

Roberto Fratini*, Enrico Marone*, Francesco Riccioli*, Gabriele Scozzafava*

Green Urban Areas: Evaluation and Analysis of Public Spending for Management. Some Cases Study in Florence**

The present article focuses on eight different types of urban parks located in Florence in order to define their Total Economic Value (VET) and, in the same time, to underline some guidelines for assessment of these areas. As a matter of fact, through the linkage of the Contingent Valuation Method and the Visual Preference Method, questionnaires have been prepared and suggested to park's users. Total Economic Value has been achieved by the elaboration of elicited data. Besides, another significant goal had been obtained by the attendances' count in the different examined areas: the individuation of the yearly average users number, which provides how the necessity of spending time in green urban spaces is noticed by people.

1. Introduction

The quantitative development of urban parks is directly connect to the rising citizen necessity about urban green areas in order to spend free time, to relax themselves and to increase their life wellbeing. The functional classification of green areas constitutes the first indispensable step for a planning and for a better use of green areas. It's important to obtain such aim through a detailed description of all green spaces, their characteristics and space development. Moreover, it is necessary to know the agronomic requirements, the pathological emergencies of this green patrimony. It's hard to define a specific and right assessment of these areas, so the stakeholders must choose specific measurements that have specific

* DEART – Department of Agricultural Economics and Territorial Resources

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and expensive costs. The decline in environmental quality in all residential areas due to the loss of greenspace, and specifically trees, leads to questions as regards the efficiency of policies. More attention needs to be paid to greenspace planning and management. It's important to underline that the complete "planning balance" of urban parks must include their benefit production. The absence or the scarcity, however, of the data relative to the economic value of potential benefits, such as those offered by greater opportunities for recreation, from the increase of physical and mental wellbeing of the populace, of the betterment of air quality and of micro-climactic conditions, often renders difficult the choices on the part of the public worker who does not have adequate tools of evaluation for an efficient allocation of resources.

The present article focuses on seven different types of urban parks located in Florence in order to define their costs (indirect supply) and their benefits (direct demand): it has been divided into two parts; first one focus on the costs of technical interventions.

Normally the costs of maintaining are readily calculated and conspicuous, therefore it would be necessary to realize a data-base that documents public green areas, playgrounds and tree stocks. The second part focus on the assessment of human wellbeing connect to their green urban areas fruition: a contingent valuation has been used in order to give a value to green areas human fruition. So, the economic evaluation of commodities and non-commodities related to urban parks is one of the strategic information which is able to influence planning choices according to a sustainable and multifunctional process.

2. Statistics about Green Urban Areas in Florence

2.1. Definitions of Urban Green Areas

With the generic term green-space we define the areas that are naturally or artificially endowed with vegetation. In Italy the term urban green-space refers to a space entirely covered or only covered above with vegetation, located in the center of a city or in the periphery [55]. The deterioration of the environment adjacent to the great metropolitan areas has increased, over time, the necessity to spread green-spaces for recreation and leisure time inside the urban fabric. Already in the mid 1800's in the English and French cities they began to conceive of and plan wide swathes of green-space as true and proper elements of ornamentation and improvement of the environment. [10]. In those same years in the United States, F.L. Olmsted planned numerous rural parks in urban environment. At the end of

the century (1898) an English scholar, Ebenezer Howard¹, proposed such ideal urban order the creation of a city “with low construction density” with a planned presence of green areas: a form of settlement in which the ordered urban 19th Century combined with a rational presence of green-space (garden city). In Rome in the 1920’s two new residential areas were built, the Garbartella and Citta Giardino Aniene. In the latter the urban plan for the quarter, which took into account a surface of 150 hectares was explicitly based on Howard’s principles, in the wish to give life to an environment to be greatly appreciated also from the esthetic point of view, one made up of small villas and gardens with trees [32]. The term “urban green-space”, as hinted at previously, means to identify those portions of territory not constructed on, of private character (green-space is intended for the enjoyment of the owner increase, who is a private subject) or the public (green-space is intended for the increase or public use through discharge of functions in favor of generality of the citizens), that coexist with the structures and the man made features and are intended for enjoyment and health of the citizens as a entity [22]. Public green areas represent ornamental green-space (historic gardens, urban parks, wooded strips along highways, neighborhood green-spaces, conservation forests and urban woods) and on the other hand the so-called functional green-space represented by green-space for sports, scholastic, health and/or recreational purposes.

