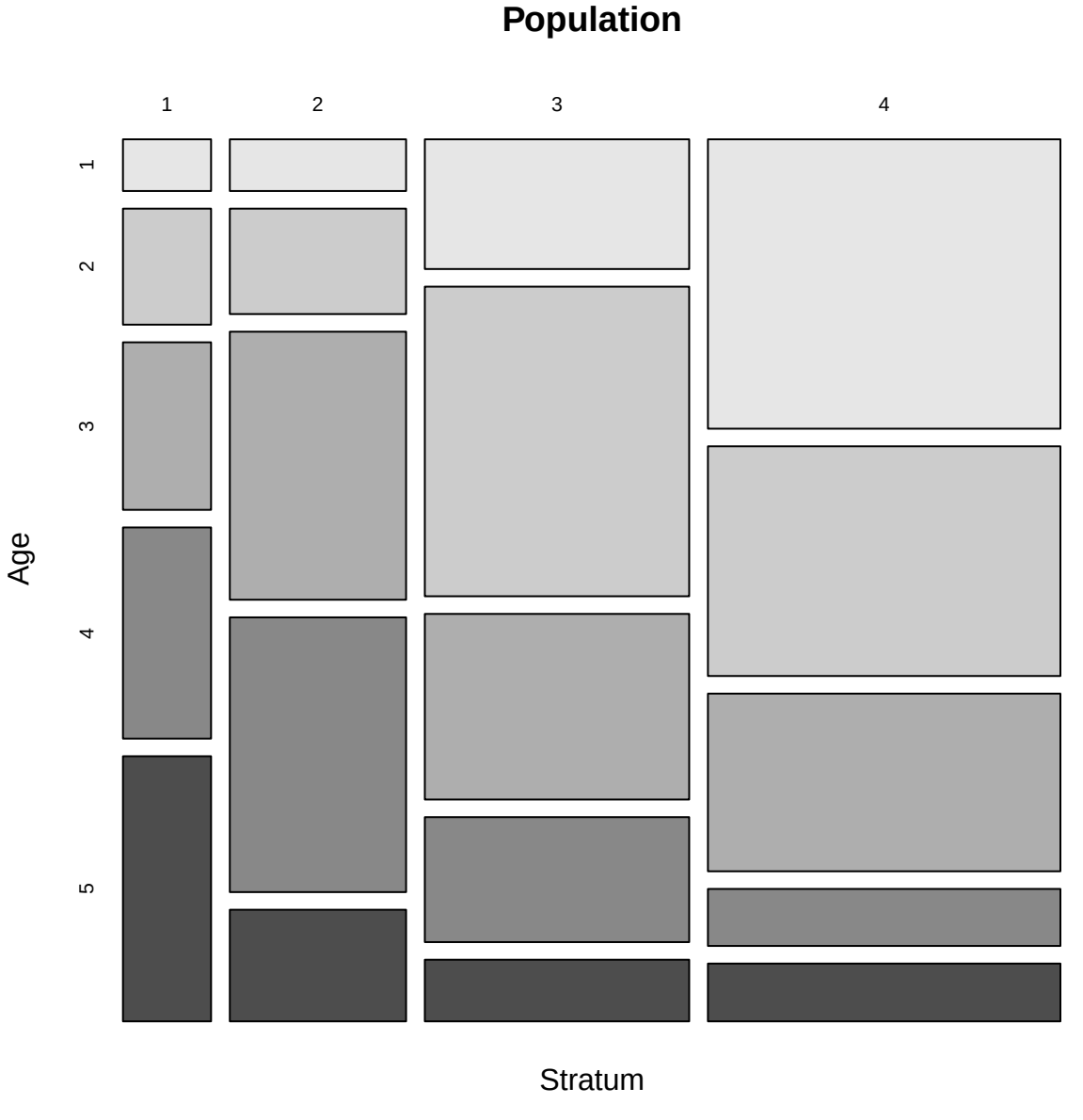
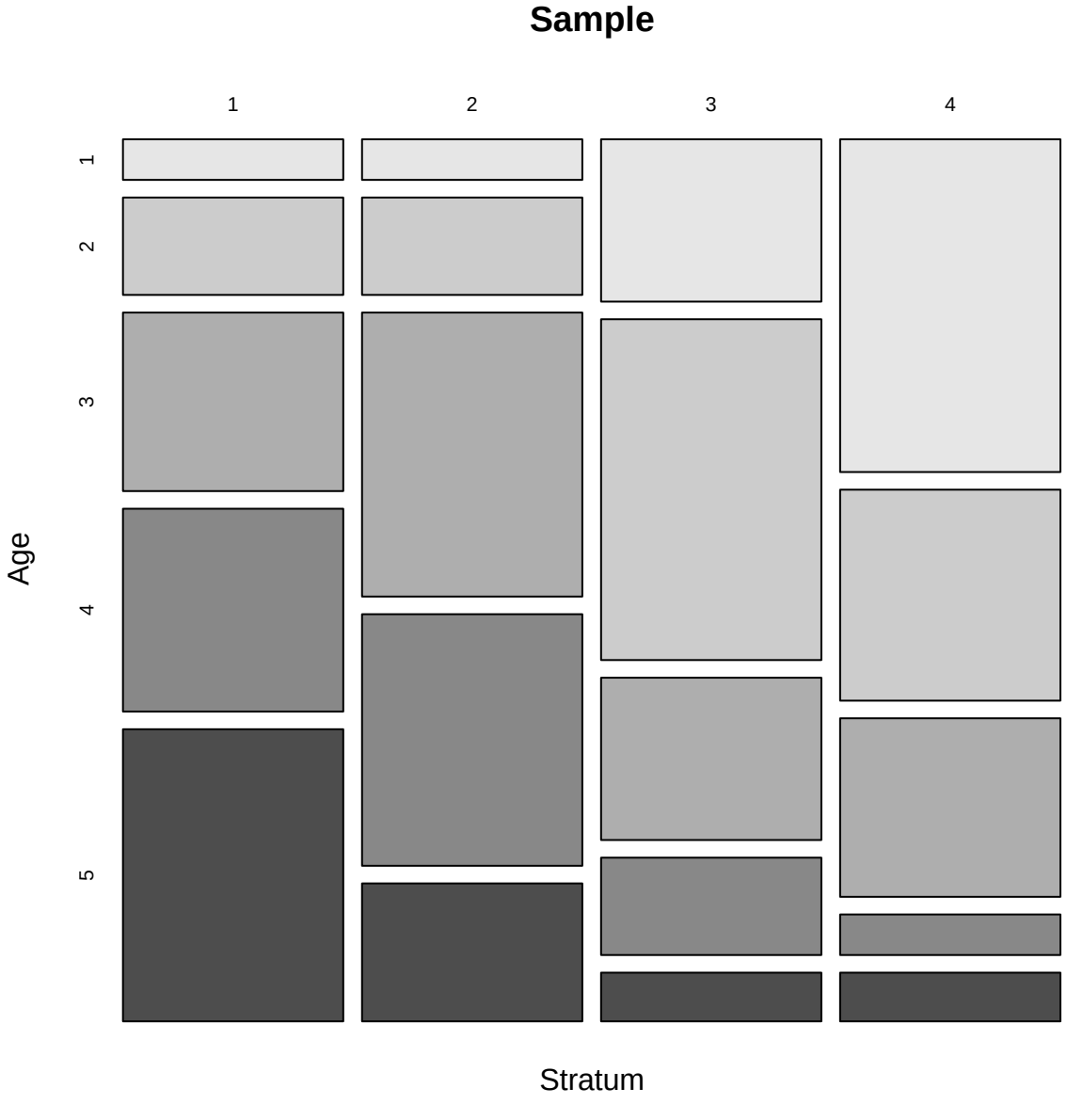
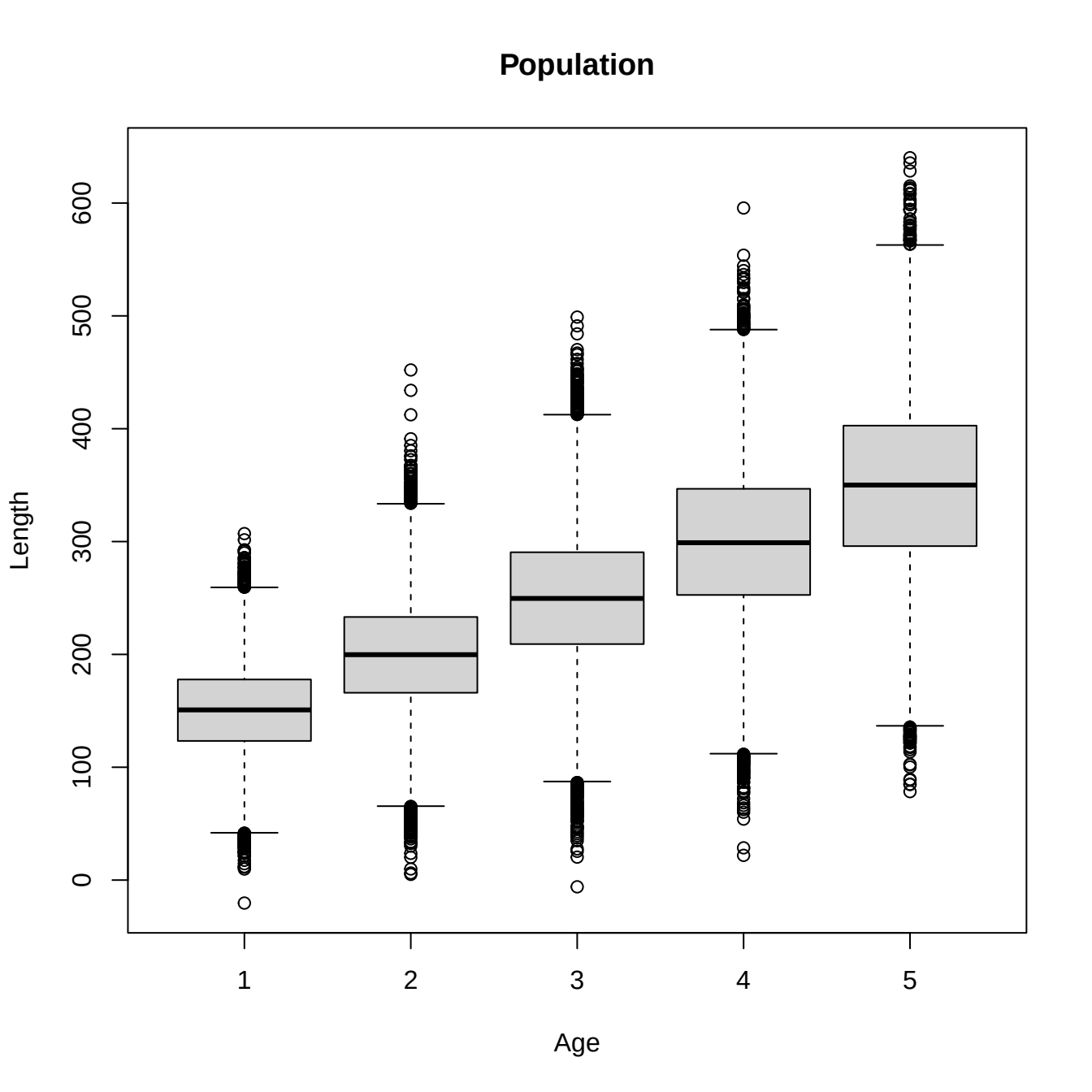
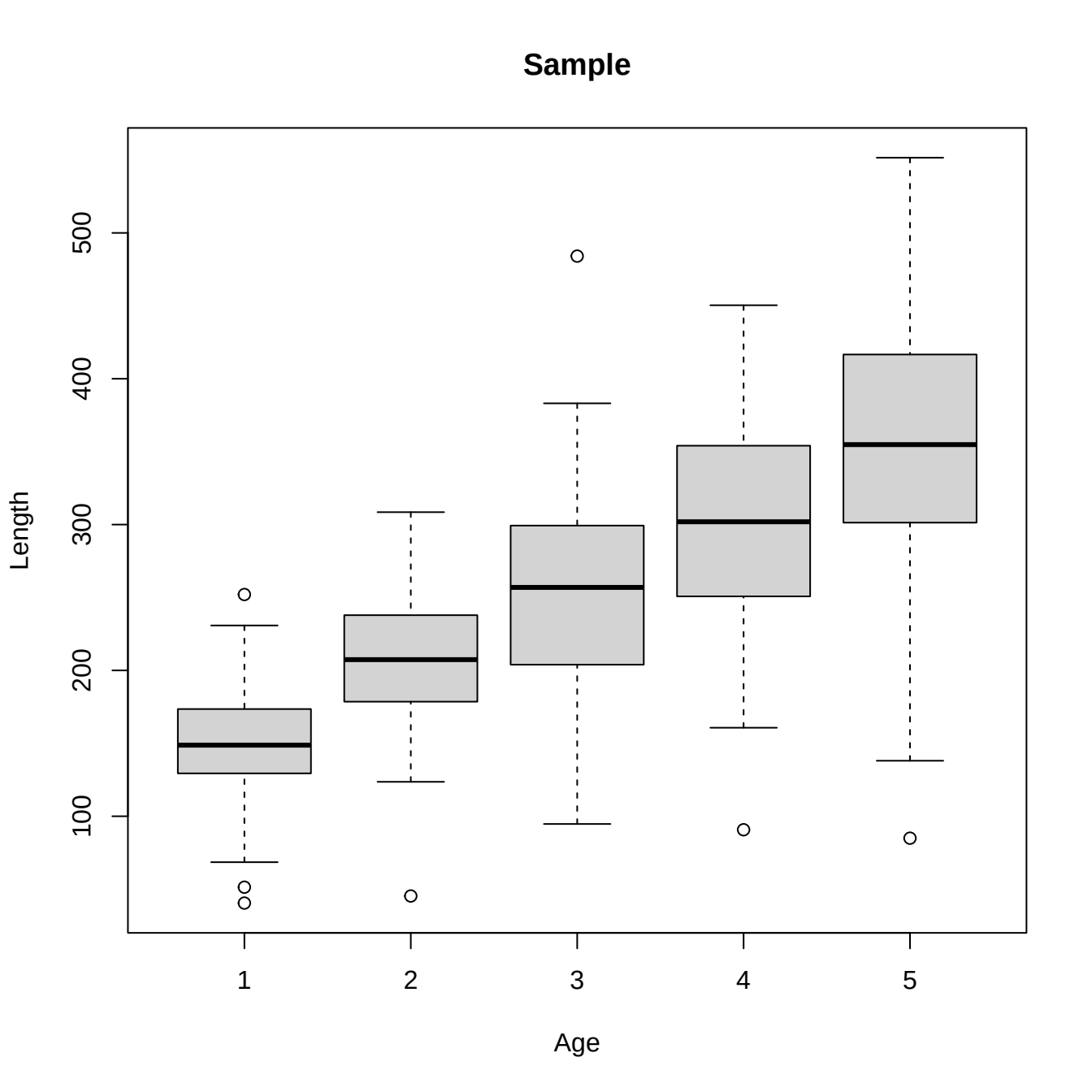
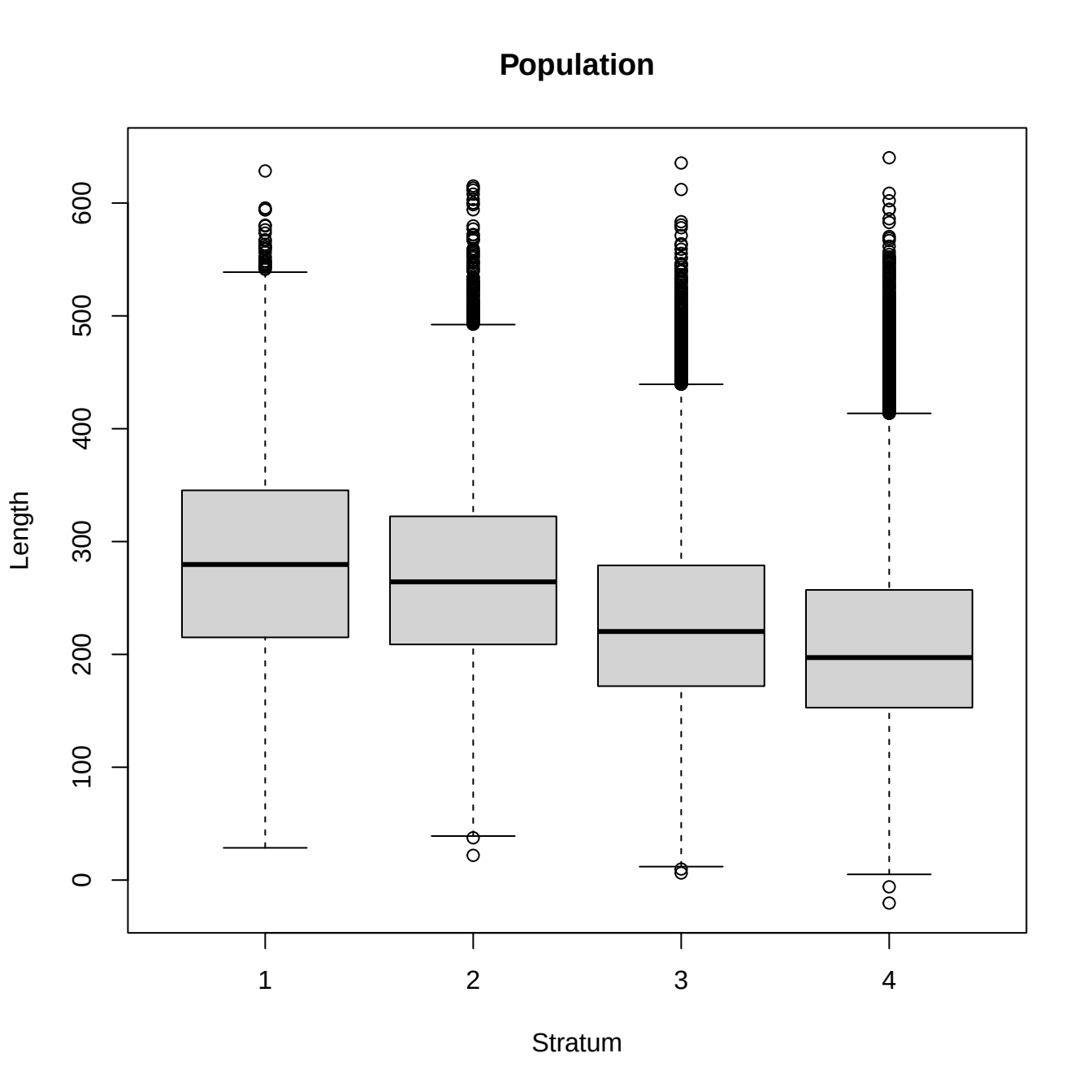
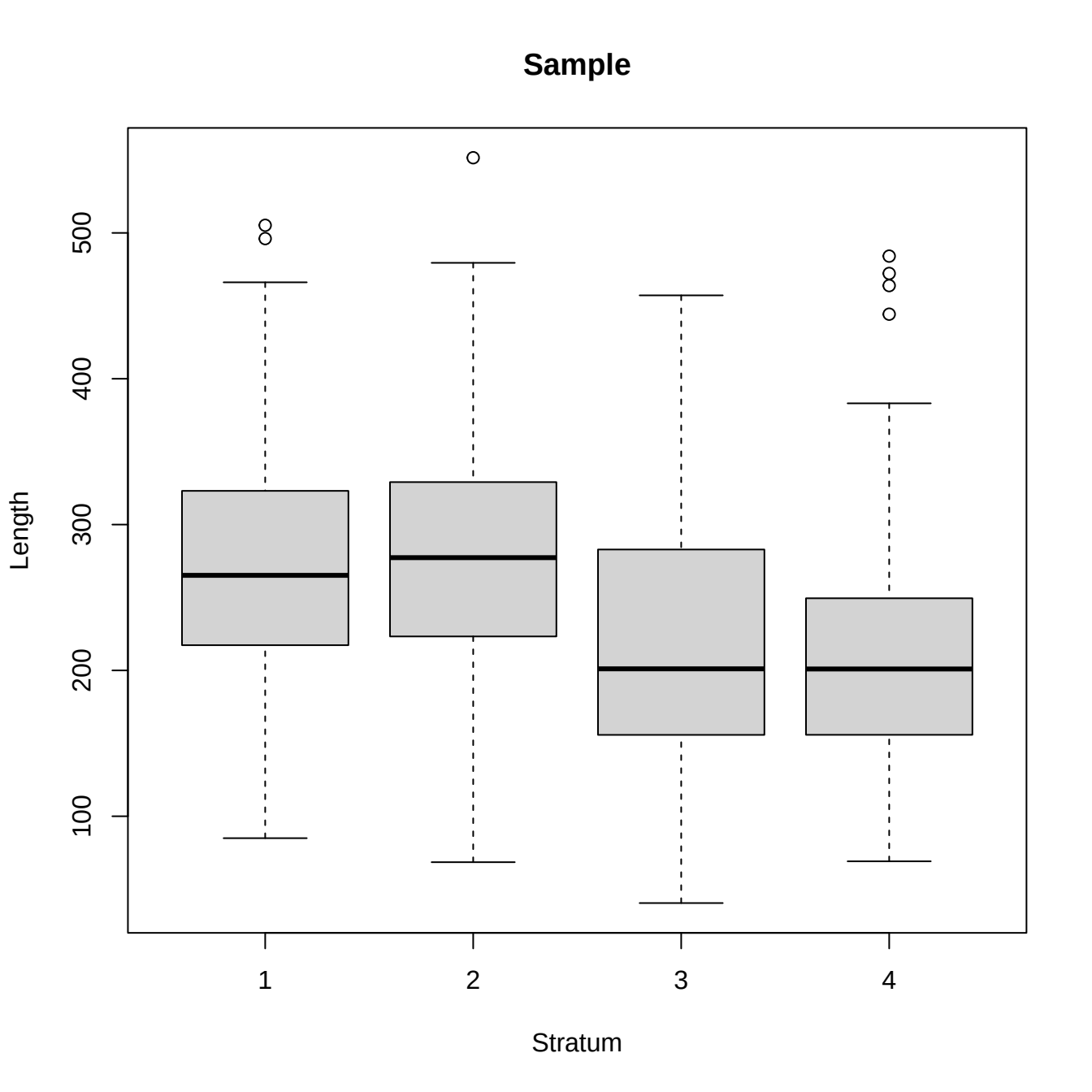

