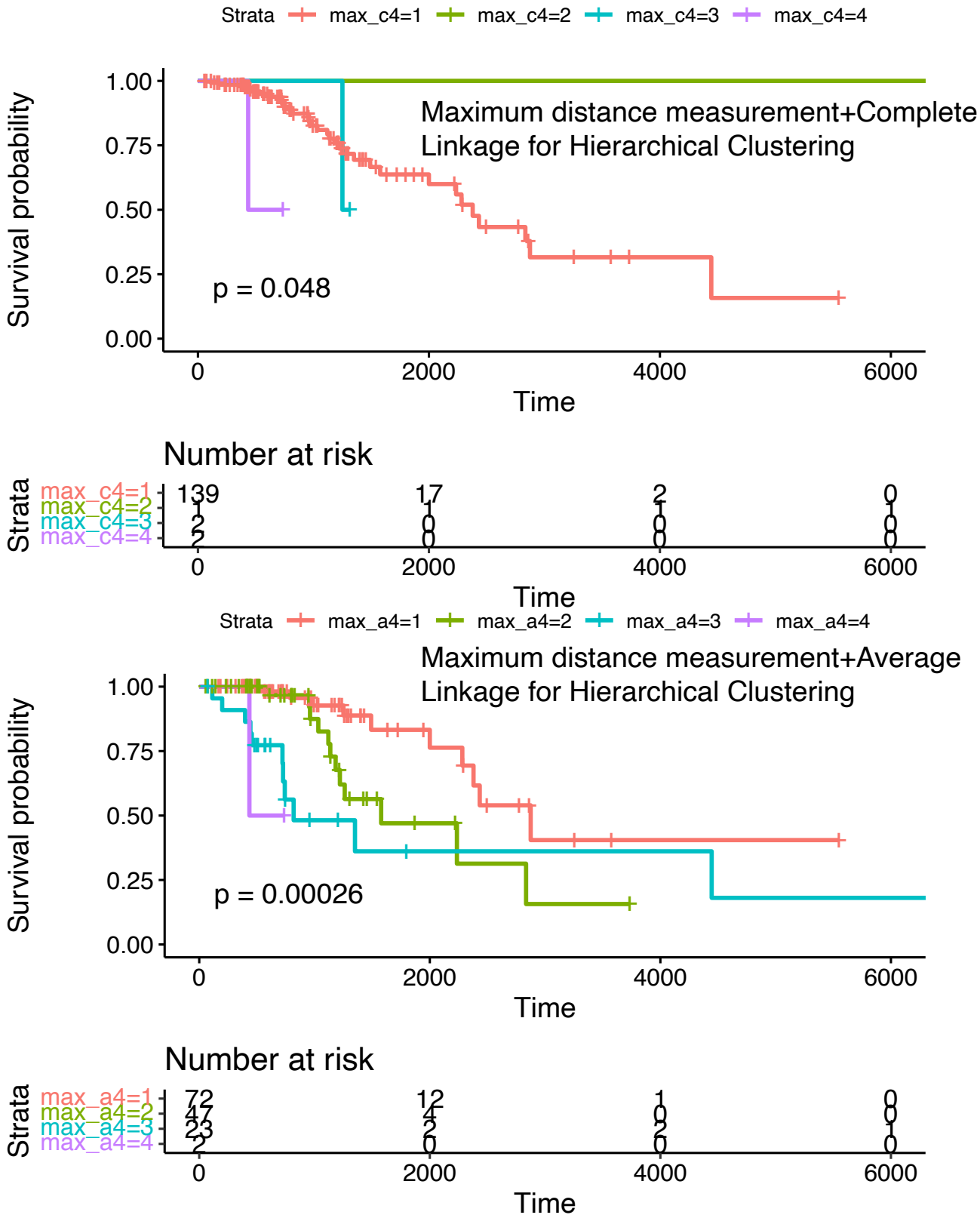

Strata man_med4=1 man_med4=2 man_med4=3 man_med4=4
Manhattan distance measurement+Median
Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.05
0
2000
4000
6000
Time
Number at risk
Strata
man_med4=1
man_med4=2
man_med4=3
man_med4=4
140
17
3
1
1
0
0
0
1
0
0
0
2
0
0
0
0
2000
4000
6000
Time
Strata man_cen4=1 man_cen4=2 man_cen4=3 man_cen4=4
Manhattan distance measurement+Centroid
Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.05
0
2000
4000
6000
Time
Number at risk
Strata
man_cen4=1
man_cen4=2
man_cen4=3
man_cen4=4
140
17
3
1
1
0
0
0
1
0
0
0
2
0
0
0
0
2000
4000
6000
Time

