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*Methodological Implications of the Pilot Survey on
Business Services undertaken by
Member States of the European Communities*

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1. Introduction

The main objective in this report is to summarise the experiences and problems of the Member States of the European Communities (hereafter called the Member States) met carrying out the pilot surveys on business services. In addition, proposals from the Member States for future surveys are presented. The report is based on the national reports from the institutes conducting the pilot survey, on the GAMMA institutes report 'Study of the Business services sector based on pilot surveys in the European Community[1] and the experience achieved by Danmarks Statistik when analysing the pilot survey data from the Member States. In addition, chapters 'ICOBS' and 'General framework' of the methodological manual together with 'Contributions of the delegations for the chapters introduction, general framework and ICOBS' are used as references for the analysis.

In this paper, the practical experience derived from the pilot surveys are mixed with the purely methodological elements in order to identify some of the bottlenecks in carrying out pilot surveys on the business services sector. In the process of developing a methodology for the business services sector, which can be implemented into the future statistical production of the statistical institutes, the empirical results of the pilot survey must be recognized as an important input.

In chapter 2, the objectives of the pilot survey are briefly introduced. The *sample sources* and *representativity* are discussed in chapter 3. The presentation is made by *business service subsectors* in chapter 4 and by relevant *demographic, employment* and *economic* variables in chapter 5.

In the final chapter general conclusions are drawn on the basis of the previous chapters and some proposals for future improvements are mentioned. Since the analyses are still under process, this paper must be considered as an intermediate report. The final and exhaustive methodological presentation will be completed by the end of this year.

2. Pilot survey on business services briefly

The pilot survey on the business services is part of the action plan for the development of the services statistics undertaken by EUROSTAT with respect to Council decision 92/326/EEC.

The pilot surveys were conducted, under contract to EUROSTAT, for Belgium[2]. The national statistical offices of the European Community Member States in all countries except the United Kingdom and Ireland the surveys were carried out by private institutes under contract to EUROSTAT.

The national statistical offices of Finland and Sweden also volunteered to participate in the pilot survey. However, the tables were mainly produced by using register based data, which did not cover the whole scale of variables required by the pilot survey.

Objectives

The objective initially assigned by EUROSTAT to the pilot survey was twofold:

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[1]The report was prepared by Mrs Saida Slama, May 1993.
[2]Final data for Greece have not been received in the beginning of September.

- to provide basic statistical information on business services
- to test and develop a methodology for the regular collection of statistical data on business services, to be provided on a harmonized basis by all the Member States

This paper will concentrate on the *second objective*, namely on the methodological aspects of the pilot survey. The development of adequate and harmonized methodological principles amongst the Member States is a precondition for production of comparable and representative data on business services. In the process of developing harmonized statistics on services at national level, the testing of the methodology and definitions of EUROSTATS methodological handbook for the services sector is of major importance. The experiences gained in the pilot survey are important input for this testing and revising process.

3. Survey universe and sampling

According to recommendations for the sampling procedures in the 'Guidelines for a Pilot Survey on the "Business Services" sector' countries are advised to aim for a sample size of at least 1 500 to 3 000 enterprises, depending on the size of the country concerned. Guidelines also suggest how these samples should be selected.

The pilot survey revealed, that the member states have quite uneven conditions in carrying out a pilot survey. In some countries it appeared to be difficult to generate a sample universe and in most of the cases the sample was not representative or could not be aggregated to represent thtotal level of business services sector.

On the other hand, the countries with advanced business registers could produce the majority of the required variables and tables exploiting the business registers and/or different statistical registers and generate the level of the total universe. Even if some Member States have updated registers with a good sectoral coverage, the most detailed information as information on the demand for businesss services had to be collected by the use of a supplementary survey, for instance in the case of Denmark where all other variables than the demand for business services were taken from different register based statistics.

A third method of conducting the survey among the Member States was annexing an additional questionnaire to the running annual statistics requiring specific variables (e.g. client type or exports/imports). This was done e.g in Portugal and in Italy, where this method implied that the smallest employment size class was delimited to ten or more persons.

