Improving service quality to local communities via satisfaction measurament in Greece: The MUSA approach

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April 2016

IMPROVING SERVICE QUALITY TO LOCAL COMMUNITIES VIA A CITIZEN SATISFACTION MEASUREMENT IN GREECE: THE 'MUSA' APPROACH

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ABSTRACT

The objective of this paper is to propose a model that improves service quality to local communities via citizen satisfaction measurement. The main argument arises is that citizen satisfaction represents a modern approach for service quality in local communities and serves the development of a truly citizen-focused management and culture. Measuring citizen satisfaction offers an immediate, meaningful and objective feedback about citizens' preferences and expectations. In this way, service performance may be evaluated in relation to a set of satisfaction dimensions that indicate the strong and the weak points of a Municipality. The study based on primary data collected through questionnaires from 456 respondents-citizens' users of the municipality services of Skopelos Island in Greece. The main satisfaction criteria were: C.S.C (Citizen's Service Centre), Municipal Roll-Registry Office, Cleanliness -Lighting, Municipal Works, Home Assistance. These criteria are aggregated through an additive value function which is inferred from a set of satisfaction judgments with the use of the MUSA multi-criteria methodology and software. According to the findings of this research, the citizens of the Municipality of Skopelos seem to be satisfied to a large extent, either fully or partly, with the total of the provided services. However, there appeared some fields that need further improvements, such as Cleanliness - Lighting and Municipality works. The findings of the study are also related to particular policy implications regarding the role and the capacity of local authorities and decision makers to provide efficient and operational services to local communities. It's very important to relate the findings and the case of Skopelos as pilot guide with the degree of organising capacity of local / regional authorities in larger and different municipalities in Greece. For this reason the proposed MUSA approach, we support that offers the framework to extent our analysis and to evaluate local/ regional authorities role and capacity regarding community development issues.

JEL Classifications: C44, O22, R58
Keywords: Citizen Satisfaction; MUSA Methodology; Municipality of Skopelos, Greece

INTRODUCTION

Focusing on the role of local authorities, several approaches stand that their importance on territories development is crucial. The report 'Cities of the Future', developed by *PriceWaterHouseCoopes* (2005, p.3), stated that 'City governments, local authorities and decision makers, are highly complex organisations. They need to respond to the demands of different groups and manage the allocation of resources between different, and often competing, claims'. The existence of local authorities with 'entrepreneurial capacity' or 'organising capacity' emerges as a basic need, especially in the '90s (i.e. Kresl and Singh, 1999; Van den Berg et al., 1997). Hagedoorn et al. (2000), awarded the establishment of partnerships between local authorities and research institutions, while Williams (2002) and Hutchcroft (1996), referring to the role of community strategies in the promotion of economic and social development and their contribution to the attainment of sustainable development in Great Britain, supported that the new model of local authorities should concentrate on the reinforcement of all forces activated in the environment of organizations and local communities.

This study aims to measure citizens' satisfaction a tier local authority (Article 1 of Presidential Decree 410/1995, the Local Government Code, primary local authorities are the municipalities) of the services of. The objective of this paper is to identify the criteria that affect the overall satisfaction of citizens with the services of the municipality. Through the model MUSA, multicriteria analysis, will find the strengths and weaknesses of the municipality, and propose ways to improve patient criteria. The study uses as case the Municipality of Skopelos Island, Greece

The additional value of the study regards to the contribution of the existing literature about local authorities and decision makers involvement on social development but also the estimation of local communities regarding their satisfaction of public services provision. Furthermore, the study proposed an efficient model of communities' satisfaction measurement, not only for Greece but also for any other community/ region or country. This study is organised into six sections. Section two presents previous studies which occupied with Customer/Citizen's Satisfaction. Section three consists briefly the basic principles of the multicriteria preference disaggregation approach and the implemented methodological frame. Citizen's satisfaction survey designs are described in Section four, while the main results of the application in Section five. Section six summarises some concluding remarks.

PREVIOUS STUDIES

Previous studies based on the Customer / Citizen Satisfaction are several (i.e. Qatari and Haran, 1995; Rennekemp et al, 2001; Bradbury and Milford, 2001; Callahan and Gilbert, 2005). Depending on what concern, companies or organizations, changing the objectives, methodology and results, but all have a common "denominator", satisfaction, whether related to customers or citizens. Some of the studies

focused on USA environment (i.e. Rennekemp et al, 2001; Bradbury and Milford, 2001) or Latin America (Gouneia et al, 2005), Europe (i.e. Callahan and Gilbert, 2005; Akgul, 2012) or internationally (Mokhlis, 2011). Most of them, use field research with main tools structured questionnaires and interviews in order to investigate citizen's satisfaction degree from particular services that provided by local authorities. For instance, Rennekemp et al, (2001) conducted a research to 384 people and shows that factors such as friendliness of the public staff, courtesy, dedication and technology are connected positively with citizens' satisfaction. In addition, with reference to health services in Brazil, Gouneia et al, (2005) by using interviews of 5.000 participants, shows that patient either external or interior was not satisfied with the provided health services. Akgul (2012) attempted to distinguish the level of satisfaction of the citizens of the services provided by the Municipality Kirşehir Turkey, through SERVQUAL method by using 292 questionnaires. Statistical analysis showed that the main factor affecting the satisfaction of citizens is the municipality in which they live, followed by sex, education, marital status and income. The author concludes that the municipality must make changes in order to improve the service quality levels.

The European Network of Operational Programmes (2013) used a comparative analysis recording the background of national local governance systems in 27 countries of the EU, focusing on relevant reforms implemented of the European Social Fund, while highlighting best practices in action level. The results revealed that in most countries the lowest degree of satisfaction noted social services and employment / local development agencies. It is important that citizens in all countries are not aware of all the services offered by the municipality and thus are not users of these services. This confusion occurs as local authorities take on new responsibilities that were previously state and is not able to successfully cope with the needs of their new duties. The priorities expressed by citizens include the creation of simpler, faster and friendlier to the service user and eliminate bureaucracy. Further note the need for information and education of citizens so that they can effectively use the provided municipal services (Headway et al, 2013).

Other surveys by using Multicriteria Satifaction Analysis (MUSA) focused on customer's services satisfaction from services that provided from business sectors, such as shipping (Grigoroudis et al, 1999) or banking (Myhelis et al., 1999), or e-Government (Manolitzas and Yannacopoulos, 2013).

By ending this session, we note that the methodology used for the above mentioned studies and analysis of the results varied considerably. In some of them, (i.e. Headway et al, 2013; Bradbury and Milford, 2001) searches were made through telephone interviews and completing a structured questionnaire. In some others (i.e. Gouneia et al, 2005; Qatari and Haran, 1999), the survey was conducted through interviews and advanced analysis (factor analysis and regression). All the other used questionnaires except that they used other analytical models. Specifically, four of them (Manolitzas and Yannacopoulos, 2013; Yaghoubi et al, 2011; Mihelis et al, 1999; Grigoroudis et al, 1999) used the multi-

criteria analysis the MUSA model while two of them (Akgul , 2012) and (Mokhlis, 2011) used the statistical SERVQUAL method.

THE MUSA: PREFERENCE DESEGREGATION APPROACH

MUSA model aims to the aggregation of individual judgements into a collective value function assuming that client's global satisfaction depends on a set of criteria or variables representing service characteristic dimensions. The preference disaggregation methodology is an ordinal regression based approach (Jacquet-Lagreze and Siskos, 1982; Siskos, 1985; Siskos and Yannacopoulos, 1985) in the field of multicriteria analysis used for the assessment of a set of marginal satisfaction functions in such a way that the global satisfaction criterion becomes as consistent as possible with customer's judgements. According to the model, each customer is asked to express his/her judgements, namely his/her global satisfaction and his/her satisfaction with regard to the set of discrete criteria (i.e. Siskos et al., 1998; Grigoroudis et al., 2000). The method follows the principles of quality regression analysis with restriction, using linear programming techniques.

TABLE 1: MAIN VARIABLES OF THE MODEL

Y	Client's global satisfaction
a	Number of global satisfaction levels
y^m	the m-th global satisfaction level (m=1,2,…a)
n	Number of criteria
X_i	Client's satisfaction according to the i-th criterion (i=1,2,..n)
a_i	Number of satisfaction levels for the i-th criterion
x_i^k	the k-th satisfaction level of the i-th criterioni (k=1,2,…a_i)
Y^*	Value function of Y
Y^{*m}	Value of the y^m satisfaction level
X_i^*	Value function of Xi
X_i^{*k}	Value of the x_i^k satisfaction level