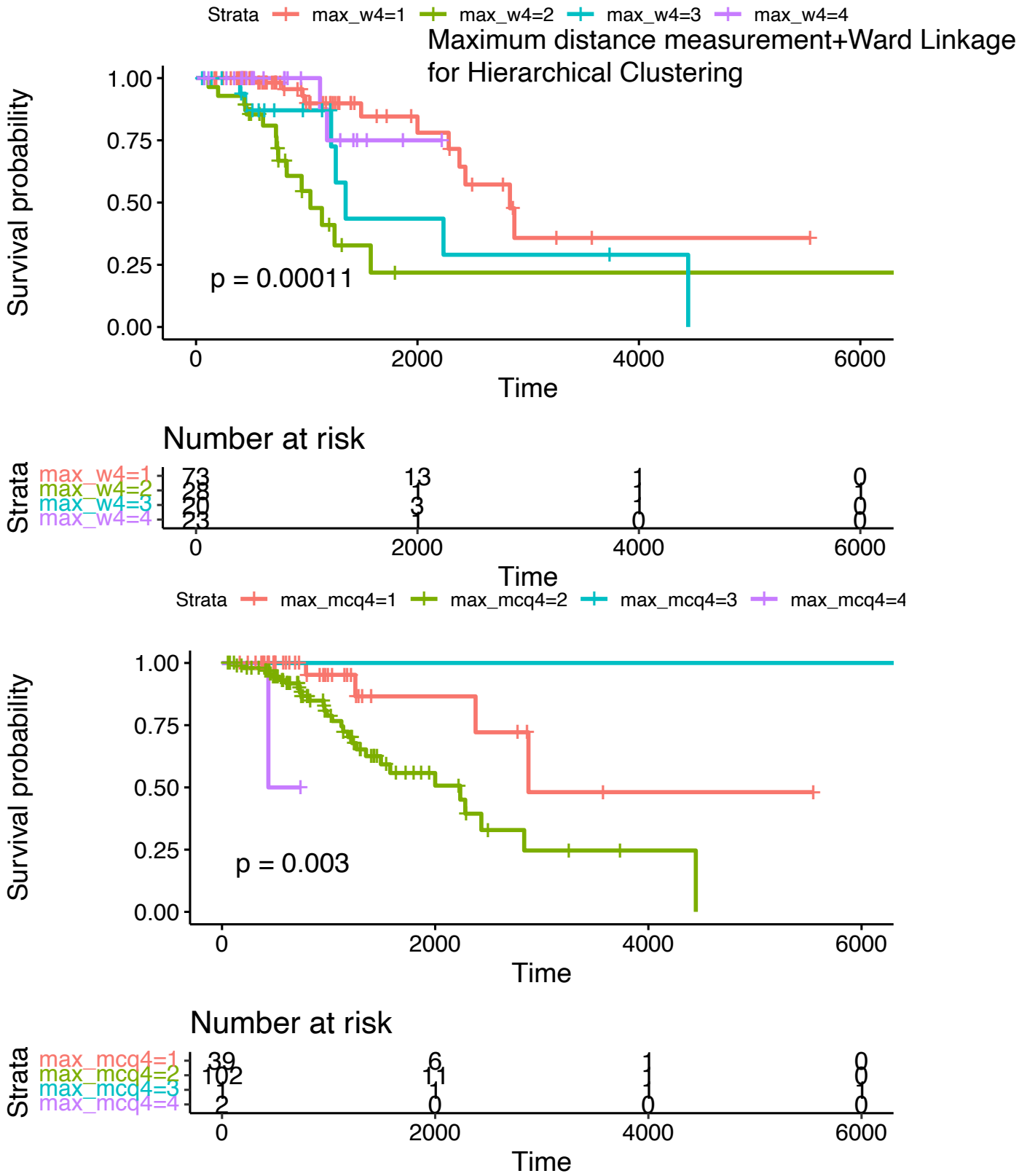

Strata
Jacc_cen4=1
Jacc_cen4=2
Jacc_cen4=3
Jacc_cen4=4
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.9
0
2000
4000
6000
Time

