CRITICAL REVIEW

Social connectivity of local governments: A social network analysis based on Kerala local governments

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Abstract. The objectives of the study are to assess the social connectivity of Kerala local governments and analyze the effectiveness of formal and informal communication networks in Local Governments in Kerala. The study considered a 'multi-stage stratified random sampling' for selecting the grassroots functionaries of local governments of the lowermost stratum, viz., Village (Grama) Panchayat, Municipality, and Corporation. Revealing the hidden connections that drive how work gets done in local governments is of utmost importance in the ever-widening communication network provided by the present order of globalization. Social networks are nodes of individuals , groups , organizations and related system that tie in one or more types of interdependencies which include shared values , visions and ideas , social contacts, kingship, conflict, financial exchanges, trade , joint membership in organization's and group participation in events, among numerous other aspects of interpersonal relationships.

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INTRODUCTION

A Social Network Analysis examines the structure of social relationships in a group to uncover the informal connections between people. Social networks are nodes of individuals , groups , organizations and related system that tie in one or more types of interdependencies which include shared values , visions and ideas , social contacts, kingship, conflict, financial exchanges, trade , joint membership in organization's and group participation in events, among numerous other aspects of interpersonal relationships. The strategy for effective communication should be based on the strengths, centrality, and such other features of these social networks.

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REVIEW OF LITERATURE

Nair *et al.,* [1] in his article on People's Plan and Industrial Development in Kerala has examined the development of Small Scale Industrial Sector in Kerala before and after implementation of Peoples Plan in Kerala. The study came to the conclusion that no significant impact is noticed in the industrial development of Kerala during the People's Plan period. This also emphasises the lack of empowered leadership at grassroots.

Harris *et al.,* [1] in his article titled 'Renewing developing and Deepening Democracy', described on the experiments that in Kerala have attracted considerable global attention. Empowering the Panchayats has helped in ushering the peoples campaign that culminated in completion of local development plans based on a thorough bottom up approach, never before attempted in India and probably in the world.

Nair *et al.,* [3] in the article *"Daridrya Nirmarjanam Adhikara Vikeendreekaranathilude"* explained the speedy process to be carried out for eradication of poverty at grass roots level through the People's Plan in Kerala.

Jha *et al.,* [4] has evaluated the fiscal success of recent efforts towards reforming and strengthening rural Governments in India through the process of rural decentralization initiated with the 73rd Constitutional Amendment Act in 1992. It measures the extent of fiscal decentralization that has taken place in order to evaluate how far the rural Governments have effective control over expenditure in seven Indian states for the decade of the 1990's and presents recommendations to make fiscal decentralisation more effective.

Bandhyopadhyay *et al.,* [5] in their article titled Convergence of programmes by empowering SHGs and PRIs, explained the effectiveness of self - help groups as:

Shaheena *et al.,* [6] points out that; there is an inter-Panchayat variation in the mobilization of non-plan revenue. The researcher also identified that, there is variation in the expected and realized additional resource mobilization. Resource transfer creates an income effect. The impact of conditional grants on revenue mobilization has great significance.

Vincent *et al.,* [7] identified that; there is a positive relationship between utilization of assistance given by Local Self Government Institution and socio–economic development of beneficiaries.

Basheer *et al.,* [8] identified that decentralization is effective to a certain extent for promoting socio-economic development, democracy, standard of living of people and ultimately upliftment of people at the grass roots level.

Minimol *et al.,* [9] points out that, there is no significant regional variation in measures for collection of revenue, and Panchayats significantly contribute to the benefit of rural mass.

Islam *et al.,* [10] points out that, adequate fund must be introduced to increase the importance and role of social institutions and decentralized governance to make them more effective.

Mathew *et al.,* [11] in his study suggested that the wage employment infrastructure development programmes should be strengthened and integrated by adopting suitable mechanisms. The areas that have maximum potential for employment in each Gram Panchayat should be identified and the projects suited for each locality may be selected and prioritized so that the available resources can be exploited to the maximum. He also pointed out the

importance of strengthening of Grama Sabha. He viewed the need to think of putting all the resources for local development under PRIs.

Jafri *et al.,* [12] pointed out that Grama Sabha is the important forum of participation to assist in planning and implementation through voluntary contribution and by scrutinizing and questioning the decisions of the panchayat. The participation of marginalized communities and women in Grama Sabha meetings has often reported to be small and these groups do not wield much influence.

