

TO: *The Chairperson, Sector Monitoring Evaluation And Research WG, MOH*
FROM: *Prof. Freddie Ssenooba, Makerere University School of Public Health*
Contact: Sengooba@musph.ac.ug Tel 0414 543872 Mob. 0772509316

Benefits of Social Network Analysis for District Performance Assessment

Summary

The district league table (DLT) as used by MOH to assess district level sector performance has generated useful insights and controversies in equal measure. Although the objective of the DLT remain noble, i.e. to inform stakeholders about decentralised service delivery, the tool does not provide sufficient information to guide stakeholders on how to support districts that are under performing. There is little information to provide plausible explanations as to why some districts make drastic climb or decline on the league table. The aim of this policy brief is to propose the adoption of social network analysis (and tools) to generate supplementary data that can better guide district and national level stakeholders to better recognize the drivers and bottlenecks of district level performance. Our study in three districts in northern Uganda demonstrates that social network analysis provides useful visual graphs and simple indices that capture the resource sharing and service delivery networks within a district. Our study findings expand the understanding of performance from the perspective of networks for district service provision, resource sharing and effectiveness of public and aid agencies at the sub-national level.

and processes under Sector Wide Approaches (SWAP). Sector monitoring teams, tracking studies, district visits and special surveys have been used in the Annual Health Sector Reviews and biannual Health Assemblies. Despite all these, the district league table DLT has occupied the centre stage in terms of monitoring district level performance. It has undergone several modifications to try to cope with the changes in stakeholder interests as well as changes in the programming context. Measures related to fiscal decentralization, medicine procurement, HIV prevalence are examples that have changed overtime in the DLT. What has not changed about the DLT are the controversies and discontent about the DLT and how it is being applied to assess performance and used (or not used) to support improvements among less performing districts. By extension, the DLT has performed poorly on its objective of "providing information to facilitate the analysis behind good and poor performance at districts thus enabling corrective measures". Among other factors, the DLT has failed to capture the service delivery networks and the resources that go directly to the districts. Given the multiplicity of donor agencies working directly with local governments and channeling funds outside of the general government budget, district level performance as measured by the DLT fails to capture these vital drivers of performance.

Introduction

Improvements in district-level performance against health sector objectives is paramount given the decentralised nature of service delivery. Government and her development partners have over the years innovated to improve the monitoring of sector performance using several structures