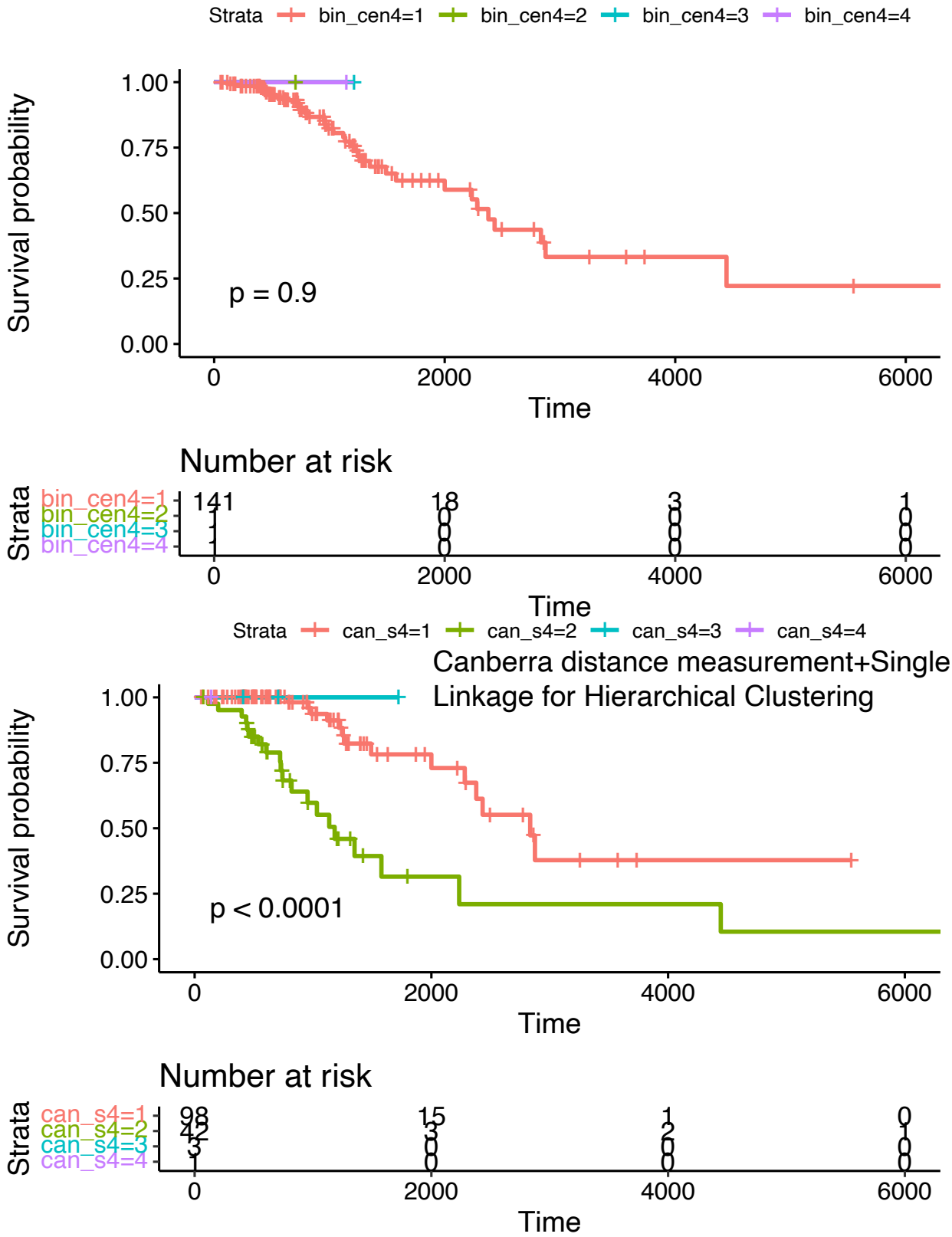

Number at risk
Strata
Jacc_cen4=1
Jacc_cen4=2
Jacc_cen4=3
Jacc_cen4=4
141
18
3
1
0
2000
4000
6000
Time

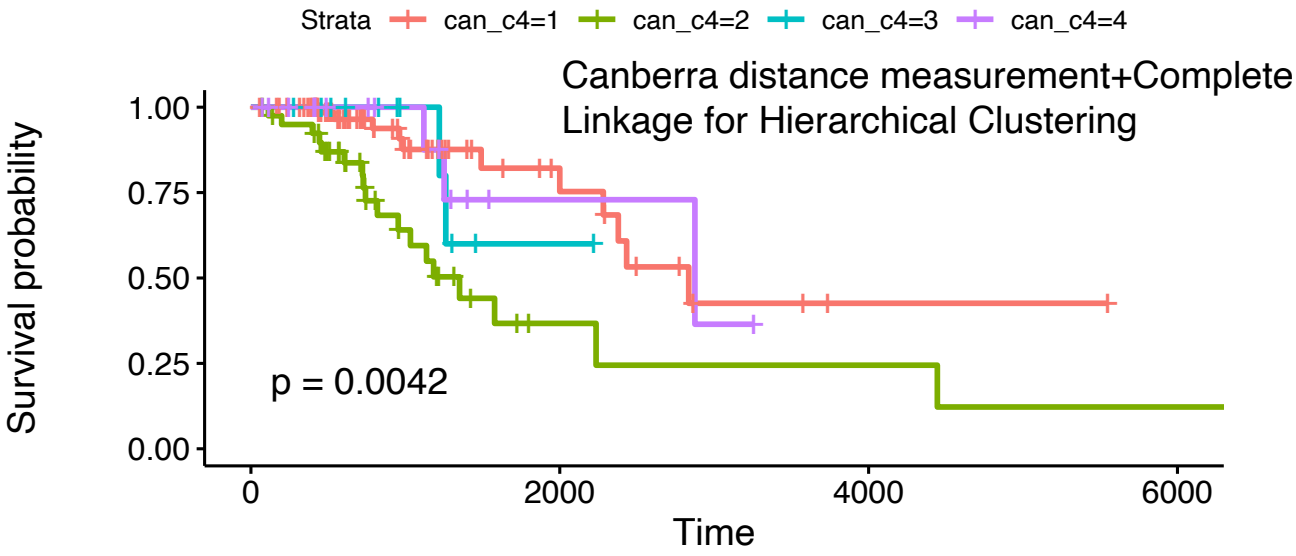

Strata
max_s4=1
max_s4=2
max_s4=3
max_s4=4
Survival probability
1.00
0.75
0.50
0.25
0.00
Maximum distance measurement+Single
Linkage for Hierarchical Clustering
p = 0.044
0
2000
4000
6000
Time

