

Closeness Centrality Calculation:

Gephi equation (we think) $\Rightarrow C(x) = \frac{1}{\sum_y d(x,y)} (n-1)$

computing closeness centrality for db5, HM01, weighted

Gephi reporting 0.55

assuming from $x \rightarrow y$

HM01 weights:

$$\begin{aligned} \sum_y = & \overset{\text{HM01}}{(0.5453)} + \overset{\text{HAP4}}{(0.4667)} + \overset{\text{YOX1}}{(0.04830)} + \overset{\text{CIN5}}{(0.3959)} + \overset{\text{CIN5} \rightarrow \text{YHP1}}{(0.3959 + 0.08035)} \\ & + \overset{\text{CIN5} \rightarrow \text{YHP1} \rightarrow \text{GLN3}}{(0.3959 + 0.08035 + 1.806)} + \overset{\text{CIN5} \rightarrow \text{SFPI}}{(0.3959 + 0.3287)} + \overset{\text{CIN5} \rightarrow \text{SFPI} \rightarrow \text{SWI5}}{(0.3959 + 0.3287 + -1.796)} \\ & + \overset{\text{CIN5} \rightarrow \text{STBS}}{(0.3959 + -0.2396)} + \overset{\text{MSN2}}{(0.100)} + \overset{\text{MSN2} \rightarrow \text{SWI4}}{(0.100 + 0.4358)} + \overset{\text{MSN2} \rightarrow \text{ASH1}}{(0.100 + -1.537)} \\ & = 3.233 \end{aligned}$$

$$C(x) = \frac{1}{3.233} (12-1) = 3.413 \neq 0.55$$

unweighted?

$$\begin{aligned} \sum_y = & \overset{\text{HM01}}{\cancel{(1)}} + \overset{\text{HAP4}}{(1)} + \overset{\text{YOX1}}{(1)} + \overset{\text{CIN5}}{(1)} + \overset{\text{CIN5} \rightarrow \text{YHP1}}{(2)} + \overset{\text{CIN5} \rightarrow \text{YHP1} \rightarrow \text{GLN3}}{(3)} \\ & + \overset{\text{CIN5} \rightarrow \text{SFPI}}{(2)} + \overset{\text{CIN5} \rightarrow \text{SFPI} \rightarrow \text{SWI5}}{(3)} + \overset{\text{CIN5} \rightarrow \text{STBS}}{(2)} + \overset{\text{MSN2}}{(1)} + \overset{\text{MSN2} \rightarrow \text{SWI4}}{(2)} + \overset{\text{MSN2} \rightarrow \text{ASH1}}{(2)} \\ & = 20 \end{aligned}$$

$$C(x) = \frac{1}{20} (12-1) = 0.55$$