THE TRAINING OF OFFICIAL STATISTICIANS: CHALLENGES AND EXPERIENCES ®

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The growing demand and use of official statistics are changing the culture and patterns of the statistical production. Official statisticians are now faced with an increasing number and variety of users, whose demands have to be satisfied. On the other hand, a trend towards de-centralisation of the statistical systems is now developing in many countries, with the result that the responsibility for producing statistics extends far beyond the realms of the National Statistical Offices. Also, globalisation stresses the need for harmonised statistical systems. All this sets a number of new challenges in the training of official statisticians. This paper comments on some of them, and describes some experiences and results.

INTRODUCTION

Official statisticians are nowadays only a small fraction of the statistical community. The many useful statistical techniques developed during the last eight decades have substantially increased the scope of the statistical profession, to the point that the outstanding majority of its members are now performing their activities in a great variety of fields, mainly within the areas of research and business, and far apart from the world of public service. Still, we cannot ignore that, as Desrosières (1998) points out, this group, consisting now only in a minority, was in the past the core of the profession. In fact, the institution to which their activity was mainly destined, the State, is at the very origin of the word statistics.

On the other hand, this comparatively small group provides the basic tool for the rest of us to carry out our professional work. There are not many research fields in statistics now that can be cultivated without the use of data. And statisticians involved in the business sector make also an extensive use of official information. We could say that the information provided by the official statisticians acts as a sort of highway on which most of the other statisticians circulate when they perform their work. And a mention should be made to the incidence of official data in the implementation of economic and social policies, which finally affect our lives in a general but significant way.

As a consequence, the whole society in general, and statisticians in particular, are interested in a good basic official information, produced by highly qualified official statisticians. But the traditional role of official statisticians has changed considerably during the last years, and still continues to change, which means that the training patterns of the past have to be considerably reviewed in order to adjust for the new demands. This sets a number of challenges to be faced and solved by the Statistical Offices with the help of all the statistical community.

NEW TIMES, NEW CHALLENGES

Official statistics are supposed to provide an accurate picture of all relevant aspects of our socio-economic setting.. But this setting is subject to changes that require a continuous updating of the contents and methodologies. In particular, the number of issues that are considered relevant increases all the time. It is true that these changes have always taken place along human history, but now they are occurring at a quicker pace than ever. Demand for information in new fields such as quality of the environment, natural resources depletion, migration patterns, or the increasing complexity of the economic transactions are good examples of it.

The outstanding technological development of computers is, no doubt, a fundamental asset in helping to cover these new statistical fields, as well as in solving other problems. But the use of new technologies implies, in its turn, a continuous upbringing in computer abilities that calls for specific efforts in the training of the human capital.

Although these facts are indeed relevant, they are by no means the only ones giving place to significant challenges in the training of official statisticians. Three other important changes are

now taking place in official statistics that are influencing the training policies of most Statistical Offices.

One of them is a drastic change in the notion of the basic role of Statistical Offices, which are shifting from production-oriented towards information-oriented bodies. National Statistical Offices are still Governmental Agencies, but they are no longer at the exclusive service of the Government. A growing variety and number of users (Reif, 1998) are now demanding statistical information in very different formats, and official statisticians have to find the way to satisfy all these demands.

As a consequence, the Statistical Offices are increasingly developing what could be called a customer-oriented attitude, and this has a number of implications. Mainly:

- Dissemination of data, which was traditionally considered a residual activity, is now a main aspect in the performance of the office, and a point that should be carefully monitored. A lot of efforts are devoted to devising a good dissemination policy, and finding friendly formats that could be satisfactory for the different kinds of users.
- Providing information means providing something more than raw data. Some value has to be added to the data by way of comparison and analysis.
- Customers needs are now well taken into account, so that it is no longer the case that official statisticians, together with the Government, decide which are the statistics to be collected. Now many other types of users are invited to explicit their interests in ad-hoc councils or panels of users (Fienberg, Martin, & Straf, 1995).
- The extended use of data encourages extensive quality control processes, including both internal checking of the data end external evaluation of the performance.
- Emphasis on satisfaction of customers provides the Statistical Offices with a business-oriented mind, in which cost-effectiveness is a point to be taken into account.
- The feedback process that derives from service to customers and evaluation from the customers provides official statisticians with many opportunities to establish contacts with a wide number and variety of users. This is a new fact that could, and should be systematically used to increase the statistical literacy of the population, a point of shared concern between official and educational statisticians. In particular, journalists and researchers are two segments of customers whose statistical literacy is open to improvement though new contacts with official statisticians.