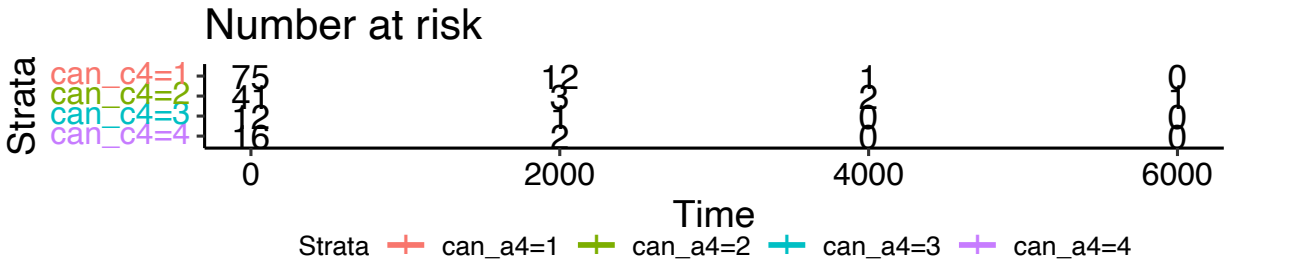

Number at risk
Strata
max_s4=1
max_s4=2
max_s4=3
max_s4=4
140
17
2
0
2
0
0
0
0
2000
4000
6000
Time

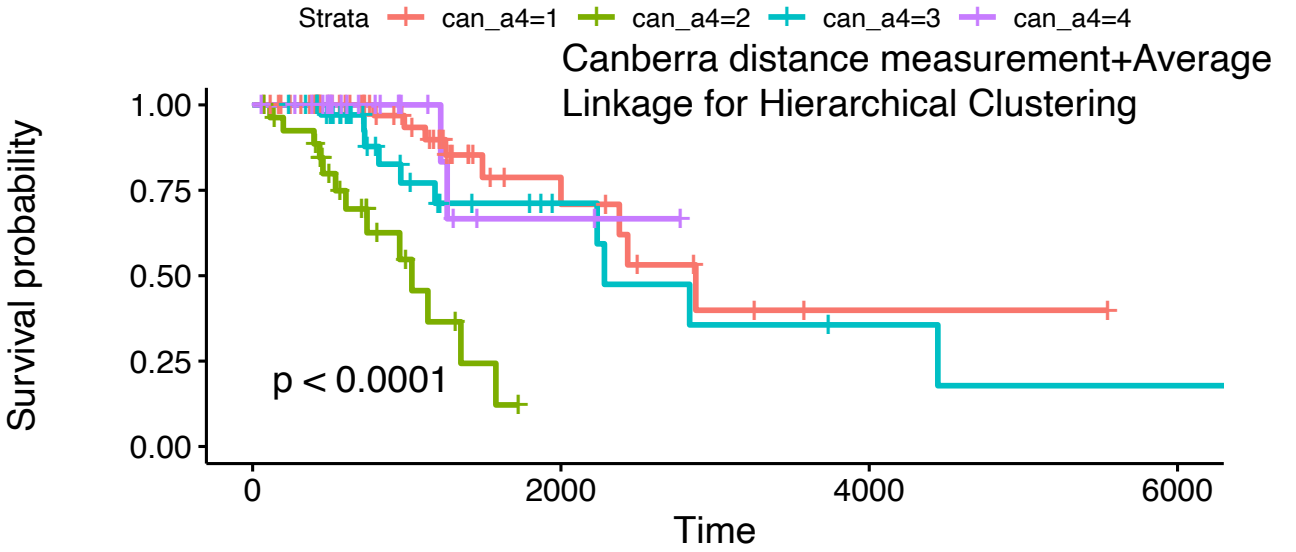

Strata max_c4=1 max_c4=2 max_c4=3 max_c4=4
Survival probability
1.00
0.75
0.50
0.25
0.00
Maximum distance measurement+Complete Linkage for Hierarchical Clustering
p = 0.048
0
2000
4000
6000
Time
Number at risk
Strata
max_c4=1 139 17 2 0
max_c4=2 1 1 1 1
max_c4=3 2 0 0 0
max_c4=4 2 0 0 0
0
2000
4000
6000
Time
Strata max_a4=1 max_a4=2 max_a4=3 max_a4=4
Survival probability
1.00
0.75
0.50
0.25
0.00
Maximum distance measurement+Average Linkage for Hierarchical Clustering
p = 0.00026
0
2000
4000
6000
Time
Number at risk
Strata
max_a4=1 72 12 1 0
max_a4=2 47 4 0 0
max_a4=3 23 2 2 1
max_a4=4 2 0 0 0
0
2000
4000
6000
Time

