E-GOVERNMENT POLICY ADMINISTRATION: THE CASE OF GREECE

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Abstract

The information and communication technologies are recognized over the last decade as a key driver of modernization of public administration and e-government has become a key concern of Governments. In the present study the problem that is examined is the issue of effective administration of e-government policy in the public sector and more specifically in the Greek public sector. It is carried out through the fields of the organization, design, management, planning and control of the electronic services. Its purpose is to show the value and benefits of the proper application of e-government policies in the public sector through the existing literature review and with the help of a questionnaire which was distributed to a sample of sixty public officers. Finally, it makes an attempt to provide solutions, recommendations and suggestions for the improvement of e-government policy administration in the Greek public sector, as well as, for the future opportunities of Greek e-government policies. The transition of the Greek public administration in the information society is a difficult undertaking that will lead to the consolidation of e-government and the existence of a new relationship between citizen and State.

Keywords:e-government, Policies, Greek, Public, sector, administration, state

Introduction

Explosive growth in Internet usage through the introduction of fibre optic technology has put growing pressure on the public sector to serve citizens electronically. In the present study the problem that is examined refers to the issue of effective administration of e-government policy in the public sector and more specifically in the Greek public sector. This study makes an attempt to shed light on the value and purpose of applying e-government policies in public organizations as well as the main issues related to it. It tries to explore if, the way e-government policy is administered in the Greek public sector, meets its purposes. The international experience shows that there is a considerable gap between the availability of on-line public services and their take up by citizens. Administrators now make attempts to design better and more citizens-centric services. They adopt on-line services which are proximate to citizens, easy and available at all times. They consider important to accelerate e-government with a view to modernization and innovation and they believe that the public sector would achieve considerable gains in efficiency, through innovative use of technology.

The aim of this study is to investigate how e-government policy is administered in the Greek public sector, on the basis of technological innovations and applications which occur in the new globalize era. It intends to demonstrate the objectives of the implementation of e-government as well as the value and the advantages of its proper application. It also tries to show what are the main problems, barriers and difficulties and finally to provide the recommended solutions for its proper application in the Greek public administration.

The most fundamental conclusion of this assignment is that despite the undertaken e-government initiatives by the Greek Government, the methods and results of activities as well as understanding of user needs are insufficiently developed. Greek Government has to face public administration problems, obstacles and failures in order to make the public on-line services more convenient, friendly, accessible and addressing the needs of citizens. It has to adopt e-government policies that will lead to the formulation of a new, more dynamic relationship between the citizen and the Greek State. Finally, it has to provide the initiatives that will increase the active participation of citizens in the administration of the Greek e-government policy.

How e-government is administered in Greek public sector: a general approach

Greece is to a large extent a developing economy and it is interesting to study, how it is keeping up with e-government objectives. The current title of the "Ministry of Interior, Public Administration and E-Government" shows how much value the Greek Government places to that direction. It reveals particular importance to promoting the information society in Greece. Its overall e-government strategy is based on some basic objectives: to become the agent of change contributing to reform and modernization of public agencies, to bring about a more advanced form of society - *the information society -,* and, to reduce the existing bureaucracy in the Greek public sector. These objectives set the purposes of e-government in Greece[4].

The adoption of an open and effective government offers better services to citizens and businesses. The creation of an environment which encourages new employment opportunities contributes to faster economic growth,

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through fostering industrial innovation, creating new businesses and increasing the productivity and competitiveness. E-government can be a major contributory factor in reforming and modernizing the Greek public sector and actually becoming the agent of change[5]. The creation of an educational system adapted to the requirements of the digital age, the application of new technologies in health, the environment and the transport can bring about a better quality of life and a more advanced form of society, the information society[6].

Greece is taking on the challenge to enable a step change in its information society performance. It is prioritizing its investment in information technologies to become more competitive. Its efforts have lead to a stable and relatively high e-government usage among business but its use by citizens has stalled and on-line availability remains below the European Unions average. According to Eurostat, by the year 2009, there were the following Information Society Indicators in Greece[7]:

- Percentage of households with a broadband connection: 33 % (2009)
- Percentage of enterprises with a broadband connection: 84 % (2009)
- Percentage of individuals using the Internet for interaction with public authorities: obtaining information 10.7 %, downloading forms 5.7 %, returning filled forms 4% (2009)
- Percentage of enterprises using the Internet for interaction with public authorities: obtaining information 65 %, downloading forms 61 %, returning filled forms 61 % (2009)

  These results show that despite the undertaken e-government initiatives by the Greek Government, public sector's management methods and procedures are still inefficient, full of inherent weaknesses. The most crucial reasons of the limited impact of e-government in the Greek public sector are the computer illiterate population, the bureaucratic structure of public administration, the fragmented implementation of projects by the public sector, the lack of interoperability between systems and applications resulting in inability to provide complete services, the complex Greek institutional framework and the adoption of incomplete logistics by public organizations.