As a result, the statistical data obtained by pilot surveys give a rather heterogenous presentation of the business services in the Member States. To summarise, three kind of survey frames were used in the pilot surveys:

- Public databases (e.g. business registers for administrative purposes) without total level representativity of business services (Spain, Italy, Portugal, Germany)
- Private databases without representativity at total level (U.K and Ireland)
- Business registers with the ability to produce aggregated and representative variables, however, not including the full coverage of variables required by pilot surveys (France, Netherlands, Denmark, Finland, Sweden)

The response rates of the sample were in general rather low, varying from 12.8 per cent of United Kingdom to 72,2 per cent to France. One reason for low response rates was the non compulsory character of the survey. Furthermore, the lowest response rates were recorded for the surveys executed by private institutes in the case of United Kingdom and Ireland with a survey sample bought from private data banks. In their final report it was suggested that this kind of study should be carried out by national institutes in the future. In annex I, the heterogenity of sample source and size together with response rates across the Member States are presented.

As a consequence of the heterogenous sampling procedure used as well as the response rates obtained, the possibilities for comparative studies of the data between the Member States remain rather modest.

4. Definitions and comments on the classification of subsectors

The definitions adopted by EUROSTAT in the pilot survey and presented also in the chapter ICOBS of the methodological manual are based on the classification NACE/Rev 1. Each of the Member States used in 1991, when the pilot survey was carried out, its own nomenclature of economic activities by which the production units are classified. In order to arrive at a common definition of the sector and subsectors considered in the pilot survey, each country needed to:

- list the various activities making up these sectors and subsectors
- identify these activities in terms of NACE/Rev1 classification and in terms of the country's own nomenclature
- regroup these activities into the service subsectors defined by EUROSTAT

In the pilot survey, the business service sector was divided into eight different subsectors:

- Computer and related activities
- professional activities
- marketing activities
- technical activities
- renting and leasing activities
- labour recruitment and provision of personnel
- operational activities
- other business activities

4.1 General comments on the classification

In general, the Member States only to a limited extent commented the classification concerning subsectors. The majority of the comments were directly connected to the variables, which are introduced in chapter 5, or were more general in nature.

The Federal Statistical Office of Germany found the aggregation of activity classes to subsectors useful even if these subsectors do not appear in the NACE/Rev.1. Furthermore, according to the Federal Statistical Office, the breakdown of NACE section 74, which covers six of the services subsectors, was done carefully and realistically. As a consequence only rarely did the enterprises surveyed have difficulties in assigning themselves to one of the eight subsectors considered.

Denmark considered it problematic in 'Contributions of the delegations for the chapter ICOBS' in 1990 that the eight subsectors were not an exact aggregation of NACE/Rev. 1 classes at three digit level, but in some cases a mixture. For the users the possibilities of systematic disaggregation of grouping are of importance. As a consequence of this aspect, Statistics Denmark has introduced a standardized aggregation level for all business statistics in statistical publications in connection with the introduction of NACE/Rev. 1. On the other hand Denmark recognizes the advantages of aggregation for analytical purposes.

Several countries reported to have problems in defining the right activity class for the surveyed enterprises. The breakdown of turnover by subsectors in the model questionnaire allowed the executive bodies to check and replace the enterprise into the right activity class. As a consequence, in some countries a subsector or a corrected sample universe was actually created after conducting the pilot survey. Checking and correcting the activity classification according to the responses is naturally an essential part of the study in order to improve the data reliability and comparability. This is even more stressed in a case, where the sample sources used in pilot surveys across the Member States appeared to be rather heterogenous.

The heterogenity of the economic activities of the enterprises within the sector also causes problems concerning registration of kind of economic activity. Several of the economic activity groups, which constitute a sector, contain untraditional activities of an innovative and/or changing character. Especially the classification of enterprises with services of more or less constantly changing nature, e.g. computer services, marketing or professional services, gives problems. These changes are due to the service/product itself or the flexibility of many small firms concerning their activity. So even if a business register is available, the information about the activity classification may be problematic - and so the creation of the population in question.

