EXPLORING MOTIVES FOR COLLABORATION WITHIN A HUMANITARIAN INTER-ORGANIZATIONAL NETWORK

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ABSTRACT

While in recent years research has highlighted the rise of inter-organizational collaboration among humanitarian organizations/agencies in the nonprofit sector and has documented issues related to the forming and maintaining of these relationships, there is little known about their motives of collaboration. In this paper, we examine collaboration relationships among organizations/agencies member of a community of interest in humanitarian information exchange. The social network block-model method was used to analyze collaboration network data. Six strongly connected clusters were identified in the community. Evaluating reported reasons for these collaborations, it was found that the two main motivations are relational characteristics, which interestingly are the most and least reported reasons in two of the most densely connected clusters of relationships. These findings suggest that it is important to determine the different reasons for humanitarian - inter-organizational relationships if one is to understand the various patterns of collaboration within inter-organizational networks.

Categories and Subject Descriptors

K.4.m [**Computers and Society**]: Miscellaneous.

General Terms

Human Factors.

Keywords

Inter-organizational network, humanitarian NGOs, social network, collaboration, network clusters.

1. INTRODUCTION

In recent years, nonprofit organizations including those in the humanitarian relief field are increasingly collaborating through alliances, partnerships, and coalitions both within and across sectors [14] [1] [27]. This rise of inter-organizational collaboration is attributed to an increased environmental complexity and challenges where interdependence between different organizations is high and organizational stability is precarious [32] [27]. In the humanitarian sector in particular, as the number of man-made and natural disasters has risen, so has the need for more resources and consequently more collaboration among humanitarian actors [27]. The popularity of these inter-organizational collaborations is well documented in the literature [32] [14] [9]. There is also concurrently, an increasing number of research addressing issues involved in forming and maintaining these inter-organizational collaborations (e.g., [25] [2] [28] [14] [12] [17]).

In their discussion of inter-organization collaboration, Guo & Acar [14] define nonprofit collaboration as what occurs when different nonprofit organizations work together to address problems through joint effort, resources, and decision making and share ownership of the final product or service. The potential gains from inter-organizational collaboration include economic efficiencies, more effective response to shared problems, improvements in the quality of services delivered to clients, the spreading of risks, and increased access to resources [14] [11]. Some studies contend that these network forms enhance organizational effectiveness in ways that traditional governance mechanisms of markets and hierarchies cannot [29] [30]. The advantages offered by network of organizations include greater flexibility and adaptability to change; efficient and reliable information; and reciprocity that can promote long-term stability and reduce uncertainty [29] [13] [33]. Other studies have investigated the potentials drawbacks of inter-organizational collaboration and found that collaboration imposes some costs on partners (e.g. [24] [12]).

In the literature however, little is known about collaboration motives among nonprofit organizations that are members of a

collaboration network. The literature is especially silent on inter-organizational collaboration network of nonprofit in the humanitarian sector. The objective of the paper is to contribute to provide some insights on this aspect of nonprofit inter-organizational collaboration that has been neglected. To this end, we explore collaboration relationships among organizations/agencies member of a community of interest in humanitarian information exchange. Especially, we investigate the patterns of interconnections among organizations/agencies in the community and seek to understand the reasons that explain these collaboration patterns. We conducted a survey among organizations/agencies member of the Global Symposium, a UNOCHA sponsored community of interest on humanitarian information management. The block-model method [20] [6] [35] was used to analyze the data collected. Discussions of the findings draw upon two main concepts including exchange relationship [19] and social network structural equivalence [7] [8] [34] [18].

The rest of the paper is organized as follow: in the following section (Section 2) we present a brief literature review of previous work on inter-organizational collaboration in the nonprofit sector. In section 3 we discuss our analytical framework. Method and data are described in Section 4. The data analysis is presented in Section 5 followed in Section 6 by a discussion and the conclusion.

2. INTER-ORGANIZATIONAL COLLABORATION IN NONPROFIT: LITERATURE REVIEW

As said earlier, researchers have devoted a considerable amount of time investigating inter-organizational collaboration in the specific context of the nonprofit sector (e.g., [14] [9] [24] [1] [12] [16] [17] [11]). They have explored the different forms of collaboration and have looked at the benefits and costs involved in inter-organizational collaboration.