Kumar *et al.,* [13] stated that undoubtedly, by making the periodic elections compulsory, the continuity of PRIs has been ensured. However, the panchayats are still groping with the fundamental problems pertaining to the three Fs: functions, functionaries and funds. The status of all these three is as ambiguous and hazy as it was a decade earlier, notwithstanding the repeated pleas and appeals to the higher authorities, both at the state and the centre. The funds are controlled by the central government, which is still not prepared to give the required untied funds to panchayats. On the other hand, the centre would like the states to devolve functions and provide adequate functionaries to these grassroots- level institutions. He also recommended, the local government system should be more accountable, responsive and transparent. Especially in the field of primary education, healthcare and local infrastructure and facilitates the judicious use and conservation of natural resources and focusing political attention on these issues. He stated that PRIs functions as a nursery for upcoming leadership, which eventually nurtures and prepares leaders for higher level institutions.

Shetye *et al.,* [14] points out that, the 74th amendment to the Constitution was promulgated in 1994 in Maharashtra through state conformity legislation and also codified specific norms for the selection of non-governmental organizations. But, state government or the elected representatives do not take initiative to implement this amendment, which was applied only after judicial intervention. Public bodies are not keen on decentralization of power and introducing transparency, accountability and responsiveness in civic administration.

John *et al.,* [15] identified that; there is a mismatch between activity mapping and corresponding funding in various budget heads of union territories. Own source of revenue needs to be mobilized by strengthening tax assessment. Proper programmes should be introduced to create awareness about the significance of gramasabha among the public.

Palanithurai *et al.,* [16] points out that, the lowest units of governance and administration have to be rationalized from the perspective of management. These units have to be made accountable to them first and then accountable to their officer next in the hierarchy. Thus downward accountability has to be ensured. Activities at local level are carried out by different personnel and the implications are to be assessed periodically.

Sharma *et al.,* [17] attempted to capture the complex and fascinating dynamic of grassroots democracy in India, and to delineate, in the context of this dynamic, critical policy steps. Panchayats present an intriguing picture of institutions embedded in the larger social and governance structure, but also capable of generating a new dynamic which has the potential for impacting the macro structure. How this can be brought about has been a consistent concern

in Indian policy. She clearly demarcated macro policy and panchayat level concerns, an insistence on the 'ground rules of politics' the development of mechanisms and processes for participation, and the development of a technically skilled bureaucracy.

Kumar *et al.,* [18] in his study on Grass roots Leadership – A Study on Local Governments in Kerala look into the study on Grass roots Leadership; A study on Local Governments in Kerala, pointed out that there are four important factors in Grassroots Leadership, namely: subordinate dexterity, superior efficiency, peer dominance and benevolent voluntarism. He also examined whether there exists significant difference in grass roots leadership potential, within and different tiers of Local Governments in Kerala and concluded that there exists significant difference within different strata of Local Governments.

Sudhish *et al.,* [19] in his work on An Evaluation on the Implementation of Peoples Plan in Kerala examined the problems in the implantation of peoples plan in Kerala with the following objectives:

1. To study the existing pattern of service delivery mechanism in Local Governments in Kerala.

2. To examine the extent of attainment of objectives set forth in ensuring Social Justice to the people of Kerala.

3. To assess the extent of attainment of objectives set forth in ensuring Economic Justice to the people of Kerala.

4. To look into the extent of attainment of objectives set forth in ensuring Environmental Justice to the people of Kerala.

5. To ascertain the extent of variation in service delivery among different implementing agencies of Local Governments in Kerala.

The study highlighted that there is an urgent necessity towards the improvement in the present practice of service delivery for ensuring environment justice in tune with social justice and there is a need for strengthening Grama Sabha to reflect the local feeling in Panchayath Raj Institutions, the importance of Grama Sabha, its formation, formation of working groups, proper training for project preparation and arrangement of institutional finance.

Biju *et al.,* [20] in his study on Certain Predictive Motivation Potential: A Study on Selected Local Self Government's in Kerala with the following objectives:

1. To identify a tentative set of major and sub-variables in combination would stand for 'grassroots motivation' potential.

