

## Results of a Delphi survey in drawing up the input–output tables for Catalonia

Jon Landeta <sup>a,\*</sup>, Jesús Matey <sup>a</sup>, Vicente Ruíz <sup>a</sup>, Jordi Galter <sup>b</sup>

<sup>a</sup> *Institute of Applied Business Economics of the University of the Basque Country, Avda. Lehendakari Agirre, 83, 48015 Bilbao, Spain*

<sup>b</sup> *Institut of Statistics of Catalunya (Idescat), Via Laietana, 58, 08003 Barcelona, Spain*

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### Abstract

This work presents the results of an ambitious and innovative use of the Delphi technique in supplying a quantitative economic model, specifically in the preparation of the Input–Output Tables for Catalonia (TIOC 2001). Using this technique for obtaining subjective information from experts comes forward as a valid and reliable option for improving the quality of the data with which the Input–Output tables are constructed, also providing further economic and social advantages. The application presented thus opens up an interesting field of development for this technique and also gives several contributions for appraising the execution of a Delphi exercise of this type.

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### 1. Introduction

Researchers and business decision-makers very often find themselves in need of applying models or techniques which need to be fed with data that cannot be obtained directly from present or past reality, data that does not exist, that is not reliable or that is insufficient. That is to say, they do not have the objective data that they need. Nevertheless, faced with the alternative of failing to act through a lack of

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\* Corresponding author.

*E-mail addresses:* [jon.landeta@ehu.es](mailto:jon.landeta@ehu.es) (J. Landeta), [jesus.matey@ehu.es](mailto:jesus.matey@ehu.es) (J. Matey), [vicente.ruiz@ehu.es](mailto:vicente.ruiz@ehu.es) (V. Ruíz), [jgalter@idescat.es](mailto:jgalter@idescat.es) (J. Galter).

objective information, it is possible to resort to the intuition, knowledge and experience tacitly residing in individual experts. Having access to this knowledge of others may place the decision-maker in a more favourable situation than simply remaining immobile or acting exclusively guided by their own intuition.

Obtaining and processing subjective information thus constitutes an important and necessary channel for advancement in scientific knowledge.<sup>1</sup> The combination of techniques making use of both types of information which seek to give the most effective reply possible to society and business's needs for economic knowledge comes forward as a major source of advancement.

In this respect, and more specifically in the sphere of planning, the best results in terms of accuracy have arisen from the combination of techniques based on both sorts of information, as is shown by some classic research works [2–5].

Also in this approach, qualitative Delphi-type methodologies can be used to obtain the information necessary from an external set of experts, in order to partially feed a quantitative economic model [6].

This work reports on the results of an experiment properly structured in this last direction: the use of the Delphi method to obtain the information necessary for drawing up the input–output tables from experts. This application was ground-breaking<sup>2</sup> in Spain, no similar international experiments being known of.<sup>3</sup>

In the following sections we will give a short presentation of the instruments used (the Input–Output Tables and the Delphi Method), the expected contribution of the Delphi Method to preparation of the Symmetrical Table of the Input–Output Tables for Catalonia will be outlined, the work will be described, and the main conclusions about the validity and reliability of the Delphi method for this purpose will be given.

## 2. The Delphi method and input–output tables

The Delphi method [8–10] is a social research technique which has the aim of obtaining a reliable group opinion from a set of experts. This is a method of structuring communication between a group of persons who can provide valuable aid for solving a complex problem.

It was conceived in the 1950s for military purposes and has been used since the sixties in academic and business spheres. It has been used mainly as a technique for planning and consensus in uncertainty

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<sup>1</sup> The three main areas of improvement in the scientific processing of subjective information, put forward by Helmer [1] are:

- a) Having an effect on improving the selection of sources of information (the experts) most appropriate for each specific case, setting selection criteria for this purpose.
- b) Assisting in the effective development of the work of the expert, mainly by means of the accurate definition of the situation for which he is required, supplying the relevant information and providing interaction with other experts.
- c) Undertaking methods of planning and/or obtaining information which establish an action methodology guaranteeing a high level of quality in the information obtained by its application.

<sup>2</sup> The procedure that has been followed in Spain by both the National Institute of Statistics (INE), and by other autonomous community institutes, for preparation of the Symmetrical Table of the Input–Output Tables for their respective economies has always been by means of making intermediate consumption surveys. This was the first national experiment that has used the information supplied by a selected set of experts subject to a predetermined participation methodology.

<sup>3</sup> The study was carried out thanks to a cooperation agreement between Catalonia Statistics Institute (Idescat) and the Institute for Business-Applied Economics (IEAE) of the Basque Country University (UPV/EHU). The provisional results of the study were presented at the XIV Jornadas Luso Espanholas de Gestão Científica conference, held in Azores (Portugal), in February 2004 [7].

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