Population
1
2
3
4
Age
1
2
3
4
5
Stratum

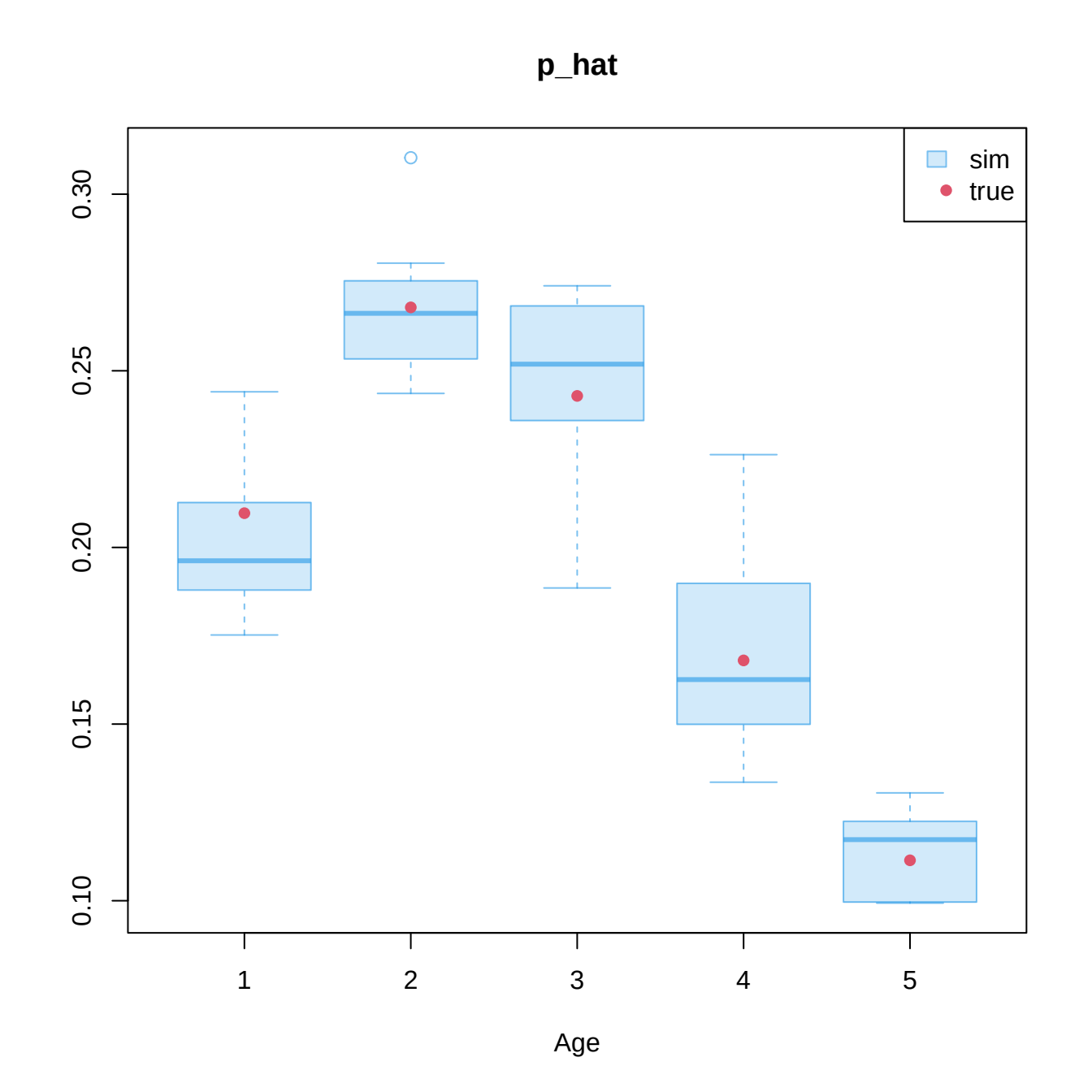

Sample
1
2
3
4
Age
1
2
3
4
5
Stratum

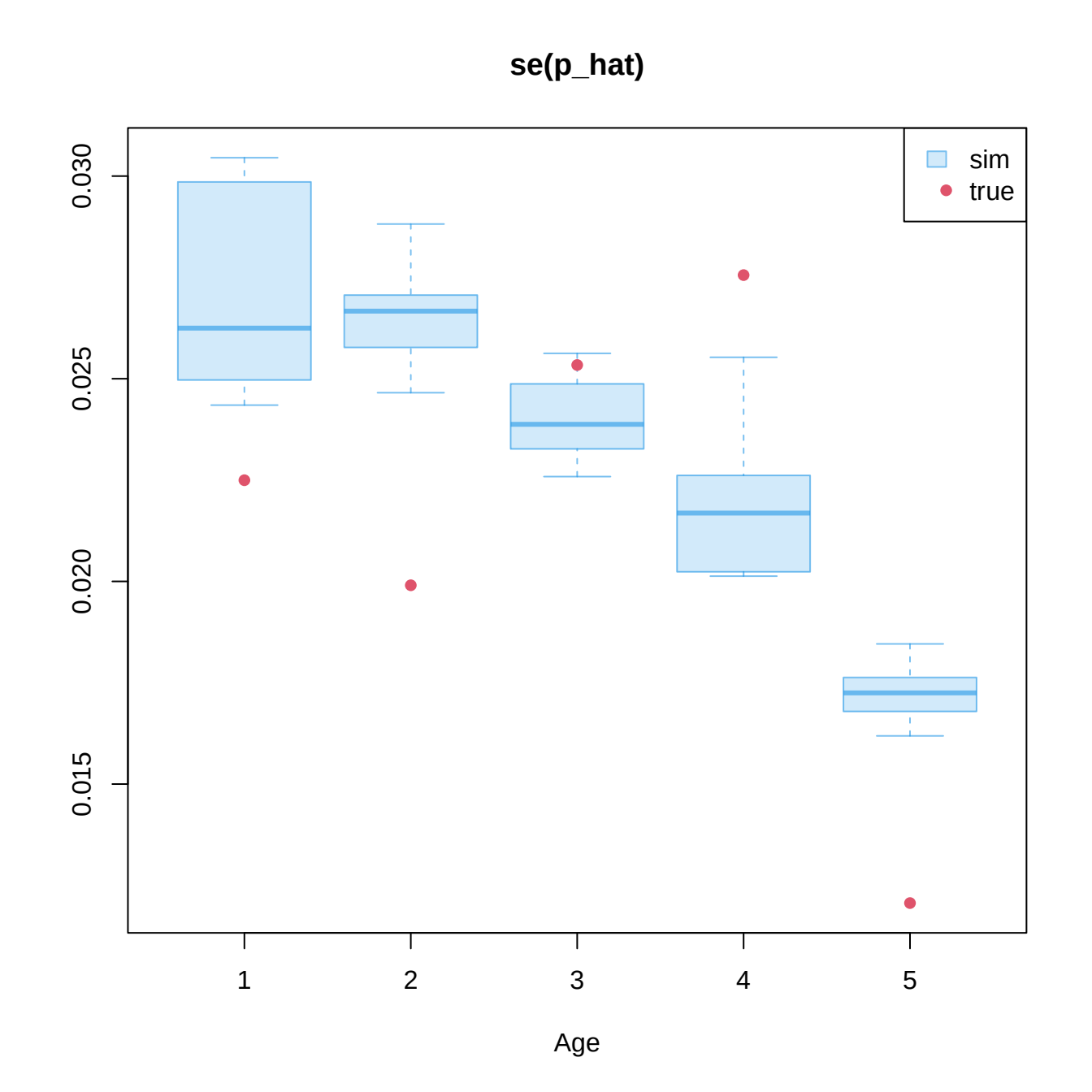

Population
Length
0
100
200
300
400
500
600
1
2
3
4
5
Age

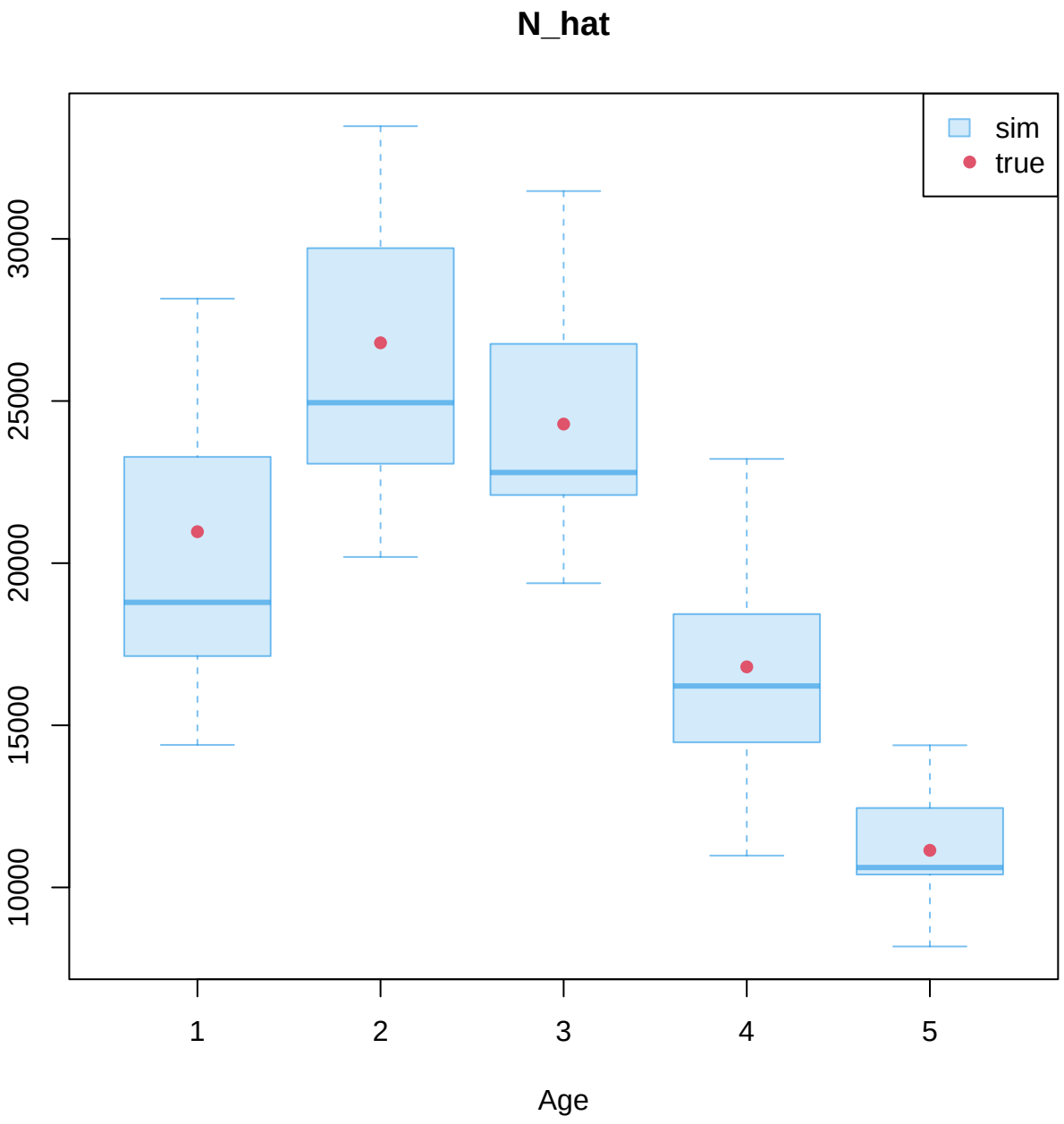

Sample
Length
100
200
300
400
500
1
2
3
4
5
Age

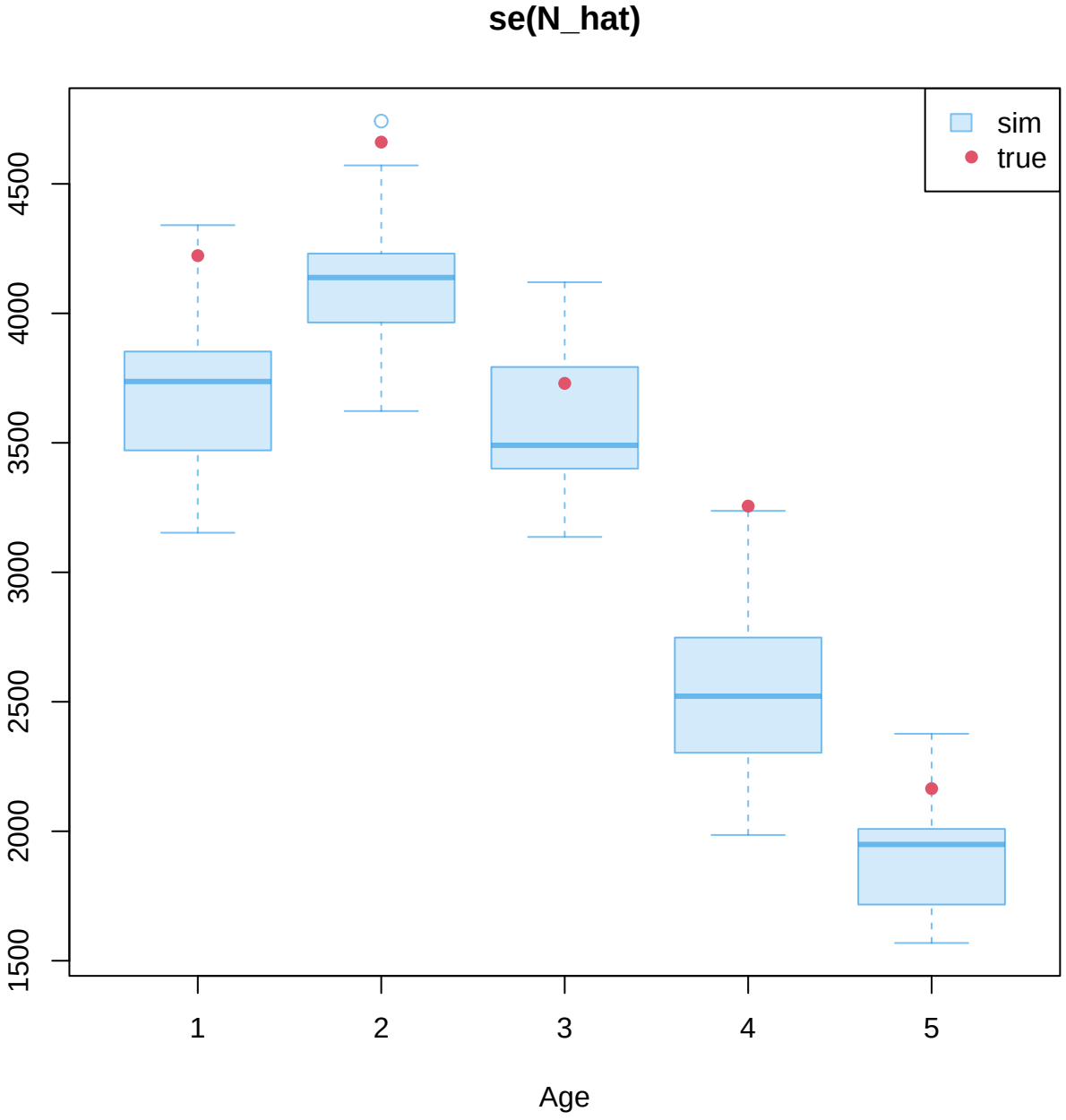

Population
Length
0
100
200
300
400
500
600
1
2
3
4
Stratum

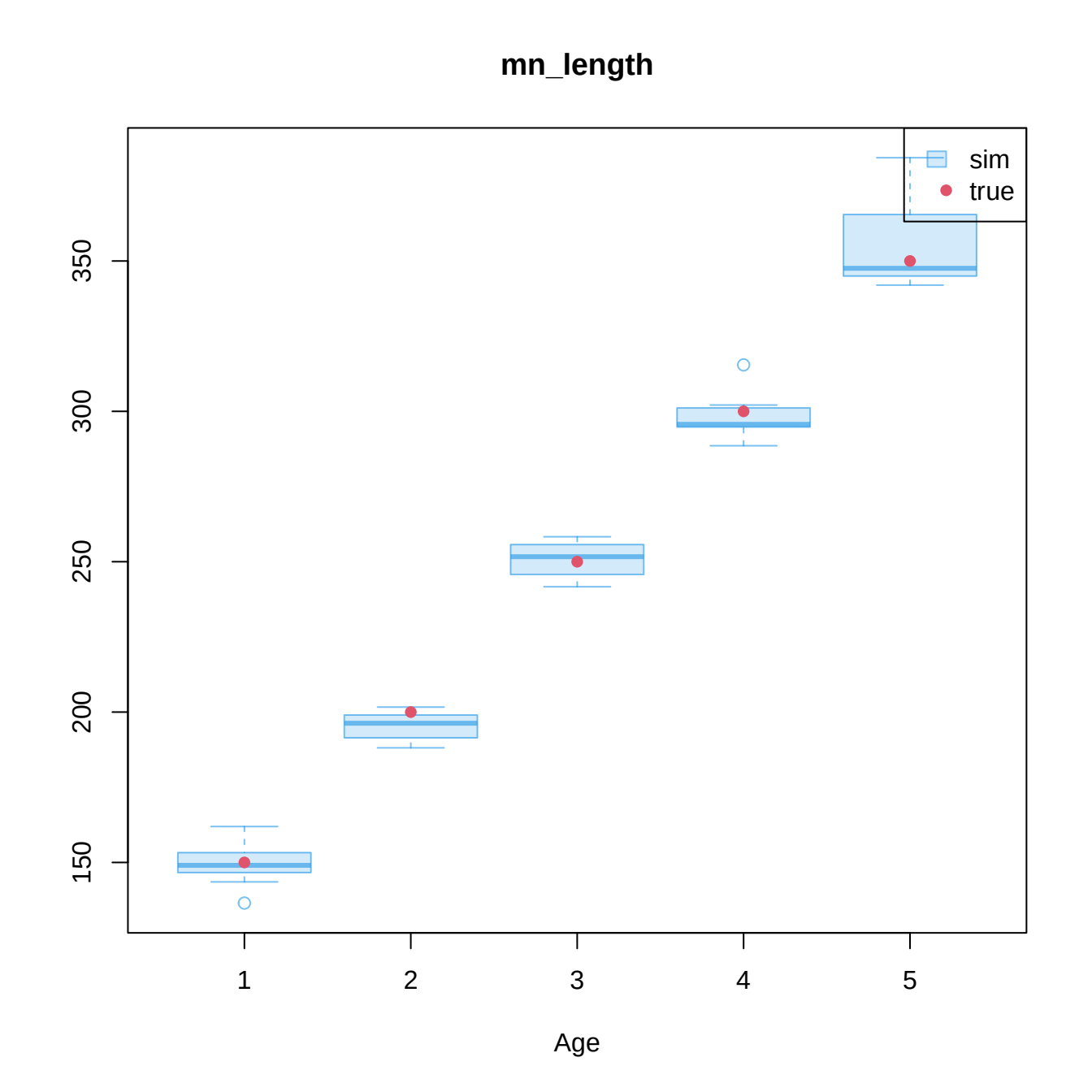

Sample
Length
100
200
300
400
500
1
2
3
4
Stratum

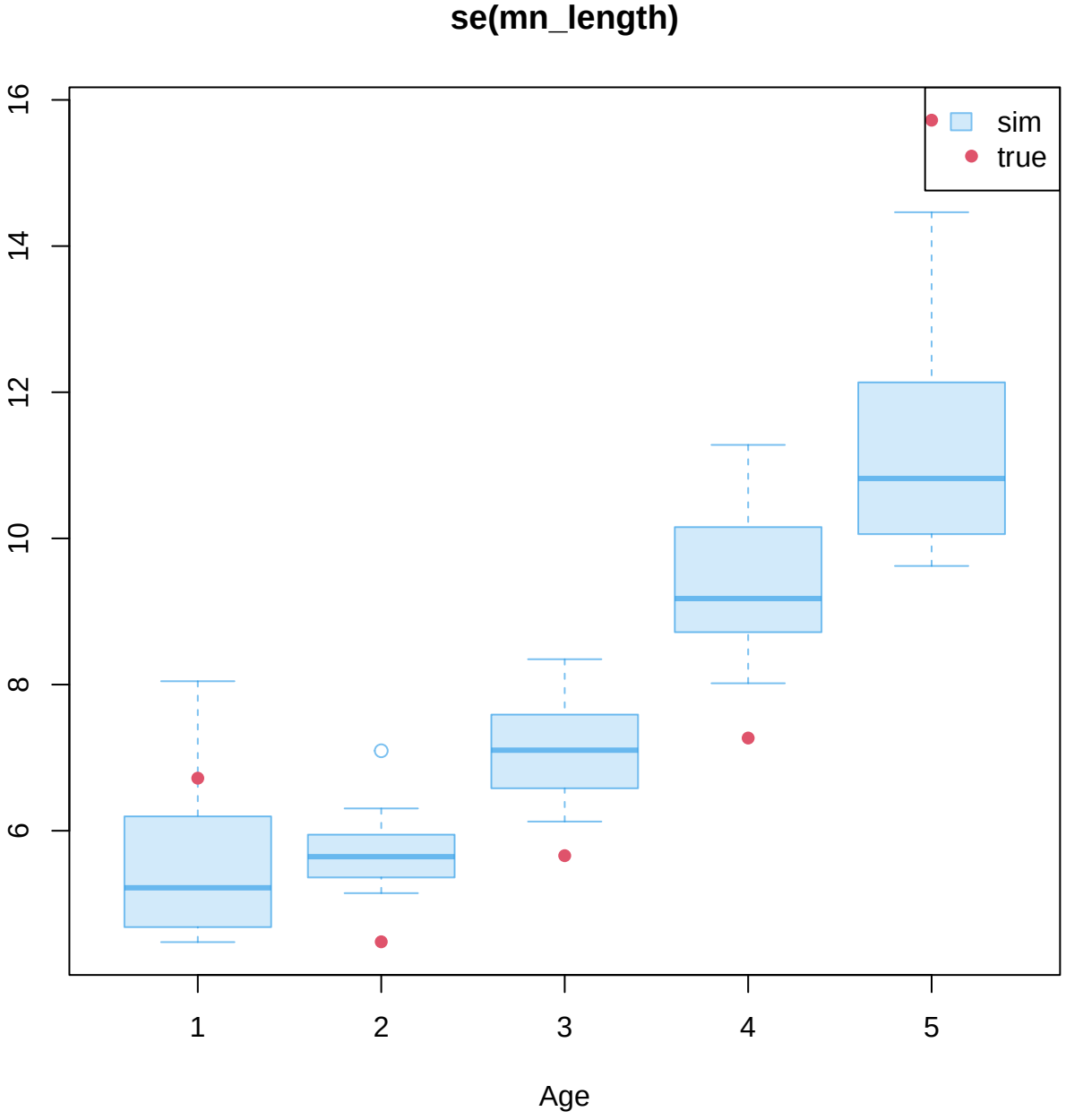

p_hat
sim
true
0.30
0.25
0.20
0.15
0.10
1
2
3
4
5
Age

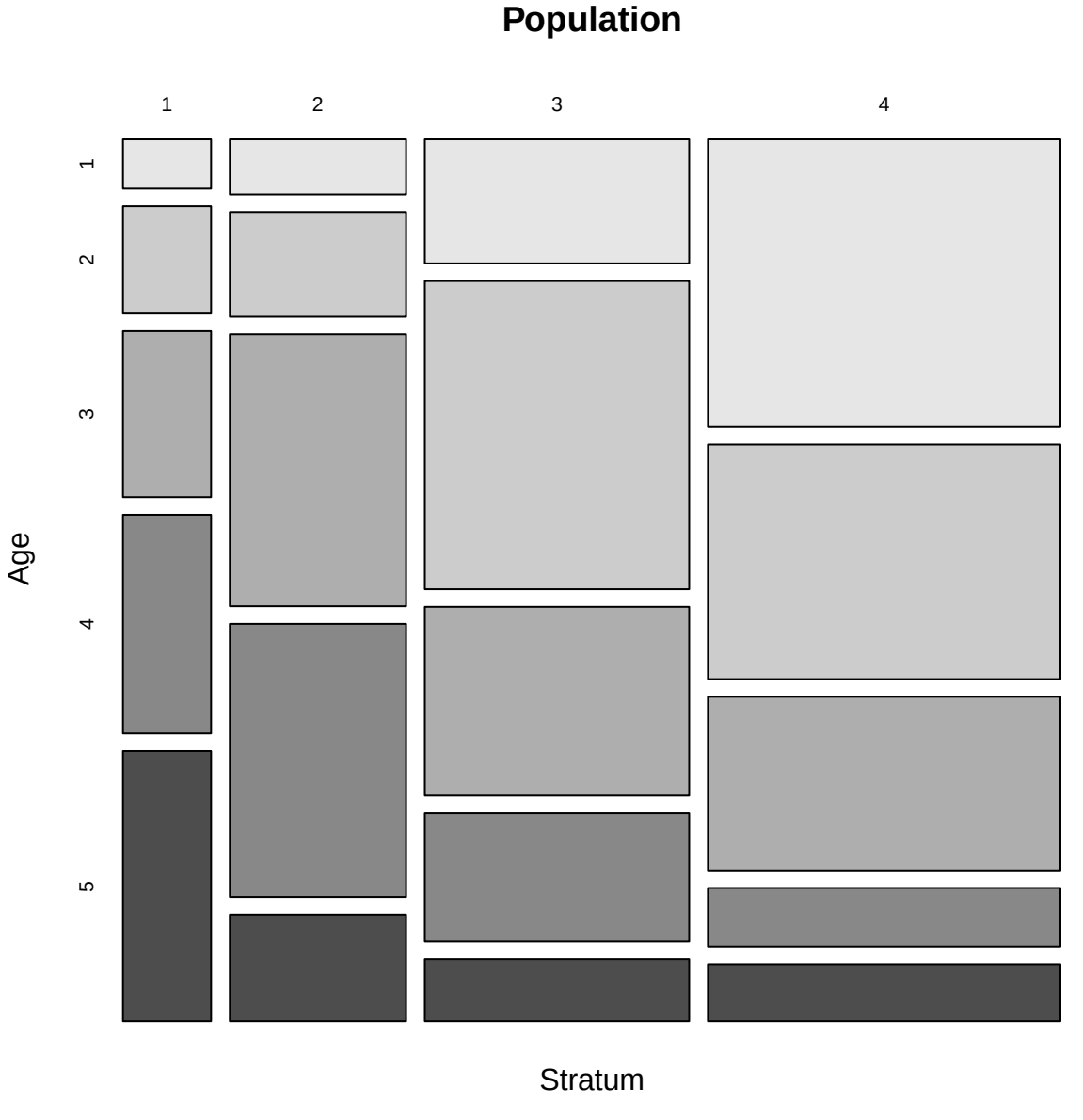

se(p_hat)
sim
true
0.030
0.025
0.020
0.015
1
2
3
4
5
Age

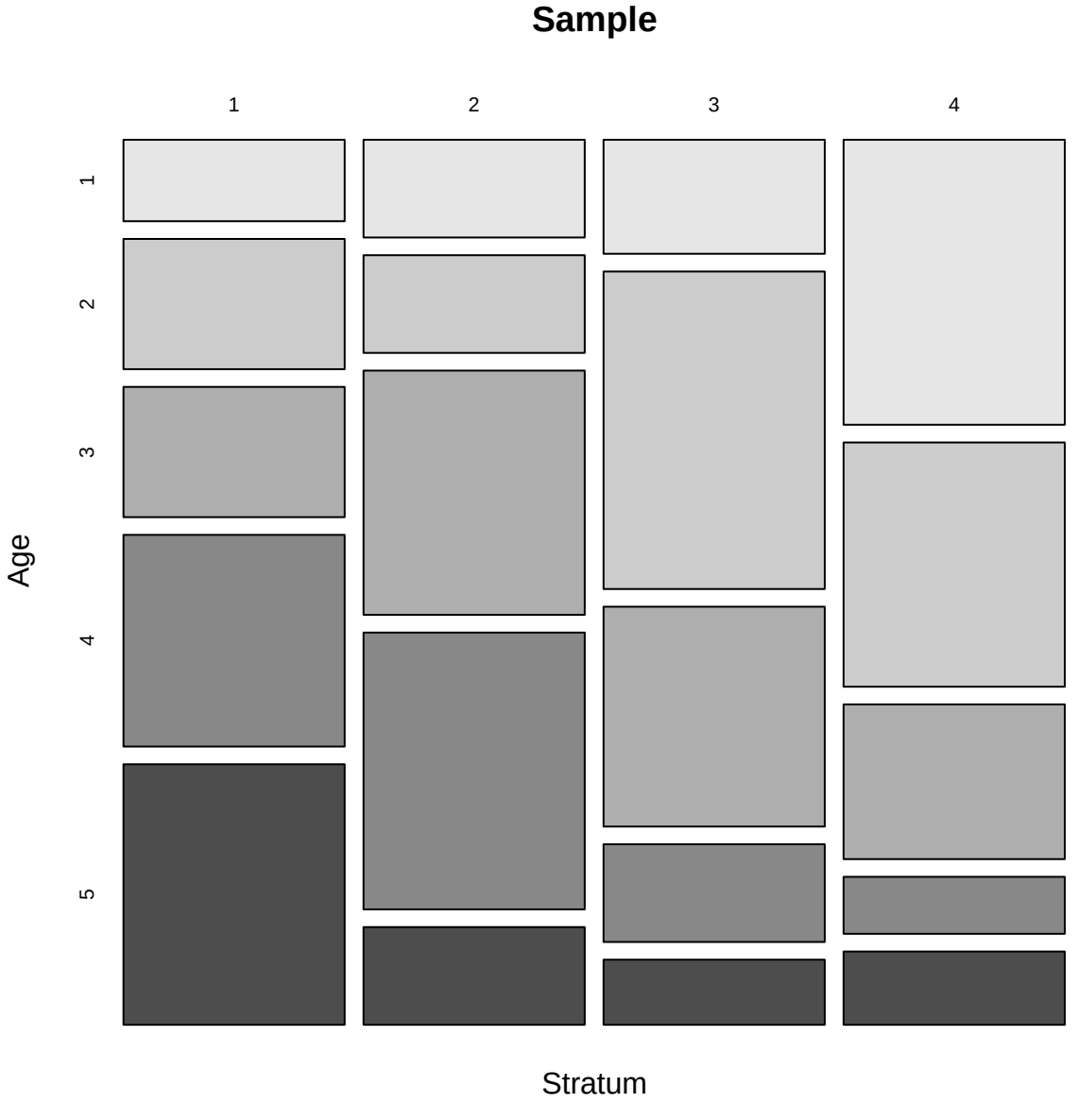

N_hat
sim
true
30000
25000
20000
15000
10000
1
2
3
4
5
Age

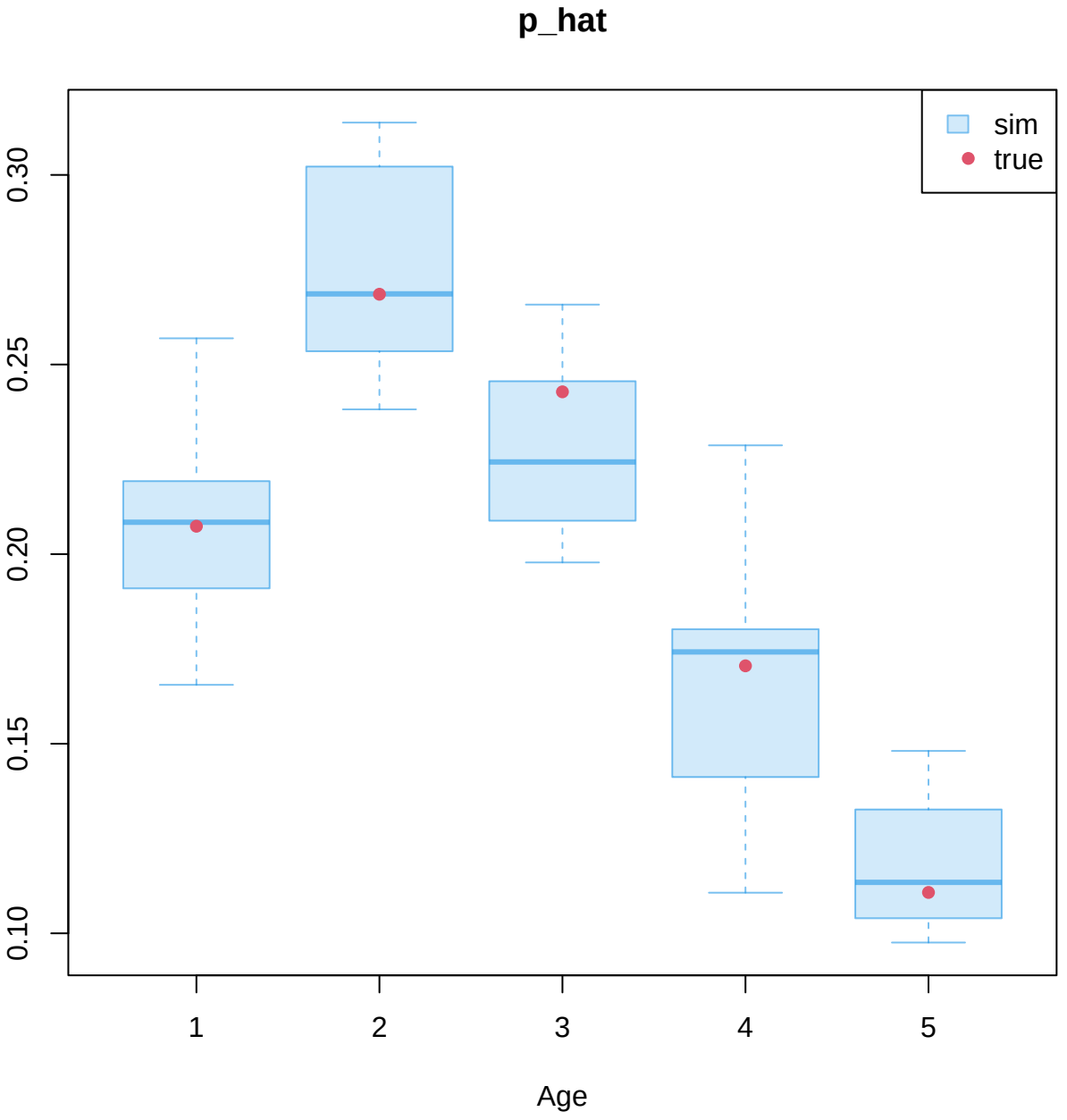

se(N_hat)
sim
true
4500
4000
3500
3000
2500
2000
1500
1
2
3
4
5
Age

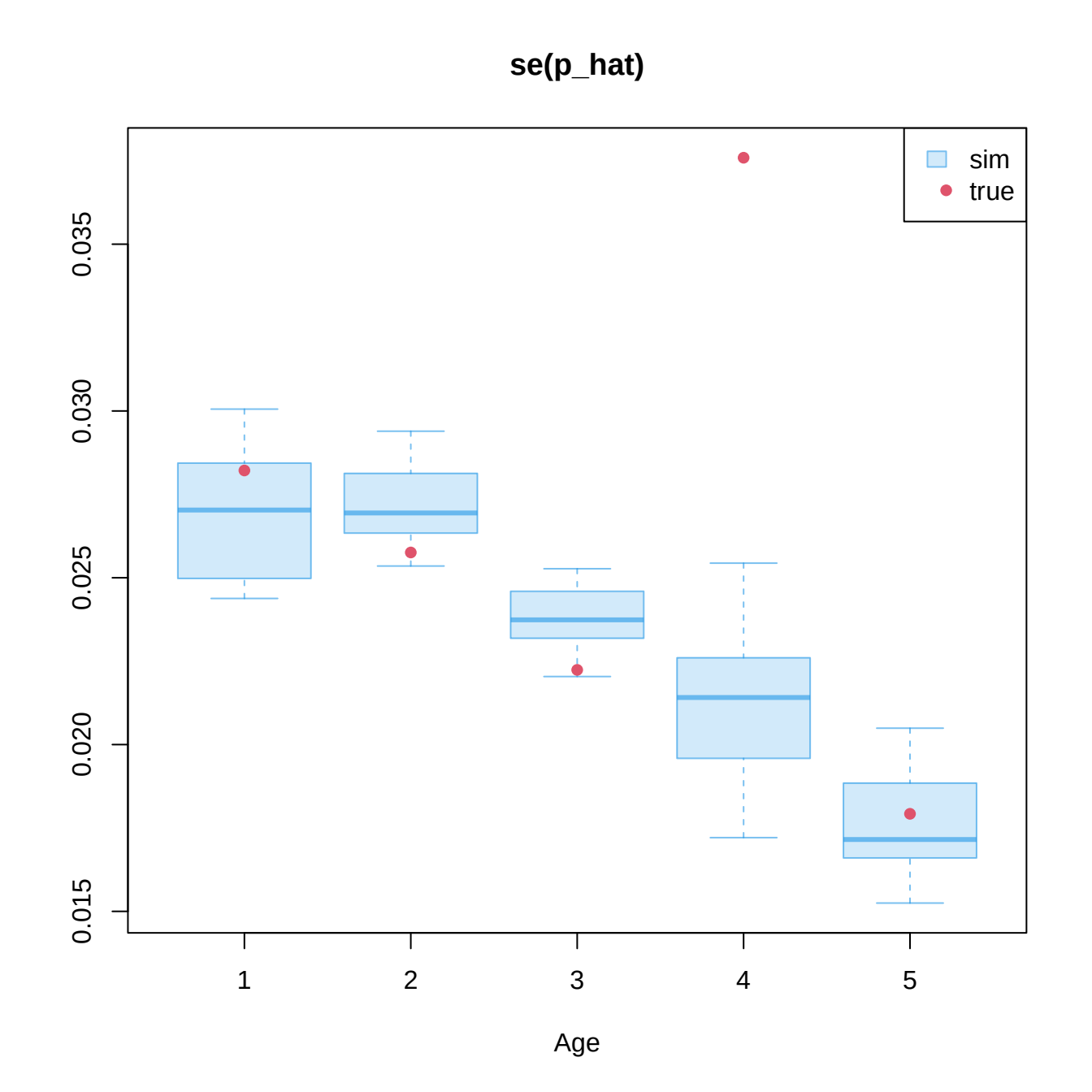

mn_length
sim
true
350
300
250
200
150
1
2
3
4
5
Age

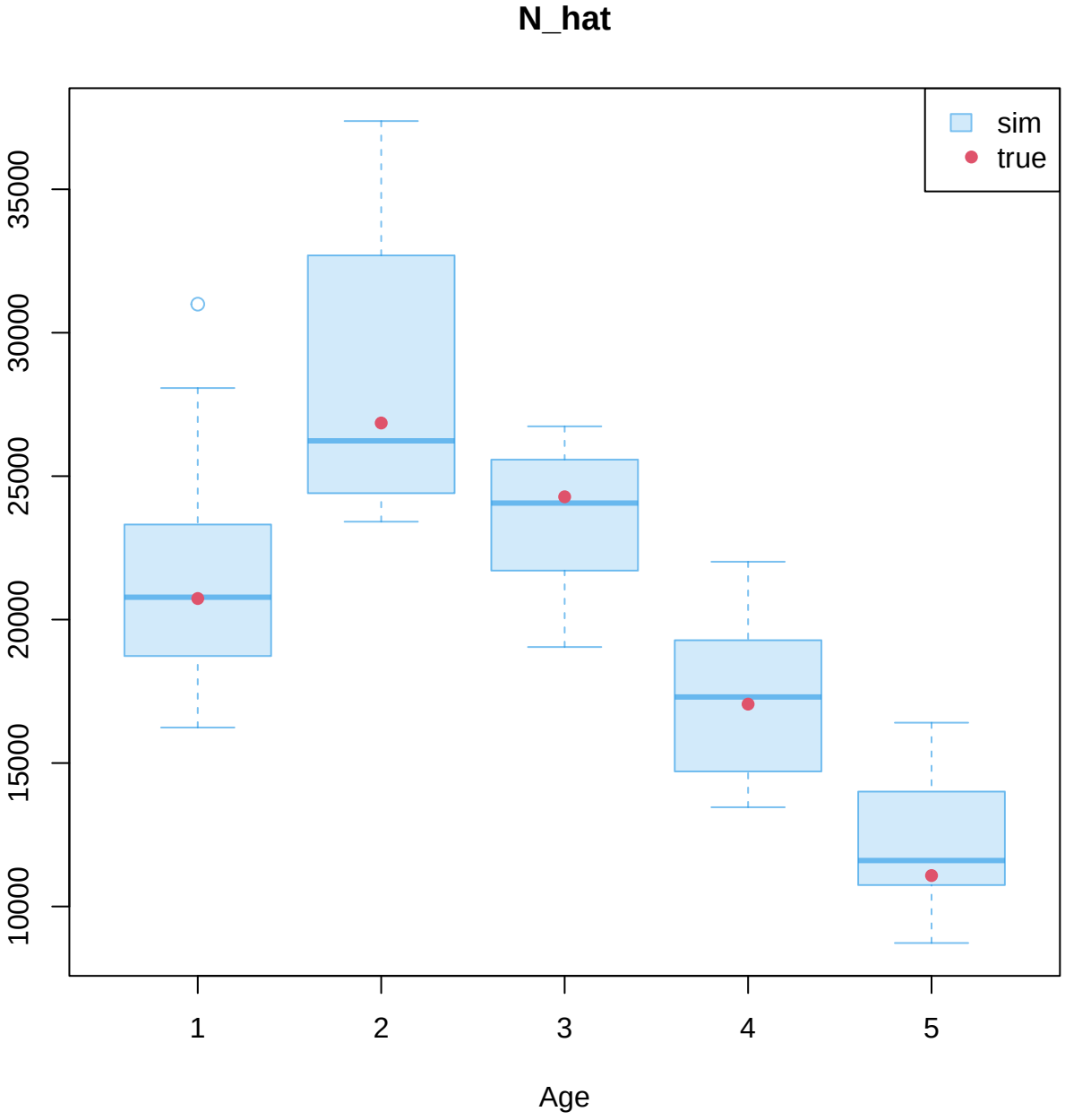

se(mn_length)
sim
true
16
14
12
10
8
6
1
2
3
4
5
Age

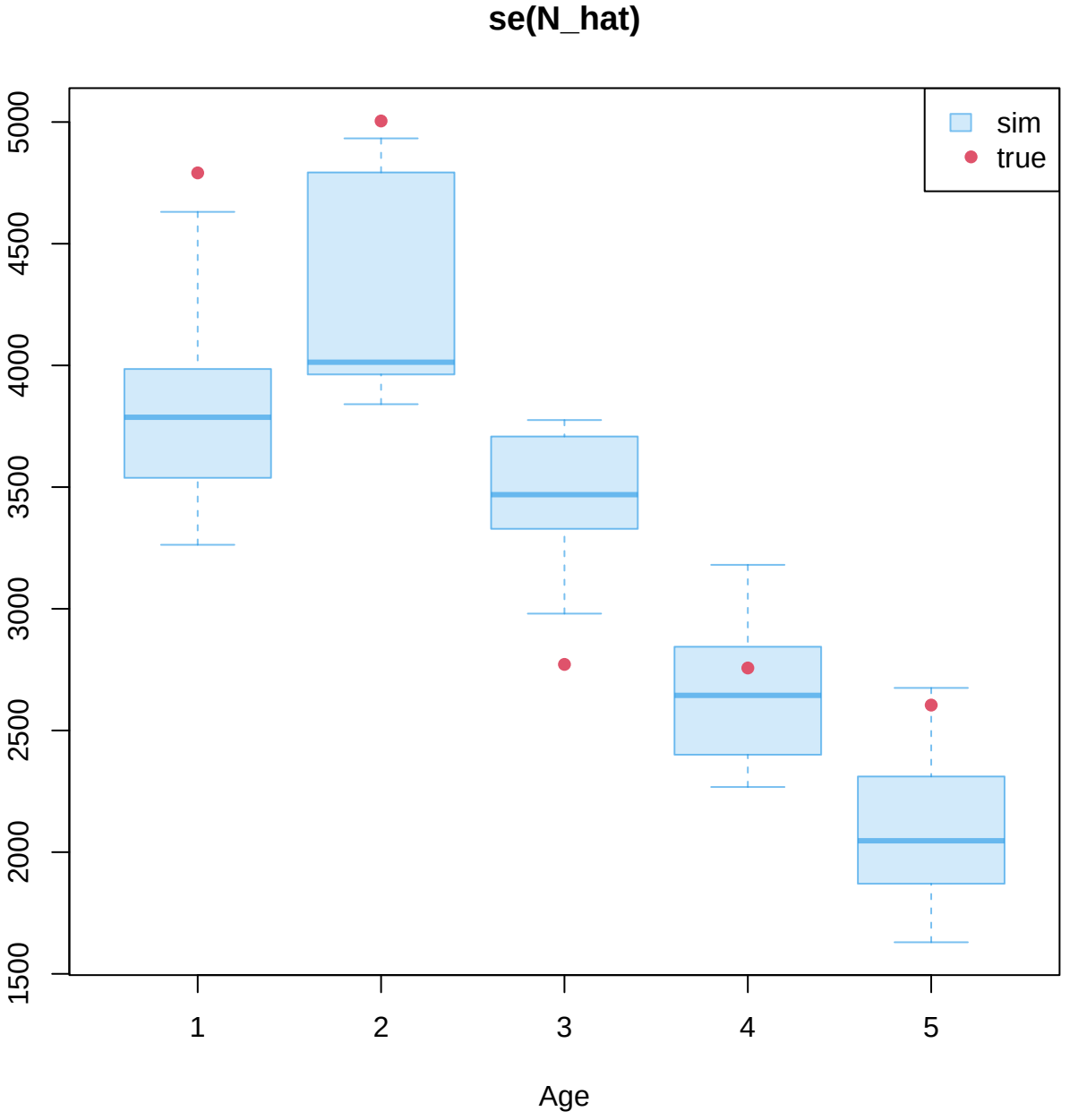

Population
1
2
3
4
Age
1
2
3
4
5
Stratum

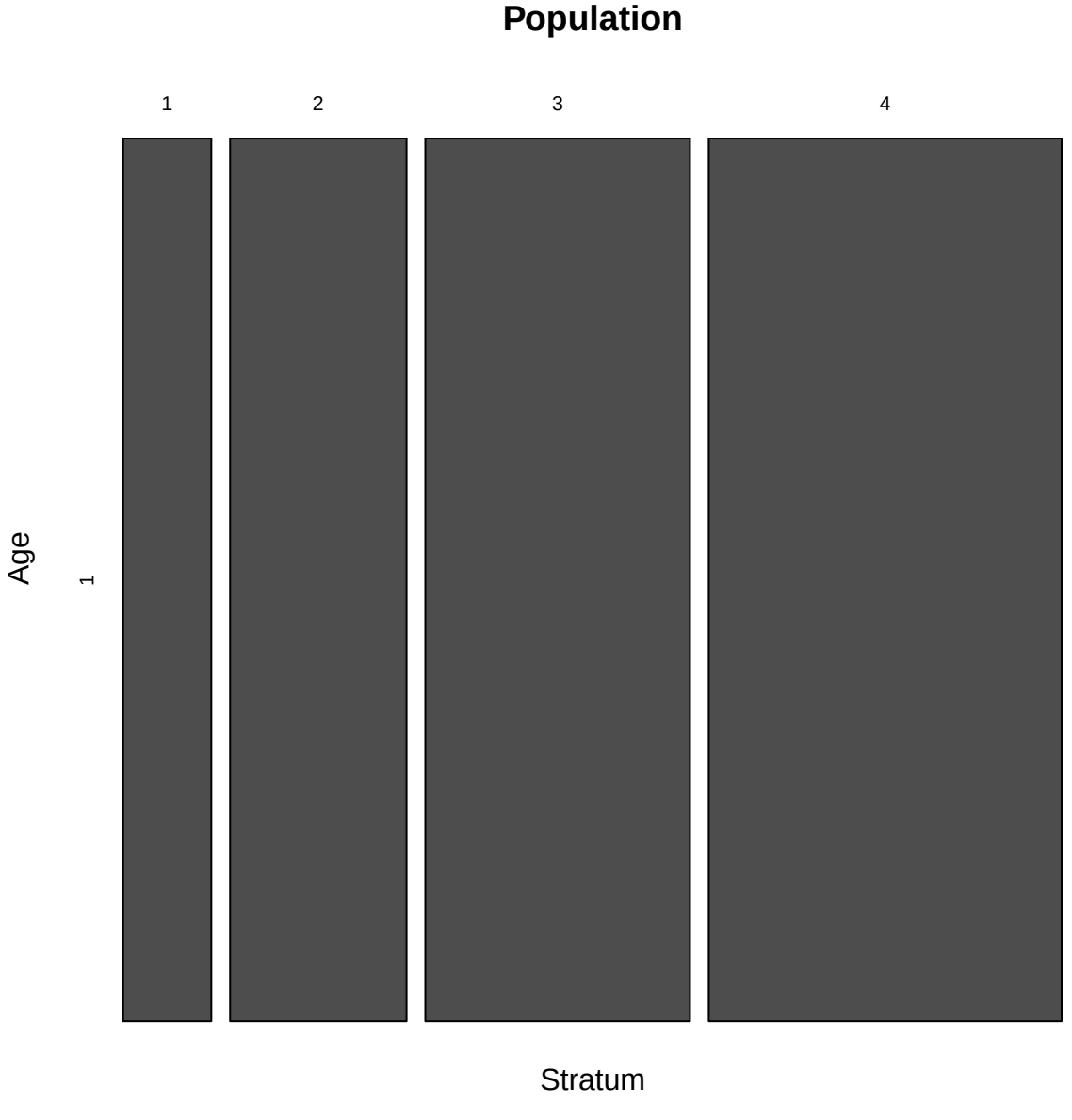

Sample
1
2
3
4
Age
1
2
3
4
5
Stratum

