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The catchword

Handbook of Recommended Practices for Questionnaire Development and Testing in the European Statistical System

1. Background

One of the central goals of official statistics is to continuously enhance the quality of its data. In the context of the "fit 2008" strategic goals, the Federal Statistical Office has therefore undertaken to "ensure a high quality of its products and services by regularly checking and enhancing the methods and estimation procedures used."[1]

That maxim is observed at the European level, too. The Code of Practice for the European statistical authorities defines 15 principles which apply as European quality standards to all spheres of statistical work[2]. The statistical offices in the European Union have undertaken to abide by the above principles which refer to the areas of "institutional framework", "statistical processes" and "statistical products". The indicators that are provided for each of the 15 principles serve as a basis for reviewing the observance of the Code of Practice. The relevant checks are carried out in the form of self-assessments and peer reviews[3]. Principle 8 (Appropriate statistical procedures), among other things, calls for systematically testing all questionnaires prior to the data collection. The heads of the statistical offices of the German Länder, too, have argued for a systematic introduction of pretests so that the German and European quality assurance systems are based on the same foundation. [4]

Since 2006, a European Handbook of Recommended Practices has been available which provides recommendations regarding the methods to be applied in developing and testing questionnaires. Commissioned by the Statistical Office of the European Communities (Eurostat), the Italian Statistical Office worked out this Manual in co-operation with several Member States, among them the Federal Statistical Office. The Recommended Practice Manual specifies more precisely the general requirements of the Code of Practice with respect to systematic pretests and it provides recommendations as to the methods to be applied. The methods recommended in the Manual serve as a basis for the further development of questionnaire tests at the Federal Statistical Office, too. In this context, a number of pilot projects are currently carried out and a pretest laboratory is set up as an indispensable basis particularly for conducting cognitive interviews.

Introducing a systematic testing scheme for questionnaires is a necessary requirement supplementing the standardisation of survey documents which has already been carried out for several years[5]. While so far, however, the focus has been on a harmonised visual design of the

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[1] "Fit 2008" http://www.destatis.de/download/allg/fit2008.pdf

[2] Eurostat (2005): Europen Statistics: Code of Practice
http://www.epp.eurostat.ec.europa.eu/pls/portal/docs/PAGE/PGP_DS_QUALITY/TAB47141301/VERSIONE_TEDESCO_WEB.PDF

[3] Kopsch, G.; Köhler, S.; Körner, T. (2006): Der Verhaltenskodex Europäische Statistiken (Code of Practice). In: Wirtschaft und Statistik no. 8 /2006. pp. 793-804
http://www.destatis.de/download/d/wista/wista0806.pdf

[4] In the relevant literature, questionnaire tests which are carried out before the actual survey takes place are often referred to as "pretests". The term stands for a large number of testing techniques used to evaluate questionnaires. While in the past, questionnaire tests were often carried out under field conditions in the context of what was called a mini sample survey, today a wide range of different methods are available to perform both qualitative and quantitative tests. See also: Ehling, M., Pretests – Ein Instrument zur Überprüfung von Erhebungsunterlagen, in: Wirtschaft und Statistik, no. 3/1997, pp. 151-159 and: Prüfer, P./Rexrodt, M. (1996), Verfahren zur Evaluation von Survey-Fragen. Ein Überblick, ZUMA Arbeitsbericht, 96/05, Mannheim: ZUMA.

[5] See also: Statistische Ämter des Bundes und der Länder (2006): Handbuch zur Erstellung von Erhebungsunterlagen der amtlichen Statistik.

survey instruments in official statistics, questionnaire tests are primarily aimed at examining the quality of the relevant measurements (reliability and validity).

This paper will both present the structure and major recommendations of the European Manual and provide information on the further steps taken at the Federal Statistical Office.

2. Systematic development and testing of survey documents

The European Manual outlines in detail the methods available for the development and testing of questionnaires. In addition, it provides recommendations for the practical application of those methods at the statistical offices. The range of available methods is very wide. The Manual presents above all (a) methods to prepare surveys in conceptual terms, (b) methods to examine the quality of questionnaires under laboratory conditions, (c) methods to test electronic questionnaires, (d) methods for quantitative tests under field conditions and (e) methods for the post evaluation of survey data (if data of previous surveys are available)[6]. Developing and testing survey documents are part of an iterative process during which, depending on the different phases of development and testing, various methods are applied [7] [8].