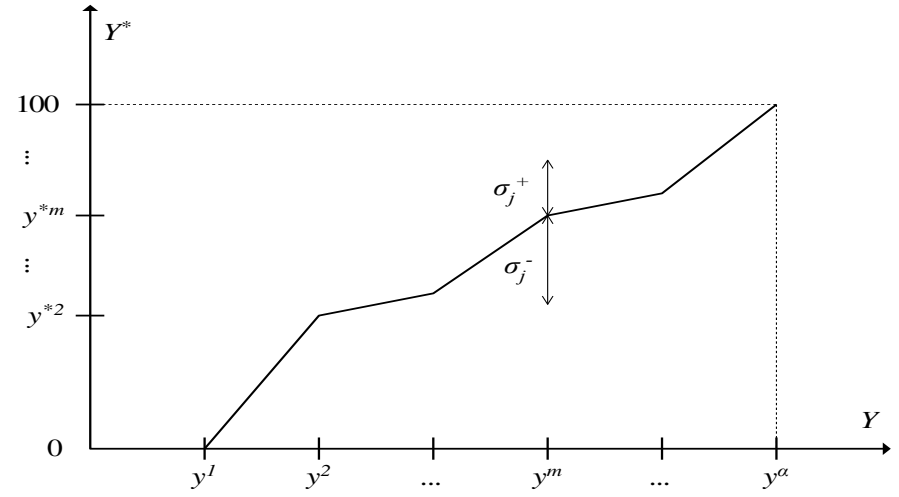
MUSA method tries to determine a collective function Y^* and a total of some functions X_i^*satisfaction based on customer opinions having designed the best possible agreement between the function and customer views. The basic equation of qualitative analysis regression finally takes the form:

$$\tilde{Y}^* = \sum_{i=1}^{n} b_i X_i^* - \sigma^+ + \sigma^-$$

where $\tilde{Y}^*$ is the estimate of the collective function values Y*, σ^+ and σ^- is the overestimation and underestimation error respectively. It should be noted that Y* and Xi* are monotonic functions normalised between 0 and 100. Also, in order to reduce the number of the mathematical constraints the following transformation equations are used:

$$\begin{cases} z_m = y^{m+1} - y^m & \text{for } m = 1, 2, \ldots, \alpha - 1 \\ w_{ik} = b_i x_i^{*k+1} - b_i x_i^{*k} & \text{for } k = 1, 2, \ldots, \alpha_i - 1 \text{ and } i = 1, 2, \ldots, n \end{cases} \quad (1)$$

(2)



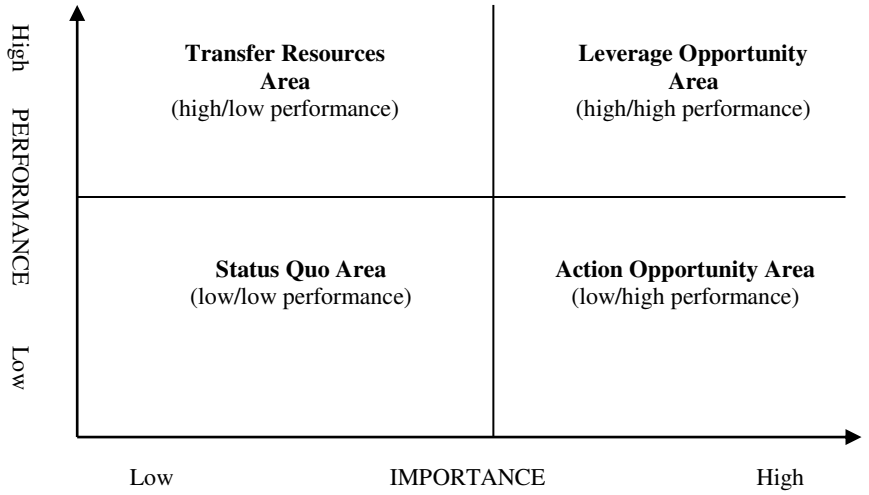
The results from the aforementioned preference disaggregation approach are focused on global and partial explanatory analysis. Global explanatory analysis lays emphasis on customer's satisfaction and its primary dimensions, while partial explanatory analysis focuses on each criterion and their relevant parameters separately. Satisfaction analysis results, in more detail, consist of:

- Global satisfaction index: This average index shows in a range 0±100% the level of global satisfaction of the customers
- Added value curve: This curve shows the real value (0±100) that customers give for each level of the global ordinal satisfaction scale; the form of the curve indicates if customers are demanding.
- ``Fragile" customers: The % of customers receiving satisfaction value less than a particular level can be calculated, using the global added value; this curve represents the probability distribution function of the added value curve. In this way, if a particular level of the added value curve is believed to be critical, the percentage of fragile customers can be calculated.
- Criteria/subcriteria satisfaction indices: These indices show in a range 0±100% the level of partial satisfaction of the customers according to the specific criterion/subcriterion, similarly to the global satisfaction index.
- Weights of criteria/subcriteria: They show the relative importance within a set of criteria or subcriteria.

Combining weights and satisfaction indices, a series of ``Performance/Importance" diagrams can be developed (Figure 1). These diagrams are also mentioned as action, decision, and strategic or perceptual maps (Dutka, 1994; Naumann and Giel, 1995). Each of these maps is divided into quadrants according to performance (high/low), and importance (high/ low), that may be used to classify actions:

- Status quo (low performance/low importance): Generally, no action is required.
- Leverage opportunity (high performance/high importance): These areas can be used as advantage against competition.
- Transfer resources (high performance/low importance):
- Company's resources may be better used elsewhere.
- Action opportunity (low performance/high importance)

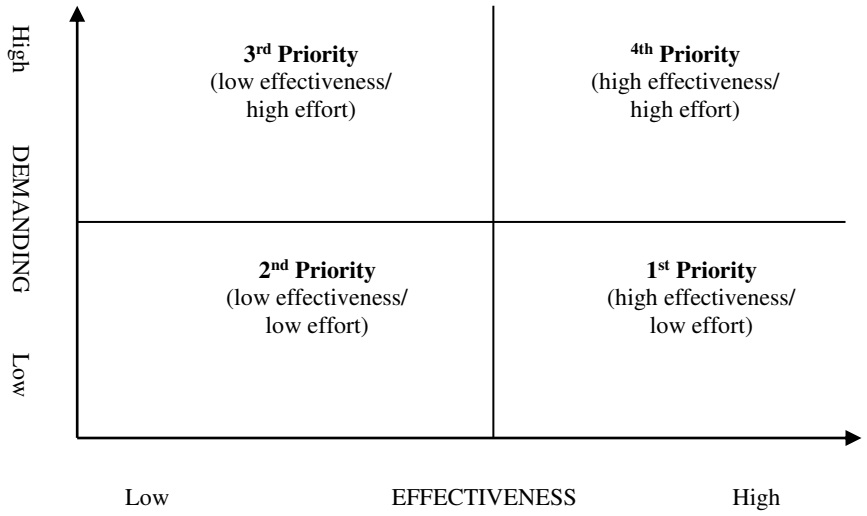
FIGURE 1. ACTION DIAGRAM



Source: Grigoroudis and Siskos (2000)

This grid can be used in order to identify priorities for improvement (Figure 2). The bottom right quadrant is the first priority, for the attributes are important to customers but company's performance is rated moderately low. The second may be given to the satisfaction criteria/subcriteria in the top right quadrant, especially if there is room for improvement. The third priority issues are indicated in the bottom left quadrant; although these issues are not terribly pertinent at the time of the analysis, they may be more important in the future, and company's performance is certainly not good. Finally, last priority for improvement can be given to the criteria/subcriteria in the top left quadrant because this category is the least important and company's performance is relatively good. Apparently, priorities for improvement can vary among different companies, depending on the potential capabilities of improving the particular category.

FIGURE 2. DIAGRAM



Source: Grigoroudis and Siskos (2000)

RESEARCH PROFILE AND METHODOLOGY

Research Profile

For our study, the population of the sample consists of all non residents- or permanent residents of the island who, according to the 2011 census was 5.041. According to the research «The Research Advisors» (2006) a good sample with 5% error for the 5.000 population is 357. The samples consists of 456 respondents (ignores questionnaires completed during the pilot phase - about 20). The survey took place in October of the year 2013 in several public places. To highlight how to collect responses, built web application identical form questionnaire, which yielded about one quarter of the total survey responses. Research used questionnaires in a Likert scale 1-5 (Revilla et al., 2013) instead to 1-7 or 1-9 scales, when it's applied to public audience.