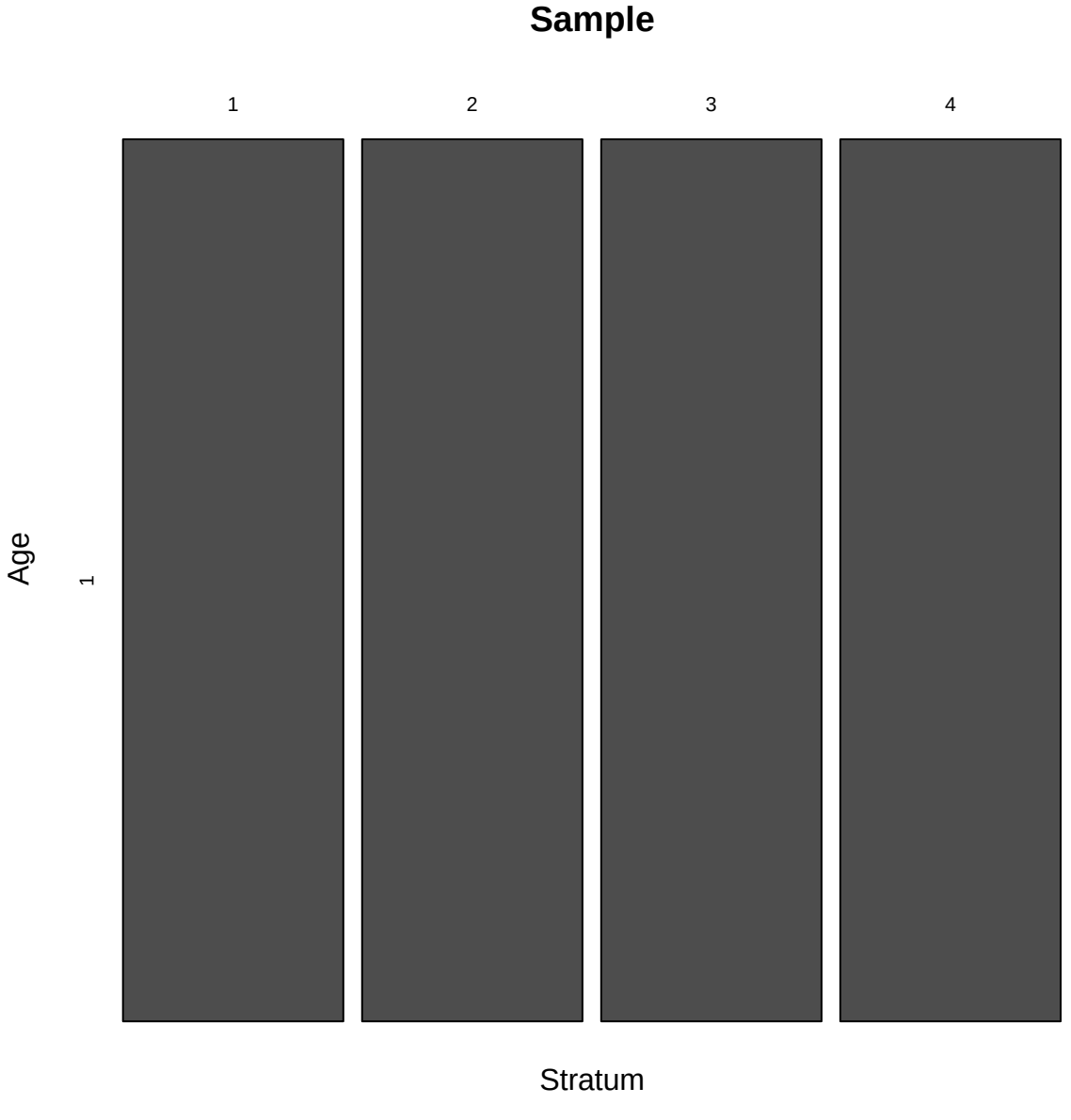

p_hat
sim
true
0.30
0.25
0.20
0.15
0.10
1
2
3
4
5
Age

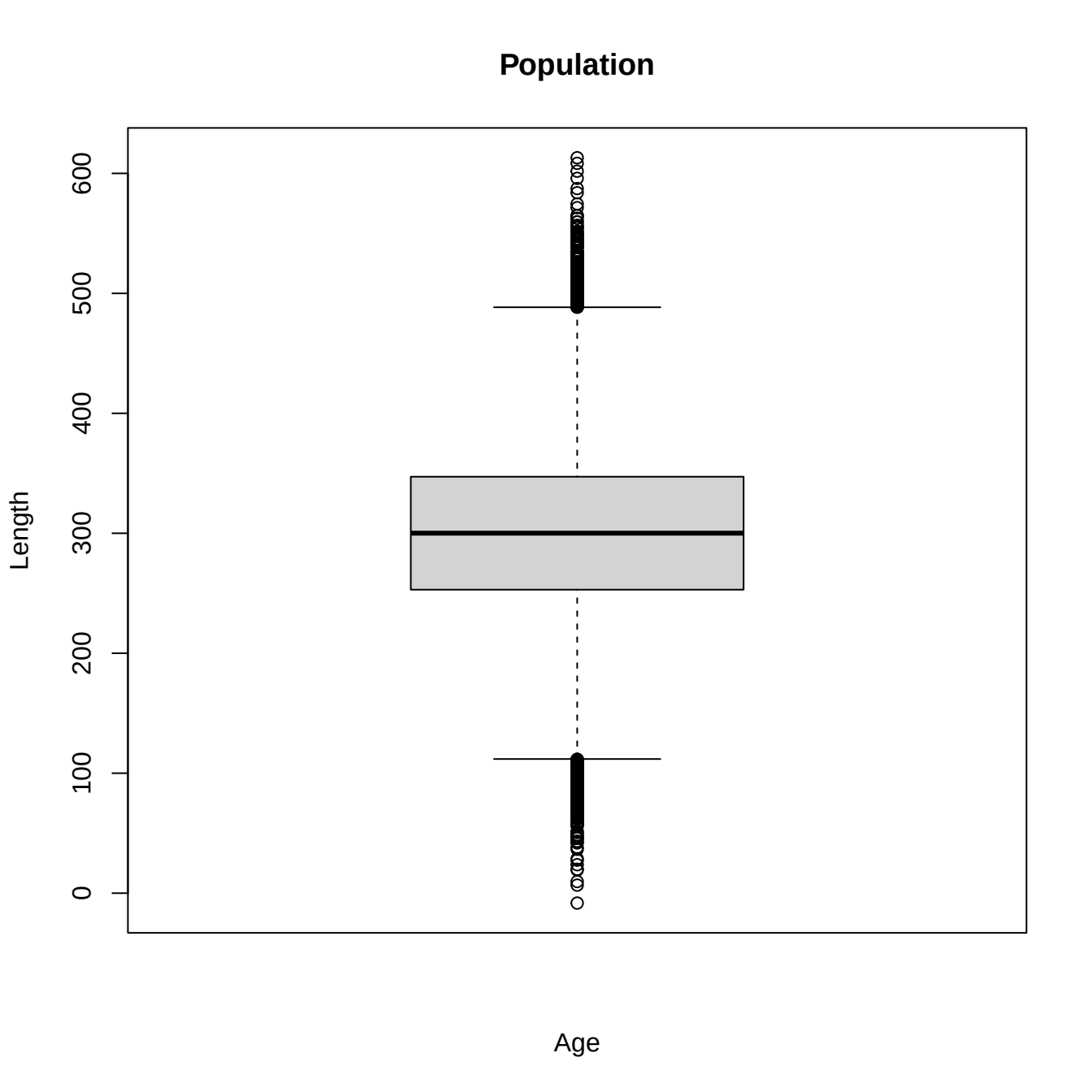

se(p_hat)
sim
true
0.035
0.030
0.025
0.020
0.015
1
2
3
4
5
Age

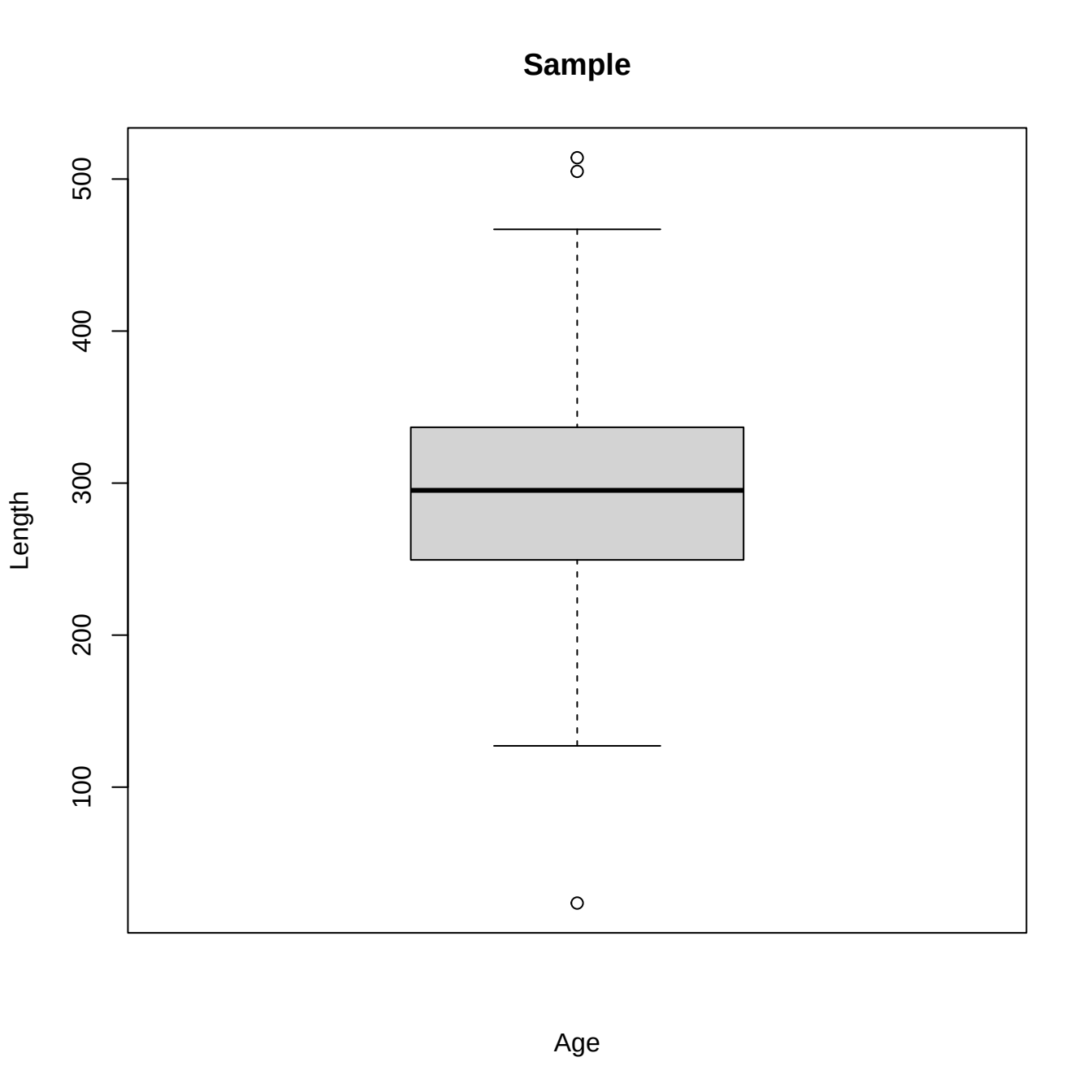

N_hat
sim
true
35000
30000
25000
20000
15000
10000
1
2
3
4
5
Age

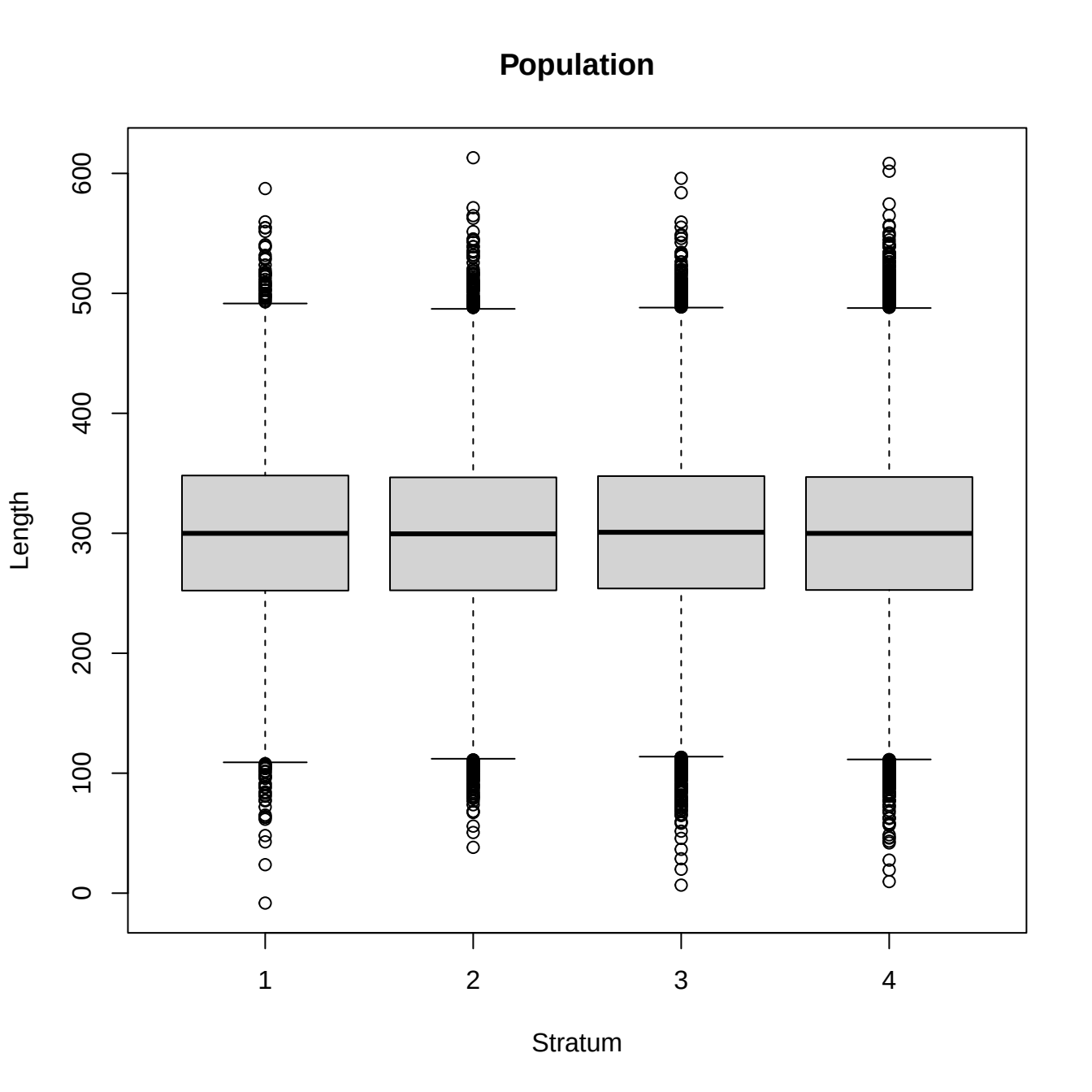

se(N_hat)
sim
true
5000
4500
4000
3500
3000
2500
2000
1500
1
2
3
4
5
Age

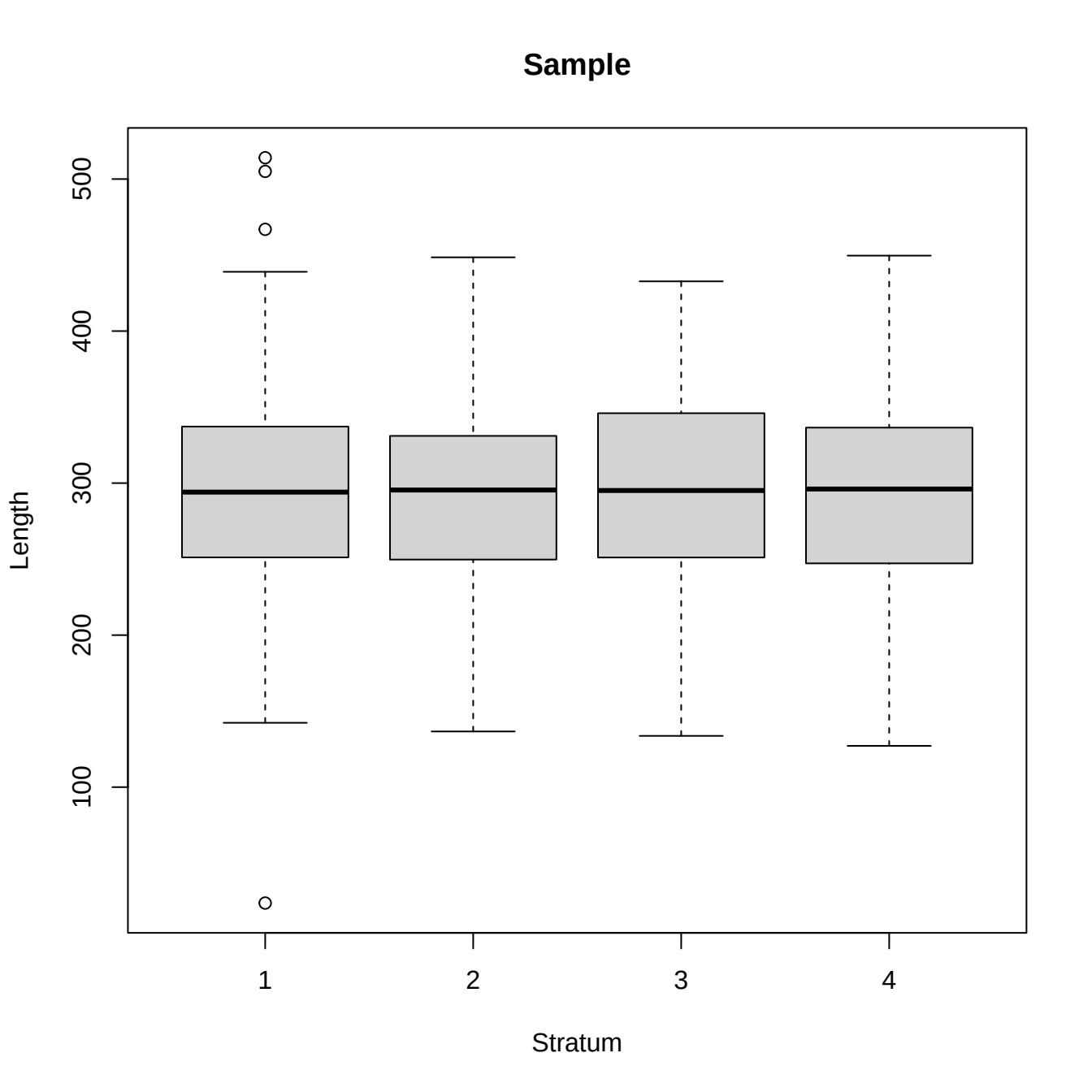

Population
1
2
3
4
Age
1
Stratum

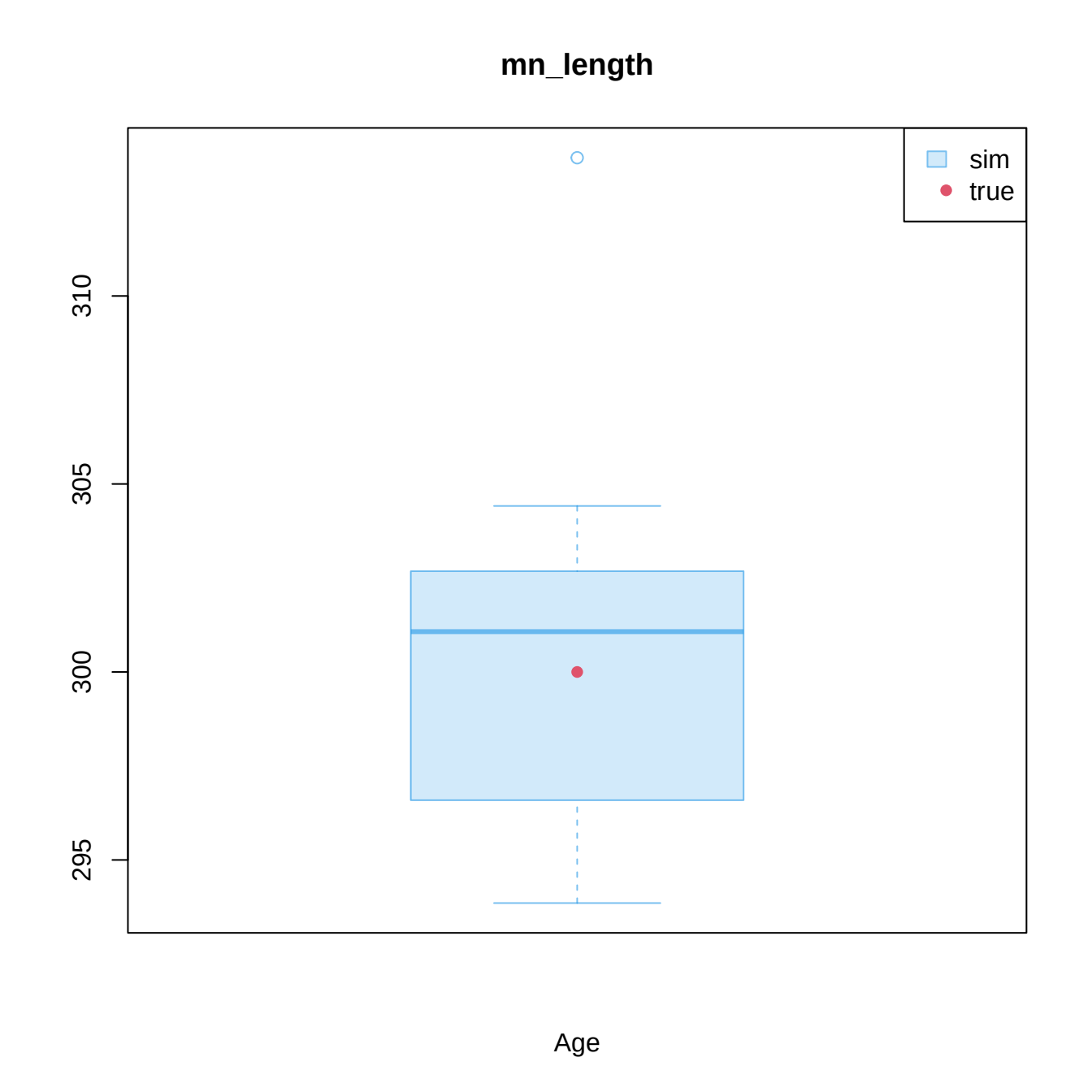

Sample
1
2
3
4
Age
1
Stratum

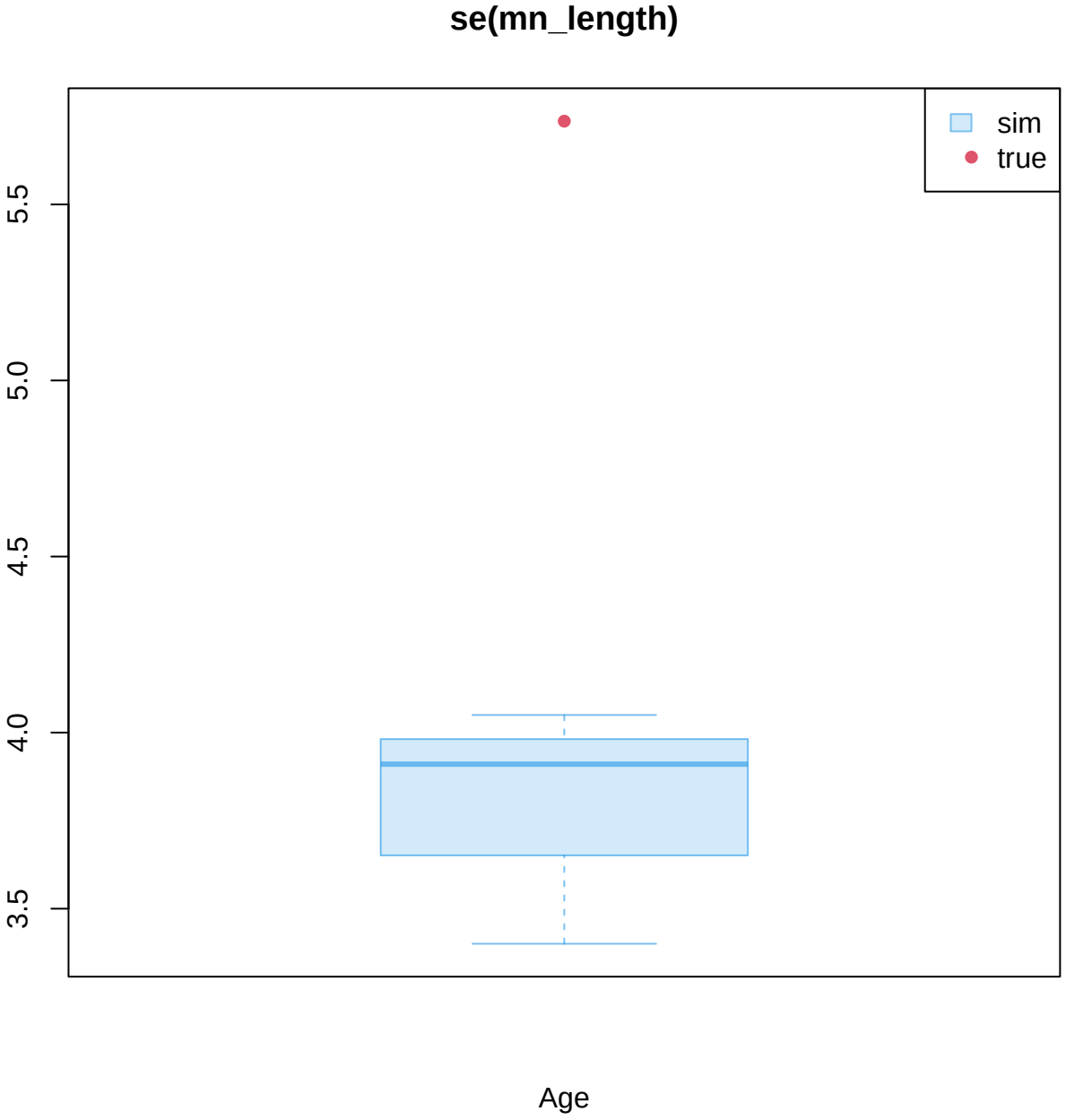

Population
Length
0
100
200
300
400
500
600
Age

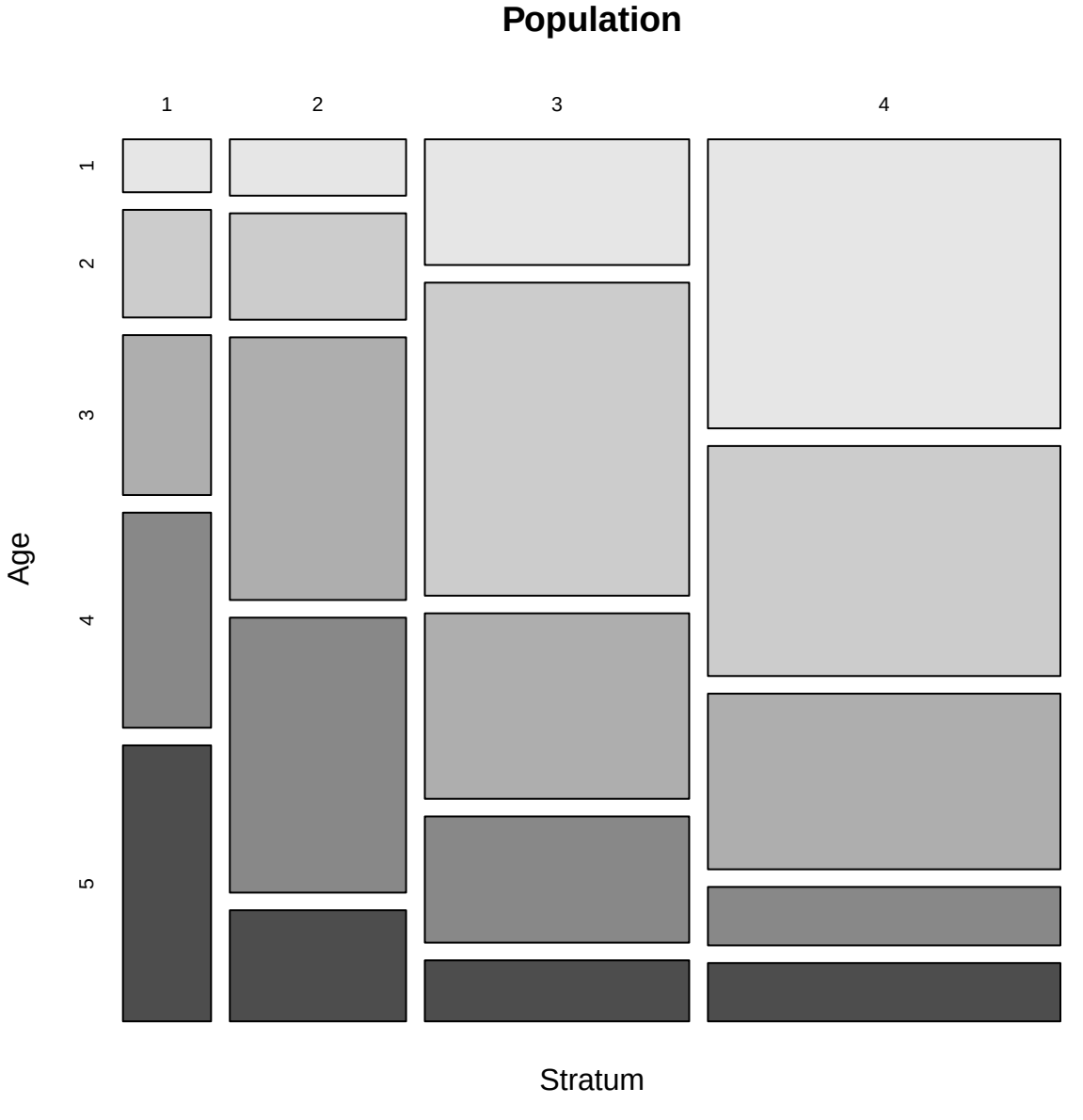

Sample
Length
100
200
300
400
500
Age

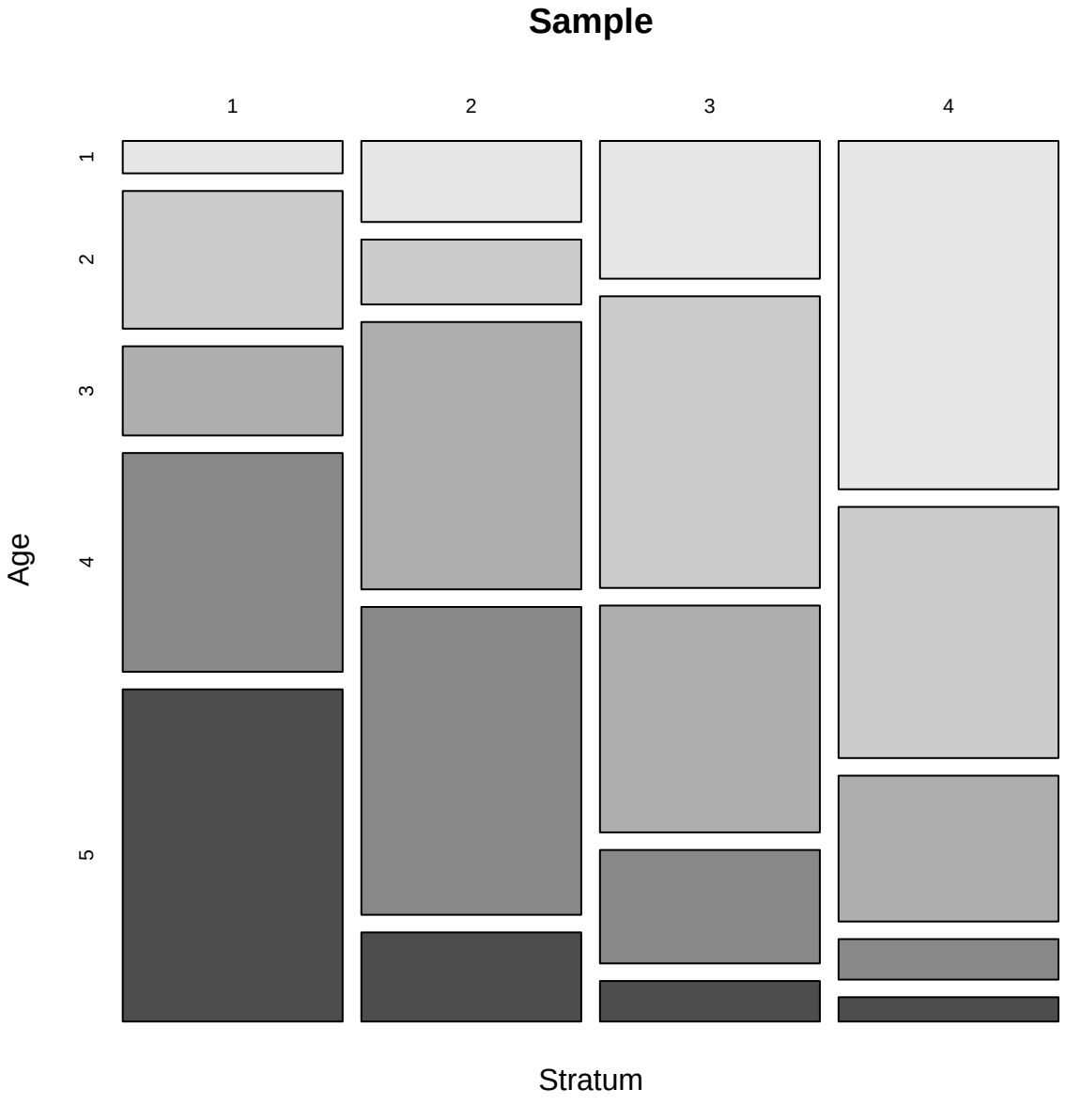

Population
Length
0
100
200
300
400
500
600
1
2
3
4
Stratum

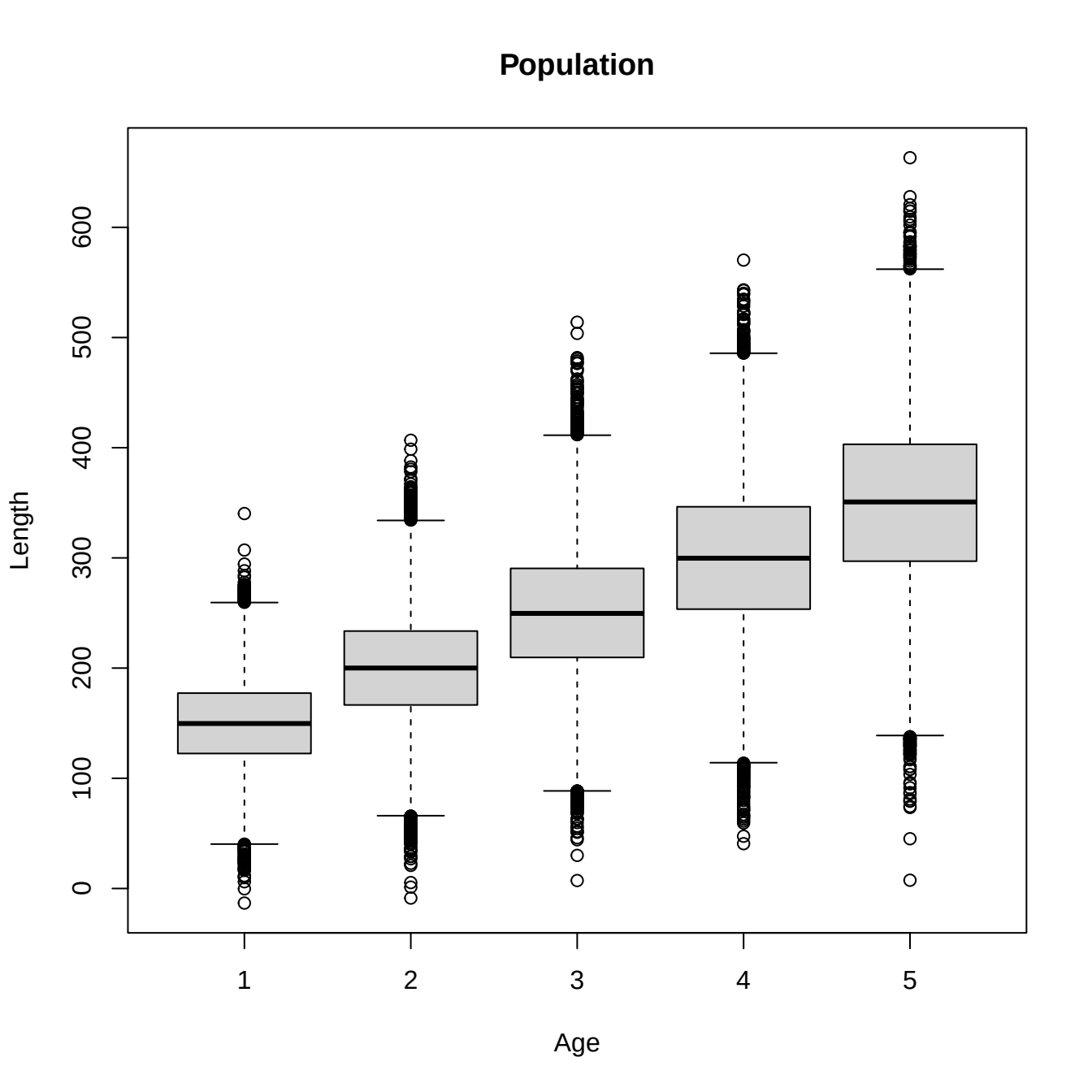

Sample
Length
100
200
300
400
500
1
2
3
4
Stratum

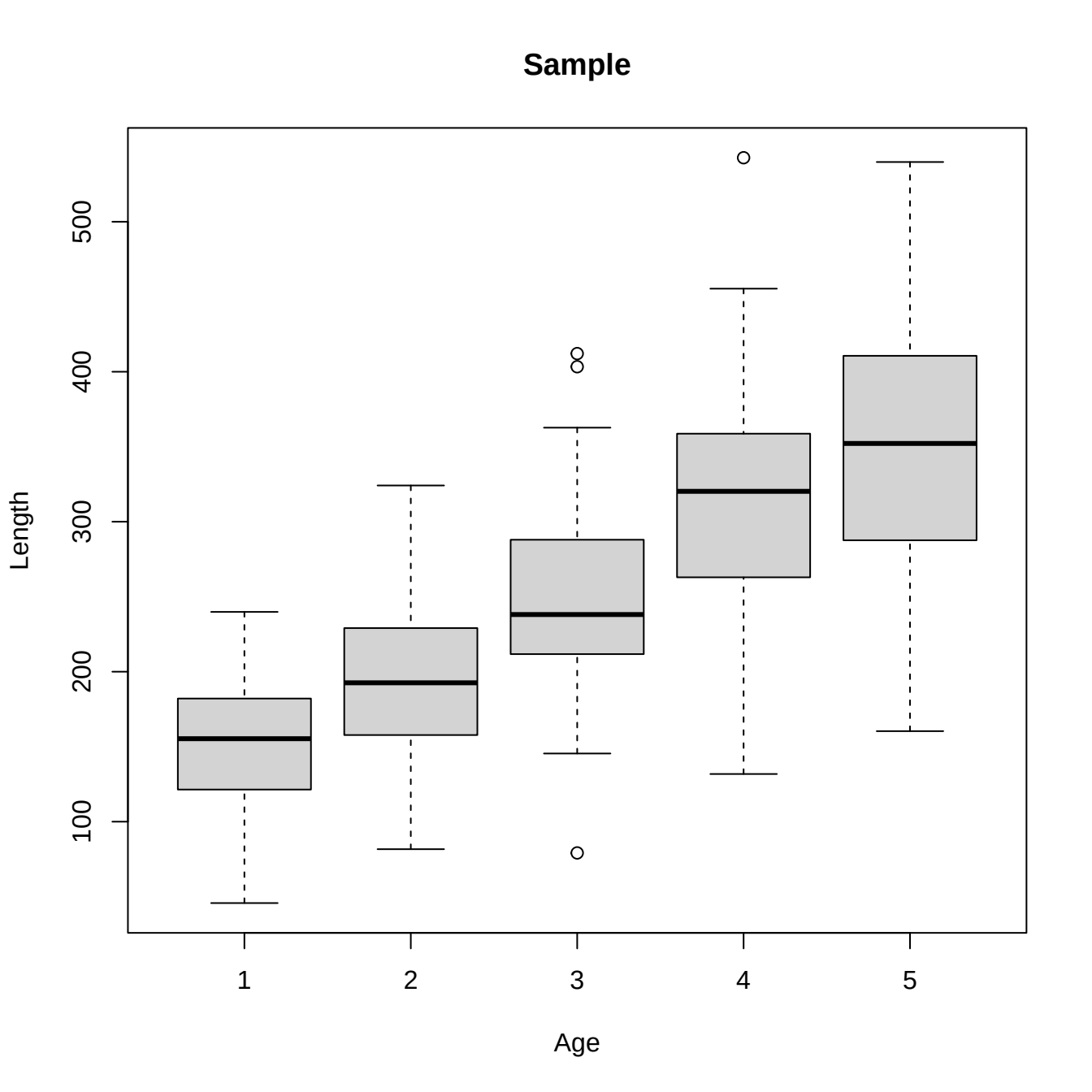

mn_length
sim
true
310
305
300
295
Age

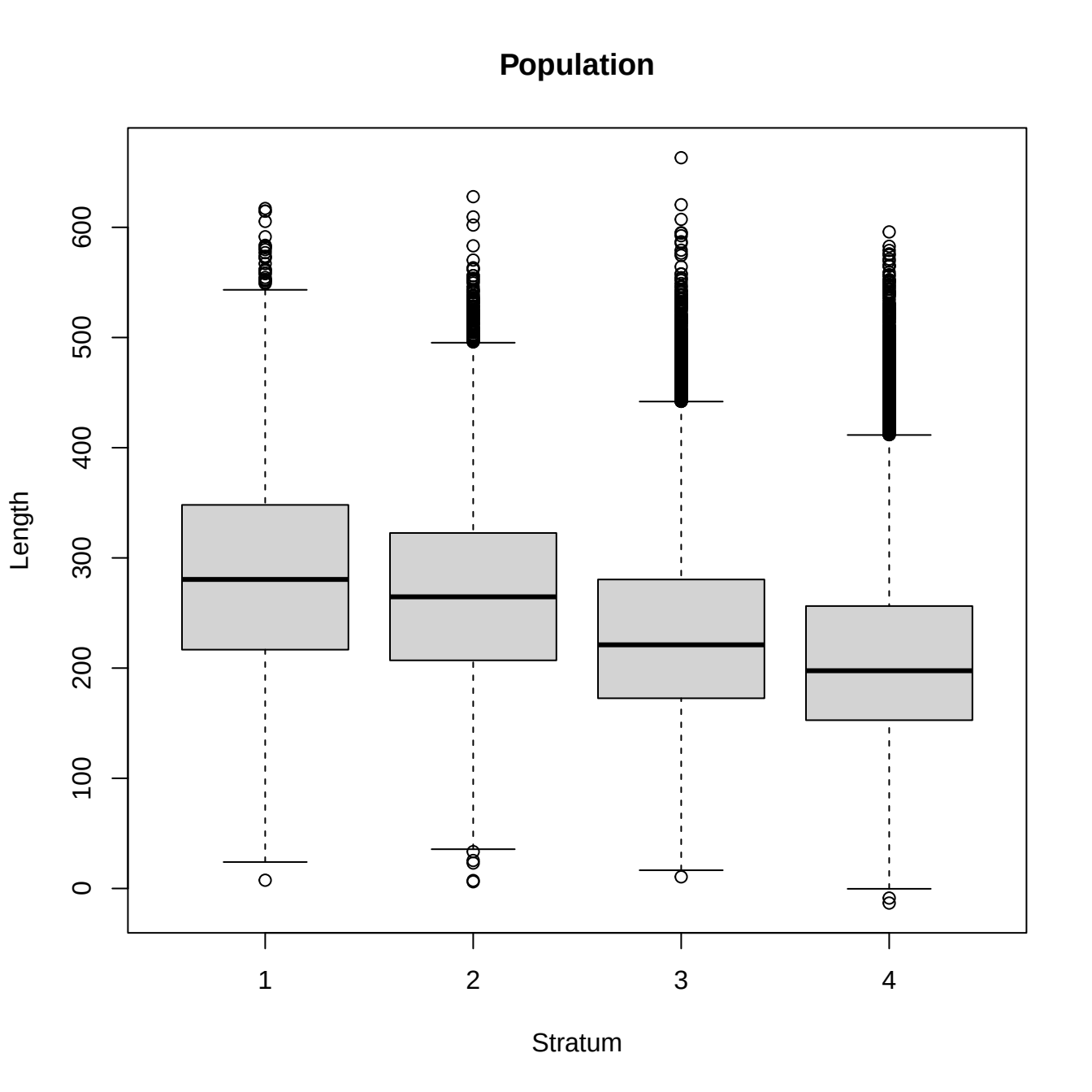

se(mn_length)
sim
true
5.5
5.0
4.5
4.0
3.5
Age

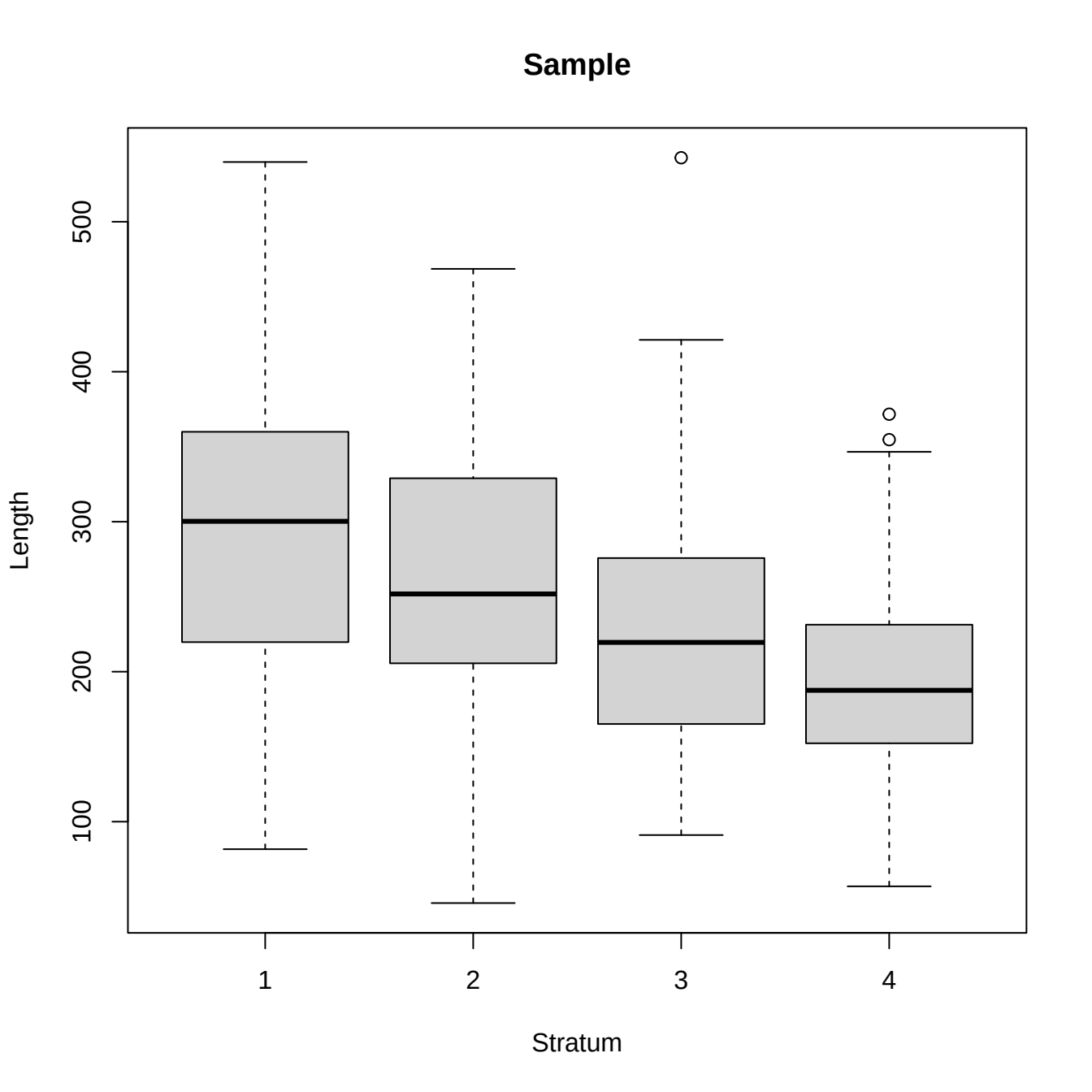

Population
1
2
3
4
Age
1
2
3
4
5
Stratum

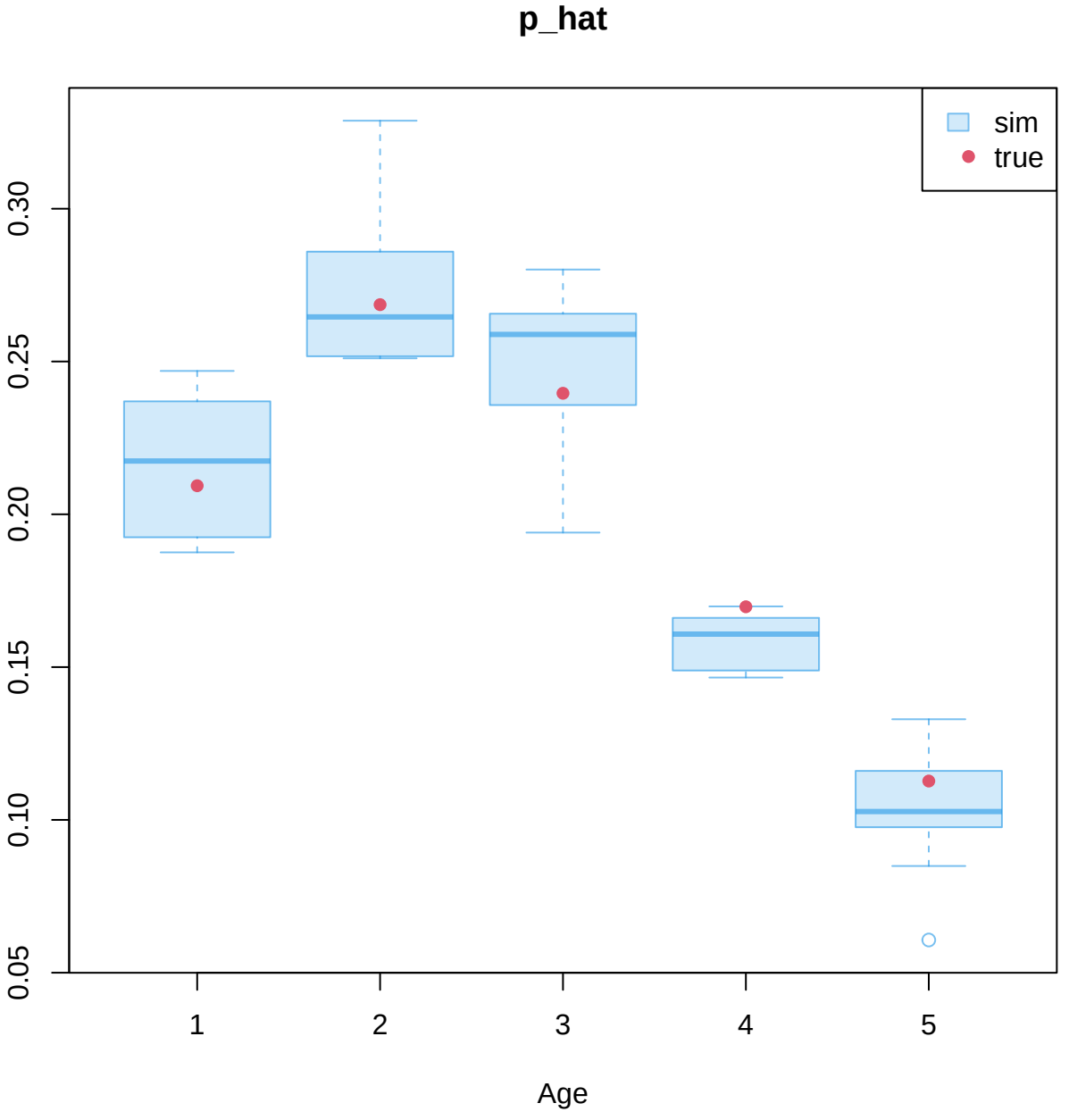

Sample
1
2
3
4
Age
1
2
3
4
5
Stratum

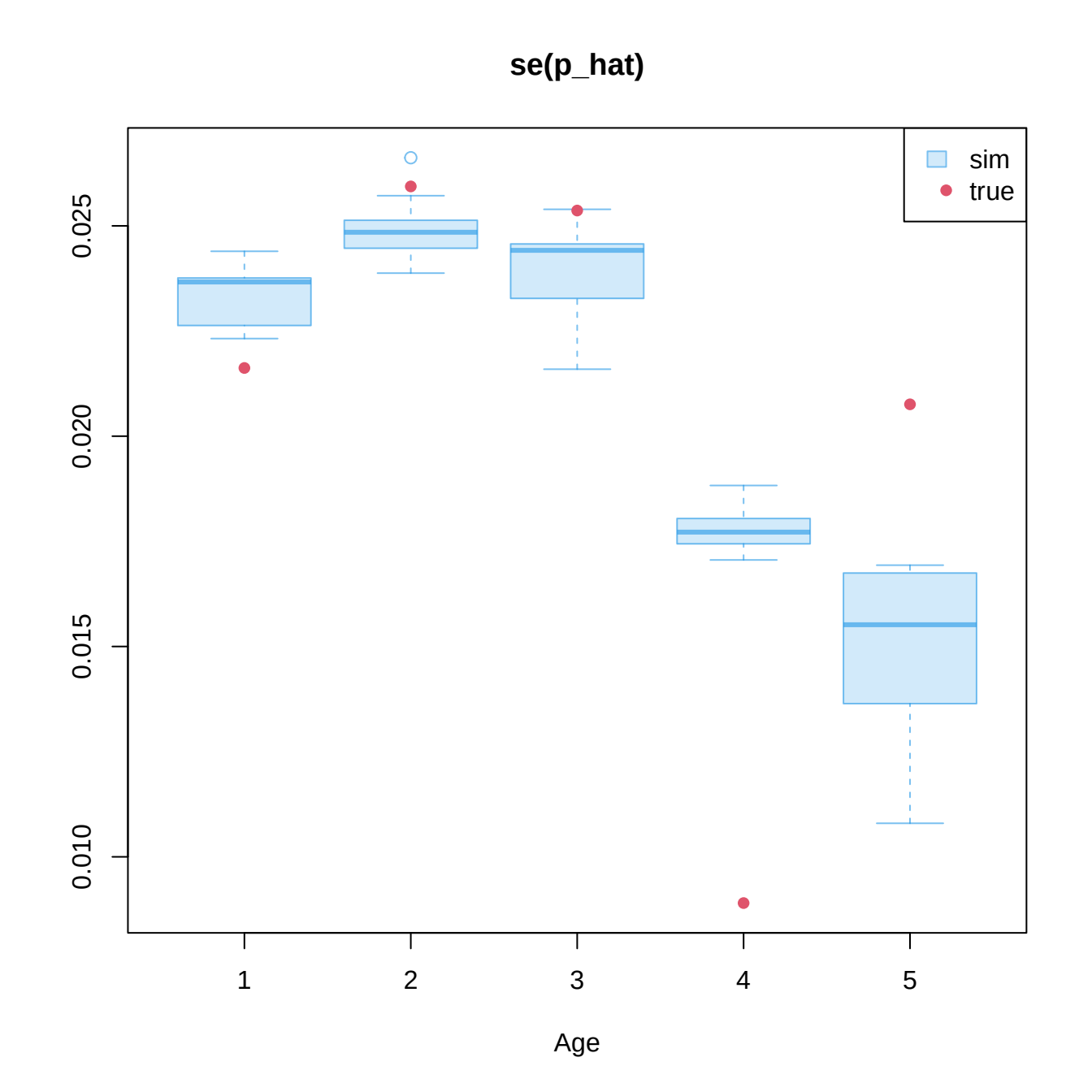