The following methods are outlined in detail:

a) In the context of conceptual preparation, for instance, group discussions are carried out with potential respondents (focus groups) and in-depth (qualitative) interviews are conducted to clarify the terminology and concepts to be used. The objective is to learn both whether respondents understand what survey designers have conceived and how they understand the theoretical concepts. In addition, systematic discussions should be held with experts of subject-matter departments, clients, potential users and questionnaire design experts. The objective of including various groups of persons in the development process is to define theoretically the details on which information will be collected. Potential respondents are included in order to get an answer to the questions of what information can be actually obtained in a survey and how the respondents interpret the questions posed. It is during this phase that the basic objectives and limits of a survey should be clarified and both a realistic list of variables to be collected and, where appropriate, a legal basis for the survey be prepared.

b) During the second phase of testing, questions which turned out to be especially problematical (in exceptional cases the questionnaire as a whole) are subjected to qualitative tests under laboratory conditions. The range of testing procedures is wide. They include, in particular, cognitive techniques originating in psychology, such as think-aloud interviews (formulating loudly all thoughts which lead to an answer), probing (posing additional questions to achieve additional information), paraphrasing (respondents repeat the questions in their own words), and sorting (categorising terms). The above and further techniques are used to examine whether the questions are understood in the way intended and potential respondents are able and ready to supply information[9]. Besides, groups of experts may be helpful to discover weak points in the

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[6] See: Australian Bureau of Statistics (ed.) (2001): Pretesting in survey development. An Australian Bureau of Statistics perspective. Research Paper. Canberra, Australia: Australian Bureau of Statistics.

[7] Eurostat (2006): Handbook of Recommended Practices for Questionnaire Development and Testing in the European Statistical System
http://epp.eurostat.ec.europa.eu/portal/page?_pageid=2273,1,2273_47143267&_dad=portal&_schema=PORTAL#METH

[8] SCB (2004): Design your questions right. How to develop, test, evaluate and improve questionnaires, Örebro: Statistics Sweden
http://www.scb.se/templates/Listning2____59175.asp

[9] Prüfer, P.; Rexrodt, M. (2005). Kognitive Interviews, in: ZUMA How-to series, no.15.
http://www.gesis.org/Publikationen/Berichte/ZUMA_How_to/

draft questionnaire. Also, observing the respondents during questionnaire completion is an adequate technique when self-completion forms are used.

c) As electronic questionnaires are used to an increasing extent, further techniques are required to test them. Those techniques include procedures which are designed to check in a systematic way the proper (in terms of content) and correct programming of a questionnaire (functionality tests). Subsequently, the user friendliness of the electronic instrument is evaluated by what are called usability tests. During those tests, potential respondents are asked to complete the questionnaire on a computer screen in a laboratory while screen-capture devices record the movements of the cursor, eye-tracking devices record the movements of the respondent's eyes or a video camera films the computer screen (audit trails).

d) Based on the experience gained in the qualitative tests, the frequency with which problems arise in relation to a given questionnaire is tested under field conditions (quantitative testing). The testing techniques include, for instance, behaviour coding (standardised coding of the behaviour of respondents during the interview) and interviewer and respondent debriefings (evaluation of the questionnaire after the survey interview by means of a follow-up questionnaire or in the form of a final discussion).

e) Provided sufficient data records are available (based e.g. on a field pretest or a previous survey regarding the same subject), the records themselves can be used to analyse certain quality criteria. Examples are checking the data records for non-response, response distribution, the plausibility of the answers obtained and the need for correction or imputation.

Depending on the survey instrument and mode of data collection – e.g. involvement of an interviewer, self-administration or computer-assisted survey – different testing techniques have to be applied. As is recommended in this context, respondents should be part of the pretest procedures in addition to experts, clients and interviewers in order to develop an appropriate survey instrument[10].

At least in certain cases, it is also recommended to carry out both qualitative and quantitative tests and to examine the electronic instrument, if applied. Furthermore, pretests should be carried out not only when a new questionnaire is introduced, but also in cases where new questions are added, questions are modified, another mode of data collection is selected (e.g. CATI (computer-assisted telephone interviewing) instead of pencil and paper) or data quality checks have revealed deficiencies[11]. A first pilot project on introducing a two-stage pretesting procedure has shown that qualitative and quantitative tests complement each other well (feasibility study on recording employers' social security contributions).

Based on the recommendations of the Manual, the Federal Statistical Office is currently preparing its own organisational and methodical guidelines for questionnaire development and testing, taking into account, on the one hand, the institutional conditions of German official statistics and, on the other, the wide range of surveys concerned.

3. Prospects

[10] See also the minimum standards of the U.S. Census Bureau: U.S. Census Bureau (ed.) (2003). Census Bureau Standard. Pretesting questionnaires and related materials for surveys and censuses. Washington, Columbia: U.S. Census Bureau. http://www.census.gov/srd/pretest-standards.pdf

[11] Statistics Canada (2002): Policy on the Review and Testing of Questionnaires. Statistics Canada Methods and Standards Committee, Ottawa: Statistics Canada.

