

Handling hybrid and missing data in constraint-based causal discovery to study the etiology of ADHD

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Supplementary material

Parameters for the Waste Incinerator Network when the correlation between variables is extreme-high:

$$\begin{aligned}P(B = \textit{stable}) &= 0.15 \\P(F = \textit{intact}) &= 0.05 \\P(W = \textit{household}) &= 2/7 \\P(E|\textit{intact}, \textit{industrial}) &= \mathcal{N}(-3.9, 0.2) \\P(E|\textit{intact}, \textit{household}) &= \mathcal{N}(-3.2, 0.2) \\P(E|\textit{defective}, \textit{industrial}) &= \mathcal{N}(-0.40, 0.1) \\P(E|\textit{defective}, \textit{household}) &= \mathcal{N}(-0.5, 0.1) \\P(D|\textit{stable}, \textit{industrial}, e) &= \mathcal{N}(6.5 + e, 0.03) \\P(D|\textit{stable}, \textit{household}, e) &= \mathcal{N}(6.0 + e, 0.04) \\P(D|\textit{unstable}, \textit{industrial}, e) &= \mathcal{N}(7.5 + e, 0.1) \\P(D|\textit{unstable}, \textit{household}, e) &= \mathcal{N}(7.0 + e, 0.1) \\P(C|\textit{stable}) &= \mathcal{N}(-2, 0.3) \\P(C|\textit{unstable}) &= \mathcal{N}(-1, 0.5) \\P(L|D) &= \mathcal{N}(3 - 0.5d, 0.25) \\P(MW|\textit{industrial}) &= \mathcal{N}(0.5, 0.01) \\P(MW|\textit{household}) &= \mathcal{N}(-0.5, 0.005) \\P(ME, d, mw) &= \mathcal{N}(d + mw, 0.002)\end{aligned}$$

Parameters for the Waste Incinerator Network when the correlation between variables is medium:

$$\begin{aligned}P(B = \textit{stable}) &= 0.15 \\P(F = \textit{intact}) &= 0.05 \\P(W = \textit{household}) &= 2/7 \\P(E|\textit{intact}, \textit{industrial}) &= \mathcal{N}(-2, 0.2) \\P(E|\textit{intact}, \textit{household}) &= \mathcal{N}(-1.8, 0.2) \\P(E|\textit{defective}, \textit{industrial}) &= \mathcal{N}(-0.40, 0.1) \\P(E|\textit{defective}, \textit{household}) &= \mathcal{N}(-0.5, 0.1) \\P(D|\textit{stable}, \textit{industrial}, e) &= \mathcal{N}(6.5 + e, 0.3) \\P(D|\textit{stable}, \textit{household}, e) &= \mathcal{N}(6.0 + e, 0.4) \\P(D|\textit{unstable}, \textit{industrial}, e) &= \mathcal{N}(7.5 + e, 0.1) \\P(D|\textit{unstable}, \textit{household}, e) &= \mathcal{N}(7.0 + e, 0.1) \\P(C|\textit{stable}) &= \mathcal{N}(-2, 0.3) \\P(C|\textit{unstable}) &= \mathcal{N}(-1, 0.5) \\P(L|D) &= \mathcal{N}(3 - 0.5d, 0.25) \\P(MW|\textit{industrial}) &= \mathcal{N}(0.5, 0.01) \\P(MW|\textit{household}) &= \mathcal{N}(-0.5, 0.05) \\P(ME, d, mw) &= \mathcal{N}(d + mw, 0.2)\end{aligned}$$

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