2.2. Green Urban Areas in the Municipality of Florence

The City of Florence² covers an area of 102.27 km² and from an administrative point of view is subdivided into five Quarters (Tab. 1). The area occupied by public green-space (managed directly by the municipal administration) amounts to around 2 km² an area equal to barely 2% of municipal area.

¹ In 1898 Howard illustrates his theories in *Tomorrow, a Peaceful Path to Real Reform*, republished in 1902 with the title *Garden Cities of Tomorrow*. The term “city garden” goes back to Howard’s formulation of thought: with this usually became indicated some quarters maintained for the ruling class (such as Bedford Park built by Norman Shaw near London, or Vésinet near Paris) or for the worker class (the paternalistic worker city-gardens). These periphery gardens, however, have nothing in common with the city-garden, thought up by Howard precisely in antithesis to the peripheries or suburbs.

² The City of Florence includes 200 Public Green-Spaces that are managed by the 5 Florentine Quarters through the coordination of the Ufficio Area Metropolitana e Decentramento del Comune di Firenze (Office of the Metropolitan Area and Decentralization of the Municipality of Florence). The total surface area amounts to around 3.200.000 m². The figure learned by us through census relative to the green-space of the individual quarters based on the Town of Florence web site: <http://news.comune.firenze.it/verde>, is 2.3 km².

The percentage contribution furnished by the five Quarters is heterogeneously allocated, in that Quarters 1 and 3 fluctuate at values a little above 1%, Quarter 2 is at a level a bit higher (1.5%), while Quarter 4 exceeds it, if only by a little. Quarter 5 is slightly over the top (around 2%) of the average value registered for green-spaces in the entire municipal area (1.99%). It must be remembered, as for the aims of this comparison, that for Quarter 1 (the historic center of the city) is registered a surface area intended for green-space of only about 124.000 m², but it should be noted that this area would be an entirely different figure if It did not include the gardens placed under the care of the *Soprintendenza ai Beni Artistici* (Superintendence of Artistic Properties), which certainly assumes a preponderant role in the municipal area of the historic center. We are thinking of the Boboli Gardens (4.5 hectares) and of the numerous gardens and historic buildings belonging to private owners such as Palazzo Capponi, Palazzo Frescobaldi, Giardino della Gherardesca etc. [58].

Table 1. Quarters of the city of Florence: surface area and distribution of green-spaces

Municipal Quarters	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	Total
Number of green-spaces	19.00	51.00	40.00	83.00	54.00	247.00
Green-space surface area [km ²]	0.13	0.35	0.26	0.71	0.58	2.03
Total green-space surface area per quarter [%]	6	17	13	35	29	100
Average green-space area [m ²]	6842.1	6862.7	6500.0	8506.0	10740.7	8202.43
Total surface area per quarter [km ²]	11.40	23.41	22.31	16.99	28.17	102.28
Green-space to total surface area [%]	1.14	1.50	1.17	4.16	2.06	1.98
Residential Population of each quarter	67 802	88 626	41 246	66 564	103 739	367 977.00
Residents per square kilometre	5950	3786	1849	3918	3682	3597.88
Residents to green-space areas	5453	2612	1584	942	1703	2470.80
Green-space per inhabitant [m ²]	1.9	3.9	6.3	10.6	5.6	5.51

Source: Our elaboration data of municipality of Florence

The results from a comparison of the data available from the Municipality of Florence show that the characteristics of the green-space in various quarters are uniform. We now see certain aspects emerging.