Conducting systematic tests of questionnaires in all areas where federal statistics are produced presents a diverse range of challenges. The different survey instruments used in the various branches of federal statistics and also the most varied survey units require a tailor-made design of the methods to be applied. The survey units include (a) households and individuals, (b) enterprises of all branches of economic activity and (c) administrative authorities at the federal, Länder and local level.

Different modes of data collection are used to cover the different survey units. While individuals typically receive paper questionnaires (which are usually to be completed in a self-administered way), data collection via the internet has gained in importance in this area, too. In particular cases, techniques are used which imply the presence of an interviewer who uses a laptop (CAPI – Computer-Assisted Personal Interviewing) or carries out the interviews by phone (CATI – Computer-Assisted Telephone Interviewing). As regards surveys of businesses and institutions, electronic questionnaires are used to an increasing extent or the data are even derived in a direct manner from the business accounting systems (eSTATISTIKcore)[12].

The in-house pretest laboratory is to create the preconditions for making increased use of cognitive interviews. It is designed, on the one hand, for the audio-visual recording of individual interviews, expert discussions and discussions with focus groups and, on the other, for observing respondents who complete paper questionnaires in a self-administered way (observational interviews) and potential users who fill in electronic questionnaires (usability tests).

The aim of setting up a pretest laboratory and introducing systematic testing procedures is to follow the quality standards specified for questionnaire development and testing in the framework of the Code of Practice. Adequate tests of survey documents will have a positive impact on the whole data compilation process. Interviewers and respondents will be provided with a comprehensible questionnaire, and the validity, reliability and plausibility of the data collected will increase. In short, this is another step towards providing high-quality data.

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Methods of federal statistics – Further development

Problems of linking the business register with the register of agricultural holdings and possible solutions

The goal of a TAPAS project[13] carried out jointly with Statistics Austria is to develop possible solutions of how to link the business register with the register of agricultural holdings (*Betriebsregister Landwirtschaft – BRL*). This was triggered especially by the coming revision of the business register regulation[14], according to which it will be compulsory for national business

[12] http://www.destatis.de/ecore/index.htm

[13] TAPAS project "Modification of the register of agricultural holdings (*BRL*) with a view to integrating it into the national business register (*UR*) and the new requirements for agricultural statistics caused by the reform of the Common Agricultural Policy (CAP reform)".

[14] Council Regulation (EEC) No 2186/93 of 23 July 1993 on Community coordination in drawing up business registers for statistical purposes.

registers to contain units of the economic sectors of agriculture, hunting and forestry as well as fisheries. To implement that regulation, a new comprehensive business register is currently being developed to cover all economic sectors. It will replace the existing business register (*URS95*) and will gradually be extended to include external steering files (address files of specific statistics) and sector-specific registers such as the *BRL*.

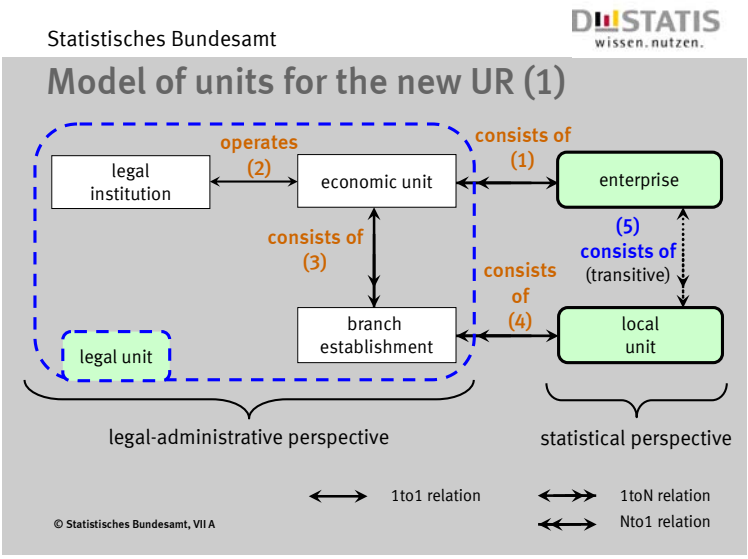
Introductory note

The main purpose of registers is to support the preparation, conduct and processing of surveys by storing the parties obliged to provide information and, where applicable, relevant statistical units. In the case of secondary statistics, registers may also be used to allocate the administrative data to the statistical units of the survey. In addition, from the viewpoint of the EU, the national business registers are the most important source for data on business demography, i.e. statistical analyses on the structure and development of the business population. Consequently, the contents of registers are defined by the survey and analysis units of the statistics to be controlled. They comprise "classic" register variables (identification and auxiliary variables of the units), code numbers for using administrative data sources, demographic variables, and regularly also specific subject-matter variables. As regards the analysis of economic agents, the business register also includes the following central items: Turnover, employees and the economic branch to which the unit belongs according to the activity performed.