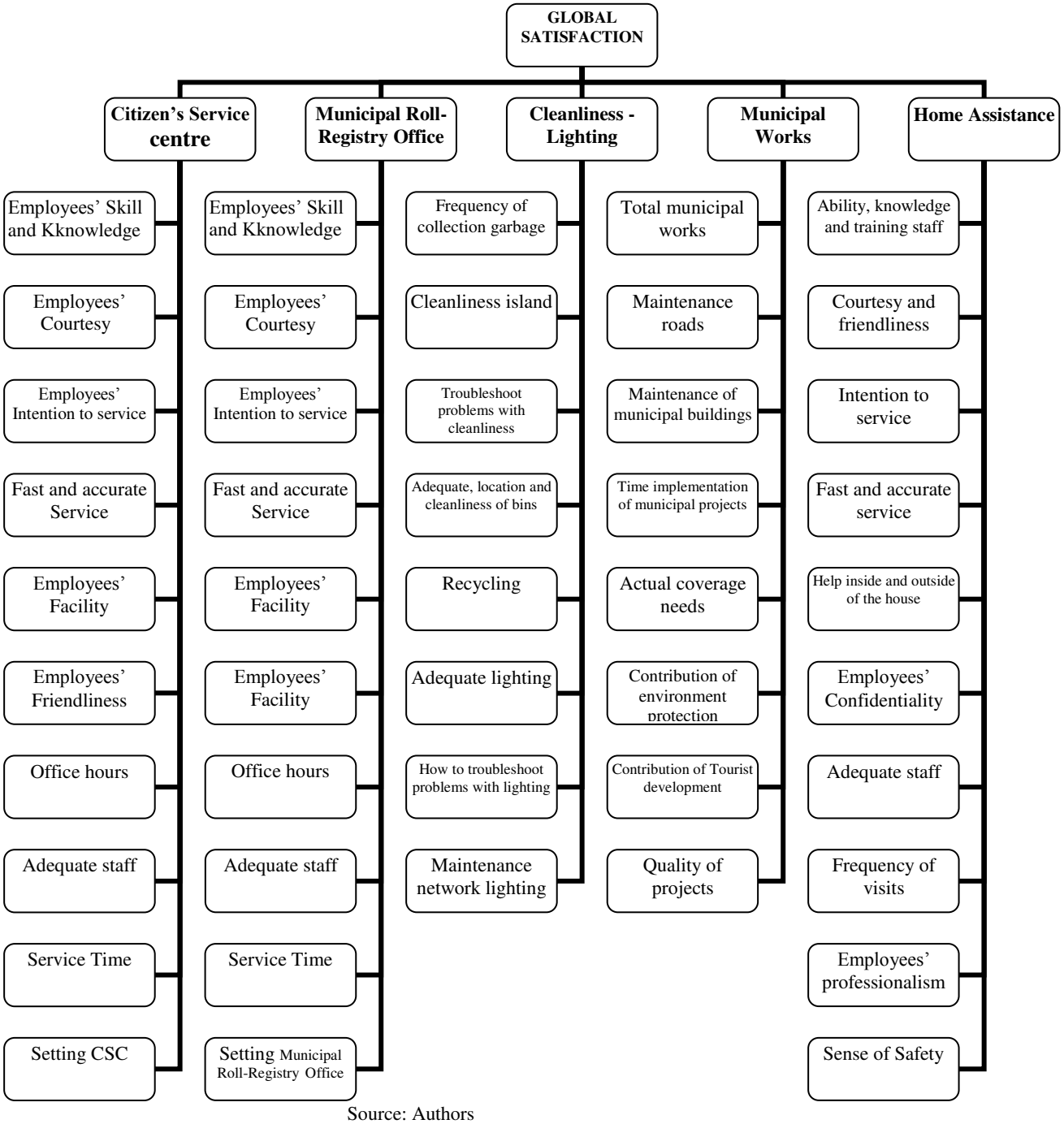
Satisfaction criteria

The assessment of a consistent family of criteria representing Citizen's satisfaction dimensions is one of most important stages of the implemented methodology, as mentioned in the previous section. This assessment can be achieved through an extensive interactive procedure between the analyst and the decision-maker (Municipality). In any case, the reliability of the set of criteria/subcriteria has to be tested in a small indicative set of customers. The hierarchical structure of Citizen's satisfaction dimensions is presented in Figure 3 and it indicates the set of criteria and subcriteria used in this survey. The main satisfaction criteria consist of:

- *C.S.C. (Citizen's Service Center):* Its includes the citizen's satisfaction from the services which give the employees of C.S.C of island, the time table, the behaviour etc [Criterion 1]

- *Municipal Roll-Registry Office*: its includes the citizen's satisfaction from the services which give the employees of Municipal Roll-Registry Office of island, the time table, the behaviour etc [Criterion 2]
- *Cleanliness –Lighting*: its includes the citizen's satisfaction from Cleanliness- Lighting up to the island, which belongs into the same services of plan of municipality that's why exam into the same criterion are [Criterion 3]
- *Municipal works*: its includes the citizen's satisfaction from municipality works where done on the island etc [Criterion 4]
- *Home Assistance*: its includes the citizen's satisfaction from the program of home help [Criterion 5]

FIGURE 3. SATISFACTION CRITERIA HIERARCHY



Source: Authors

Figure 3, shows that the dependent variable is the total satisfaction and the independents are all the subcriteria. According to Grigoroudis and Siskos (2000, pp. 148-170) cases - which are confirmed by the results of the research - are

Hypothesis 1: Total Satisfaction depends from criteria-subcriteria

Hypothesis 2: Criteria are independent between them

In the following panel there are the sources from which found the variables.

TABLE 2. VARIABLES AND SOURCES

Independent Variables/Subcriteria	Found sources
Employees' Skill / knowledge	Manolitzas and Yannacopoulos (2013), Akgul (2012), Mokhlis (2011)
Employees' Courtesy	Callahan and Gilbert (2005), Cumberfold et al (1999), Rennekemp et al (1999)
Employees' Intention to service	Akgul (2012), Gouneia et al (2003)
Fast and accurate Service	Yaghoubi et al (2011), Bradbury and Milford (2001), Mihelis (1999)
Facility	Bradbury and Milford (2001), Cumberfold et al (1999)
Employees' Friendliness	Manolitzas and Yannacopoulos (2013), Rennekemp et al (1999),
Working Time	VPRC Institute (2005), Callahan and Gilbert (2005)
Adequate staff	Yaghoubi et al (2011), Mokhlis (2011)
Service Time	Gouneia et al (2003)
Environment	Akgul (2012), Mihelis (1999), Grigoroudis et al (1999)
Education	Headway et al (2013), Yaghoubi et al (2011), Bradbury & Milford (2001)
Confidentiality	Gouneia et al (2003)
Professional official	Headway et al (2013), TNS System (2005)
Safety	Akgul (2012), Rennekemp et al (1999)
Help inside & outside of house	Makaratzi (2013)
Frequency of visits	Gouneia et al (2003), Qatari and Haran (1995)
Collection garbage	Headway et al (2013)
Cleanliness	Headway et al (2013), Akgul (2012), Gouneia et al (2003)
How to troubleshoot problems	Makaratzi (2013)
Adequate, location and Cleanliness Bins	Makaratzi (2013)
Recycling	(Irsos Mori,2006).
Lighting	(Irsos Mori,2006).
Maintenance network electric	(Irsos Mori,2006).
Total works	Makaratzi (2013)
Roads	(Irsos Mori,2006).
Municipal buildings	Manolitzas and Yannacopoulos (2013), Akgul (2012),
Time implementation of municipal projects	Makaratzi (2013)
Actual coverage needs	Makaratzi (2013)
Protection of environment	Makaratzi (2013)
Tourism projects	Akgul (2012)
Quality of projects	Makaratzi (2013)
Dependent Variable	
Total Satisfaction	Total

Source: Authors

Research Limitations

Despite careful planning this investigation encounters certain limitations. Firstly, there is the limitation of the sample, which although satisfactory in size does not exclude the existence of error. Secondly, the absence of significant previous satisfaction surveys prevents correlations and comparisons of the results. Finally, the fluidity that characterizes the public sector nowadays entails corresponding liquidity in shaping citizen satisfaction, and therefore the results can be considered indicative and reliable only for that timing.

RESULTS

Analysis of main criteria

The first results that ensued through the MUSA system referred to the descriptive statistical analysis. This analysis referred both to the total satisfaction of citizen's, and to their satisfaction by each criterion separately. In this section all the statistical results that referred to the citizens will be analysed. Table 3 summarizes the following:

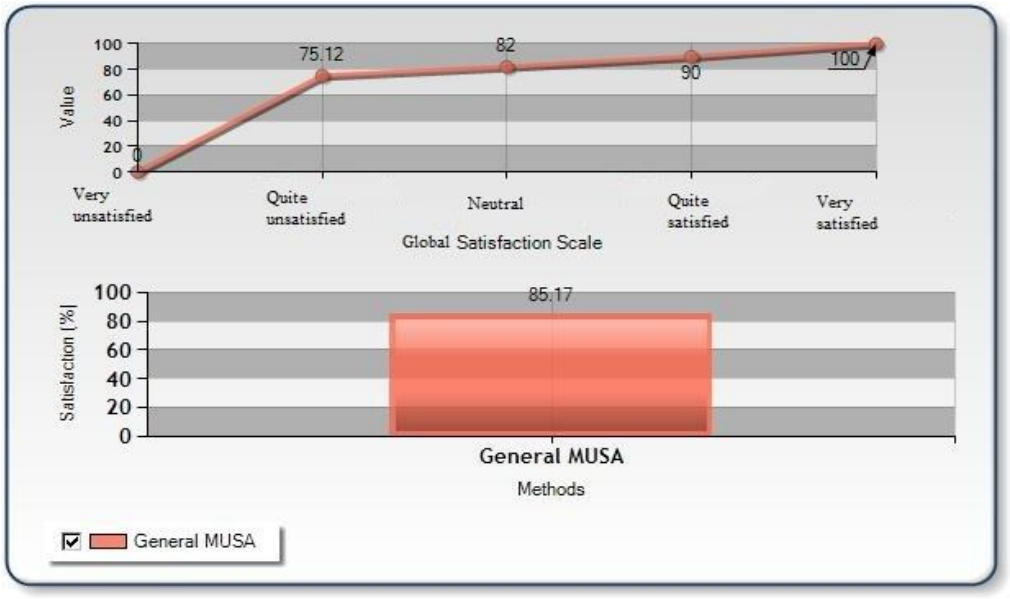
TABLE 3. MAIN CRITERIA

		Scale 1-5 (%)				
Criteria	**Codes**	**1**	**2**	**3**	**4**	**5**
Satisfaction of C.S.C	C.S.C	1,97	3,73	15,57	35,96	42,76
Municipal Roll-Registry Office	MRRO	1,10	3,07	7,24	17,54	71,05
Cleanliness –Lighting	CL	10,31	11,62	27,85	41,01	9,21
Municipal works	MW	10,96	16,01	40,35	28,29	4,39
Home Assistance	HA	2,85	3,95	22,37	44,96	25,88
Total Satisfaction	TS	4,17	6,58	19,08	55,92	14,25

C.S.C shows that the majority of citizens are very satisfied, as it sums up a rate of 42, 76%. The result is logical if we think that CSC is an acceptable institution from society. Regarding MRRO, results of the statistical analysis are very positive too (71,05% very satisfied and 14,54% quite satisfied). CL also shows a high percentage of quite satisfied citizens (41,01%), but there is also a considerable percentage of neutral answers (27.85%). MW, presents a large number of neutral answers (40,35%). Finally, the results of HA show a high percentage of quite satisfied tourists (44,96%). Moreover, the statistical frequency of neutral level is quite high (22,37%). Most of citizens (55,92%) are quite satisfied with the services of Municipality. The second highest rate referred to citizens who are neither satisfied nor dissatisfied (neutral) with 19,08% and followed by citizens who are very satisfied (14,25%). The quite unsatisfied and very unsatisfied citizens have 6,58% and 4,17% respectively.