As regards the *per capita* endowment of green-space, the inhabitants of Quarter 4 can count on double the value (10 m²) in respect to the average of the entire municipal area (5.5 m²), while Quarter 5, the most populous and extended maintains itself at levels decisively lower (ca. 5.9 m²). Such a circumstance gives evidence to the fact that Quarter 5 offers a number of green-spaces larger than in the rest of the city. It must be noted however that in this Quarter of the City of Florence there is not an analogous availability of services provided to correspond to the extensive availability in terms of surface area: for example the sports structures of various types do not seem sufficient in respect to the resident population. One aspect that all the Quarters of the city hold in common lies in the homogeneous presence both of benches and of trees capable of guaranteeing shaded refuge from the hot summer days.

3. Case Study: Analysis of Public Green Urban Areas in Florence Municipality

3.1. Indirect Supply Analysis of Green Urban Areas: Management Costs of Public Administration

Financing of urban green-space is tied to municipal budgets of the individual administrations. In the case of the City of Florence we have made reference to the budgets from the period 1997–2005, endeavoring to extract the component of expense relative to the maintenance and the planning of the individual areas. In particular, we have analyzed the voice of costs that include the expenses in capital funding and current expenses subdivided between those intended for Urban Planning and to the Management of the Territory and expenses meant for Parks and Environmental Protection of urban green-spaces. It was not possible in light of the data available to separate out expenses for each individual Quarter in that the information referred to the entire Florentine area. Figures 1 and 2 report the flow of current expenditures and expenditures in capital funding during the period 1997–2005 [28].

The statistic that appears very noticeable (the comparison is expressed in current value prices) is the decrease of allocations for green-spaces both in terms of current expenditures and in investments. In the latter case the decrease appears

decisively more significant as 82%, calculating the percentage difference on the total expenditures during the two years at the peak of the reference period (1997–2005). For the current expenditures, which represent the actual figure intended for the maintenance for green-spaces, the decrease is not regular because at the end of the year 2003 the amounts allocated are shown substantially constant and in fact show a slight increase, but beginning with the following year (2004) a reduction of 33% of the rise is recorded (determining the 20 millions euro near 2004) confirmed by a last decrease in the following year.

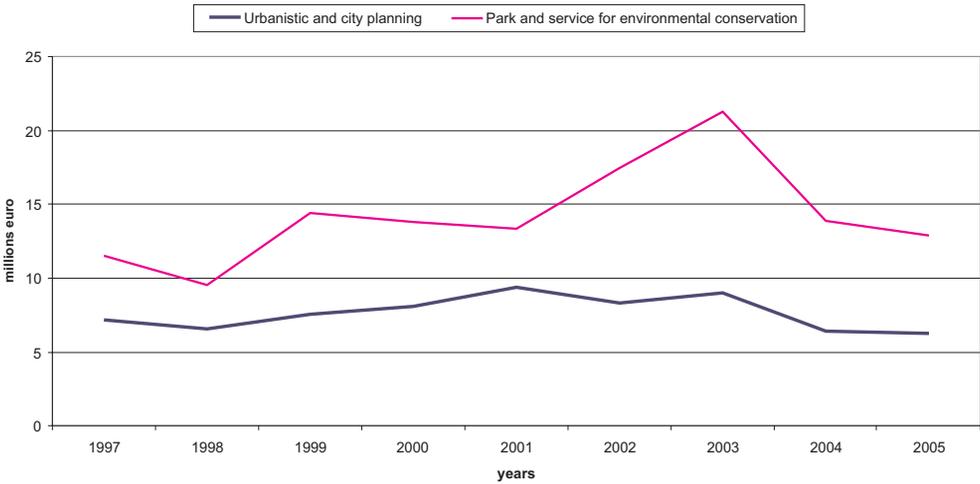


Fig. 1. Trend of Current Costs – Current Value (1997–2005)