Description of business register and *BRL*

Based on the two major goals (business demography and survey control) of the future business register, there are two basic perspectives from which the units to be stored can be considered: First, all legally independent economic units should be shown as exactly as possible and by using administrative data to the largest extent possible and, second, the various production and structural surveys in economic statistics should be based on statistically comparable units.

Figure 1:



In line with the business register regulation, it is intended for the model of units of the business register to store legal units for the legal-administrative perspective, as well as local units, enterprises and enterprise groups[15] for the statistical perspective of the economy. Mainly for reasons of availability/allocation to administrative data and for the creation of the statistical units, it is necessary for the legal unit to distinguish between the legal-financial aspect (legal institution), the economic aspect (economic unit) and the local aspect (branch establishment). The schematic model and the relations between the units are shown in figure 1.

What is stored in the *BRL*, however, is the agricultural or forestry holding (in short: holding), which is the survey and analysis unit generally underlying agricultural statistics. The definition here is a functional one, i.e. what is considered as a holding is any technical-economic unit with a uniform management and producing agricultural, forestry or fishery products, thus performing to a sufficient extent agricultural (production) activities. The extent depends on lower thresholds referring to the area cultivated or to the number of animals kept. However, the question of whether such activities reflect the main economic activity of the holdings is just as irrelevant here as the legal form, the ownership structure and the fiscal allocation.

In agriculture, the principle of the seat of the holding applies, i.e. if there are spatially separated parts of a holding, those holding parts are grouped together at the main seat of the holding. It may also occur that the holding has no independent legal personality as long as the technical-economic unit is clearly defined and can be covered in surveys.

Main problem

Already now, the business register contains units of agriculture without entirely covering that sector. So far, information has been integrated only from the turnover tax data of the fiscal administration and from the employee data of the Federal Employment Agency. Information on agricultural units is available where such units submit advance turnover tax returns or where they have employees subject to social insurance contributions. As there are special provisions for agriculture in terms of tax law and social insurance law, such information is often unavailable in the two data sources. Therefore, it would be helpful to use or transfer the *BRL* in order to ensure complete coverage of that economic sector.

Comparing the units and their definitions in the registers reveals that they are not identical. The definition of the holding clearly shows that a holding combines properties of legal units, local units and enterprises or, in some constellations, covers just partial aspects of them.

[15] Enterprise groups are not further treated in this context.

Usually, the holding as a legal entity is the survey and analysis unit for agricultural statistics and, in addition, it is the reference point when administrative data are used. It thus incorporates both the legal-administrative perspective and the statistical perspective of the units examined. Within the legal unit, there is the (subject-matter) economic aspect of a holding, focusing on the agricultural-economic activities, and its local aspect with the principle of the seat of the holding (all production factors are allocated to the seat, irrespective of their regional location). However, the local aspect is inexact for holdings with several holding parts because the latter are allocated to the main seat.

This means that, with its definition, a holding combines various properties of the unit types of the business register, with the consequence that it is not possible to create a generally valid and clear relation to one of those business register units. Consequently, when compared with the units of the business register, a holding corresponds to a legal unit or, as the case may be, to a local unit or even an enterprise (a complex enterprise consisting of several legal units), and in many cases it is equivalent to parts of such units.

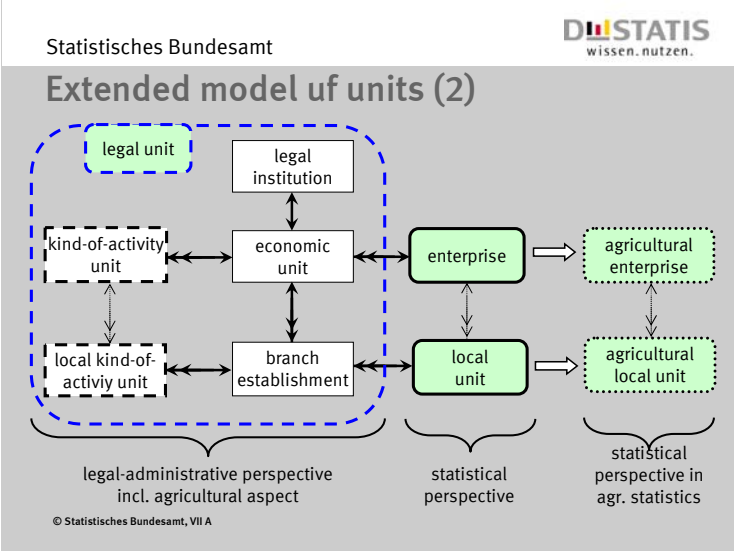
Only a holding that can legally be identified, has no sub-holdings and is engaged only in agricultural activities can be considered to be equal to a legal unit (a legal institution of an economic unit with one branch establishment) of an enterprise with one local unit. If that holding is transferred to the business register by allocating its variables to the units, then the subject-matter aspects will be lacking that are indispensable for the purposes of agricultural statistics.