Population
Length
0
100
200
300
400
500
600
1
2
3
4
5
Age

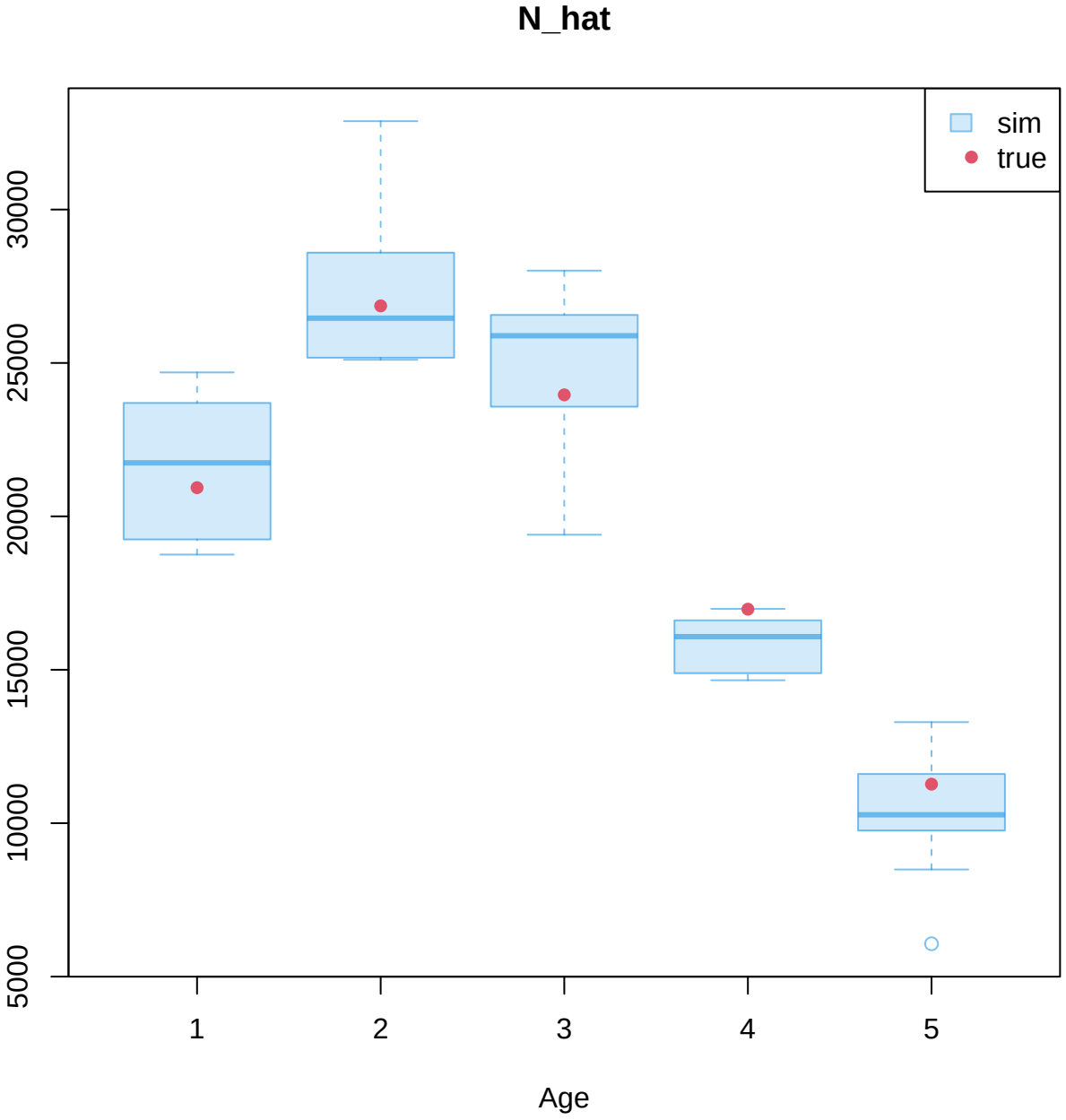

Sample
Length
100
200
300
400
500
1
2
3
4
5
Age

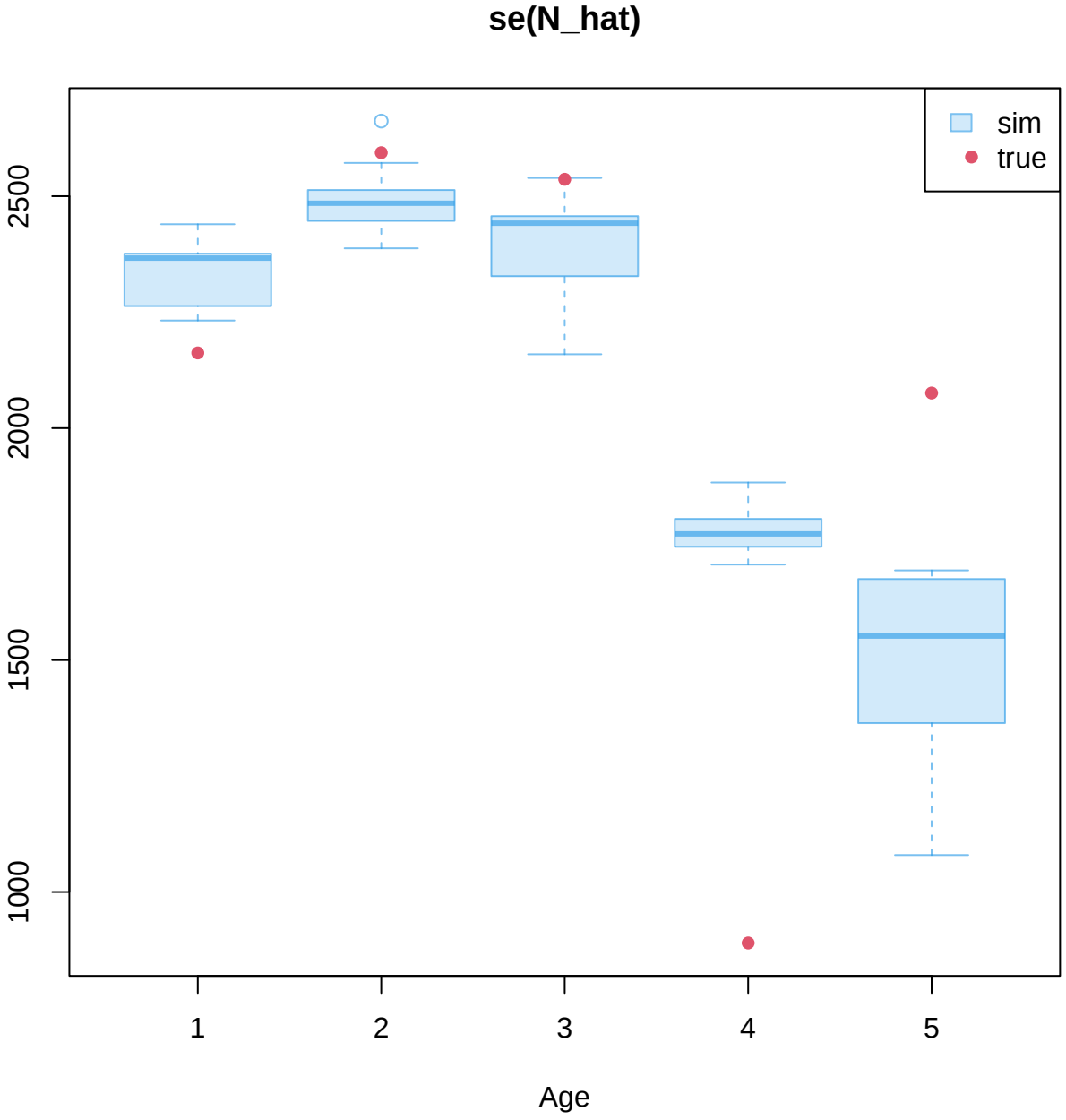

Population
Length
0
100
200
300
400
500
600
1
2
3
4
Stratum

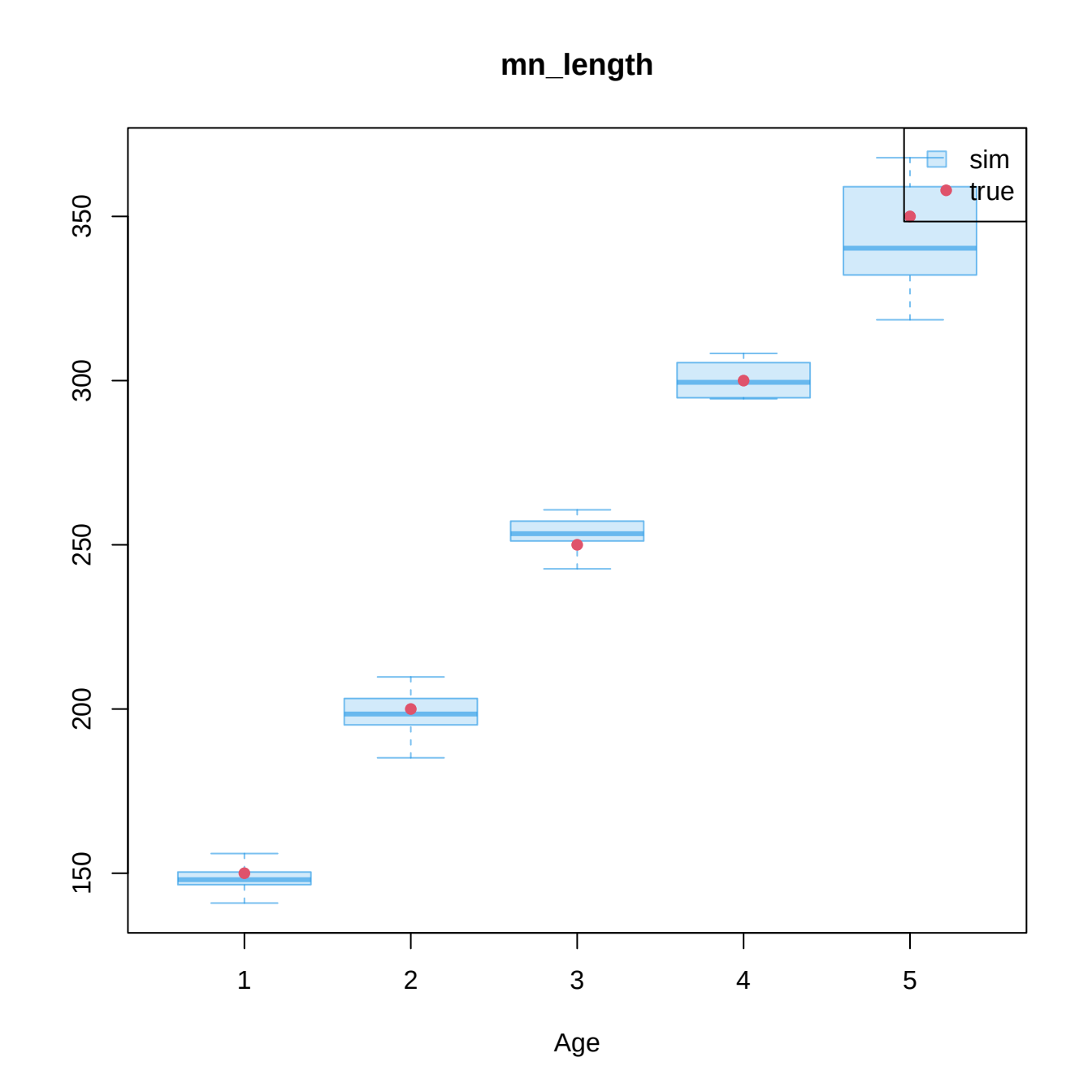

Sample
Length
100
200
300
400
500
1
2
3
4
Stratum

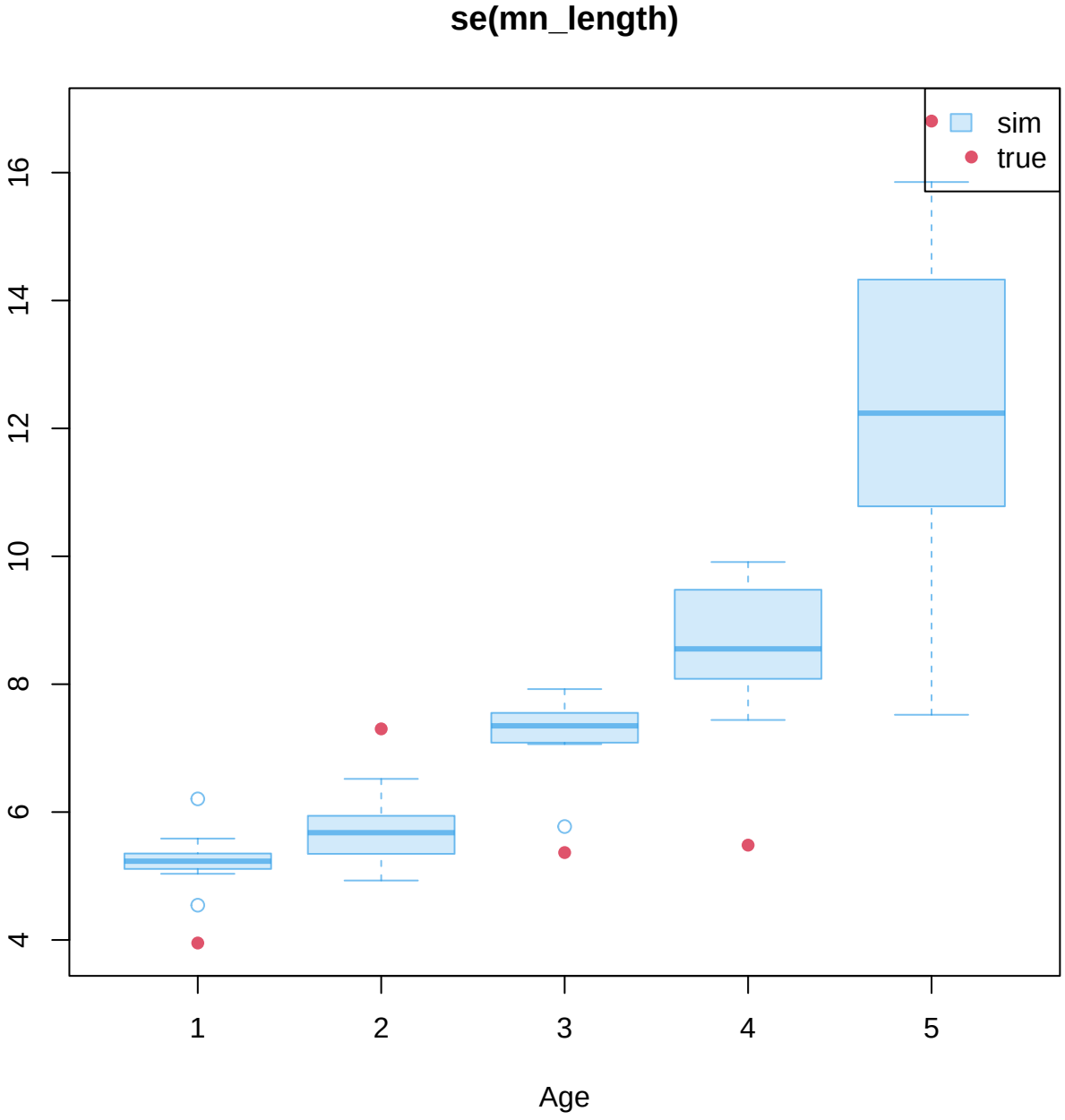

p_hat
sim
true
0.30
0.25
0.20
0.15
0.10
0.05
1
2
3
4
5
Age

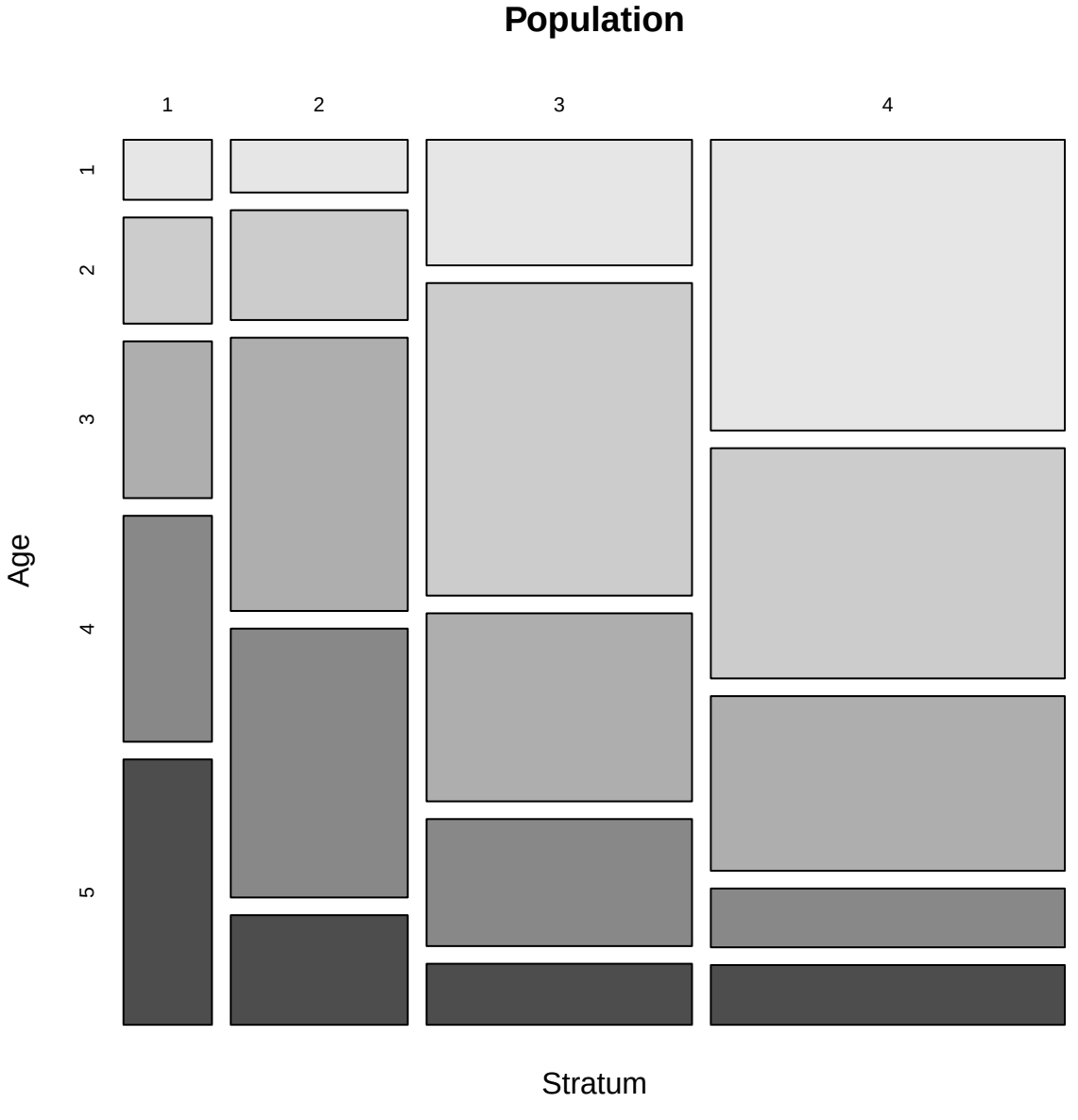

se(p_hat)
sim
true
0.025
0.020
0.015
0.010
1
2
3
4
5
Age

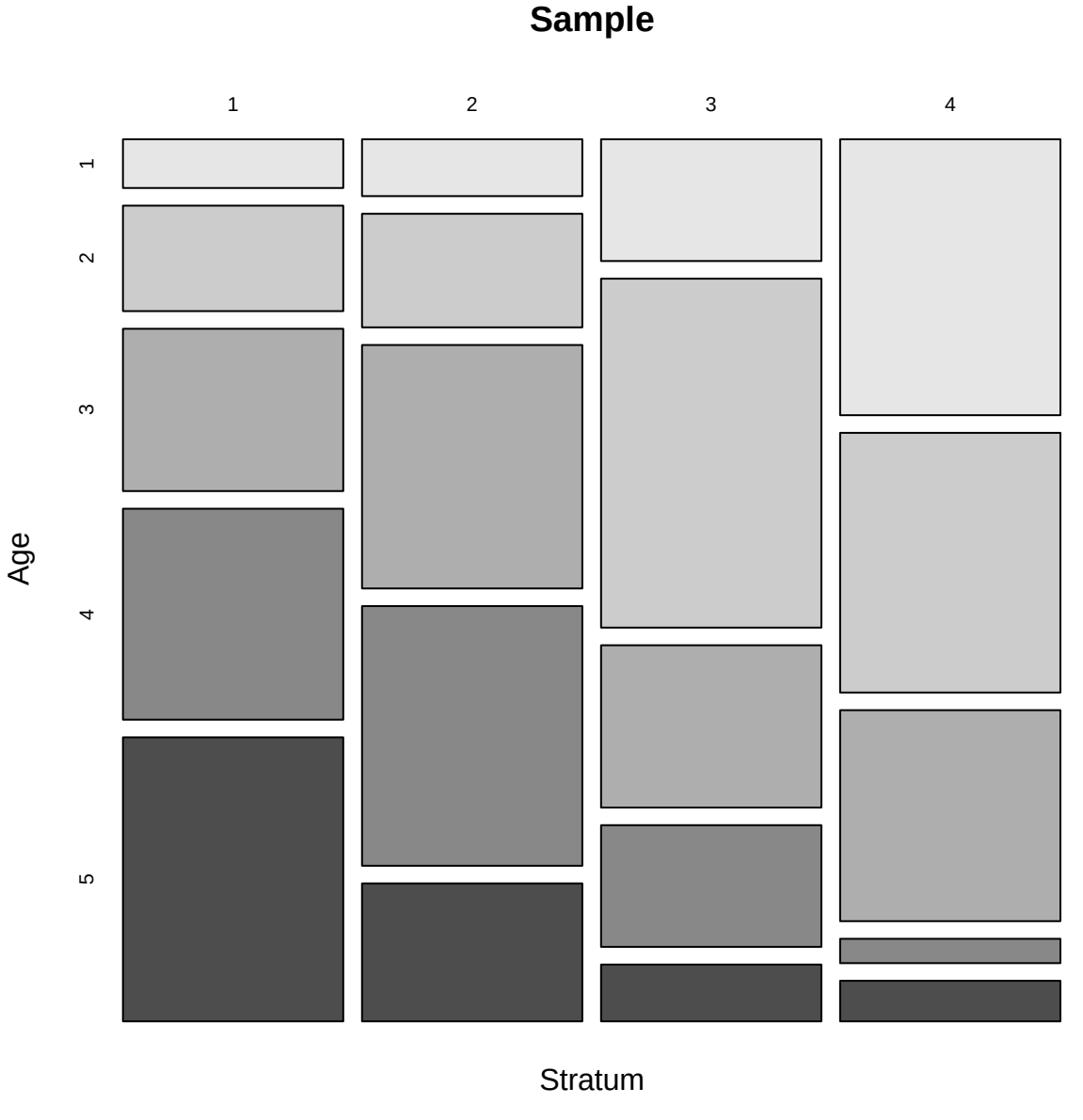

N_hat
sim
true
30000
25000
20000
15000
10000
5000
1
2
3
4
5
Age

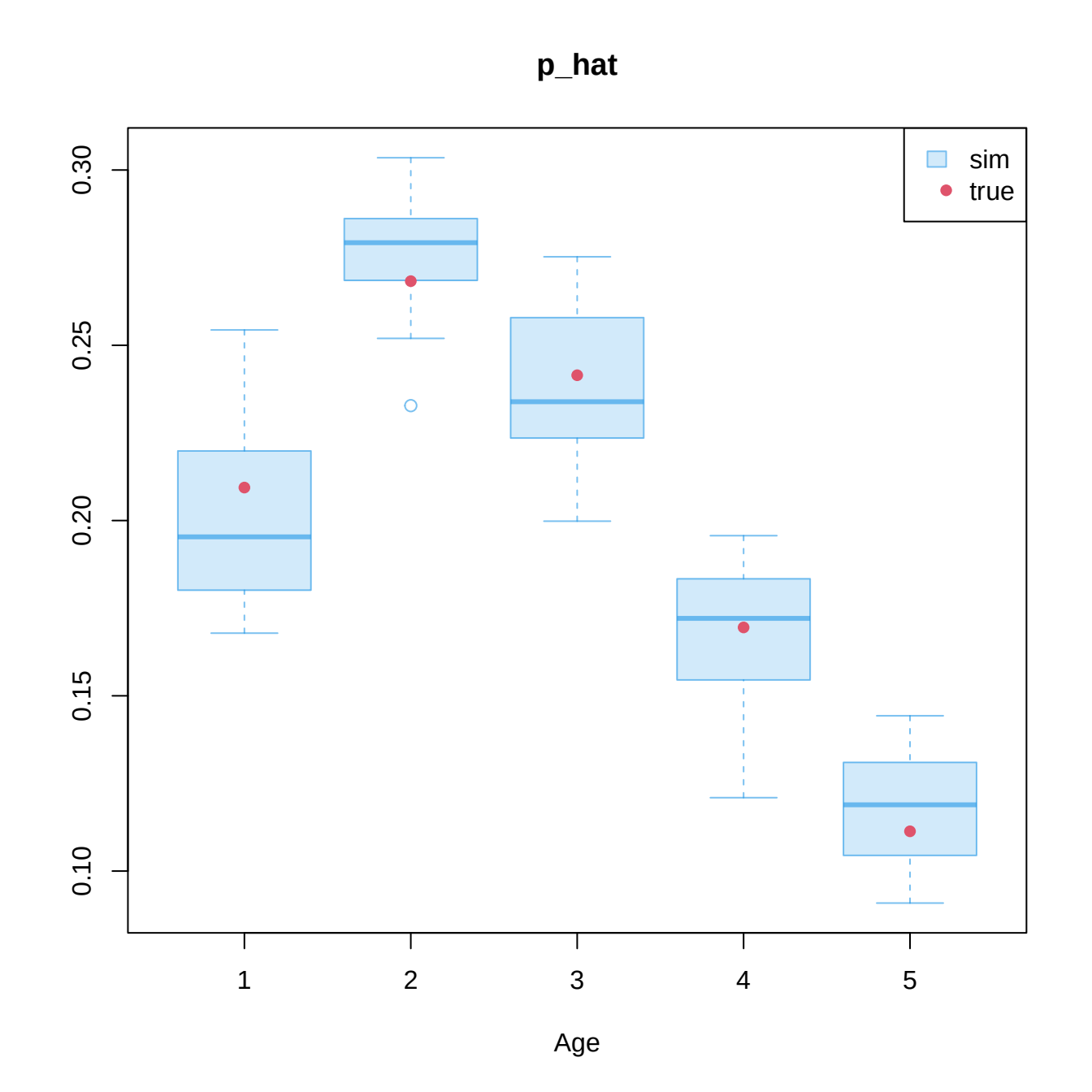

se(N_hat)
sim
true
2500
2000
1500
1000
1
2
3
4
5
Age

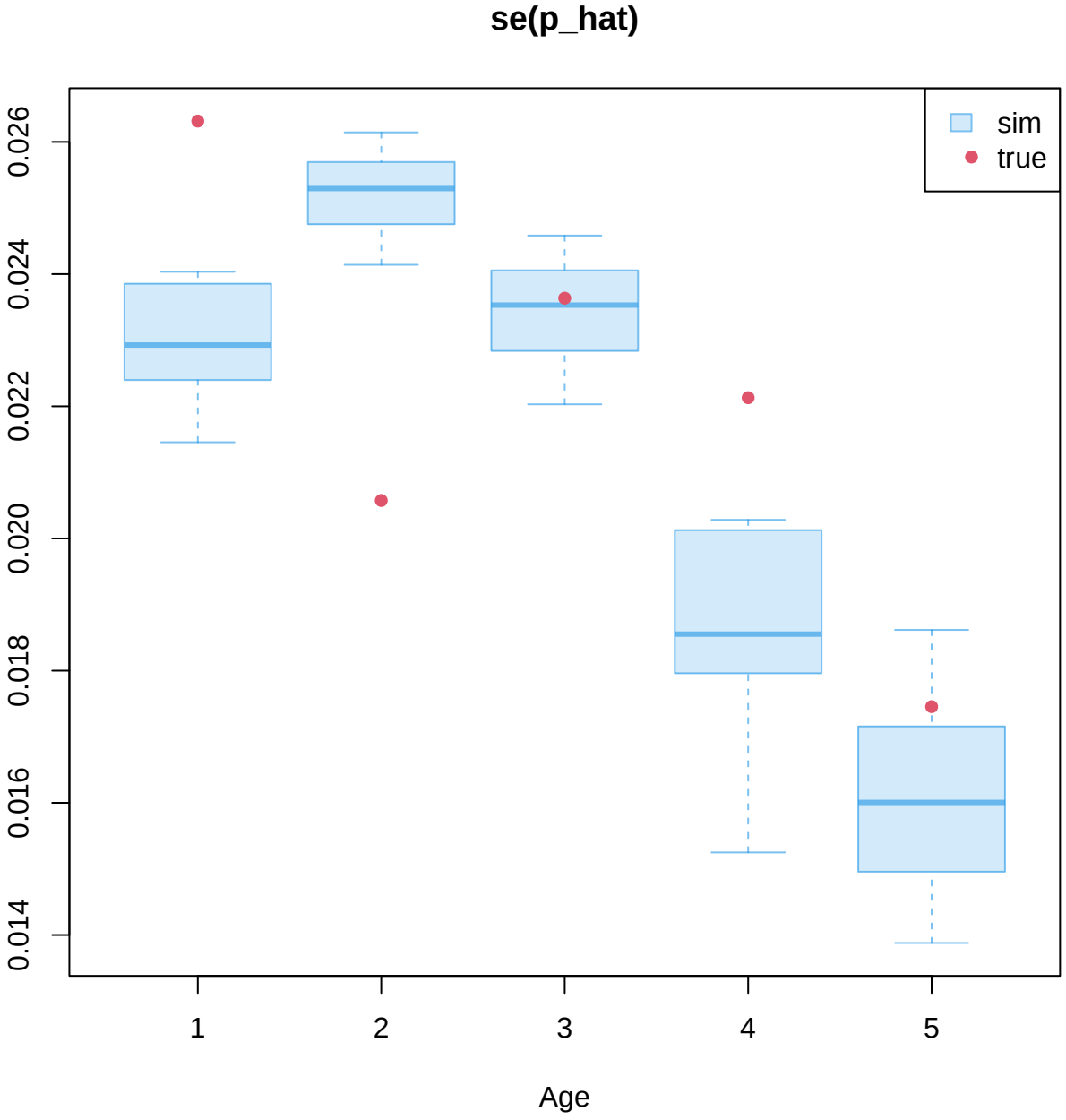

mn_length
sim
true
350
300
250
200
150
1
2
3
4
5
Age

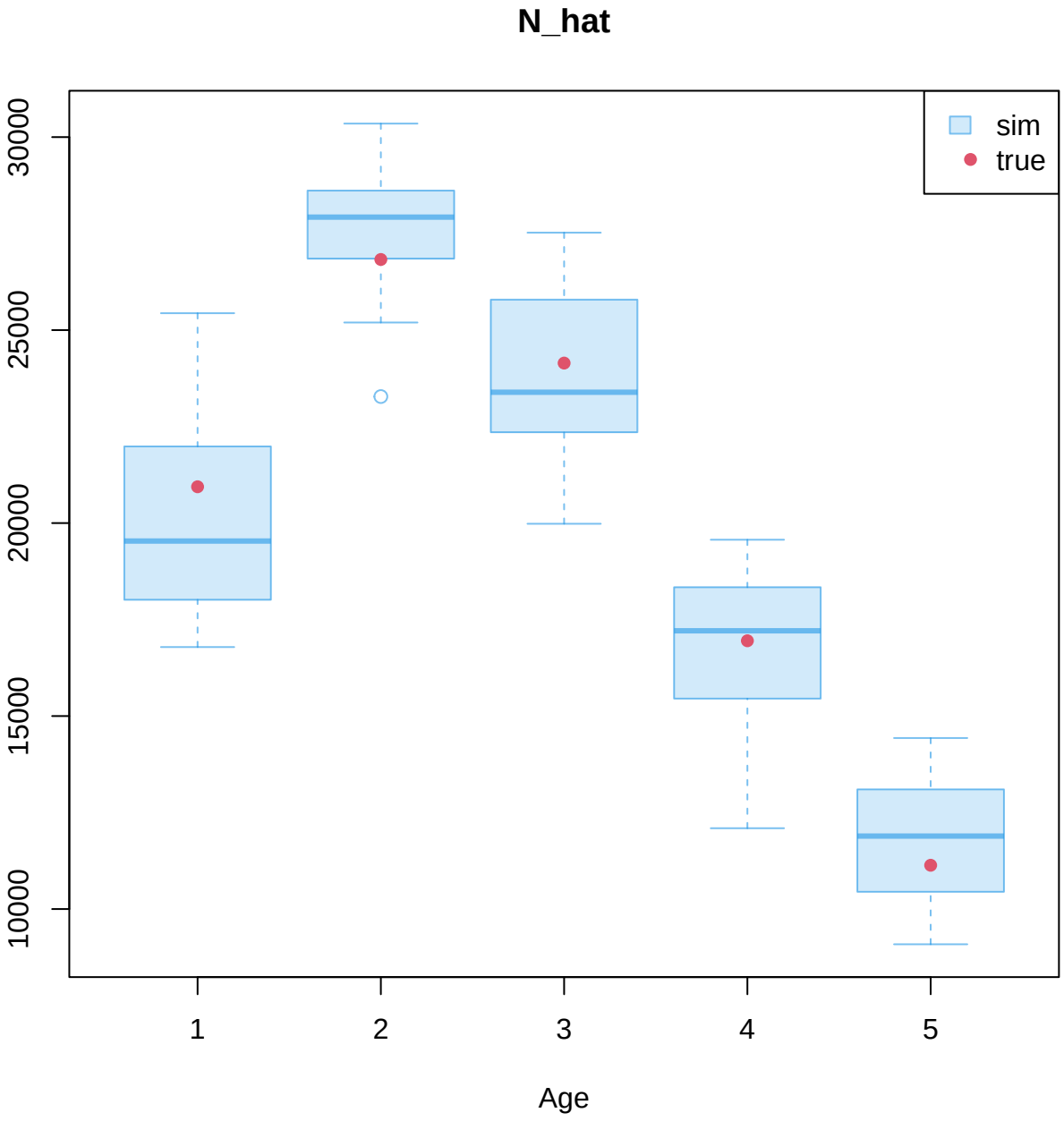

se(mn_length)
sim
true
16
14
12
10
8
6
4
1
2
3
4
5
Age

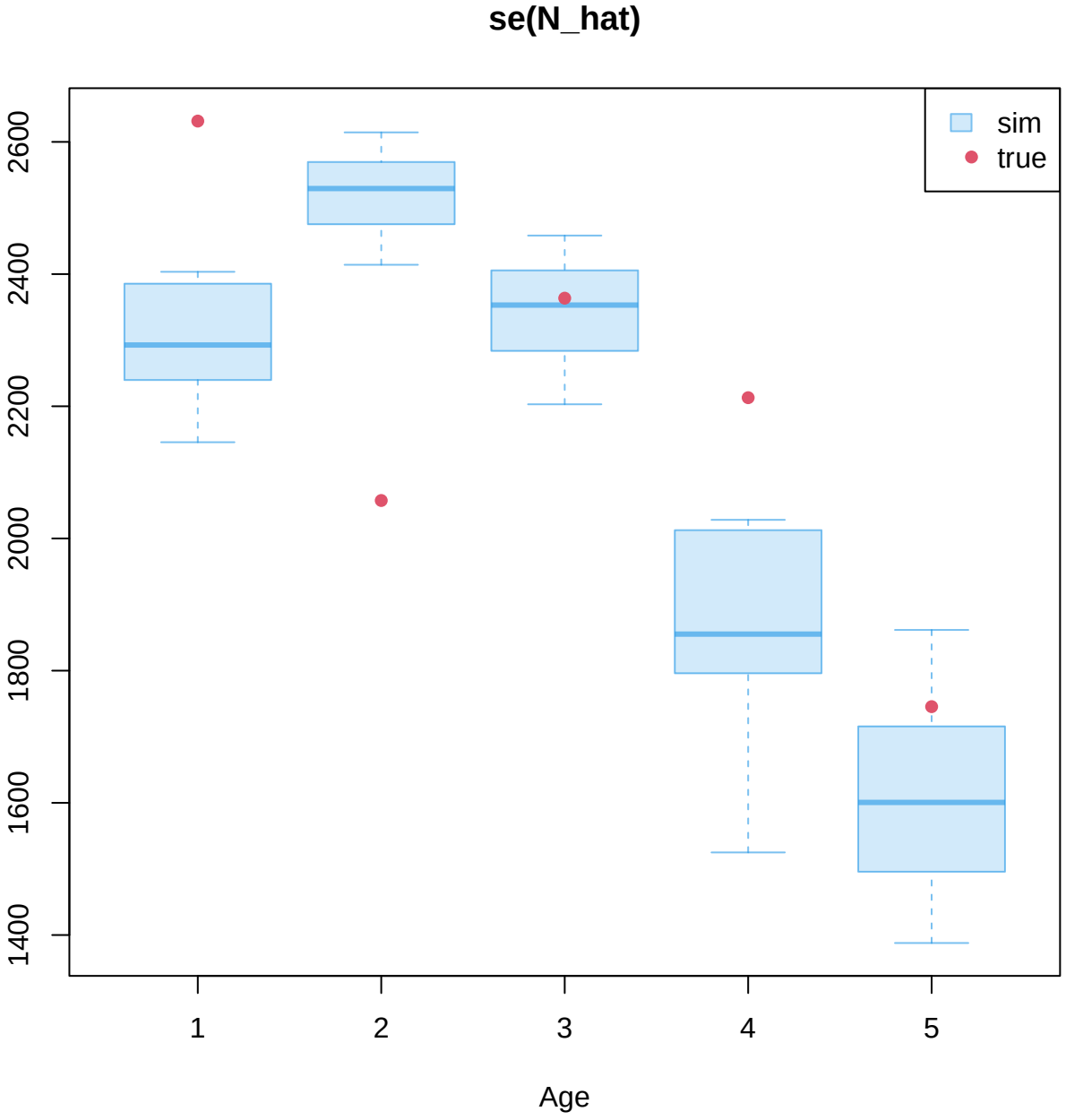

Population
1
2
3
4
Age
1
2
3
4
5
Stratum

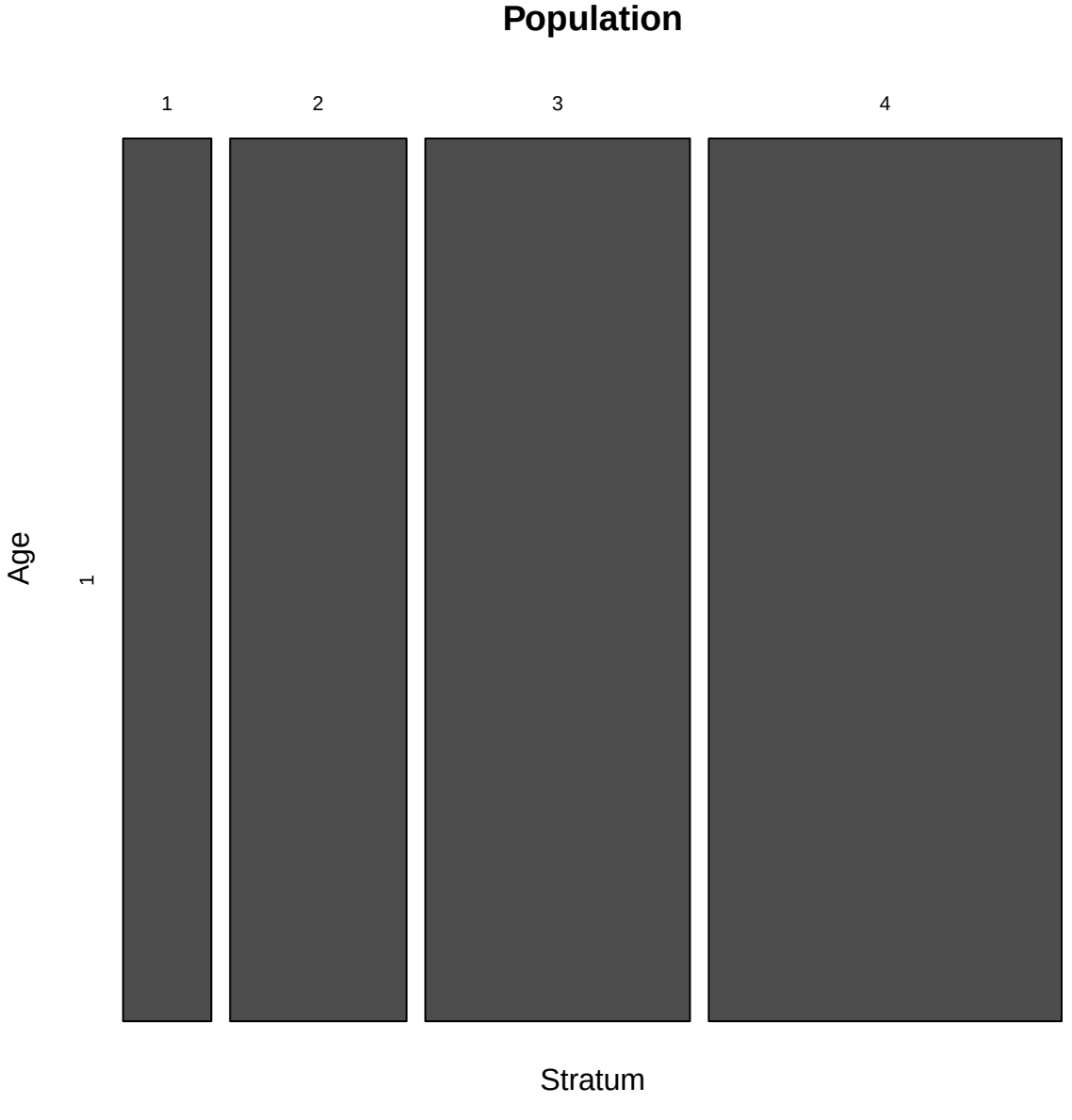

Sample
1
2
3
4
Age
1
2
3
4
5
Stratum

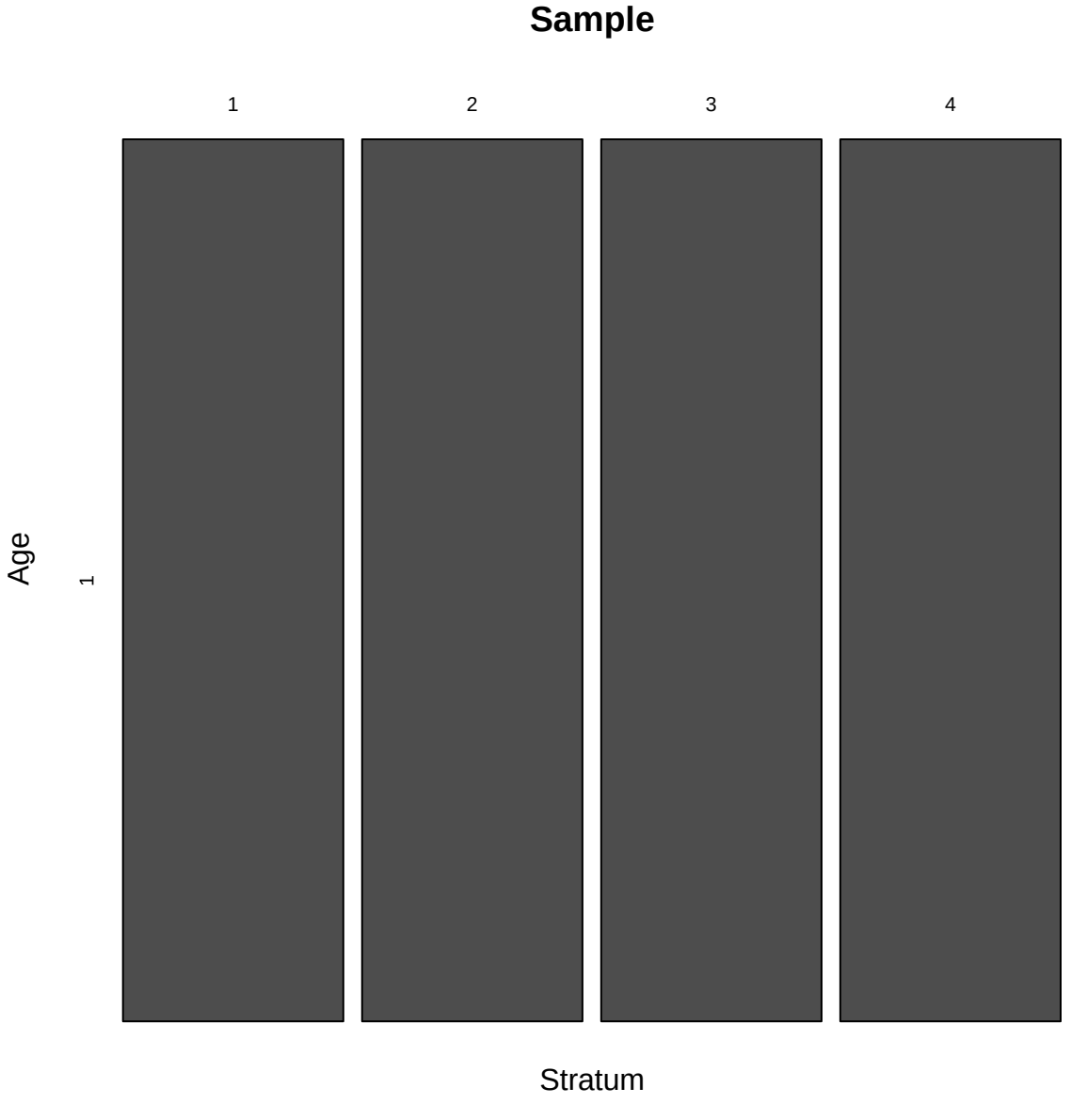

p_hat
sim
true
0.30
0.25
0.20
0.15
0.10
1
2
3
4
5
Age

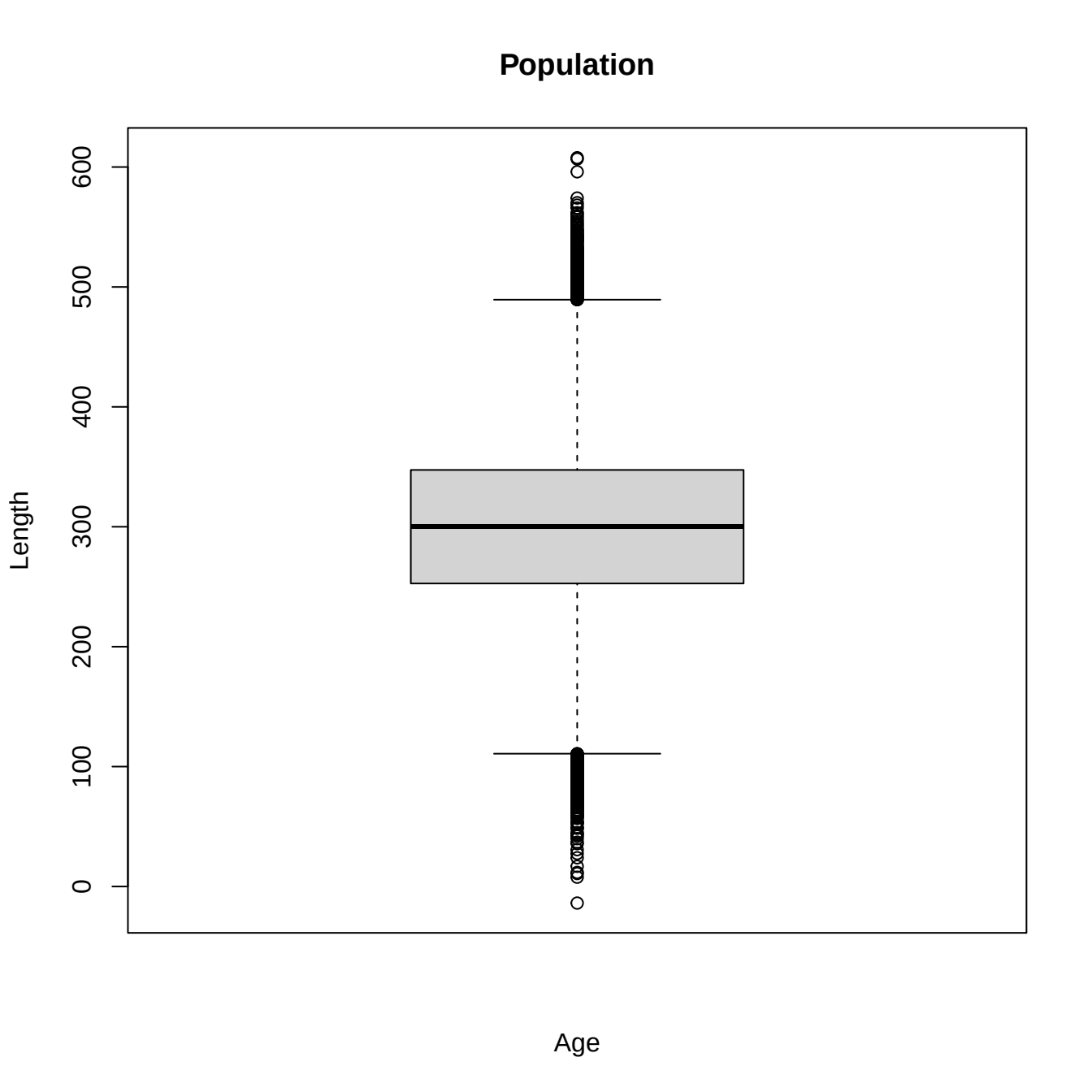

se(p_hat)
sim
true
0.026
0.024