2. To develop predictor equations of the Grassroots motivation potential of the functionaries in Local Governments.

3. To obtain factor structures on grassroots motivation in terms of experimental variables for different categories of people at grassroots in the Local Governments and for the total sample.

4. To examine the difference existing in perceived grassroots motivation among different strata of people in Local Governments.

Statement of the Problem

Grassroots communication networks in Local Governance consists of interaction of key players of different communication nodes viz., Local

Governments, GramaSabhas, Oorukkuttams, Ward Sabah's, District Planning Committees, District Planning Offices, Working Groups, Transferred Institutions, District Treasury Offices, Police Stations, Collectorates, Higher tier governments, Educational institutions, various missions like Kudumbashree, Non-Governmental Organizations, Social Activists and to a considerable extent, some informal communication nodes. The interaction to a particular node very largely depends upon the purpose for which advice or information is required to avail. In order to understand how a group functions in an organization it becomes necessary to analyses how one communicates in times of necessity and urgency where the means of communication ranks top in priority, be it formal or informal. This analysis is made through Social Network Analysis.

Objectives of the Study

1. To assess the social connectivity of Kerala local governments.
2. To analyze the effectiveness of formal and informal communication networks in Local Governments in Kerala.

Sample Design

The study considered a 'Multi-stage Stratified Random Sampling' for selecting the grassroots functionaries of local governments of lower most stratums, viz., Village (Grama) Panchayat, Municipality and Corporation.

METHODOLOGY FOR SOCIAL NETWORK ANALYSIS

In order to understand how a group functions in an organization it becomes necessary to analyses how one communicates in times of necessity and urgency where the means of communication ranks top in priority, be it formal or informal. This analysis is made through social network analysis. A Social Network Analysis examines the structure of social relationships in a group to uncover the informal connections between people. Social networks are nodes of individuals , groups , organizations and related system that tie in one or more types of interdependencies which include shared values , visions and ideas , social contacts, kingship, conflict, financial exchanges, trade , joint membership in organization's and group participation in events, among numerous other aspects of interpersonal relationships. A separate methodology is used for assessing formal and informal communication network of local governments in the lower strata. For the purpose of identifying the centrality, closeness, betweenness and other vital social network indicators, a specific opinion is redesigned for this purpose is made use of for capturing the communication networks between and among various formal and informal nodes by selecting one Corporation.

Sub Group Identification

Social Network Analysis can identify the number of closely knit sub groups or "cliques" in a network. Within a clique every unit is connected to every other unit. These sub groups can then be analyzed to see whether they share overlapping members. In Local Governments it is a matter of fact that the communication passing through informal networks are at higher side that it becomes necessary to measure its significance by using the techniques of social network analysis.

Corporations

SNA in Corporations has been worked out with a sum of Twenty Nine (29) different communication nodes occupied by both elected representatives and officials.

TABLE 1. Codes allotted

Mayor	1
SC1	2
SC2	3
SC3	4
SC4	5
SC5	6
SC6	7
Secretary	8
Deputy Secretary	9
P.A to Secretary	10
Corporations Engineer	11
Project Engineer	12
Council Secretary	13
Accounts Officer	14
Revenue Officer	15
Health Officer	16
Project Officer	17
Town Planning Officer	18
Asst. Town Planning Officer	19
Health Supervisor	20
Asst. Executive Engineer	21
Asst. Engineer	22
Asst. Accounts Officer	23
Superintendent	24
Head Draftsman	25
UDC	26
LDC	27
Daffedar	28
Peon	29

In this network there are Seven (7) elected representative holding the position of Corporations Mayor and Chairmen of six Standing committees and there are Twenty Two (22) officials working at different levels of key functions such as Secretary, Deputy Secretary, P.A to Secretary, Corporations Engineer, Project Engineer, Council Secretary, Accounts Officer, Revenue Officer, Health Officer, Project Officer, Town Planning Officer, Asst. Town Planning Officer, Health Supervisor, Asst. Executive Engineer, Asst. Engineer, Asst. Accounts Officer, Superintendent, Head Draftsman, UDC, LDC, Daffedar and Peon. The functions in general of these major role players are given below: The codes used for indicating various nodes in this communication network diagram in respect of Corporation in Table 1.

