

**THE STATISTICS TO KNOW THE TERRITORY.
A CRITICAL EVALUATION OF THE COLLABORATION
BETWEEN THE PROVINCE OF ROME AND THE DEPARTMENT
OF STATISTICAL SCIENCES OF LA SAPIENZA¹**

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1. Introduction

In 2003 the Province of Rome announced a call for bids addressed to Universities in Lazio for the design of a statistical survey on the Quality of Life in the Municipalities of the Province of Rome. The Department of Statistics, Probability and Applied Statistics (DSPSA, now DSS, Department of Statistical Sciences) of the University of Rome "La Sapienza" (Sapienza), participated in and won the tender with a project managed by Enzo D'Arcangelo, at that time Director of the DSPSA. A long-lasting collaboration between the two institutions thus began: thanks both to the outcome of the commissioned surveys and to the way in which the resources had been exploited (we will return to the topic in the following), the Province directly entrusted the DSPSA with other research projects which ended in 2013.

For each commissioned survey, the DSPSA assembled a Research Group coordinated by Enzo D'Arcangelo and formed of young graduate and undergraduate students in Statistical Sciences.

In this work, after a brief description of the surveys and their outcomes, we will try to draw up a critical evaluation of this collaboration, as well as put forward some thoughts on the role of Metropolitan Cities. Finally, some methodological considerations on the relationship between the research objectives, the nature of data used and the techniques we employed for their statistical analysis will be drawn.

2. Surveys

In what follows we outline the essential aspects of different surveys with respect to their timeline:

¹ Invited paper to the 53rd SIDES Scientific Meeting – Rome 2016.

a) *“A multidimensional survey on the quality of life in the Municipalities of the Province of Rome: the creation of a Permanent Observatory”.*

This is the first commissioned survey included in the 2003 call for bids, and based on the creation of a database with quantitative information regarding different subject areas at the municipal level.

The database contains 2,342 variables, divided into 12 groups further separable into sub-groups according to the reference field and to the source of the data. The thematic main areas and sub-areas have been chosen according to the objectives of the provincial statistical plan: Territory, Population, Economy (divided into five sub-areas: Income and Consumption, Production structures, Enterprises, Labour market, Social safety nets), Housing, Education and Training, Services (Health services and Personal care services), Environment (Air quality, Urban waste, Repeaters and Environmental crimes, Sismic risk, ISO enterprises, Unauthorized activities, Protected areas, Seismic and hydrogeological damages, Plants at risk of accidents), Mobility and Transport (Transport and Road accidents), Tourism, Networks, Crime and Security (Crimes and medium-sized penalties, Fines, Offences and Police units for defence), Culture and Recreation. The variables and indicators included in the database are available to the Municipalities of the Province and some of them are organized in a historical data series, in order to make it possible to analyse not only the present situation, but also the time evolution of the main demographic, economic and social phenomena occurred during the last twenty years.

The complete database of a simple but effective research program was published online by the statistical office of the Province of Rome in December 2005.

The DSPSA also presented to the Province the research report “The socio-economic structure of the Municipalities of the Province of Rome: multivariate analysis and creation of a typology” in which the Municipalities in the Metropolitan Area of Roma Capitale are classified into 5 groups according to their demographic, economic and social characteristics, on the basis of 95 relevant indicators (DSPSA, 2005).

The database has shown to be a valuable tool for the knowledge of territory and a precious support to territory related policies, due to both the amount of information and simplicity of access.

Then the Province and the DSPSA decided to perform an update in 2010. A second update has been on line since 2016.

b) *“The satisfaction of Social and Health Services in the Province of Rome”.*

In 2005, the Department of Consumer Protection and Fight Against Usury of the Province of Rome and the DSPSA signed a Memorandum of Understanding for

the creation of an “Observatory on the quality of activities and services in the social and health sector in the Province of Rome and on the degree of user satisfaction”. The aim was to realize surveys on citizen satisfaction regarding social services provided by the Province of Rome.

A “**Customer Satisfaction**” survey is not easy to realize both due to the nature of the statistical units (patients in public hospitals) and the methods (questionnaire on the quality of services perceived during hospitalization). Thanks to the cooperation of the hospitals selected, from the Medical Directors to the doctors and paramedics, but above all to the patients, the survey was successfully performed: 12 hospitals were sampled and 1,127 patients filled in the questionnaires correctly and completely.

Moreover, others 520 more citizens waiting for a doctor visit during a day hospital were interviewed, reaching a total of 1,647 respondents.