0.022
0.020
0.018
0.016
0.014
1
2
3
4
5
Age

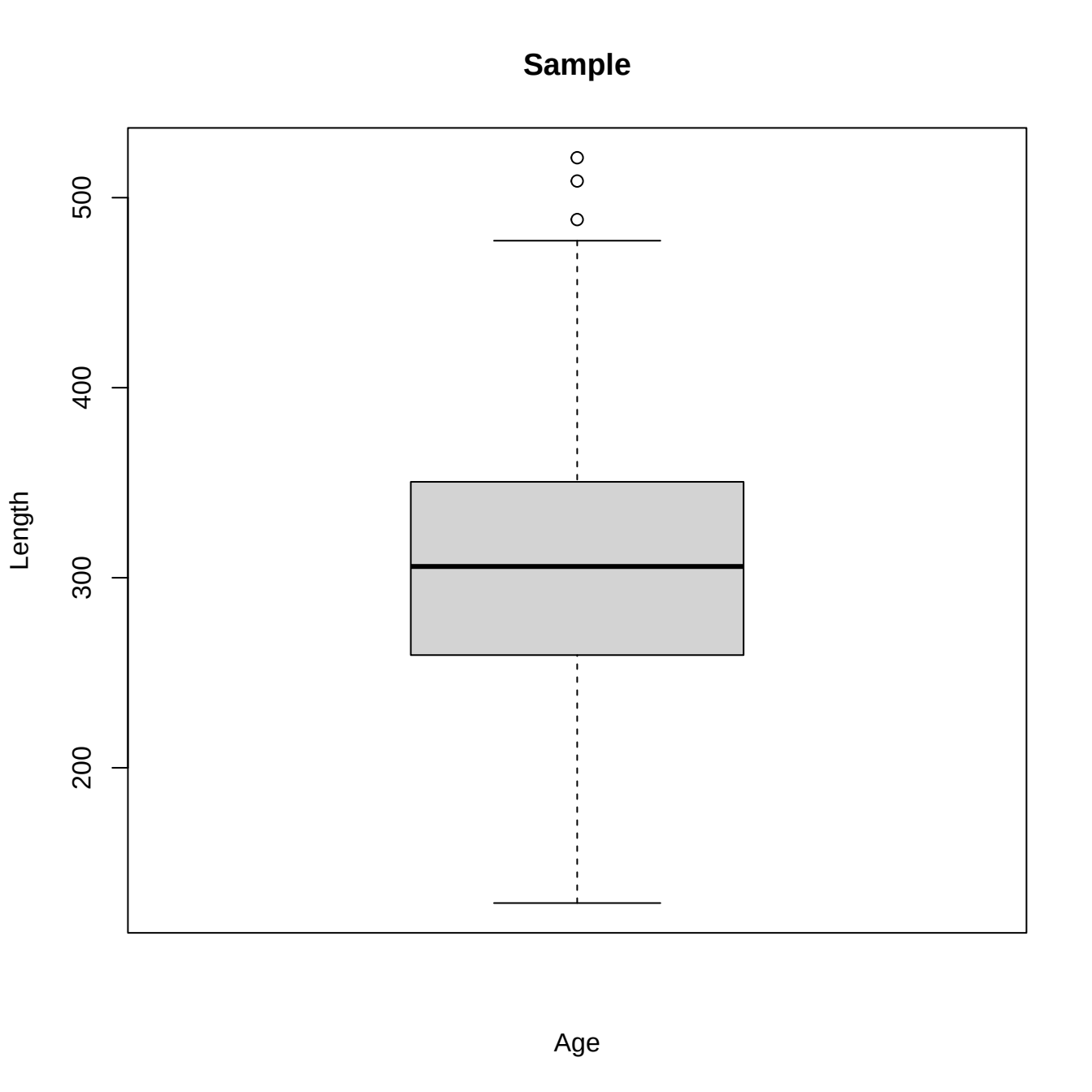

N_hat
sim
true
30000
25000
20000
15000
10000
1
2
3
4
5
Age

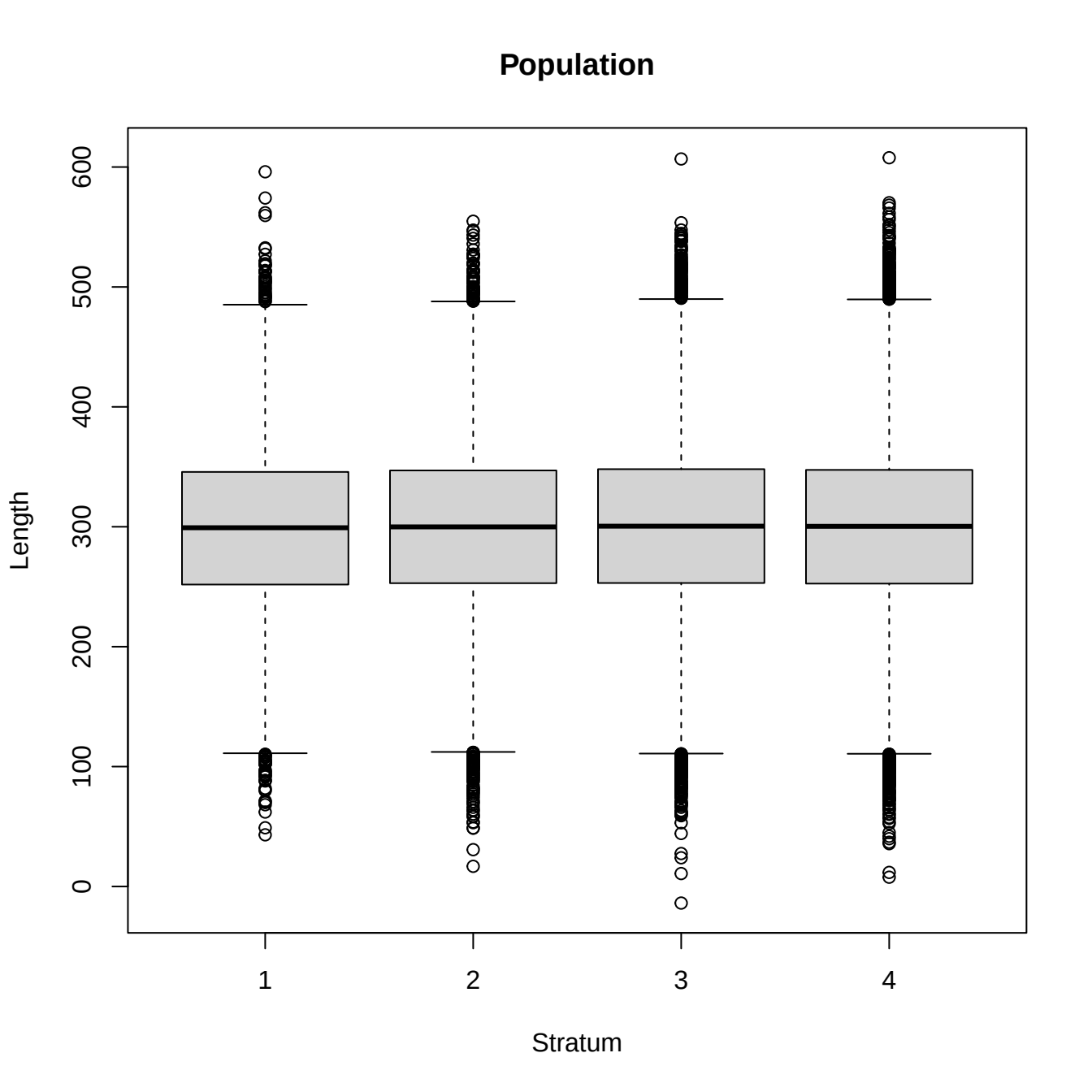

se(N_hat)
sim
true
2600
2400
2200
2000
1800
1600
1400
1
2
3
4
5
Age

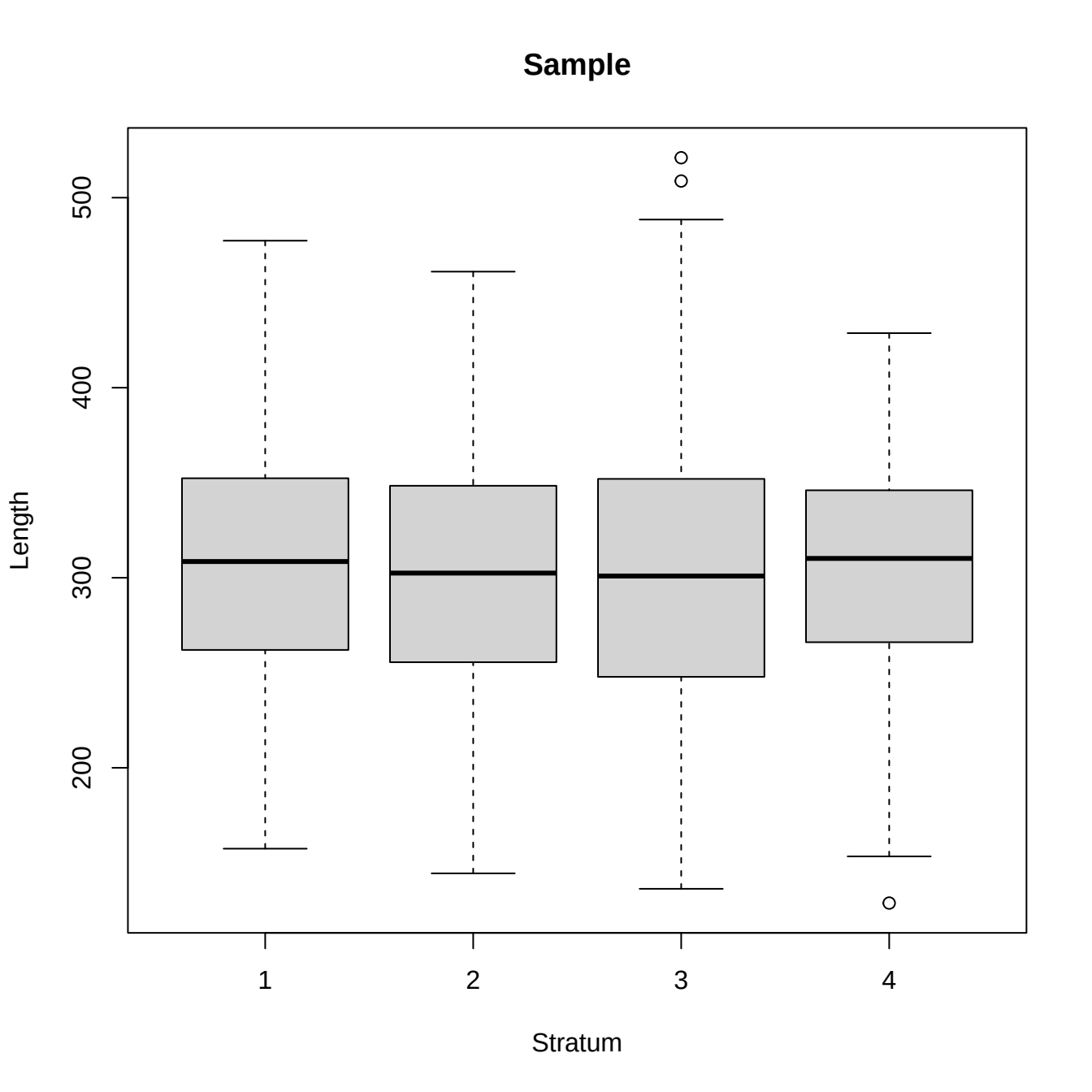

Population
1
2
3
4
Age
1
Stratum

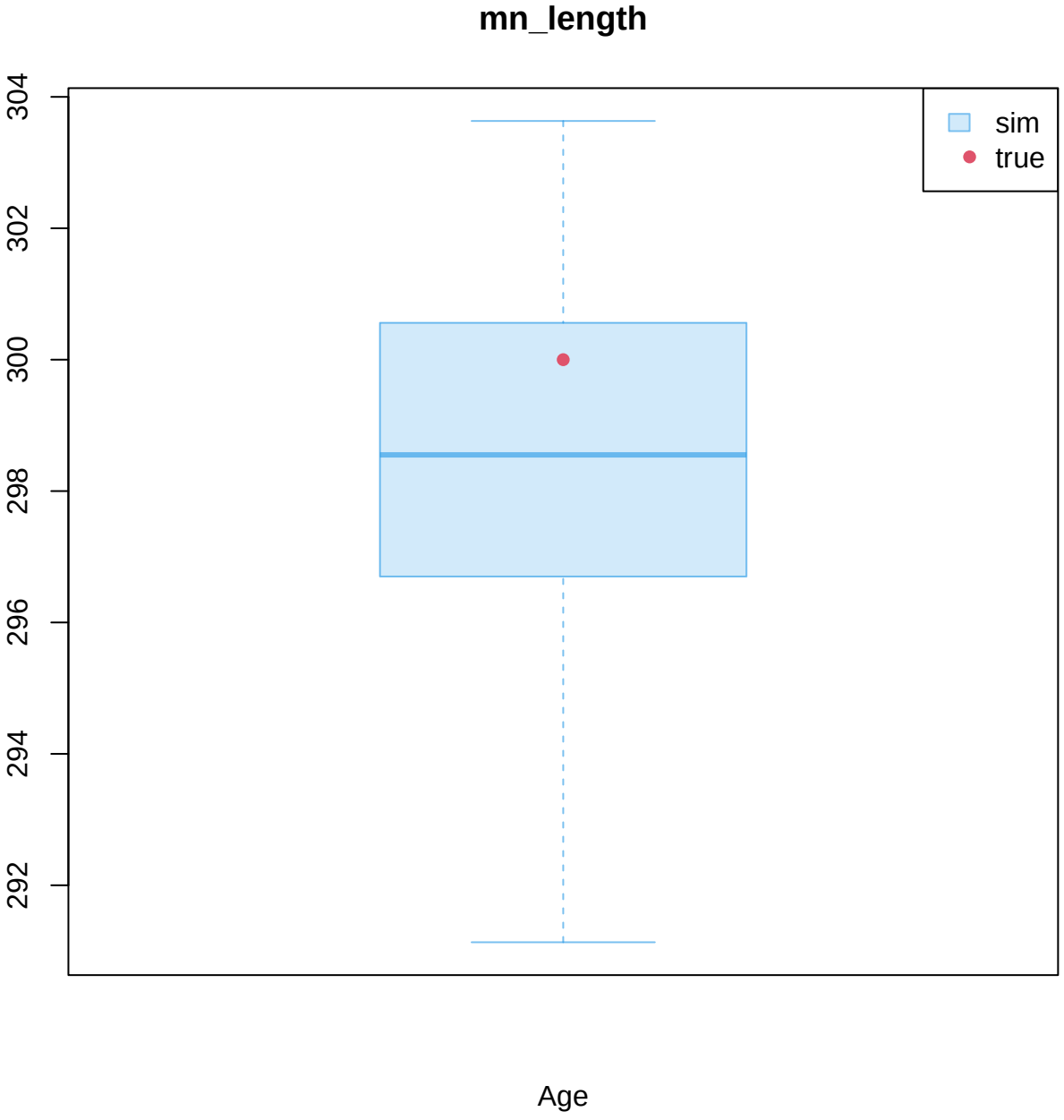

Sample
1
2
3
4
Age
1
Stratum

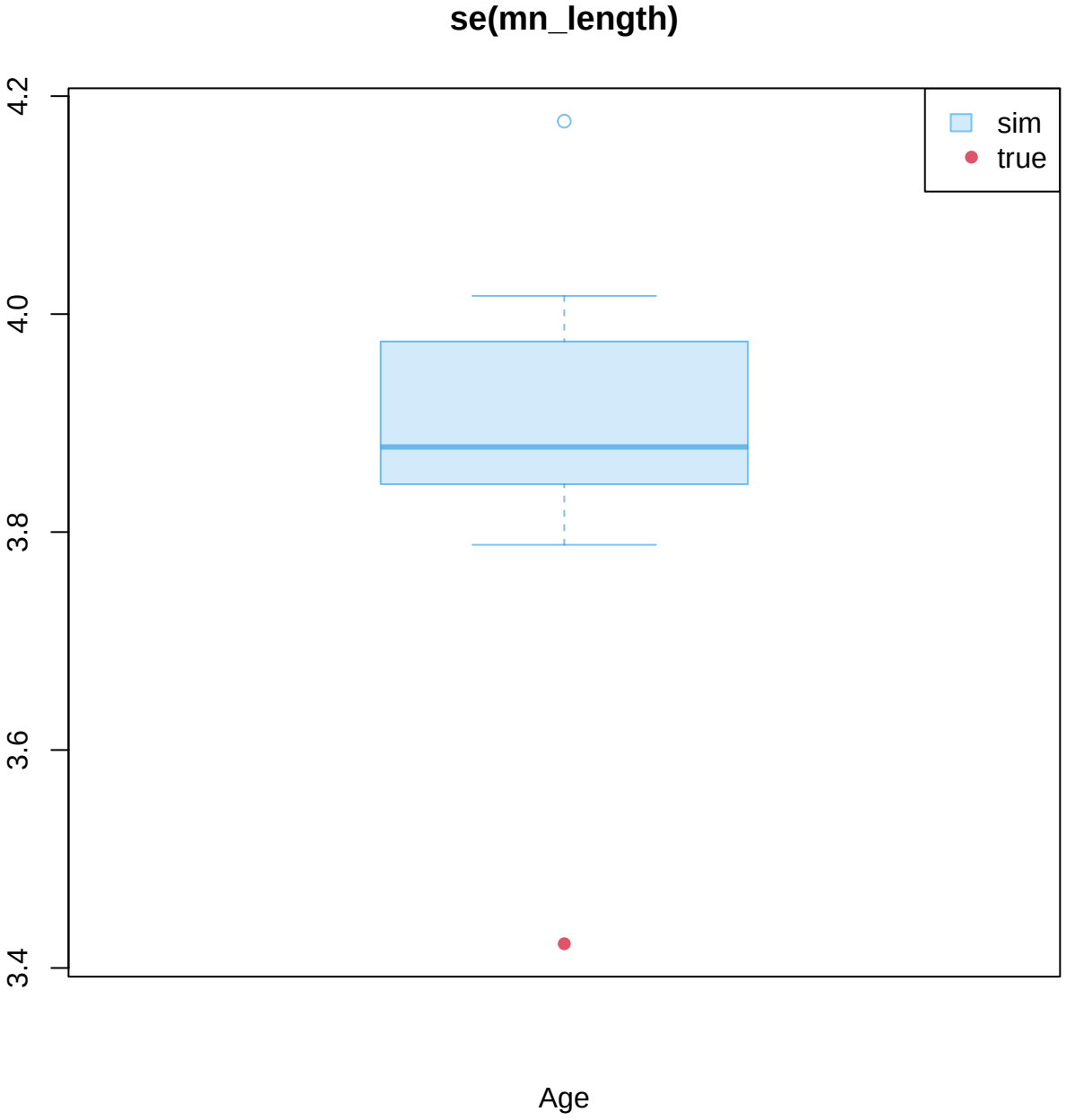

Population
Length
0
100
200
300
400
500
600
Age

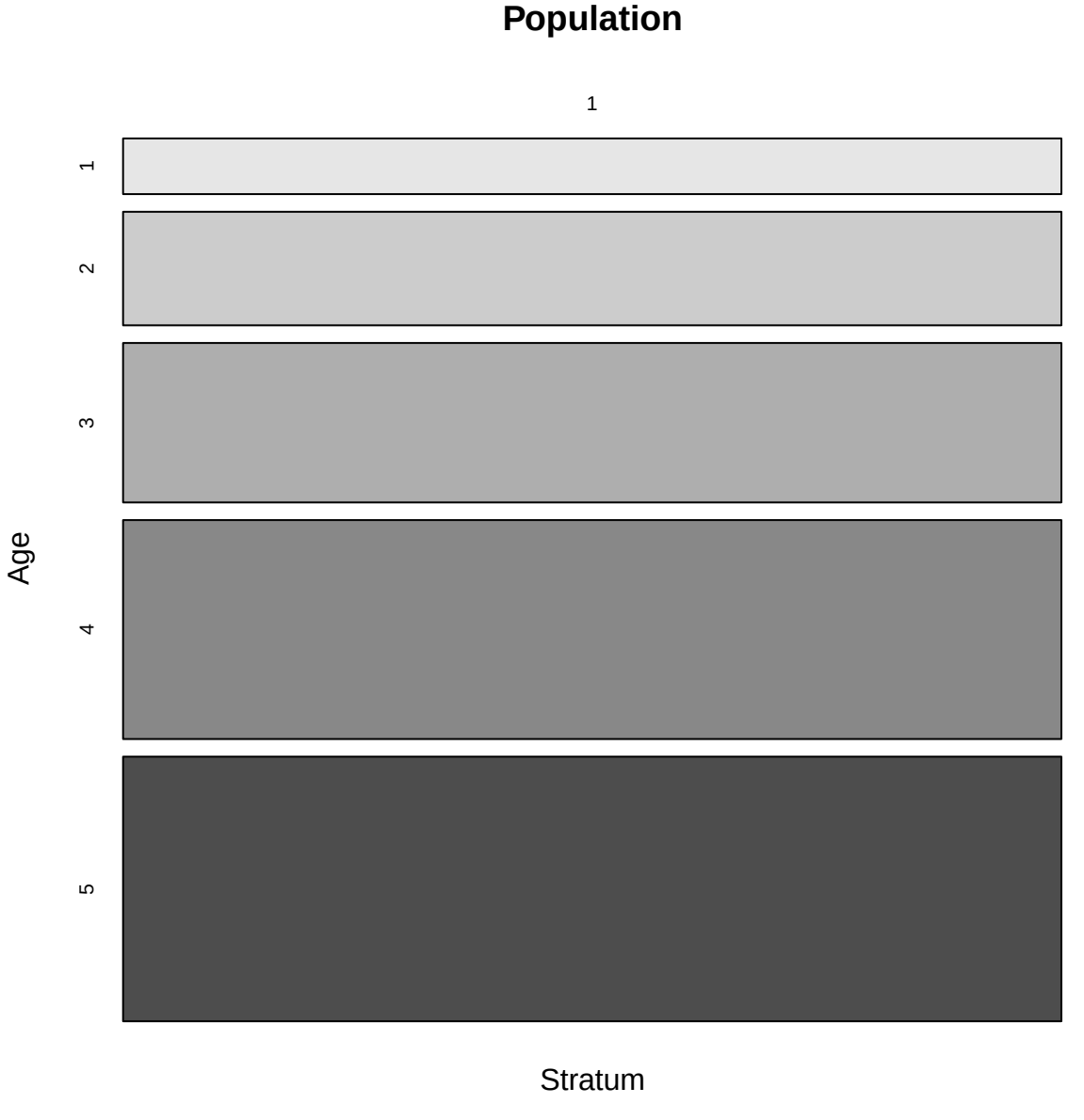

Sample
Length
500
400
300
200
Age

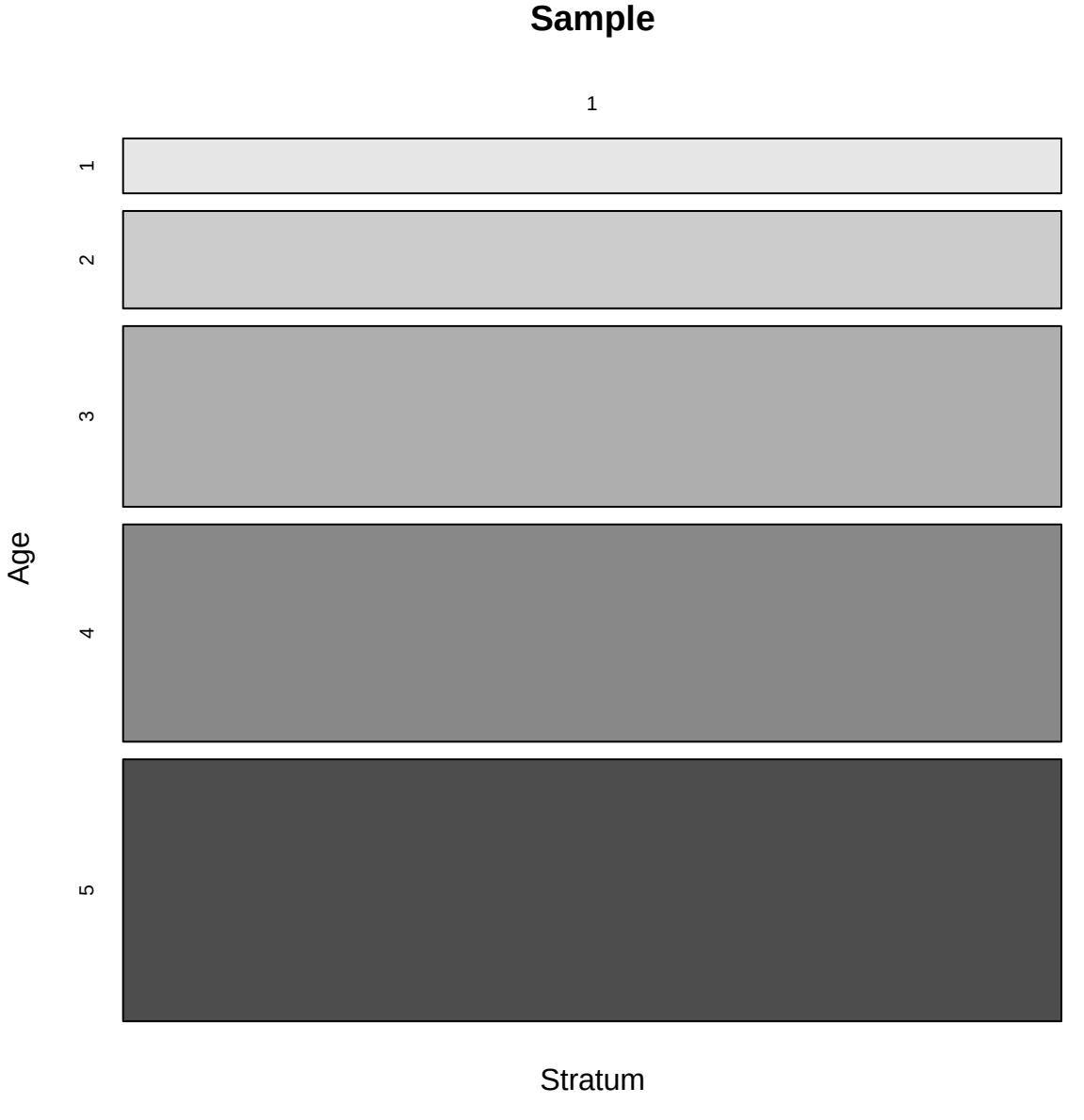

Population
Length
0
100
200
300
400
500
600
1
2
3
4
Stratum

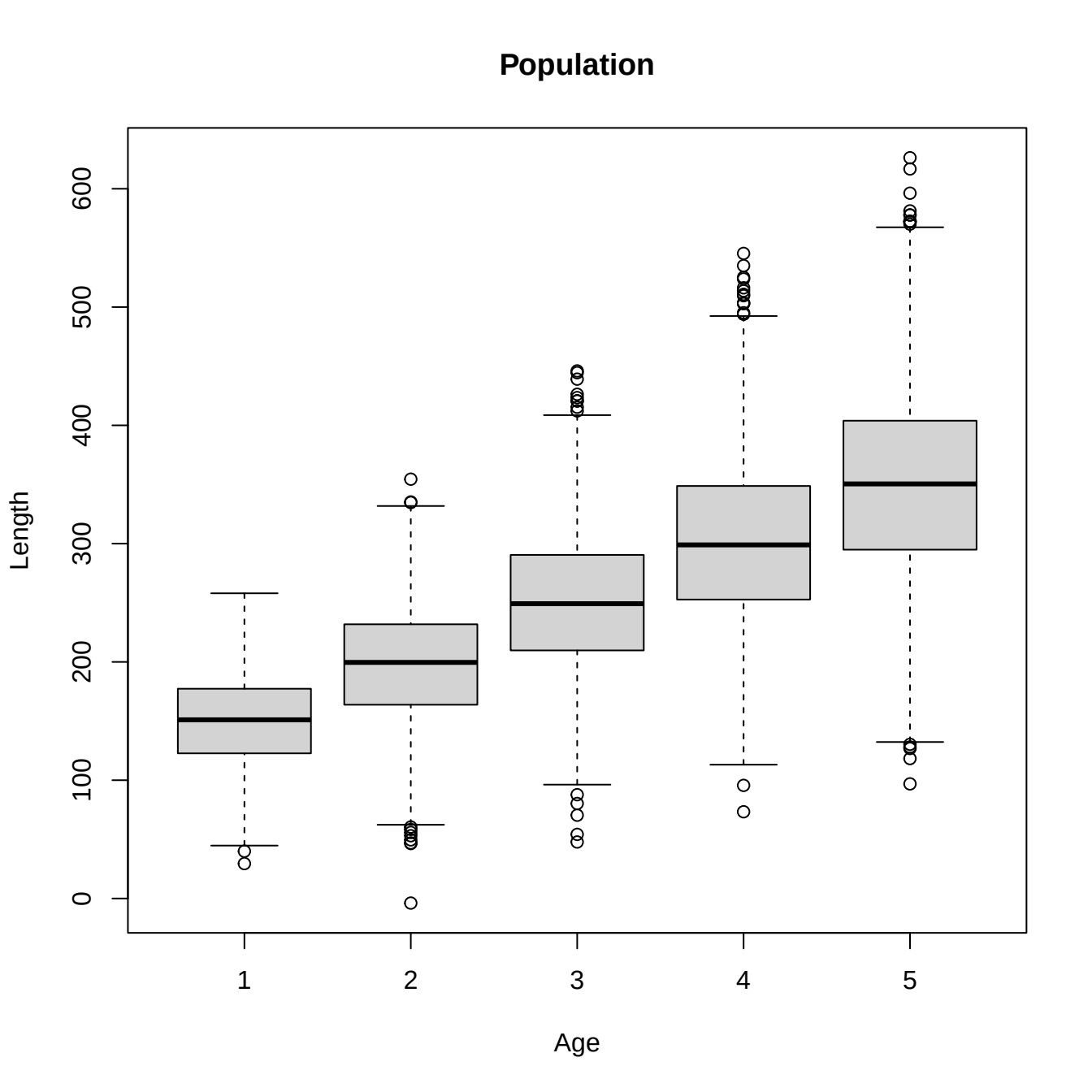

Sample
Length
500
400
300
200
1
2
3
4
Stratum

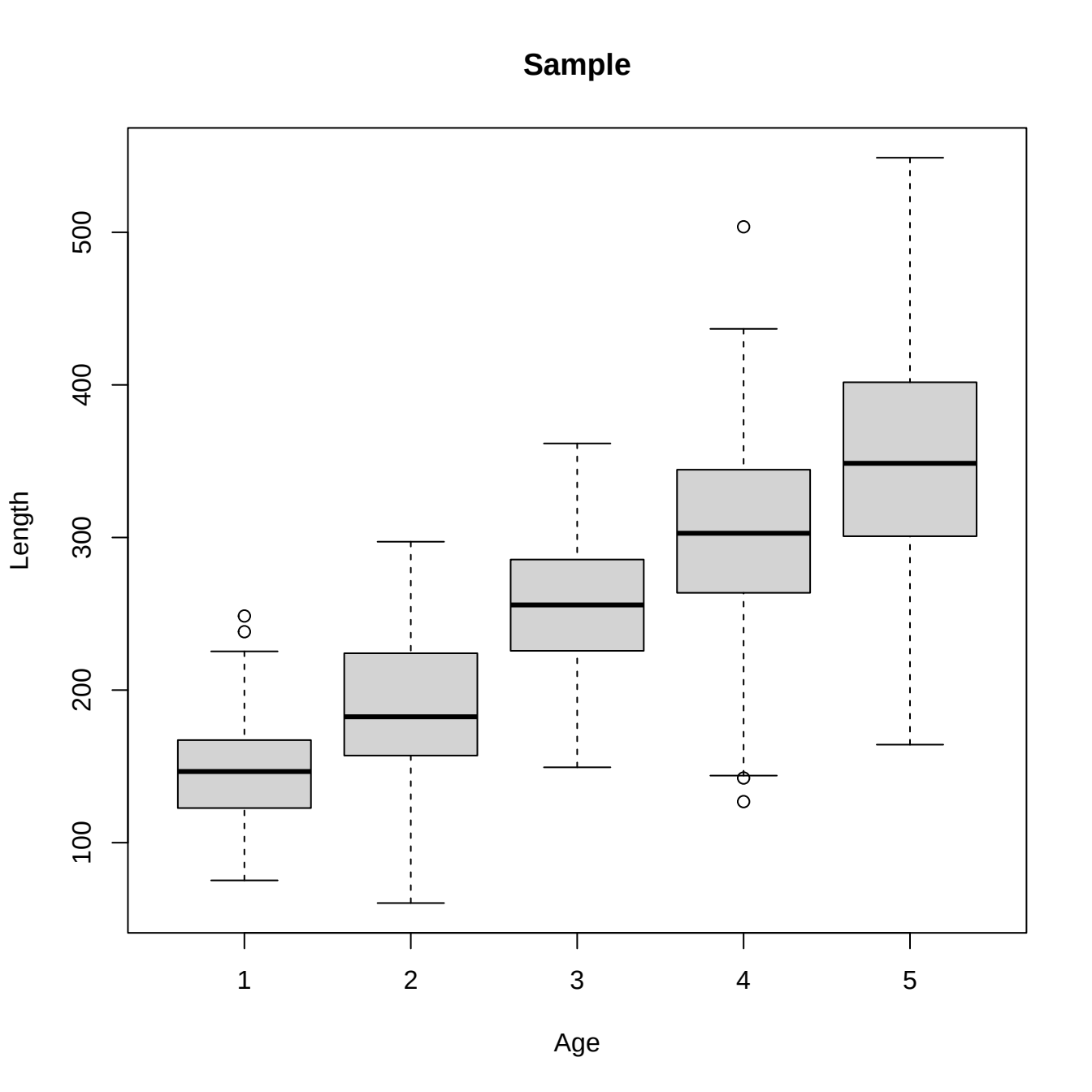

mn_length
304
302
300
298
296
294
292
sim
true
Age

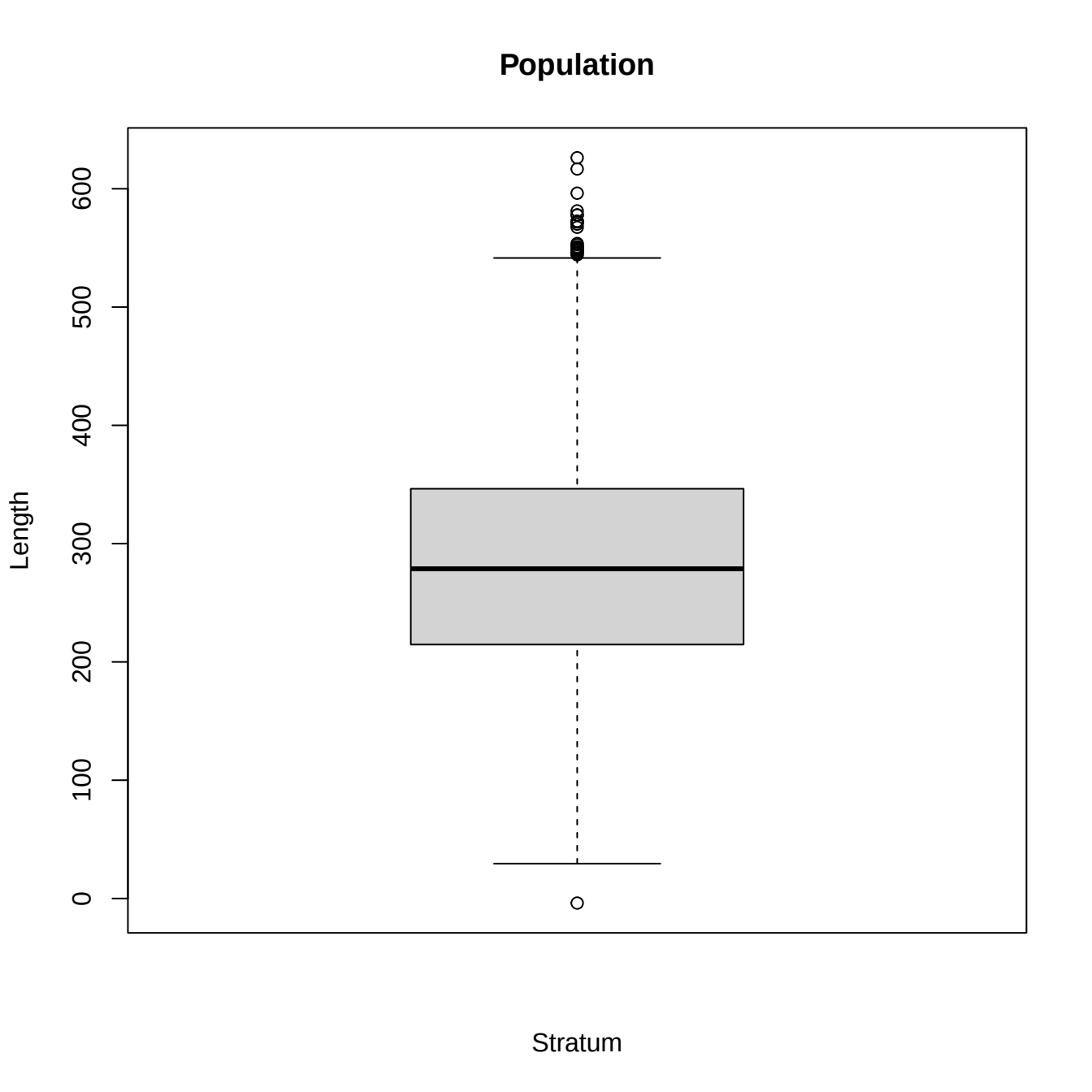

se(mn_length)
4.2
4.0
3.8
3.6
3.4
sim
true
Age

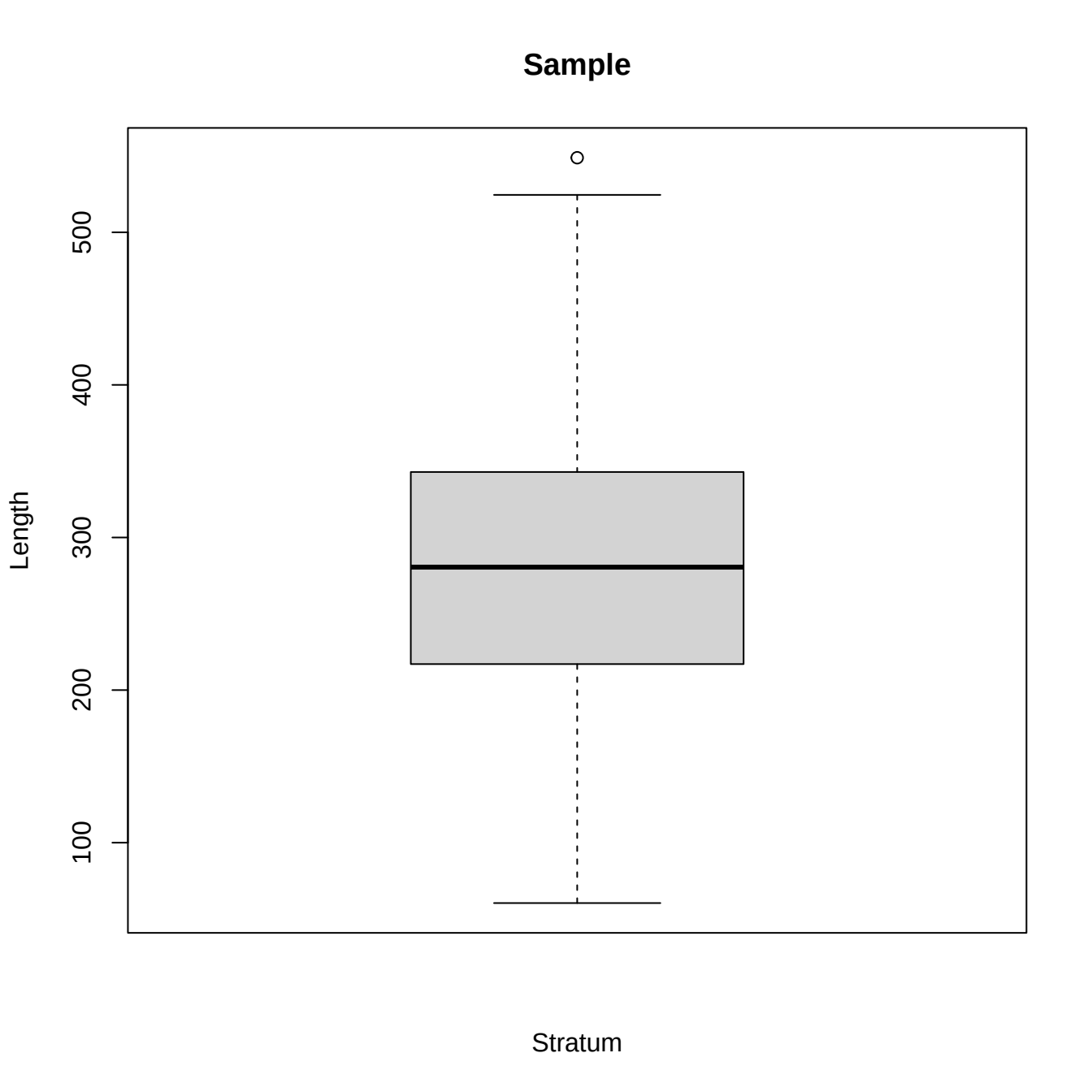

Population
1
1
2
3
4
5
Age
Stratum

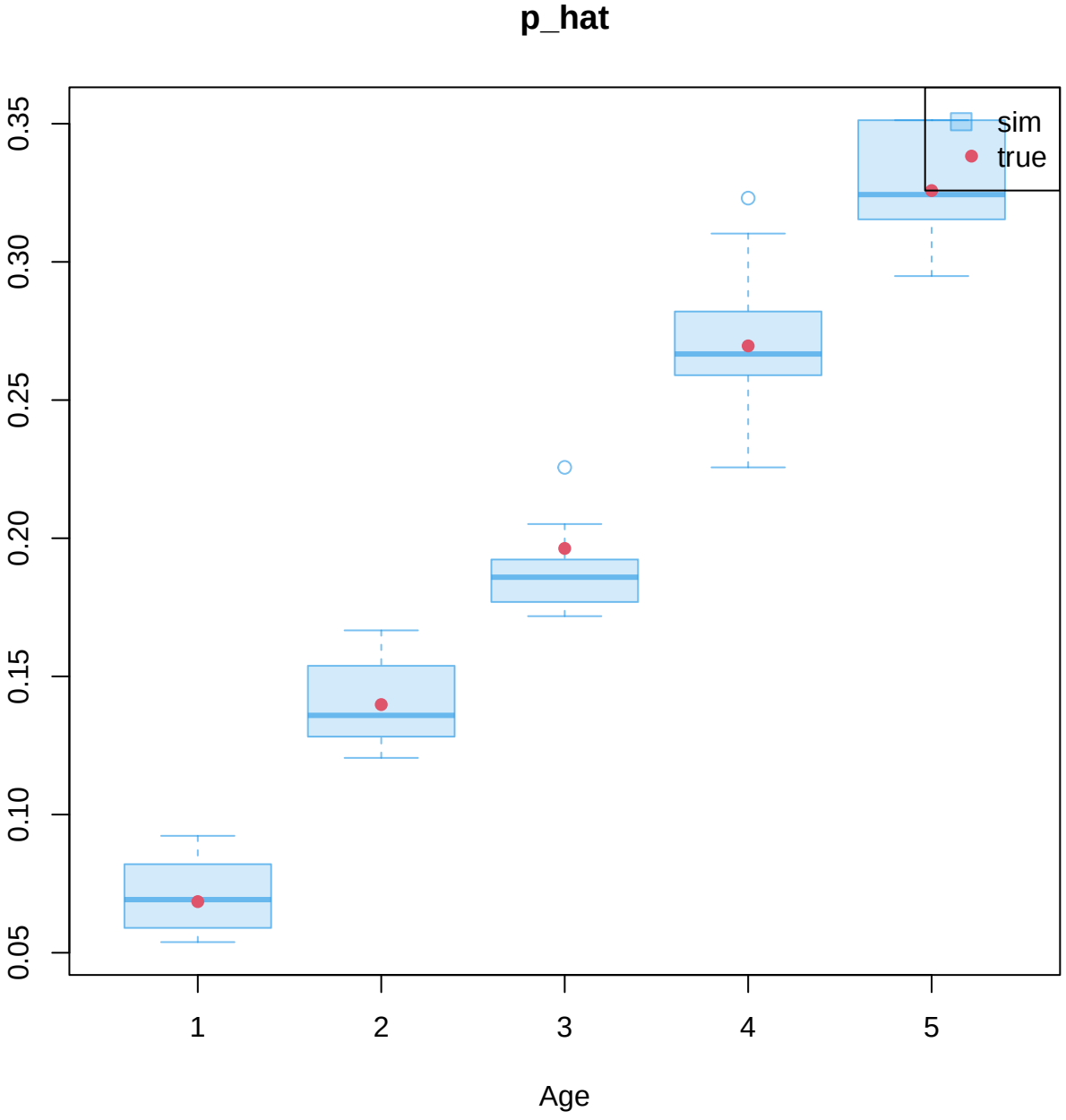

Sample
1
1
2
3
4
5
Age
Stratum

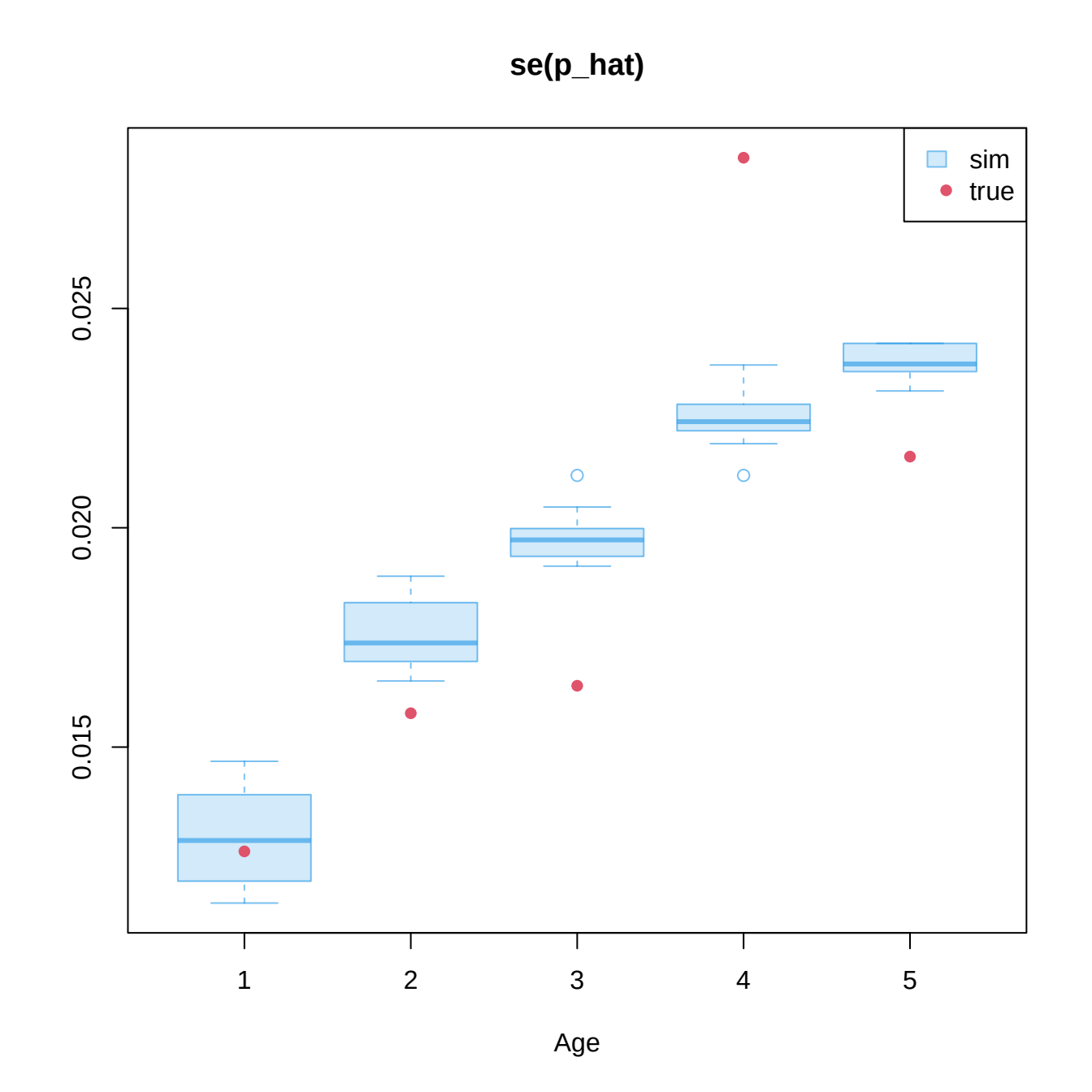

Population
Length
0
100
200
300
400
500
600
1
2
3
4
5
Age

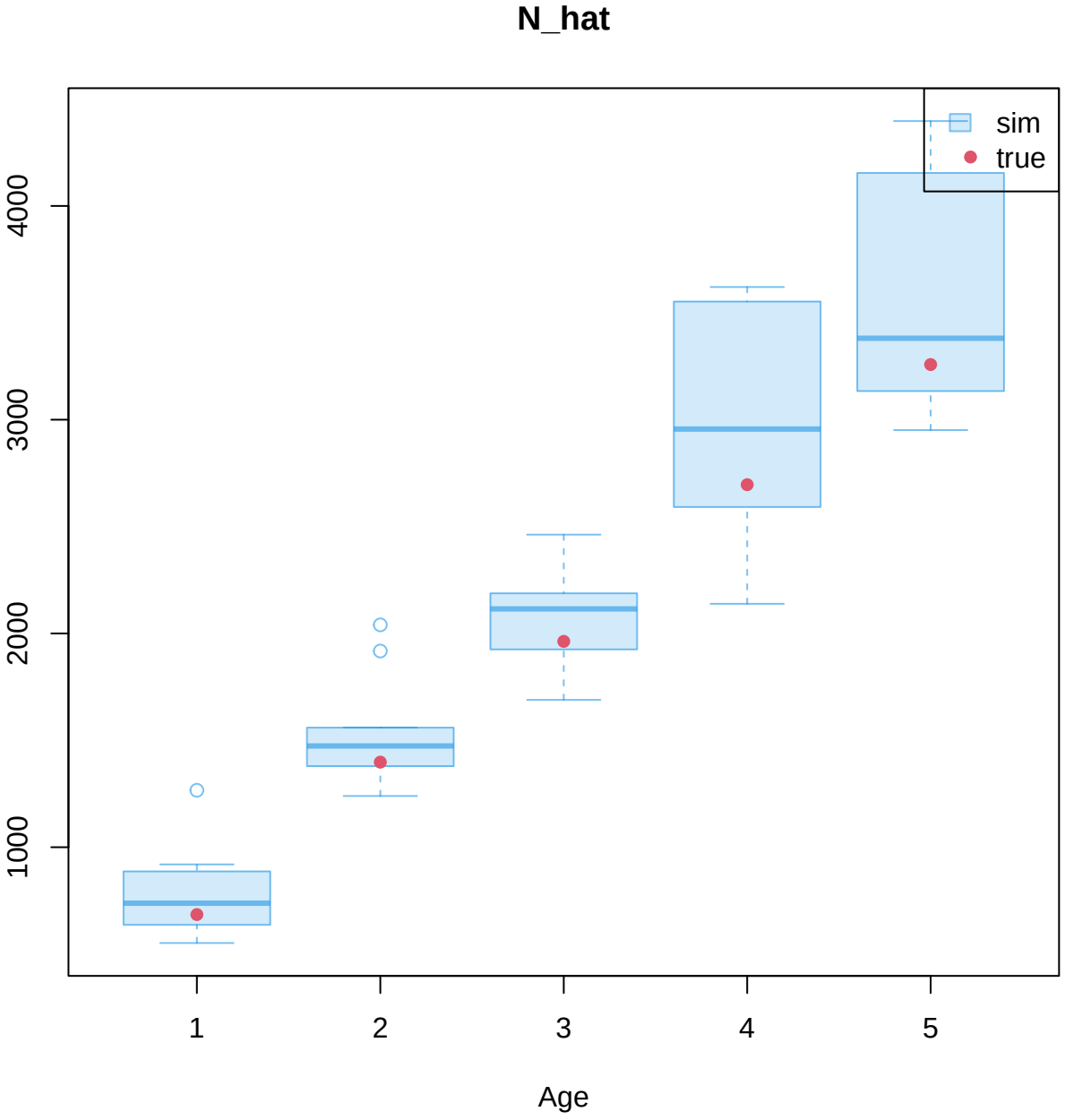

Sample
Length
100
200
300
400
500
1
2
3
4
5
Age