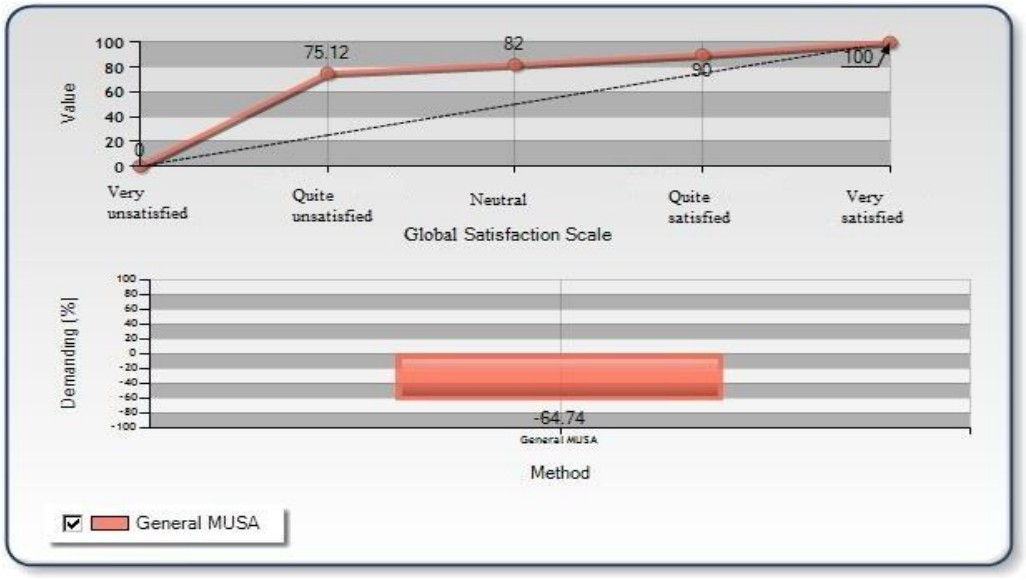
The Global satisfaction function (Figure 4) shows how the transition from one grade of satisfaction to the other affects the average indicator of total satisfaction. For example, when the citizens declare that they are quite unsatisfied, then they fulfill 75.12% of their expectations, while as the levels of satisfaction go up it is observed that the percentage of their expectations that is fulfilled increases at 82% and when they are quite satisfied increases at 90%.

FIGURE 4. GLOBAL SATISFACTION



Source: Authors

FIGURE 5. GLOBAL SATISFACTION FUNCTION & DEMANDING



Source: Authors

The global satisfaction of each user depends on a number of key criteria. It is logical that the price formation of the average total satisfaction index (85.17%), and mean total index pretentiousness (-64.74%) depends on the respective values taken by the five key dimensions of satisfaction. Table 4 shows, the weights of the criteria, as well as the average satisfaction ratios, demand and efficiency.

TABLE 4. RESULTS OF BASIC CRITERIA

Criteria	Weight (%)	Average satisfaction index (%)	Average demanding index (%)	Average effectiveness index (%)
C.S.C	63,54	95,56	-87,31	2,82
MRRO	9,55	90,27	-17,28	0,93
CL	8,28	57,93	-3,81	3,48
MW	9,28	55,21	-14,17	4,16
HA	9,35	75,43	-15,51	2,30
TS		85,17	-64,74	

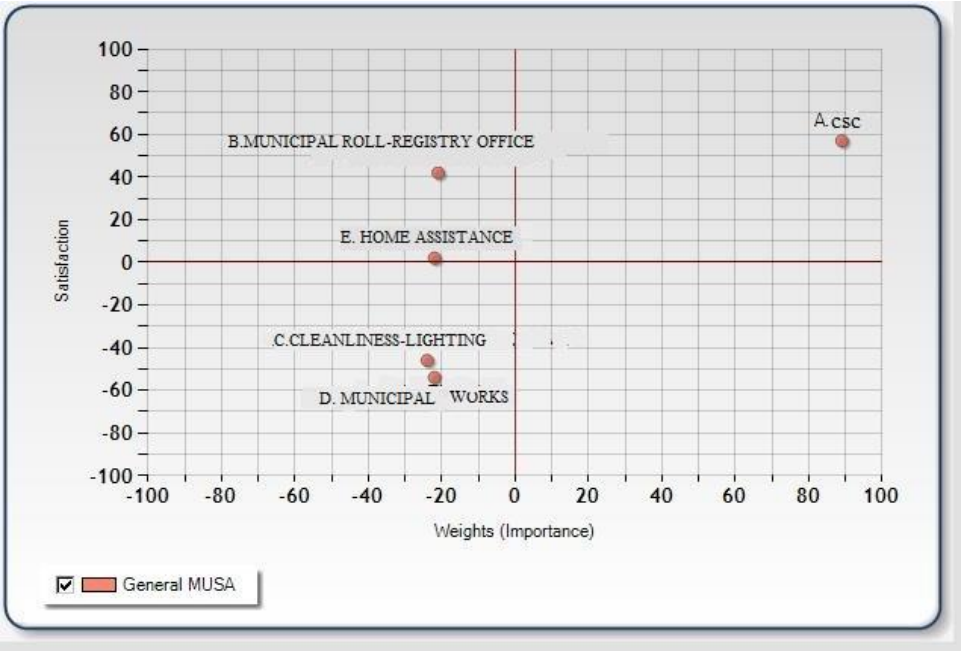
Source: MUSA Analysis, Authors

The weight of each criterion indicates the degree of importance given by the respondents in each of the dimensions of satisfaction. Thus, fix the level of importance of each criterion in the formation of overall satisfaction. The first in importance is the C.S.C criterion (63.53%) and appears to be the dominant benchmark of the municipality. Below is the MRRO, the HA program, the MW and finally CL. This result indicates that the weights are not interested residents the municipality as an institution, but only because the C.S.C have combined as a means of communication with the state. Of course it must be noted that C.S.C and its servants belonging to the organizational structure of the municipality. Services MRRO and HA to find common and is satisfied by them. Moreover, they have given their immediate service so they do not have high weights. Regarding MW and the CL not give any weight because they think that there are projects and there are no proper services of CL.

Figure 6 (Action Diagram), shows the average efficiency ratio for each of the five key dimensions of satisfaction and complete the analysis of the results. This ratio may indicate the magnitude of the increase citizen satisfaction of the Municipality to a criterion in the case of improving the performance of the Municipality criterion. Thus an improvement of the energy dimension MW will be more effective, as it would increase overall citizen satisfaction by 4.16%. The second position holds effectiveness CL with rate 3.48%, followed by the CSC, HA with rates of 2.82% and 2.3% respectively. The lower level of efficiency (0.93%) would have an ameliorative action dimension- MRRO. Conclusion that the dimensions with the greatest potential for improvement and better results when their improvement are those that have the lowest levels in importance and satisfaction.

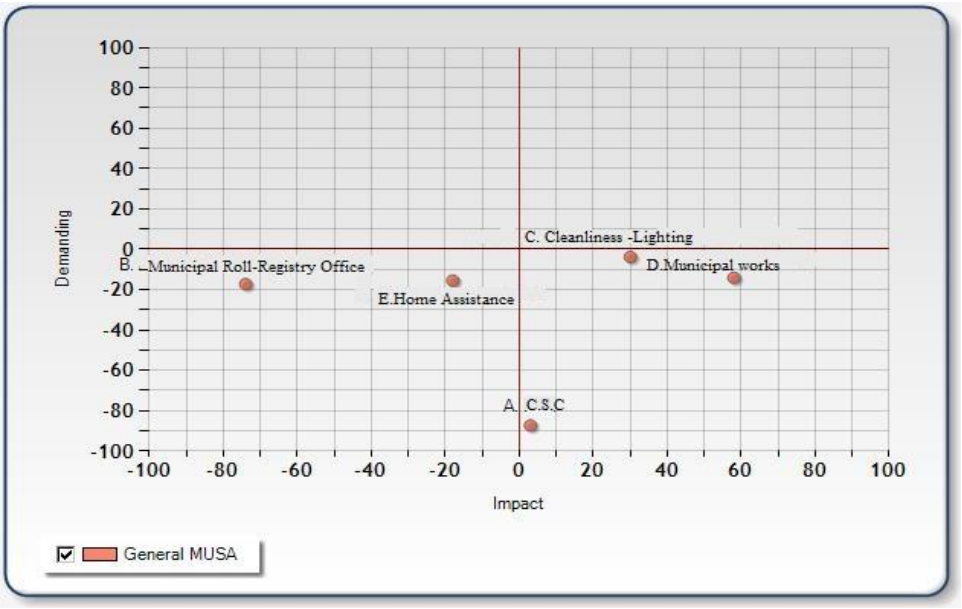
The above results of basic criteria can also help in the calculation of an action diagram through the combination of weights of satisfaction criteria with average satisfaction indicators. Thus, the strengths and the weaknesses of citizen's satisfaction can be determined and also where we should focus improvement efforts (Figure 7 –Improvement Diagram).