The SNA conducted among the above nodes of communication in Corporations indicates that it is more a reciprocally designed structure as is evident from the Fig 1.

Source: Analysis of primary data

FIGURE. 1. Network diagram of the select functionaries and standing committees in corporations

TABLE 2. Closeness centrality measures

	1	2	3	4
	In Farness	**Out Farness**	**In Closeness**	**Out Closeness**
8	28.000	31.000	100.000	90.323
10	34.000	34.000	82.353	82.353
24	35.000	34.000	80.000	82.353
14	36.000	38.000	77.778	73.684
17	37.000	34.000	75.676	82.353
29	39.000	36.000	71.795	77.778
13	40.000	40.000	70.000	70.000
26	40.000	40.000	70.000	70.000
21	40.000	41.000	70.000	68.293
12	42.000	42.000	66.667	66.667
25	42.000	42.000	66.667	66.667
9	42.000	42.000	66.667	66.667
1	43.000	44.000	65.116	63.636
11	43.000	44.000	65.116	63.636
18	43.000	43.000	65.116	65.116
22	44.000	43.000	63.636	65.116
15	44.000	44.000	63.6	63.636
27	45.000	45.000	62.222	62.222
23	45.000	45.000	62.222	62.222
19	45.000	46.000	62.222	60.870
16	46.000	46.000	60.870	60.870
5	46.000	46.000	60.870	60.870
4	48.000	49.000	58.333	57.143
20	48.000	48.000	58.333	58.333
7	49.000	49.000	57.143	57.143
3	50.000	53.000	56.000	52.830
6	50.000	50.000	56.000	56.000
2	51.000	51.000	54.902	54.902
28	55.000	50.000	50.909	56.000

Source: Analysis of primary data using computer software programme

The Fig 1. indicates that superintendent has maximum number of nodes directly reporting to him followed by the Corporations secretary followed by peon.

Closeness of Nodes in the Communication Network in Corporations

On an analysis as to the closeness of nodes in the communication network in the Corporations reveals that low farness or high closeness is for the secretary followed by the superintendent. It is seen that the size of node representing the secretary is very small followed by that of the superintendent. The value of closeness centrality measure of the Secretary is very high (100) followed by the PA to secretary (82.353).

The Closeness Centrality Measures of different nodes and Descriptive Statistics are shown Table 2 and Table 3.

Table 3. Descriptive statistics

		1	2	3	4
--------		In Farness	Out Farness	In Closeness	Out Closeness
1	Mean	43.103	43.103	66.215	66.127
2	StdDev	5.647	5.517	9.807	9.225
3	Sum	1250.000	1250.000	1920.249	1917.682
4	Variance	31.886	30.438	96.179	85.098
5	SSQ	54804.000	54762.000	129939.438	129278.344
6	MCSSQ	924.690	882.690	2789.201	2467.845
7	Euc Norm	234.103	234.013	360.471	359.553
8	Minimum	28.000	31.000	50.909	52.830
9	Maximum	55.000	53.000	100.000	90.323

Source: Analysis of primary data using computer software programme

Network in-Centralization = 71.28%

Network out-Centralization = 51.05%

Density of Nodes in the Communication Network in Corporations

The density (matrix average) of nodes in the communication network in Corporations is worked out to be 0.4643 with standard deviation of 0.4987, which is considered to be a good indicator.

Betweenness of Nodes in the Communication Network in Corporations

On an analysis as to the betweenness of various nodes of communication network in the Corporations, it is found that there are only very few nodes without having reciprocal relationship as the size of node representing the Corporations secretary is very high followed by that of superintendent.

Closeness of Nodes in the Communication Network in Corporations

On an analysis as to the closeness of nodes in the communication network in the Corporations reveals that low farness or high closeness is for the secretary followed by the superintendent. The network diagram with node size on the basis of closeness. It is seen that the size of node representing the secretary is very small followed by that of the superintendent. The value of closeness centrality measure of the Secretary is very high (100) followed by the PA to

