

Protection of urban green areas in the Municipality of Thessaloniki: The views of the Municipal Police officers

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ABSTRACT: *Undoubtedly, urban greenery improves the conditions and the quality of life of city residents. Urban green spaces management requires the involvement of citizens and entrepreneurs in the decision-making process, together with the improvement of relevant legislation. Environmental policy aims at preserving, protecting and improving the environment, as well as the sustainable management of natural resources. Policy makers utilize tools of direct intervention (threat of fine or imprisonment) and/or mild intervention (environmental education programs and courses, seminars, financial incentives). The objective of the study is to investigate the views of the Municipal Police officers of the Municipality of Thessaloniki in Greece on issues relating to protection of urban green areas, in order to formulate appropriate policies, to draw useful conclusions and also, to find possible relationships and correlations between the research variables, by using appropriate statistical analysis methods. Data was collected through questionnaires.*

KEY WORD: *Urban greenery, environmental policy, questionnaire, Thessaloniki, Municipal Police*

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I. INTRODUCTION

Environmental policy must be compatible with existing socio-economic policies and research in the fields of conservation, protection and improvement of the environment (Kula, 1994). Policies for the management and protection of green and free spaces should focus on legislation, as well as giving incentives to citizens (Bengston et al., 2003). Urban green spaces management faces the challenge of spreading urban areas and preserving green spaces. Therefore, better management requires the involvement of citizens and entrepreneurs in the decision-making process, together with the improvement of relevant legislation (Carbone et al., 2015). In general, all stakeholders should be involved and exploit the various legal and institutional tools for urban planning and protection of green areas and clearly redefine green spaces (Roberts et al., 2017).

II. RESEARCH OBJECTIVES

The objective of the study is to investigate the views of the Municipal Police officers of the Municipality of Thessaloniki in Greece on issues relating to protection of urban green areas, in order to formulate appropriate policies, to draw useful conclusions and furthermore, to find possible relationships and correlations between the research variables, by using appropriate statistical analysis methods. The present study is part of a wider research.

III. RESEARCH METHODOLOGY AND DATA ANALYSIS

The research instrument that used for the data collection was a self-completed questionnaire, which is the main tool of research in the social sciences (Cohen and Manion, 1997). A relevant bibliography was studied for the development and validation of the questionnaire (Gillham, 2007). The questionnaire contains 18 questions measured on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree) (Babbie, 2011). Furthermore, there are questions related to demographic data of the participants (whether they are residents or not of Municipality of Thessaloniki, gender, age and educational grade).

The study population included the 65 Municipal Police officers of Municipality of Thessaloniki. The census of the population was attempted, that is to record all its members (Cohen et al, 2005). The questionnaires were distributed in employees' workplaces. Furthermore, the questionnaires were sent by e-mail. In total, 59 employees participated in the study (90.77%). The research took place in the period from April to July 2016.

Data handling and analyses were conducted using the IBM SPSS Statistics 21. More specifically, statistical analysis included:

Descriptive statistics. Descriptive statistics deal with methods of organizing and presenting data (Anderson & Finn, 1996).

Reliability. The reliability of a questionnaire relates to the consistency with which it measures the concept that it claims to measure. One of the most common reliability coefficients is Cronbach's alpha (Bland & Altman, 2002).

Validity. The term validity refers to whether a questionnaire measures what it is intended to measure and how well it measures (Babbie, 2011).

Correlations. Correlation estimates the degree or the relationship between two or more variables (Healey, 2015). When one or all of the variables are measured on an ordinal scale, Spearman correlation coefficient is used instead of Pearson correlation coefficient (Foster et al, 2006).

Mann-Whitney/T-test. The non-parametric Mann-Whitney test is used when the groups being tested are two and independent of one another and do not follow the normal distribution. The t-test is used to determine if there is a statistically significant difference between the two groups mean values (Dawson and Trapp, 2004).

IV. FINDINGS

Descriptive statistics:

The respondents' answers are presented in Table 1.