FIGURE 6. ACTION DIAGRAM GLOBAL SATISFACTION



Source: Authors

FIGURE 7. IMPROVEMENT DIAGRAMM GLOBAL SATISFACTION



Source: Authors

CSC consist the comparative advantage of Municipality and this because the dimension is on the high area of importance on the *action* diagram. We have already seen that the citizens are more satisfied from the services of CSC and are very important for them. It‘s logical because CSC is the mean which union all the services especially in small places like Skopelos island. Moreover, from the *Improvement*

diagram CSC is in the first priority of Municipality because the citizens are demanding and a small improvement will bring bigger total satisfaction and enforce the image and reliability.

The MRRO is a service which has distinguished and there is no need for the future to invest. There is in fourth quadrant, in the area transferring funds which mean that has the second high percent of satisfaction. Is a criterion no high importance for citizen's but shows high impact for the side of Municipality? From the improvement diagram the citizen's are not so demanding and the improvement affect little the total satisfaction.

Similar happen with the HA. It is a criterion which is in the area of transferring funds. It presents lower attach and importance from Municipal Roll-Registry Office. From the improvement diagram the citizen's are not so demanding and the improvement affect little the total satisfaction.

For the MW there no attach, the citizens are demanding and the improvement bring huge total satisfaction. It must be the first priority for the Municipality. The same happen with CL which must be the second priority for the Municipality.

The action diagram should always be analyzed in combination with the improvement diagram, because even though it shows which characteristics should be improved, it cannot ensure the results of this improvement and the efforts required to bring about these changes.

Analysis of Subcriteria

The analysis of individual satisfaction dimensions confirms the conclusions of the previous analysis and indicates the features that are the strengths and weaknesses of the municipality. Generally, the performance of the municipality is fairly high in those dimensions of satisfaction that citizens consider important, but there are sub-criteria to be improved, as will be seen below (Table 5).

TABLE 5. RESULTS OF SUB- CRITERIA

Criterion	Subcriterion	Weight (%)	Average satisfaction index (%)	Average demanding index (%)	Average effectiveness index (%)
C.S.C.	Employees' Skill and knowledge	4,37	95,56	-9,73	0,88
	Employees' Courtesy	4,3	82,38	-7,08	0,76
	Employees' Intention to service	4,47	82,24	-11,91	0,79
	Fast and accurate Service	4,37	74,35	-9,73	1,12
	Facility	4,62	77,71	-12,61	1,03
	Employees' Friendliness	60,29	96,75	-93,41	1,96
	Office hours	4,41	87,77	-8,8	0,54
	Adequate staff	4,09	57,78	-2,81	1,73
	Service Time	4,47	78,86	-11,91	0,94
	Setting CSC	4,62	75,45	-12,61	1,13
MRRO	Employees' Skill and knowledge	60,13	98,54	-88,82	0,88
	Employees' Courtesy	4,41	91,01	-8,76	0,40
	Employees' Intention to service	4,59	89,98	-8,91	0,46
	Fast and accurate Service	4,21	87,06	-4,59	0,54
	Facility	4,21	86,31	-4,59	0,58

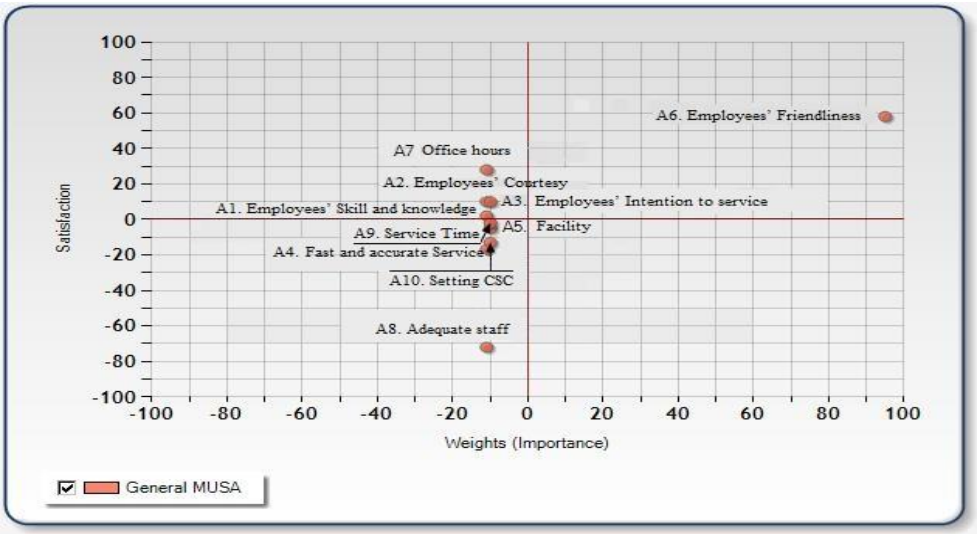
	Employees' Friendliness	4,24	90,15	-3,86	0,42
	Office hours	4,51	91,56	-10,89	0,38
	Adequate staff	4,33	66,71	-6,19	1,44
	Service Time	4,55	86,73	-14,25	0,60
	Setting MRRO	4,83	73,7	-16,01	1,27
CL	Frequency of collection garbage	12,66	80,22	-51,64	2,50
	Cleanliness of island	13,96	75,61	-48,96	3,40
	How to troubleshoot problems with cleanliness	11,83	74,83	-57,08	2,98
	Adequate, location and cleanliness of bins	6,36	58,18	-21,6	2,66
	Recycling	5,15	31,4	2,87	3,53
	Adequate lighting	7,34	50,78	13,77	3,61
	How to troubleshoot problems with lighting	9,96	54,54	-11,11	4,53
	Maintenance network lighting	32,73	22,94	66,8	25,22
MW	Total municipal works	5,7	36,45	12,32	3,62
	Maintenance roads	5,56	38,5	10,11	3,42
	Maintenance of municipal buildings	26,83	82,66	-81,4	4,65
	Time implementation of MW	9,69	42,15	9,83	5,61
	Actual coverage needs	5,7	53,48	-13,4	2,65
	Contribution of environment protection	5,7	45,07	12,32	3,13
	Contribution of Tourist development	32,25	13,99	83,93	27,74
	Quality of projects	5,56	48,19	10,11	2,88
HA	Ability, knowledge and training staff	7,73	85,03	-47,48	1,16
	Courtesy and friendliness	6,13	87,5	-33,77	0,77
	Intention to service	4,71	82,49	-14,65	0,82
	Fast and accurate service	6,13	80,36	-33,77	1,20
	Offer inside and outside of the house	5,04	75,51	-18,97	1,23
	Employees' Confidentiality	4,78	78,24	-17,24	1,04
	Adequate staff	4,25	55,18	-3,57	1,90
	Frequency of visits	8,06	81,24	-51,27	1,51
	Employees' professionalism	6,13	79,48	-33,77	1,26
	Sense of Safety	47,04	94,22	-91,34	2,72

Subcriteria of Criterion 1

Regarding the *CSC*, all of sub-criteria show small variations in weight, except sub-criteria *Friendliness Employees* with corresponding weight 60.29%. This dimension has the greatest weight in this category, which is explained also by the corresponding high satisfaction index of about 96.75%. Is the comparative advantage of CSC. As a natural consequence, the pretentiousness of respondents in this criterion is too low (-93.41%). The remaining sub-range in average weight about equal to 4.5%, with the *Facility and Environment CSC* in the same position, come next in importance in terms of respondents, with corresponding weight for both 4.62% corresponding satisfaction rates are 77.71% and 75.45%. The relatively high satisfaction levels suggest non demanding citizens regarding specific sub with the corresponding demanding index equal for both to -12.61%. A similar analysis for the other sub-criteria is presented. Finally *Sufficient Staff* appears in the last position of significance, with a weight equal to 4.09% and the average satisfaction index gets lower than the indices of the other sub-criteria value, 57.78%. In contrast, the index demanding of the subheadings is the highest of the demanding indicators of specific

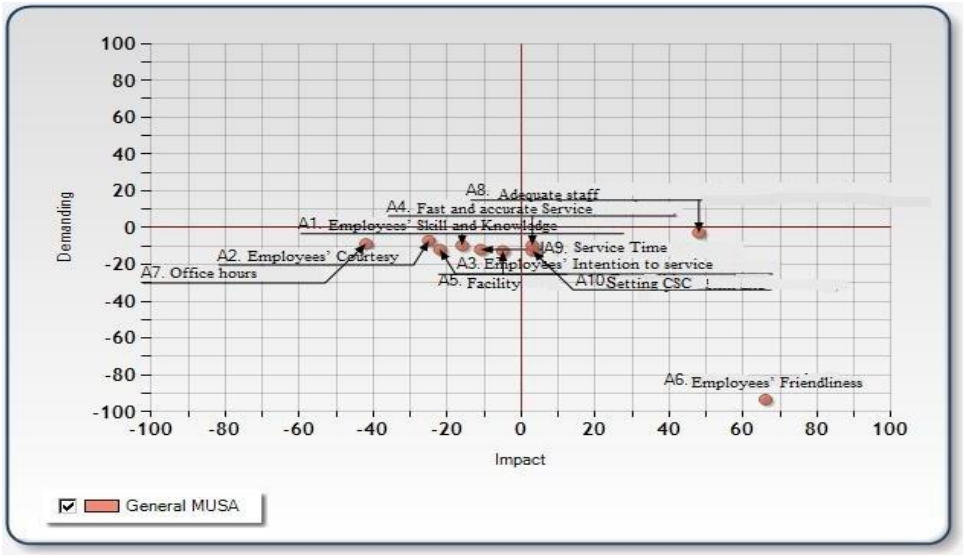
dimensions of satisfaction (-2.81%). Reassuring is the fact that no sub-criterion is not in the action area. Moreover, most in sub improvement diagram in the area with low efficiency / little effort and is second priority for the municipality. First priority is the *fast and accurate service*, the *environment of CSC* and sufficient numbers of staff who are sub that is low to moderate significance and value as a result of ameliorative energy will bring greater global satisfaction in CSC criterion. That is an increase of the existing number will result in faster service and hence accuracy and increase the satisfaction of respondents. Figures 8 and 9 present the action and improvement diagrams of the sub-criteria of CSC criterion.