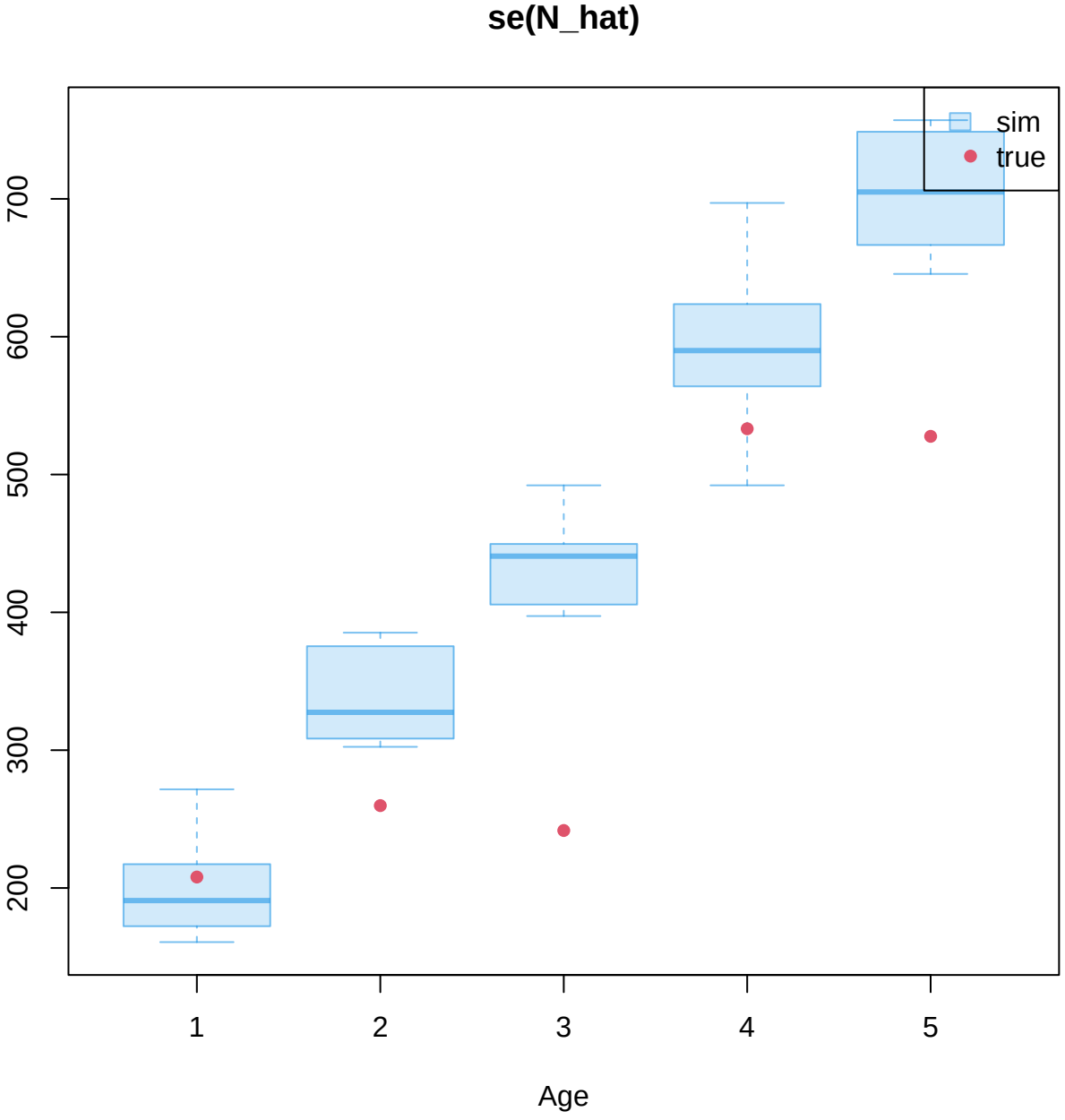

Population
Length
0
100
200
300
400
500
600
Stratum

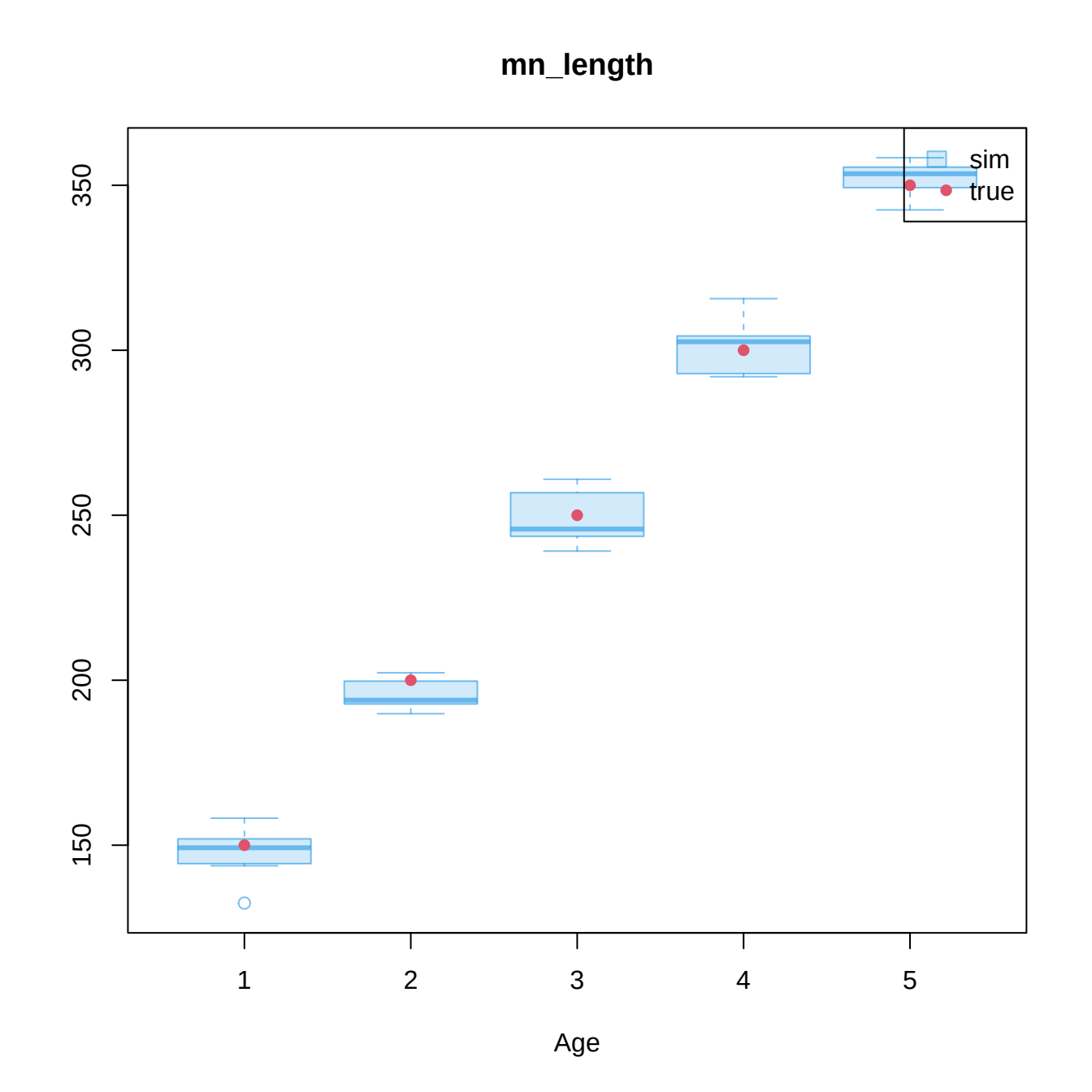

Sample
Length
100
200
300
400
500
Stratum

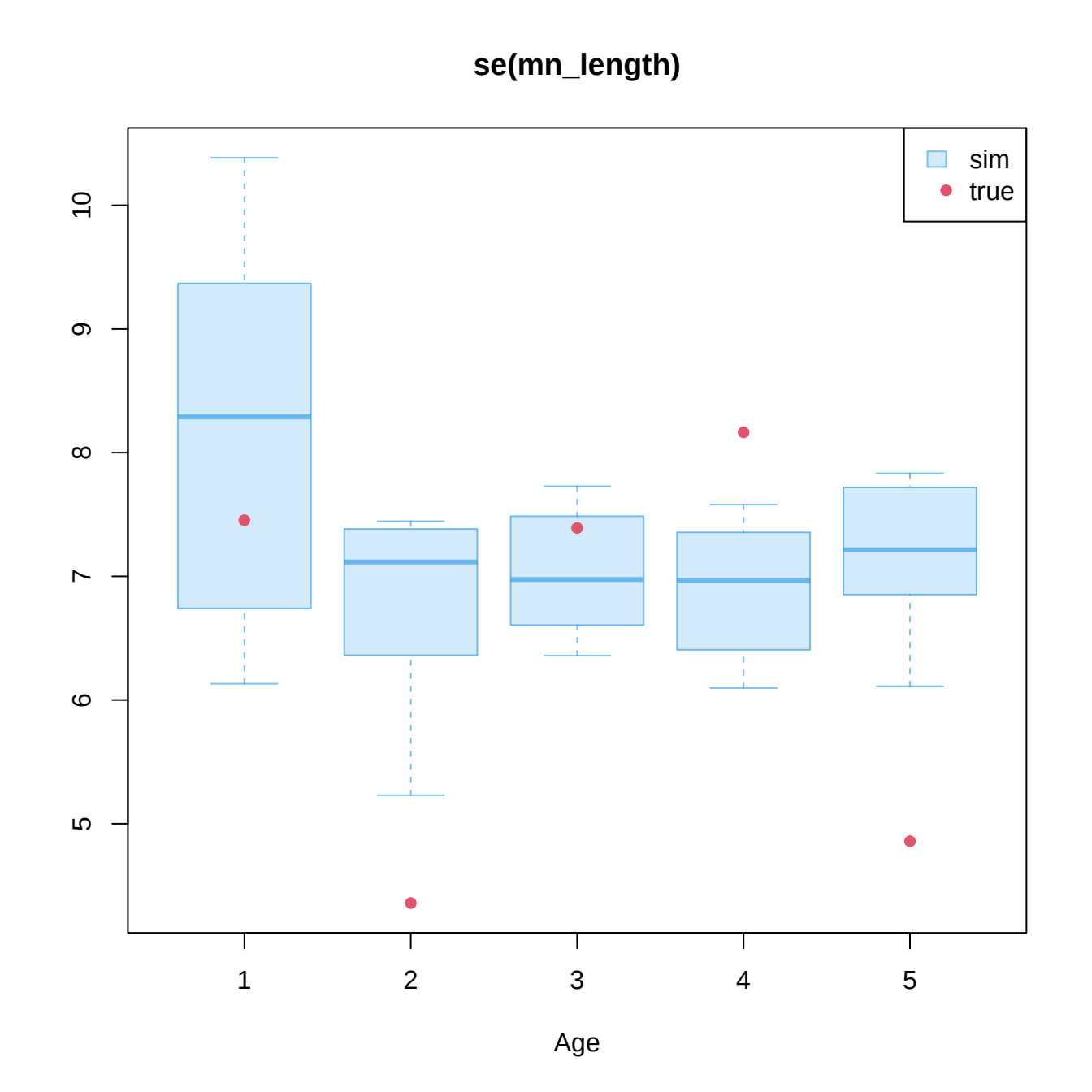

p_hat
sim
true
0.05
0.10
0.15
0.20
0.25
0.30
0.35
1
2
3
4
5
Age

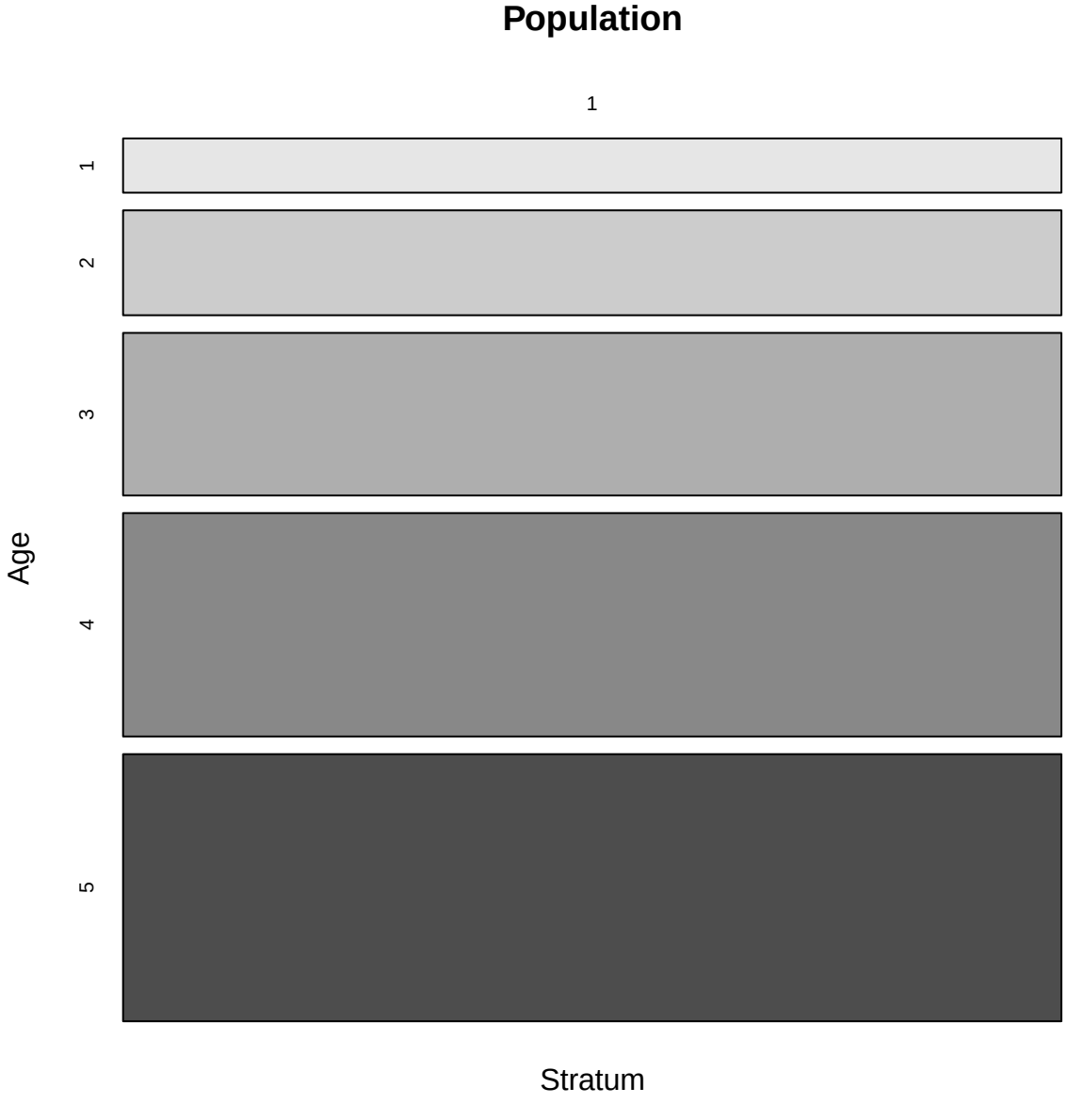

se(p_hat)
sim
true
0.025
0.020
0.015
1
2
3
4
5
Age

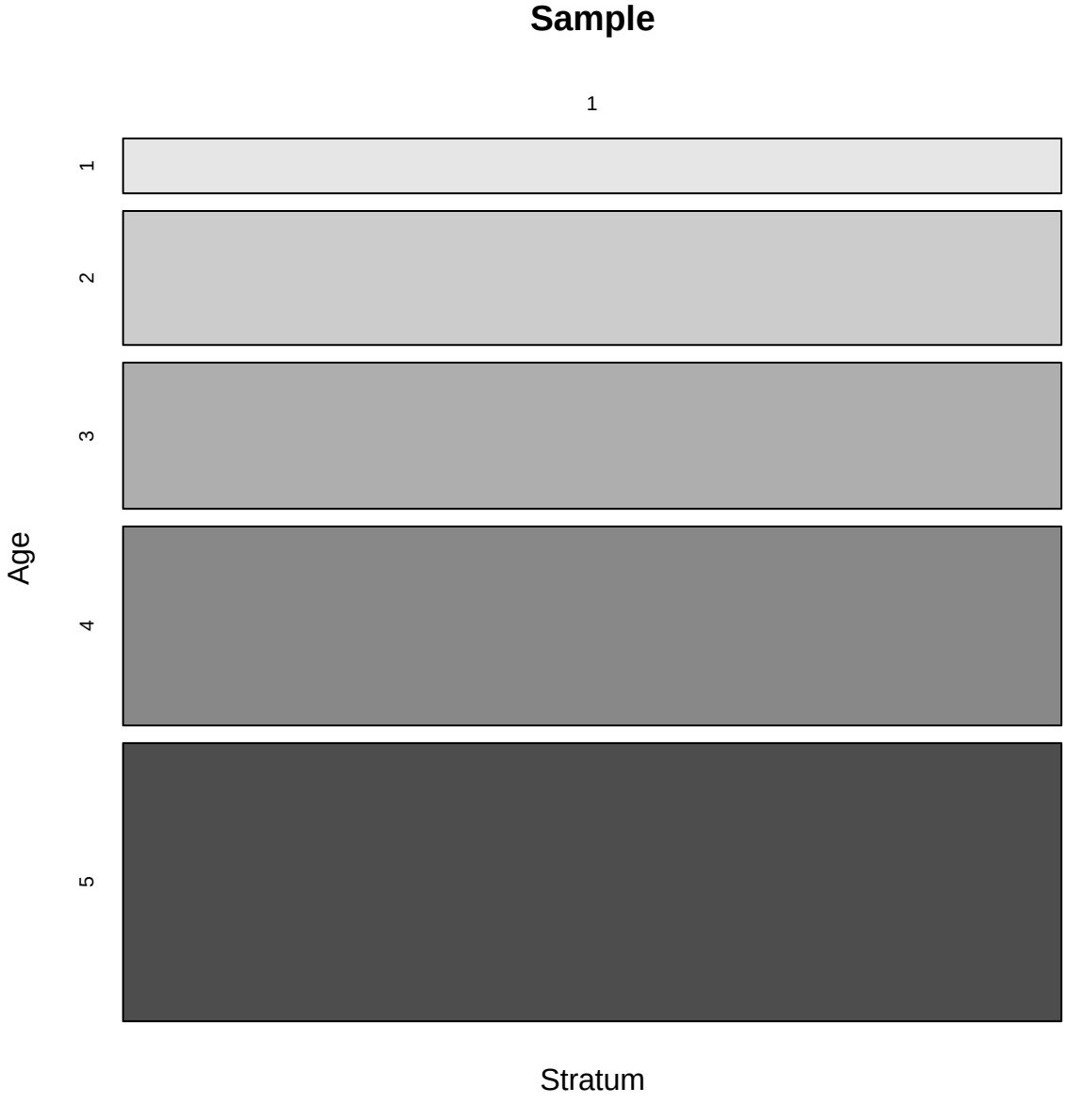

N_hat
sim
true
4000
3000
2000
1000
1
2
3
4
5
Age

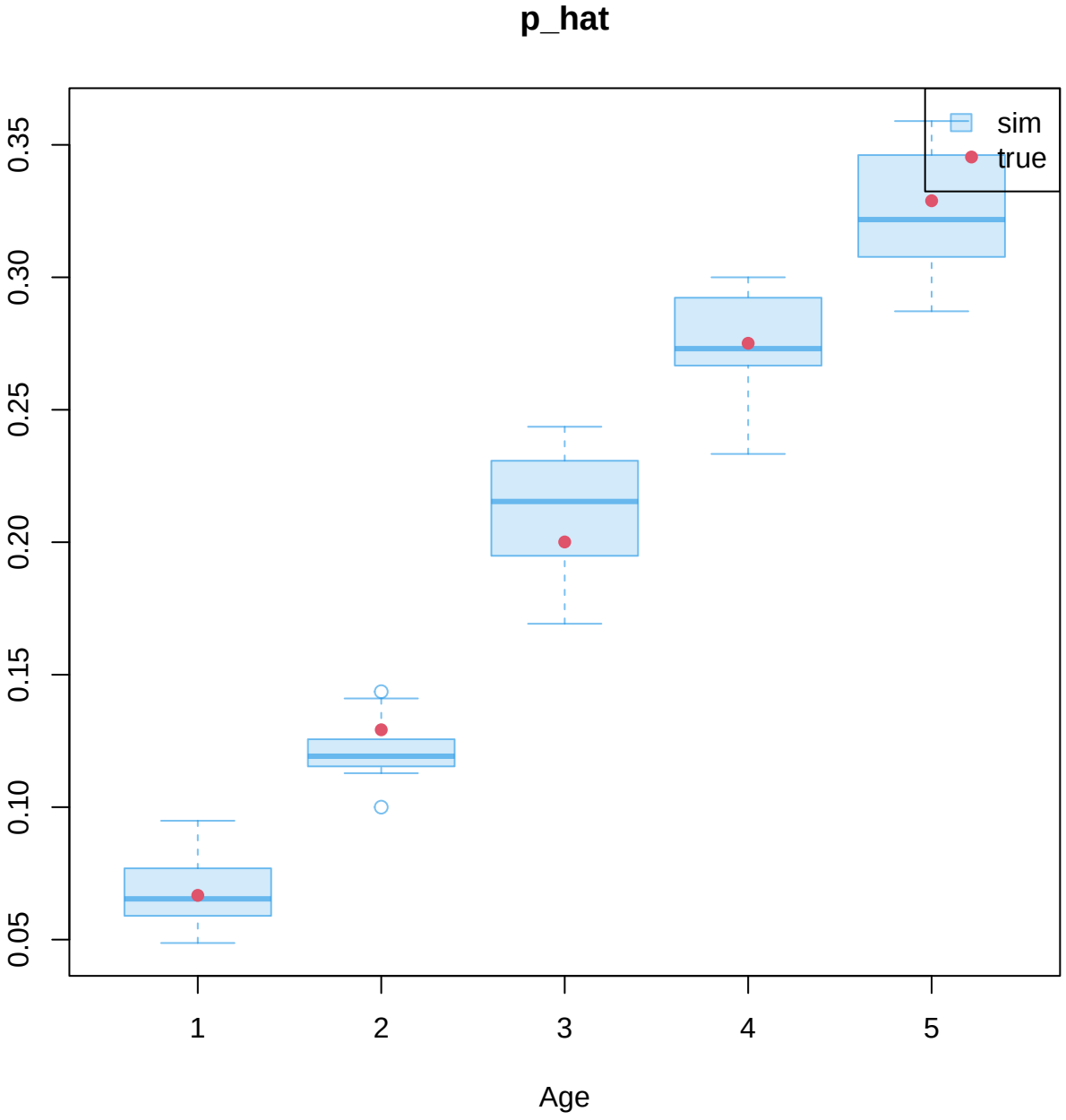

se(N_hat)
sim
true
700
600
500
400
300
200
1
2
3
4
5
Age

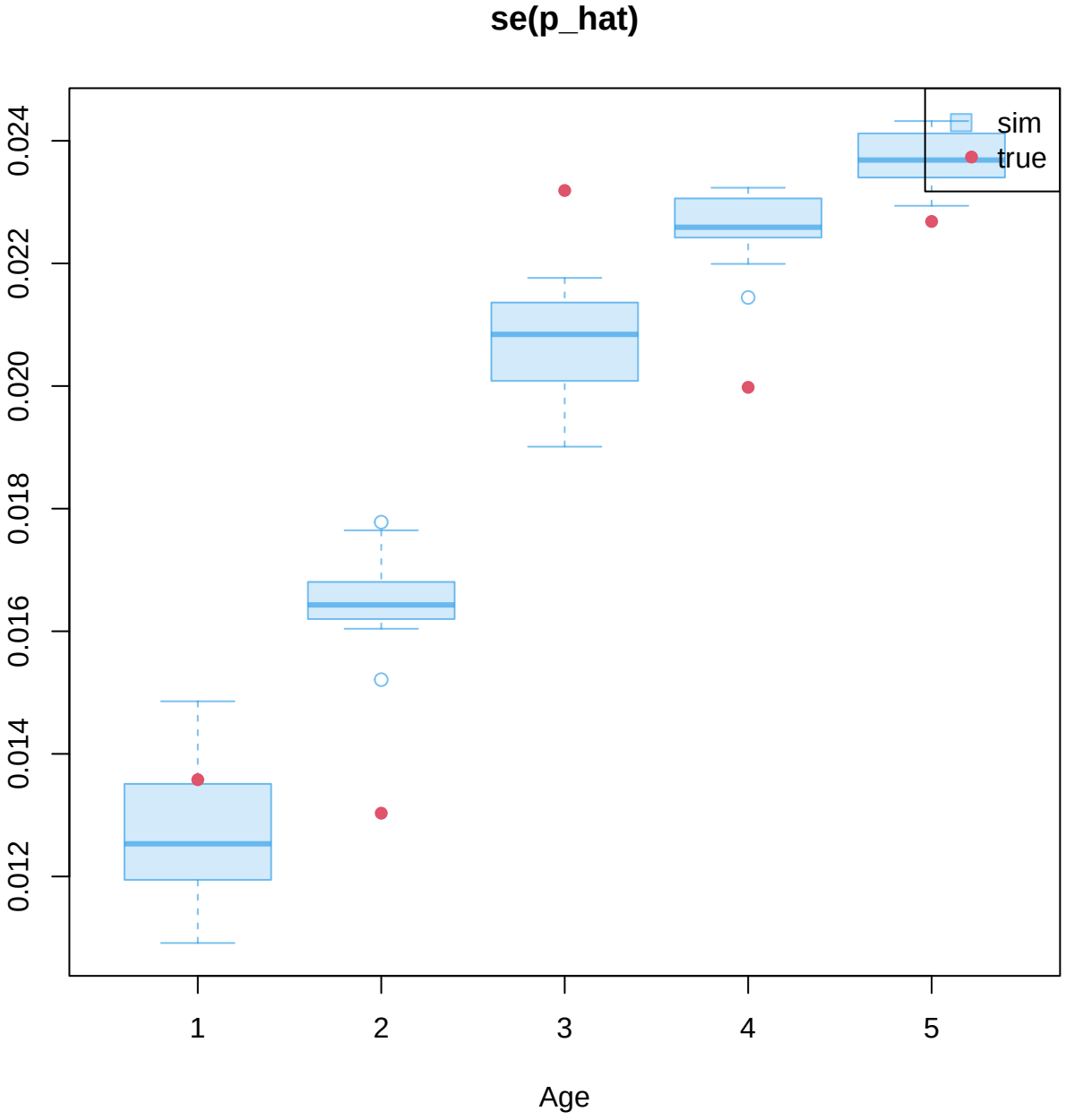

mn_length
sim
true
350
300
250
200
150
1
2
3
4
5
Age

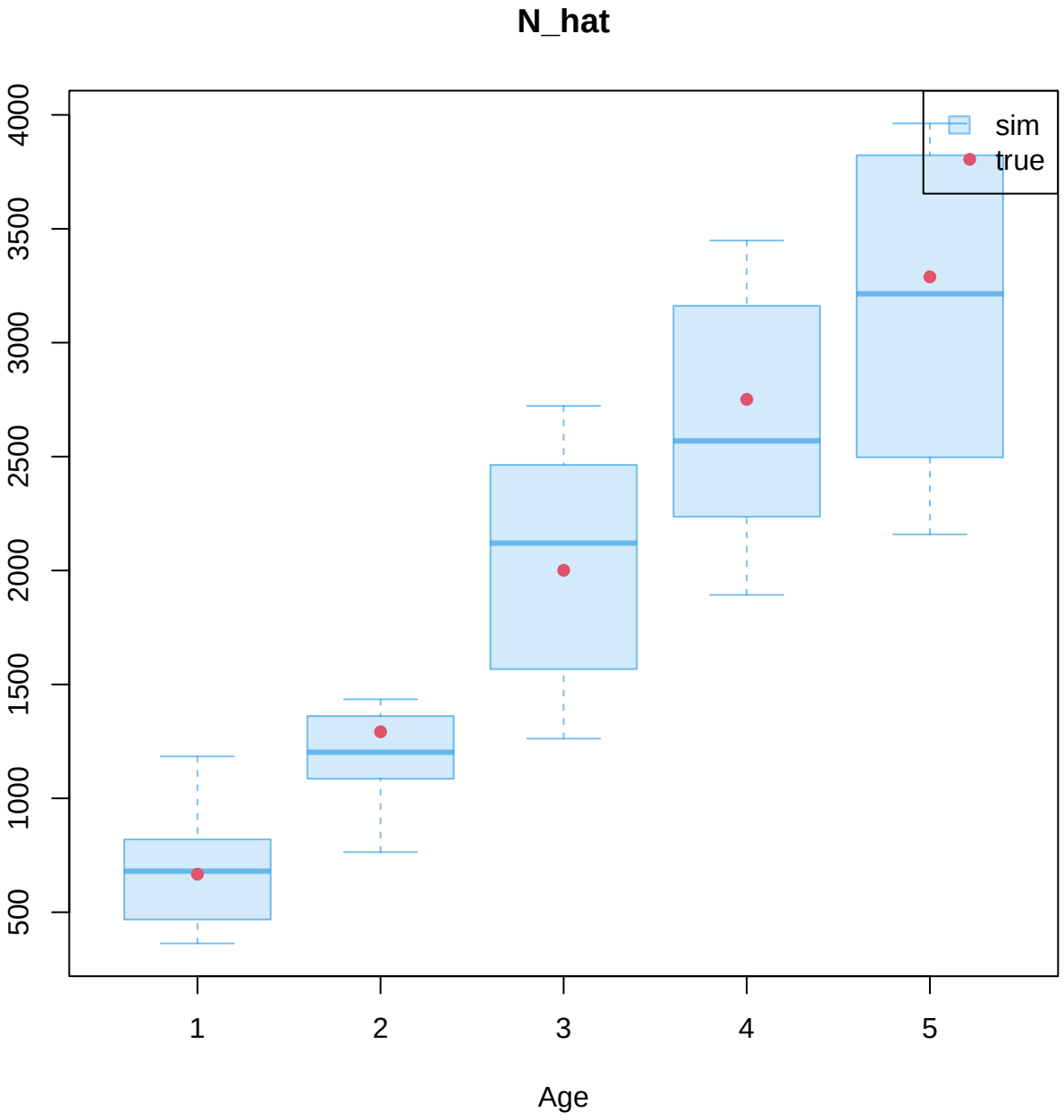

se(mn_length)
sim
true
10
9
8
7
6
5
1
2
3
4
5
Age

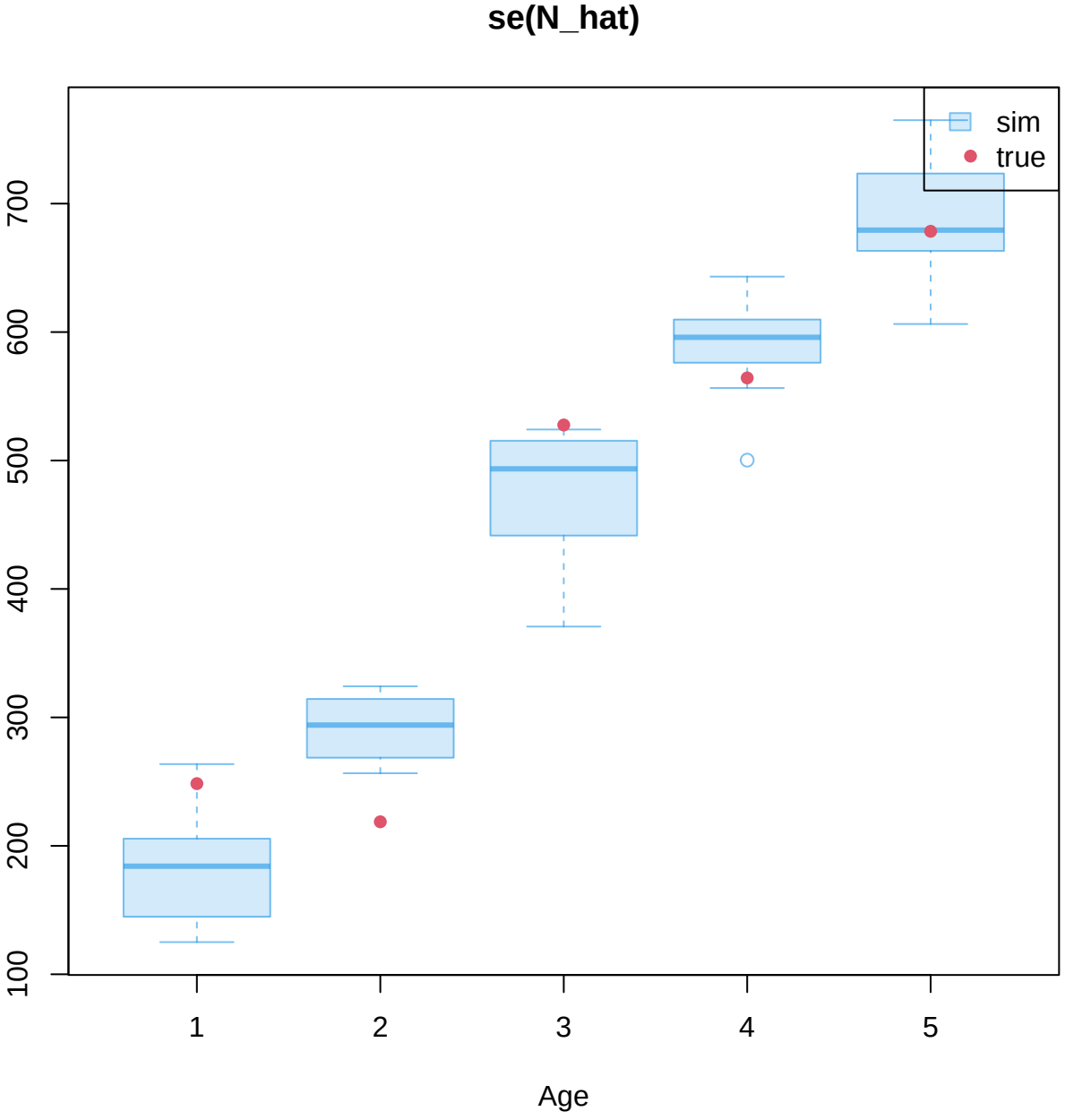

Population
1
1
2
3
4
5
Age
Stratum

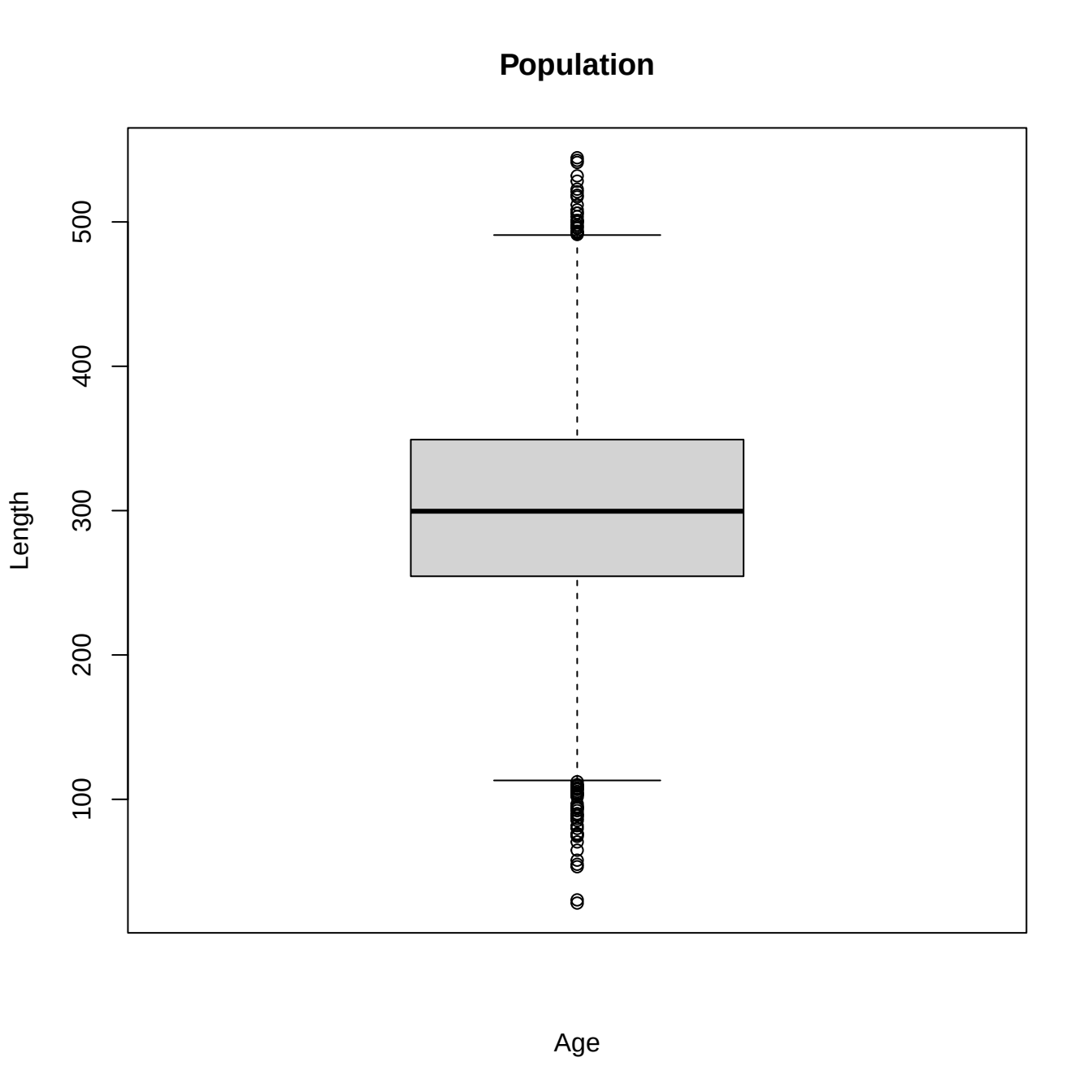

Sample
1
1
2
3
4
5
Age
Stratum

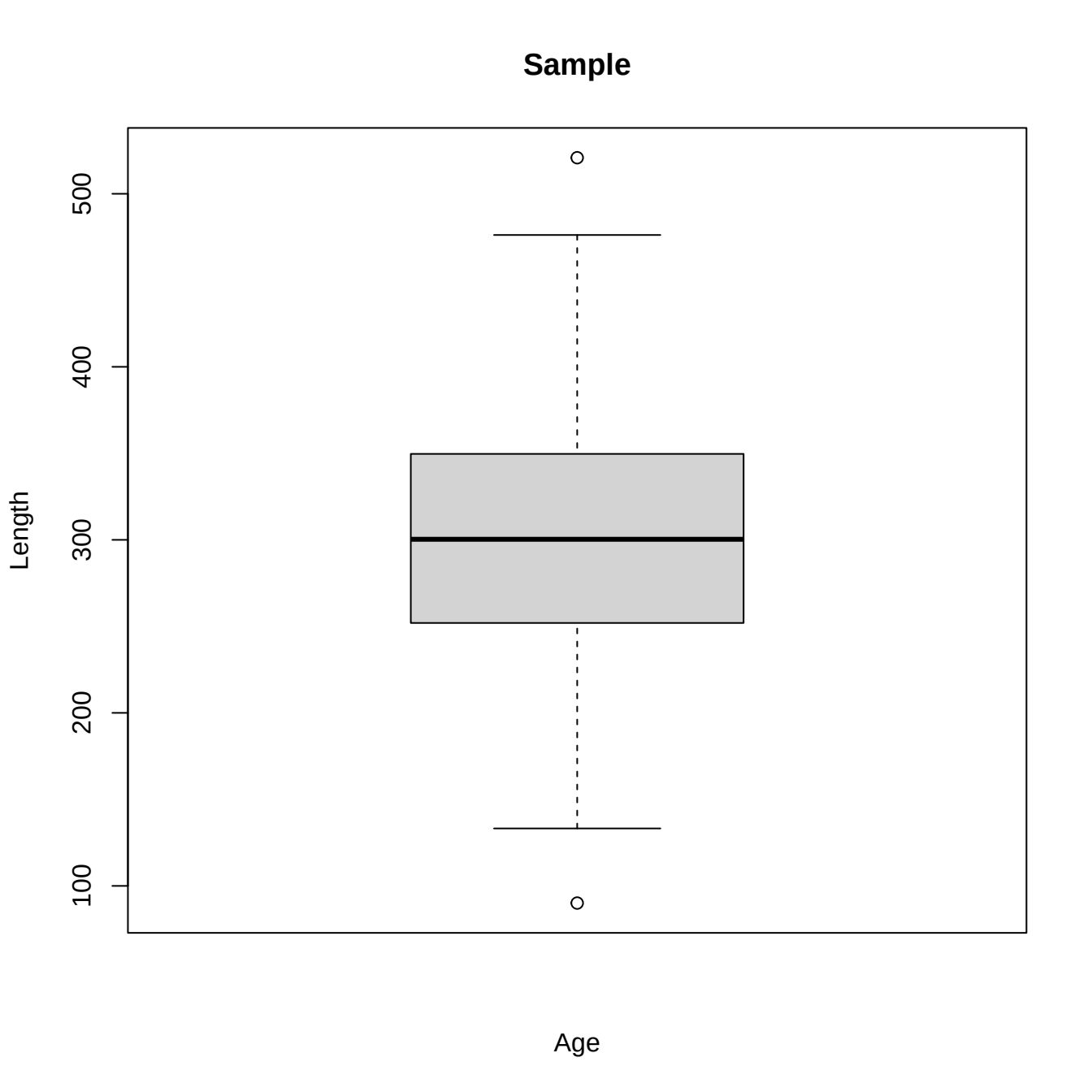

p_hat
sim
true
0.05
0.10
0.15
0.20
0.25
0.30
0.35
1
2
3
4
5
Age

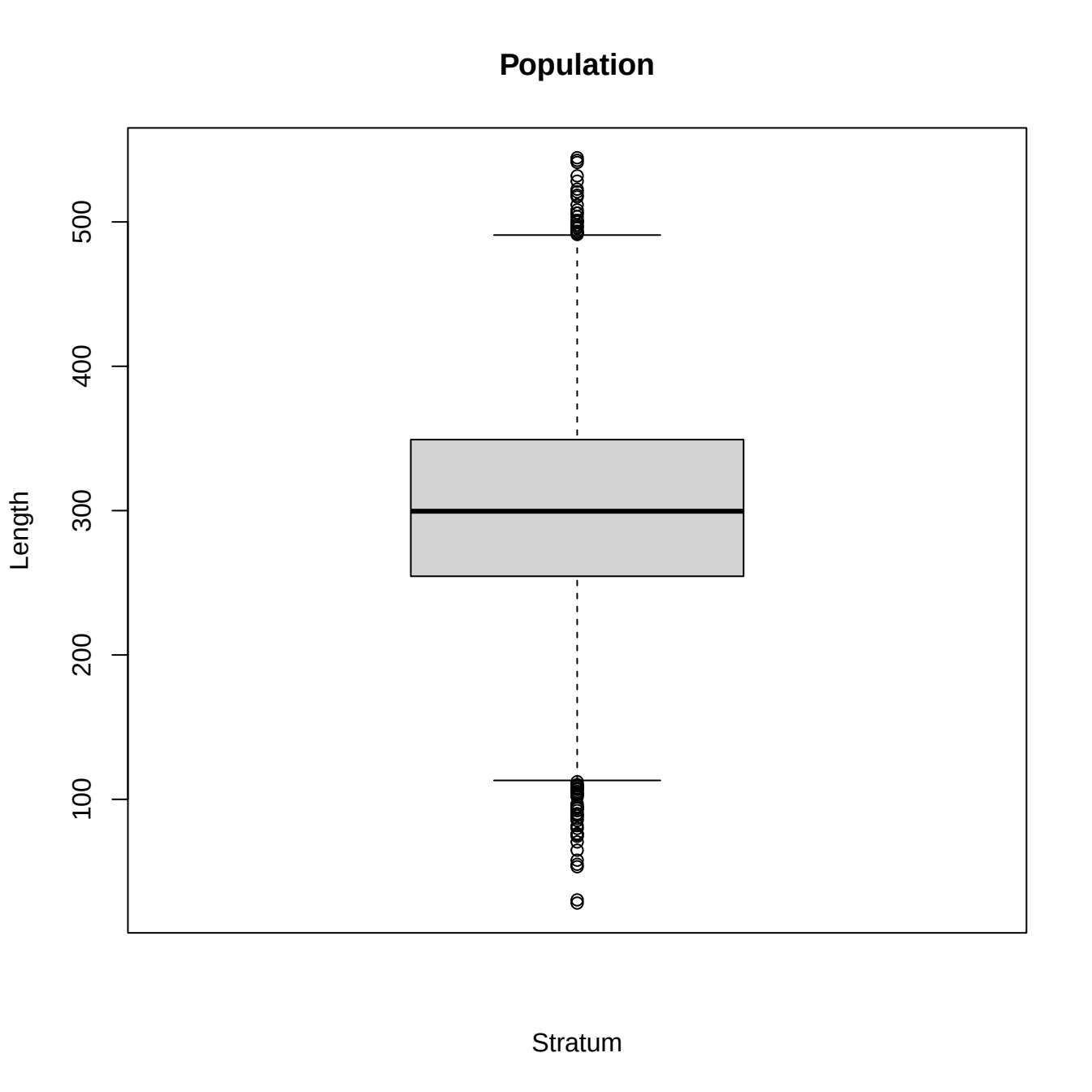

se(p_hat)
0.012
0.014
0.016
0.018
0.020
0.022
0.024
1
2
3
4
5
Age
sim
true

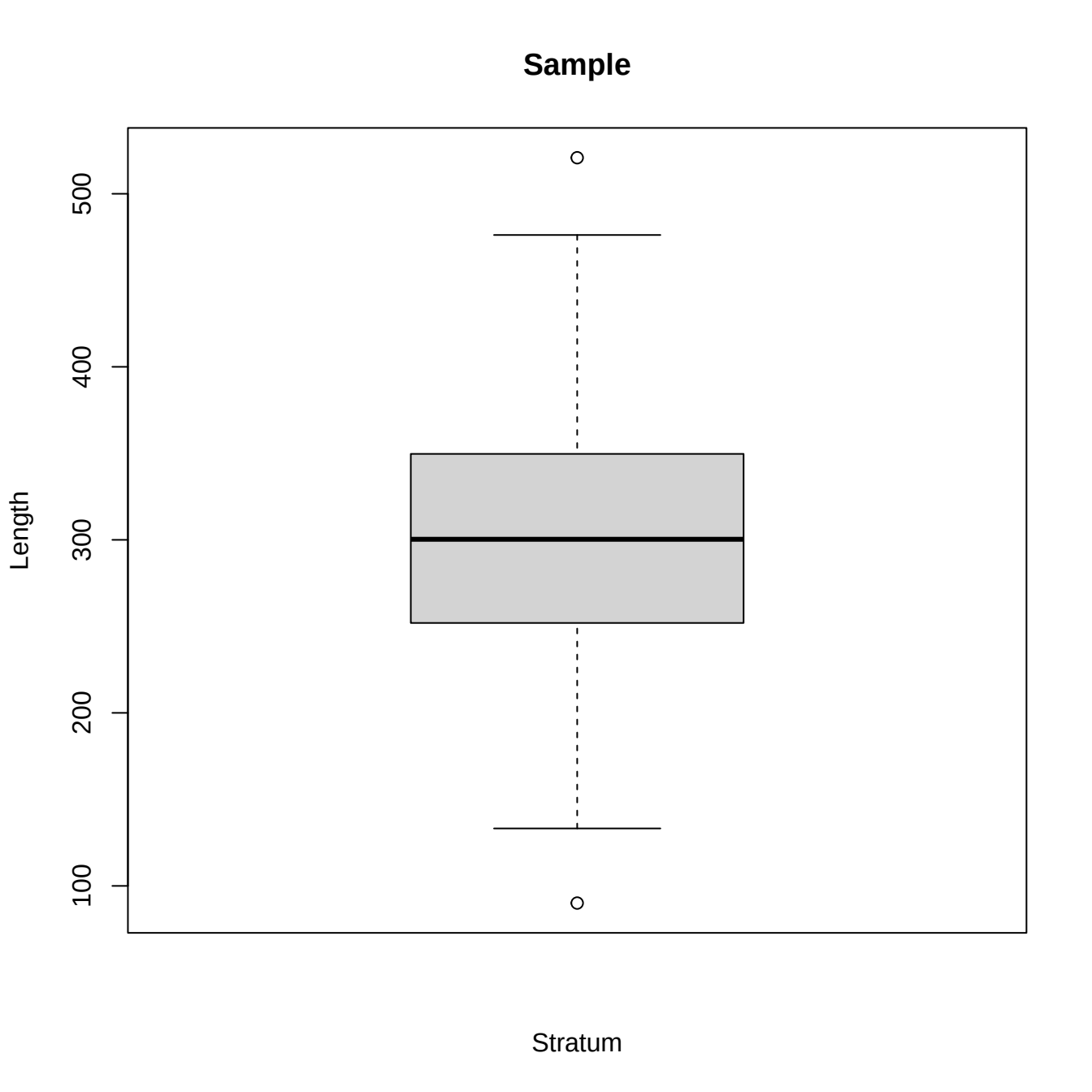

N_hat
sim
true
4000
3500
3000
2500
2000
1500
1000
500
1
2
3
4
5
Age

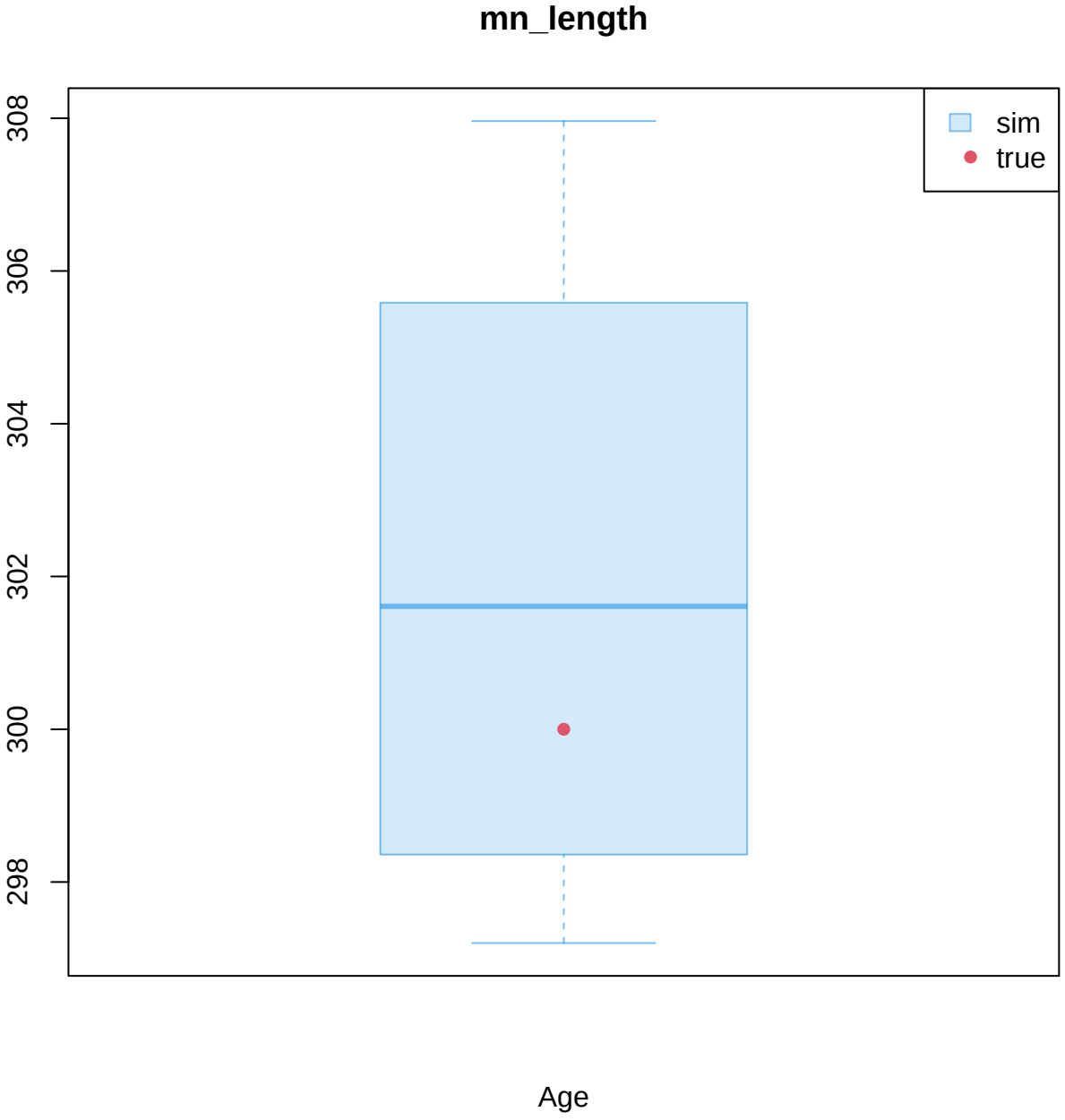

