Model 1- All centralities – 13 variables

Page Rank, Closeness (Latora), Degree, eigenvector, authority, hubscore, Betweenness, DMNC, Lobby Index, Leverage, Eccentricity, Information Centrality, Local Bridging

**Ablation Study models**

Model 2 – Without community centralities and information centrality– 7 variables

We are removing the effects of:

* DMNC -density of the community structure
* Leverage- how influential is a node in a community? Can it influence or does it get influenced?
* Local Bridging- based on global betweenness, how well is this community propagating information?
* Eccentricity- how easily can a node be reached/ affected/ affect others in a community?
* Lobby- connectivity within a community
* Information- how much do each node control the information flow?

To see how well the model performs when only centralities that are calculated globally (WITHOUT taking neighborhood/ community into account) are used

Model 3 – Without node centralities – 6 variables

We are removing the effects of:

* Page Rank- how are the nodes ranked in terms of importance?
* Closeness- how fast is the information propagated from the community globally?
* Degree- how well connected are the nodes?
* Eigenvector- how important is the node globally?
* Authority- how are the nodes ranked in terms of importance?
* Hubscore- how are the nodes ranked in terms of importance?
* Betweenness- how crucial are the nodes in shortest paths between other nodes? / How crucial are the nodes in maintaining connectivity?

To see how the model performs when global centralities are taken out of the equation and centralities that depend on neighborhood/ community are used

Model 4 - without eigenvector, pagerank, hubscore, authority – uses ranking – 9 variables

We are removing the effects of:

* Pagerank- how are the nodes ranked in terms of importance?
* Hubscore-same
* Authority- same

To see how the impact of “importance” amongst nodes differs from the impact of “distance” between nodes

Model 5 - without betweenness, eccentricity, closeness, information – uses distance – 9 variables

We are removing the effects of:

* Betweenness- How crucial are the nodes in maintaining connectivity?
* Eccentricity- how easily can a node be reached/ affected/ affect others in a community?
* Closeness- how fast is the information propagated from the community globally?
* Information- how much do each node control the information flow?

To see how the impact of “distance” between nodes differs from the impact of “importance” amongst nodes

Model 6- without leverage, lobby, dmnc, local bridging, information centrality, eigenvector, closeness – 6 variables – mix and match

We are removing the effects of:

* Leverage- how influential is a node in a community? Can it influence or does it get influenced?
* Lobby Index- connectivity within a community
* DMNC- density of the community
* local bridging- based on global betweenness, how well is this community propagating information?
* information centrality- how much do each node control the information flow?
* eigenvector- how important is the node globally?
* closeness- how fast is the information propagated from the community globally?

Keeping:

* degree
* betweeness
* pagerank
* hubscore
* authority
* eccentricity

To see how more global information received about “centrality” of nodes with some community information impacts the model

Model 7- without degree, hubscore, authority, betweenness, information, Eccentricity, leverage– 6 variables – mix and match

We are removing the effects of:

* Degree- how well connected are the nodes?
* Hubscore- how are the nodes ranked in terms of importance?
* Authority- how are the nodes ranked in terms of importance?
* Betweenness - How crucial are the nodes in maintaining connectivity?
* Information- how much do each node control the information flow?
* Eccentricity- how easily can a node be reached/ affected/ affect others in a community?
* Leverage- how influential is a node in a community? Can it influence or does it get influenced?

Keeping:

* Page rank
* Closeness
* Eigenvector
* DMNC
* Local Bridging
* Lobby

To see how equal proportions of community and node importance information affects the model

Model 8- without Closeness, eigenvector, authority, hubscore, Betweenness, Leverage, Information Centrality,

We are removing the effects of:

* Closeness- how fast is the information propagated from the community globally?
* Eigenvector- how important is the node globally?
* Authority- how are the nodes ranked in terms of importance?
* Hubscore- how are the nodes ranked in terms of importance?
* Betweenness- How crucial are the nodes in maintaining connectivity?
* Leverage- how influential is a node in a community? Can it influence or does it get influenced?
* Information Centrality- how much do each node control the information flow?

Keeping:

* Page Rank,
* Degree
* DMNC
* Lobby Index
* Eccentricity
* Local Bridging

To see how more information about community and some information about node importance affects the model

Model 8 - without degree – 12 variables

We are removing the effects of:

* Degree

To see how degree, which signifies the connectivity of the nodes, affect the model