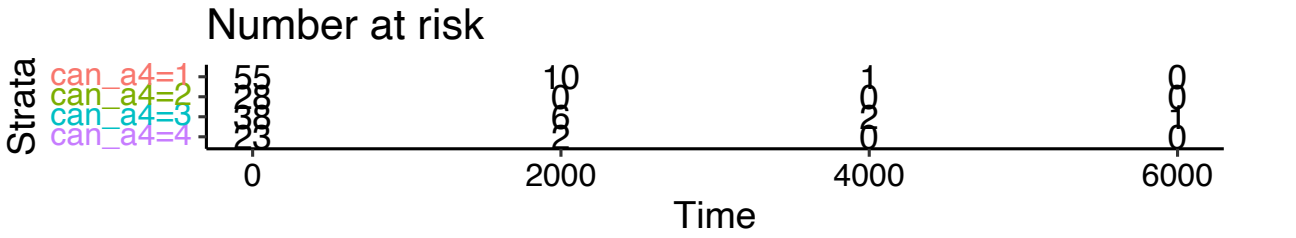

Strata max_w4=1 max_w4=2 max_w4=3 max_w4=4
Maximum distance measurement+Ward Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.00011
0
2000
4000
6000
Time
Number at risk
Strata
max_w4=1
max_w4=2
max_w4=3
max_w4=4
73
13
1
0
28
1
1
1
20
3
1
0
23
1
0
0
0
2000
4000
6000
Time
Strata max_mcq4=1 max_mcq4=2 max_mcq4=3 max_mcq4=4
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.003
0
2000
4000
6000
Time
Number at risk
Strata
max_mcq4=1
max_mcq4=2
max_mcq4=3
max_mcq4=4
39
6
1
0
102
11
1
0
1
1
1
0
2
0
0
0
0
2000
4000
6000
Time
Maximum distance measurement+Mcquitty Linkage for Hierarchical Clustering