If, as mentioned above, the holding covers just partial aspects and, consequently, represents just one business register unit, or even only part of such a unit, case-specific decisions will have be taken. For that purpose, data or data sources of the business register may be used where suitable. However, a major problem here is that there are no common indicators (such as a national standard business number).

Possible solution

The possible solution shown schematically in figure 2 is based first of all on splitting up the legal perspective and the statistical perspective to the units of agricultural statistics. This generally allows for those units to take over the basic structure of the business register units model.

Figure 2:



As the survey units in agricultural statistics are defined in terms of subject-matter, it is necessary to create kind-of-activity units in addition. Since this refers to the subject-matter perspective of the production factors of economic units, those kind-of-activity units are linked to the economic unit and to the relevant branch establishment.

From the statistical perspective, it is then possible to present and analyse the subject-specific aspects both at the enterprise level and at the local unit level. To put it more concretely, this allows – analogous to economic statistics – to perform separate structural analyses (usually for enterprises) and regional analyses of production and the labour market. The solution outlined here, however, cannot avoid that the units of the *BRL* and the

business register must be combined on a case-by-case basis (once only), which is labour-intensive and time-consuming. For specific constellations, special arrangements may be applied, such as forming pseudo establishments if, in the process of combining, the existing holding turns out to be a part of an establishment.

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Optimisation of the survey procedures for the crop production reports on vegetables and fruit

The crop production reports on various types of cultivation are regulated at the national level by the Law on Agricultural Statistics and at the supranational level by Regulations Nos. 837/90/EU and 959/93/EU concerning statistical information to be supplied by the member states on cereals production and on crop products other than cereals. Apart from that, "gentlemen's agreements" concerning the supply of information have existed between Eurostat and the member states since 1990. This contribution describes the optimisation of the survey procedures for the crop production reports on vegetables and fruit. This optimisation was initiated in 2006 with the objective of reducing the burden on the respondents while at the same time improving the quality of the data.

Methodological bases

In accordance with the Law on Agricultural Statistics, the crop production reports on vegetables (including strawberries) and fruit are compiled every year in the months from April to December, except for the Länder of Berlin and Bremen. They comprise estimates of the presumable and final crop yields in the current year as well as estimates of the current stage of growth and of growth-influencing factors. As regards fruit, the reports also contain estimates about the use made of the quantities harvested. The estimates are carried out and provided by crop reporters and enumerators in the holdings. The surveys are voluntary and therefore depend on the acceptance by the respondents so that data of adequate quality can be collected. The crop production estimates for vegetables are based on the annual survey of the cultivation of vegetables, which is conducted as an exhaustive survey every four years and as a sample survey in the interim years. The crop production reports on fruit are based on the survey of the cultivation of fruit trees, which is taken every five years.

As regards the survey of vegetable cultivation, an obligation to provide information rests on agricultural holdings which grow vegetables for commercial purposes, while, for the survey of fruit tree cultivation, this obligation rests on agricultural holdings with an area of at least 30 ares under fruit trees whose yield is mainly used for commercial purposes.

The results of the crop production reports are used to anticipate the yearly production and to monitor the production of vegetables and fruit over time. They are also used for planning and monitoring national and European agricultural policy and are integrated into the supply balances and the Economic Accounts for Agriculture.

Former survey procedures

Vegetable crop production:

Up to 2005, information on the vegetable crop production was supplied by some 1 500 crop reporters who estimated the yields to be expected from the areas under cultivation several times a year. In the former territory of the Federal Republic, most of them were former producers or staff members of the responsible authorities and worked on a voluntary basis. After German reunification, such a historically grown system was not available to the statistical offices of the

new Länder of the Federal Republic. However, the considerably larger agricultural holdings enabled the statisticians to obtain estimates from the producers themselves.

Throughout Germany, four reporting dates were set for submitting crop production reports on vegetables cultivated outdoors to the statistical offices of the Länder (at mid-June and around the 20th of July, September and October). The yields of vegetables cultivated under glass were estimated from the end of October to the middle of November. Based on the areas under vegetable cultivation in the preceding year, the results of the preliminary estimates were published by the Federal Statistical Office 5 to 7 weeks after the reporting date. The final results on the production of vegetable crops (incl. greenhouse cultivation) were published about 10 to 12 weeks after the reporting date on the basis of the data obtained from the survey of vegetable cultivation in the current year.