For example, the reclassification of enterprises to correct subsector was made in the case of United Kingdom, which changed the number of enterprises in the original classification considerably. The enterprises were reclassified according to the sector from which they derived the greatest proportion of turnover. In addition, Denmark had the same kind of experience when applying new NACE Rev1 to the business service enterprises classified according to the Danish Activity Classification. The figures from both countries are presented in annex 2 as an illustration of the potential classification problems.

4.2 Comments by subsectors

a) Computer and related activities
Definition: *72 Computer and related activities*

Computer and related activities are characterized as being one of the fastest growing service industries. The enterprises producing computer services are also often involved in computer hardware/software sales and thus causing problems in the definition of the principal activity class between trade and services. For instance, in the case of Luxembourg also NACE Rev1 class 51.64 Wholesale of office machinery and equipment was included in the sample and taken into account, if they received more than 10 per cent of their turnover from computer services. In addition, Germany reported to have used turnover figures as a method to distinguish the two types of activities.

The principal activity definition problem can be crucial in small countries and the results of an inquiry might be very sensitive in case that there are only one or two big multiestablishments enterprises dominating the production of some branches. E.g. the biggest computer company in Finland has been a borderline case selling computer hardware as well as computer services, mainly repair and maintenance

services. As the enterprise is the statistical unit, the decision of including/excluding this company from the population of the pilot survey on business services,is essential to the statistical results.

b) Professional activities,

Definition: *74.11 Legal activities, 74.12 Accounting, book-keeping and auditing activities; tax consultancy, 74.14 Business and management consultancy activities*

The subgroup professional activities is an aggregation of NACE classes which - at least for 74.11 and 74.12 - consists of narrow combined substantial activities. So the regrouping of NACE 74.12 into two groups in some of the requested tabels, namely " accounting, auditing and bookkeeping " and " taxation, management consulting " has caused problems for the Member States in interpretation of these tables.

This subsector accounted for about 1/3 of the respondent enterprises of all Member States which indicates that this subgroup might be divided into two groups. The NACE classes 74.11 and 74.12 clearly constitutes two separate activity groups which is also reflected in the educational background of the personnel in these two classes and in the strict licensing system for lawyers and accountants. This system normally means the existence of good sources for identification of the two subpopulations.

c) Marketing activities

Definition: *74.13 Market research and public opinion polling, 74.40 Advertising*

The Member States seemed to have no difficulties with allocating the two different NACE/Rev. 1 classes 74.13 and 74.40 to the same subsector " marketing activities ." Germany stated that only one single class for advertising activities does not take the importance and multiplicity of these activities fully into account. But before going into more detailed classifications, the basic problem of identifying the total universe of enterprises producing marketing activities should be further considered. The marketing services are supposed to cover the largest number of private enterprises in the business services[3]. But in the pilot survey this subsector only accounted for about 10% of the total responding population.

The special character of marketing activities is a large volume of advertisement space and time sales. This often increases the turnover substantially, although only the commission of the sales remains in the enterprise. The chapter 'ICOBS' of the methodological manual recognizes the measurement and definition problems of turnover in advertising services stating that in order to divide gross and net turnover in these services one has to make sure that this trade in 'media costs' is made explicit.

If the volume of marketing services enterprises is measured only by turnover, one might get a distorted picture of the subsector, since the turnover figures can be very high in relation to real production of the enterprise. Gross value added, not including the purchases of goods and services (code 13), might be considered as an indicator for the volume of the sector. It might also be possible to try to define the commission of the trade in advertising space and time explicitly and only count the commission as turnover.

In the case of Denmark who carried out a very detailed breakdown of turnover, the flexibility of the small firms implied that the main activity of several advertising firms can vary between advertising (74.40) and printing activities (22.20) depending on the time of registration of the activity class.

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[3]For EUROSTAT: Chapter " ICOBS " of the methodological manual, paragraph 79.

d) Technical activities
Definition: *74.20 Architectural and engineering activities and related technical consultancy, 74.30 Technical testing and analysis*

For the subgroup technical activities the same problems of measurement of turnover as for marketing services exists, especially for the engineering services in the case of turnkey projects. No Member State commented on these problem of reinvoicing.

e) Renting and leasing activities
Definition: *71.1 Renting of automobiles, 71.2 Renting of other transport equipment, 71.3 Renting of other machinery and equipment*

The precondition for carrying out renting and leasing activities is a considerable amount of capital needed. So the investment as a share of the turnover is exceptionally high compared to the other subsectors, which is also supported by the results of the pilot survey. This indicates that enterprises within the renting and leasing subsector have a cost mixture which differs from the other subsectors and so influences the level of value added per employee.