2.1 Forms of inter-organizational collaboration in nonprofit

Studies are also accumulating on the benefits and cost related to inter-organization collaboration in the nonprofit sector (e.g. [9] [16] [24] [12] [17] [11]). Inter-organizational collaboration benefits include benefits to the individual members of the network (e.g. the ability to address shared problems more effectively, the potential for cost savings and organizational learning), benefits to the clients of members of the network (e.g. the higher quality service or end product) and benefits to the community as a whole.

According to Jang & Feiock [17], inter-organizational collaboration among nonprofit organizations has the potential to enhance service to clients. They argue that inter-organizational collaboration is beneficiary to nonprofits because it allows them to share the risks associated with service production and delivery. Gazley [11], identifies five potential gains that nonprofit organizations could ripe from collaborating. They include (i) economic efficiencies, (ii) more effective response to collective problems, (iii) improvements in the quality of services, (iv) the spreading of risks, and (v) increased access to resources. According to Jang [16] collaboration with governments, other nonprofit or private organizations is an attractive option especially when nonprofits face transaction cost.

The major constraints and costs involved in inter-organizational collaboration in the nonprofit sector have also been intensively documented in the literature [12] [27] [23]. They include loss autonomy, financial instability, difficulty in evaluating organizational results, and the opportunity costs from the time and resources devoted to collaborative activities. Nonprofit inter-organizational collaboration must also content with problems related to conflict of interests among organizations and coordination cost in terms of resource inputs, especially staff-time [27]. According to Jang & Feiock [17], the costs of inter-organizational collaboration tend to be individual to organizations that participate in collaborative efforts while the benefits tend to be collective. They assert that nonprofits are confronted with a collective action problem because the benefits of collaborative services are diffused and difficult to measure for individual organizations, but many of the costs are borne by individual organizations.

This vast and growing literature in the nonprofit sector is however silent in investigating the motives of humanitarian inter-organizational collaboration. The objective of this paper is to contribute to the literature by providing some insights on this aspect of collaboration among nonprofit organizations in the humanitarian sector. Our research question is twofold. It is framed as follow: (i) what are the characteristics of interconnections among organizations/agencies which are members of a network of humanitarian information sharing? (ii) What are the major reasons that can explain inter-organizational collaboration patterns observed in a network of humanitarian information sharing?. We discuss below the analytical framework used in the paper. We draw upon network analysis and exchange theory. Network analysis coupled with the theory of exchange provided the framework for our consideration of the relationships within the network. Network analysis captures the embedded nature of a network's organizational actors and structural element [5]. It focuses on patterns of communication and information flows without placing value on the nature of the exchanges. The theory of exchange, meanwhile, assumes that the ties between organizations consist of exchange relations of valued items and that what matters is the value of the items [19] [30]. When combined, network analysis and exchange theory permit to understand more fully the relationships that exist and the nature of these links.

3. ANALYTICAL FRAMEWORK

We use two theoretical lenses to guide our study. These two theories which include the exchange theory and the network structural equivalence are briefly discussed in this section.

3.1 Exchange theory of inter-organizational collaboration

One of the main approaches that inter-organizational researchers have been using to study inter-organizational relationships is the exchange perspective [19] [30]. The exchange theory conceptualizes inter-organizational collaboration more broadly, as to compare with the perspectives of resource dependency and transaction costs theories. This theory posits that organizations get involved in relationships when there is a perception of mutual benefit for interacting. According to Levine & White [19], exchange among organization does not necessarily involve elements of economic value. They assert that part of the exchange process is the development of consensus among organizations. In

addition to explaining the motivations for inter-organizational relationships, the exchange approach also implies that the nature of the interactions between participants in these relationships is characterized by a high level of collaboration [31]. According to Provan & Milward [30], the degree and type of inter-organizational collaboration within a community is reflected in both the number and pattern of inter-organizational exchanges.

3.2 Network structural equivalence

According to the concept of structural equivalence, organizations which have the same or similar ties to others tend to be equivalent in terms of their potential to act in the network [7] [20] [34] [18]. Structural equivalence also takes into account the pattern of connections among all members of the network. Unlike the clique detection methods which are based on relations among members of the sub-group, this approach detects subgroups based on their similar patterns of relations with other members of the network [34] [18]. Members of a network are put in a structurally equivalent group when they have comparable patterns of linkages with other members of the network, even if they do not maintain relations with one another [20].

Central to structural equivalence analysis is the concept of distance [7]. Using the structural equivalence criterion, distance between network members is measured by the degree of similarity in their patterns of interaction: The greater the similarity, the shorter the distance. If two members have exactly identical patterns of relations with other members, their distance from each other is zero. The greater are the differences in their patterns of interaction, the greater is the distance between them. In a nutshell, the goal of structural equivalence analysis is to simplify the structure of relations in a network so that it is possible to understand the various kinds and patterns of interactions occurring in the network.

