

STATISTICAL TEACHING AND TRAINING AT THE GENERALITAT OF CATALONIA, SPAIN

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Political Institutions

The evolution of democracy in Spain, with the restoration of the Monarchy in 1975 and the promulgation of the Constitution of 1978, has implied a deep change in the political structure of this country. One of its most important aspects has been the acknowledgement and devolution of political rights to the historical Spanish nationalities and regions. In this process Catalonia has recuperated the Generalitat, that is its historical political institution deriving from the Middle Ages and that is formed by the Catalan Parliament and the Catalan Government. The Statute of Autonomy for Catalonia regulates its political rights and obligations since the Referendum held in 1979.

General Aspects

In this frame of political change, with responsibilities in organizing a new government's administration and in creating a Catalan Institute of Statistics, statistical teaching and training has for us two principal aims: to retrain civil servants for new responsibilities in statistics and to improve the relations between statistics and the general society.

So we are developing quite a lot of activities in different subjects and at various levels. Let me mention some of the most important.

- a. **Courses in online searching and databases**
- b. **Courses and seminars in specific statistical subjects**
- c. **International Meetings**

"The First Catalan International Symposium on Statistics" was celebrated in Barcelona – in September 1983 – as a satellite event of the 44th period of Sessions of the International Statistical Institute, held in Madrid. A special session of the Symposium was devoted to the memory of the late Professor G. Jenkins.

This year, we shall celebrate the Second Symposium on the 18th and 19th of September, with a programme that includes a large variety of topics.

d. Statistical Awards for High-school Students

But beyond that miscellaneous exposition, I would like to emphasize two special projects.

The Project on Multivariate Statistics

We try to follow the example of the I.N.S.E.E. and other centers, and the ideas expressed by Professor Malinvaud about the responsibilities of statistical institutes on computing and publishing elements of multivariate data analysis, as correlation, regressions, principal axis and correspondence analysis, that are of general use and multiple purposes, and that can facilitate posterior specific studies based upon them.

This programme of teaching and training on multivariate statistics and exploratory data analysis has to analyze the results about the knowledge of Catalan Language and the extent of bilingualism in Catalonia. These results derive from the register of population by municipalities renewed in 1986. We will also analyze the results of the Political Elections for the Catalan Parliament (1984) and other important files.

The object of the programme is to prepare people at different levels and responsibilities.

In the first level we work with a large variety of students as politicians, administrations, civil servants, sociologists, and planners and we explain them the basic concepts in order to insure correct interpretations and to avoid misuses and abuses of abstract terms and charts.

In the second level we work with a group of people, experts in sociolinguistics and political sociology, that will have to do further analysis of the results so as to prepare maps and charts on the extent and depth of bilingualism. We need a common language and we try to help them to ask us right questions and to propose us interesting developments on exploratory data analysis.

Finally in the third level we work with a group of statisticians who are in charge of exploratory data analysis and of all conceptual and computational aspects of multivariate statistics.

To implement this programme we collaborate with some French Institutions such as C.R.E.D.O.C. and of some departments of Catalan Universities.

We work with independent microcomputers provided with the same software as our main computer so as to be able to make independent experiences and eventually connect with the main data files.

The Programme "Statistics in Schools and in Society"

Going into democracy also means that we have to spread the very easy idea that statistics is from the people and for the people.

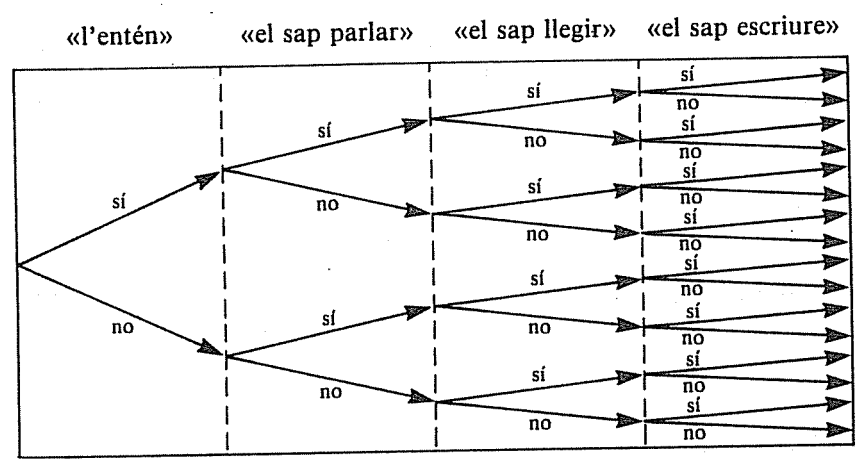
So the object of this programme is to improve the collaboration of society in the production and the quality of statistics and also to diffuse largely the statistical data into society.