The renting and leasing activity is also characterised by being attached to visible goods which implies that the contribution of services to the overall economic activity of the enterprises is lower than for many of the other subsectors. But the existing additional types of services connected to the supply of the goods as maintenance and repair should not be neglected.

f) Labour recruitment and provision of personnel
Definition: *74.50 Labour recruitment and provision of personnel*

The Netherlands proposed in 'Contributions of the delegations for the chapter 'ICOBS', 1990, to split up this subgroup into *provision of temporary personnel, paid by the agency*, and *recruitment of personnel*. This proposal is relevant in the context of further discussion of the NACE clssification. However, the pilot survey revealed that the subsector of labour recruitment and provision of personnel in general was confronted with huge problems of identifying the population even with no subdivision.

Firstly, in Denmark and Spain, these services are placed in the subsector other business services and the class is thus missing from the final survey tables. Furthermore, this class was unrecognized by national activity classification in Italy, where it was actually reconstructed on the course of study with only a handfull of enterprises. A very low number of enterprises in this class was observed in many countries. On the other hand, this class was important in France, especially in terms of employment.

One reason for the low representativity of this class among the business services is probably the fact that in several countries provision of personnal services are traditionally produced by public or semi public authorities. As a consequence of this the appearance of provision of personnel services of private enterprises is limited.

The provision of personnel enterprises can as its main substance be described as renting of the labour force. According to chapter 'General framework' (code 22a number of wage and salary earners) a temporary worker is considered to be an employee of the agency and not of the production unit (customer) in which he provides his services. The question, whether the out hired personnel is counted as the personnel of the provision of personnel enterprise or of the customer enterprise, is of *essential*

importance. The low number of employees in this subsector in some Member States indicates that the out hired personnel is not considered as employed by the agency.

Another possibility is that in these Member States the enterprise population mainly consisted of enterprises conducting labour recruitment activities

Labour recruitment or 'headhunting' services are in fact quite close to a specific consultancy work, and as such not as labour intensive as provision of personnel services. So the mixture of these two classes in the survey population is an important piece of information when analyzing the statistical results as indicated by Germany and the Netherlands as well.

g) Operational activities
Definition: *74.60 Investigation and security activities, 74.70 Industrial cleaning*

Operational activities can be characterized as the most labor intensive subsector. This is supported by the results of the pilot survey which show that the labor costs of this subsector in general have the highest percentage share of turnover of all subsectors. The issue of part time workers which constitute an important part of the total labour force in operational activities will be further discussed in chapter 5.2.

h) Other business activities
Definition: *74.81 Photographic activities, 74.82 Packaging activities, 74.83 Secretarial and translation activites, 74.84 Other business services n.e.c.*

The subsector of 'other services' seems to have more or less a character of a residual class, because firstly there is no natural link between the NACE classes included and secondly some of the countries have implicitly adopted this class as a residual one, for instance by including labour recruitment and provision of personnel into this class.

5. Definitions and comments by variables

In this chapter selected comments from the Member States concerning the variables are presented. The definitions of the key variables according to the "Methodological Manual of Statistics on Service Enterprises. Chapter General Framework" are given. The variables are divided into 3 groupings: demographic, economic and employment variables.

5.1 Demographic variables

Code 3: Variables concerning the characteristics and demography of the enterprises (or local units)
Definition: Factors explaining the characteristics and demography of the enterprises

There were not many comments from the Member States to these basic information included in this variable. More countries stated that the basic demographic variables are defined and discussed in relation to the development of a regulation concerning harmonization of business registers.

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Also in this context Denmark stated that information on age of an enterprise is impossible to collect as long as there is no general definition of the birth and death criteria of enterprises.