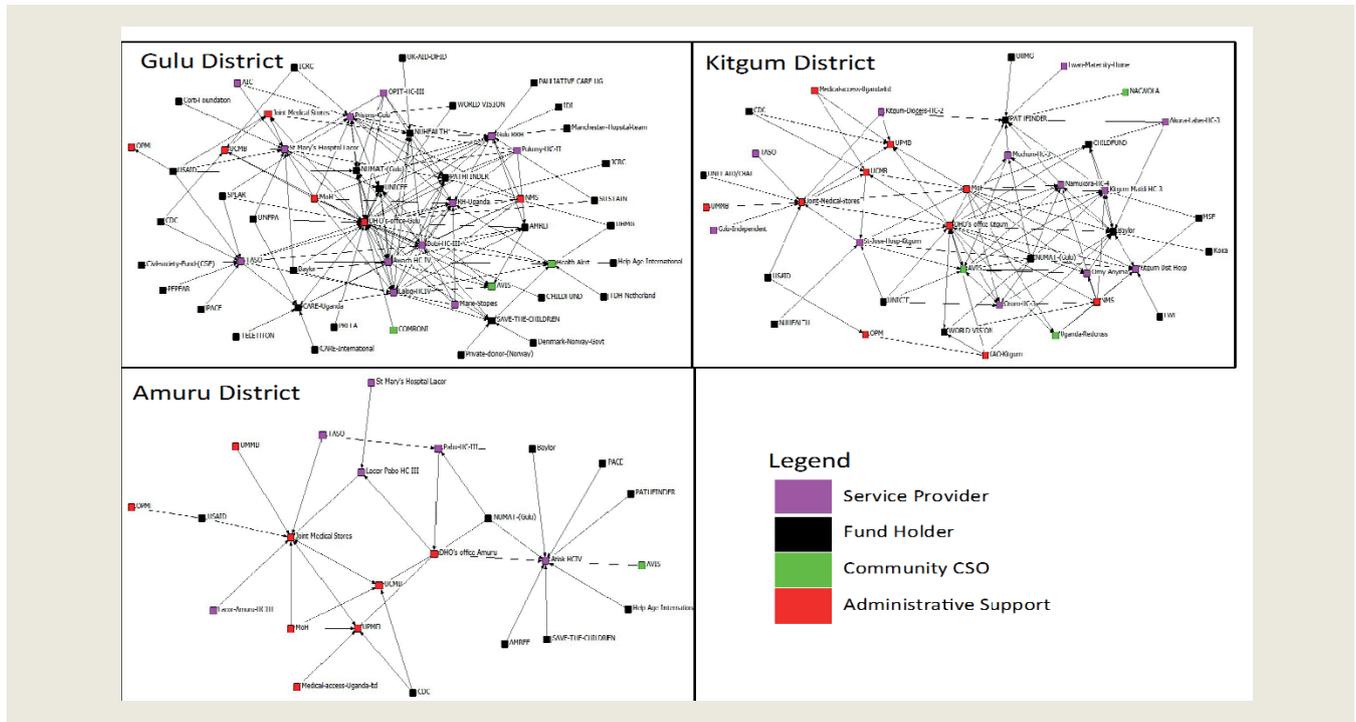
A study by Makerere University School of Public Health (MakSPH) in the three districts of Amuru, Gulu and Kitgum has provided useful insights on how social network analysis and tools for resource sharing can generate useful information to boost the DLT especially in enabling corrective measures from within and outside the district. The main findings illustrate the disparity in the network

structures across study services and districts. Additional findings demonstrate the strategic actors that are central to mobilizing the network for improved performance.

1. Disparity in Service Delivery Networks Among Districts

The district networks for providing HIV treatment was found to be more dense in Gulu district and most sparse in Amuru district. By implication, more partners in Gulu are able to achieve better performance in HIV treatment outputs relative to Amuru district with few partners.

Figure 1: HIV Treatment Networks for Gulu, Kitgum and Amuru Districts (Feb 2013)



2. Disparity in Overall District Networks

The disparities in the density of service delivery networks in the three districts persist even after combining the sub-networks for 1) HIV treatment, 2) maternal delivery and 3) system strengthening (i.e. inputs to support the health workforce). Amuru district represent a young district with low network density of implementing partners, while Gulu and Kigum have high and medium densities respectively. Gulu has more funding agencies in her network (black dots). All three districts are post conflict districts in Acholi sub-region.

Figure 2. Gulu: High Dense Service Delivery Network (HIV, Deliveries and Workforce)