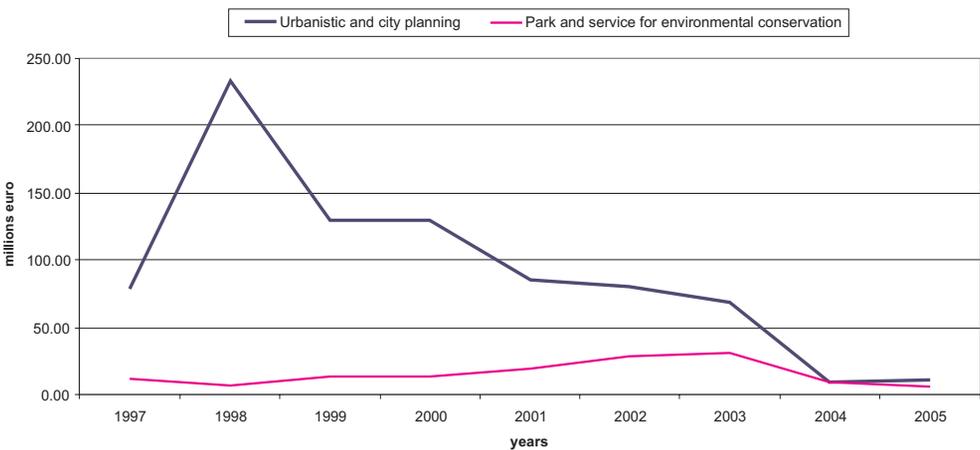


Fig. 2. Trend of Capital Funding – Current Value (1997–2005)

If we look in greater detail at the data reported in figure 1 and in the summary table (Tab. 2) we can highlight that the sums for the maintenance intended for Urban Planning and Management of the Territory, included in an interval between 7 and 9 millions euro, present a trend at the time practically flat, while those that refer to Parks and Environmental Protection (which have 9.5 millions euro as a lower limit and 21 million euro as an upper limit) show a very slight growth (Fig. 1), although in 2004 and 2005 the allocated funds are cut back notably.

Table 2. Current capital funding costs for environmental sector of the municipality of Florence (current value)

Year	Current value cost			Capital account cost			Total cost	Current cost/capital account cost [%]
	Urban and city planning	Parks and service for environmental conservation and for green-spaces	Total current cost	Urban and city planning	Parks and service for environmental conservation and for green-spaces	Total capital account cost		
1997	7.23	11.50	18.73	77.91	11.56	89.47	108.20	20.9%
1998	6.57	9.48	16.04	233.21	6.78	239.98	256.03	6.7%
1999	7.53	14.44	21.97	129.79	13.16	142.94	164.91	15.4%
2000	8.07	13.79	21.86	129.28	13.36	142.64	164.50	15.3%
2001	9.33	13.36	22.68	85.35	19.19	104.54	127.23	21.7%
2002	8.26	17.51	25.77	80.48	28.15	108.63	134.40	23.7%
2003	8.97	21.23	30.20	68.68	30.57	99.25	129.46	30.4%
2004	6.45	13.92	20.36	9.14	8.62	17.76	38.12	114.7%
2005	6.29	12.87	19.16	10.19	5.56	15.75	34.91	121.7%

Source: Our elaboration data of municipality of Florence

The corresponding costs in the capital funding, represented by figures decisively around 10 times greater, are characterized by great irregularities in the trend and by marked fluctuations between successive years (Fig. 2) in the field at this time of a trend markedly falling.

Table 3 reports the percentage comparison that is recorded between the current expenditures and those in the capital funding in the course of the period under examination. Until 2003 maintenance expenditures (that is current expenses) were very much lower than investments (expenses in the capital funding) and were around the values between 15% and 30% of the latter. Therefore we can deduce that there is in effect a tendency toward an increase incidence of such a percentage, a trend that is confirmed by the data relative to the years following up to 2003: current expenditures, though representing rather modest increments of

value from 1997 to 2005, arrive first to equal (2004) the expenditures in capital funding, then to overtake them (by 20%) in 2005. The overall trend of the total outlays will at any rate significantly feel the effects of the bare soundness of the current expenses.

