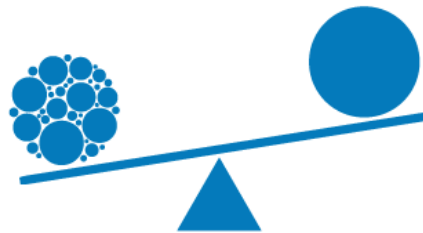


Jean Monnet Chair

Small Area Methods for Monitoring of Poverty and Living conditions in EU (SAMPL-EU)

Objectives, Teachers, Workplan of
Teaching activities,

<http://sampleu.ec.unipi.it>



Objective of the Chair

The Chair aims at introducing students and stakeholders to the study of **local statistics** on **poverty and living conditions** in order to provide reliable evidence to **monitor EU regional policy**

Measuring Poverty in EU Countries, Regions and local areas...



...integrating good quality data (from
surveys and other sources) for
evidence-based policy making

Objective of the Chair

The aim of the Chair is threefold:

1)

enhancing the students' and stakeholders' abilities to **understand** and **analyse** the **existing set** of poverty and living conditions **indicators** in Europe (multidimensional and Laeken poverty indicators), (un)employment rates, subjective well-being indicators);

Objective of the Chair

The aim of the Chair is threefold:

II)

building up and teaching a statistical tool-box of **Small Area Methods** based on traditional and new techniques of survey data collection and integration in order to produce local values and estimates of the indicators for the monitoring of the effects of European Regional Policy in the era of Big data and data deluge;

Objective of the Chair

The aim of the Chair is threefold:

III)

educating the students to **communicate the results** of the Small Area Methods to the stakeholders, to feed the evidence-based process of policy making with flash-estimates and to provide guidance on what might be the problems that arise in the reliability of the estimates and in the quantitative evaluation of regional policy.

Teachers and teaching responsibilities

- **Monica Pratesi**, *Jean Monnet Chair Holder*
- **Luigi Biggeri, Natalie Shlomo, Ralf Müennich, Risto Lehtonen, Francesca Gagliardi**, *Teaching staff*
- **Daniela Ghio, Achille Lemmi, ...others TBD**, *Seminar holders*

Monica Pratesi, Responsible for:

1. European Local Indicators of Poverty and Living Conditions: traditional and new survey techniques in the era of data deluge and Big data (I semester)

The course (9ECTS) aims to provide definition and measure of local indicators that be coherent and comparable across Europe and be useful and used by local stakeholders. It provides knowledge on the traditional data collections methods used in EU Surveys (e.g EU-Survey Income Living Conditions, Household Budget Surveys, Labour Force Survey)

The course offers a general introduction to the usage of administrative data sets and also large datasets as sources of statistical data (Big Data), with a focus on multi-frame surveys. It will tackle the most important topics in big data ranging from data collection, analysis and visualization, as well as applications of statistical models to Big data.

- At the end of the module student should be able to be confident with the theme of local indicators and Big Data in Official and should know the main problems/challenges linked to their usage as source of statistical data – The course is to be held in Master of Science in Economics, curriculum in Official Statistics, European Module.
- Students will learn the fundamental small area methods and what might be the problems that arise in the application of them and in the definition of their statistical quality

2. Analysis of European Data by Small Area Methods (II semester)

The course (9ECTS) will be structured in the following parts 1) Analysis of the collected data for estimation and testing for the phenomenon under study; definition of planned and unplanned domains. 2) Direct and indirect estimates for unplanned domains; R codes for the application of the SAE estimators (EURAREA and SAMPLE project libraries) 3) quality issues in SAE and usage of SAE in European Statistical System.

- At the end of the module student will be able to deal with small area estimation both at the theoretical and empirical level – The course is to be held in Master of Science in Economics, curriculum in Official Statistics, European Module.

Luigi Biggeri, responsible for:

The estimation and computation of Income, Consumption and PPPs in the European Statistical System (I semester - 1ECTS)

The intensive course will be structured into three modules: i) Evidence-based policy making; ii) European Statistical System; iii) Sources of data on Income, Consumptions, Poverty and PPPs in the European Statistical System. The course will introduce to the role of statistics in the design and evaluation of policy intervention and to the principles and organization of the ESS with attention to the data production model, statistical burden and privacy issues.

- Students will learn: the role of statistics to support the decision making at national and local level; the fundamental principles of the ESS and what might be the problems that arise in the application of them across the EU Member States and their National Statistical Agencies; the characteristics of data available at the ESS on the national accounts (in particular on gross domestic product and consumptions) and poverty.

