

Mat-2.4177 Seminar on Case Studies in Operations Research

Supporting planning and monitoring of conflict management using expert assessments on relationships between conflict stakeholders

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Client: Crisis Management Initiative

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1. Updates on research questions

Since the project plan, the goal of this project has become more accurate. It is to:

- Develop a prototype version of a procedure for expert based assessment of conflict relations.
- Discuss the potential use of this procedure in planning mediation activities and monitoring the outcomes of peace mediation.
- Develop prototype tools that help visualizing the relations and in using the information gathered with the process.
- Discuss the assumptions behind the logic of this process, discussion of the strengths and weaknesses of this process, discussion of the potential extensions or modifications to this process.

Together with CMI we decided that it would be most fruitful to develop a working prototype version of the process without too much focus on details. This prototype version would serve as a reference point and a source of ideas for similar future work.

The prototype version of the procedure has been created. It has been tested with CMI staff on a half-day workshop where it was used to assess the relations between stakeholder groups in Palestine conflict. The procedure is described in more detail in the section 2.

At the workshop it became clear that this prototype procedure could be further developed in multiple ways that would result in a procedure that is potentially very useful for CMI especially in planning conflict mediation activities. The further development, however, should not be carried out before CMI experts further define the context for the use of the procedure and the goals that the use of the procedure has.

2. A procedure for assessment of conflict stakeholder relations

The current version of the procedure consists of the following steps.

1. Defining the stakeholders included in the analysis.
2. Expert assessment on the groups and their relations in four dimensions:
 - Trust: Group X's trust towards group Y.
 - Respect: Group X's trust toward group Y.
 - Technical communication capacity: The technical possibility for X and Y to communicate with each other.
 - Communication ability: The ability of a group to communicate its agenda
3. Presentation of the results. Identification of interesting patterns.

For step two the team has implemented an online questionnaire that was used in the Palestine workshop.

Error! Reference source not found. shows how respect was defined and measured in this questionnaire. The other dimensions were measured in a similar way.

Measuring respect

Respect means giving value for a person or a group and their rights. It means treating others with dignity and recognition of the views and perceptions of others. It also includes acknowledging them, listening to them, being truthful with them and accepting their individuality. Absence of respect can feed anger and hostility and at worst lead to humiliation and violence. Respect can be both give and/or received.

		1	2	3	4	5
		Group A has no respect towards group B:		Group A has moderate respect towards group B:		Group A has complete respect towards B:
RESPECT	Desire to co-operate:	Group A has cut linkages with group B and is not willing to reconstitute them.		Group A is ready to negotiate with group B but not truly willing to reconciliation of dissenting opinions.		Group A is willing negotiate with group B and find mutually acceptable solutions.
	Occurrence of hostility and violence between group A and B:	Daily	Weekly	Few times a month	Few times a year	None during the last 12 months
	Aggression used by group A in speech towards group B:	Speech towards group B is nothing but hostile, offensive or intimidating.		Hostile, offensive or intimidating appear occasionally in speech towards group B.		Speech towards group B is not hostile, offensive and intimidating at all.

Place each pair of groups, where A→B indicates A's respect towards B, to scale of 1-5 according to their respect towards other group considering the criteria in the table.

- 1: Group A has no respect towards B.
- 2
- 3: Group A has moderate respect towards B.
- 4
- 5: Group A has complete respect towards B.

	1	2	3	4	5
A -> B	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A -> C	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B -> A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B -> C	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C -> A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C -> B	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 1: Measuring respect. A screenshot from the online questionnaire.

In step three the results can be presented in multiple ways.

- The raw numbers between different experts can be compared with each other. For example, it can facilitate discussion if the expert's opinions on the relation "A->B" in the respect dimension differ greatly from each other.
- The expert judgments can be averaged for each item in the assessment. This averaged information can be presented e.g. for each pair of groups. For example in form of column plot where height of one column gives the average evaluation for "A->B", the height of a second column gives the average evaluation for "B->A" etc. It can be useful to aggregate some information to simplify the visual presentation. It can be better, e.g. to present only the minimum of average "A->B" and "B->A" evaluations.
- The averaged information can also be presented in form of a graph. This helps in giving an overall view on the relations. The graph can depict multiple dimensions simultaneously with following degrees of

freedom in building the graph: an arc can be directed / undirected to visualize whether a dimension is directed or not, the color of an arc can e.g. depict the degree of trust / respect, the weight of an arc can depict the communication capacity between the groups, the size of a node can depict an attribute of the group corresponding to the node. We have developed a tool for this graph presentation. The relationship data is inputted to an excel sheet from which a file is generated that is readable by Gephi graph visualization software.

- We developed an aggregate indicator that combines the dimensions of trust, respect, technical communication capacity and communication ability to one number that represents the capability for constructive discussion. This aggregate indicator is not further discussed here.

Below is a list of some interesting patterns that can be identified from the assessment data:

- Clustering of the groups.
- Strongest link between clusters of groups.
- Cases where the link between A and C is weaker than the links from A to B and B to C combined. Here a reasonable “distance metric” must be defined.

We have developed algorithms identifying each of these patterns. The algorithms are implemented in excel.

3. Project management

The project team has decided together with CMI that the prototype procedure and the tools it includes that were developed for the Palestine workshop are enough complete. Thus the task for rest of the project work is give detailed description on the procedure and to discuss it thoroughly.

The upcoming task by the group is to define the items to be discussed and explained in the final report and to allocate the writing duties on each of them to the group members.

Currently none of the risks identified in the project plan have realized. Now it seems clear that the work is useful and there are no problems that cannot be overcome. Thus the greatest risk for rest of the project is lack of time. To mitigate this risk, the team should start writing the final report as soon as possible.