Table 3. Cost for maintenance intervention of surface of green areas

Actions	Ordinary conditions [euro/year]	Optimal condition wear
Lawns	2333.44	2709.44
Grass maintenance	5400.00	11546.50
Hedges	2832.00	4404.00
Trees	–	5019.60
Various garden works	9462.40	6083.20
Total	20027.84	29762.74
Surface area under maintenance [m]	33 800	–
Cost per square meter	0.59	0.88

Source: Our elaboration data of Quarter 5 and municipality of Florence

This short examination of the municipal expense for urban green-spaces draws us a rather worrisome picture: over the course of the years the ordinary available funding has diminished, as has that tied to funds in the Capital funding; on the contrary, the growth of the commitment of the municipal Administration for contemplated interventions, such as, for example, substitution of numerous trees, greatly damaged by fungi and pathogens, in the citizen territory, creation of parking areas with the addition of green-space and/or other interventions of improvement of the neatness of the green-space. Therefore financial funding that the municipal budgets have at their disposition every year remains insufficient, especially if one thinks about the importance that green-space assumes in a city such as Florence and one considers the future costs that will have to be sustained in order to guarantee sufficient maintenance.

The Costs of Maintaining an Historic Garden: Villa Stibbert

In the planning of an urban green-space is given, erroneously, more consideration to the style of the project than to the achievement of “good measurements”. Applying good measurements means, in effect, to plan with knowledge of the biological cycles of the plants. The breadth and simplicity of planning are determining factors even if it means razing or emptying urban portions of the useless or

superfluous. The art of planning is undoubtedly one of the crucial moments of the transformation of the territory, but for many aspects it is not the most important. Surely the choice to maintain the urban green-space according to qualitative standards remains the priority. Very often in areas of new edification, rows of trees are planted like hedges, which, if not followed up with adequate agronomic practices, end up perishing. Analogous problems present themselves in those areas allocated for public gardens, where more often the lack of cultivation transforms them into not very welcoming settings and often into receptacles of refuse and/or of abandonment. It is a primary need for the administrations of communities and of the provinces to invest in the green-space but also to plan in advance the instruments designed for the purpose of maintenance [47]. Such work is distinguished from the other possible actions in that it does not require re-planning or substantial changes to the layout of landscape of the places. Operations of ordinary maintenance to be carried out on a regular basis throughout the year (cleaning, weeding, path maintenance, pruning of hedges and small trees, ground work, mowing, small trimmings, seasonal plantings, cleaning of manholes and drains) are distinguished from those of extra maintenance, which is to be carried out over a cycle of years (such as major pruning, plant removal and topping of trees). In this study we would like to present a close thematic examination of the district of the municipality of Florence, with the aim of highlighting both the question of annual expenses faced by the municipal administration for urban green-spaces and also an example of the maintenance of an historic garden.

For the purpose of confirming what we have written, we report an analysis relative to the maintenance of an area of special importance in the context of gardens in Florence.

The area under consideration is that of the garden at the Stibbert Museum. The park around the museum, open to the public, constitutes an interesting case of green-space built on the slopes of the hill Montughi, located to the north of the historic center of Florence. In 1908 the holdings passed, by way of inheritance, from Frederick Stibbert to the Municipality of Florence, which from that time has conserved it as a museum of antique collections gathered there and as a public park. Thanks to the successive acquisition also of the park and of the Villa Fabbricotti (area adjacent to Villa Stibbert), the city Administration connected the two parks negotiating the obtainment of a piece of property of 2 hectares that separated them. There was formed, therefore a vast area of hilly public green-space (around 3–4 hectares) filled with historic memories and rich with vegetation and highly prized plants. Our study wishes to highlight the necessary costs of maintenance for the purpose of guaranteeing the best conditions of such a space of historical public green-space [17].