FIGURE 8. ACTION DIAGRAM CSC



Source: Authors

FIGURE 9. IMPROVEMENT DIAGRAM CSC



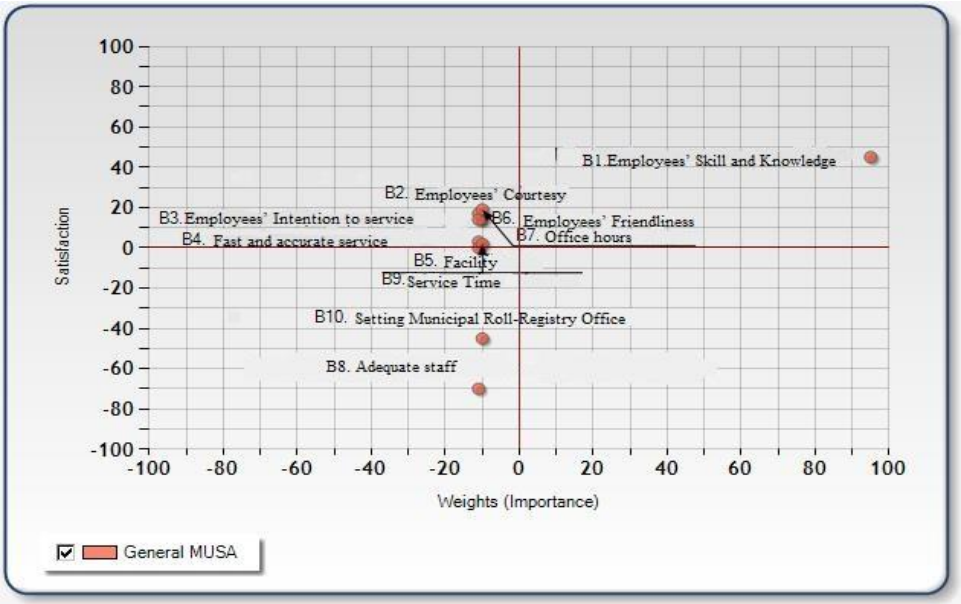
Source: Authors

Some studies concerned the CSC satisfaction (Manolitzas and Yannacopoulos, 2013; Yaghoubi et al, 2011). The first one in Greece, where citizens were satisfied with the CSC staff, as opposed to research conducted in Iran and involved similar centers. All investigations except VPRC institute made by the same method, the MUSA, and therefore the criteria were almost same noted that although the same methodology with almost same criteria differences. These are due to different geographical position was conducted (Iran, Greece, Skopelos) and in a different culture, mentality and culture of every country and party.

Subcriterion Analysis of Criterion 2

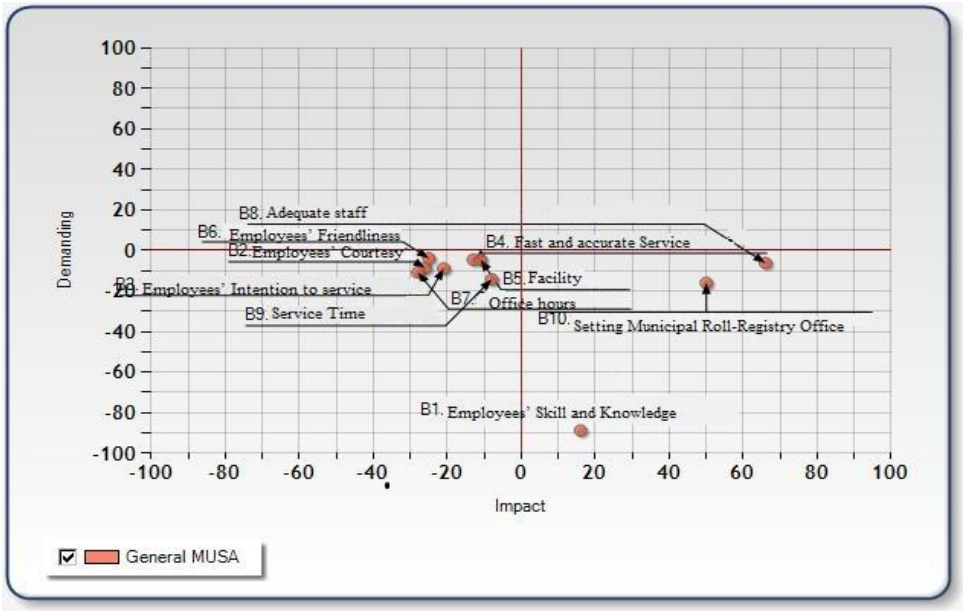
Regarding the *MRRO* criterion, we see that all of sub-criteria show small variations in weight, except sub-criteria *Capacity and staff knowledge* with corresponding weight 60.13%. This dimension has the greatest weight in this category, which is explained also by the corresponding high satisfaction index of about 98.54% and is the comparative advantage of Municipal Roll-Registry. As a natural consequence, the pretentiousness of respondents in this criterion is too low (-88.82%). The remaining sub-range in average weight about equal to 4.5%, with the *Municipal Roll-Environment Registry, Intention* and *Service Time* in the same position, to come next in importance in terms of respondents, with weights respectively 4.83%, 4.55% and 4.51% respectively .The satisfaction rates are 73.7%, 89.98% and 86.73 % but which is lower than the *politeness* 91.01%, 91.56% *Working Friendliness* and 90.15%. The relatively high satisfaction levels suggest non demanding citizens regarding specific sub demanding with the corresponding index for the Environment with -16.01%, the intention with -8.91% and -14.25% Time Service. Finally *Precision-Speed Facility* and appear in the last position of significance, with a weight equal to 4.21% and the average satisfaction index of 87.06% and 86.31% respectively, by but getting the lowest price, the sufficient number of 66.71%. The demanding index of the subheadings that are the higher is the friendliness with -3.86% .Be noted that here most sub improvement in chart are in the area with low efficiency / little effort and is second priority for the municipality. As a first priority is the sub located in the area of high efficiency / low effort and is the sufficient number of personnel to direct service and the surroundings MRRO. This makes sense because the number of employees is minimal (one employee) and the office space is small. So an increase of the existing number and a larger and more comfortable space would increase the satisfaction of respondents. Figures 10 and 11 present the action and improvement diagrams of the sub-criteria of MRRO criterion.

FIGURE 10. ACTION DIAGRAM MUNICIPAL ROLL-REGISTY OFFICE



Source: Authors

FIGURE 11. IMPROVEMENT DIAGRAM MRRO



Source: Authors

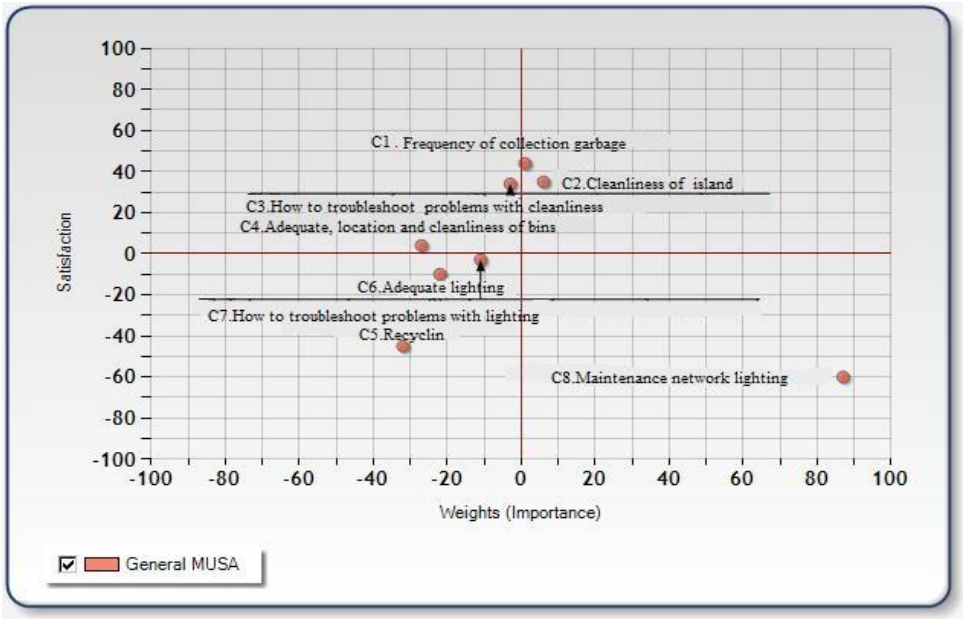
Subcriterion Analysis of Criterion 3

CL consists of eight individual sub-criteria. The results are more heterogeneous than in previous cases. Dominant subheadings have the sub-criteria *Maintenance Lighting networks*, with corresponding weight 32.73%. However, the average satisfaction index is the lowest 22.94%, which indicates strong dissatisfaction of respondents. There should be improvement. In particular, the sub-criterion demanding index is fairly high 66.8%, which means that the residents are particularly demanding. The highest