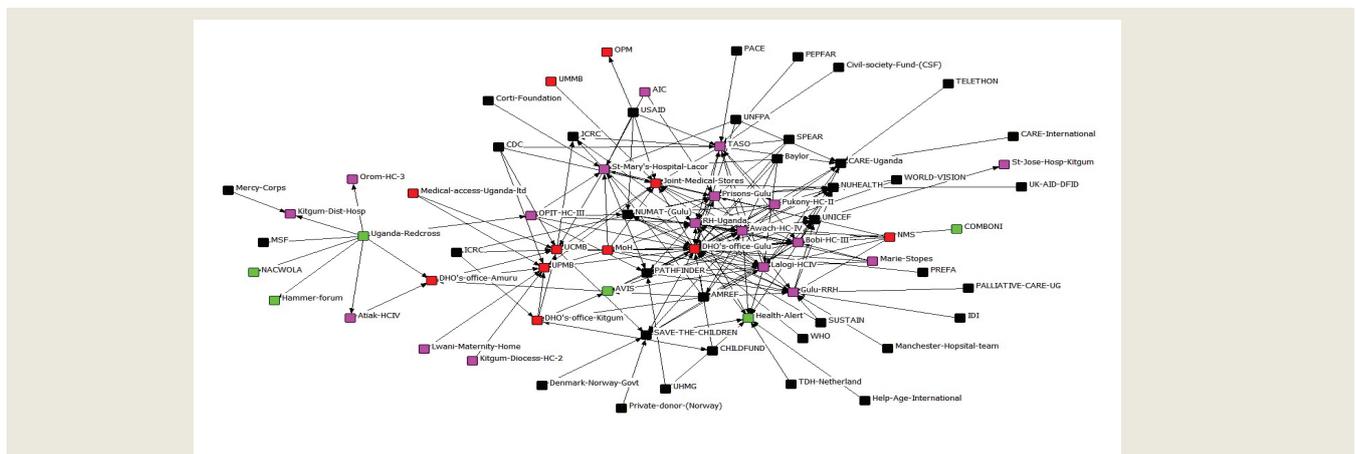


Figure 3 Kigum: Medium Density Service network (HIV, Deliveries