5.2 Employment variables

Code 22: Number of persons employed
Definition: The number of persons employed is defined as the total number of persons who work in the enquiry unit (inclusive of working proprietors, partners working regularly in the enterprise and unpaid family workers), as well as persons who work outside the unit but who belong to it and are are paid by it (e.g. commercial representatives, delivery men, repair and maintenance groups). Included are persons absent for a short period (e.g. sickness absence, paid leave or special leave), and also those on strike, but not those absent for an indefinite period. Also included are part-time workers who are regarded as such under the laws of the country concerned and who are on the pay-roll, as well as seasonal workers, apprentices and home workers on the pay-roll.
Excluded are labour forces made available to the unit by other enterprises and charged for persons carrying out repair and maintenance work in the enquiry unit on behalf of other enterprises, as well as those doing their compulsory military service.' (adapted from Industry Handbook, VI, 1)

In general, the problems arised in the pilot surveys concerning the number of persons employed were of the following types:

- a) concerning employment size classification, especially the conception of class '0' employees (code 4a)

- b) the great variance of part-time workers between the subsectors and also between the countries, (code 22b).

5.2.1 National applications of employment size classes

Information about the 0 employee class were available from Denmark, France, Germany, Ireland, Luxemburg, Netherlands and United Kingdom, but in several cases there were only very few obzewations in this class. . The 0 class was not available for Portugal and Spain. The smallest size class in Italy was 10-99 persons employed due to their sample universe.

One problem arose from the questionaire itself. Number of persons employed was a required variable but was not listed as a variable in the tabels where only number of employees was asked. Especially in the business services sector where the self employed constitutes a relative important share, information on the 0 class is important. Germany has given information about the self employed and other non - salaried persons employed.

A more practical problem is the size classes used. For many Member States the 500+ persons employed class implied confidentiality problems due to the low number of large enterprises in several subsector. In the case of Luxemburg the biggest size class was 10+ persons employed.

5.2.2 Part-time workers

In the pilot survey on business services, many of the tables included number of employees as a 'secondary' variable, namely turnover per employee and gross value added per employee. Basicly this kind of important and characteristic relations should be included in a description of subsectors. This variable, however, includes a total number of employees *not regarding* whether they are working on part-time or full time basis.

The pilot survey revealed that the share of part-time workers across the subsectors differed substantially. In general the operational services subsector accounted for a great part of the total number of employees in the Business Services sector. This large proportion of the employees in operational services is mainly due to part-time workers.

Denmark suggests to use the variable full time equivalent number of employees to solve the problem with number of part time workers. This is in Denmark obtained by the use of social security data. The Netherlands did deliver information based on full time equivalency.

5.3 Economic variables

Code 8: Turnover
Definition: Turnover comprises the totals invoiced by the enterprise (or by local unit) during the reference period, and this corresponds to market sales of goods or services supplied to third parties. Turnover includes all duties and taxes on the goods or services invoiced by the unit (or the local unit) with the exception of the VAT invoiced by the units vis à vis its customer. It also includes all other charges (transport, packaging, ect.) ascribed to the customer, even if these charges are listed separately in the invoice. Reduction in prices, rebates and discounts as well as the value of returned packing must be deducted, but not cash discounts.
Turnover does not include sales of fixed assets. Operating subsidies received from public authorities or the EEC are also excluded. (adapted from Industry Handbook, V1 , 18 c)

The main part of the comments concerning turnover is described in chapter 4 under the different subsectors. The essential problem is the reinvoicing of the purchases which inflates the economic activity of the enterprise in question measured by turnover value.

One method to try to cope with this problem is a detailed breakdown of turnover. This was done in Denmark in the survey, and the breakdown of turnover constitutes a part of the statistical program in Finland, France and Sweden.

A more accurate way is to ask for a breakdown of the purchases which is a part of the on going surveys on audiovisual services and hotels, reataurants and travel agencies.

6. Conclusion

The reports and statistical results from the Member States clearly reflect the immature states of the statistical coverage of the business sevices sector in most of the Member States. On the other hand all

statistical institutes recognize the importance of establishing methods for statistical coverage of the sector.