Greek Government has to face public administration problems, failures and controversies to effectively manage and fully utilize the potentials that the new technologies offer in order to improve public sector services. A modern education system is suggested with the following goals:

- Training all teachers in the use of new technologies and encouraging them to exploit new technologies in the classroom. New technologies redefine and upgrade the role of the teacher in the education system. Far from simply imparting dry knowledge to the students, the teacher can become an instructor in the pursuit, processing and production of knowledge. Students must

acquire the ability to explore, seek, discover, collect and produce information. They should learn to learn, adapting to a society which requires life-long training and education.
- Improvement of infrastructures and communication networks in schools. Development of suitable multimedia applications and creation of links to digital libraries. Familiarization of students with the use of new technologies.
- Lifelong training. The Greek Open University is particularly suitable for this. Furthermore, centers for distance education should be established.

The digitization and better structuring of the huge volume of information possessed by Greek public administration will reduce the existing bureaucracy and ensure a more effective administration, greater transparency and democratic participation of citizens in matters of public interest. The state has an important regulatory role to play. This role is to guarantee the functioning of democracy and constitutional freedoms, access of all citizens to the new communication media and services and the protection of the privacy in transactions between citizen and State[10].

Greek Government must include in its e-government strategies efforts to develop projects that are compatible with its nation's telecom infrastructure. It should introduce telecom competition and lift regulations on wireless and other digital technologies to accelerate their deployment. It should consider the government's current use of technology and learn from past successes and failures. Budgetary frameworks can restrict e-government initiatives. Information and communication technologies expenditure should be treated as an investment, recognizing future benefits and providing a degree of certainty for future funding[11].

There should also be strategic investment by the Greek Government. It should define clear goals and catalogue all its available recourses. It should make short and long-term plans, with expected expenditures, income streams and deadlines, designating an organizing body that will oversee planning and budgets. Projects must be chosen carefully. They should have clear value in terms of enhancing transparency, increasing citizen participation in the governance process, cutting bureaucratic mechanisms and saving money[12].

Methodology
3.1 Research design
This essay is a policy study based on an empirical research through the distribution of a questionnaire.

It is a qualitative research, which is by definition exploratory and it is used when we want to define a problem or develop an approach to the problem. Its aim is a complete, detailed description. No attempt is made to classify features, count them, and even construct more complex statistical models. A qualitative approach is also used for data analysis.

The aim of our research is to develop an understanding of e-government and exploration of how is administered in

 Capgemini, IDC, Rand Europe, Sogeti and DTi, (2010), Digitizing Public Services in Europe: Putting Ambition into Action – 9th Measurement, Directorate General for Information Society and Media, EC, http://www.bka.gv.at/DocView.axd?CobId=42590
 European Commission, (2006), "I-2010 E-Government Action Plan: Accelerating E-Government in Europe for the Benefit of All", COM 173, Brussels, http://ec.europa.eu/information_society/eeurope/i2010/index_en.htm
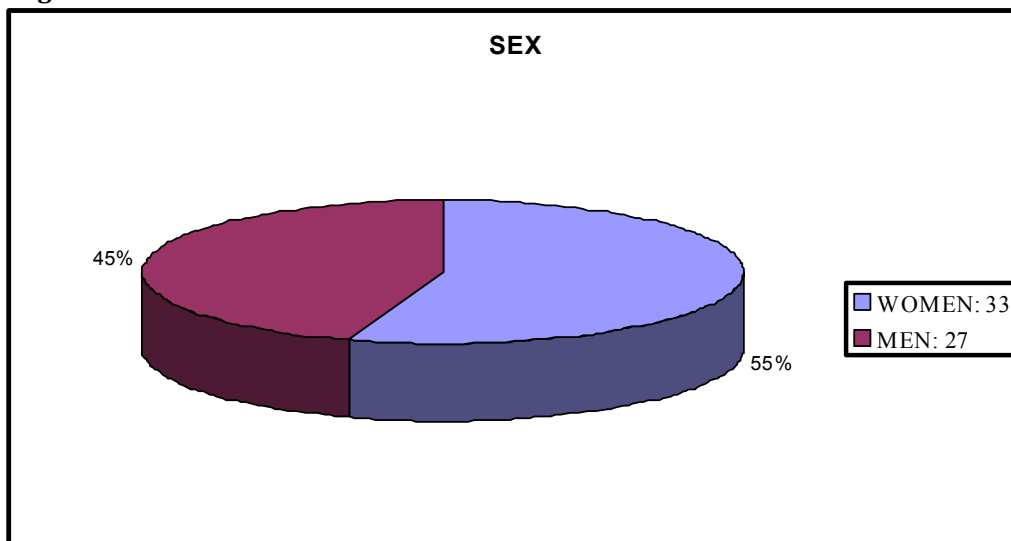
Greece, in order to be highlighted possible problems and other issues.