The survey outcome is reported in the research report “The satisfaction of Social and Health Services in the Province of Rome: a field survey” DSPSA, 2006).

c) *“Monitoring of social discomfort and usury risk in the Province of Rome territory”.*

In 2005 the DSPSA was also assigned directly by the Department of Consumer Protection and Fight Against Usury of the Province of Rome to develop a study on a worrying phenomenon in the Roman Metropolitan Area. A growing number of people in financial distress is now victim of usury. In this case, it was difficult to organize the research according to the classical methods. It was not possible to draw a random sample, nor it was possible to administer a questionnaire that would have implied serious legal consequences as well as personal risks. We then chose to extract information from multiple sources, completely different in their nature:

- the toll-free number of the Province of Rome, established with the goal of providing legal, institutional and economic support to victims of usury;
- data provided by various voluntary associations (those recognized by the Ministry of Interior and/or the Prefect), that for years have engaged in the difficult task of fighting usury and supporting the victims;
- official data (ISTAT - Italian National Institute of Statistics, Chamber of Commerce, etc.) on crime in general and on usury related crimes in particular.

The results have been described in the research report “Monitoring of social discomfort and usury risk in the Province of Rome territory” DSPSA, 2006).

d) *“Customer Satisfaction Survey on the quality of rail public transport in the Province of Rome”.*

In 2006, the Province of Rome (General Management - Office of Studies) directly commissioned the DSPSA with a new sample survey on citizen satisfaction regarding the quality of rail public transport. It is once again a “**Customer Satisfaction**” survey on a topic that is relevant to the commuters using Regional Railways FM3, and to the media especially due to the continuous difficulties of the service (delays, cancelled trains, breakdowns) resulting in numerous incidents and protest actions (petitions, train blocks, occupation of the stations, etc.).

The Research Group organized a real “task force” to ensure the success of the survey: in addition to the DSPSA and the Province, Trenitalia (at its central and peripheral levels), trade unions, associations of consumer protection and other bodies were involved. According to the data collection plan, the interviews were carried out on weekdays (Monday to Friday) at the three peak hours: from 5.45 to 8.00, from 13.00 to 15.00 and from 17.00 to 19.00. A totem was installed in all the stations in order to explain the objectives of the survey and to invite citizens to participate. Announcements were made in the train departing areas.

Yet again, citizen reactions went beyond expectations: commuters considered the survey a unique opportunity to democratically express their ideas, not only to denounce the failures of the service, but also to express their positive judgements on some interventions (e.g. almost all of the passengers knew that the Province had financed the increase of the number of trains on some lines) as well as proposals and suggestions - often extremely reasonable - on other issues (especially cleanliness and the absence of train managers). However, more than anything, all of interviewed commuters agreed to take the survey. Many of them were willing to skip their stop and get off at the next station in order to finish the interview, others made the effort to fill out the questionnaire on their own and then leave it in the special “pigeon box” left for this purpose in the main stations of the different lines. Eventually 3,513 interviews were completed, more than three times the 1000 planned.

The survey had a remarkable participation success. The results are in the research report “Customer satisfaction survey on mobility in the Province of Rome” (DSPSA, 2007).

e) “Monitoring of social discomfort and usury risk in the Province of Rome”.

In 2007, in order to give continuity to the previous work, the Department of Consumer Protection and Fight Against Usury of the Province of Rome commissioned to the DSPSA the update of the survey on usury, by adopting the methodological approach that was successful in the previous analysis.

The results appears in the research report “Monitoring of social discomfort and usury risk in the Province of Rome” (DSPSA, 2008).

f) *“Eating habits, consumption and lifestyles of young people relating to obesity in the Province of Rome”.*

In 2008, the Department of Consumer Protection and Fight Against Usury of the Province of Rome directly commissioned to the DSPSA a study on obesity, a phenomenon that is showing increasingly worrying dimensions in the Roman Metropolitan Area and that has to be placed in the wider framework of young people lifestyles, ranging from food consumption to sports, cultural interests, alcohol and smoking abuses. The project presented by the DSPSA entailed the sample survey through the direct interview method with a questionnaire on the middle- and high-school students of the Province of Rome. The DSPSA, with the collaboration of ISTAT, in order to compare the results with those of the Multipurpose Survey group of ISTAT, drew up a very extensive questionnaire, covering several thematic areas (from eating habits, to cultural interests and lifestyles). Schools were contacted and a letter where objectives and the methods of the survey were explained was delivered to the School Managers.

In this case, once again the participation of both the schools through their designated teachers and, above all, of the students, was extremely significant, as shown by the very low number of questionnaires that were partially or unreliably filled (less than 2%).

The survey was conducted on a sample of 15 schools (of which 9 high schools divided into different types and areas, and 6 middle schools) and by interviewing all the students of a class of each year of study, making a total of 3,717 students surveyed (almost twice the number that had been planned). The interviews were carried out by the staff of the DSPSA in the classroom. A teacher was present at all time.