At the reporting dates mentioned above, information was also collected in all the Länder on growth-influencing factors (precipitation, temperatures, pest infestation) and in June and July additionally on the stage of growth of specific types of vegetables. The estimates of the yields to be expected in correlation to the area under cultivation included initial estimates for certain variables and final estimates of other variables at the relevant dates. Since many types of vegetables were classified into early and late varieties (especially cabbages), estimates had to be made for a wide range of vegetables at each reporting date. On the whole, preliminary and/or final estimates were carried out for just over 40 types of vegetables.

Fruit crop production:

Throughout Germany, the fruit crop production was estimated until 2005 by some 1 800 crop reporters or respondent holdings. The structure of the reporting system for fruit crop production was like that of the crop production reports on vegetables.

For estimates of the yield of fruit, too, five dates were set throughout Germany for submitting these estimates to the statistical offices of the Länder (20th of May, around the 10th of June and July, and at the end of August and October). The federal results of the preliminary estimates were published 5 to 6 weeks, those of the final estimates about 10 to 12 weeks after the reporting date.

At the reporting dates mentioned above, information was collected in all the Länder on growth-influencing factors (precipitation, temperatures, pest infestation) and in May and June on the stage of growth of the different fruit types. In May, preliminary estimates were additionally carried out for the yields of sweet and sour cherries. In June, preliminary estimates were made for the yields of all types of stone fruit. Also, final estimates were obtained for cherries, certain types of bush berries and for the use of the latter (e.g. marketing as dessert fruit or fruit for processing, own consumption). At the remaining reporting dates, preliminary or final crop production estimates were made and information was collected on the use made of the other types of fruit (apples, pears, plums/damsons, mirabelles, greengages, apricots and peaches). Since 2005, the quantities harvested of all types of fruit have been determined in terms of decitonnes per hectare.

Optimised survey procedure

In the former territory of the Federal Republic, too, it is becoming increasingly difficult to recruit a sufficient number of competent crop reporters in particular for special crops. This is why the statistical offices of the Länder have started to gradually reorganise the survey procedure for the crop production reports on vegetables and fruit in such a way that the data are reported directly by the holdings. This means that, as in the new Länder, a reporting system of agricultural producers will be set up in the whole of Germany, with enumerators in the agricultural holdings reporting the crop production estimates for their own holding. In addition, the number of

reporting dates will be reduced for both surveys, the schedule will be optimised and the list of variables will be adjusted to current requirements.

Vegetable crop production:

From 2006 onwards, crop production estimates for vegetables grown outdoors will be collected in the whole of Germany at only three reporting dates (end of June, August and October). The reporting date for vegetables cultivated under glass will be the 10th of November. Since the statistical offices have adopted a more streamlined procedure, the federal results are planned to be released already three weeks after the first estimate, four weeks after the second and six weeks after the final estimate. It will also be possible to carry out the second estimate on the basis of the survey of vegetable cultivation conducted in the current year.

Regarding the variables, information on growth-influencing factors and on the stage of growth will no longer be collected throughout Germany. The statistical offices of the Länder will have to decide on the extent to which these variables will be covered by future surveys or replaced by regional information from other sources. In June, data will only be collected on the harvest of asparagus and rhubarb, and preliminary estimates will be made for the yield of strawberries. In August (preliminary estimate) and in October (final estimate), all other kinds of outdoor vegetables will be included in the crop production estimates. Although the total number of variables has not been reduced, the range of vegetables included in the survey has been adjusted to the changed and specialised structures of cultivation. The outdated classification of many vegetables into early and late varieties has been abandoned. Instead, in accordance with the survey of vegetable cultivation, some varieties of vegetables that have gained in importance over the past years (e.g. diverse types of lettuce) will be newly incorporated into the crop production estimates. Estimates for the individual types of vegetables will only be carried out in those Länder where they play a certain role as compared to the extent of their cultivation throughout Germany.

Fruit crop production:

From 2006 onwards, crop production estimates for fruit will be collected in the whole of Germany at only four reporting dates (10th of June, 15th of July, 20th of August and 10th of November). The results are planned to be released by the Federal Statistical Office three weeks after the first estimate and four to five weeks after the subsequent estimates.