se(N_hat)
sim
true
100
200
300
400
500
600
700
1
2
3
4
5
Age

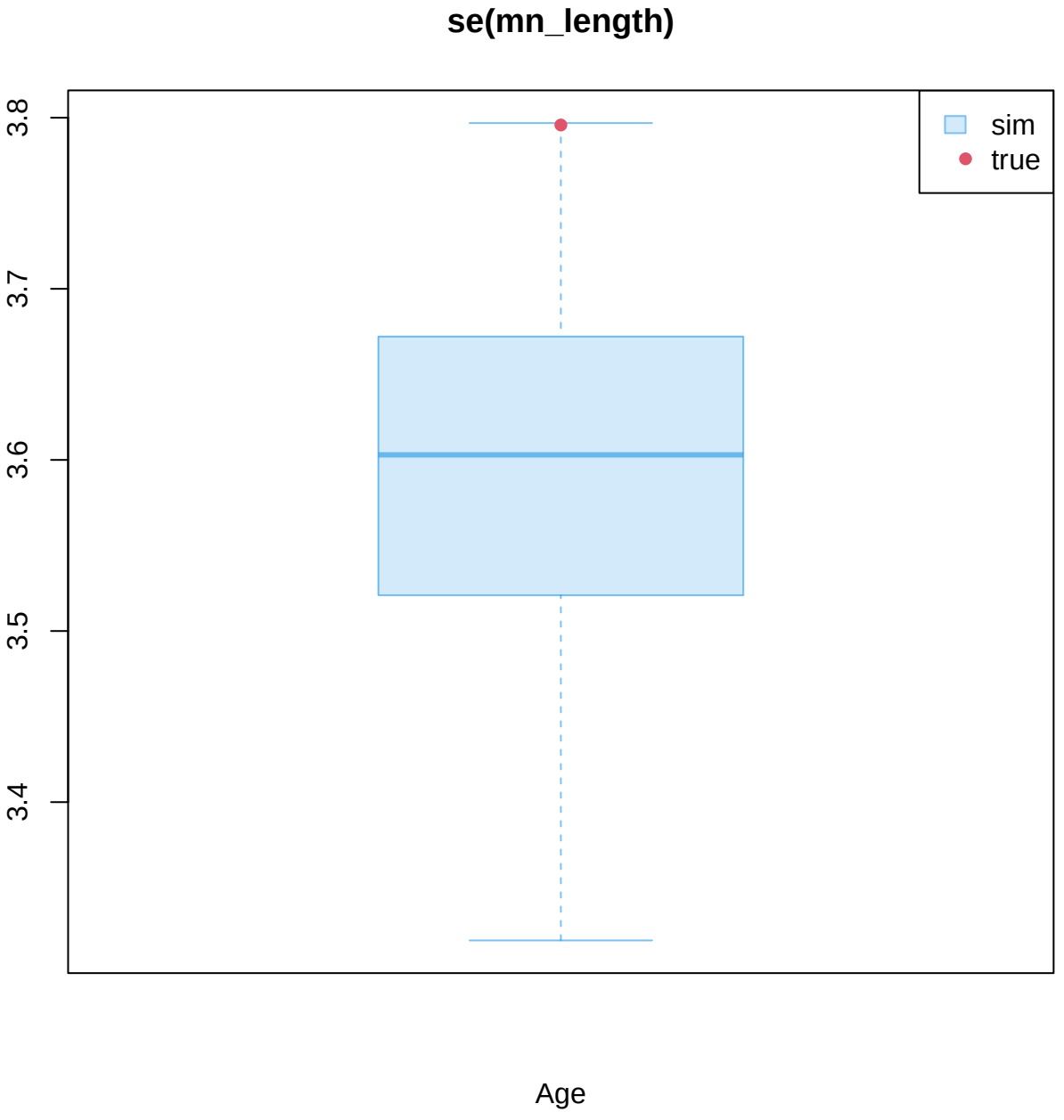

Population
Length
100
200
300
400
500
Age

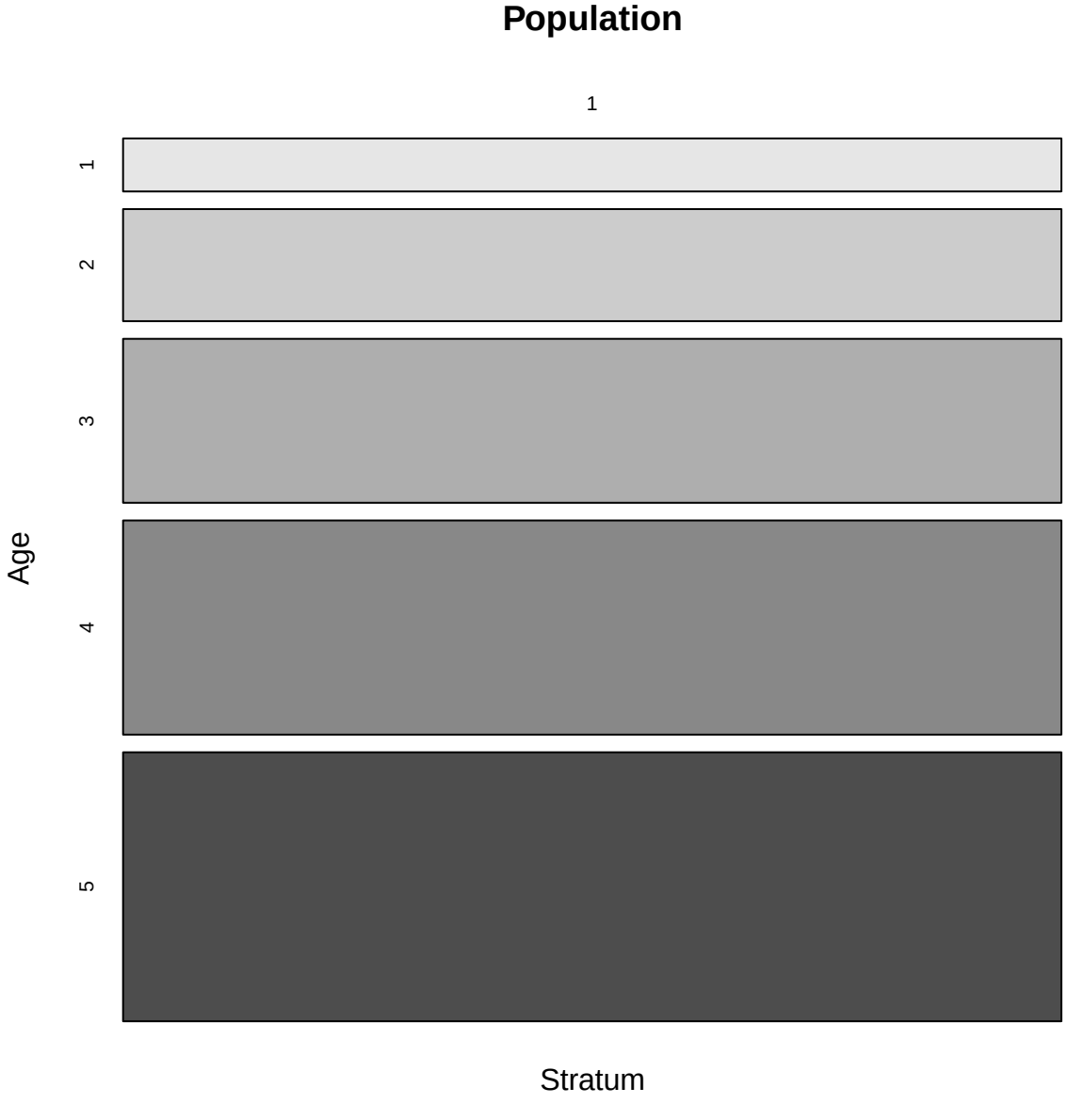

Sample
Length
100
200
300
400
500
Age

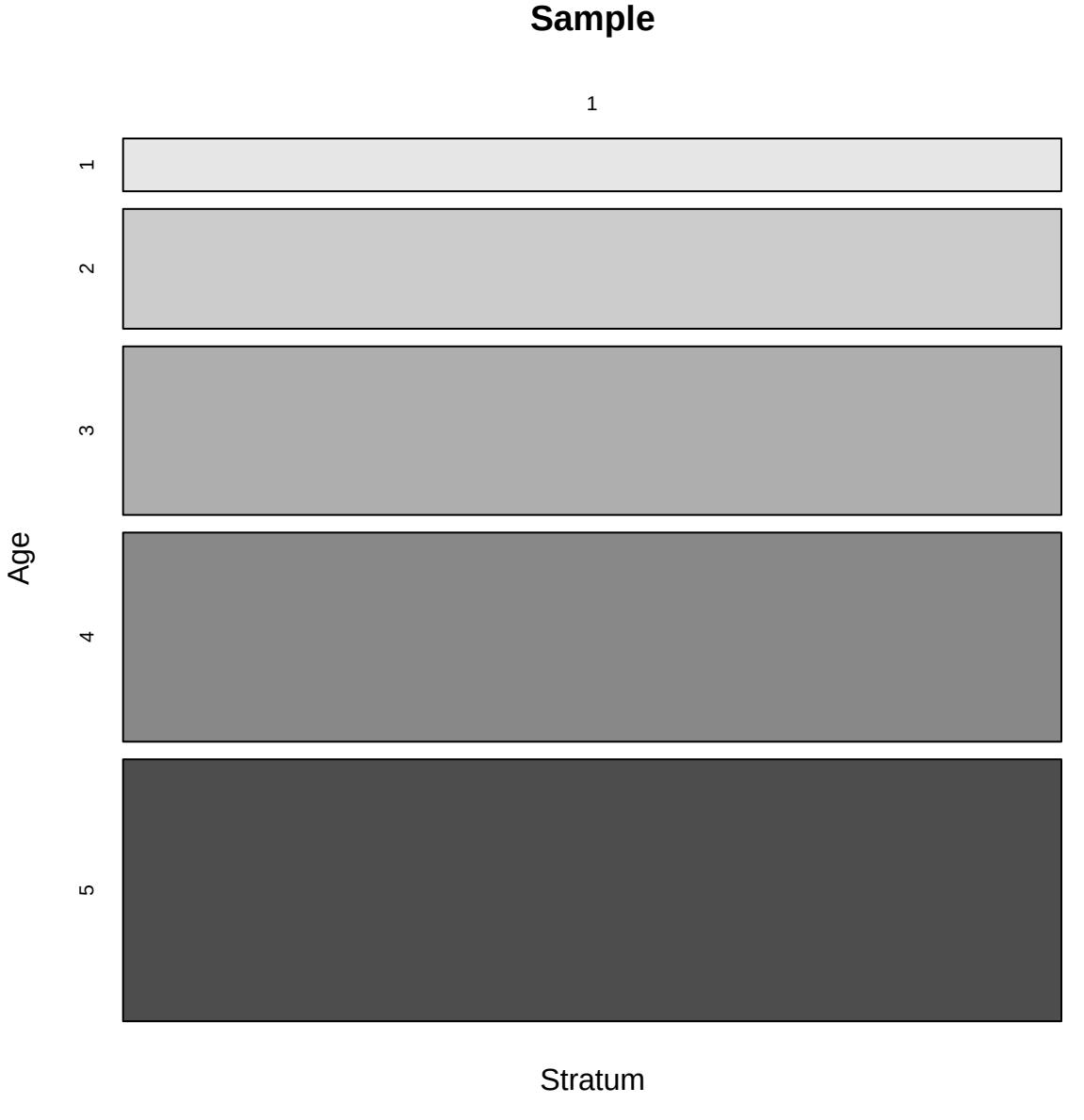

Population
Length
100
200
300
400
500
Stratum

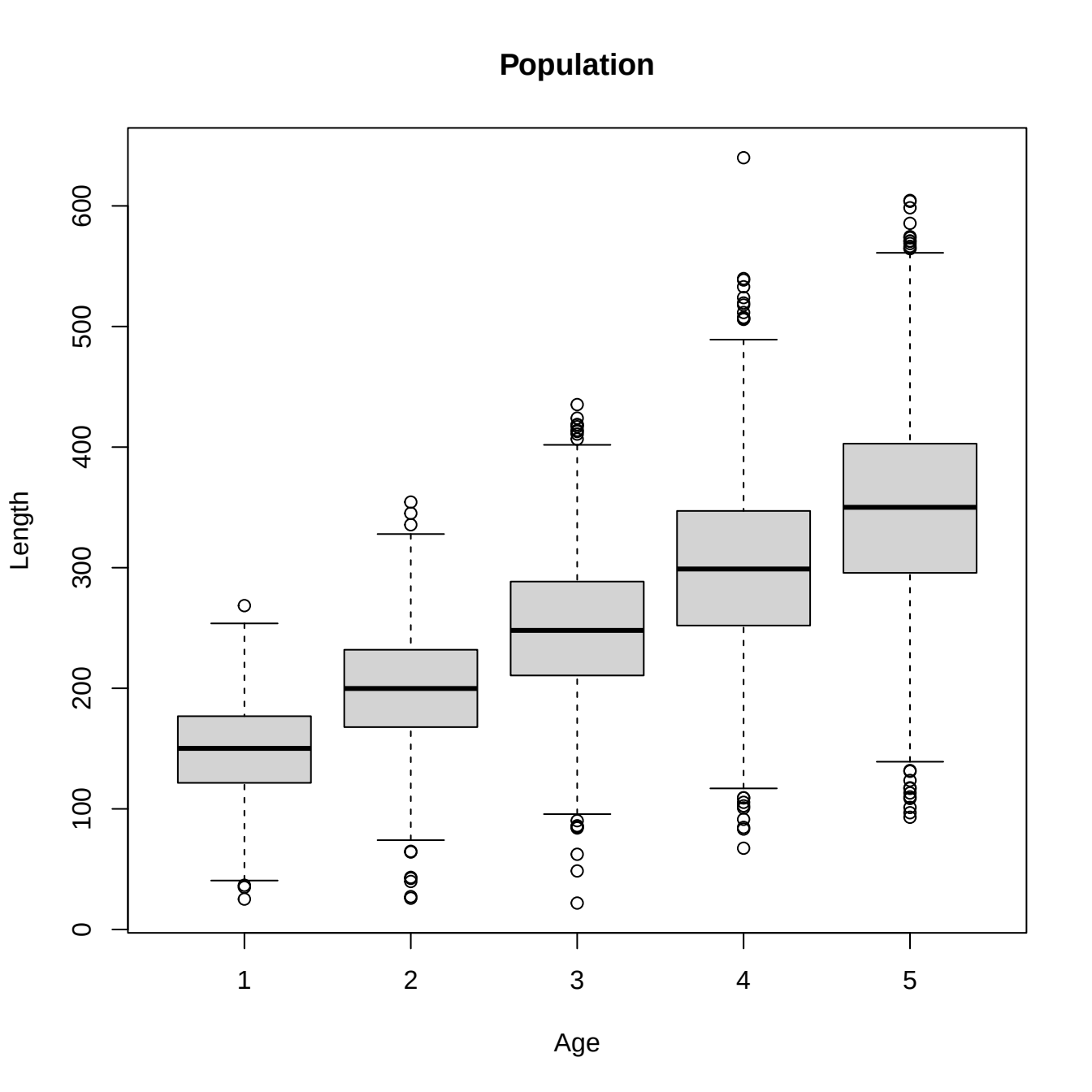

Sample
Length
100
200
300
400
500
Stratum

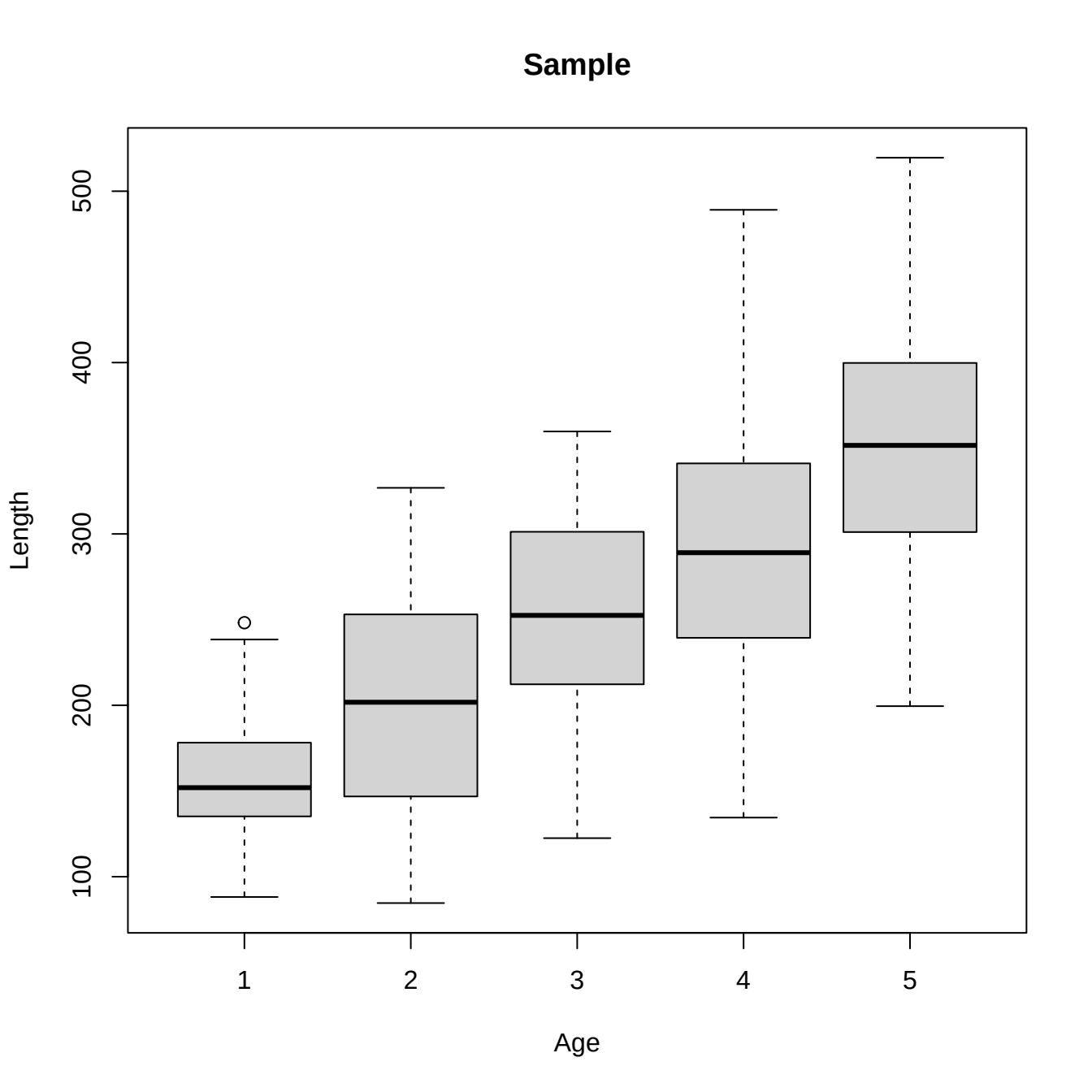

mn_length
sim
true
308
306
304
302
300
298
Age

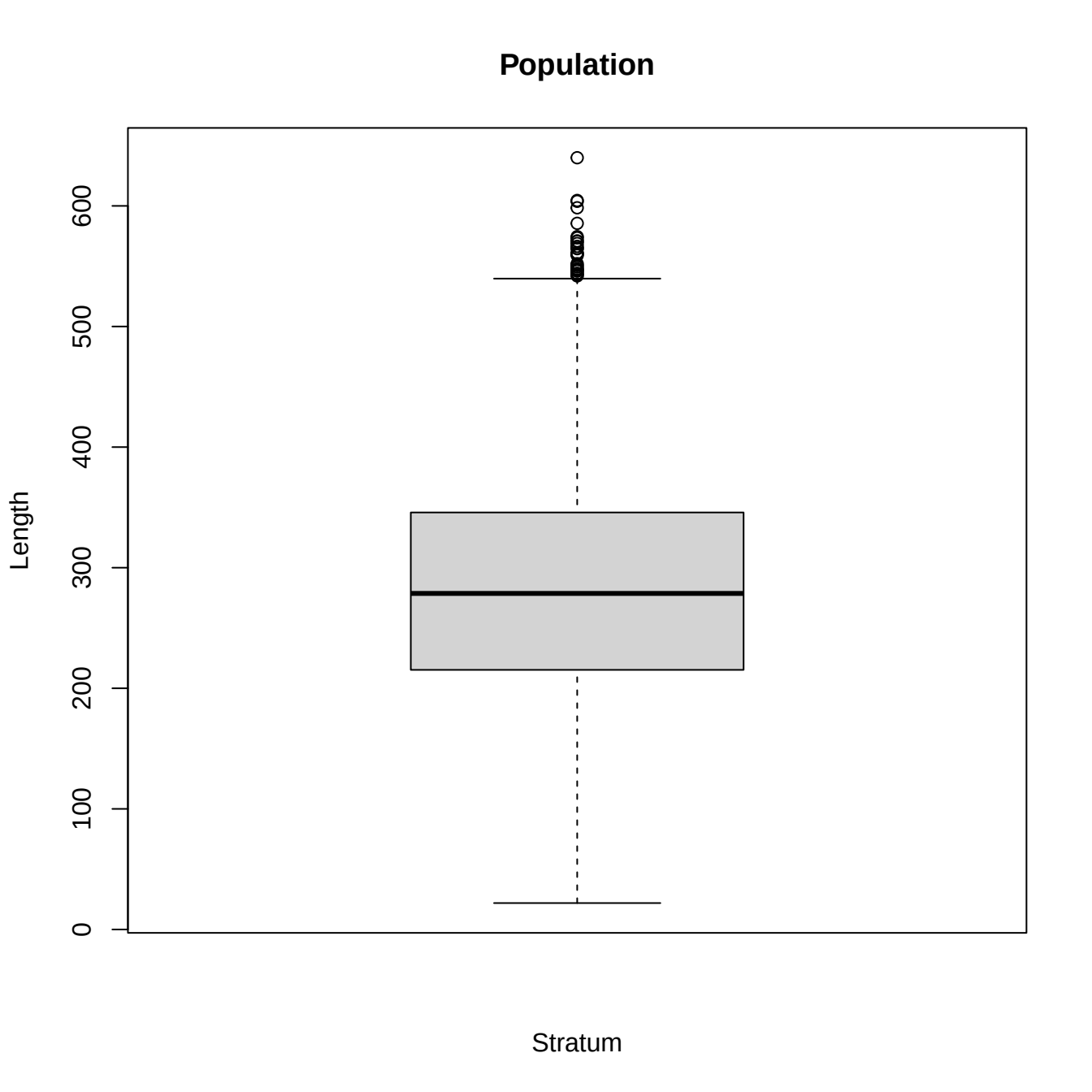

se(mn_length)
3.8
3.7
3.6
3.5
3.4
sim
true
Age

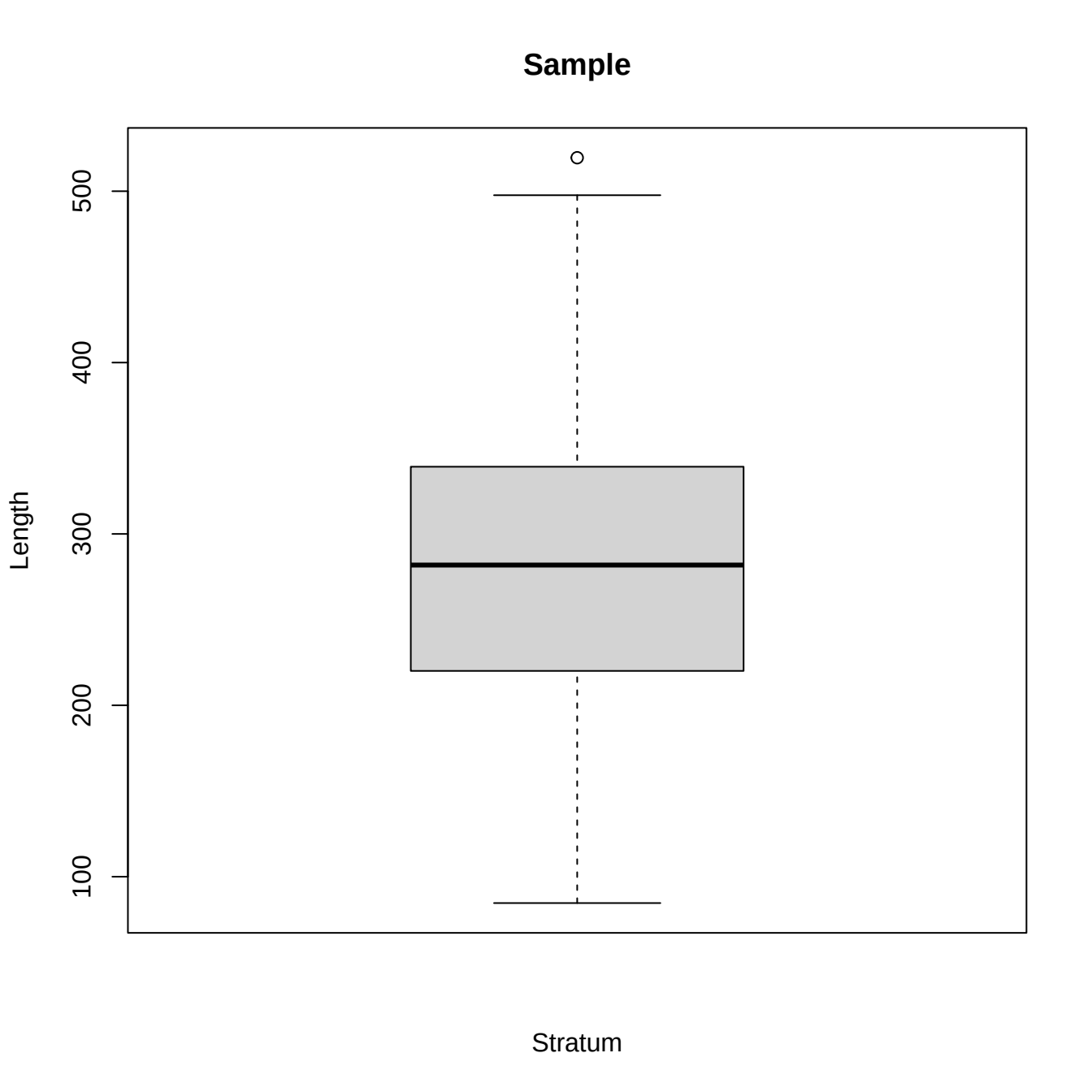

Population
1
1
2
3
4
5
Age
Stratum

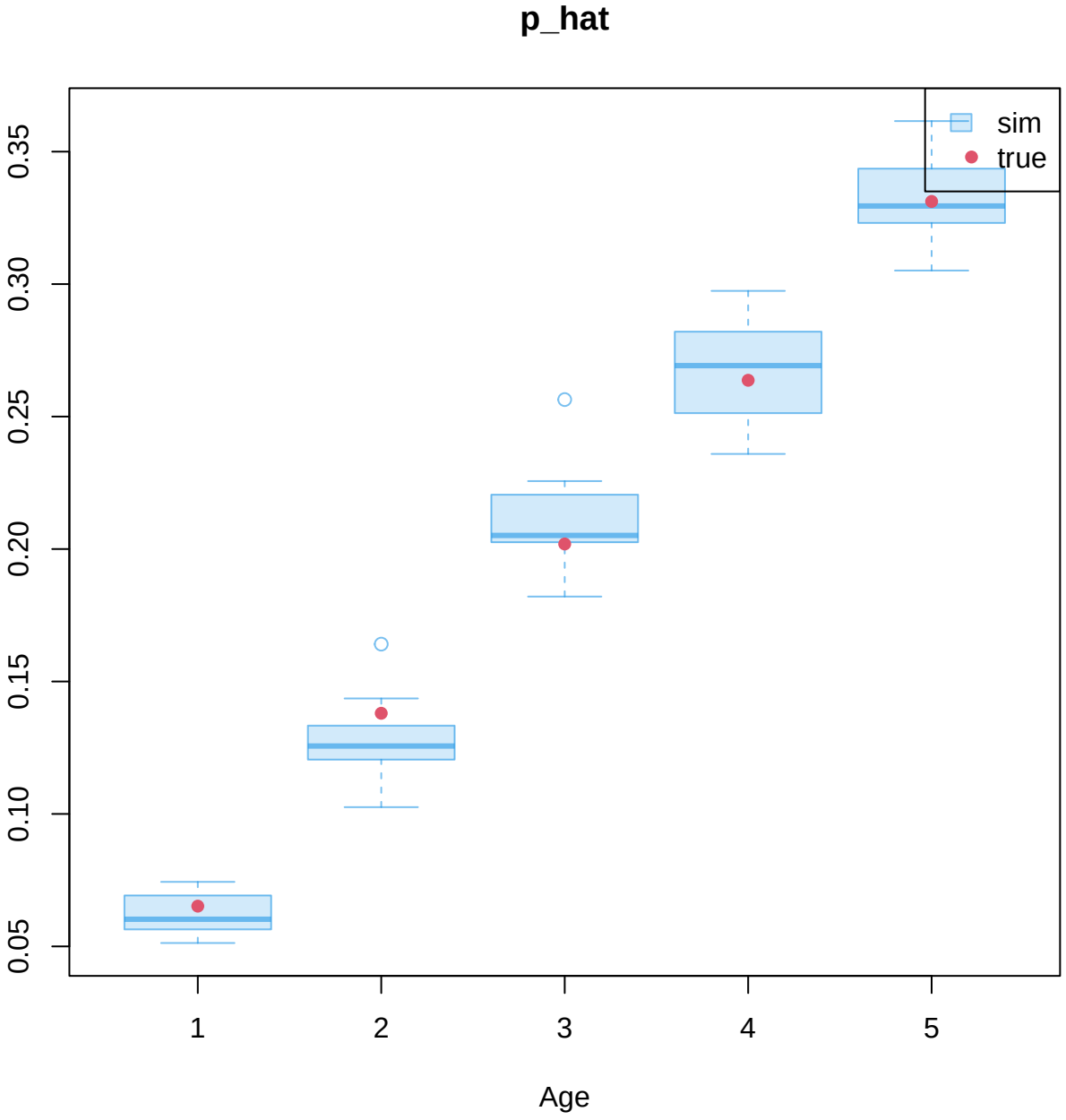

Sample
1
1
2
3
4
5
Age
Stratum

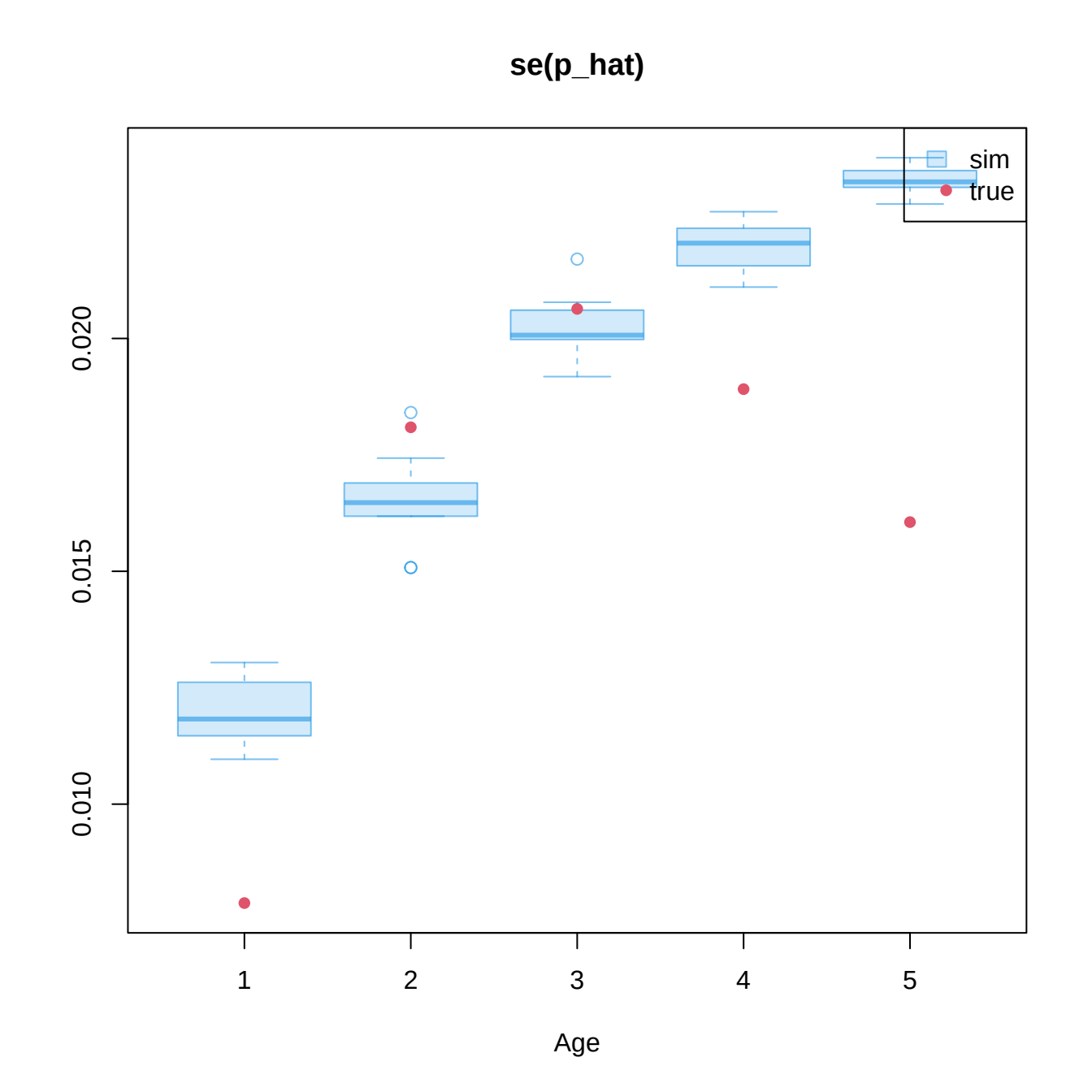

Population
Length
0
100
200
300
400
500
600
1
2
3
4
5
Age

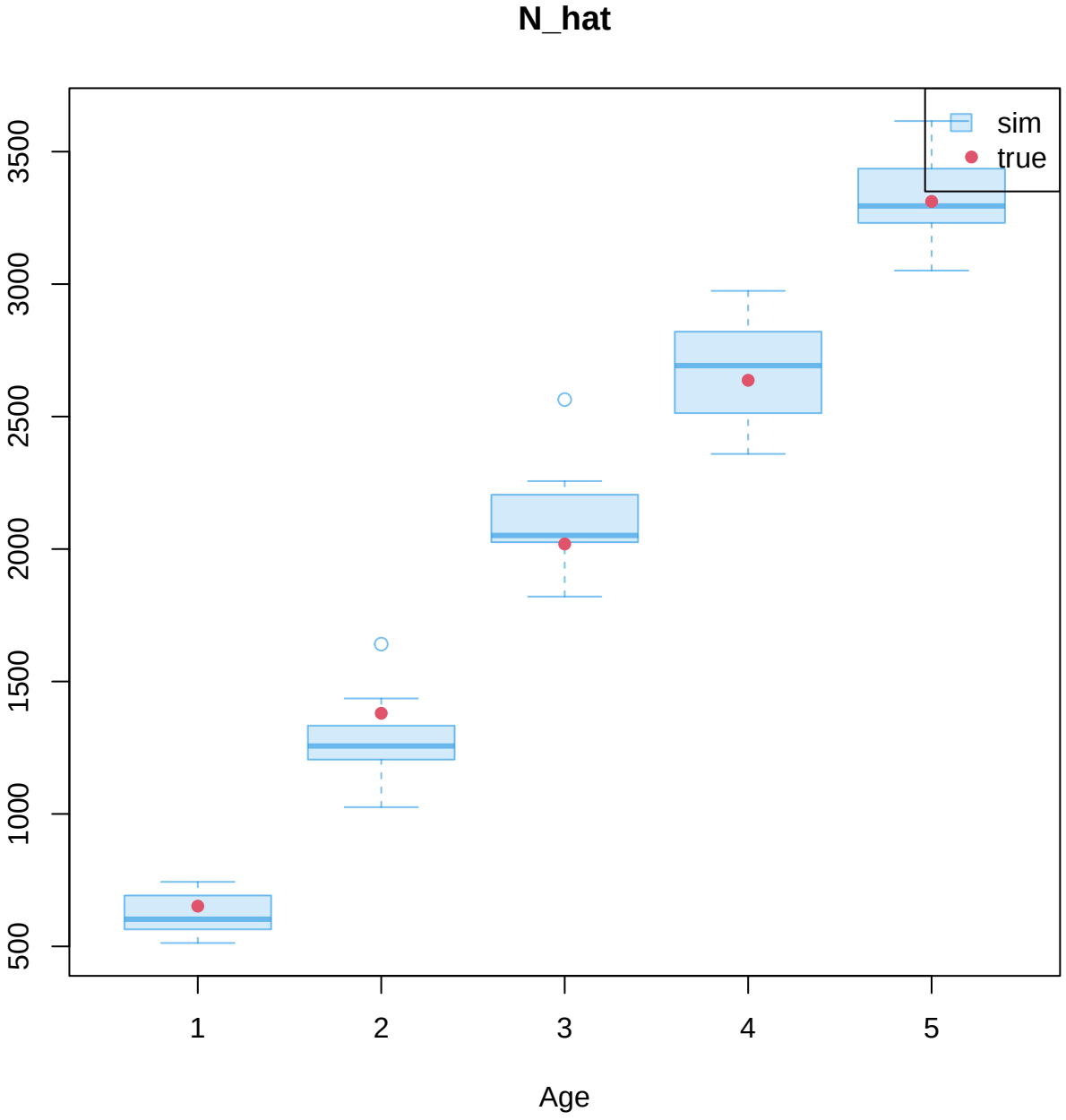

Sample
Length
100
200
300
400
500
1
2
3
4
5
Age

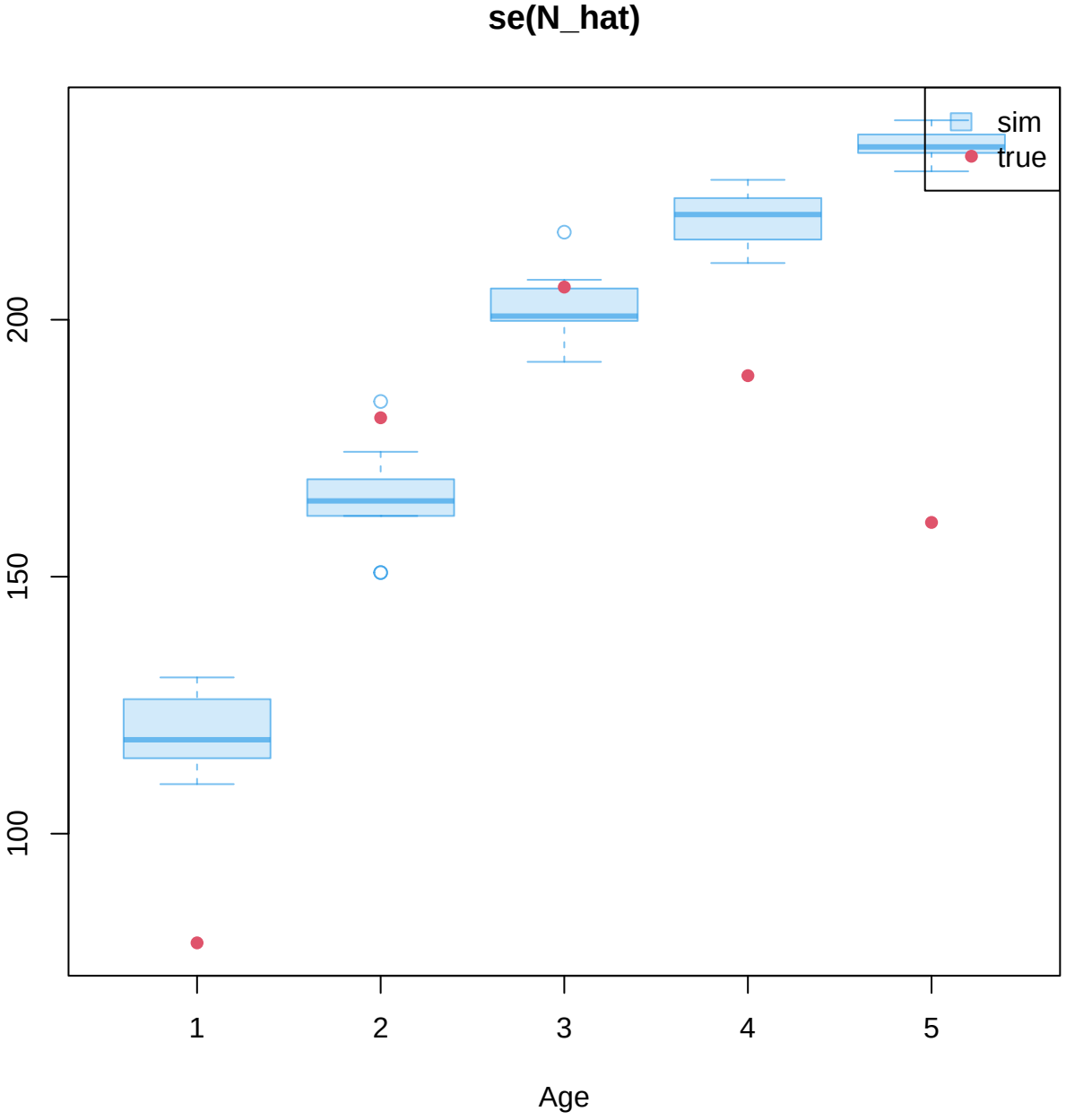

Population
Length
0
100
200
300
400
500
600
Stratum

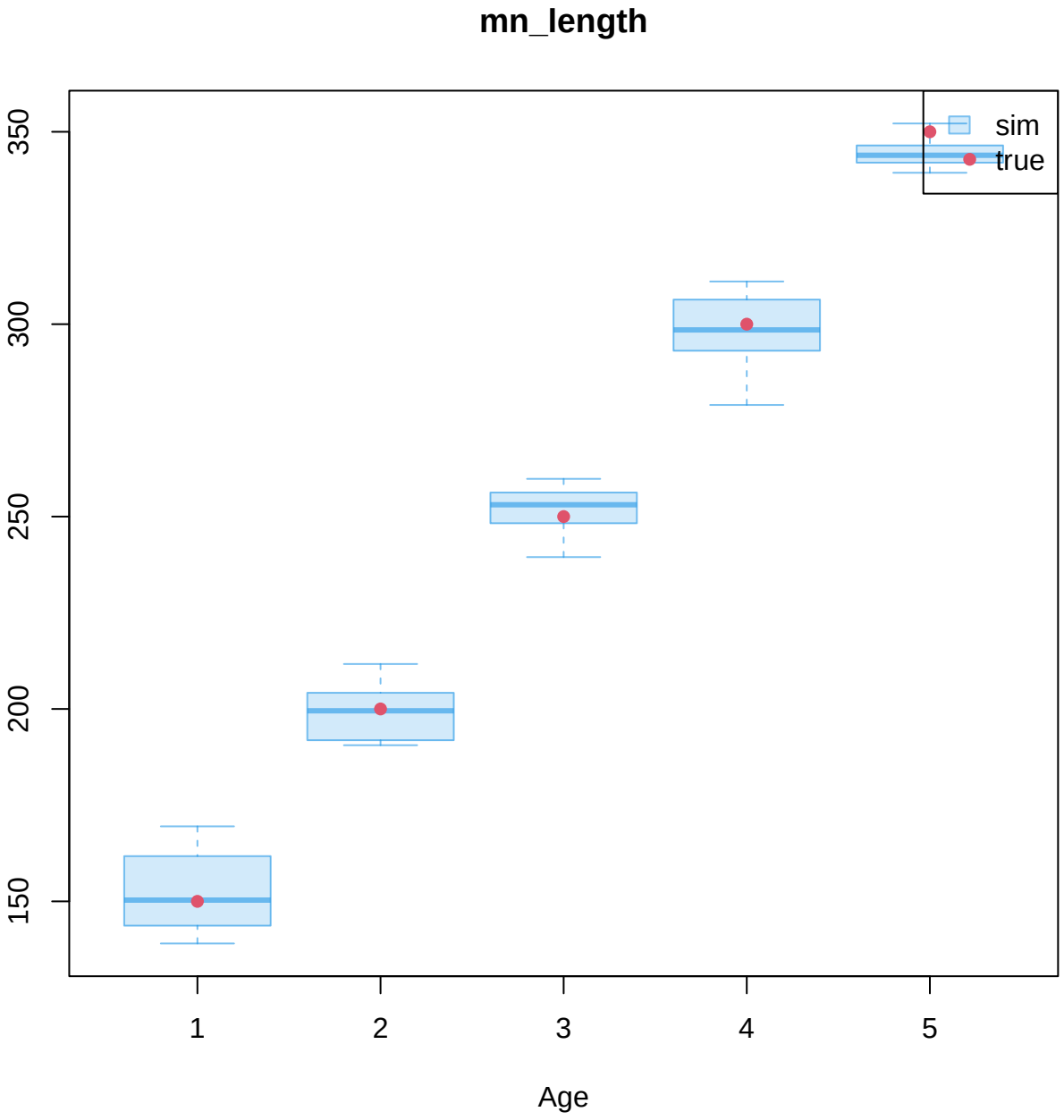

Sample
Length
100
200
300
400
500
Stratum

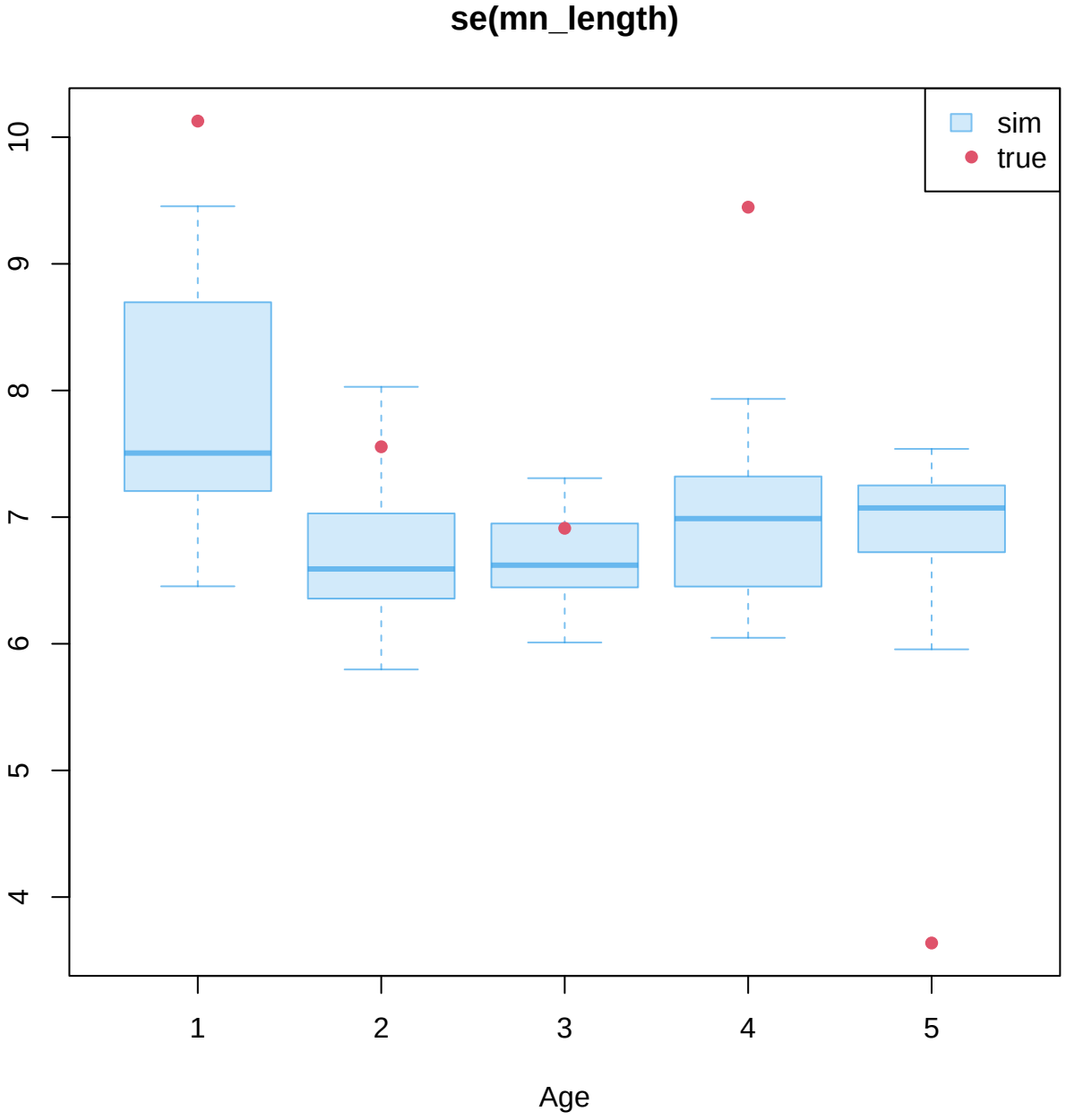

p_hat
sim
true
0.05
0.10
0.15
0.20
0.25
0.30
0.35
1
2
3
4
5
Age

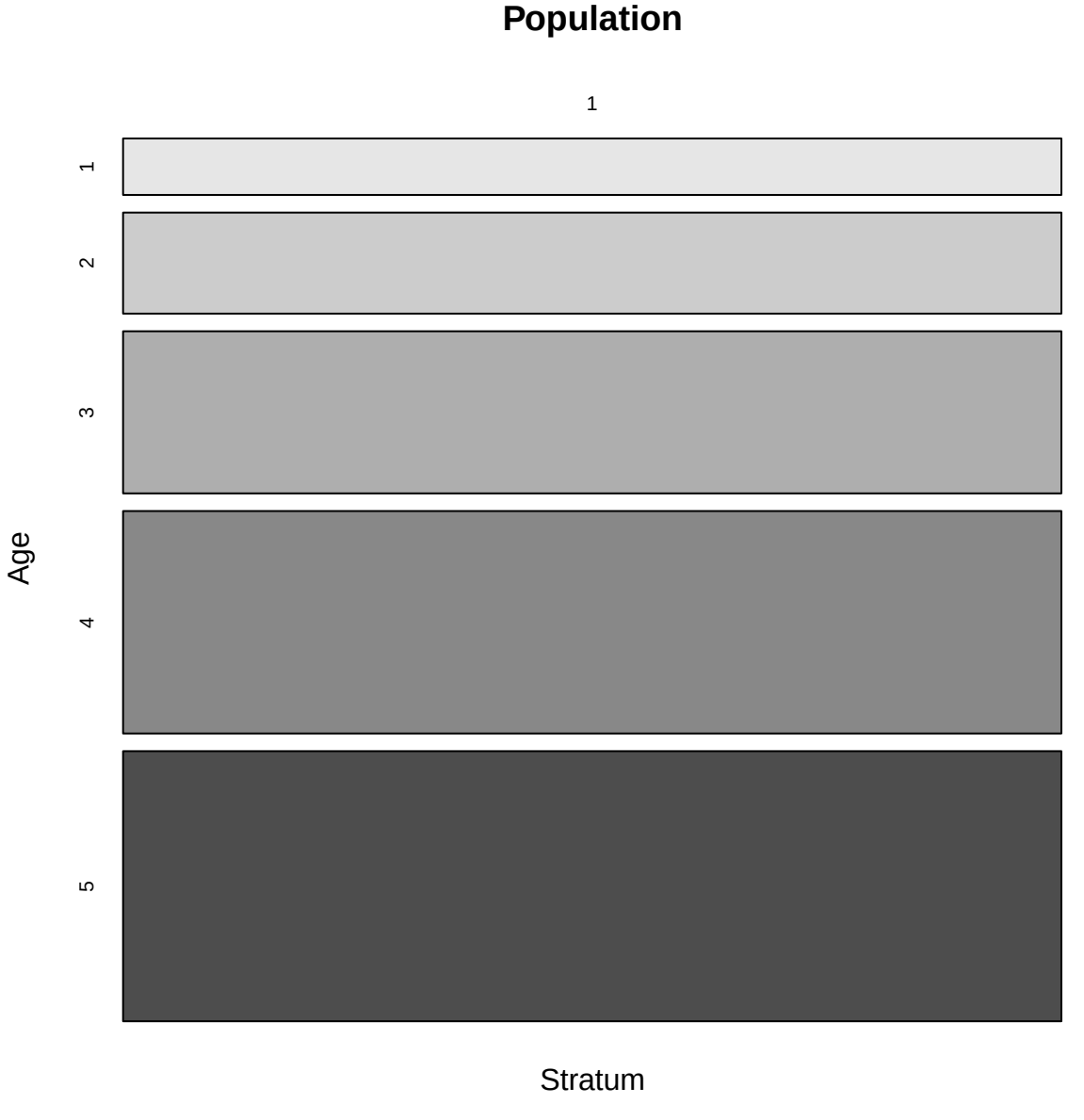

se(p_hat)
sim
true
0.020
0.015
0.010
1
2
