

Official statistics and academic research: challenges and cross-fertilisation

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Abstract: The main theme of this paper is to argue in favour of systematic cooperation between universities and Official Statistical Offices. Fields traditionally considered as those where services are provided by one to the other are revisited in a more symmetric approach. Also, new challenges are shown to require new cooperation and to offer opportunities for cross-fertilisation, to be beneficial for both kinds of institutions and for society as a whole.

1. Introduction

Official Statistical Offices (OSOs) and (public) universities *share in common a major responsibility of service to society*. A basic objective of this paper is to examine how far these duties do interact.

Because of the shared commitment to serving public interest, one may consider which services each may expect from the other and also how both should cooperate for a better service to society. This suggests the *organisation of this paper*: in the next two sections we briefly overview what each institution typically expects from and provides to the other for the fulfilment of its own duties with respect to society. These two sections are more in the spirit of a balance of day-to-day reality. The last section is more in the spirit of designing the future and sketches some scenarios where both institutions should cooperate for realising tasks out of the reach of each one separately.

In a sense, *this paper is an 'abstract' one*. It reflects a general approach trying to be free of considerations characteristic of a particular country. This is motivated partly because the author's country is likely to be a rather particular one for the topic under consideration and partly because of this conference being sponsored by Eurostat.

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The general emphasis is on cooperation rather than on exposing demands from one to the other one. A basic contention of this contribution is that a demand is better satisfied through mutual exchanges between the demander and the provider rather than through unidirectional exchanges. Moreover, the dynamic of cooperation makes somewhat artificial the distinction between demand and supply. Thus the division of material between the next section (what universities provide) and the section after that (what statistical offices can provide) is somewhat arbitrary. A conclusion of these sections is precisely that a better division of material would probably refer to fields of cooperation. In contrast, the last section points mainly to the future and refers to domains which, up to now, do not seem to have attracted due attention whereas the next two sections refer to domains that already have received some attention.

2. What universities provide to statistical offices

In the framework of *the teaching responsibilities of the universities*, the statistical offices make use of the opportunities of initial training not only in statistics, but also in sociology, economics, environment science, computer science, management, project management methods, communication, etc. This is true not only for the standard academic careers but also for vocational training. As users of such services, OSOs should be very keen to take an active part in the elaboration and evaluation of the university teaching programs: such a responsibility should not be given up to the private sector only.

A related issue is that universities provide the OSOs with *access to the market of newly educated people*. A more efficient working of this domain is achieved by organising contacts between students and OSOs, in particular by offering students temporary jobs, practical training periods and topics for essays during the course of their study. The mutual benefits, for both the OSO and the university, will be considered with more detail in next section.

Methodological assistance in statistics is another case for cooperation. Indeed, methodological assistance does not only help the OSO to improve the quality of the rendered services, it also helps the university teacher and researcher to grasp what are the real problems in producing better data and what kind of care should be used when modelling actually available data. Past experiences with, for instance, the evaluation of the GNP or the choice of some procedures for deseasonalising have shown how desirable such cooperation is.

Another field of cooperation concerns the assistance in the *evaluation of internal projects*. Indeed, OSOs are frequently facing new challenges not only because of continuous developments in computer and data storage technology but also because new policy problems are calling for new statistical data and/or new data handling. In some countries, OSO also develop projects of research, including methodological problems. All these situations often require strategic choices and it may be important to have the possibility of asking for e.g. the assistance of a scientific committee of academics that could be a guarantee of independence, both political and economical.

Last, but not least, universities may provide *references for the modelling of data*. Indeed, model builders are often aware that the construction of data is part of the model and of the underlying theoretical framework. Think, for example, of models for unemployment duration, models for job search, models for the analysis of the enterprise. The way relevant quantities are measured may crucially depend on the theoretical framework. This is again an instance of the necessity of cooperation rather than of unidirectional service provision.

3. What statistical offices can provide to universities

Let us now survey some items that, *prima facie*, could be presented as services that OSOs provide to universities. Again, I shall argue that these are fields of cooperation rather than opportunities for unidirectional services.

Starting again with the universities' commitment to teaching, OSOs can provide the universities with *training periods for their students*. In general, it is of great educational value to offer our students the possibility of a first contact with professional life while being still engaged in student life. The interest is multiple. In particular, it gives our student a better feeling of what higher education is about and also puts their situation into perspective. It also provides a first experience of making a professional use of classroom knowledge. This experience will be particularly rewarding if the student realises that the job has a substantial content and there is a real hope of being useful for the job provider. In this respect, students on training periods may realise (simple) tasks an OSO would be unable to do because the task is too exceptional or atypical to be realised by their existing staff. This is the case, for instance, of experimenting with new statistical packages, of crosschecking statistical data, of experimenting with new methodological treatments of the data. All these are instances of cooperation beneficial to both the OSOs and the universities, provided a previous interaction between the partners is concerted.