and Workforce)

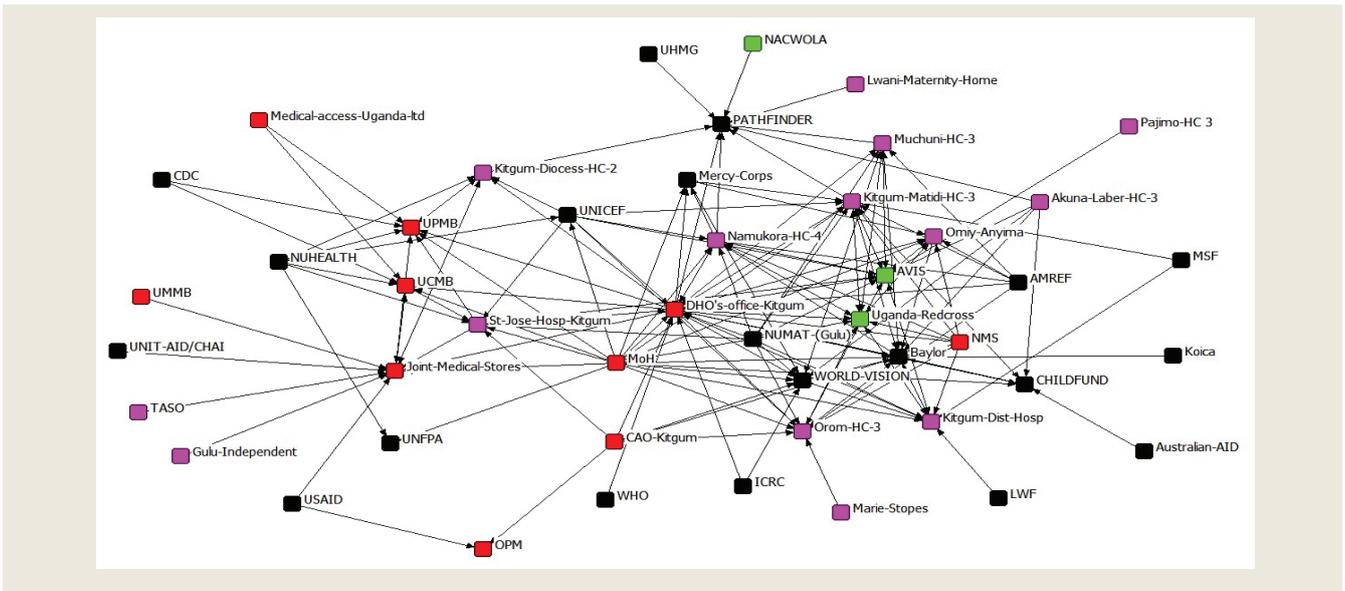
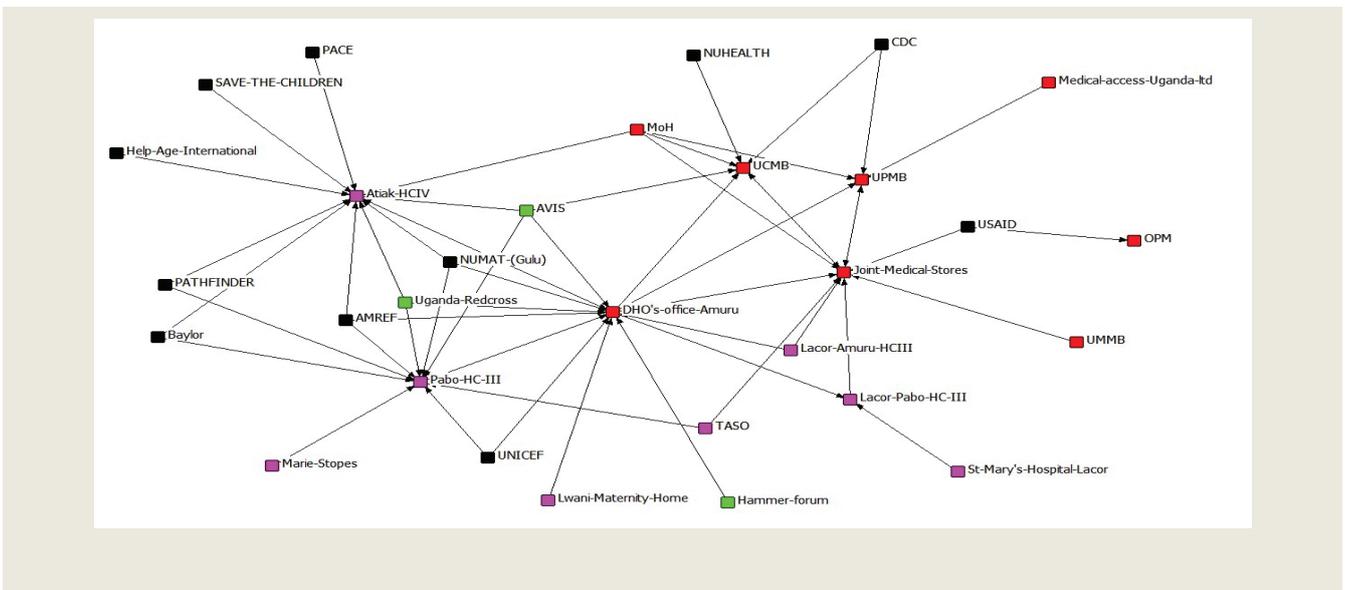