4. RESEARCH METHODOLOGY

In this paper, we used social network tools to analyze data collected through survey. Network analysis is becoming increasingly popular for understanding complex patterns of relationships. The network perspective examines actors which are connected directly or indirectly by one or many different relationships. Regardless of unit level, network analysis describes structures and patterns of relationships and seeks to understand both their causes and consequences.

4.1 Method

In this paper we analyze data drawn from the Global Symposium inter-organizational project collaboration network [21] [22]. The Global Symposium is a United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) sponsored inter-organizational community for humanitarian information management. The community is made up of about 100 international organizations/agencies, engaged in information management in the field of humanitarian assistance and disaster relief. UNOCHA distinguishes eleven broad categories of network members including NGO, United Nations System, Academia, Donor, Governmental Organization, Regional organization, Intergovernmental Organization, Media, Permanent Mission UN / Observer Private Sector, and Red Cross / Red Crescent Movement. A total of 61 responses were registered from an online survey conducted among 267 attendees of the 2007 Global Symposium+5 meeting. Respondents represented 47 different organizations out of the 119 organizational members of the Global Symposium network that were surveyed; making a response rate of nearly forty percent (39.50%). They were asked to identify organizations/agencies with which they had collaborated on humanitarian projects and to indicate their reasons for collaboration. The survey was the second in a series of three. It was developed with insights gained from survey results obtained at the time of the Symposium itself as well as those gained from an historical analysis of Symposium. Both the first and this second survey were reviewed by leaders of the Symposium. Social network analyses were conducted to explore the data collected in order to assess inter-organizational collaboration patterns in the network. The UCINET software [4] was used to computerize the data. Social network features used in the paper include network density [10] [34], degree centrality [10] [34], network position [7] [8] [34] and a block model [20] [6] [35] [34].

4.2 Data

4.2.1 Project collaboration network data

As said earlier, we collected data through survey, from 47 organizations/agencies members of the Global Symposium. Respondents were asked among other questions, to indicate organizations/agencies with which their organization/agency had collaborated on humanitarian projects. Thirty five (35) organizations answered this question. In order to increase the reliability of this network data, we provided respondents with the complete list of organizations/agencies, rather than relying on their memory. In addition, during coding, we averaged responses from multiple informants of the same project collaboration relationship. Table1 presents the 35*35 directed network matrix generated from the data collected. To protect confidentiality, we identify organizations/agencies by assigning codes for example NGO1. The collaboration relationships represented in the matrix are those reported by organizations on the rows. In this study, we considered both the reciprocated and non-reciprocated reported collaboration ties. A reciprocated collaboration tie is one in which both organizations/agencies report the collaboration relationship. Many researchers report reciprocated ties, with the premise that this strategy increases the reliability of network data and provides a more conservative estimate of inter-organizational relationships (e.g., [26]). However, a relatively high number of non-reciprocated ties are also often reported [3], suggesting that an over reliance on confirmed ties may under represent relationships in the network.

In order to gain a better understanding of tightly and loosely connected members of the network, we used the CONCOR block modeling procedure. CONCOR block modeling method relies on structural equivalence. It aggregates network actors into clusters based on similar patterns of interaction, regardless of whether or not they interact with each other. Table2 shows the matrix resulting from this procedure. The content of this matrix is the same as that of the original network matrix represented by table1. The only difference is that the organizations/agencies in the rows and columns have been reorganized by CONCOR in a manner to group together those that are structurally equivalent. Four different network positions (P1, P2, P3, and P4) are identified. Each position comprises a set of organizations/agencies that collectively reported collaboration or no collaboration with other organizations/agencies in the network.

The CONCOR block modeling procedure also provides a density matrix (Table 3). A density matrix is a table that has positions instead of individual organization/agency as its rows and columns and the values in the matrix are the proportion of ties that are present from the organizations/agencies in the row position to the organizations/agencies in the column position. This density can be used to measure the level of connectedness, which means collaborations in this network, among organizations in the position. In order to define a tightly connected network block, we set the cutoff density value to the density of the whole network which is 0.15. . In other words, a tightly connected cluster is the one in which at least 15% of all possible collaboration ties are effectively made. This method of determining the cutoff density value is frequently used in the literature (e.g. Wasserman & Faust, 1994). Based on this decision, six tightly connected clusters (set of relationships between two positions) were found in the network data. These clusters (P1P2, P2P1, P2P2, P3P1, P3P2 and P4P4) are represented in the image matrix below by 1s (Table 4). The rest of the clusters are represented by 0s.

