# ITACOSM 2019

**FLORENCE** 5-7 June 2019 | 6th ITAlian COnference on Survey Methodology

## Survey&
## Data Science

**Dear colleagues,**
on behalf of the Scientific Program Committee and of the Local Organizing Committee, we welcome you to Florence and to the 6th ITAlian COnference on Survey Methodology – ITACOSM 2019 "Survey and Data Science".

ITACOSM is a bi-annual international conference organized by the Survey Sampling Group (S2G) of the Italian Statistical Society (SIS) whose aim is promoting the scientific discussion on the developments of theory and application of survey sampling methodologies in the fields of economics, social and demographic sciences, of official statistics and in the studies on biological and environmental phenomena.

Fundamental changes in the nature of data, their availability, the way in which they are collected, integrated and disseminated are a big challenge for all those working with designed data from surveys as well as organic data. ITACOSM 2019 tries to give a response to the increasing demand from researchers and practitioners for the appropriate methods and right tools to face these changes.

The Conference is scheduled in 5 plenary sessions, 12 specialized sessions on specific topics and 6 contributed sessions.

The Scientific Program Committee and the Local Organizing Committee and many volunteers have contributed substantially to the organization of this conference. We acknowledge their work and the support of the University of Florence, the International Association of Survey Statisticians (IASS) and the Italian Statistical Society (SIS).

We wish you a productive and stimulating conference and a pleasant stay at the University of Florence.

**Alessandra Petrucci**
*chair of the Scientific Program Committee*

**Emilia Rocco**
*chair of the Local Organizing Committee*

# The Venue

The main venue of the Conference (registration desk, plenary and parallel sessions, S2G members' assembly) will be located in the rooms of the **Learning Center Morgagni** of the University of Florence, **Viale G.B. Morgagni 40-44**.

The *Learning Center Morgagni* can be reached by tram from the Florence Train Central Station (Santa Maria Novella): **line T1 - Direction Careggi-Ospedale**. The Learning Center is right next to the stop '**Morgagni** - *Università*'.

The **tram** goes into service at 5 am and ends its run at 00.30 am. Throughout the day, there is a run every 5 minutes from 7am to 8pm and every 10 minutes the rest of the day.
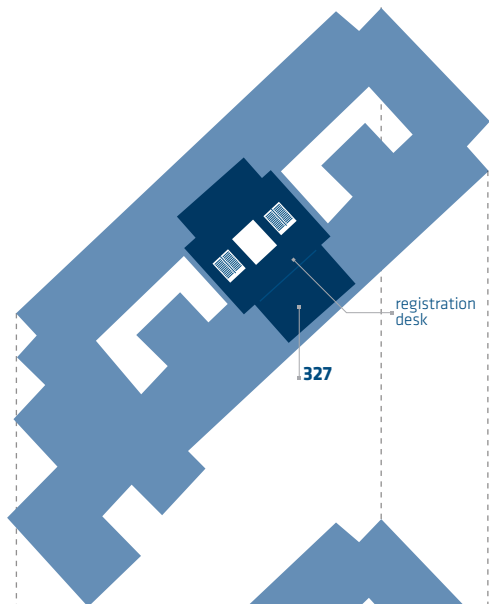
You can check the transportation company web page www.gestramvia. com for directions and timetables.

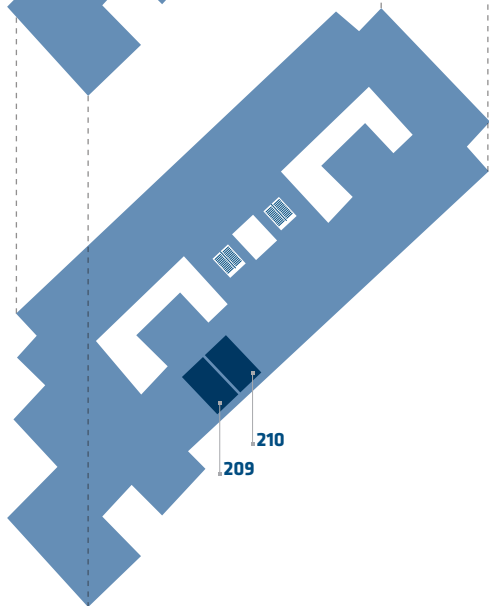If you arrive to *Rifredi station*, the conference venue can be reached in about 10 minutes walk.