Figure 4: Amuru: Low Density Service Network (HIV, Deliveries and Workforce)



3. Which Agencies are Central to District Service Delivery Networks?

Social network analysis generates scores that are useful to rank agencies according to their centrality in contributing to the service provision network in the district. These are presented for Gulu and Kigum districts in figure 4 and 5. In Gulu district, for instance, the DHO and NUHEALTH project are the most central actors/agencies in the network. In Kitgum, AVIS is the most central agency. The most central agency is one that has most influence in terms of connecting the rest of the members in the network. From a program point of view, these are agencies that can theoretically be most efficient in “mobilizing” the district network. This is also a proxy measure of agencies well positioned to “lead” the network in terms of performing service delivery functions for the interventions assessed in this study.

Figure 5: Gulu District: Ranking agencies based on their centrality in the district network.

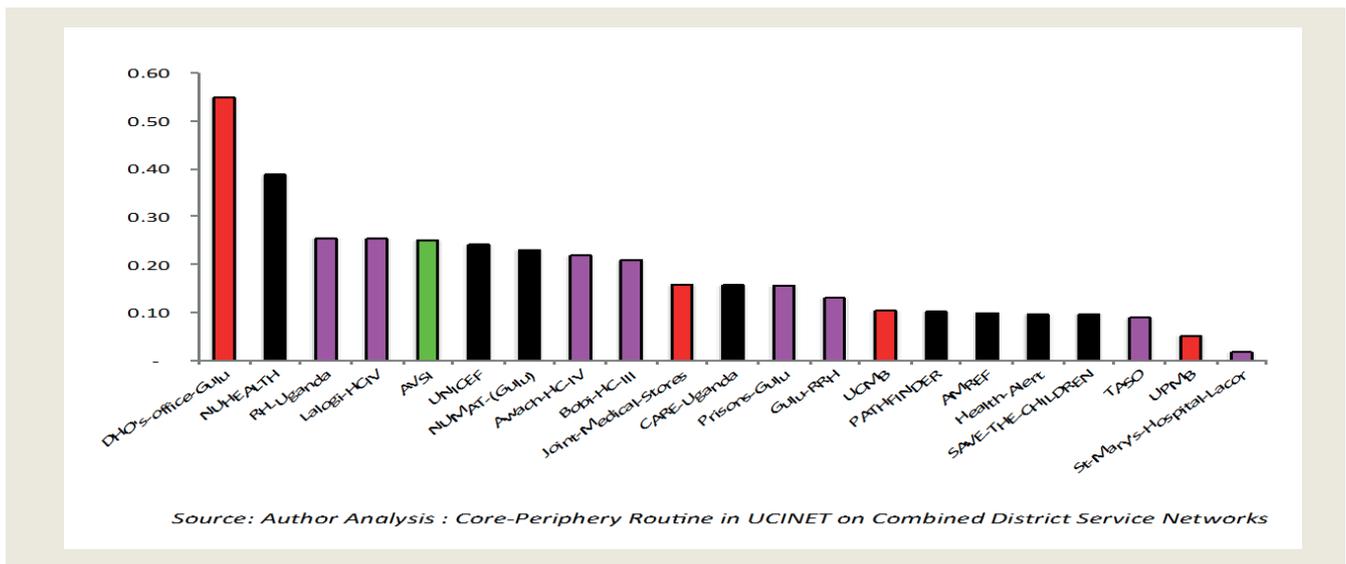
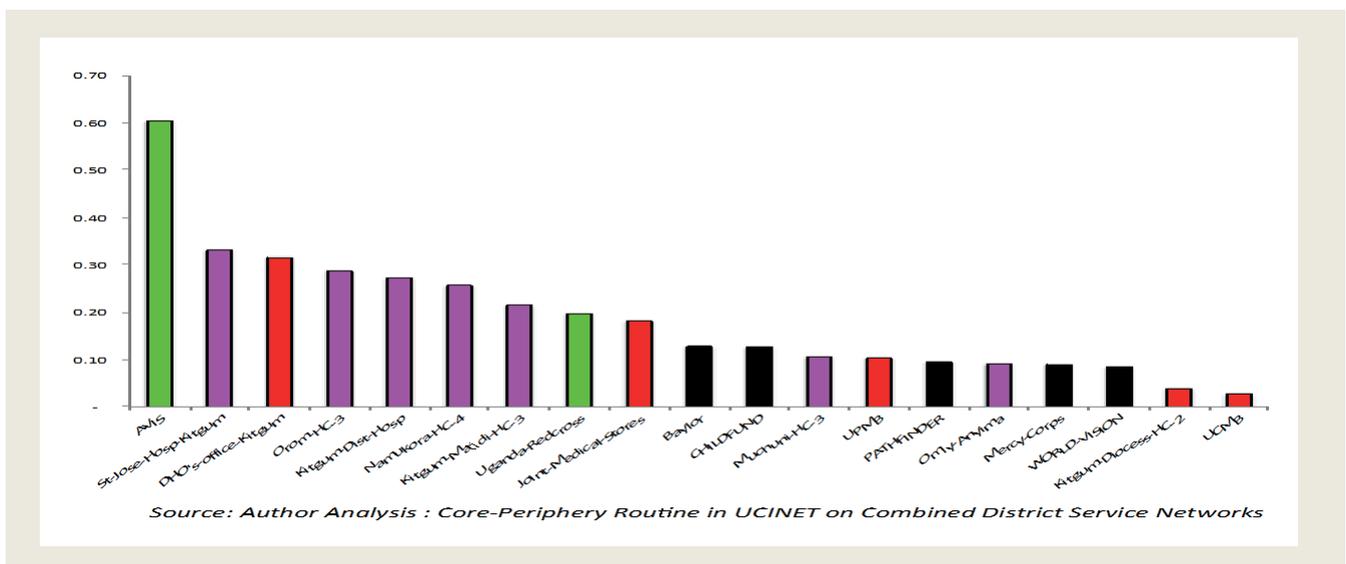