Figure 1. Reduced Graph

Table 1. Raw network project collaboration matrix

Table 2. Blocks of organizations in the network identified through CONCOR block-modeling

4.2.2 Data on reasons for collaboration

Respondents to the survey were also asked to indicate the reasons their organizations/agencies collaborate with other organizations/agencies member of the network. They were provided with a list of eight reasons, derived from the literature on coordination in general but tailored to the specific concerns of humanitarian information management (Table 5), from which they could select all that apply to them.

To better understand the collaboration relationship between and within positions, the inter-organizational collaboration network in Table 2 is transferred into the reduced graph in Figure 1. In this graph, positions are represented as nodes and ties between positions in the image matrix define the arcs between nodes. A "1" in an image matrix indicates that there is an arc from the node representing the row position to the node representing the column position in the reduced graph.

Table 3. Density Matrix

```
         P1      P2      P3      P4
       -----   -----   -----   -----
 P1    0.100   0.400   0.147   0.050
 P2    0.218   0.264   0.024   0.000
 P3    0.240   0.297   0.110   0.033
 P4    0.050   0.000   0.017   0.167
```

Table 4. Image Matrix

```
         P1      P2      P3      P4
       -----   -----   -----   -----
 P1       0       1       0       0
 P2       1       1       0       0
 P3       1       1       0       0
 P4       0       0       0       1
```

Table 5. List of reasons for collaboration

R1	The goals of both organizations overlap.
R2	The project was on my organization's agenda already.
R3	Both organizations are operating in the same geographical area.
R4	My organization is seeking a relationship with the project partner.
R5	The other organization has a successful track record of securing project funding.
R6	The other organization has data in which my organization is interested.
R7	The other organization has information management policies or procedures in which that my organization is interested.
R8	The other organization has technical tools in which that my organization is interested.

Table 6 shows the responses that were collected. These responses were aggregated for each of the six tightly connected network clusters identified through CONCOR. The aggregation was made based on the number of reported project collaboration relationships in each cluster. For example, if organization/agency NGO1 collaborates for reason R1, this reason will be credited with the total number of collaborations report by NGO1. As said earlier, we assumed that all reported collaborations from one organization/agency were for the same reasons. After calculating the total frequency of occurrence of each reason, we computed the mean frequency per cluster (Table 7) and ranked them from the most important (high mean frequency) to the least important (low mean frequency). Table 8 presents the result of the ranking.

Table 6. Organizations' reasons for collaboration

		R1	R2	R3	R4	R5	R6	R7	R8
P1	NGO1	√							
	NGO19	√					√	√	√
	NGO29	√	√	√	√	√	√	√	√
	NGO6	√	√		√	√			
	NGO8	√		√			√		√
P2	NGO20			√			√	√	√
	NGO22	√	√	√	√		√	√	
	NGO32	√	√	√	√		√	√	√
	NGO17	√							
	NGO27	√		√	√		√	√	√
	NGO28	√							
	NGO4	√	√			√			√
	NGO30	√	√	√	√	√	√	√	√
	NGO14	√	√	√	√	√	√	√	√
	NGO31	√					√		√
	NGO33	√	√	√				√	√
P3	NGO9	√				√			
	NGO35	√	√	√			√	√	√
	NGO2				√	√			√
	NGO3	√					√		
	NGO12	√	√	√	√	√	√	√	√
	NGO5				√		√		√
	NGO24	√	√		√	√	√	√	√
	NGO15	√	√	√	√	√	√		
	NGO25	√	√		√	√	√	√	√
	NGO34	√	√			√			
	NGO10	√			√	√			
	NGO11	√					√	√	√
	NGO16	√	√		√	√			√
	NGO13	√						√	√
	NGO23	√			√	√	√		√
P4	NGO7	√					√	√	√
	NGO21	√	√		√		√		
	NGO26			√	√	√			
	NGO18		√			√	√		√