To consent to the working of a maintenance plan a data archive was created that considers the following costs:

- costs of achieving the principal works necessary for the creation of green-spaces;
- costs of maintaining the green-spaces (flowerbeds, trees, roadways, etc.);
- costs of management services (also considering forms of management contracted out, such as global service).

Other aspects always inherent in maintenance of green-spaces.

The costs of creating the principal works has come about through the examination of computed estimative metrics of the operations concerning the work in the area of the green-spaces in numerous areas of Italy, making a compilation of existent appraisals and of the technical information adjusted by various municipal administrations (Torino, Rimini, Ferrara, etc.).

The data base created is composed of a combination of information and technical indications that can be organized as follows:

- average unit operative output (use of manpower and machinery of various types) for all the foreseen interventions in the area of special specifications;
- identification of the cultural interventions of maintenance with average unit operative output for each intervention;
- attribution by means of an opportune calculation model that includes the average unit operative output and unit costs, in such a way as to define an average price (understood as a reference price) for every individual cultural operation.

The effected simulations offer us an idea of the annual cost for ordinary maintenance and that of maintenance under optimal conditions. In particular, they highlight what is necessary for accurate maintenance, beyond a professionalism with which the work is carried out, also good financial funds on the part of Public Administration. If the expenditures relative to unforeseen events are included, such as, for example, interventions for tree rows, certainly the economic cost increases and undoubtedly becomes more difficult to sustain [30, 57]. At the present, our research activity is endeavoring to understand what part of public expense, classified as funds for public green-spaces, is absorbed by the carrying out of a bureaucratic-administrative nature that are not immediately perceived by the citizens. A more thorough knowledge of the costs strictly necessary for technical-agronomic management of green-spaces, as compared to the costs of the organizational structure of officials assigned to such functions and of the functions not strictly pertaining to the management of the green-spaces treated by these same officials, can contribute to improving the management efficiency of the adminis-

tration by providing for better services and lesser costs. The fact remains, however, that the financial resources available in today's world are surely not sufficient for an optimal management of green-space (as in the example above where it is noted how optimal maintenance would require an increase equal to 50% of those funds normally sustained). It is therefore important to understand how important it is to search for forms of financial aid even from sources different than the traditional ones (involvement of private enterprises, forms of outsourcing, European funds), especially if the objective that we envision is that of the attainment of a more elevated level of functionality and quality of urban green-spaces.

3.2. Demand Analysis of Green Urban Areas: Urban Areas Benefits

The choice of green urban areas for Contingent Valuation analysis focus on different type of parks in Florence with different size and location. The size of areas is properly related to number of users: there are small local gardens visited by small number of person and large areas visited by great number of person (Tab. 4).

Table 4. Urban areas in Florence (size)

ID	Urban area	Surface [m ²]
1	Villa Vogel	49.783
2	Villa Strozzi	87.000
3	Piazza Tasso	6.165
4	Giardino di Borgo Allegri	1.870
5	Campo di Marte	25.957
6	Viale Tatini – Galluzzo	12.150

Another choice's element of the areas is their location: the parks have been selected with a casual distribution around the centre of the city. The demand of green urban areas in Florence has been analyzed through a set of questionnaires about six urban parks where total number of interviews is 495. Typical users are 50 years old (average age), 55% of all are female and 45% are male. Predominant study degree of users is representing by high school degree users (33%) while 29% of all have a secondary school degree; primary degree and university degree users are respectively 20% and 14%. Many users go to parks for bring children to play with mates (41%), and for spend free time for walking inside parks (26%). They

use urban parks for relaxing (67%) and for urban noise's isolation (13%). WTP elicitation method has formalized in questionnaires with a double bounded question about an availability to pay n^3 euro per year for better urban areas planning and no limit access to parks. Table 5 shows WTP general analysis: we used a spreadsheet model to solve it [6].