This report has mentioned the major basic problems of establishing the survey population for many of the Member States and the problems with the low responding rate. One way to overcome the response problem is of course to carry out compulsory surveys. Another method is - as suggested by Denmark and Germany - to concentrate the survey to a number of key variables. From several countries came proposals for a structure where different subsectors are surveyed each year.

The pilot survey showed that the business services sector is so heterogenous that in several cases more subsector specific questionnaires should have been used. As stated in the paper for some subsectors the measurement of turnover was of problematic value due to reinvoicing of products. Another issue for further discussion is the employment variable because of the relative high numbers of part time workers in one or two subsectors - which causes the problems of partly measuring the actual amount of workload and partly comparisons between subsectors or countries.

It was suggested by Germany to supplement the number of NACE/Rev. 1 classes which now constitute the Business Services sector with the following classes: Real estate activities (NACE/Rev. 1 70), Post and telecommunications (NACE/Rev. 1 64) and activities of other transport agencies (NACE/Rev. 1 63.4). These classes are seen as fields which will play an important part in the economic development in the coming years.

The problems concerning the interpretation of the definitions of some variables and the implementation and the data collection problems concerning a number of variables give a valuable feedback to the improvement of the methodological manual and the future set up of a reference framework for harmonised service sector statistics within the European Communities.

ANNEX I   Background information of pilot survey

	Source from which enterprises identified	Population from which survey is drawn	Number of surveyed enterprises	Number of accepted responses	Response rate %
Denmark	General Register of Enterprises	Pop. used for accounting statistics, 4544 enterprises	1 715	925	53,9
Germany	Enterprises from 1987 business services census were used	243 325 enterprises	16 954	4 169	24,6
Spain	Central Directory of INE enterprises DIRCE 1	DIRCE 1 (+ supplementary sources)	10 589	3 037	28,7
Netherlands	General Register of Enterprises	Annual production statistics 6450 enterprises		1 500	
Luxembourg			1 097	470	42,8
France	Register of Enterprises and Establishments (SIRENE)		38 567	27 856 Values are aggregated to relate 197 688 enterprises	72,2
Italy	SIRIO classification	System of Corporate accounts 4860 enterprises.	4 860	1 564	32,2
United Kingdom	Database of the Central Statistical Office (CSO), but inaccessible for legal reasons	DunsMarketing Database + other prof. ass files 43 000 enterprises.	10 189	1 301	12,8
Ireland		Kompass Database	3 008	426	14,2
Portugal	Register of enterprises	Preliminary survey of 24 000 enterprises	3307	1 500	49,4

Source: Study of the business services sector based on pilot surveys in the European Community, prepared by Mrs Saida Slama

ANNEX II Results of the reclassification of enterprises in United Kingdom

	Number of enterprises Feb. 1992	Corrected number of enterprises, Nov, 1992
Professional services	310	163
Technical services	318	179
Marketing services	162	122
Computer services	200	240
Renting and leasing services	110	101
Labour recruitment	44	78
Operational services	47	114
Other business services	112	304
Total	1303	1301

Example of reclassification within the business services sector in Denmark

NACE Rev.1

Existing Danish Activity Classification		7413	7414	7440	7484
83249	Technical services n.e.c.	0,0	18,9	2,5	6,6
83250	Advertising and marketing services	57,1	10,1	81,5	15,4
83295	Rationalization and planning consultancy	0,0	26,4	2,5	0,0
83299	Other business services n.e.c.	42,9	27,7	7,0	63,7
Other 83XXX	Rest of business services	0,0	4,7	0,0	2,2
3XXXX	Manufacturing industries	0,0	0,0	2,5	2,2
5XXXX	Construction	0,0	0,0	0,0	0,0
61XXX	Retail trade	0,0	4,1	2,5	3,3
62XXX	Wholesale	0,0	0,7	0,0	0,0
63XXX	Hotel and restaurants	0,0	0,7	0,0	0,0
7XXXX	Transport	0,0	0,0	1,3	0,0
9XXXX	Other services	0,0	6,8	0,0	6,6
Total		100,0	100,0	100,0	100,0
Enterprises		7	148	157	91

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