TABLE 4. Freeman's degree centrality measures

1	2	3
Degree	Nrm Degree	Share

8	28.000	100.000	0.072
24	22.000	78.571	0.057
17	22.000	78.571	0.057
10	22.000	78.571	0.057
29	20.000	71.429	0.052
14	20.000	71.429	0.052
13	16.000	57.143	0.041
21	16.000	57.143	0.041
12	14.000	50.000	0.036
25	14.000	50.000	0.036
9	14.000	50.000	0.036
1	13.000	46.429	0.034
22	13.000	46.429	0.034
11	13.000	46.429	0.034
18	13.000	46.429	0.034
27	12.000	42.857	0.031
15	12.000	42.857	0.031
23	11.000	39.286	0.028
19	11.000	39.286	0.028
16	10.000	35.714	0.026
5	10.000	35.714	0.026
4	8.000	28.571	0.021
20	8.000	28.571	0.021
7	7.000	25.000	0.018
3	6.000	21.429	0.015
6	6.000	21.429	0.015
28	6.000	21.429	0.015
2	5.000	17.857	0.013

Source: Analysis of primary data using computer software programme

Table 5. Descriptive statistics

		1	2	3
		Degree	**NrmDegree**	**Share**
1	Mean	13.379	47.783	0.034
2	StdDev	5.623	20.081	0.014
3	Sum	388.000	1385.714	1.000
4	Variance	31.615	403.249	0.000
5	SSQ	6108.000	77908.164	0.041
6	MCSSQ	916.828	11694.229	0.006
7	Euc Norm	78.154	279.120	0.201
8	Minimum	5.000	17.857	0.013
9	Maximum	28.000	100.000	0.072

Source: Analysis of primary data using computer software programme
Network Centralization = 56.08%, Heterogeneity = 4.06%. Normalized = 0.63%

secretary (82.353). The degree centrality is high for the secretary as the node size is bigger in case of the node representing the secretary followed by the office superintendent. Degree Centrality of Nodes in the Communication

Network in Corporations. The degree centrality is high for the secretary as the node size is bigger in case of the node representing the secretary followed by the office superintendent.   The Freeman's degree centrality computed for different nodes and Descriptive statistics are shown in Table 4 and Table 5.

Betweenness of Nodes in the Communication Network in Corporations

On an analysis as to the betweenness of various nodes of communication network in the Corporations, it is found that there are only very few nodes without having reciprocal relationship as the size of node representing the Corporations secretary is very high followed by that of superintendent.

Closeness of Nodes in the Communication Network in Corporations

On an analysis as to the closeness of nodes in the communication network in the Corporations reveals that low farness or high closeness is for the secretary followed by the superintendent. The network diagram with node size on the basis of closeness. It is seen that the size of node representing the secretary is very small followed by that of the superintendent.   The value of closeness centrality measure of the Secretary is very high (100) followed by the PA to secretary (82.353). The degree centrality is high for the secretary as the node size is bigger in case of the node representing the secretary followed by the office superintendent.

Density of Nodes in the Communication Network in Corporations

The density (matrix average) of nodes in the communication network in Corporations is worked out to be 0.4643 with standard deviation of 0.4987, which is considered to be a good indicator. The Social Network Analysis made on the functionaries and elected representatives of Local Governments viz., Corporation indicates a common trend that the grassroots communication is not being channelized through the formally designed structure of the respective Organization Chart. In all the cases, the Secretaries viz., Corporation Secretary are having the highest centrality indicators in respect of betweenness, closeness and degree centrality. The second position goes to the node Superintendents and Peons of these Local Governments. This is the clear indication of the fact that when it comes to the grassroots communication, it is not the formal organization structure that matters but the informal organization structure.

CONCLUSION

The SNA conducted among the above nodes of communication in Corporations indicates that it is more a reciprocally designed structure which indicates that superintendent has maximum number of nodes directly reporting to him followed by the Corporations secretary followed by peon. On an analysis as to the reciprocity of various nodes of communication network in the Corporations, it is found that there are only very few nodes without having reciprocal relationship. The red arrows indicate those nodes having reciprocal relations and blue arrows indicate non-reciprocal relationships that indicate that the majority of interactions by different nodes in the communication network of municipality are that of reciprocal. The blue arrow in the network shows non reciprocal interactions and red arrows denotes the reciprocal interactions. All interactions in the network with different nodes except those between

Corporations Mayor, Standing committee (2), Standing committee (3), PA to Secretary, Accounts Officer, Project Officer, Asst. Executive Engineer, Asst. Engineer, LDC and Daffedar are reciprocal in character.

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