Probably the most natural benefit that OSOs can provide to the universities regards the *access to individual data for socioeconomic studies*. This is indeed one of the most dramatic changes in the research in social sciences for the last few decades. The recent developments in the computer and data storage technology have made possible the analysis of large bodies of individual data. This has created fascinating problems for the methodology of research in social sciences, for the statistical analysis of such data and for the actual handling of huge data bases; think for instance to the (now!) fashionable data mining. In the last section we shall come back to some of these issues but it should be clear that the complexity of those problems makes close cooperation between OSOs and universities particularly important and beneficial for both sides.

The fact that OSOs can provide the universities with *concrete problems for methodological research* is widely recognised at an intellectual level but it is poorly effective in many countries. I shall make some suggestions on this issue in the last section but it may be relevant to display some explanatory factors. Like many human activities, academic research has its own fashions and its own system of evaluation. These factors of reward very much depend on financial elements. In many countries,

OSOs are poorly endowed and do not have the necessary resources (financial or scientific) to establish or affect the dominant themes in academic research. Nevertheless, this situation is not hopeless and as a matter of fact, there are several examples of research motivated by or actually useful to OSOs (just as an example, think of the recent developments in small area sampling) and there are countries in far better situations than other ones. Being aware of the actual difficulties should help to improve the present situation, progress that should be beneficial to both the OSOs and the universities.

An issue strongly related to the previous one is the idea that OSOs can provide the universities with *research co-financing*. Here the issue is that putting together scarce resources allows research that otherwise would not be possible. This also provides incentives for looking for themes of common interest and requires coordination structures for the organisation of common projects.

This kind of cooperation in research activities also leads to different complementary effects: it would provide the universities with a *valorisation of research* by ensuring a concrete implementation of theoretical proposals and it would also give universities the incentives to deal with organisational problems in statistics. Closer contacts with the producers of data would help improve understanding of the actual difficulties in producing reliable data.

4. Challenges and cross-fertilisation

The preceding sections are mainly concerned with a kind of description of the present situation in many countries. Looking to the future requires a more visionary approach to the future and of the role of each actor.

In this section we consider some challenges official statistics should meet but that both OSOs and universities should feel jointly responsible to answer, not only because joining forces would be inescapable for meeting such challenges but also because cooperation in these fields should enrich both partners.

4.1. Official statistics and society's memory

It seems to be largely agreed that one of the objectives of official statistics is to confirm 'society's memory'. It seems therefore suitable to set forth some motivation for such a task.

One should not identify 'society's memory' with (passive) data storage. The real issue is rather to build a tool to be used in the process of a better understanding of the workings of society and of decision making. Experience shows that a historical perspective may be an important ingredient for a better understanding of today's reality. A simple example might be the following: if we want to better capture the possible influences of pollution on climatic changes, historical data on climate are of crucial importance and, for a more recent example, think of the serious flooding.

This raises a number of relevant issues. The first one is clearly to select the data to be stored. In as far as one of the roles of the university is to think of the future of society, the university should be aware that it is its responsibility to detect which data will be

important tomorrow and not only which data are important today. But this is clearly an issue of interaction between an OSO and a university. A related issue is that OSOs and universities should be jointly aware that demand today and solvable demands should not be the only ones to be satisfied. Again, cooperation and joint discussion are important because they involve some vision into the future that helps statistical offices to anticipate, either on the side of methods, technology or need for statistics.

4.2. Individual data and the protection of privacy

As mentioned earlier, recent years have seen an impressive development in the availability of individual data. The primary sources are multiple: tax administration, companies' accounts, social security data etc. All those data share in common the need for the protection of privacy. The traditional approach has been to deliver only aggregate data, choosing the level of aggregation so as to make retrieving the individual data from the published ones impossible. Recently, there has been an effort to refine those aggregation procedures in order to combine better the protection of privacy and the elaboration of micro-econometric models based on individual behaviour. This topic is both important for our societies and challenging from a scientific point of view. Research works have already produced results, under the heading of 'micro-aggregation', and various projects are under elaboration. Without going into detail, this is likely to be one of the most important challenges to be faced in the future, but this is also a field where close cooperation between OSOs and universities should be strongly encouraged.