Under the same conditions as for the vegetable crops, information on growth-influencing factors and the stage of growth will no longer be collected for the whole of Germany. Due to the small area under cultivation, the crop production estimates for peaches and apricots have been discontinued. In June, only a preliminary estimate of the yield of sweet and sour cherries will be carried out in at least seven of the Länder where cherry cultivation is of significance. Henceforth two preliminary estimates will only be made for apples and cherries. For the fruit crop production, too, estimates of individual varieties of fruit may be abandoned in those Länder where their cultivation is of minor relevance.

Advantages of the optimised survey procedure

1. Because of the rescheduling of the reporting dates, a considerable reduction of the burden on respondents has been achieved for both surveys. This is due, on the one hand, to a general decrease in the number of reporting dates and, on the other, to the fact that the current arrangements make greater allowance for regional structures of cultivation.

2. In cooperation with the statistical offices of the Länder, the more streamlined procedure is expected to increase the timeliness of the provisional federal results by two to three weeks and that of the final federal results by up to six weeks.

3. The quality of the results will improve in several respects:

   - because the collection modalities and the variables have been adjusted to the current structures of cultivation;
   - due to the optimised scheduling of the reporting dates, the preliminary estimates of the vegetable crop production in August can already be made on the basis of the areas under cultivation in the current year;
   - by shifting the reporting system from crop reporters to the holdings producing vegetables or fruit, it will be easier in future to assess the quality of the sample because the areas can be determined on which the various types of vegetables and fruit are cultivated.

Future developments

Because of the highly regionalised structures of fruit and vegetable cultivation, the agreed survey procedure is to be reviewed and adjusted, where necessary, after each general survey of cultivation. For the vegetable crop production this will be the 2008 Survey of Vegetable Cultivation and for the fruit crop production the 2007 Survey of Fruit Tree Cultivation.

Further information

Further information concerning the methodology and results of the crop production estimates for vegetables and fruit is available from the quality reports on these surveys and from our Statistics Shop:

http://www.destatis.de/download/qualitaetsberichte/qualitaetsbericht_EBE_gemuese.pdf

http://www.destatis.de/download/qualitaetsberichte/qualitaetsbericht_EBE_obst.pdf

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Events

15th Scientific Colloquium: "Training for practice? The study of statistics as part of the economics curriculum"

In cooperation with the German Statistical Society, the Federal Statistical Office hosted the 15th joint scientific colloquium on the subject "Training for practice? The study of statistics as part of the economics curriculum" at the Crowne Plaza Hotel in Wiesbaden on 23 and 24 November 2006. The colloquium was moderated by Prof. Dr. Ulrich Rendtel from the Free University of Berlin, who also provided an introduction to the subject.

Prof. Dr. Peter Michael von der Lippe from the University of Duisburg-Essen started the discussion on the subject by presenting his contribution on the "Decline of the statistics courses at

institutions of higher education". The subsequent paper by Prof. Dr. Walter Krämer (University of Dortmund) examined whether statistical training is a hindrance to the progress of economics and social sciences. Prof. Dr. Hans Wolfgang Brachinger from Fribourg University in Switzerland spoke about a problem-oriented statistical training as part of economics studies that goes beyond "chalk-and-talk". Apart from that, he devoted part of his speech to describing the current situation of the statistics courses at the economics departments of Swiss universities.

The director of the Land Statistical Office of Berlin, Prof. Dr. Ulrike Rockmann, gave an account of the concepts applied in Germany for e-learning in the field of statistics and supplied a number of examples. Magdalena Thöne and Prof. Dr. Claus Weihs from the University of Dortmund presented their contribution entitled "Versatile and in demand: statistics graduates from Dortmund University", which described the university course as such and, based on information from the alumni register, the careers of former students after graduation.

The first day of the scientific colloquium was concluded by a ceremony at which the 2006 Gerhard Fürst Award was presented by Vice-President Radermacher. For 2006, the award and promotion prizes were granted to a total of three scientific contributions closely related to official statistics. For more details on the Gerhard Fürst Award of the Federal Statistical Office please refer to the relevant chapter in this publication or to the Internet at: http://www.destatis.de/allg/e/veroe/fue_txt.htm.

The agenda for the second day of the colloquium started with three contributions, which dealt with questions concerning new statistics courses at two German universities and which examined the possibilities of using absolutely anonymised official microdata in academic teaching.

This thematic block was opened by Prof. Dr. Ralf Münnich from the University of Trier, who informed the audience about the new statistics courses at Trier University. Using the example of campus files, Markus Zwick from the Federal Statistical Office in Wiesbaden illustrated how microdata of official statistics can be used in academic teaching today. The session dealing with questions concerning new statistics courses was rounded off by Dr. Sibylle Schmerbach from the Humboldt University of Berlin, who presented the new teaching concept for economic statistics that the university has introduced together with bachelor and master courses.