the present research. This analogy is illustrated in Figure 1 below.
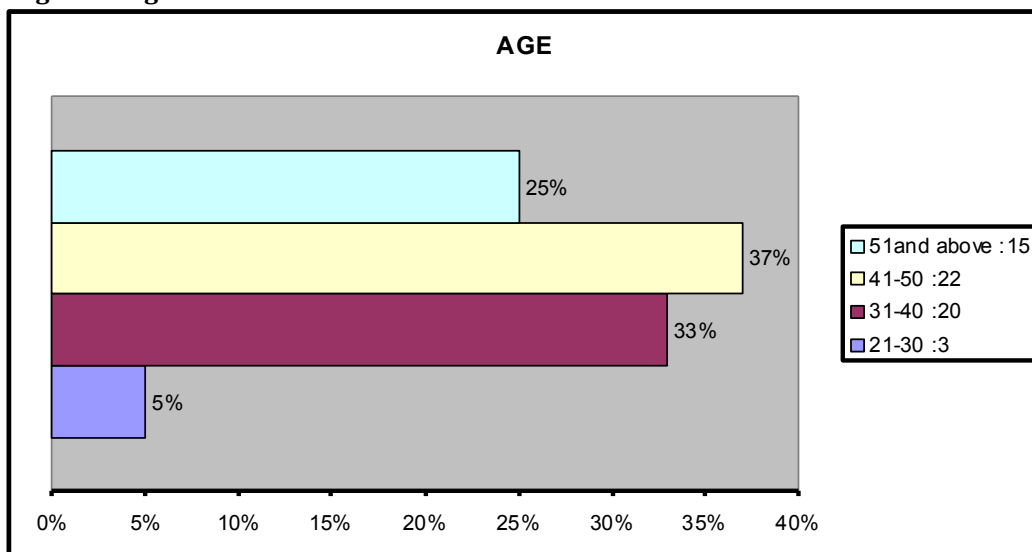
3.1.1 Description of the sample

Sixty public servants, thirty – three women (55%) and twenty – seven men (45%) constitute the sample of participants in
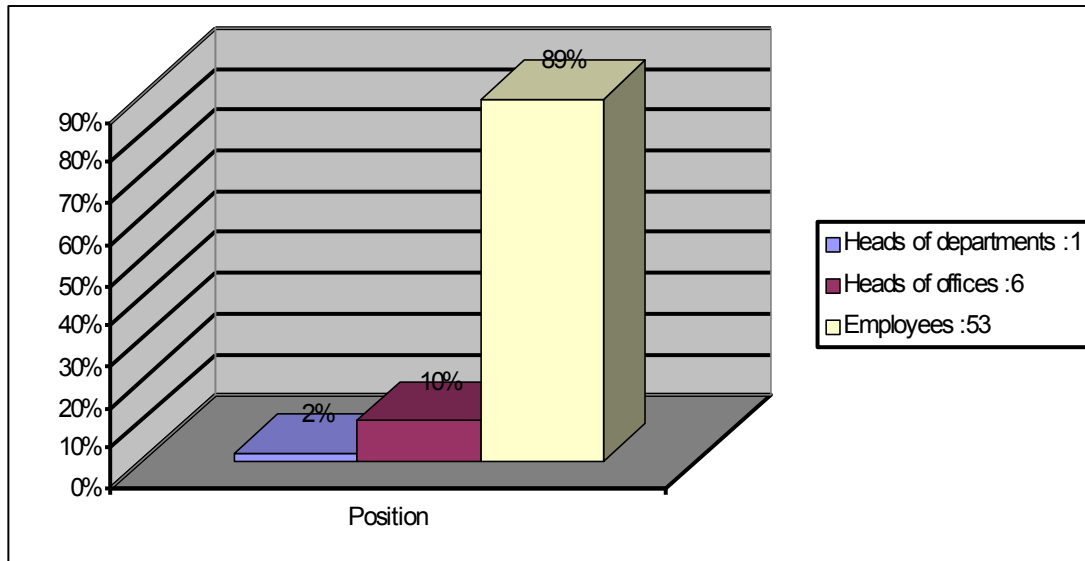
Figure 1: Sex