The results are reported in the research report “Eating habits, consumption and lifestyles of young people relating to obesity in the Province of Rome” (DSPSA, 2009).

g) *“Survey on museums and archaeological sites in the hinterland of the Province of Rome”.*

In 2010, the Province of Rome (the Cabinet of the President, Statistics Service - Office of Studies) directly assigned to the DSPSA a statistical survey on the 99 museums of the Province of Rome, namely those in the Municipalities of the Metropolitan Area with the exclusion of Rome. They are often very interesting institutions, but the number of visitors and media coverage are overshadowed by the role played in the tourist circuits by the museums and the archaeological sites of the Capital. In collaboration with the people in charge of the Statistics Service

and the Office of Studies of the Province and together with other experts, a very analytical questionnaire was prepared. It consisted of 68 mostly multiple-choice questions concerning 12 thematic areas. Each of the Directors of the 99 sampled institutions directly received the questionnaire to fill in.

The results are available in the research report “Survey on museums and archaeological sites in the hinterland of the Province of Rome” (DSPSA, 2012).

h) “Observatory on sports practice in the Province of Rome in view of Rome as candidate for the 2020 Olympics”.

The city of Rome had already proposed in 1997 (with Mayor Rutelli) its candidacy for the 2004 Olympic Game (then assigned to Athens); the new Council of Mayor Alemanno resumed the idea and proposed Rome as a candidate for the 2020 Games. As known, the Monti government that in 2013, after a long period of uncertainty, negatively expressed its opinion on this proposal, thus disappointing both Roma Capitale and CONI (Italian National Olympic Committee). The Province of Rome also supported the candidature of the city. In fact in 2011 the Cabinet of the President directly assigned to the DSPSA a survey on an “Observatory on sports practice in the Province of Rome in view of Rome as candidate for the 2020 Olympics”. The aim of this project was two-fold: on one hand, to give a contribution to the assessment of the spread of sports practice among young people; on the other hand, to present the wealth of sporting facilities in the Metropolitan Area, so as to favour the Olympic event planning.

The Research Group of the DSPSA therefore decided to update the 2009 survey on schools (see point f), giving more importance to the topic of sports practice among young people. In addition, another survey on sports facilities owned by the Province of Rome was carried out, on high school gyms, which are in fact under provincial administration.

The updating of the sample survey on schools followed the same methods previously adopted and, once again, it was a great success, also driven by the interest in the candidature for the Olympics. As many as 20 schools were involved (15 high schools and 5 middle schools), to a total of **3,429** students surveyed.

Once completed the survey, the DSPSA delivered a research report to the Province on the “Observatory on sports practice in view of Rome as candidate for the 2020 Olympics” (DSPSA, 2012).

In addition, thanks to the collaboration of the Department 13 Service 1, “Sport, free time - Office of School Sports Facilities” of the Province of Rome, the structural data related to the high school gyms were collected. This data specifically concerned the size of the gym (length, width, height), the type of high school, the gym classification established for the assignment to sport clubs (A, B, C) and the location in the territory (the Municipality and the Boroughs of Rome).

In addition to the statistical analysis of this data, the size of the gyms was then compared to that established by the Italian Volleyball Federation (FIPAV) in order to participate in the various Federal Championships (Provincial, Regional, National), whose clubs are those which mostly use the structures in non school hours. The results have been described in a second report "The school-gym assets of the Province of Rome" (DSPSA, 2012).

i) *"The labour market in the Province of Rome; a space and a time analysis of the Roman labour system in recent years with special reference to short term jobs and young people"*.

In 2011, the Province of Rome (the Cabinet of the President) directly commissioned the DSPSA with a survey on the labour market in the Metropolitan Area of Rome. The aim of the work was to analyse the labour market characteristics in recent years, paying special attention to the issues relating to short-terms jobs and young people.

The data, extracted from the Continuous Labour Force Survey (Rilevazione continua sulle forze di lavoro -ISTAT) refers to the Province of Rome, from the first quarter of 2008 to the fourth quarter of 2011.

After a general analysis of the labour market, two specific branches of research were identified:

i) the first is related to the territory, as it aims to analyse the movements of the respondents on the territory in their search for a stable and qualified work. In particular, through multivariate logit-linear models, we studied whether the probability of working in a Functional Subsystem different from that of residence, depends on gender, age group, macro-areas (Rome and hinterland), employment (employed or not), contract duration (temporary or permanent), working hours (full-time or part-time), work experience (first experience or not). We then analysed the flows between the Local Functional Subsystems of work in the Province of Rome;

ii) the second one is longitudinal in nature; in this case, by using the survey characteristics² a survival analysis was conducted. In order to analyse the respondents change of status with respect to employment, and the time of its occurrence - that is the time between the first survey when the respondent resulted employed and that when he proved to be unemployed -, namely the period in which the respondent experienced the exit from the labour market was analysed (the maximum observation period was 18 months).