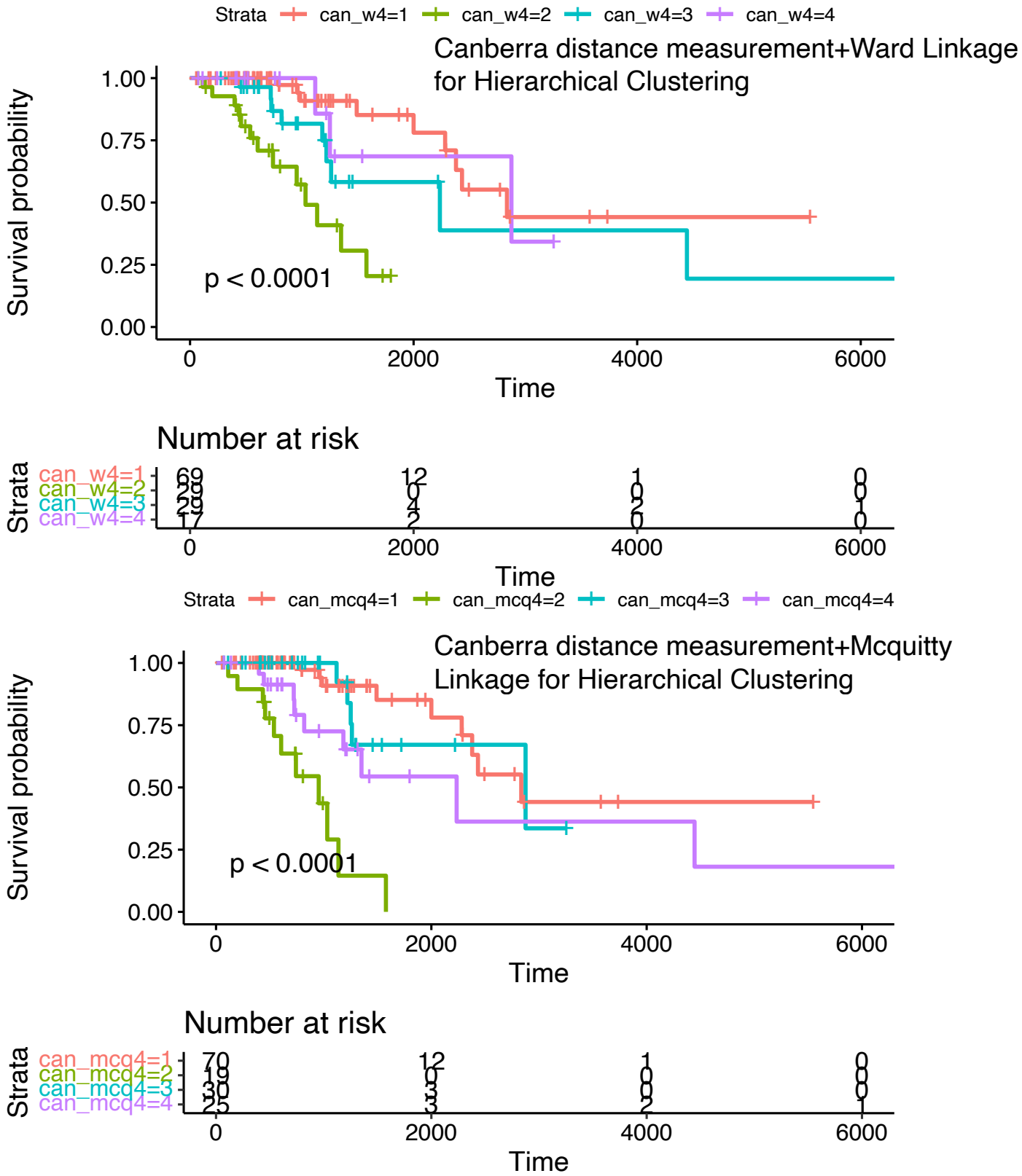

Strata bin_cen4=1 bin_cen4=2 bin_cen4=3 bin_cen4=4
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.9
0
2000
4000
6000
Time
Number at risk
Strata
bin_cen4=1
bin_cen4=2
bin_cen4=3
bin_cen4=4
141
18
3
1
1
0
0
0
1
0
0
0
0
2000
4000
6000
Time
Strata can_s4=1 can_s4=2 can_s4=3 can_s4=4
Canberra distance measurement+Single
Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
2000
4000
6000
Time
Number at risk
Strata
can_s4=1
can_s4=2
can_s4=3
can_s4=4
98
42
3
1
15
3
0
0
1
2
0
0
0
1
0
0
0
2000
4000
6000
Time

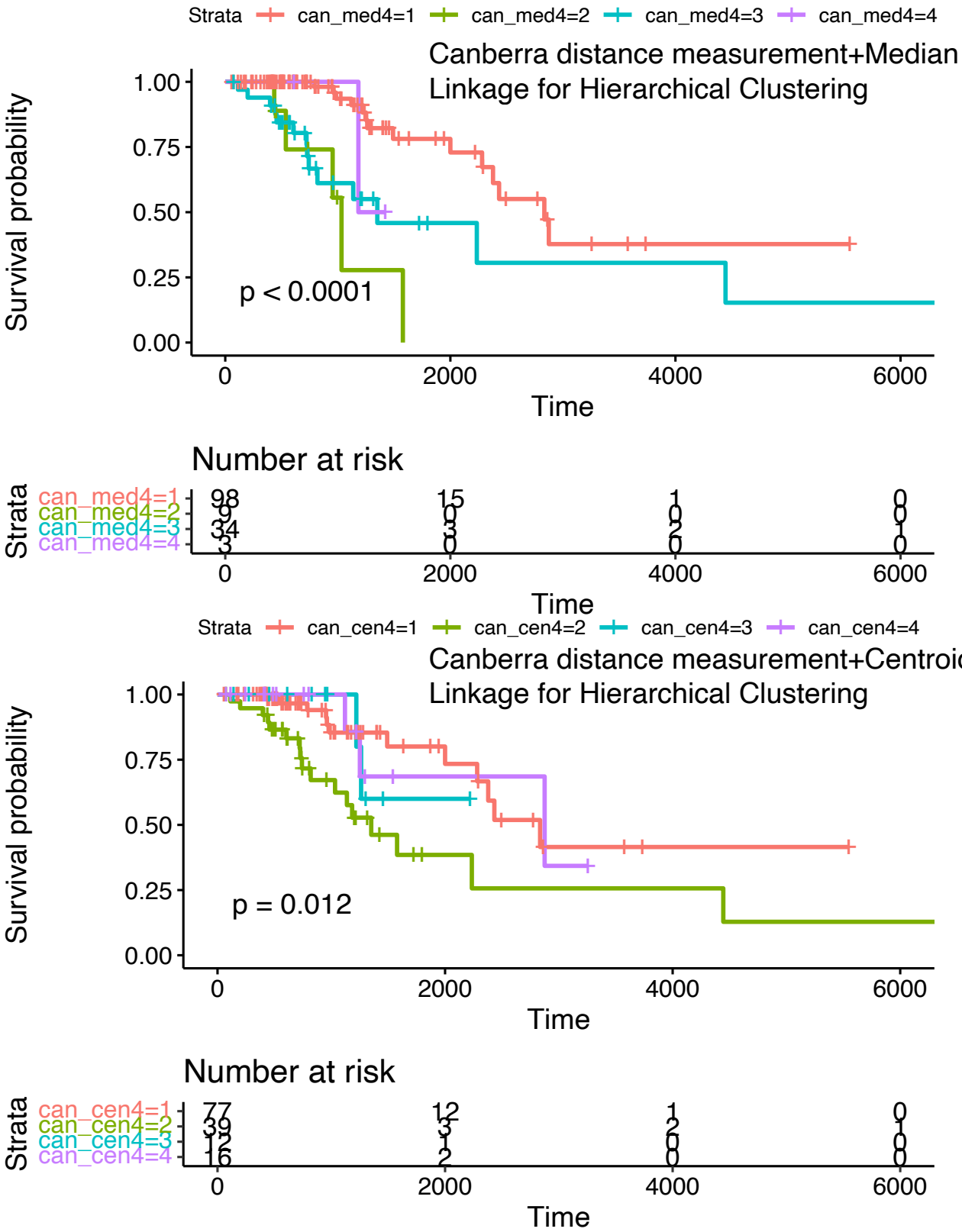

Strata
can_c4=1
can_c4=2
can_c4=3
can_c4=4
Canberra distance measurement+Complete
Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.0042
0
2000
4000
6000
Time