5. ANALYSIS

5.1 Characterizing network positions

As shown in table 3, applying the CONCOR procedure to the network data produced four structurally equivalent positions in the network. The number of organizations/agencies in each the network positions varies significantly ranging from 4 (four) to 15 (fifteen). Positions P1 and P4 have the smallest number of organizations/agencies, 5 (five) and 4 (four) respectively. These two positions could also be characterized as NGOs positions since 4 (four) out of the 5 (five) organizations/agencies in position P1 and 2 (two) out of the 4 (four) in position P4 are NGOs. Position P2 in made up of 11 (eleven) organizations/agencies mainly from the UN System (six out of eleven). The only Donor organization in the 35 surveyed belongs to this position. This position could be characterized as the UN position. Position P3 has the greatest number of organizations/agencies (fifteen) and is the most diversified in term of different categories represented (eight). With six organizations/agencies, academia is the category with the highest number of organizations/agencies. The only Media organization surveyed belongs to this position. Position P3 could be characterized as the 'other agencies' position. This examination of the Global Symposium collaboration network positions sheds some light on the grouping of the members of the network.

Table 7. Mean frequency each network position reported types of reasons for collaborations

Cluster	R1	R2	R3	R4	R5	R6	R7	R8
P1-P2	1.07	1.03	1.37	0.78	0.93	1.19	1.32	1.23
P2-P1	0.98	0.94	1.55	0.72	0.43	1.03	1.14	1.18
P2-P2	1.07	1.04	1.92	1.19	0.35	1.28	1.41	1.27
P3-P1	0.95	0.84	0.52	0.95	1.23	0.84	0.76	1.03
P3-P2	0.96	0.85	0.55	0.98	1.10	0.70	0.74	0.72

Table 8. Ranking of types of reasons for collaboration in descending order of mean frequency

	Cluster				
	P1-P2	*P2-P1*	*P2-P2*	*P3-P1*	*P3-P2*
1	R3	R3	R3	R5	R5
2	R7	R8	R7	R8	R4
3	R8	R7	R6	R4	R1
4	R6	R6	R8	R1	R2
5	R1	R1	R4	R2	R7
6	R2	R2	R1	R6	R8
7	R5	R4	R2	R7	R6
8	R4	R5	R5	R3	R3

5.2 Patterns of collaboration

After the network is partitioned into structurally equivalent positions, patterns of relationships between and within the positions are examined using the density matrix and the image matrix (see [51(p.389-391)]). As said earlier, a density matrix shows the proportion of potential linkages that are actually sent from a row position to a column position. It is possible for a position to send many linkages to other positions and not to receive linkages in return. Another possibility is for a position to be internally linked, with members of the block sending links to one another.

Six tightly connected clusters of collaboration were identified in the Global Symposium network data. With regards to the density of interactions, these clusters present diversified patterns of project collaboration between and within the four structurally equivalent network positions. Scores in the density matrix range from 0.40 to 0.167. For example, the cluster formed by positions P1P2 is strongly linked. Forty percent (40%) of all the possible linkages between the organizations in these positions are actually found to exit. In contrast, only about 17% of all possible linkages of organizations/agencies in the cluster formed by positions P4P4 are present.

5.2.1 Patterns of collaboration within positions

Among the six tightly connected clusters of interaction that were identified in the network data, two were concerned with interaction within position (P2P2 and P4P4). The level of collaboration among organizations/agencies in each of these two positions was higher than the average in the whole network. These two clusters differ in their intensity of interaction as well as in the type of organizations/agencies. With 26.4% of connections, P2P2 has one of the highest densities among the tightly connected clusters while P4P4 has the lowest density. Position P2 is made up mainly of UN agencies while P4 is composed of NGOs. The reduced graph (Figure 1) shows that P4 is an isolate in the network. That is, organizations/agencies in this position collaborate only among themselves.

5.2.2 Patterns of collaboration between positions

The following four clusters of interaction P1P2, P2P1, P3P1, and P3P2 show collaboration between network positions. An examination of the direction of relationship flows between positions in the reduced graph (Figure 1) shows a "one way" relationships between positions P3 and P1 and positions P3 and P2. This means that organizations/agencies in position P3 reported collaboration with organizations/agencies in both position P1 and position P2. But organizations/agencies in P1 and P2 did not report collaboration relationships with P3. This may be a common characterization of relationships between resources providers and resources seekers. The pattern of relationships is consistent with this notion. The reduced graph also shows a bidirectional relationship between position P1 and position P2.

5.3 Reasons for collaboration

Table 7 shows for each of the six tightly connected clusters of interactions the mean frequency of occurrence of reasons for collaboration. The highest score cross cluster is for reason R3 (both organizations are operating in the same geographical area). This highest score is registered in cluster P2P2. The lowest score cross cluster is for reason R5 (the other organization has a successful track record of securing project funding). This score is also registered in the cluster P2P2. The appearance of these two extremes scores in the same cluster would be a strong indication

of the characteristic of interaction in this cluster. This also indicates the differences between clusters.