**THIRD FLOOR**
Learning Center Morgagni

registration
desk

**327**

**SECOND FLOOR**
Learning Center Morgagni

**210**

**209**

# Social Events

The **Welcome Cocktail** will be held at the conference venue, **Learning Center Morgagni**, Viale G.B. Morgagni 40-44, starting at 19.00 on **Wednesday June 5th**.

The **Social Dinner** will take place at the **Caffè del Verone** of the **Istituto degli Innocenti**, Piazza Santissima Annunziata 12, in the center of Florence, starting at 20.30 on **Thursday June 6th**.

The cost of the Social Dinner is 35€ and is not included in the conference fees. Dinner tickets can be purchaised at the registration desk subject to availability. Be aware that the number of participants to the Social Dinner is limited to 60 people.

# Structure of sessions

| | |
|---|---|
| **Plenary session** | 45' talk, 15' floor discussion |
| **Specialized session (SPE)** | 25' talks, 15' floor discussion |
| **Contributed session (CON)** | 15' talks, 10' floor discussion |

# Other information

## Coffee breaks and lunch

Coffee breaks will take place in the foyer of the Conference venue, *Learning Center Morgagni*.

A lunch ticket usable at the *University Canteen* on Thursday June 6th is included in your Conference kit.

## Internet WiFi

EDUROAM Internet connection is available: don't forget to bring your EDUROAM credentials.

If you don't have an EDUROAM account, you can ask to the registration desk for a temporary UniFi account. Please bring your ID document in order to facilitate the account registration.

## Abstracts

The Conference abstracts are available on the Conference website.

## Taxi

If you need Taxis you can call it by Radiotaxi (phone):
(+39) 0554242
(+39) 0554390
+39) 0554798.
You can also download the APP:
www.apptaxi.it/firenze/

## Visiting Florence

You can find useful information for visiting Florence on the Official Florence Tourism website (www.firenzeturismo.it/en/) or on the Visit Florence website (www.visitflorence.com/it/).

## Organizer

- Survey Sampling Group of the Italian Statistical Society
- DISIA - Dipartimento di Statistica, Informatica, Applicazioni "Giuseppe Parenti"

## Partners and Sponsors

- Università degli Studi di Firenze
- International Association of Survey Statisticians
- Società Italiana di Statistica