The colloquium ended with a panel discussion between Prof. Dr. Karl Mosler (University of Cologne), Dr. Manfred Ehling (Federal Statistical Office, Wiesbaden), Prof. Dr. Hans-Joachim Mittag (Open University of Hagen) and Prof. Dr. Gert G. Wagner (German Institute for Economic Research, Berlin). Under the chairmanship of Prof. Dr. Ulrich Rendtel, the participants discussed the future design of statistical training.

For abstracts of all contributions please refer to the Internet pages on the scientific colloquia at: http://kolloq.destatis.de/. From the beginning of 2007, the full texts of the contributions will also be available as free downloads.

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Gerhard Fürst Award 2006

On the occasion of the 15th Scientific Colloquium on the subject "Training for practice? The study of statistics as part of the economics curriculum", which was held jointly with the German Statistical Society, the 2006 Gerhard Fürst Award was presented to the winners on 23 November 2006. Based on the recommendations of the panel of independent jurors, Walter Radermacher, the Vice-President of the Federal Statistical Office, awarded the 2006 Gerhard Fürst Award to a

scientific paper closely related to official statistics. Two other papers were awarded promotion prizes for junior scientists.

In the category of diploma/master's dissertations, the 2006 Gerhard Fürst Award was granted for a study by Alexander Vogel on "Women's employment in a household context – A comparison of results on regular, actual and desired working hours with data of the 2001/2002 Time Use Survey on the basis of the collective model". The diploma dissertation, which was regarded by the jury as an outstanding achievement, won a prize money of EUR 2 500. The dissertation was supervised by Professor Dr. Joachim Merz of Lüneburg University. It is the first study to examine what impact different operationalisations of the working hours may have on research results concerning women's employment. The diploma dissertation by Alexander Vogel compares the conventional operationalisation of the working hours with those of the actual and the desired working hours. The aim of the dissertation is to determine whether the existing findings on the employment behaviour of women can be assumed to be independent of the operationalisation of the working time variables; that is, whether the results are robust in certain respects.

The dissertation by Dr. Martin Rosemann on "Effects of data-modifying anonymisation procedures on the analysis of microdata" was regarded by the jurors as an enrichment to the scientific discussion within the official statistics community. For this reason, the dissertation was awarded a promotion prize for junior scientists and won a prize money of EUR 2 000. It was supervised by Professor Dr. Gerd Ronning of the Eberhard Karls University of Tübingen. Martin Rosemann's dissertation deals with problems of anonymisation especially of business data. This issue is of great practical significance with a view to the use of microdata of official statistics in scientific research. The dissertation is focussed on data anonymisation through data-modifying procedures; it systemises and extends the findings on bias in the estimation and efficiency losses resulting from such procedures.

In the category of diploma/master's dissertations, Jonas Radl received a promotion prize and a prize money of EUR 1 000 for his diploma dissertation on "Individual determinants of retirement age – An empirical analysis of transition into retirement on the basis of the scientific use files on insured persons who retired in 2004". The dissertation, which was supervised by Professor Dr. Wolfgang Clemens of the Free University of Berlin, presents an empirical analysis of the individual determinants of the transition into retirement and thus discusses an issue of great practical relevance. The objective is determine the extent to which individuals are free to take their own decision about entering retirement and to examine the structural aspects limiting their options for action.

By offering the Gerhard Fürst Award every year, the Federal Statistical Office seeks to strengthen the existing links between the work of the official statistics agencies and that of institutions of higher education. At the same time, the award is intended to encourage junior scientists to make extensive use in their empirical research of the wide variety of data offered by official statistics.

An appropriate setting for the annual Gerhard Fürst Award was provided by the 15th Scientific Colloquium on the subject "Training for practice – The study of statistics as part of the economics curriculum". This scientific colloquium was held by the Federal Statistical Office in cooperation with the German Statistical Society in Wiesbaden on 23 and 24 November 2006. For more information about the 15th Scientific Colloquium please refer to the relevant chapter in this publication or to the Internet at: http://kolloq.destatis.de/.

More details about the Gerhard Fürst Award are available from the Internet at: http://www.destatis.de/allg/e/veroe/fue_txt.htm. On this webpage you will find, for example, abstracts of the award-winning papers and information on the conditions of participation for the 2007 Gerhard Fürst Award, whose deadline for submissions is 31 March 2007. Professor Dr. Hans Wolfgang Brachinger (University of Fribourg/Switzerland), the chairman of the independent Gerhard Fürst Award jury, delivered the laudatory speeches at the award-giving ceremony on 23

November 2006. These speeches were published in Volume No. 12/2006 of the journal "Wirtschaft und Statistik". The award-winning authors will publish detailed articles on their dissertations in the journal "Wirtschaft und Statistik" in 2007.

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