Figure 5 Kitgum District: Ranking agencies based on their centrality in the district network.



4. Network Structure and Integration

Data was collected using a 2-step snowball approach. In the first step, the District Health Office (DHO), hospitals and level IV and III health centres were interviewed. In the interview a list of external agencies supporting these units were listed separately for HIV treatment, maternal delivery and for Workforce. The type of support received/provided was also elicited along with a few attributes of the agencies listed. The listed agencies from the first set of interviews were visited in step two and similar questions were asked. Table 1 provide the descriptive data while table 2 provides the percentage contribution of each sub-network to the overall district one. HIV service network accounts for the most partner connections in Gulu and Kitgum at 81% and 69% respectively. Workforce (HRH matrix) make the lowest connections in all the districts. This shows that there is low system strengthening with regard to workforce in the study districts. Amuru district has 67% of connections for Maternal health services.

Table 1: Network Descriptive information for each service in the study districts

	Agency No	Mean partners	Std. Dev.
1. Maternal Services – Gulu Dist	52	3.5	5.0
2. Maternal Services – Kitgum Dist	34	2.5	4.5
3. Maternal Service – Amuru Dist	24	0.9	2.0
4. HIV Treatment Services – Gulu District	54	4.0	6.2
5. HIV Treatment Services – Kitgum District	39	2.7	4.4
5. HIV Treatment Services – Amuru District	24	0.8	2.0
6. HRH Services – Gulu District	23	0.9	2.0
7. HRH Services – Kitgum Distrit	24	0.9	1.9
8. HRH Service – Amuru District	18	0.5	1.2

Table 2 Contribution of Sub-network to the Aggregate District Service Network

Table 4: QAP regressions predicting the aggregate service network in study districts

	Gulu	Kitgum	Amuru
Intercept	0.004*	0.008*	0.002*
Maternal service matrix	0.28*	0.47*	0.67*
HIV treatment matrix	0.81*	0.69*	0.30
HRH matrix	0.06*	0.10*	0.30
Model fit R-Square	0.89	0.76	0.80
Model fit P-value	0.001	0.001	0.001

* Statistically significant at the 0.05 level.

Recommended Actions:

From the above findings, SMEAR Working Group should take steps to explore the use of Social Network Analysis (SNA) as a method to generate more strategic information to support the performance of districts. Advantages of the SNA as demonstrated above include:

1. Deeper insights about the structure and density of inter-agency networks that support district performance outcomes. These include fund-holders, service providers and support agencies;
2. Identify agencies that play central roles in mobilizing the district-level networks. These can serve as entry points for more efficient implementation of program across the network. This also serves as a proxy measure of leadership in the network for agencies such as DHOs.
3. Findings can aid the allocation or redirecting funding agencies and NGOs to districts with low-density networks (few partners) and to systems strengthening (e.g. workforce) to support effective implementation of health programs.
4. Data collection tools for SNA are simple and can be incorporated into the annual or biannual reporting templates of HMIS. Capacity development in this area is within reach at MakSPH.

Source: Ssengooba F. Namakula et al (in press) Organizational Infrastructure for Service Delivery: A Case Study of Post-conflict Northern Uganda.