## WEDNESDAY JUNE, 5

**13.00** | **13.30**, room 327
WELCOME ADDRESS

**13.30** | **14.30**, room 327
PLENARY SESSION

**14.30** | **16.00**, room 209
SPE. 1 - Small area estimation using integrated and big data sources

**14.30** | **16.00**, room 210
SPE. 2 - Optimal sampling design

**16.00** | **16.20**
COFFEE BREAK

**16.20** | **18.00**, room 327
CON. 1 - Small area estimation

**16.20** | **18.00**, room 209
CON. 2 - Issues in complex surveys

**16.20** | **18.00**, room 210
CON. 3 - Methods for the analysis of survey data

**18.00** | **19.00**, room 327
PLENARY SESSION

**19.00** | **20.30**, foyer
WELCOME COCKTAIL

## THURSDAY JUNE, 6

**9.00** | **10.30**, room 209
SPE. 3 - Machine learning for socio-economic surveys

**9.00** | **10.30**, room 210
SPE. 4– Small area estimation methods: innovations and applied issues

**10.30** | **11.30**, room 327
PLENARY SESSION

**11.30** | **12.00**, foyer
COFFEE BREAK

**12.00** | **13.30**, room 209
SPE. 5 - Analysis of Official Statistics for decision making

**12.00** | **13.30**, room 210
SPE. 6 - Environmental surveys: theoretical and practical issues

**13.30** | **14.30**
LUNCH

**14.30** | **15.30**, room 327
PLENARY SESSION

**15.30** | **16.40**, room 327
CON. 4 - Advances in survey data analysis

**15.30** | **16.40**, room 209
CON. 5 - Non sampling error

**15.30** | **16.40**, room 210
CON. 6 - Real survey data analysis issues

**16.40** | **17.00**, foyer
COFFEE BREAK

**17.00** | **18.30**, room 209
SPE. 7 - Inference from informative and non-probability survey samples

**17.00** | **18.30**, room 210
SPE. 8 - Spatial sampling and applications

**18.30** | **19.00**, room 327
S2G MEMBERS' ASSEMBLY

## FRIDAY JUNE, 7

**9.00** | **10.30**, room 209
SPE. 9 - Record linkage and statistical
matching techniques

**9.00** | **10.30**, room 210
SPE. 10 - Sample surveys for sensitive
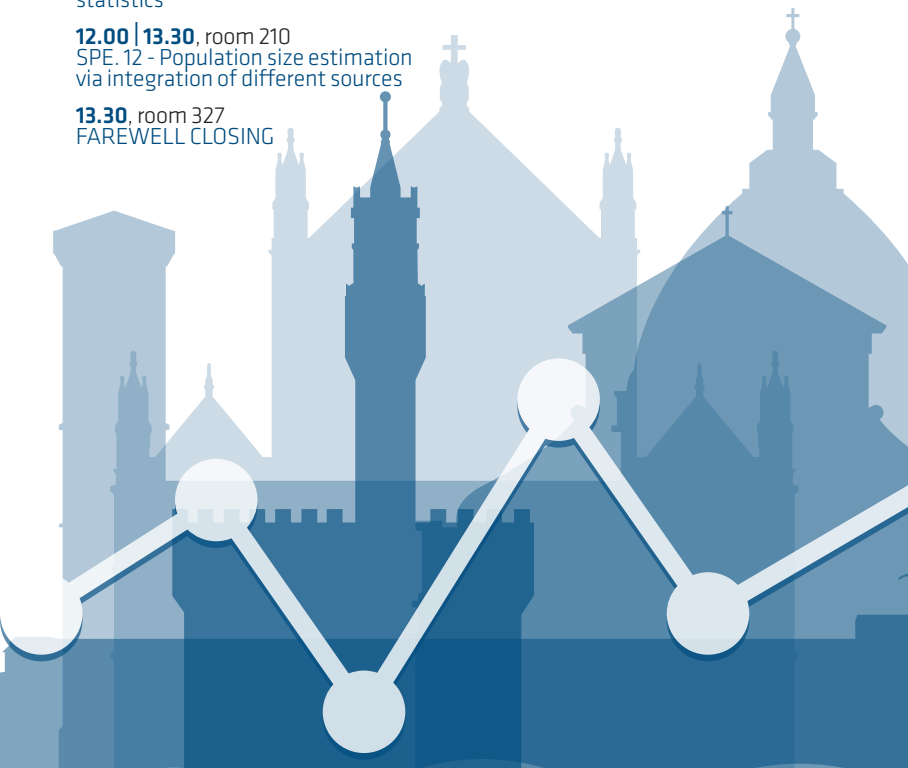data

**10.30** | **11.30**, room 327
PLENARY SESSION

**11.30** | **12.00**, foyer
COFFEE BREAK

**12.00** | **13.30**, room 209
SPE. 11 - Quality of multi-source
statistics

**12.00** | **13.30**, room 210
SPE. 12 - Population size estimation
via integration of different sources

**13.30**, room 327
FAREWELL CLOSING

# WEDNESDAY JUNE, 5

## WELCOME ADDRESS

## PLENARY SESSION

*chair*
**Monica Pratesi**

Imputation for the treatment of item nonresponse in surveys: an overview
*David Haziza*

## SPE. 1 - Small area estimation using integrated and big data sources

*chair*
**Nicola Salvati**

Measuring well-being and poverty at local level using remote sensing data
*Ralf Münnich, Christopher Caratiola, Hanna Dieckmann, Max Gerhards, Thomas Udelhoven*

Alternative spatial data sources for small area estimation in developing countries
*Nikos Tzavidis, Angela Luna, Kristine Nilsen, Jessica Steele*

Small area poverty indicators adjusted using local price indexes
*Stefano Marchetti, Gaia Bertarelli, Caterina Giusti, Francesco Schirripa Spagnolo, Monica Pratesi*

## SPE. 2 - Optimal sampling design

*chair*
**Roberto Benedetti**

Survey design for the estimation of the economic performance of the Italian fisheries sector
*Paolo Accadia, Federica Piersimoni, Evelina Carmen Sabatella, Dario Pinello*

Enhancing small area estimation through spatially balanced designs?
*Maria Simona Andreano, Francesco Pantalone*

Optimal spatial sampling design using coupled Gaussian processes
*Luigi Ippoliti, Sara Fontanella, Pasquale Valentini*

## COFFEE BREAK

## CON. 1 - Small area estimation

*chair*
**Caterina Giusti**

Borrowing strength from larger surveys to improve related estimates from smaller surveys using bivariate small area estimation models
*Carolina Franco, William R. Bell*

Hierarchical Bayes estimation of unit-level small area log-normal models
*Aldo Gardini, Carlo Trivisano, Enrico Fabrizi*

On the properties of EBP for a class of models with correlated random effects and longitudinal data
*Małgorzata Karolina Krzciuk*