² According to the sample design over time, every family selected had to follow a rotation scheme of the 2-2-2 type, i.e. it was included in the survey sample for two consecutive quarters and then, after a break of two quarters during which it was not surveyed, it was then re-included in the sample in order to be surveyed for another two quarters.

Through a multivariate Cox Proportional Hazards model, the effect of several covariates on the probability of “exiting the labour market” was analysed. The covariates considered were those already included in the logit models as well as the educational qualification in three classes (low, medium, high), the macro sector Ateco 2007 (primary, secondary, tertiary) and the professional qualification (apprentice, worker, employee, supervisor/manager).

The results are in the research report “The labour market in the Province of Rome: a territorial and longitudinal analysis of the Roman labour system in recent years with special reference to precarious work and young people” (DSPSA, 2013).

3. A critical thought on the effectiveness of this experience

After an experience developed over 10 years³, it is now necessary to express some general considerations on the effectiveness and on the limits of what we have accomplished. We focus briefly on what, in our opinion, “has worked” and what “has not worked”.

What has worked:

i) **The formula** (the Province plus La Sapienza) has been successful especially regarding the relations with people: this is, in our opinion, the most interesting aspect of this cooperation, because even in the most difficult situations (as in the survey on usury, hospitals or FM3 railway lines) we received the respect, the agreement and the participation of Institutions and Associations, and above all of citizens, whether they were people in distress, patients, commuters or students. This should make us ponder about our own position: the high esteem with which University in general and La Sapienza in particular is regarded by citizens of all levels, is certainly far greater than what is imagined by professors of La Sapienza themselves and this must be taken into account in the future.

ii) **The economic investment and resource use:** the resources available to DSPSA from 2003 to 2013 can be considered moderate if related to a single survey (from 25,000 to 50,000 euros), but they are certainly important if taken as a whole (more than 400,000 euros), especially when compared with the very low public contributions not only to research but also to the functioning of the department. The allocation of these resources is well known: 10% to the University, 3.75% to the Department and the remaining is usually for management expenses, reimbursements and contributions to the professors and the research Coordinator.

³ From 2003 to 2013, but relationships between the DSS and the Statistics Office of Roma Capitale Metropolitan City are still ongoing, as demonstrated by both the study day organized at the DSS in 2015 and the SIEDS - Italian Society of Economics Demography and Statistics -conference held in 2016, to which this paper refers.

In this case no contributes to the professors were allocated on budget and this resulted in additional resources for the department.

iii) **Grants to new graduates:** Most of the resources were allocated for “grants” (in different types as allowed by law) to new graduates, so that over ten years, from 2003 to 2013, more than 30 grants were funded. Their number could have been even higher if the taxation on these contributions had been lower.

iv) **Inclusion of final-year students:** in addition to grants for new graduates, a great number of final-year undergraduate students (more than 50) have also been included in the different research groups either with respect to their final dissertation (more than half of the students) and the others as interviewers and/or collaborators in various stages of the surveys.

v) **The involvement of Institutions, Associations, Schools:** as already mentioned, almost all the surveys has required the involvement of numerous Institutions as well as Associations and Schools. Apart from some exceptions (after a first positive feedback Trenitalia did not advertise the survey as was planned, some School Managers refused to allow the survey in their schools, some Museum Directors and Archaeological sites who showed resistance to returning the completed questionnaire) the participation has been very high and beyond all our expectations, and their collaboration has often been essential to achieve the objectives of the research.

vi) **Citizen involvement:** we have already mentioned this in point i) and now we confirm that when real problems of great importance for large portions of the population have to be surveyed, it is crucial in our opinion not only to operate with transparency and with respect of the respondents, but also to ask their cooperation and participation. The large number of people involved and interviewed (far wider than what planned for a single research), and the small number of failed answers, show that this goal has been achieved. Such participation has also positively affected the quality of the collected data and, consequently, their statistical analysis.

What has not worked:

i) **The “detached” attitude of the academy:** despite the importance at an institutional level of the Protocol signed between the Province and DSPSA and the undeniable high level of financial resources available to La Sapienza in a period when resources are really poor, we have to point out that the governance of the University (the Board of Governors, the Academic Senate, and also the Faculty of Statistical Sciences) had an attitude that can be defined as “detached”. They did not intervene in any way to improve the type of agreement or to correct it, or to generalize it. At an organizational and logistic level too, the DSPSA was left alone to manage even the administrative tasks, and not without difficulty. However, with a different attitude of the governance we could have been supported in the

treatment of both procedures and obligations which were a very demanding task for us to deal with, especially with regards to administrative duties related to grants and salaries to collaborators.

