Multi Actor Multi Criteria Analysis as a tool to involve stakeholders within the city distribution context

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Extended abstract

Objectives and motivation
Lessons from previous experiences to implement sustainable solutions for city distribution show that the involvement of stakeholders in projects is critical (Melo & Costa, 2011; Lindholm and Browne, 2013). A stakeholder is according to Freeman (1984) an individual or group of individuals who can influence the objectives of an organisation or can be influenced by these objectives themselves. Stakeholders are thus not only those who are affecting a problem, but also the ones who are being affected by it (Macharis, 2005). Within the urban freight context these are usually the receivers, shippers, authorities, citizens and transport operators. These stakeholders might have conflicting objectives. Whereas authorities are responsible for governing urban areas, the private sector is responsible for the majority of the movement of goods. Measures often fail because not all stakeholders are involved early in the decision process. In addition, there is a lack of systematic assessment of the effects of different measures (Macharis et al., 2014). The support of each stakeholder group is essential to drive the sector towards economic, social and environmental sustainability (Behrends et al., 2008). The bottom-up approach, comprehensively involving different stakeholders, should therefore be a common practice. The success of freight quality partnerships is showing a positive trend in this regard (Lindholm & Browne, 2013). They allow to bring together the different stakeholders and to introduce communication within a sector that is typically very competitive.

In this context, the multi-actor multi-criteria analysis (MAMCA) offers a method to improve the discussion among stakeholders. Based on a detailed analysis of each stakeholder group, the MAMCA shows an evaluation of the different possible alternatives from the perspective of each stakeholder. It uses the stakeholders’ objectives as the criteria for the evaluation. Hence, it is possible to clearly identify the alternatives that receive the most support from the different actors as can be seen in Figure 1. Each line represents the overall scores for an alternative by each of the stakeholders. Alternatives that can count on the support of all stakeholder groups will become at the top of the graph. At the same time, the visualisation facilitates the understanding among stakeholders. The visualisation does not only stimulate discussions, it also helps decision-makers to understand the problem, their priorities and those of other involved stakeholders. Altogether, it shows which alternative has the highest possibility of consensus and consequently helps to enhance the acceptance of the final result (Macharis et al., 2012). In the example below it could be said that alternative 3 (S3) has the highest probability of consensus.

The MAMCA has been developed by Macharis (2005). Since then, it has mainly been applied in evaluation of transport projects (Macharis et al., 2009), and also specifically in the field of urban freight transport (e.g. Macharis et al., 2014). Different cases have shown the benefits of using the methodology to improve the understandings among stakeholders. Today, the application of the MAMCA has been extended to workshops as a basis for discussion. Such workshops have been organised in Newcastle within the European project STRAIGHTSOL (for the application of the MAMCA within the project see STRAIGHTSOL, 2014), in Gothenburg with local stakeholders,
with shippers and logistics managers from several large companies on the distribution of their goods in metropolitan areas, for the location of a UCC in Brussels, and focusing on sustainable distribution concepts with local stakeholders in a small municipality in Belgium. The aim of this paper is to give an overview of these five different workshops which have been organised in different ways and different settings, and explain the lessons learned from the application of the methodology in a workshop focusing on city distribution problems.

**General description**

The MAMCA consists of seven steps. The first step is to give a clear problem definition and determine possible alternatives for this problem (e.g. urban consolidation centre). Next, a stakeholder analysis is conducted in order to identify the relevant stakeholders and their objectives. Although stakeholder groups in the context of city distribution are often the ones mentioned above, these groups can be adapted depending on the project. The objectives are identified with aid of the literature and consultation with the relevant stakeholders. In the third step, the stakeholders are asked to give weights to each of their objectives during the workshop. In this way, the importance of the specific objectives for each group is determined. The fourth step links one or more measurable indicators to each criterion. These indicators can be either quantitative or qualitative, depending on the criterion. In step five, the aggregation of the information in the previous steps is performed into an evaluation matrix. In this way a ranking of the different alternatives for the stakeholders is achieved. The results – showing the advantages and disadvantages for each stakeholder group – are visualised in step six. Visualisation can be mono- as well as multi-actor. Finally, in step seven the results are discussed in order to define mitigation and deployment strategies for future implementation (Macharis et al., 2012).

**Results and conclusions**

The paper will give an overview on the added value of a MAMCA workshop in order to help discussion about city distribution within cities. The lessons learned from several experiences will be analysed and will allow identifying the relevance of the methodology in discussions around urban freight transport projects. Also, further improvements will be identified for future work. These can be implemented in the MAMCA software in a next stage for future discussions.

**References**


**Keywords**: Urban freight; Stakeholder involvement; MAMCA.