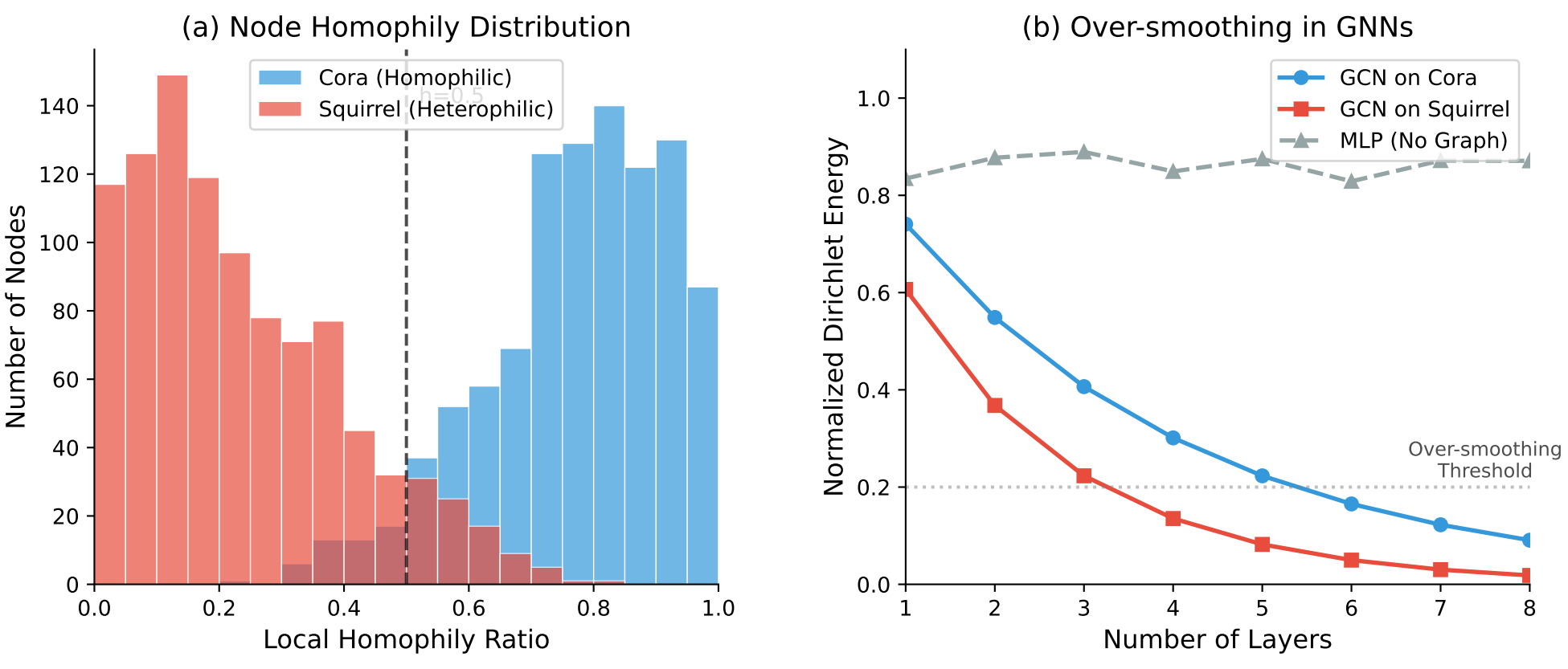
(a) Node Homophily Distribution
Cora (Homophilic)
Squirrel (Heterophilic)
h=0.5
Number of Nodes
Local Homophily Ratio
0
20
40
60
80
100
120
140
0.0
0.2
0.4
0.6
0.8
1.0
(b) Over-smoothing in GNNs
GCN on Cora
GCN on Squirrel
MLP (No Graph)
Over-smoothing
Threshold
Normalized Dirichlet Energy
Number of Layers
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6
7
8