ii) **The “detached” attitude of top institutions of the Province:** the top institutions of the Province, with the exception of few people, paid very little attention to the contents of the surveys and to the produced reports. However, when they did, we found immediate and positive feedbacks both in terms of management and communication. This must also be an issue to take into account in the future: a protocol of research has to deal not only with contents, financial commitments and deadlines, but also with the management of results, their publication and their communication both inside and outside the institutions involved.

iii) **Politicians only “occasionally interested”:** we should dedicate a separate comment to politicians, whose changes in attitudes towards our research have been even greater. The attitude ranges from people enthusiastically supporting the protocol and therefore personally engaging in the organization of the official presentation of the results, the media coverage and the communication, to people who, probably appointed as Council members when the research was underway, did not even bother to read the report drafts before their presentation and publication.

iv) **“Partial” usage of the survey results and material produced:** while the DSPSA and the Office of Statistics of the Province of Rome have enhanced and strengthened their relationships to the point of presenting themselves as partners in the Memorandum of Understanding, the mentioned heterogeneity of interaction with the institutions has surely prevented a full use of the survey outcome as well as the material produced. Although a synthesis of the outcome – the summary of the various reports - have been included in the statistical year book produced by the Statistics Office of the Province, many other actions could have been done and this is a critical aspect that can be passed on to those who will have to continue with this type of experience.

v) **“Distance” of the Lazio Region:** one last mention of the Institution that, both for role and resources, should be the natural referent for the Provinces and new Metropolitan Cities, namely the Region. The Region is in charge of establishing the Regional Statistical System, that, in turn, is also committed to “promoting knowledge tools, coordinating and harmonizing the statistical work of the Region, in order to provide quality information and appropriate detail, able to meet the information needs of public administrators, economic and social operators and individual citizens” (source: SISTAR Lazio). Provinces and Municipalities are obviously included in the SISTAR, but the coordination and harmonization of statistical activities in the territory are far from being achieved, at least in our

experience (for example, it was easier to contact Municipalities rather than the Region for collecting data for the database).

4. The framework of the Quality of Life and the observatory.

As we said, this long-lasting experience started with a public call for bids of the Province of Rome for a research project on the Quality of Life in the Municipalities of the Province of Rome. Since that moment and for over 10 years the agreements between the Province of Rome and the DSPSA of La Sapienza have walked along two parallel paths:

i) **The Quality of life** in the territory, considered in its broadest sense, starting from those which are the oldest political aggregations but also the nearest to the basic needs of citizens, i.e. the Municipalities.

ii) **The Statistical Observatory**, considered as a set of variables and indicators able to monitor over space and time the demographic, economic, social, cultural, environmental and structural characteristics, i.e. the quantitative basis necessary to achieve the various measures of what is commonly known as “Quality of life”.

Looking back at this experience, we can say that on one hand, the topic of “Quality of life” in the Municipalities of the Province of Rome has proved to be a valuable conceptual framework to realize different types of research; on the other hand, the project to build a “Permanent observatory” has been the methodological thread between the different surveys in their different aspect: from the definition of the objectives to the data collection plan and the selection of models for their analysis.

Figure 1 shows the 11 surveys conducted by DSPSA: the two databases (2005-2010) are an attempt to build a permanent observatory to which Local Institutions, researchers and operators can refer, with numerous variables and indicators at a municipal level. The two surveys on usury (2006-2008), by means of data and information from different sources, helped to provide a quantitative knowledge of a problem significantly affecting society, together with its impact on citizens’ lives.

The two surveys addressed the problem of usury, trying to describe through quantitative measures (using a large number of sources, very different from each other) a phenomenon with a significant impact on society, because of its serious repercussions on the quality of life of an increasing number of citizens.

The Labour Market (2013) only used the data provided by the Continuous Labour Force Survey (RCFL) by ISTAT, relating to the years from 2008 to 2011, with the aim of surveying over space and time job insecurity, particularly among young people, in the Province of Rome.

The assets of the high schools gyms of the Province of Rome (2012) have been described critically, by analysing the data relative to 306 gyms (provided by the

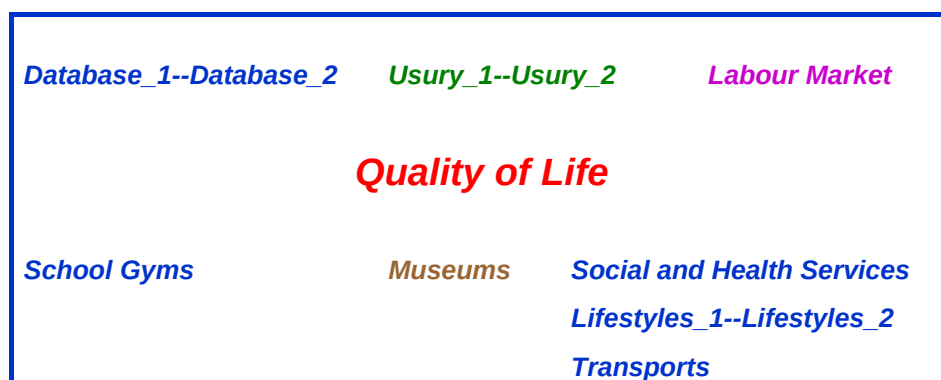
offices of the same Province) concerning their sizes and structural characteristics as the type of schools and the reference area (Municipalities and Boroughs of Rome).