Variable and transformation selection for mixed regression models with application to small area estimation
*Natalia Rojas-Perilla, María José Lombardía, Esther López Vizcaíno, Cristina Rueda Sabater*

Using the entropic distance for large area definition in small area estimation methods
*Fabrizio Solari, Livio Fenga*

On synthetic median estimator in small area estimation
*Tomasz Stachurski*

### 16.20 | 18.00, room 209
## CON. 2 - Issues in complex surveys

*chair*
**Luca Tardella**

Improving cube method
*Shoaib Ali*

Variance estimation for rotating samples: the case of the EU-SILC survey in Luxembourg
*Guillaume Osier*

Some topics of sampling and estimation on a bipartite graph: the adaptive estimator
*Martina Patone*

Functional central limit theorems for stratified single-stage sampling designs
*Anne Ruiz-Gazen*

On bootstrap for complex sampling designs via sampling scheme modification
*Tomasz Żądło*

### 16.20 | 18.00, room 210
## CON. 3 - Methods for the analysis of survey data

*chair*
**Andrea Giommi**

Evaluation of the impact of mixed mode design on the quality of the estimates of the Aspects of Daily Life social survey
*Claudia De Vitiis, Alessio Guandalini, Francesca Inglese, Marco Dionisio Terribili*

The marginal impact of auxiliary totals in calibration
*Alessio Guandalini, Claudio Ceccarelli*

The R-Package 'surveysd'
*Johannes Gussenbauer, Alexander Kowarik, Gregor de Cillia*

Mind the mode: lessons from a web survey on household finances
*Andrea Neri, Romina Gambacorta, Martina Lo Conte, Manuela Murgia, Roberta Rizzi, Francesca Zanichelli*

Big Data for finite population inference: calibrating pseudo-weights
*Ali Rafei, Carol Flannagan, Michael R. Elliott*

Optimal sampling design with administrative sources for household finance surveys
*Tiziana Tuoto, Andrea Neri, Giuseppe Ilardi, Giulio Barcaroli*

18.00 | 19.00, room 327
## PLENARY SESSION

*chair*
**Giancarlo Blangiardo**

The future of Statistics: challenges for understanding new phenomena in a rapidly changing world
*Giorgio Alleva*

19.00 | 20.30, foyer
## WELCOME COCKTAIL

# THURSDAY JUNE, 6

## SPE. 3 - Machine learning for socio-economic surveys

*chair*
**Annamaria Bianchi**

Machine learning in survey research: modeling nonresponse and completion conditions from a prediction perspective
*Christoph Kern*

Producing contingency table estimates integrating survey data and Big Data
*Paolo Righi, Giulio Barcaroli, Mariagrazia Rinaldi, Gianpiero Bianchi*

Improving data validation using machine learning
*Christian Ruiz*

## SPE. 4– Small area estimation methods: innovations and applied issues

*chair*
**Nikos Tzavidis**

Small area estimation of entropy inequality measures
*Maria Rosaria Ferrante, Silvia Pacei*

Small domain estimation with calibration methods
*Risto Lehtonen, Ari Veijanen*

Data-driven transformations for the estimation of small area means
*Nora Ulrike Würz, Timo Schmid, Nikos Tzavidis*

## PLENARY SESSION

*chair*
**Alessandra Petrucci**

Sample designs and geospatial information for monitoring agriculture and agri-environment
*Elisabetta Carfagna*

## COFFEE BREAK

## SPE. 5 - Analysis of Official Statistics for decision making

*chair*
**Giorgio Alleva**

Composite indicators for measuring socio-economic phenomena
*Matteo Mazziotta*

Graphical structural learning for complex survey data
*Daniela Marella, Paola Vicard*

Civil justice: a method for assessing efficiency
*Irene Rocchetti, Maria Filomeno*

## SPE. 6 - Environmental surveys: theoretical and practical issues

*chair*
**Lorenzo Fattorini**

Spatial sampling and entropy
*Daniela Cocchi*

Estimating co-occurences index in finite populations
*Tonio Di Battista, Stefano Antonio Gattone, Francesca Fortuna*

Design-based maps for two-phase inventories
*Sara Franceschi*

## LUNCH

## PLENARY SESSION

*chair*
**Maria Giovanna Ranalli**

Analysis of integrated data for Official Statistics
*Li-Chun Zhang*

## CON. 4 - Advances in survey data analysis

*chair*
**Caterina Pisani**

Passengers' perceptions of airport service quality: a case study of airports of Puglia
*Rosanna Cataldo, Corrado Crocetta, Maria Gabriella Grassia, Marina Marino*