Number at risk
Strata
can_c4=1
can_c4=2
can_c4=3
can_c4=4
75
41
12
16
12
3
1
2
1
2
0
0
0
1
0
0
0
2000
4000
6000
Time


Strata
can_a4=1
can_a4=2
can_a4=3
can_a4=4
Canberra distance measurement+Average
Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
2000
4000
6000
Time

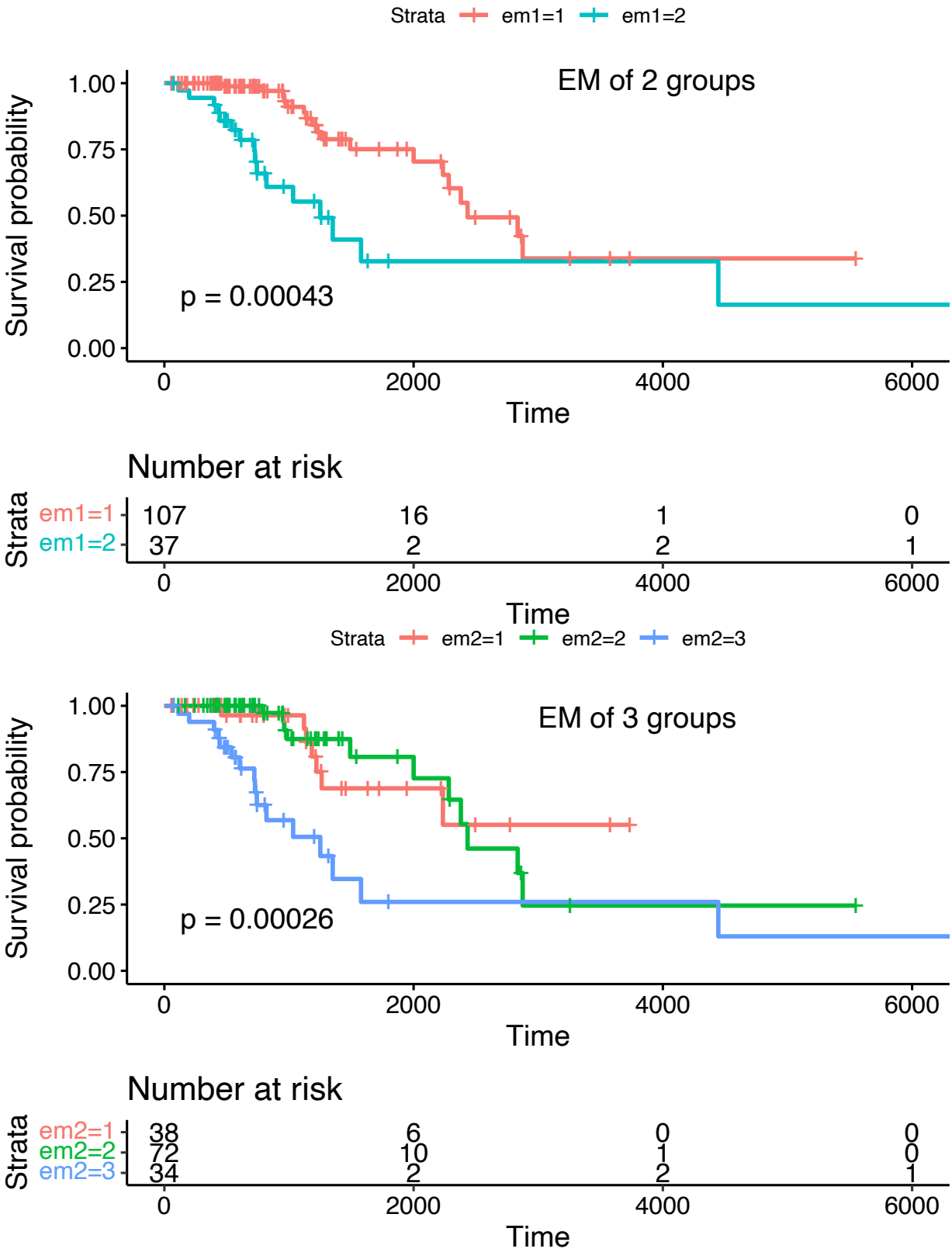

Number at risk
Strata
can_a4=1
can_a4=2
can_a4=3
can_a4=4
55
28
38
23
10
6
6
2
1
0
2
0
0
1
0
0
2000
4000
6000
Time