Museums (2012): in this case, once again, all the museums and archaeological sites in the hinterland of the Province of Rome have been taken into account (99 structures, not including those in Rome). Data have been collected through a very extensive questionnaire, administered to the Directors of these structures.

Finally, the sample surveys conducted with a questionnaire, two of which follow the **customer satisfaction** type: the former studied people satisfaction with respect to social and health services in the Province of Rome (Hospitals and Clinics, 2006); the latter regarded regional railway lines FM3 (2007). The other two surveys were about the lifestyles of middle- and high-school students: one aimed at surveying food consumption and youth obesity (2009) and the other one sport and sedentary lifestyle (2012).

All the surveys have been conducted with a very large sample of adult citizens and students.

Figure 1 – *Quality of life framework*



5. Metropolitan Cities: a useless or a strategic institution?

As already mentioned, the two guidelines followed during this long research journey, i.e. Quality of life and Observatory, were strongly linked to the territory from a theoretical point of view and to the Province of Rome from a practical point of view. After the recent reform (Law n. 56 of April 7, 2014, Provisions on Metropolitan Cities, Provinces, the merging of Municipalities), the Province of Rome took the name of Roma Capitale Metropolitan City (CMRC). We focus on underlining some clear contradictions in the long process that led to the 2014 reform.

The number of provinces in Italy increased from 59 in 1861 to 76 in 1924 (+17 in 63 years) and then to 93 in 1927, a number that remained more or less unchanged until 1974, when the provinces were 95 (+2 in 47 years). For the first time in that period their abolition was proposed. However, in 1992 eight new provinces were established, another four were set up in 2001 (in Sardinia, where the total number of provinces thus increased from 4 to 8), and finally another three in 2004, thus making a total of 110 provinces (+15 in 30 years from 1974 to 2004). No criteria except that of the local electoral interests can be recognized in these decisions. In some cases there was not even an agreement on the name of the province (Olbia-Tempio, Verbano-Cusio-Ossola, Barletta-Andria-Trani, etc.).

Therefore an overall reform of Local Institutions was well expected, but it was influenced by the political and electoral choices of that moment, without any reference to the structure and real needs of the territory. In this context, the most typical example is probably the CMRC.

Table 1 shows the data relating to the population resident in the city, the CMRC and the Lazio Region at 31/12/2014. The data should be well known to those who are in charge of the difficult task of making important decisions for the "common good."

Table. 1 – Resident Population at 31/12/2014 in Rome, CMRC and Lazio Region

<i>INSTITUTIONS</i>	<i>RESIDENT POP.</i>	<i>NOTES</i>
LAZIO REGION	5,892,425	
CMRC	4,324,046	73.4% of the whole Region
MUNICIPALITY OF ROME	2,872,021	66.4% of CMRC and 48.7% of the Region

The demographic weight of the Municipality of Rome, therefore, is equal to 2/3 of that of the CMRC and almost half of that of the Region, while that of the CMRC is 3/4 of that of the Region; in short three Institutions which in reality are strongly dependent on the Capital of Italy. The situation is even more striking when the Municipalities within the CMRC are considered, as is clearly shown in Table 2:

Table 2 - Distribution of the Municipalities of CMRC according to their Resident Pop.

<i>Resident pop.</i>	<i>N° of mun.</i>	<i>%</i>	<i>Cum freq.</i>
<=500 Inhabitants	14	11.6	
500<Inhab.<=1,000	12	9.9	26(21.5)
1,000<Inhab.<=5,000	33	27.3	
5,000<Inhab.<=10,000	18	14.9	51(42.2)
10,000<Inhab.<=30,000	27	22.3	
Inhab.>30,000	17	14.0	44 (36.3)
TOTAL	121	100.0	121 (100.0)

Therefore, more than 20% of the Municipalities of the CMRC have less than 1,000 inhabitants, which are equivalent to 5-6 apartment blocks of a popular district in a big city (some particularly crowded apartment blocks such as the famous “snake” of Corviale in Rome host about 3,000 inhabitants). Of these Municipalities, more than half have even less than 500 people, i.e. less than 200 families, but nevertheless they have administrative autonomy (in addition to the political one, so that in some cases they can submit 4-5 electoral lists). When in addition to the population we consider other more efficient indicators, such as production units, employees, services, etc., imbalances and contradictions become clearer and any legislative and regulatory intervention in the territory must take that into account. The law of 2014 never mentions Municipalities this small municipalities.

