Supporting Public Decision Making: A Progressive Approach Aided by an Ontology

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ABSTRACT

This article discusses a number of results from the CAVALA project, a project which was set up to design a method for defining assessment indicators in relation to territorial economic development policies. An analysis of the particularities of the field and the specific context is proposed. With these particularities in mind, we preferred a progressive approach in the implementation of decision-making tools and we included the construction of an ontology as a prerequisite. The phases leading up to the design of this ontology are explained. An analysis of the texts that set out the Regional Council’s policy on economic development allowed us to identify the existence of competing visions of the world (doxai). The co-existence of these doxai made it necessary for us to construct a polydoxical ontology, that is, integrating several discrete doxai. This choice generated specific methodological problems for which we are able to provide an insight. An illustration is given via an excerpt from the ontology consisting of two doxai for the concept of “territory.”

Keywords: Doxai, Indicators, Local Economic Development, Ontology, Polydoxies, Public Decision Making, Public Policy Assessment

1. INTRODUCTION

This article deals with the means of supporting economic development-related territorial public decision making at the French Regional Authorities level. The work presented here has been carried out within the framework of a multidisciplinary research project (the CAVALA project: regional economic development policy monitoring and assessment partnered method) that was conducted in partnership with the Midi-Pyrenees Regional Authority. The aim of the project is to help define indicators that can assess economic development policies and more precisely, financial support for companies. The purpose is to design a cooperative method in the construction of these indicators. The project includes the preparation of an initial set of indicators and their corresponding decision-making tools.

The research undertaken presents two facets that differentiate it from the majority of work that has been carried out on helping the decision-making process. On the one hand, the organisations involved here are territorial ‘collectivités’ (authorities) and not companies,
whilst on the other hand, above all else the project aims to assist in the process of policy definition (for which the establishment of assessment indicators represents the final phase) and not in the decision-making for a policy which has already been defined. These two facets will have a strong impact on how the project proceeds (an example is given in the following paragraph).

The indicators reflect the objectives for which their role is to measure the outcome. The implementation of indicators therefore supposes that the objectives have been clearly defined, quantified and that they have milestones to reach over time.

By way of illustration, it would be very difficult (or even impossible) to define assessment indicators for an objective coming under the heading ‘long-term employment development’. It would first prove necessary to redefine the objective in question with a view to making it much more precise. This sort of fine-tuning work supposes that the concepts used have been defined. Does ‘long term’ thus mean permanent and/or letting employees gain new skills to guarantee a more secure professional future and/or giving a lasting competitive advantage to the company, etc? In the same way, what kind of employment are we talking about here: direct, indirect, full-time, qualified, unqualified, and so forth? Or again, what do we mean by ‘development’: creating, maintaining, changing, and so forth?

The preciseness of the objectives therefore depends on the preciseness of the concepts used.

And yet, the way in which territorial authority economic policies are expressed is noteworthy because of the inexactitude of the notions, a general lack of stability in the concepts used and the presence of numerous polysemous terms.

Consequently, the work in defining the indicators must necessarily be accompanied by work on the concepts and the organisation thereof.

It is a work of constructing an ontology in adherence with Gruber’s ‘historical’ definition (1993), “An ontology is a formal, explicit specification of a shared conceptualisation”. Along with Uschold and Gruninger (1996) we would furthermore admit that “an ontology necessarily entails or embodies some sort of world view with respect to a given domain.” The world view is often conceived as a set of concepts (e.g. entities, attributes, processes), their definitions and their inter-relationships; this is referred to as a conceptualisation”. The CAVALA project has produced such a conceptualisation in the form of an ontology of territorial economic development, designed to help in defining economic policies, and more particularly, to help in defining assessment indicators.

This article describes the development of this ontology by focusing on the specific methodological problems that we encountered, especially during the conceptualisation phase (as used by Gómez-Pérez et al. (2004) in the Methontology method). It should be noted that when this ontology was first applied, no automatic machine reasoning tasks were included. The ontology is used essentially to help index the applications for financial support and to underpin the effort needed by political representatives in defining policies (preciseness of the objectives, choices in the implementation, indicators, etc.) through the clarification of the concepts used.

The article is organised into five parts, where the introduction makes up the first part.

The second part of the article specifies the particular context in which territorial economic development decisions are made and the assessment thereof within the French Regional Councils. The relative newness of these institutions along with the very rapid growth in the scope of their missions, has led us to propose a gradual approach in the establishment of decision-making tools.

In the same way as economic development, a territorial public decision includes a set of unique characteristics that are fully conveyed within the knowledge pool used. Part 3 describes these distinctive features amongst which we will need to underline the simultaneous existence
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