Table 5. WTP general statistics

Statistics	
min WTP	3.22
max WTP	5.90
average WTP	4.56
median WTP	4.50
stand. dev. WTP	0.04

The data of 495 questionnaires are heterogeneous and they describe the complex users characteristics: next step has created uniform user's groups. Thus the analysis has based on a hierarchic cluster method of values; it operates for subsequent aggregations of units from n groups of only one individual group. Seven variables have been used in cluster analysis: five *socioeconomic* variables (age, sex, type of study degree, professional conditions and civil status) and two *park's fruition* variables (purposes and frequency of use). The result of process are 3 uniform groups with low deviance. Each group is respectively compose by 161, 186 and 123 persons while the outliers number (all interviewees that give wrong answers with an influent weight on statistics analysis) is 25, and it is not considered into the analysis. Cluster analysis has been operated through Ward method that bases on group's aggregation with minimum deviance. The distance between two groups is the difference between total deviance and the sum of internal group's deviance.

It is possible to divided each group about the age of persons: the first group (group 1) is 71 years old (average age), the second (group 2) is 45 years old, and the last one (group 3) is 27 years old.

The previous group has been composed by 42% of female and 58% of male. Same percentage is represented by primary degree users while the person with secondary school degree are 26%. 80% of all are retired men and 63% are married

³ Casual starting point is 2, 4 o 6 euro per year. These thresholds have been reckoned during a previous study case done in Piazza Leopoldo, Firenze.

people (63%). 34% of users bring children to play with mates, 28% of them meet friends or other people inside the parks and 36% of them spend time for walking. The frequency of park's fruition is 2 hours, 1–4 day per week (87% of interviewees). 135 people prefer the functional aspects of these areas rather than their aesthetic aspects. 88% of interviewees has a positive opinion about infrastructural aspect such as sport and play areas. People think that the grass maintenance aspect, the organization of functional areas, the kind of plants and the walking areas are well preserved, while animal areas and illumination service are not enough well preserved: there is no enough illumination for 70 interviewees (43% of all). 53% of users spend free time in green urban areas because it is relaxing to stay inside a place far away from urban pollution and traffic noise and they are very important for cities decongestion. The biological indicators of environmental conditions are *rare kind of plants* (important for biodiversity) and *vertebrate animals and invertebrate animals* such as "ducks and peafowl" for first category and "hornets and spiders" for latter. Typical kind of plants are more important than animals (77% of users): the bird's presence is better than insect's presence (41% of users prefer birds, only 2% prefer insects), because interviewees identified insects like mosquito's noise. Table 6 shows statistical index Willingness To Pay of this group is about 4.39 euro per year, maximum value is 5.75 euro and minimum value is 3.03. Standard deviation (quantification of distance from average value) is 0.067 while variance is 0.00449.

Table 6. WTP statistics of each group

Statistics	1st group	2nd group	3rd group
min WTP	3.04	3.59	2.92
max WTP	5.76	6.29	5.52
average WTP	4.40	4.94	4.22
median WTP	4.50	5.00	4.50
stand. dev. WTP	0.01	0.06	0.07

The second cluster analysis group is 45 years old (average age) and it has been composed by 66% of female (122 on 186 persons) and 34% of male. A great part of interviewees has secondary school degree (38%) and high school degree (44%); there are some university degree users (32 on 186 person), while the primary degree users are only 17% of all. Married people are 25% of all while dependent of public or private enterprises are 22%: a great part of this (72%) is married (134 on 186 persons) and while only 15% of all are student. A great part

of interviewees (like the precedent group) use green areas for bring children to play in the park (62%) and for spend time for walking (18%). The frequency days use is one and half hour, 1–4 days per week. 80% of people prefer the functional aspects of these areas rather than their aesthetic aspects. This group is more dissatisfied than precedent about this functional aspect: in fact 35% of interviewees are not satisfied for play areas, and 39% are not satisfied for organization of animal areas (many people want closed areas for dogs, because they are dangerous for children and they leave dirty excrements inside the parks). Illumination services are important (37% of total interviewees) for a night use of areas. The aesthetic function is less important than functional aspect: only 10% of person appreciate parks for flowers, fountains or pond, while the other (90%) appreciate parks because they are a natural barrier against urban noise. The safe biological indicators for environmental protection (special kind of plants) have been chosen by 76% of interviewees, while vertebrate and invertebrate animals have been selected by a few part of users. The presence of birds and insects for environmental quality are more important than other group (41% versus 24%), where 34% of users consider presence of only birds more important than presence of only insects (they was 41% in the previous group). Table 6 shows statistical index. Willingness To Pay of this group is about 4.93 euro per year (maximum value is 6.28 euro and minimum value is 3.58 euro). Standard deviation is 0.064 while variance is 0.004410.