Within this framework, actions aimed at unifying small cities and downsizing the weight of Rome could be foreseen. Conversely, Municipalities (even the very small ones) were not touched, and in March 2013, three months before the end of his mandate, Mayor Alemanno and his Council decided to reform the administrative structure of Rome by reducing the number of Boroughs from 19 to 15 (the twentieth, Fiumicino, had already become an autonomous Municipality following the referendum in 1992), with the objective of limiting the power of the left parties at a local level. In fact, the process of the decentralization of the Capital had already started in 1966, with the establishment of 12 jurisdictions, then turned into 20 Boroughs in February 1972 (reduced to 19 in 1992, as mentioned above). Borough population ranges from 132,000 inhabitants of Borough XI to 204,000 of Borough IV (Montesacro), to 230,000 of Borough XIII (Ostia) and to 256,000 of Borough VIII (Tor Bella Monaca). Steps have therefore been taken to turn Boroughs into Municipalities in every sense of the word (such as Fiumicino that has over 78,000 inhabitants), for example the Boroughs with over 200,000 residents, or to increase the number of Boroughs, completing the process started in 1972, by creating smaller Institutions in order to be closer to citizen needs. Policymakers took the opposite way and merged, for instance, Boroughs VI to VII (now Borough V with 246,000 inhabitants) and Borough X to XI (now Borough VII with more than 307,000 inhabitants). It is even peculiar the fact that this decision, so important for the future structure of the Capital, was actually approved without opposition (32 members present, 28 absent, 24 in favour, 4 against and 4 not participated to the vote).

To make it clear what a Borough with a population of 308,207 inhabitants means within the context of Italian Regions and Local Institutions, we recall that Valle d'Aosta, a special statute region, has 128,298 people (the Municipality of

Aosta 34,777) and the Molise Region 313,348; while there are still only ten Municipalities (out of 8,881) with more than 300,000 inhabitants, including Bari (327,361) and Catania (315,601) ninth and tenth respectively.

In other words, a “monster” of more than 300,000 inhabitants and another of 246,000 have been created, in addition to the other three Boroughs with more than 200,000 residents (the sixth of this ranking is Borough XIV, the former XIX Montemario, with 190,000 inhabitants), but with no administrative autonomy whatsoever (even though there are regular direct elections to vote for the leader – the so-called “minisindaco” - and the Borough Council). It was clear that the Boroughs should have been equipped with a greater political and administrative autonomy, starting from the most basic services for citizens, firmly detained instead in the hands of the central government, with results we all know too well.

The law has then created big municipalities without proper legislative tools for their administration.

6. Conclusions

From the above, we understand the relevance of statistics to improve knowledge of territory and how this knowledge is essential to the legislative process. We are encouraged by the fact that many steps have been taken in this direction, thanks both to ISTAT that produces statistical data increasingly suitable for this purpose, and also to many Local Institutions that have developed research, surveys and observatories on many aspects of social life. We will leave to others the task of addressing these issues in a comprehensive way, while we address some methodological reflections:

i) **Knowing the territory through the statistics** should be an institutional duty on behalf of all Local Institutions, especially the Regions, because, as we have seen above, they are committed to periodically drawing up a regional statistical plan.

ii) **The Permanent observatory** - defined in its broadest sense, according to our definition - should be an instrument of permanent knowledge to be used at a regional level, from the smallest aggregations such as the districts of big cities or small Municipalities, to Metropolitan Cities, in order to support programming actions and policy decisions, in particular long-term and/or strategic ones.

iii) **The need for coordination**: the complexity of situations and problems to deal with obviously implies a plurality of actors (Italian Regions and Local Institutions, ISTAT, Universities, other Institutions, Associations, Citizens), so as to make it difficult to find out or set up a “**central committee**” able to manage the entire process of knowledge. Nevertheless it is not an impossible step, as our

experience by the agreement signed between the DSPSA of La Sapienza and the Province of Rome has demonstrated.

iv) **The development of industrial societies** in recent years has been definitely characterized also by the development of information technology, by the strong increase of databases in all aspects of social life and, finally, by a major number of multivariate methods and statistical models that are now implementable and usable, thanks to the development of the software. This evolution should create, almost as a natural consequence, on one hand an increasing importance of quantitative information, on the other a parallel growth in the use of statistical methods and models appropriate to the nature of the data and the research objectives.