Another change that is now taking place in many countries is a process of decentralisation of the statistical production. For one thing, a devolution of decision powers to smaller entities, such as regions, counties or municipalities, as a follow-up of the principle of subsidiarity, is giving place to a new network of regional and municipal statistical offices, which collect data within their territories for the use of their local governments. On the other hand, the increasing use of registers as a source of statistical information tends to develop small statistical offices in the governmental bodies where these registers are run.

So, the family of official statisticians, understood as the set of all professionals working in the collection of official data, is expanding, and has come to include in some cases qualified employees that are not necessarily well qualified in statistics. It is true that many of them will not need the high qualifications in statistics that are usual among senior statisticians in National Statistical Offices, but basic grounds of understanding and a common language are important tools for working in co-operation. And this usually calls for some training exercise.

And then, of course, globalisation is a new fact with a great incidence in training activities. In general, the need for comparable statistics at world level becomes more evident every day. But this need appears as particularly pressing in the countries that are part of supranational organisations, such as the European Union, NAFTA or MERCOSUR. Official statisticians working in these countries are compelled not only to complete their statistical systems by collecting data on new fields, but also to harmonise definitions and methodologies in the traditional fields, in order to get comparable statistics. A good part of the training activities carried out nowadays in these countries are oriented towards this purpose.

THE BASIC TRAINING

As things are, official statisticians need to have a good training in a number of fields, many of which are evolving at a very quick pace. Basic training and continuous updating of this training is one of the activities that Statistical Offices have to take on. In particular, fields to be considered as a priority are:

- A sound basic statistical knowledge., including descriptive statistics, inferential procedures, sampling methods, time series analysis and multivariate techniques. Also, data analysis and research are being increasingly carried out in statistical offices as an instrument for quality evaluation, so that official statisticians should also be updated in new statistical techniques, such as neural networks, or data mining. Co-operation with universities and research centers is a fundamental asset in this issue.
- Some general knowledge of the context in which statisticians are collecting the data, that allow them to put the statistical information in the right scope. This usually means mastering the basics of economics, sociology, demography and geography. Deeper specific knowledge could be necessary for some of them, depending on the type of data that they are collecting. For example, it is important that statisticians involved in business statistics should be well acquainted with the business accounting system.
- A good mastering of the new techniques in computing. This is one of the fields that requires more frequent updating, not only because of its rapid development, but also because the new spirit of service to customer´s demands a constant effort in designing quicker and more friendly dissemination techniques.
- Some elementary knowledge of the legal frame. Official statisticians have to deal nowadays with an increasing amount of legal acts that set the procedures for defining, collecting, processing or disseminating the data at different levels. Acts on confidentiality are a good example of this (Bodin, 1998). To the extent to which statistical information is based on registers, knowledge of the administrative rules of the country becomes increasingly necessary.
- For senior official statisticians, who are in charge of the organisation of work on a unit, some basic ideas on management techniques, human resources and knowledge transfer techniques will come up as extremely useful.
- The new extensive dissemination practice, which obviously includes the media as an important sector of customers, demands also some specific skills. A good capability for performing in T.V. and the radio, and the ability to edit good press releases are very appreciated traits, that can be cultivated through suitable training.
- Last but not least, globalisation demands the ability to communicate with official statisticians from another countries, which implies the mastering of foreign languages. English speaking countries are in an advantageous position here, but for non- English speaking countries, this is a permanent source of training needs and activities.

Many of these skills are included in the typical curricula of universities, but there are always good reasons for updating them. Others are not covered by basic university education. In any case, the need for specific training within the realms of the Statistical Offices is obvious.

SOME TRAINING EXPERIENCES

Training programmes for official statisticians vary across countries and institutions, depending on the scope of the office, the academic background of the personnel and the recruitment system. The last, in particular, is a very determinant factor.

Recruitment systems are very diverse. In some of them the Statistical Office supplies most of the basic training, while in others the candidates assume, on an individual basis, most of the training load that is not covered by university curricula (Garonna, 1998). As an example of the first, we can mention the paradigmatic case of INSEE, the French National Statistical Office, that runs a school of statistics, ENSAE, providing specific, and several years long, training to prospective official statisticians. A positive result is that all of them share a common statistical culture and language, and this facilitates co-operation between statisticians of different

governmental offices. That probably explains, to a great extent, the fact that the French statistical system, although considerably decentralised, enjoys a remarkable degree of consistency, and a high credibility.

In other countries –Canada, for example- the recruitment is based on the university curricula of the candidates, and the statistical office provides substantial continuous training. Some others have established agreements with a number of universities that impart an ad-hoc master degree in official statistics: this is, for example, the case of Finland (Martin-Guzmán & Cervera, 2001).

In the National Statistical Office of Spain, INE, the selection is made through a competition process, in which the candidates have to prove their ability in the statistical and computer techniques, as well as a basic knowledge in general economics, national accounts, sociology and demography. A good mastering of the English language has been recently added as a precondition. Once they are part of the staff, these statisticians participate, either as trainers or as trainees, in three different training experiences, that we would like to describe briefly.