satisfaction accrues sub-criteria *Frequency garbage collection* with 80.22% and the cleanliness of the island with 75.61%. The corresponding weights are 12.66% and 13.96%, while for both sub respondents are not demanding - respective indicators -51.64% and -48.96% -. Satisfaction with the *recycling program* and *island lighting* are the lowest percentages of 31.4% and 50.78%, by weight of 5.15% and 7.34% respectively while the residents demanding state with rates of 2.87% and 13.77% respectively. In the other sub-criteria are not demanding. We note here that most are sub-areas with second priority. The *Maintenance of lighting* networks are in the area with high efficiency and great effort, i.e. the activity area so it is very important subheadings, but which derive a very low yield and the yet to be improved. Everything else (except Lighting Island and recycling program is the third priority area with low efficiency and great effort) is in a region of low efficiency and little effort.

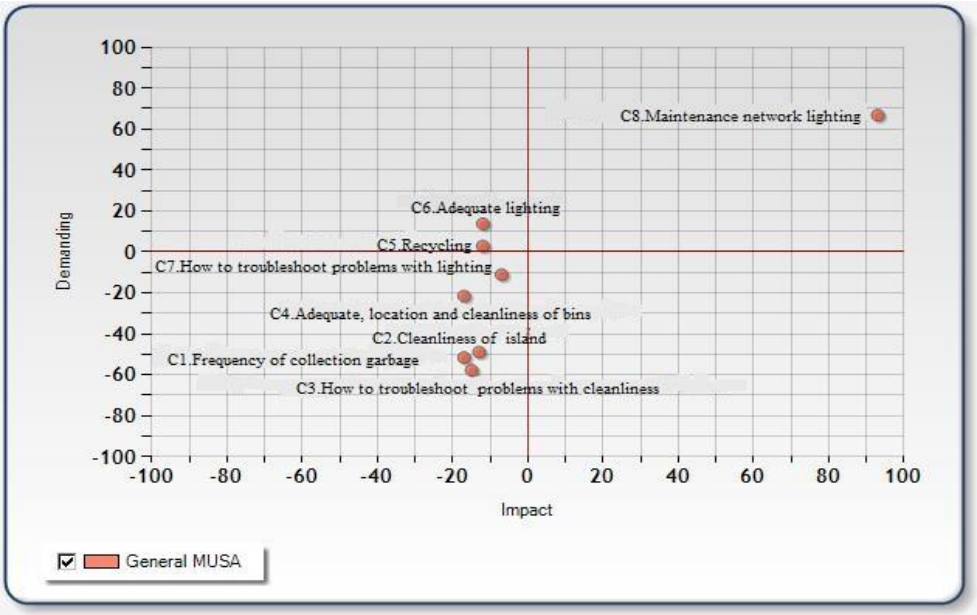
The only research that dealt with sub as lighting, recycling, roads, cleanliness was the research conducted in Wales (Irsos Mori, 2006) where results were unlike ours. There the people were quite satisfied. Figures 11 and 13 present the action and improvement diagrams of the sub-criteria of CL.

FIGURE 12 : ACTION DIAGRAM CLEANLINESS-LIGHTING



Source: Authors

FIGURE 13. IMPROVEMENT DIAGRAM CLEANLINESS-LIGHTING

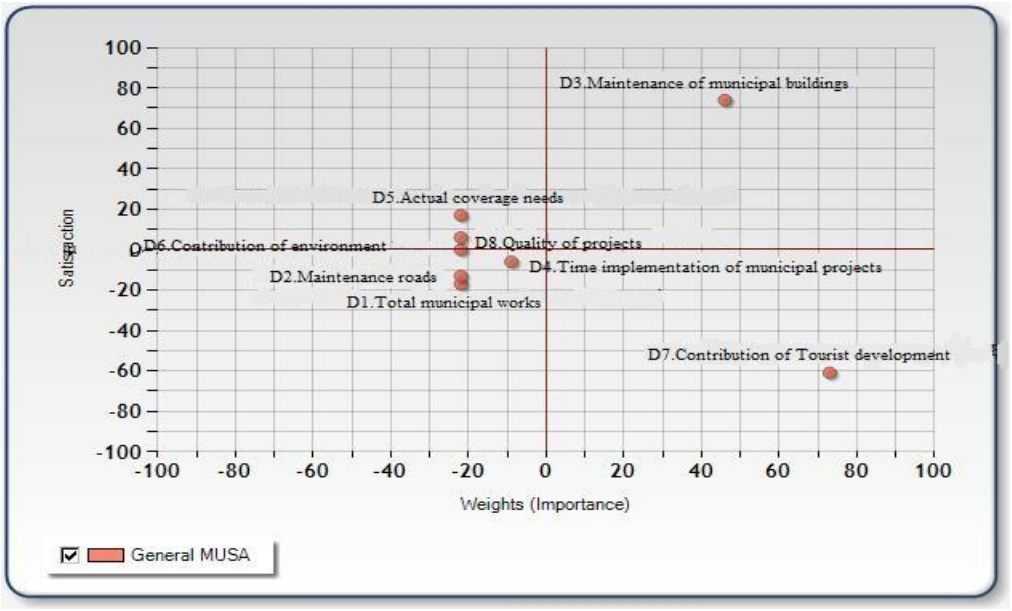


Source: Authors

Subcriterion Analysis of the Criterion 4

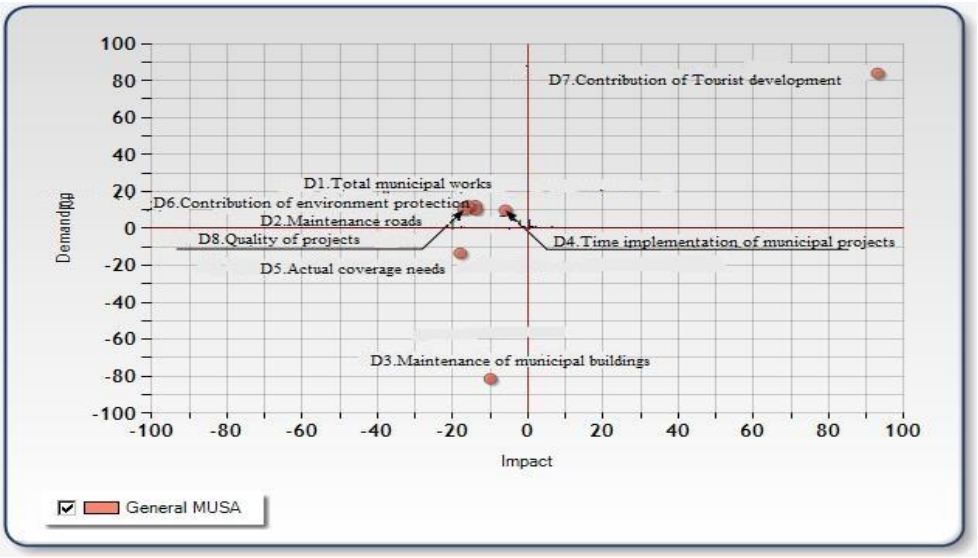
MW consists of these eight individual sub-criteria. The results show great heterogeneity and here just as in the previous case. Dominant subheadings have the sub-criteria *Contribution works on tourist development*, with a corresponding weight of 32,25%. However, the average satisfaction index is lower by 13.99% -which indicates strong dissatisfaction of respondents. There should be improvement. In particular, the sub-criterion demanding index is fairly high 83.93%, which means that the residents are very demanding. The highest satisfaction accrues sub-criteria *Frequency municipal buildings* with 82.66% and the actual coverage needs of the projects executed with 53.48%. The corresponding weights are 26.83% and 5.7%, while for both sub respondents are not demanding – respective indicators -81.4% and -13.4% -. The satisfaction of the other dimensions is between 36 and about 48%, with small weights 5.5% but the citizens are demanding. We observe that for most sub in the area with a third priority, low efficiency / high effort, contribution to tourist development projects is the second priority with high efficiency and great effort while *municipal projects maintenance* and the actual coverage of needs is also in second priority but with low efficiency and low effort. Figures 14 and 15 present the action and improvement diagrams of the sub-criteria of MW criterion.