An examination of table 7 also shows that two different main reasons for collaboration (highest scores) are identified that could characterize two of the six clusters. As said earlier, reason R3 would characterize cluster P2P2, while R5 (Successful track record of securing project funding R5) would characterize cluster P3P2. These two reasons occupy respectively and inversely the top and the last positions in the two clusters. This same pattern is almost similar in the other clusters.

Table 9 presents the density of collaboration among organizations grouped per reported reasons of collaboration. As highlighted in this table, R3, R4, R5 and R7 register respectively the first, second and third highest density of collaboration. These findings are concordant with the result obtained from block modeling.

6. DISCUSSION AND CONCLUSIONS

The main objective of this research is to investigate inter-organizational collaboration behavior / reasons among humanitarian organizations/agencies which are members of a community of interest in information exchange. We seek to understand the patterns of interconnections among organizations/agencies in the community. We also investigate the reasons that explain the collaboration patterns observed in the community. Although previous research highlight the popularity of inter-organizational collaboration in the nonprofit sector and document issues involved in forming and maintaining these inter-organizational collaborations few studies examine the behavior of humanitarian organizations/agencies members of a community of interest in information sharing.

Table 9. Density of collaboration among organizations grouped per reason

	Reasons for Collaboration							
	R1	R2	R3	R4	R5	R6	R7	R8
# of organizations	30	17	12	18	17	22	17	23
Max # of ties possible	870	272	132	306	272	462	272	506
# of ties present	166	93	77	124	103	128	103	124
Density	0.19	0.34	0.58	0.41	0.38	0.28	0.38	0.25

Our study shows that with regards to inter-collaboration relationships, the UNOCHA Global Symposium community is fragmented into four groups described as network positions. The density of collaboration relationships within and between these groups varies significantly ranging from 0% (zero) to 40% (forty). Organizations/agencies of each group appear to be almost all in similar category (e.g. NGO, UN agencies, Academia). This may mean that organizations in similar categories hold similar structural positions in the inter-organizational collaboration network. The study also shows that two main reasons predominantly characterize collaboration relationships among members of the Global Symposium community. These reasons were related to (i) location of operation, i.e., both organizations/agencies are operating in the same geographical area and (ii) resources i.e., the other organization has a successful track record of securing project funding. More importantly, we found that the two predominant reasons were inversely the most and least reported in two of the most densely connected clusters. These findings are consistent with Bolland & Wilson [3] according to whom every inter-organizational network is clustered into groups of agencies centered on specific needs. Our study extends their work in the humanitarian information exchange field.

As stated earlier, according to the exchange perspective of inter-organizational relationships, relations form when organizations perceive mutual benefits or gains from interacting [19] [15]. Our findings corroborate with this perspective as one of the major reasons for which organizations collaborate was found to be related to secured resources. When looking at the findings from the structural equivalence perspective [7] [8] [34], the fact that the two predominant reasons for collaboration were inversely the most and the least reported in two different clusters would be consistent with this approach. Organizations in the same structurally equivalent network position would tend to have similar behavior in the network. The results of this research contribute to the body of literature inter-organizational collaboration among humanitarian organizations/agencies by identifying and describing the patterns of collaboration as well as the motives that could explain these patterns.

Summarizing, this paper responds to a call for researchers to further examine solutions to inter-organizational collaboration issues. It sheds some lights on collaboration behavior in a community of interest in humanitarian information exchange. It also identifies some factors that explain the patterns of collaboration found in the community.

The results of this study should be considered in light of several limitations. Of particular concern, is the potential sampling bias due to the fact the survey participants were not selected through any scientific sampling technique. Rather, the survey was conducted on a sample defined by UNOCHA thereby generating an organizational bias. Another limitation to the study concerns the source of information. The network data was constructed based on information provided by individuals. The position of these individuals in their organization may not allow them to always have complete information about the organization's relationships. A third limitation concerns CONCOR, the social network block model that we use. CONCOR has been criticized as lacking validation. That is, there is no proof that convergence of the correlation matrix actually represents structurally equivalent positions. Lastly, two important assumptions are made in the study. First, we assume that inter-organizational collaboration relationships are of different kind. At any particular time, an organization could be engaged collaboratively in different kind of projects with other organizations. The second assumption is that reasons for which an organization collaborates with others were the same irrespective of projects or collaboration partner's characteristics.

7. ACKNOWLEDGMENTS

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