THE SCHOOL OF STATISTICS FOR PUBLIC ADMINISTRATORS

This school was created by INE some ten years ago, when the effects of the decentralisation that took place in the country during the eighties began to be fully noticeable. In former times, all official statisticians in Spain were recruited by INE through the standard competition process. But the new statistical agencies organised in the different central and regional governmental bodies recruited their senior staff from very different sources, so that the new expanding family of official statisticians was far from sharing a common background.

In order to improve the statistical literacy of civil servants in the Spanish administration, and to create links that would facilitate the achievement of common projects, this school started organising short courses on specific statistical topics. Now its activity has been extended to segments of users far beyond the realms of the administration. As an indicator of the scope of its present activities we mention some of the courses organised during the last years.

- Description and analysis of the new statistical operations carried out in INE, or of the methodological changes introduced in the current production. Attendants to courses on these topics are not only the public administrators. Also university researchers specialising in the field and statisticians from the Trade Unions and Business Associations are usual participants. So, they are a good contribution to the increase of statistical literacy of the population.
- Updating of statistical or computing techniques. The massive participation in these courses of public administrators working in statistical production all over the country is gradually creating a common background, as well as personal links that contribute to a higher consistency of the Spanish statistical system.
- Courses dealing with specific topics of general interest to statisticians. Good examples of these are the courses on confidentiality issues and on the legal frame and regulations of the European Union.
- Taylor-made courses for the media, either on basic statistical issues for the junior journalists, or on methodological innovations for the most experienced ones, with a time-table adjusted to the daily activity of these professionals.
- Courses for school teachers, including practical exercises that they can reproduce with their students, in order to help them introduce official statistics in the school curricula. This will contribute to a better knowledge of the main statistical operations, such as Population Censuses, the Labour Force Survey or the Consumer Price Index, and subsequently increase the statistical literacy of future citizens.

University researchers participate as trainers in many of these courses, but there is also an increasing participation of them as trainees. Their interest can be explained partly by the fact that official statistics is a topic very rarely included in university curricula (Martin-Guzman & Cervera, 2001). The growing complexity of official statistical data sets is also a good reason (McDonald, 2001).

THE TRAINING OF EUROPEAN STATISTICIANS

This is a very interesting experience in the area of the European Union, but extending its activity to all over the world. It is run by the TES Institute (Training of European Statisticians), a non profit organisation located in Luxembourg and mainly financed with European funds. The TES Institute organises courses and seminars of short and medium length, with official and academic statisticians participating as trainers, and basically oriented towards the public sector, but also open to statisticians from the private sector. The aims of these courses are

- To disseminate best practices and to promote transfer of know-how in the areas of statistical production, dissemination, management and quality control.
- To contribute to the convergence of statistical practices
- To promote exchanges between statisticians. The TES courses are a determining factor in the harmonisation of the European statistical system.
- To generate economies of scale in very specialised training areas, for which the organisation of courses at national level would be cost-ineffective.
- To provide a better knowledge of the European Statistical system.

The TES courses are being a determining factor in the harmonisation of the European statistical system. Moreover, the activities of the TES Institute are increasingly expanding outside the European Union, and covering the so-called Phare and Tacis countries, and the Mediterranean Basin countries. Consequently, the TES programme is playing an essential role in the harmonisation of the statistics of the E.U. with the candidate countries.

THE CESD-MADRID

This is another non-profit organisation located in INE, Spain, financed with funds coming from the European Commission and the Spanish Government, and with a history of more than twenty five years of training programmes, mainly concentrated in Latin America and the Caribbean Region. CESD-Madrid organises courses of short and medium length on the basic statistical activities of INE- advanced sampling theory, national accounts, household and business statistics and quality control techniques- and on specific statistical issues, as well as stays and exchanges for official statisticians from both sides of the Atlantic. It has played an important role in the dissemination of advanced statistical technology in the area, and has created long-term personal and institutional links between the statistical offices involved.

This organisation is closely related to the School of Statistics for Public Administrators, and is now replicating in Latin American and Caribbean countries some of its more successful courses. The very idea of creating a School of Statistics in the Statistical Office is now being adopted by some of these countries with the support of the Spanish experts.

While continuing with these activities, CESD-MADRID has recently expanded the scope of its co-operation programmes in the directions established as preferential by the European Union. For example, CESD-Madrid is now in charge of the MERCOSUR programme, and is transferring to the countries involved in this supranational project the know-how of the European Union on the harmonisation of statistics, or of the MEDSTAT and COMEX programmes, whose target is to harmonise the statistics of tourism and external trade in the Mediterranean Basin countries.

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