Natalie Shlomo, responsible for:

Handling Missing Data, Statistical Data Editing and Imputation (I semester – 1ECTS)

The intensive course will provide students with knowledge and skills in advanced methods for compensating for missing data: alternative survey weighting methods for unit non-response and alternative methods of imputation for item-nonresponse. To introduce students to the concept of edit restrictions for identifying erroneous values and an overview of statistical data editing techniques.

- Students will learn the fundamental small area methods and what might be the problems that arise in the application of them and in the definition of their statistical quality.

Ralf Müennich, responsible for:

Variance estimation of some EU-SILC based indicators at regional level (II semester- 1ECTS)

Aim of the course is to provide an in-depth insight to methods and problems of variance estimation in survey statistics and in complex indicators. The course also introduces students on how to implement the considered methods in R.

- Students acquire profound methodological knowledge and are, therewith, prepared to thoroughly understand and judge respective methods from a theoretical as well as from a practical point of view.

Risto Lehtonen, responsible for:

**Reweighting estimates from European Sample Surveys
(II semester - 1ECTS)**

The intensive course will focus on weighting, reweighting and integration of sample surveys and data archives under a design-based approach.

- Students will learn the fundamental principles of weighting and reweighting sample data to compensate for non sampling errors and integration under a design – based approach.

Francesca Gagliardi, responsible for:

Robustness of some EU-SILC based indicators at regional level (II semester – 1ECTS)

The course will address some statistical aspects related to the construction from EU-SILC data of indicators of poverty and social exclusion for sub-national regions. Conceptual and methodological issues in going from the national level – for which EU-SILC surveys are primarily designed– to the regional level are discussed.

- Students will learn the fundamental problems that arise in the construction from EU-SILC data of indicators of poverty and social exclusion for sub-national regions.

Work Plan of teaching Activities

First Group of Lectures and Seminars, from 1st to 15th October: Luigi Biggeri and Daniela Ghio

- 1. The role of statistics in supporting the decision making: an overview (Luigi 1st Oct)**
 - Need for Statistical Information
 - Need for Statistical Analysis
- 2. The design of policy interventions: a framework (Luigi 1st Oct)**
- 3. Definition and measure of variables and indicators (Luigi 1st Oct)**

**4. The design, implementation and evaluation of policy intervention at local level
(Luigi 1st Oct)**

**5. Availability and production of statistical information at EU level: The European Statistical System (ESS), Principle, Structure and Organization
(Daniela 1st Oct)**

**6. ESS: Data Collection, the link between National level and the EU context
(Daniela 2nd Oct)**

**7. SDMX: Data, metadata and exchange system; the code of practice and design and harmonization at EU level
(Daniela 2nd Oct)**

**8. Different methods to get information: methodology of statistical survey. Estimation of economic aggregates: GDP, GDP and beyond, consumptions
(Luigi 9th Oct)**

**9. Estimation of poverty and living conditions: main European surveys
(Luigi 9th Oct)**

**Second Group of Lectures and Seminars, 8th Oct
and from 16th October to 18th December: Monica
Pratesi, Natalie Shlomo and Achille Lemmi**

- 1. Traditional and innovative survey methods in the era of
data deluge (Monica 8th Oct and following)**
- 2. Handling missing data, reweighting and imputation
(Natalie, 3rd - 4th Dec)**
- 3. Poverty and well being indicators (Achille, date tbd)**

To summarize: the JMC project jointly with the EMOS curriculum in the MoS in Economics offers 6 courses in survey methods, analysis of survey data, small area estimation, applied statistics and data production methods focused on the study of poverty and living conditions

“European Local Indicators of Poverty and Living Conditions: traditional and new survey techniques in the era of data deluge and Big Data” (9 ECTS - I Semester – begin 1st october 2015). On this course has been borrowed:

“European Statistical System and Data Production Model” (6 ECTS - I Semester - begin 1st october 2015) which is part of the new curriculum “OS” of the Masters of Science in Economics which recently has been labelled with the 'Certificate European Master in Official Statistics' by European Statistical System Committee

“Poverty and Living Conditions Indicators” (3 ECTS - I Semester - begin 1st october 2015)

“Analysis of European Data by Small Area Methods” (9 ECTS - II Semester). On this course has been borrowed:

“Analysis of Survey Data and Small Area Estimation” (6 ECTS - II Semester) which is part of the new curriculum “OS” of the Masters of Science in Economics which recently has been labelled with the 'Certificate European Master in Official Statistics' by the European Statistical System Committee

“European Local Data Sources” (3 ECTS - II Semester)

- ***Such courses may be included among the free choice 24 ECTS for the Master of Science in Economics and free choice credits of other courses, after prior authorization by the Council of the Degree Programme.***
- We invite you to visit the website <http://sampleu.ec.unipi.it> for a description of courses (and the project) and write an email to sampleu@ec.unipi.it for more information about it and if you want to attend it.