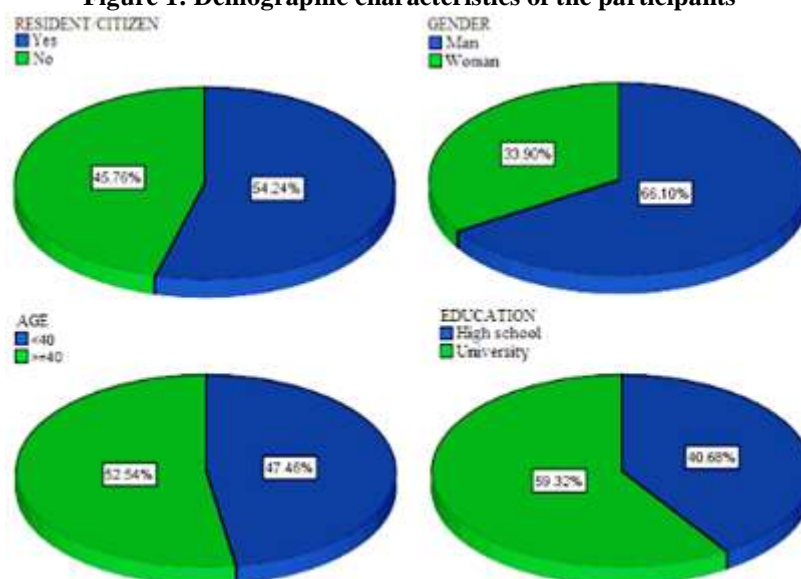
Table 1: Presentation of responses

Variable	Strongly disagree	Disagree	No opinion	Agree	Strongly agree
	Percentage (%)				
Establishment, in the municipalities, of an upgraded Service for protection and security, headed by the Municipal Police	5.09	0.00	8.47	55.93	30.51
Increased and more frequent policing by Municipal and Greek Police	0.00	1.69	11.86	52.54	33.91
Strengthening Municipal Police with human resources and funds	1.7	0.00	5.08	44.07	49.15
Assigning protection of public spaces to a private security company	23.73	27.12	32.2	10.17	6.78
Active involvement in guarding and protecting of all relevant Services	6.78	5.08	15.25	38.98	33.91
Cooperation of the municipality with NGOs, on issues related to the protection of green areas and open spaces	15.26	18.65	38.98	15.25	11.86
Staffing of audit Services with agronomists/foresters to provide expertise in green protection issues	1.69	11.86	13.56	40.68	32.21
Stricter arrangements for licensing public space to those who concerned	0.00	1.7	10.17	42.37	45.76
Simplifying the bureaucratic processes	0.00	0.00	3.39	44.07	52.54
Stricter criminal penalties and fines for those who vandalize outdoor public areas and green areas	1.69	5.09	3.39	33.9	55.93
Smaller fines for easier enforcement by competent auditors and faster payoff	15.25	32.22	18.64	22.03	11.86
Red-handed caught for those who vandalize outdoor public areas and green areas	3.39	8.47	18.64	37.29	32.21

Adoption of the institution of Environmental Prosecutor dealing with issues related to the protection and management of urban/suburban green areas and public spaces in direct cooperation with the relevant municipal Services	1.71	3.39	18.64	42.36	33.9
Adoption of a single law that will replace older laws, regulations, etc. on the protection and general management of urban outdoor spaces and greenery	0.00	0.00	5.08	44.07	50.85
Strengthening participation processes for citizens and professionals on the protection of public spaces and green areas	1.7	6.78	8.47	45.76	37.29
Implementation of environmental education actions by the municipality on the benefits of urban and suburban greenery	1.7	3.39	8.47	49.15	37.29
Ensure additional funding for the protection of public and green areas with more effective absorption and exploitation of European programs	0.00	3.39	10.17	49.15	37.29
Slight increase in municipal fees for the development, maintenance and protection of new green areas	20.34	23.73	25.42	16.95	13.56

Concerning the demographic characteristics of the participants, 54.24% are residents or citizens of Municipality of Thessaloniki and 45.76% are not, 66.10% are men and 33.90% women, 47.46% are aged < 40 years old and 52.54% ≥ 40, 40.68% are graduates of secondary education and 59.32% are graduates of higher education. Aggregate presentation of responses is depicted in Figure 1.

Figure 1: Demographic characteristics of the participants



Reliability analysis:

The entire questionnaire has a Cronbach's alpha coefficient of 0.613, which is acceptable.

Construct validity:

Validation was performed by using the Categorical Principal Component Analysis. A 4-dimensional solution (4 principal components), gave characteristic values of 3.532, 2.726, 1.816 and 1.590 respectively, which state that 19.62% of the explained variance is explained by the first dimension, 15.14% by the second, 10.09% by the third and 8.83 from fourth, accounting for 53.68% of the total explained variance. The loads of the principal components are presented in Table 2. The first principal component can be called "Policy implementation with a combination of information, regulatory and financial tools", the second "Upgrading and strengthening state control mechanisms", the third "Enabling and involving co-operative services and individuals" and finally the fourth can be called "Stricter penalties". For the sake of brevity and ease of processing, the four principal components were given the abbreviations PC1, PC2, PC3 and PC4 respectively and will henceforth be used in the text.