v) Scheme 1 shows, in a schematic way, the method used for each survey: in addition to the descriptive-exploratory analysis (distribution analysis, statistical indices, contingency tables, analysis of correlations, comparisons between averages, graphical analysis, etc.), the most frequently used multivariate methods have been the Linear Model (Regression, ANOVA and ANCOVA), the Principal Component Analysis (PCA), the Multiple Correspondence Analysis (MCA), the Cluster Analysis (CA), the log-linear and logit linear models (GLM) and the Analysis of Survival Data (ASD). In any case, rather than on single techniques, emphasis has been placed on what we have called “**analysis strategy**”, i.e. the relationship between the nature of the data, the objectives and the statistical models.

vi) **Statistical Information:** With reference to the increase of amount of data currently available in all areas of social life we can roughly divide the nature of the statistical information into two branches:

a) **Information already collected:** thanks to the development of information technology and the increasing number of Institutions that produce data, it is becoming easier to handle big data (for both the variables measured and the statistical units on which the variables have been measured). Depending on the case, data can be classified as “**Databases**” or “**Archives**”. However, irrespective of their nature and/or definition, we can say that today real “**Information fields**” are available to researchers and new skills both in computer science and methodological areas are necessary in order to get the best results;

b) **Information to be collected:** on the other hand, the large amount of data now available does not mean we can just simply ignore or forget all the traditional tools - such as the “**Choice of design**”, the “**Dataplanning**” and the “**Statistical sampling**”, together with all the other connected tools, i.e. the statistical methodology used throughout the whole of the last century and in the first few years of the 2000s.

vii) **Data and statistical models.** We would like to conclude these notes with a further consideration on the nature of “data”. We have just mentioned the

“Information field” and the large amount of quantitative information currently available, so large that in recent years we have almost exclusively referred to it as “**Big Data**”, to highlight the nature of a huge mass of information, both quantitative and qualitative, easily accessible. The first and preferred source of Big Data is obviously the Internet, e.g. short messages on social networks (Twitter, Facebook, Instagram, MySpace, etc.).

It is undoubtedly clear that one of the tasks of statistical research is to address the methodological challenges that arise with new types of data available (did not the same happen with the multivariate analysis that has become routine today?). However, it is not for this reason that the inferential analysis on small experimental samples or on a limited number of observed variables are useless and outdated.

Just like in recent years we have repeatedly faced the failure of electoral surveys, exit polls and vote forecasts (with all the differences between candidates so highly unreliable that it would have been better to resort directly to the candidates’ horoscopes), without any sign of rebellion from the academy or at least from statisticians, at the same time we would not want to face a new failure. Namely, that everything collected as “**Data**” (even more Big Data) is automatically considered as “**Statistical Data**”, since the latter has a different nature, thanks to its properties which the scientific community of statisticians has defined and formalized throughout the years.

Scheme 1 – Surveys, data and statistical methods

SURVEYS	DATA	STATISTICAL METHODS
Database-1	Institutional	Descriptive Analysis.
Database-2	Quantitative variables-Indicators	Analysis of Relationships; PCA; CA.
School Gyms	Institutional	<i>the same as above</i>
Usury-1; Usury-2	Institutional + Non institutional data (toll-free number, etc.)	Comparison between Metropolitan Areas; Type of Municipalities at risk of usury;
Museums	Survey with questionnaire	Descriptive Analysis; CT; MCA; CA.
Labour Market	Institutional Matching of unities	Descriptive Analysis; Territorial Analysis; Logit-Linear Models; Survival Analysis
Social and Health Services Regional Transports Lifestyle – Obesity Lifestyle – Sports	Sample surveys with questionnaire	Descriptive Analysis; CT; Linear Models; GLM; MCA; CA.

CT=Contingency Tables; PCA=Principal Component Analysis;

Linear Models=Regression, Anova, Ancova; MCA=Multiple Correspondence Analysis;

GLM=Generalized Linear Models; CA= Cluster Analysis.

In short, we advocate that the keywords, which accompany Statistics from almost a century and can be summarized in Quantitative Survey, Statistical Data, Analysis Goals, Hypothesis, Statistical Methods, i.e. the need for a methodology do not pass into oblivion.

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SUMMARY

The statistics to know the territory. A critical evaluation of the collaboration between the province of Rome and the Department of statistical sciences of La Sapienza

In this work we describe a ten year experience of collaboration between the Department of Statistics, Probability and Applied Statistics (DSPSA, now DSS, Department of Statistical Sciences) of the University of Rome “La Sapienza” (Sapienza) and the Province of Rome.

In the common framework of an Observatory on the Quality of Life we describe eleven surveys which differ for both the nature of the data and the methodology of the statistical analysis. Light and shadows of this collaboration underline some aspects that should be taken into account in order to exploit the potential of statistics and statistical methods in the knowledge and government of territory.