The third group of cluster analysis is called the *younger group*: it is 27 years old (average age) where 57% users are female and 63% are male. The group's numerosness is consisting of 123 persons. The reduction of average age is not proportional to the type of study degree, in fact there is an increment of university degree users (24% versus 3% of first group and 17% of second group), and high school degree users (52%, it is the highest percentage of interviewees). It has a typical profile of young people: a great number of interviewees are students (46%), they have a dependent job in private and public enterprises (14%), they are not married (75%). Relaxing activities are main park's uses, in fact 24% of interviewees go to green areas for spend time for walking (one and half hour per day). Frequency of use is a variable number between 18% of week end users and 33% of 3–4 days per week users. 107 people prefer the functional aspects of these areas rather than their aesthetic aspects. Organization of these areas is not enough well preserved (30% of interviewees): there is a relationship between age and sport activity: younger people is more interested to sport than oldest people. The other functional aspects are well preserved except for illumination services (27% of users) and animal areas (24% of interviewees). The green urban areas are important for relaxing and for isolation from urban noise like the other groups. The same

opinion about environmental indicators: rare kind of plants are more important (76% of users) than vertebrate and invertebrate animals and the 47% of interviewees consider the presence of both species (birds and insects) an important choice. Table 6 shows statistical index. Willingness To Pay of this group is about 4.22 euro per year (maximum value is 2.91 euro and minimum value is 5.52 euro). Standard deviation is 0.071 while variance is 0.005030.

4. Conclusions

The importance of the green-spaces in an urban context is becoming everyday a topic of contention and of relevance for public opinion on the one hand and for the public administrations on the other. Often, in fact, the choices of urban policy are dictated by the restricted financial resources available, so that, if not accompanied by investments and extra provenances, they barely allow the carrying out of the interventions of ordinary administration.

Therefore, on the national and regional scene, numerous failings appear especially of positive examples of good management. An element that emerges from the reading of the vast scientific and popular literature existing about this topic is the “functionality” of the green-spaces. The classification of the different functionalities allow us, in fact, to identify the degree of intensity of benefits for the population in relation to the costs necessary for the development and maintenance of such areas. We can underline a general deficiency of operative specific rules for urban areas because public stakeholders have not enough data for do them. In fact it is important to give economics and statistic data to stakeholders for a right planning of urban parks, because it is impossible to do it with present planning documents only. So, the present paper focus on the analysis of urban areas indirect supply that it is represented by management costs of public administration: urban green-space necessitates a management continuously more scrupulous, a management that must represent a priority that the public administrations may not abandon also because of the quality of a life that is lived out in a negative sense in urban and peripheral areas. Stakeholders can know the real cost of infrastructural and management actions for an urban areas, but unfortunately it is difficult to estimate the right value of citizen’s welfare concerning urban areas. So, the second part of this paper focus on the analysis of benefit connect to the fruition of these areas that can be definite as the direct demand of park users. First step has been individuated a typical park user’s profile with a questionnaire based on functional and aesthetic aspects of urban parks while second step has been created a market for non-market goods through the Contingent Valuation where it has been estimated their Willingness To Pay (WTP).

The final result is the *management cost analysis* that represent the supply of green urban areas and *the demand (benefit) analysis* of them through the characteristic and behaviour of parks users: it gives a complete scenario about green urban spaces assessment that it's important because stakeholders (like public administration) need specific rules and instrument for making a right green urban areas planning.

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