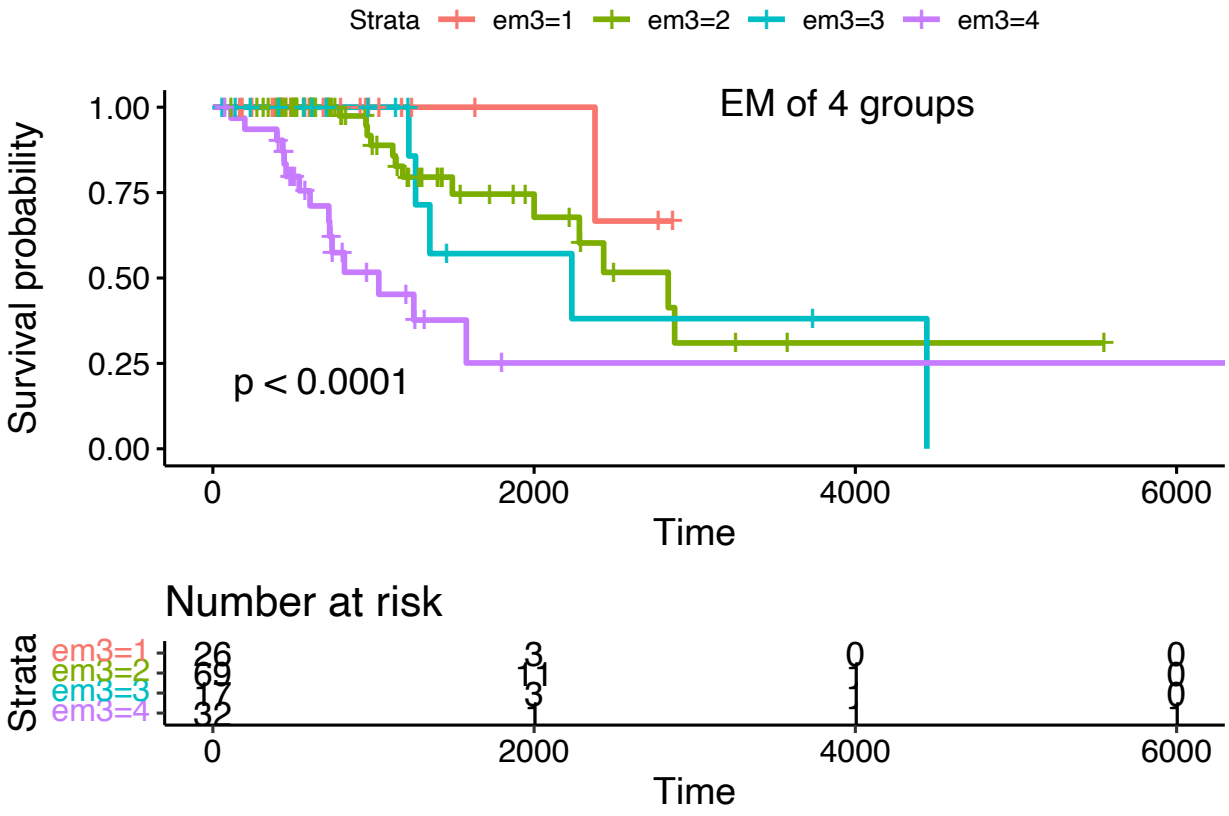

Strata can_w4=1 can_w4=2 can_w4=3 can_w4=4
Canberra distance measurement+Ward Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
2000
4000
6000
Time
Number at risk
Strata
can_w4=1
can_w4=2
can_w4=3
can_w4=4
69 12 1 0
29 0 0 0
29 4 2 1
17 2 0 0
0
2000
4000
6000
Time
Strata can_mcq4=1 can_mcq4=2 can_mcq4=3 can_mcq4=4
Canberra distance measurement+Mcquitty Linkage for Hierarchical Clustering
Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
2000
4000
6000
Time
Number at risk
Strata
can_mcq4=1
can_mcq4=2
can_mcq4=3
can_mcq4=4
70 12 1 0
19 0 0 0
30 3 0 0
25 3 2 1
0
2000
4000
6000
Time



3. DBSCAN

```
## Warning: package 'dbscan' was built under R version 3.6.2
```


Strata em1=1 em1=2
EM of 2 groups
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.00043
0
2000
4000
6000
Time
Number at risk
Strata
em1=1 107 16 1 0
em1=2 37 2 2 1
0
2000
4000
6000
Time
Strata em2=1 em2=2 em2=3
EM of 3 groups
Survival probability
1.00
0.75
0.50
0.25
0.00
p = 0.00026
0
2000
4000
6000
Time
Number at risk
Strata
em2=1 38 6 0 0
em2=2 72 10 1 0
em2=3 34 2 2 1
0
2000
4000
6000
Time


Strata em3=1 em3=2 em3=3 em3=4
EM of 4 groups
Survival probability
1.00
0.75
0.50
0.25
0.00
p < 0.0001
0
2000
4000
6000
Time
Number at risk
Strata
em3=1
em3=2
em3=3
em3=4
26
69
17
32
3
11
3
1
0
1
1
0
0
0
1
0
2000
4000
6000
Time