Table 2: Principal components' loads

Variable	Component			
	1	2	3	4
Establishment, in the municipalities, of an upgraded Service for protection and security, headed by the Municipal Police		0.717		
Increased and more frequent policing by Municipal and Greek Police		0.751		
Strengthening Municipal Police with human resources and funds		0.476		
Assigning protection of public spaces to a private security company			0.536	
Active involvement in guarding and protecting of all relevant Services			0.634	
Cooperation of the municipality with NGOs, on issues related to the protection of green areas and open spaces			0.582	
Staffing of audit Services with agronomists/foresters to provide expertise in green protection issues		0.633		
Stricter arrangements for licensing public space to those who concerned	0.591			
Simplifying the bureaucratic processes	0.715			
Stricter criminal penalties and fines for those who vandalize outdoor public areas and green areas				0.747
Smaller fines for easier enforcement by competent auditors and faster payoff	-0.401			
Red-handed caught for those who vandalize outdoor public areas and green areas		0.400		
Adoption of the institution of Environmental Prosecutor dealing with issues related to the protection and management of urban/suburban green areas and public spaces in direct cooperation with the relevant municipal Services		0.640		
Adoption of a single law that will replace older laws, regulations, etc. on the protection and general management of urban outdoor spaces and greenery	0.589			
Strengthening participation processes for citizens and professionals on the protection of public spaces and green areas	0.697			
Implementation of environmental education actions by the municipality on the benefits of urban and suburban greenery	0.741			
Ensure additional funding for the protection of public and green areas with more effective absorption and	0.712			

exploitation of European programs				
Slight increase in municipal fees for the development, maintenance and protection of new green areas			0.50 4	

Correlations:

The correlation between the 4 principal components and the variables "Education" and "Age", was investigated through the Spearman correlation coefficient. The variable "Age" shows a moderately negative correlation (-0.442) and statistically significant differences at the significance level of 0.01 with the variable "education" as well as a moderate negative correlation (-0.305) and statistically significant differences at the significance level of 0.05 with the PC1 variable. The variable "Education" shows little positive correlation (0.274) and statistically significant differences at the significance level of 0.05 with the PC1 variable. In essence, younger ones who are mainly higher education graduates, seem to be in agreement with the implementation of a policy for the preservation and protection of urban greenery and other public spaces that will mainly utilize legal and regulatory tools, always in conjunction with financial, educational and information tools.

Mann-Whitney/T-test:

With Mann-Whitney test, it was investigated whether there is a statistically significant difference (at significance level 0.05) between the mean values of the 4 principal components and the variables "Resident/citizen of the Municipality of Thessaloniki" and "Gender". In the data that follow the normal distribution, a T-test was performed. Statistically significant differences were found only in the variable "Gender" with the PC3 component. More specifically, there were statistically significant differences between man and women at significance level 0.001 ($Z = -4.003$, $p < 0.001$). In fact, it appears that women are more in agreement, compared to men, by involving all competent services and private companies as well in protecting and safeguarding the common green spaces.

V. DISCUSSION

According to the results of the study, it appears that:

- Municipal Police officers want to be more active in protecting the urban environment and urban greenery in particular, to show that they can do more exuberant work and not being exclusively associated with responsibilities such as parking control. Consequently, they believe that this will create a great need for upgrading and staffing of the Municipal Police. Furthermore, they want (a) efficacious changes of the legal framework, (b) involvement in urban protection of all stakeholders but under their own guidance and (c) stricter penalties for those who vandalize the communal and green spaces.
- They are open to the possibility of new forms of funding, and are in line with the consultation, participation and environmental awareness processes of citizens and organizations. In general, many of them are in favor of pursuing policy by combining regulatory, financial and information tools but also by upgrading and strengthening state control mechanisms, as they are skeptical of the possibility of granting protection and custody to private companies, apparently fearful of loss of their job. Moreover, they show mistrust in their cooperation with NGOs, possibly because of the mismanagement that some of them have committed.
- In the proposal "Slight increase in municipal fees for the development, maintenance and protection of new green areas", were given mainly negative and neutral responses to this measure, perhaps because Municipal Police officers think that will be more targeted by citizens if the Municipality do not actually use this income for greenery, coupled with the fact that they do not have as much financial capacity as they used due to the economic crisis.
- Concerning the socio-demographic data of the respondents, it is recorded that: The police profession is still male-dominated, even at the level of milder policing. A remarkable percentage (almost 60%) of the Municipal Police officers has a university degree. Apparently, they preferred a permanent job in public sector, though dangerous and obviously completely different from what they studied. Concerning their age, about 50% are in highly productive age (< 40 years).
- Younger officers who have a university degree are found to be more environmentally concerned and extroverted, as they largely agree with the implementation of a policy for the preservation and protection of urban greenery and other public spaces that will mainly use regulatory tools, always in combination with the corresponding financial and informational means. Women are more practical, as they agree with the involvement in protection and custody of all stakeholders and private companies, obviously in order to achieve the Municipal Police better results in exercising its responsibilities, but always under the direction and supervision of the Municipal Police officers.

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