This year the register of population by municipalities is renewed with reference to the first of April. We took advantage of it by introducing a question about the knowledge of Catalan language, in order to have a linguistic census with a marginal cost.

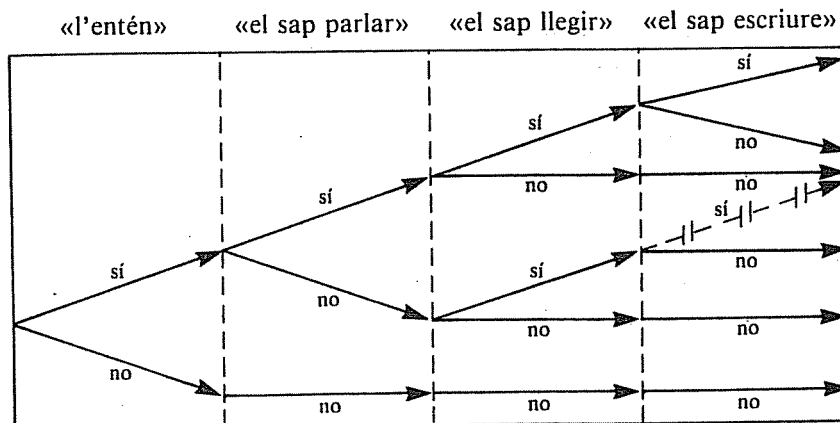
Besides the administrative circuit and the official organization we have sent to all schools, high-schools and vocational schools of the country - i.e. about three thousand centers - a set of documents, for school purposes, about the scope of the registration, the questions asked, the wording of them and the organization of the field operation.

We added a booklet about the knowledge of Catalan Language, that includes the following aspects.

1. The four functions of the language: "understanding", "speaking", "reading" and "writing" with the tree of all combinations.



2. The following combinations were retained as possible:



3. These possible combinations were expressed in different forms:

«l'entén» «el sap parlar» «el sap llegir» «el sap escriure»

⑥	sí	sí	sí	sí
⑤	sí	sí	sí	no
④	sí	sí	no	no
③	sí	no	sí	no
②	sí	no	no	no
①	no	no	no	no

⑥	l'entén	el sap parlar	el sap llegir	el sap escriure
⑤	l'entén	el sap parlar	el sap llegir	no el sap escriure
④	l'entén	el sap parlar	no el sap llegir	no el sap escriure
③	l'entén	no el sap parlar	el sap llegir	no el sap escriure
②	l'entén	no el sap parlar	no el sap llegir	no el sap escriure
①	no l'entén	no el sap parlar	no el sap llegir	no el sap escriure

4. Finally we gave the actual wording in the registration forms:

- ⑥ el sap parlar, llegir i escriure
- ⑤ el sap parlar i llegir
- ④ el sap parlar
- ③ l'entén i el sap llegir
- ② l'entén
- ① no l'entén

A lot of schools have used this material in their classes and we have detected a good improvement in the quality of the answers.

As a part of this programme we have been intensively working for a full week with fifty professors of high-schools and vocational schools in order to emphasize the importance of teaching statistics, to introduce new point of views on teaching it, to show video material and to experiment software programmes. We will advise for some dissertation theses for Ph.D in teaching statistics. Last year Mr. Peter Holmes had a seminar on teaching statistics, in which we got many ideas for the programme.

The next step of this programme will be to send back to the schools the results on population, by sexes, ages, professions and knowledge of Catalan corresponding to each municipality and region.

Finally I will remark that this kind of programmes are also very stimulating for statisticians and civil servants who work in statistics and directly satisfy the interest of society in their works.