A Multi-Criteria Decision Aiding System to Support Monitoring in a Public Administration

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ABSTRACT

The Piedmont Region Financial Institute has had to construct a procedure and a system to monitor projects that a regional law has financed. In this context, the integration of a new data reading approach in a monitoring procedure has been proposed and a multi-criteria decision aiding method, ELECTRE TRI, has been applied to the problem, first to explain a possible use of the acquired information and then to be integrated in the information system. The Model base of the prototype system was used, as a shared space and a common framework, to better understand the aims and information needs of the monitoring process and therefore to read data and orient information acquisition. The application of ELECTRE TRI to the models analytically synthesizes the information elements, to face the difficulties of the monitoring process in its different phases and to support decisions, in terms of modifications and integrations of activities for future law applications.

Keywords: Collaborative Modelling, ELECTRE TRI, Monitoring Information System, Monitoring Processes in the Public Administration, Problem Formulation and Structuring

INTRODUCTION

An administrative process, to stimulate and finance “integrated planning” actions in the tourism sector, was activated in Piedmont, a Region in the north west of Italy, through Regional Law n° 4 of 24 January 2000 (R.L. N. 4/2000). The law has the aim of involving local agencies in the territory, to promote the development of new areas with tourist possibilities, revitalize declining tourist areas or qualitatively improve important tourist areas, according to the sustainable tourism principle.

R.L. N. 4/2000 explicitly activated (and financed) a monitoring process to acquire knowledge not only on the courses of action and the results of the financed agencies, but also and above all on the long and complicated law implementation process, in order to improve future activities in relation to the same law and to the design of new financing processes.

Finpiemonte, the Piedmont Region Financial Institute, is often required to administer the procedure of financing the accepted projects and to administratively monitor the project realizations, in relation to different regional laws. In this case and for the first time, it was also involved in constructing a procedure to monitor the law implementation process and a
system to synthesize all the acquired information elements.

The new work context created some complexity elements and the definition of the main activities was neither easy nor immediate. In literature a great deal of attention has been paid to some specific actions that characterize the implementation of a financing law, e.g. project selection, to propose models and methods to evaluate the projects that have to be financed (see for instance Jacquet-Lagrèze, 1995; Norese & Viale, 2002; Puthamont & Charoenngam 2007; Halouani et al., 2009), or program evaluation, to systematically investigate the effectiveness of social intervention programs (see Rossi et al., 1999; Schröter, 2006; Frechtling, 2007). However, in this case, only the realization process of the financed projects had to be monitored and then connected to the other actions of the process, in order to identify positive and/or negative relationships and improve future law implementations. The discrepancies between the scheduled project execution and the actual situation had to be identified, but not for rescheduling or re-planning purposes, because the project monitoring was not oriented towards project control (as in Jiingen & Kowalczyk, 1995; Ahuja & Thiruvengadam, 2004.). These discrepancies had to be globally analysed and related to the identified limits of the law implementation process.

Multi-criteria models and methods were proposed in this monitoring process as a common framework and vocabulary for the involved actors, technicians and experts, to understand the situation and acquire a shared vision of the problem, to support the definition of some monitoring procedures and orient the information acquisition, and as an operational tool, to read and synthesize all the elements of the monitoring information system.

The different activities of the monitoring process in the first R.L. N. 4/2000 implementation are described in the next section and then related to the proposal of using a “multi-criteria approach” to the problem of data acquisition and its tools (models and methods), to support the decision makers when the monitoring results have to be used. The third section deals with the integration of a multi-criteria decision aiding method, ELECTRE TRI, with the monitoring process and the monitoring information system, above all to describe and anticipate how the acquired information can be synthesized and oriented towards specific monitoring goals and then to use all the acquired information elements and propose modifications and integrations of the law implementation activities. The last section discusses the integration of ELECTRE TRI in a system that has to be perceived and used as a useful tool for the organization, not only at the end of the monitoring, but in all the phases of the process.

THE MONITORING PROCESS AND PROCEDURES

The integrated plans (IPs), the R.L. N. 4/2000 financed in its first implementation, have to be promoted and coordinated by a public Agency and can include several intervention projects and involve different beneficiary subjects. Integrated planning requires specific expertise and direct and deep knowledge of the territory. The selection of the IPs, in relation to these characteristics and to consistency with the aims of the law, is not easy. The setting up of an integrated plan is complicated since it requires coordination and control capabilities during the project implementation. For these reasons, R.L. N. 4/2000 activated a monitoring process, to identify and limit weakness elements in the law implementation. The monitoring however resulted to be difficult for several reasons, such as the nature of the monitoring, the multiplicity of the involved sectors, the complicated and time consuming communication between sectors and the very long development of the process.

Public organizations, which operate at a central level, often require data about the different law implementation procedures that are activated at local levels (States, Regions, Districts or local Agencies), to monitor a situation. However, at the local level, it is not always clear how and why the monitoring process is
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