As for their age, three (5%) are between 21-30, twenty (33%) are between 31-40, twenty-two (37%) are between 41-50 and the other fifteen (25%) are over 51 years old (see Figure 2).

Figure 2: Age

"Greece in the Information Society: Strategy and Actions", (1999), http://unpan1.un.org/intradoc/groups/public/documents/untc/unpan001838.pdf

Gouscos D., Mentzas G. and P. Georgiadis, (2001), Planning and Implementing E-Government Service Delivery: Achievements and Learning's from On-line Taxation in Greece, http://74.125.155.132/scholar?q=cache:Fs5KGydaZRUI:scholar.google.com/&hl=el&as_sdt=0

"Greece in the Information Society: Strategy and Actions", (1999), http://unpan1.un.org/intradoc/groups/public/documents/untc/unpan001838.pdf

Figure 3: Position

3.1.2 Gathering of data

Data selection through questionnaires is the most popular method of conducting research. They are easily applicable, they are familiar to most people and they are less intrusive than telephone or face to face surveys. Their aim is to gather valid, reliable and unbiased data from a representative sample of respondents. We distributed the questionnaire to people who work in different public organizations so that a variability of information to be gathered. The research took place between December 10th 2010 and January 20th 2011, date on which the last questionnaires were submitted.

3.1.3 Instrumentation

In our empirical research we tried to design the questions of the distributed questionnaire carefully so that the answers given to produce the required information without influencing the people completing them. The questions were designed to serve the purpose of the present study and they were set in such a clear and precise way so that to be easily understood and reasonably quickly answered. We tried not to contain biased or leading questions and where responses in the form of multiple choice are provided , those responses try to cover every possible answer and do not force people to answer in a way that they do not wish to answer

3.2 Research Findings

Questionnaire

3.2.1 The presence of the Greek public administration on internet

In the first, open-ended question "Which of the following software do you use?", only three (5%) employees answered that they don't use any program. Fifty seven (95%) of them answered that they know how to write a text using the "Word", fifty one (85%) said that they know how to browse through the Internet but only thirty-seven (62%) of them know how to send an e-mail. Thirty-one (52%) employees use "Excel" and only thirteen (22%) know how to use other databases like "Access", "Autocad" or other programs (see Figure 4).
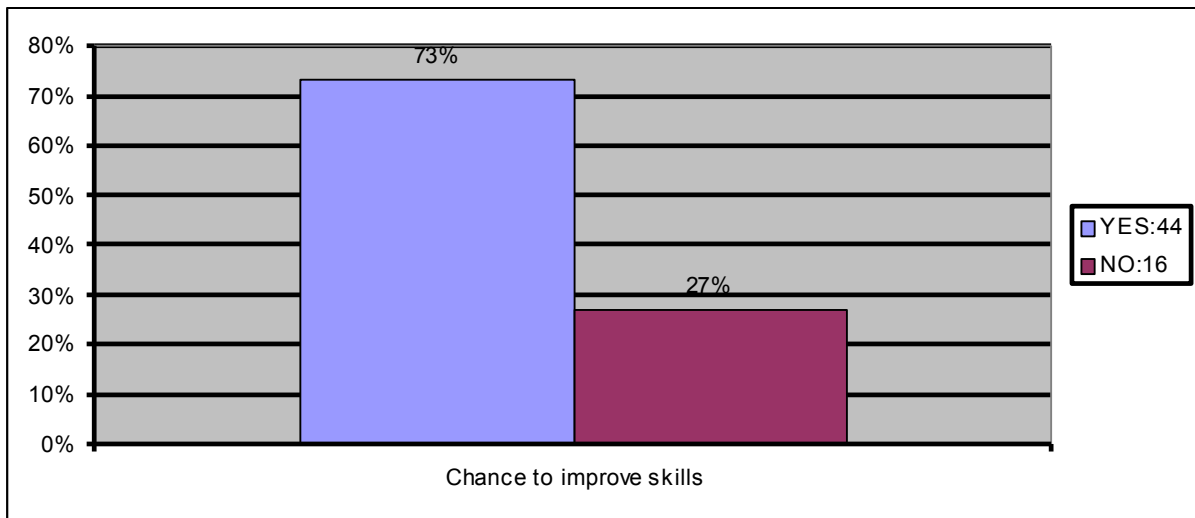
Figure 4: Software used