FIGURE 14. ACTION DIAGRAM MUNICIPAL WORKS



Source: Authors

FIGURE 15. IMPROVEMENT DIAGRAM MUNICIPAL WORKS



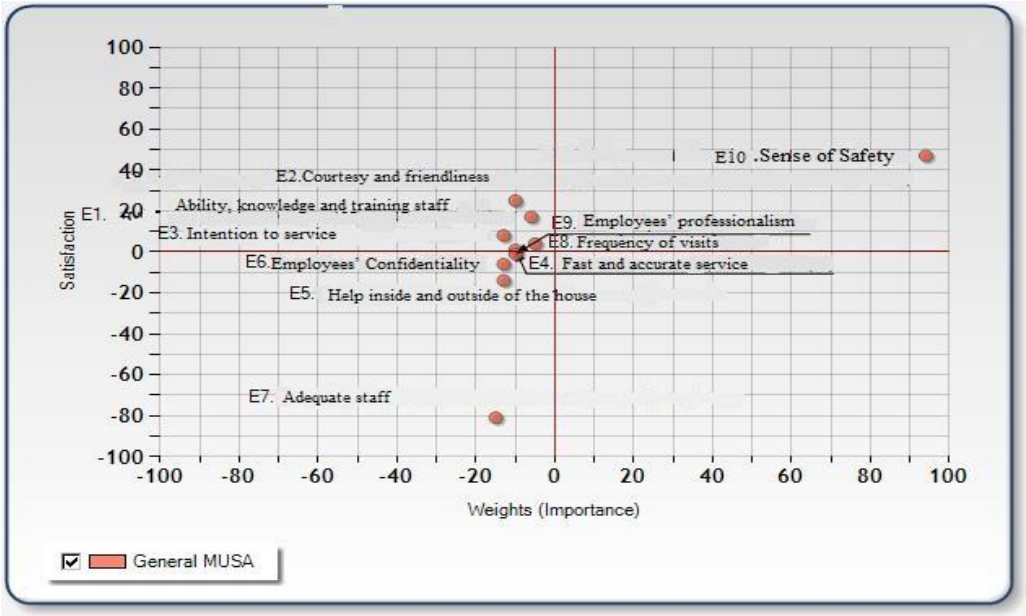
Source: Authors

Subcriterion analysis of the criterion 5

Regarding criterion *HA*, all of sub-criteria exhibit their small variations in weight, except sub-criteria Safety Sense that you are offered an equivalent weight of 47.04%. This dimension has the greatest weight in this category, which is explained also by the corresponding high satisfaction index of about 94.22%. It is the comparative advantage of this dimension. As a natural consequence, the pretentiousness of respondents in this criterion is too low (-91.34%). The remaining sub-range in average weight about

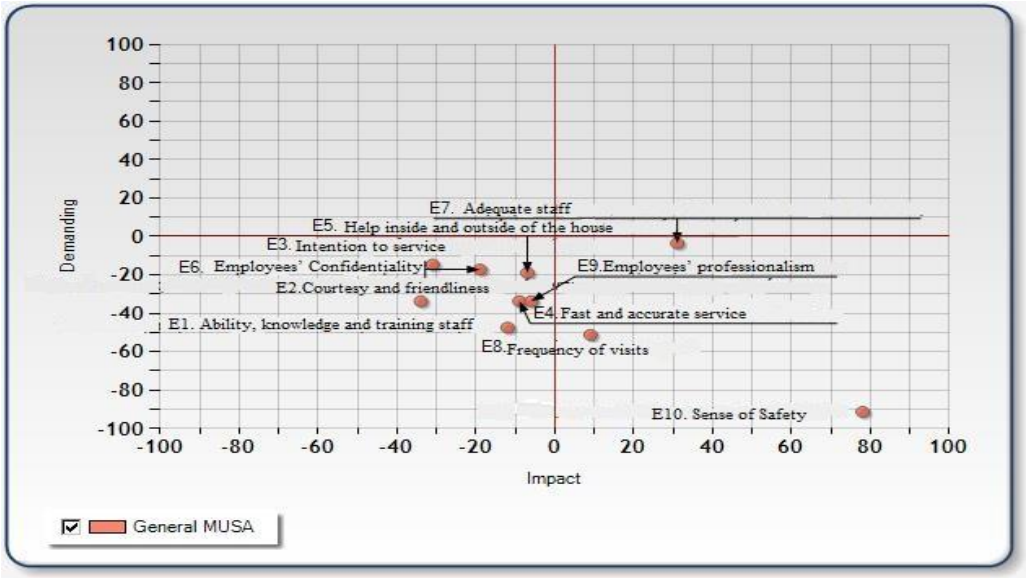
equal to 6.3%, with the *frequency of visits and capability, knowledge and education officials* to come next in importance in terms of respondents, with corresponding weight 8.06% and 7.73% respectively the satisfaction rate is 81.24% and 85.03% which is the immediately higher. The relatively high satisfaction levels suggest non demanding citizens regarding specific sub with demanding index equal to -51.27% and 47.48%. Finally Sufficient Staff appears in the last position of significance, with a weight equal to 4.25% and the average satisfaction index gets lower than the indices of the other sub-criteria value, 55.18%. In contrast, the demanding index of the subheadings is the highest of the demanding indicators of specific dimensions of satisfaction (-3.57%). Reassuring is the fact that no sub-criterion is not in the action area. Moreover, most in sub improvement diagram in the area with low efficiency / little effort and is second priority for the municipality. Figures 16 and 17 present the action and improvement diagrams of the sub-criteria of HA criterion.

FIGURE 16 : ACTION DIAGRAM HOME ASSISTANCE



Source: Authors

FIGURE 17. IMPROVEMENT DIAGRAM HOME ASSISTANCE



Source: Authors

Finally, the views of citizens on public services and the rate of overall satisfaction of them, both in this research and in the past, are positive. The only survey the opinion of citizens was negative, the citizen satisfaction measurement of the provided municipal services conducted in Turkey (Akgul, 2012). Also, a negative result had the survey conducted in Brazil in the health sector (Gouneia et al, 2005).

By ending this session, we could support that it is logical that studies measuring citizen satisfaction from the services offered by a municipality to differ. Each study attempts to address the issue according to the specificities of each municipal entity. One feature that sets the level of satisfaction in Turkey or Thailand can not respect a European municipality due to completely different conditions. Certainly, many of the criteria are common to all studies (eg, gender, age, education level, etc.), while some are quite specialized (eg which part of the municipality of residence of the citizen). Also, there are reasonable differences in the services chosen by the researcher to document the assumptions and functions. Another is the specific gravity of a service such as " Home Assistance" in a municipality of Greece and another in Turkey (which can be the particular service is non-existent). What is common in all studies, apart from the methodological approach, is that the issue *Satisfaction* is common, since everyday life is directly affected by the services (and quality) of the municipality living. All studies show that citizens have the "wisdom" to rank the priorities that affect them and how to tell them what decision-makers should be improved, what is a priority and how effective the operation of the municipality. This is the utility of these studies and therefore should be encouraged to carry out their.

CONCLUDING REMARKS

The aim of this study is to identify the criteria, through the model MUSA, that affect the global satisfaction of citizens with the services of the municipality of Skopelos, find the strengths and weaknesses of it and propose ways to improve patient criteria.

The results show, that citizens of the Municipality presented largely satisfied with all services, with partially or fully satisfied touching the 70.17% of the total respondents. More specifically, high levels of satisfaction achieved by both services and CSC- MRRO, and the HA. The presented some levels of dissatisfaction regarding services related to CL and MW. More particularly, regarding main criteria analysis:

CSC is the comparative advantage of the municipality. It is the most important evaluation criterion, which simultaneously brings together the highest performance from the municipality. Accordingly, the dimensions HA and MRRO are moderate significance criteria but who have high performance. Finally, the dimensions CL and MW are those for which respondents are presented less satisfied and consider it less important. As a logical consequence, any improvement actions should take place primarily relate to the CL and MW and CSC and then the other dimensions of satisfaction.

Several recommendations that would improve services aimed at meeting the citizen is to measure the satisfaction of them, explore their needs and expectations as well as processing them and delivering results. The next phase is the design of the improvement proposals and implementation of these last. The important is all these phases can be repeated and controlled. This task could be considered part of the first phase. Could there were also open questions as to mention the two most common problems faced by citizens and suggestions for improvement. The proposed methodology deals with the degree of Local Authorities and public services capacity to plan evaluate and offer efficient and quality services to local community.

In this framework basic proposals related to mobilization of citizens to participate in the same configuration of service. The organizing capacity of public authorities and organizations should focus on the identification of the real needs of citizens and expectations should be made in a number of ways to measure the satisfaction of the principle. This can be done by conducting polls, surveys and questionnaires and posting in newspapers as did the present study, research through the website of the municipality, recording complaints in application forms will be collected at the most popular spots in cans complaints, operation dedicated phone line complaints and requests for meetings with various clubs, groups and organizations on the island etc.

Furthermore, this study provided an overview of the concept of local government identified the dimensions / criteria that affect the overall satisfaction of citizens with the services provided by the municipality. Focused on the measurement of citizens' satisfaction a number of factors that identified the

strengths and weaknesses of which were suggestions for improvement of services. So the objectives set by the beginning of the investigation carried out. Similar surveys in Greece, for municipalities, are minimal so far. Of course in the near future such investigations deemed necessary and will be continuous since the Public Administration is trying to change the way that development actions and policies in order to face several local problems. The reform is most needed. The Public Sector is changing and becoming more customer-centric. The application of the philosophy of TQM in Public Services is a fact in order Local and Regional Authorities to become more efficient oriented contributing through this way to the social but also to the economic development locally. This study provides the scientific and practical framework in order to become a pilot guide methodology for pubic authorities' capacity and operational improvement in national scale.

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