Estimation of population mean under stratified median ranked set sampling using air-quality data
*Nursel Koyuncu*

Simulated geo-coordinates as a general means for regional analysis: theory and examples
*Ulrich Rendtel*

On influence of clustering population on accuracy of vector mean estimator
*Grzegorz Antoni Sitek, Janusz Leszek Wywiał*

## CON. 5 - Non sampling error

*chair*
**Silvia Pacei**

Response burden and data quality in business surveys: the experience of Banca d'Italia
*Marco Bottone, Lucia Modugno, Andrea Neri*

Parametric estimation and prediction under informative sampling and nonignorable nonresponse
*Abdulhakeem A. A. Eideh*

Beyond the sampling errors: the effects of Centralised data collection on Total Survey Errors
*Pasquale Papa*

## CON. 6 - Real survey data analysis issues
*chair*
**Paolo Righi**

Use of an integrated system of administrative data for the estimation of household features
*Antonella Balistreri, Stefano Falorsi, Daniela Pagliuca, Fabrizio Solari*

Multilevel time series modeling of mobility trends in the Netherlands for small domains
*Sumonkanti Das, Harm Jan Boonstra, Jan van den Brakel*

Correcting sample biases: an analysis of teaching evaluations
*Shira Fano, Rosanna Cataldo, Tiziana Venittelli*

Estimation weights for school longitudinal surveys: the case of Geres
*Gabrielle Alves Palermo Cavalcante*

## COFFEE BREAK

## SPE. 7 - Inference from informative and non-probability survey samples
*chair*
**Jay Breidt**

Combining non-probability and probability survey samples through mass imputation
*Jae-kwang Kim*

Sample matching and double robust estimation with non-probability samples
*Changbao Wu*

Data integration of probability and nonprobability samples
*Jean-François Beaumont*

## SPE. 8 - Spatial sampling and applications
*chair*
**Luigi Ippoliti**

An application of the pivotal method to spatial sampling
*Guillaume Chauvet*

Spatial sampling for the French

Master Sample
*Thomas Merly-Alpa*

The French National Forest
Inventory survey: covering space
and time at country level
*François Morneau, Cédric Véga,
Olivier Bouriaud*

**18.30 | 19.00, room 327**
**S2G MEMBERS' ASSEMBLY**

# FRIDAY JUNE, 7

## SPE. 9 - Record linkage and statistical matching techniques

*chair*
**Enrico Fabrizi**

Advances in survey estimation with imperfectly-matched auxiliary information
*Jay Breidt, Chien-Min Huang, Jean Opsomer*

A Bayesian approach for multiple regression with linked and deduplicated data
*Brunero Liseo, Rebecca C. Steorts, Andrea Tancredi*

Use of record linkage in Official Statistics and feedbacks on research
*Marco Fortini, Tiziana Tuoto*

## SPE. 10 - Sample surveys for sensitive data

*chair*
**Pier Francesco Perri**

The privacy protection-aspect in surveys for sensitive data
*Andreas Quatember*

Estimating anti-immigrant sentiment by item count technique
*Beatriz Cobo, María del Mar Rueda, Sara Pasadas, Sebastian Rinken*

Direct vs Indirect questioning surveys in a cannabis real study
*Elvira Pelle*

## PLENARY SESSION

*chair*
**Silvia Biffignandi**

Total error frameworks for integrating probability and nonprobability data
*Paul P. Biemer*

## COFFEE BREAK

## SPE. 11 - Quality of multi-source statistics

*chair*
**Li-Chun Zhang**

Quality issues in multisource statistics
*Giovanna Brancato*

Estimating population census tables and their accuracy using Multiple Imputation of Latent Classes (MILC) with multi-source data
*Laura Boeschoten, Sander Scholtus, Ton de Waal, Jacco Daalmans, Jeroen Vermunt*

An empirical evaluation of latent class models for multisource statistics
*Loredana Di Consiglio, Marco Di Zio, Danila Filipponi*

### 12.00 | 13.30, room 210
## SPE. 12 - Population size estimation via integration of different sources

*chair*
**Brunero Liseo**

Capture-recapture for population size estimation based upon zero-truncated count distributions with one-inflation
*Dankmar Böhning*

Use of latent class models for estimating population size in multiple record systems in presence of missing data
*Davide Di Cecco*

Deduplication and population size estimation
*Andrea Tancredi, Brunero Liseo*

### 13.30, room 327
## FAREWELL CLOSING