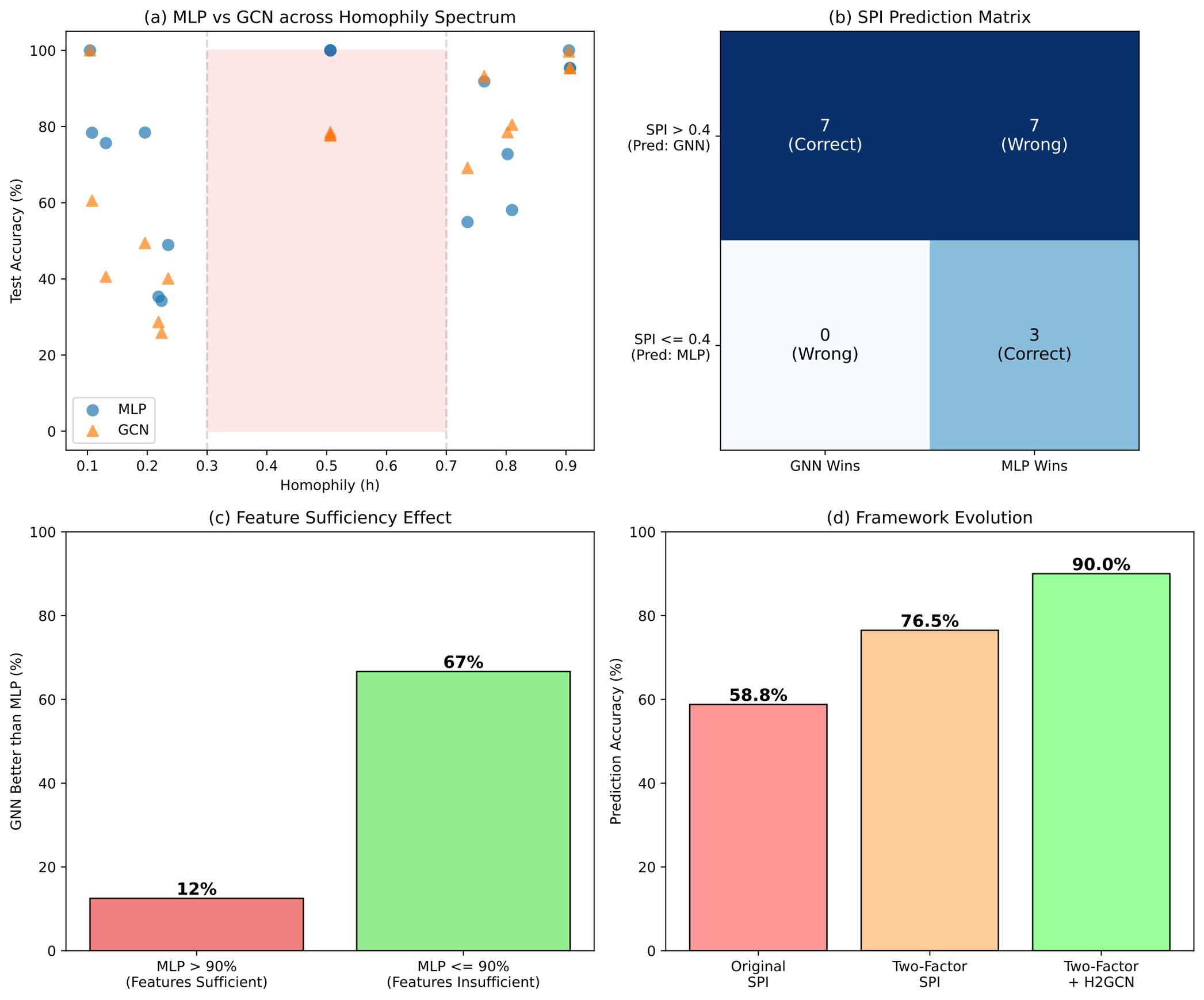
(a) MLP vs GCN across Homophily Spectrum
Test Accuracy (%)
Homophily (h)
MLP
GCN
(b) SPI Prediction Matrix
SPI > 0.4
(Pred: GNN)
SPI <= 0.4
(Pred: MLP)
7
(Correct)
7
(Wrong)
0
(Wrong)
3
(Correct)
GNN Wins
MLP Wins
(c) Feature Sufficiency Effect
GNN Better than MLP (%)
12%
67%
MLP > 90%
(Features Sufficient)
MLP <= 90%
(Features Insufficient)
(d) Framework Evolution
Prediction Accuracy (%)
58.8%
76.5%
90.0%
Original
SPI
Two-Factor
SPI
Two-Factor
+ H2GCN