3
4
5
Age

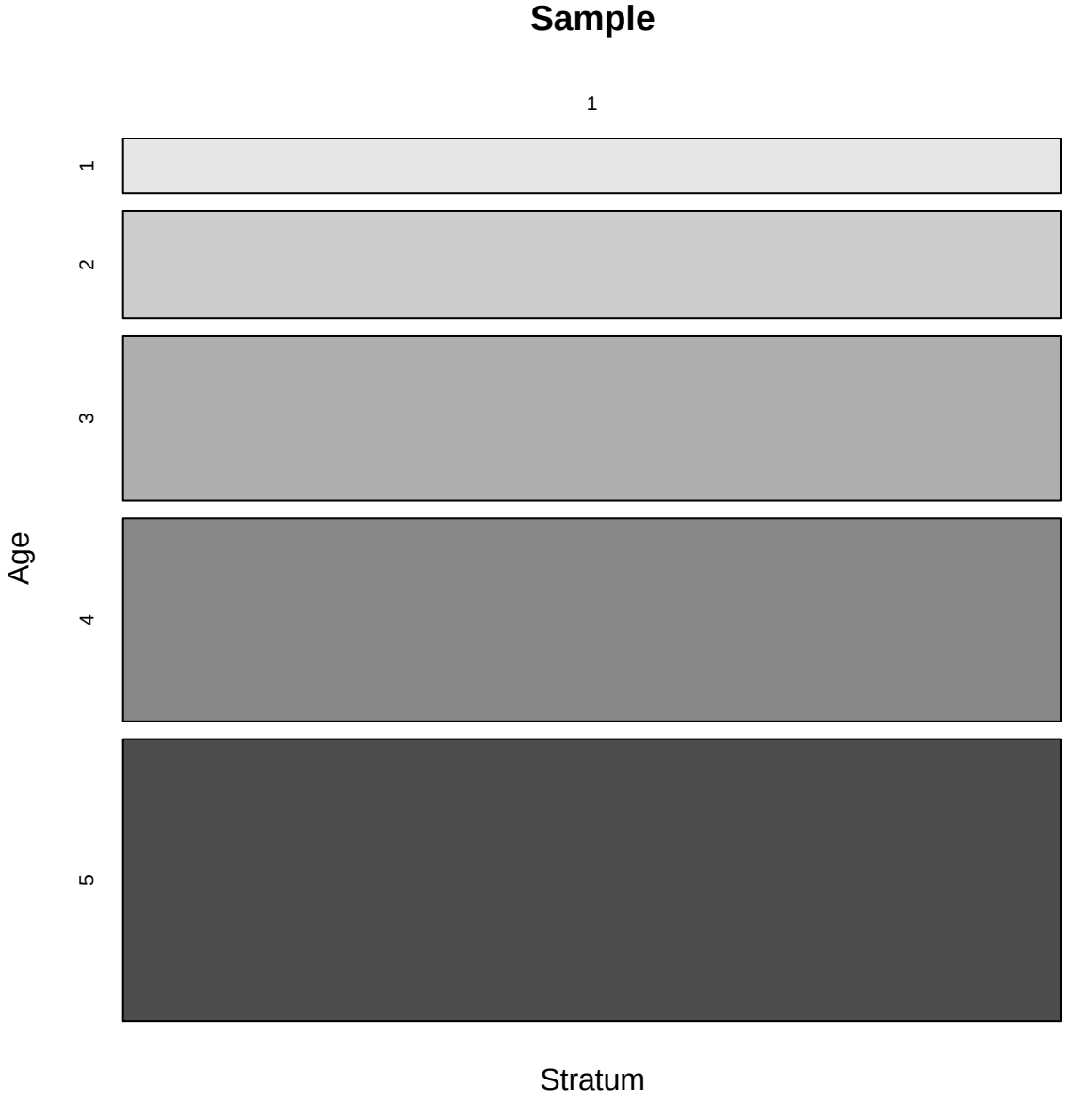

N_hat
sim
true
3500
3000
2500
2000
1500
1000
500
1
2
3
4
5
Age

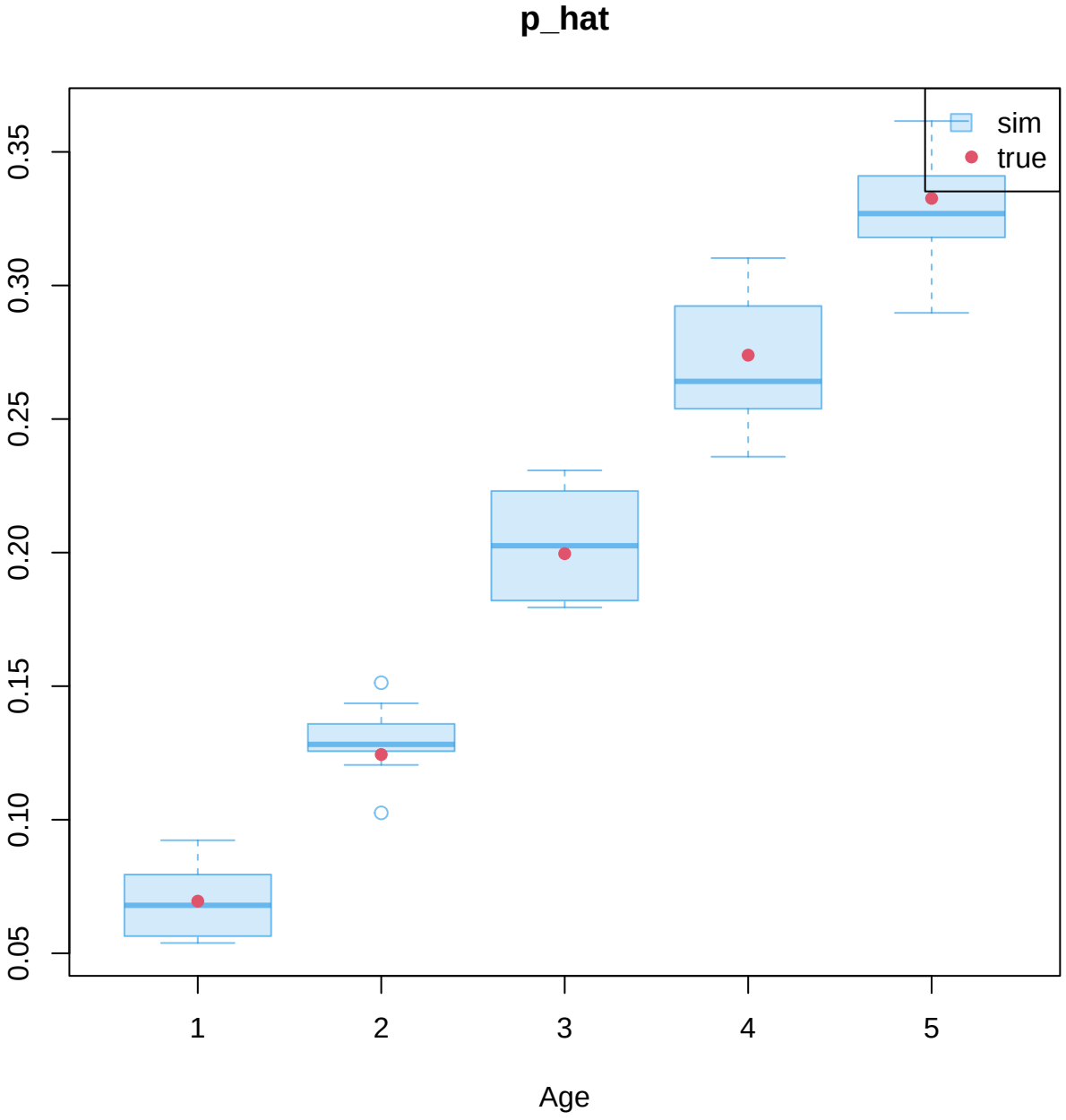

se(N_hat)
sim
true
200
150
100
1
2
3
4
5
Age

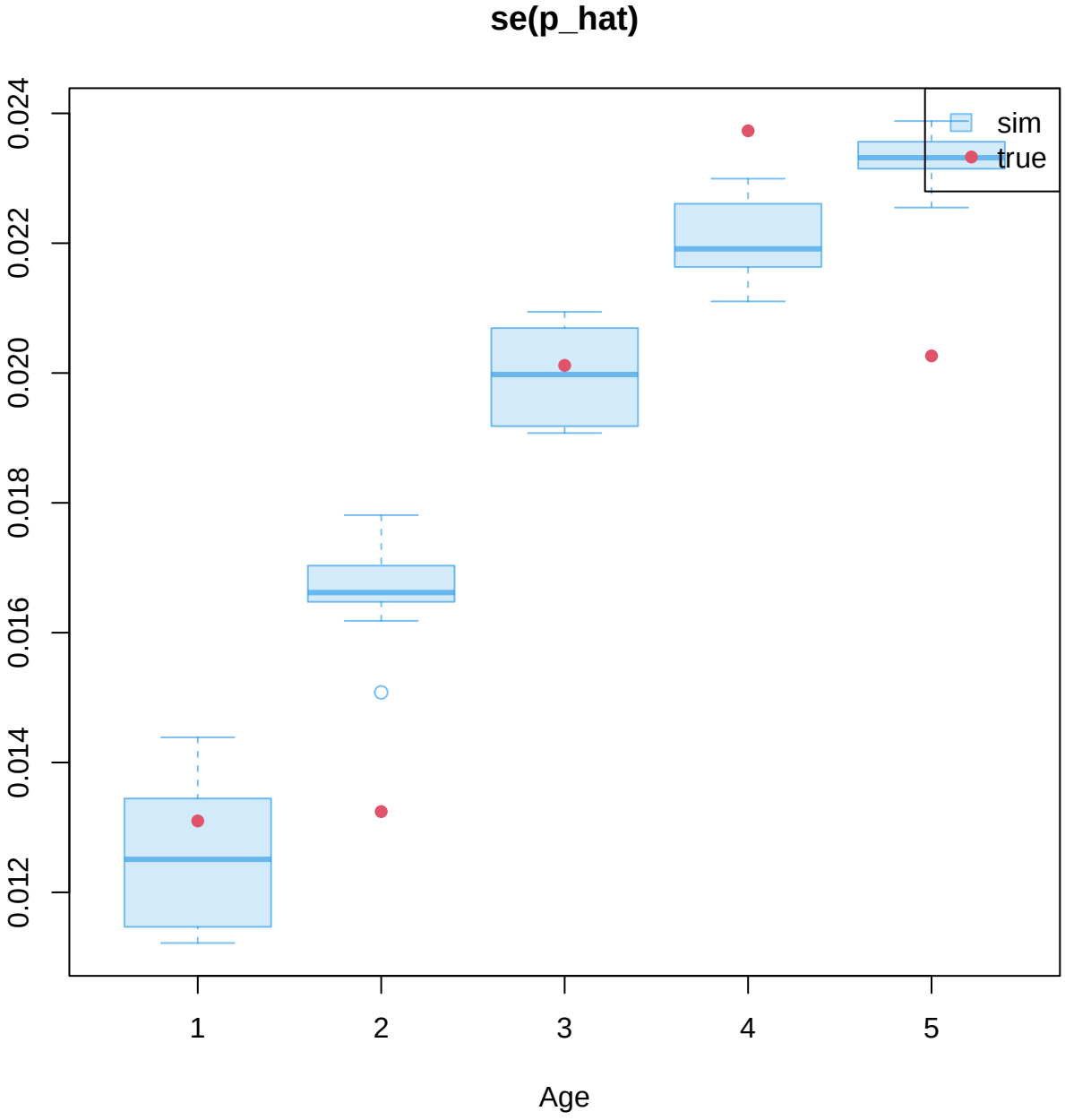

mn_length
sim
true
350
300
250
200
150
1
2
3
4
5
Age

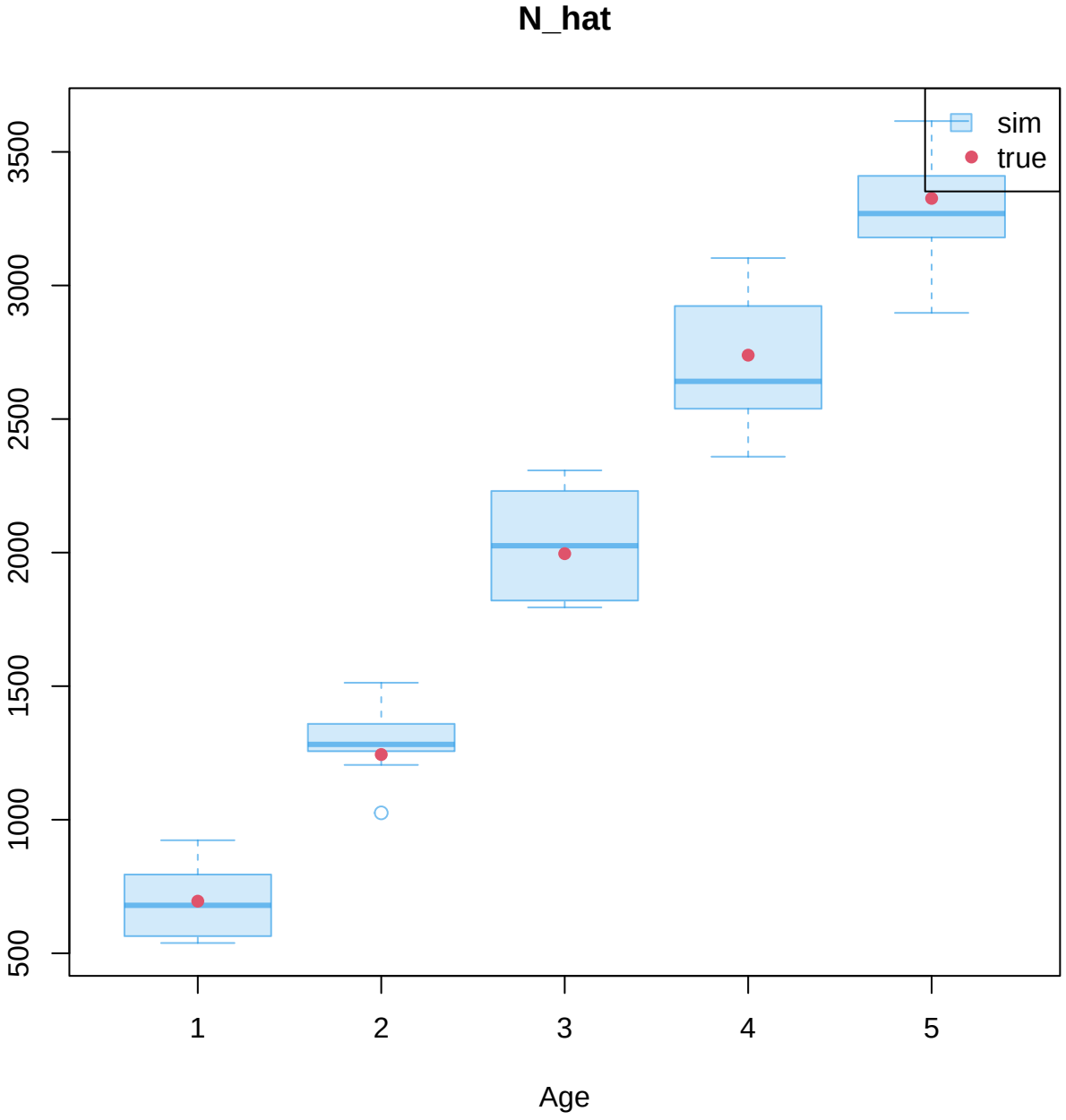

se(mn_length)
sim
true
10
9
8
7
6
5
4
1
2
3
4
5
Age

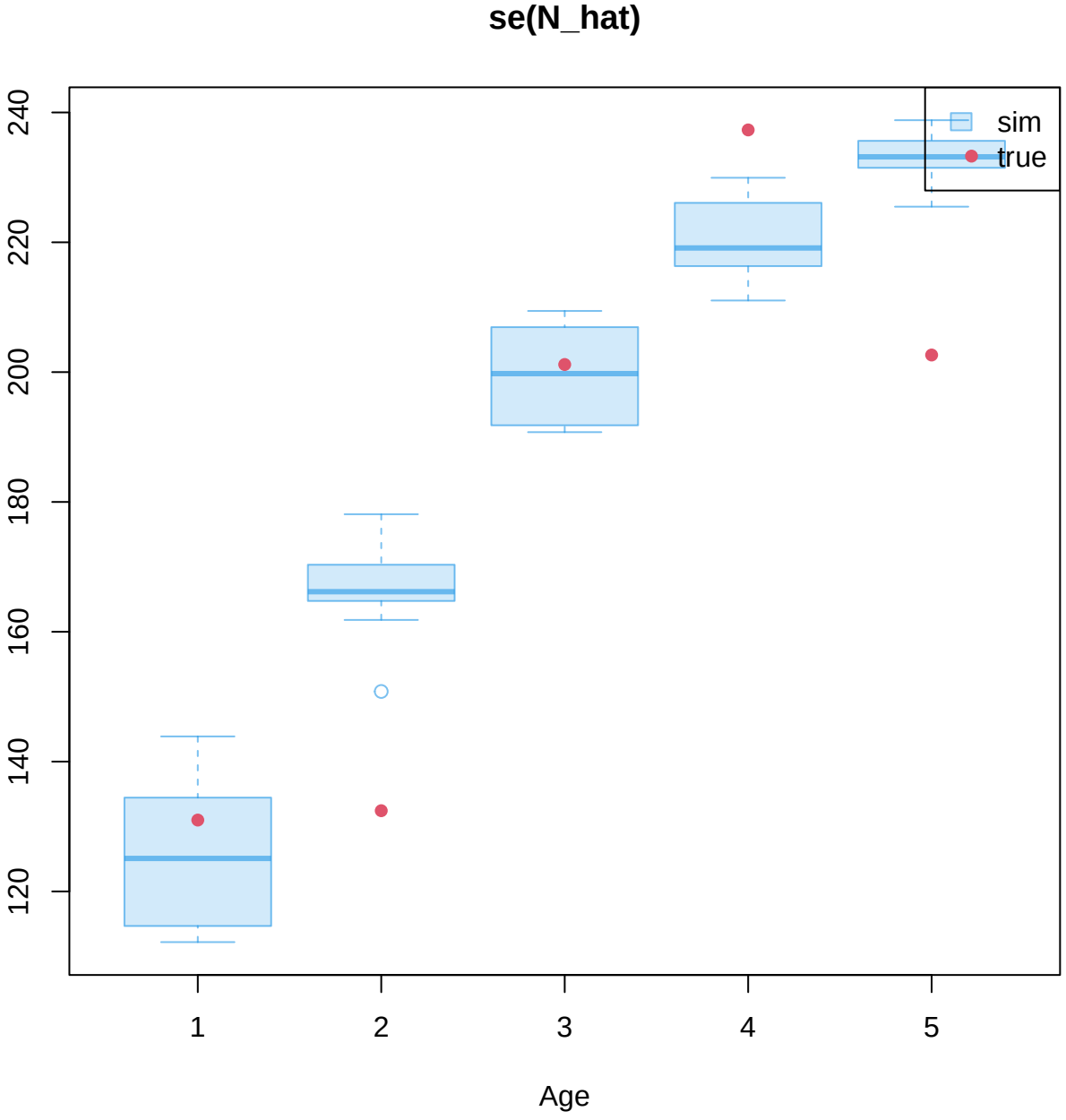

Population
1
1
2
3
4
5
Age
Stratum

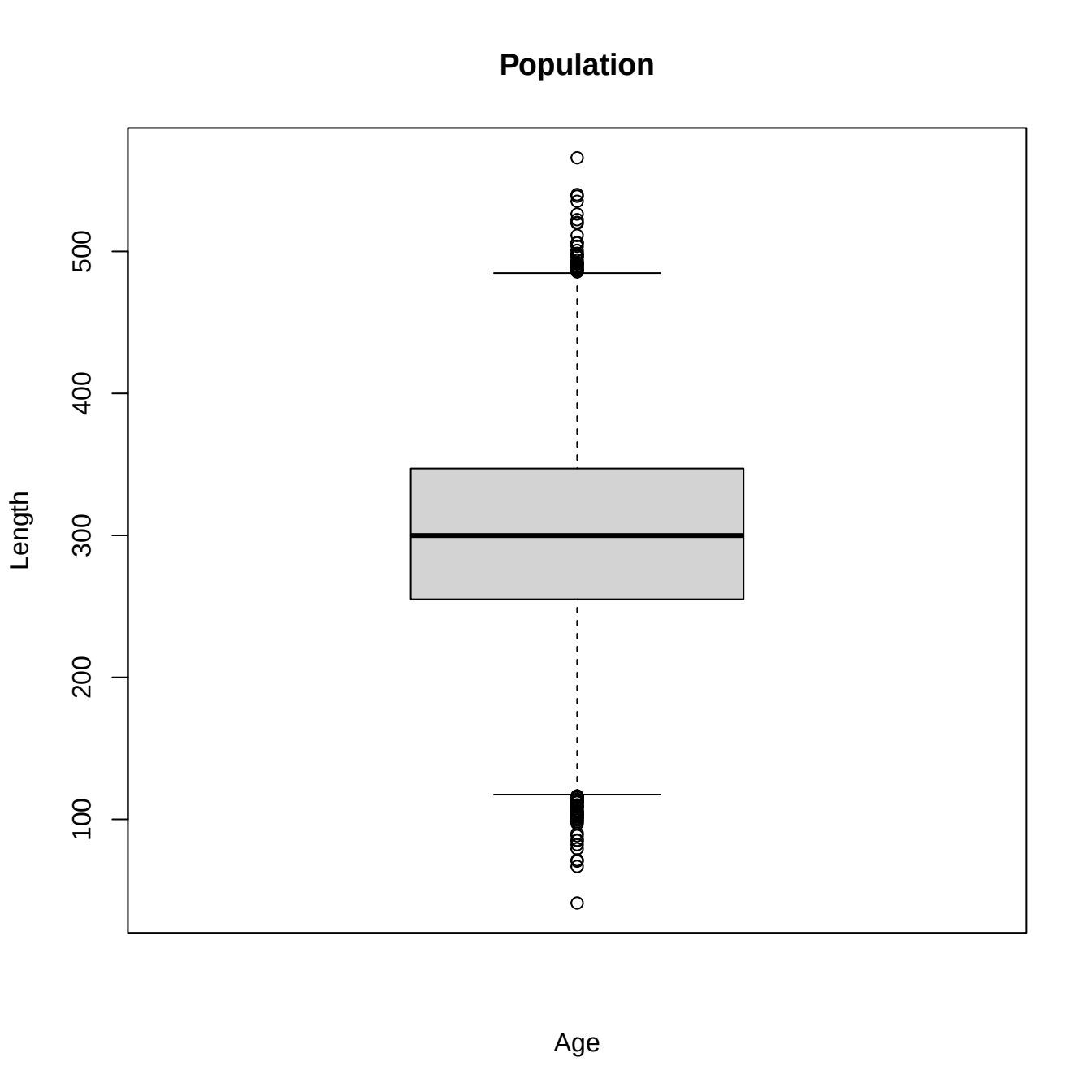

Sample
1
1
2
3
4
5
Age
Stratum

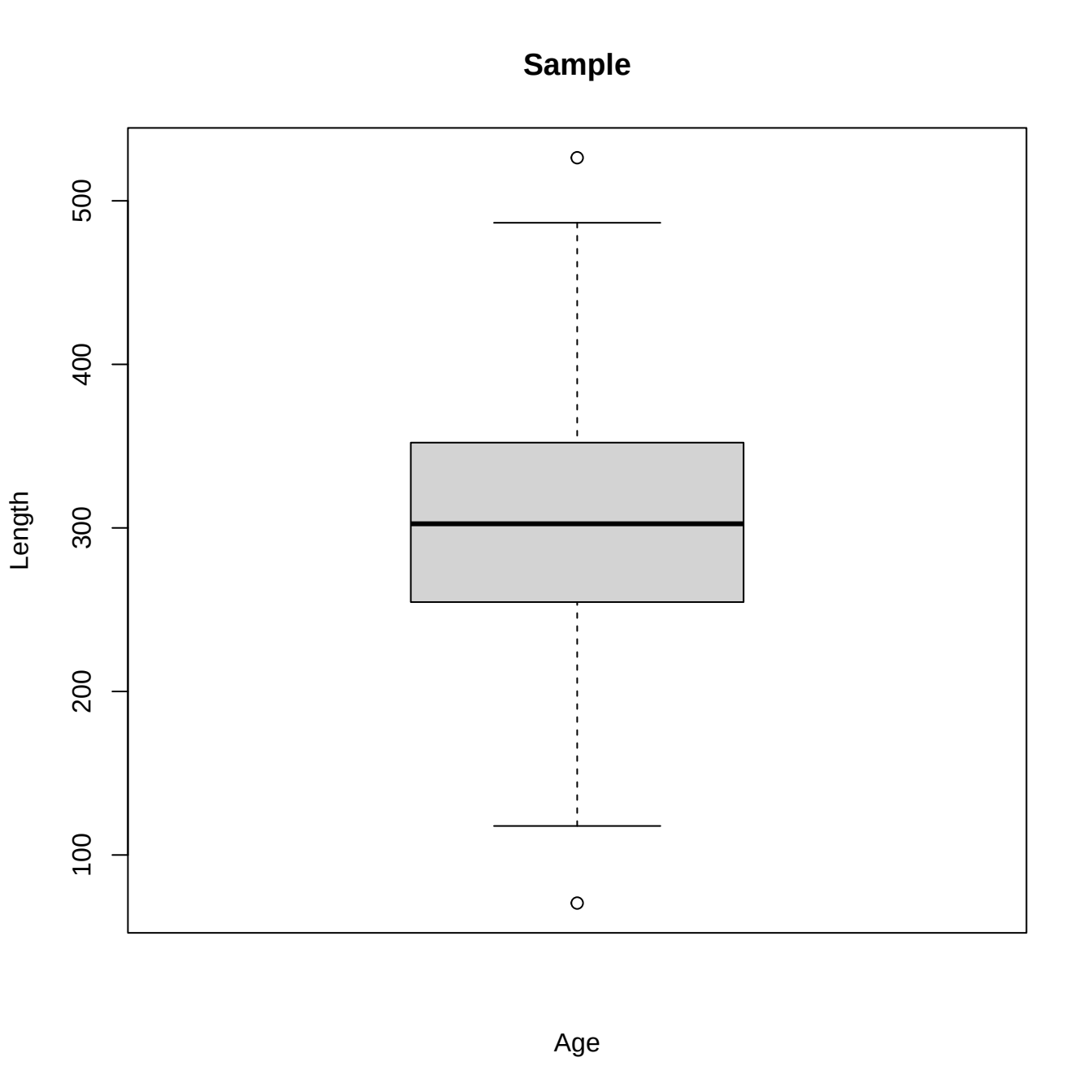

p_hat
sim
true
0.05
0.10
0.15
0.20
0.25
0.30
0.35
1
2
3
4
5
Age

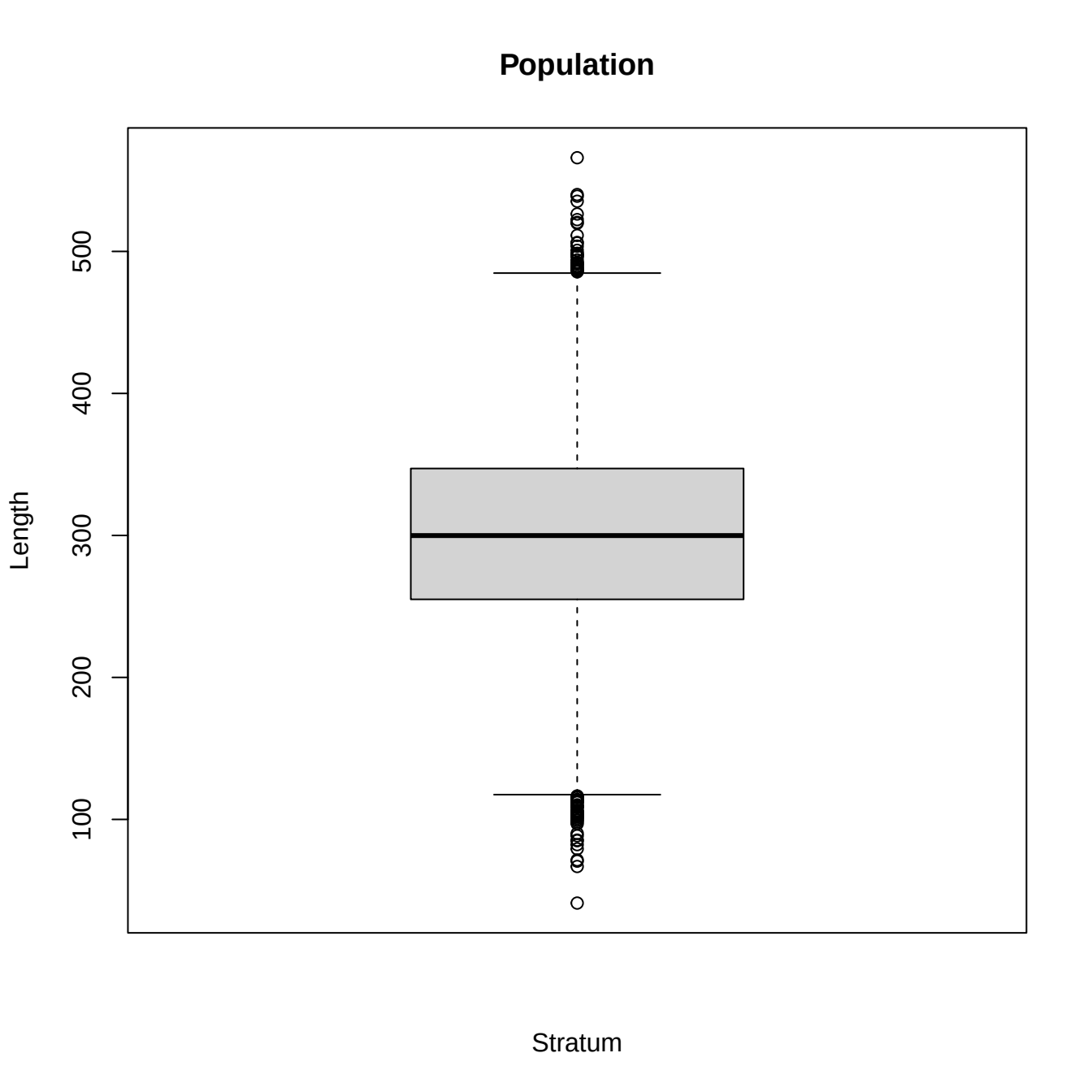

se(p_hat)
0.024
0.022
0.020
0.018
0.016
0.014
0.012
sim
true
1
2
3
4
5
Age

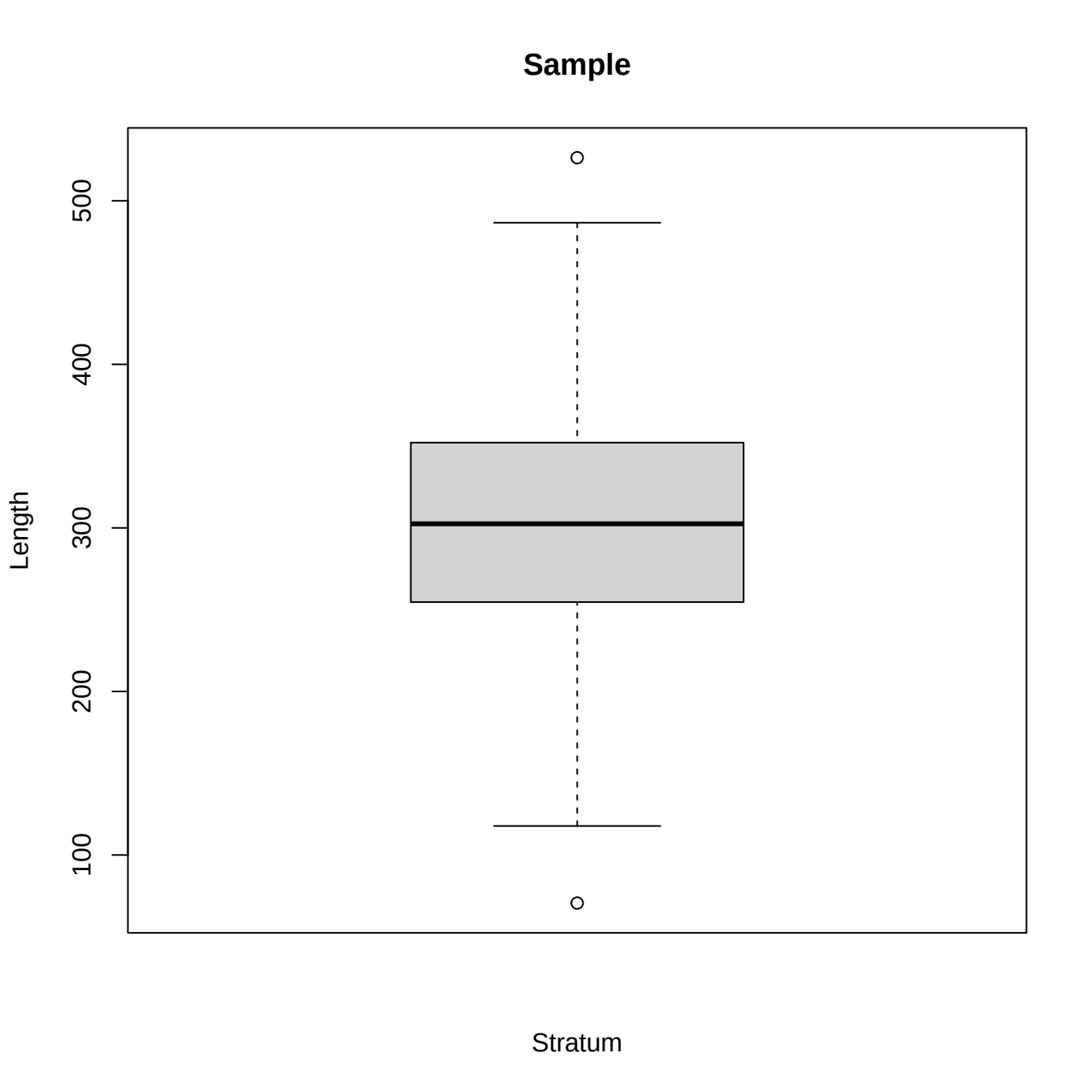

N_hat
sim
true
500
1000
1500
2000
2500
3000
3500
1
2
3
4
5
Age

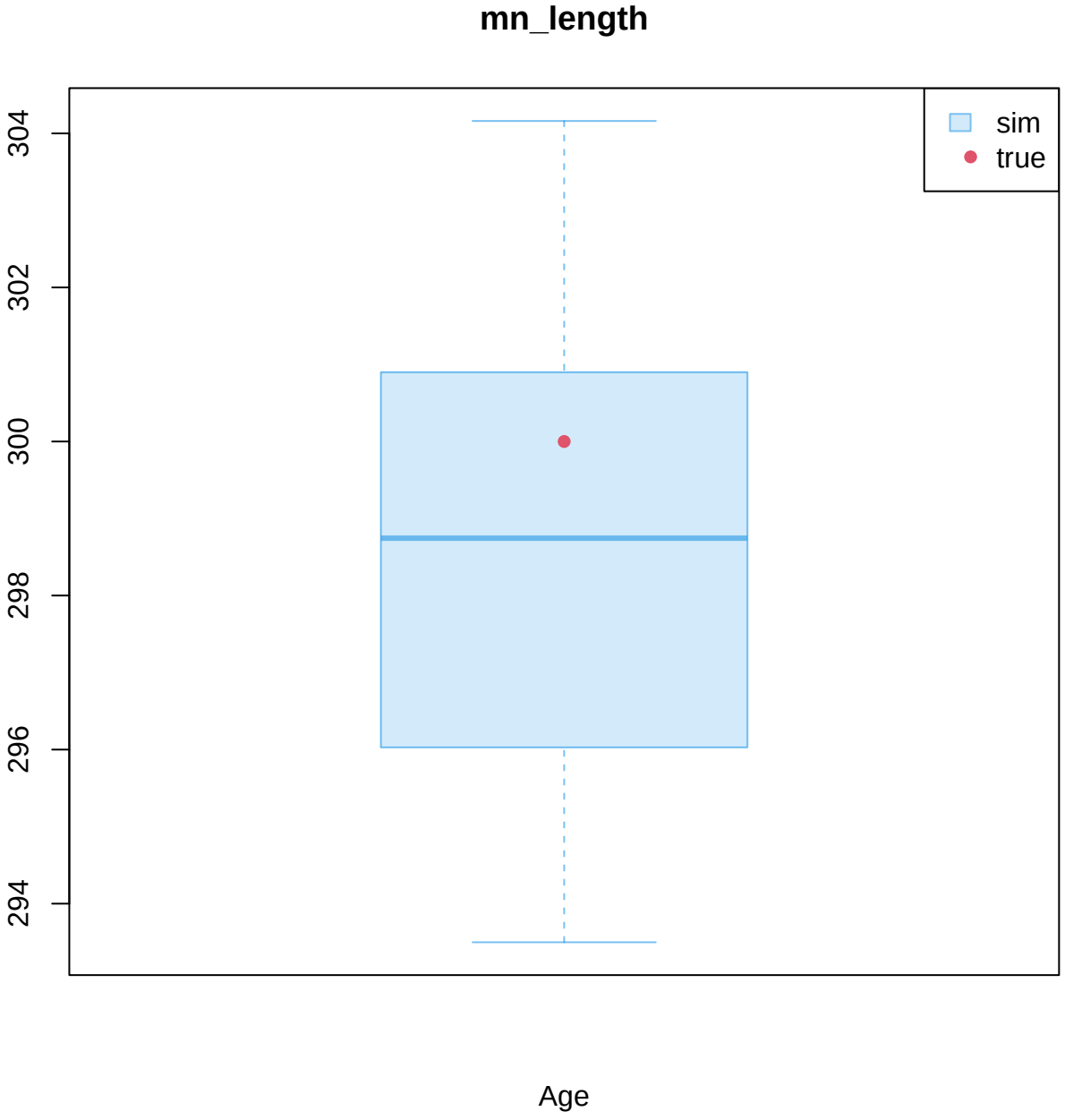

se(N_hat)
240
220
200
180
160
140
120
1
2
3
4
5
Age
sim
true

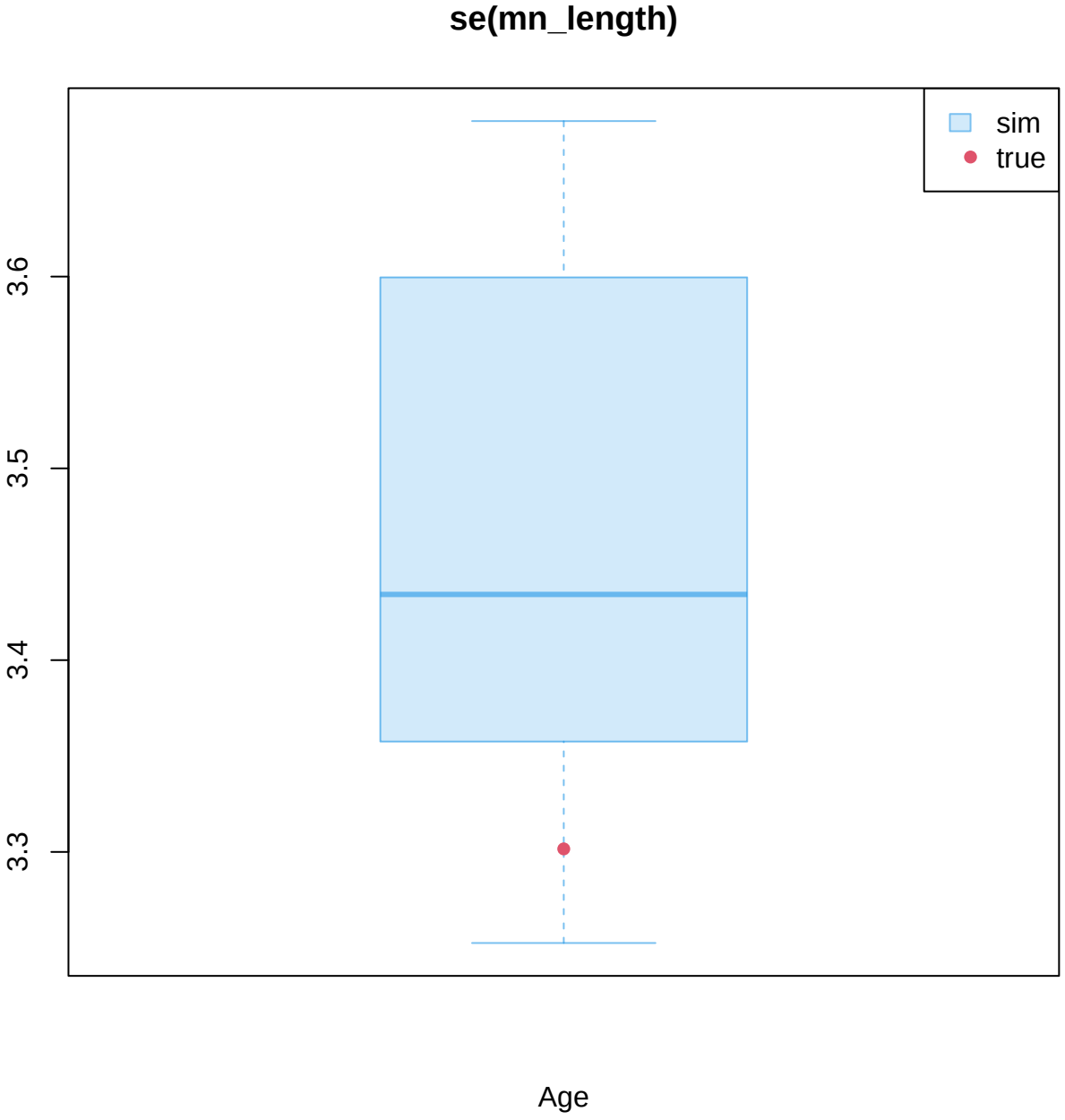

Population
Length
100
200
300
400
500
Age


Sample
Length
100
200
300
400
500
Age


Population
Length
100
200
300
400
500
Stratum


Sample
Length
100
200
300
400
500
Stratum


mn_length
sim
true
304
302
300
298
296
294
Age


se(mn_length)
sim
true
3.6
3.5
3.4
3.3
Age