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[7]**European Commission,** (2010), "E-Government Fact-Sheets: E-Government in Greece", http://www.Observatory.gr/files/meletes/eGovernment_in_GR_April_2010_en.pdf
[8]**Boufeas G., Halaris I. and A. Kokkinou,** (2004), Business Plans for the Development of E-Government in Greece: An Appraisal , UNTC Occasional Papers Series, No.5
[9]"Greece in the Information Society: Strategy and Actions", (2002), http://www.epractice.eu/files/media/media_358.pdf

In the next, closed-ended question "Does the public organization in which you work give you the chance to improve your skill in using PCs and electronic communication?", sixteen people (27%) answered that they don't have this opportunity and the rest forty-four (73%) answered that they have this chance (see Figure 5).
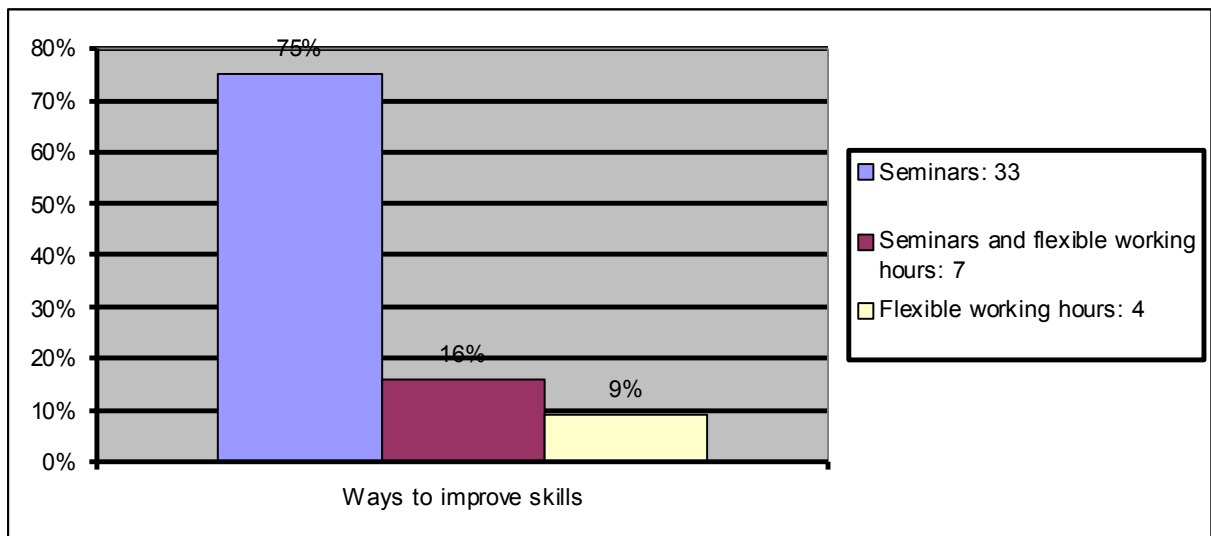
Figure 5: Chance to improve skills

Of the forty-four public servants who answered that their organization gives them the chance to improve their skill in using PCs and electronic communication, in the open-ended question, "In what way?", thirty-three of them (75%) mentioned that this was conducted through educational seminars, four of them (9%) through flexible working hours and seven of them (16%) through both seminars and flexible working hours (see Figure 6).

Figure 6: Ways to improve skills

In the following, closed-ended question "In your organization, do you have access to the internet?" fifty-five public officers (92%) answered "yes" and the rest five (8%) said "no" (see Figure 7).

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[10]"Greece in the Information Society: Strategy and Actions", (2002), http://www.epractice.eu/files/media/media_358.pdf
[11]As above

Figure 7: Access to the Internet

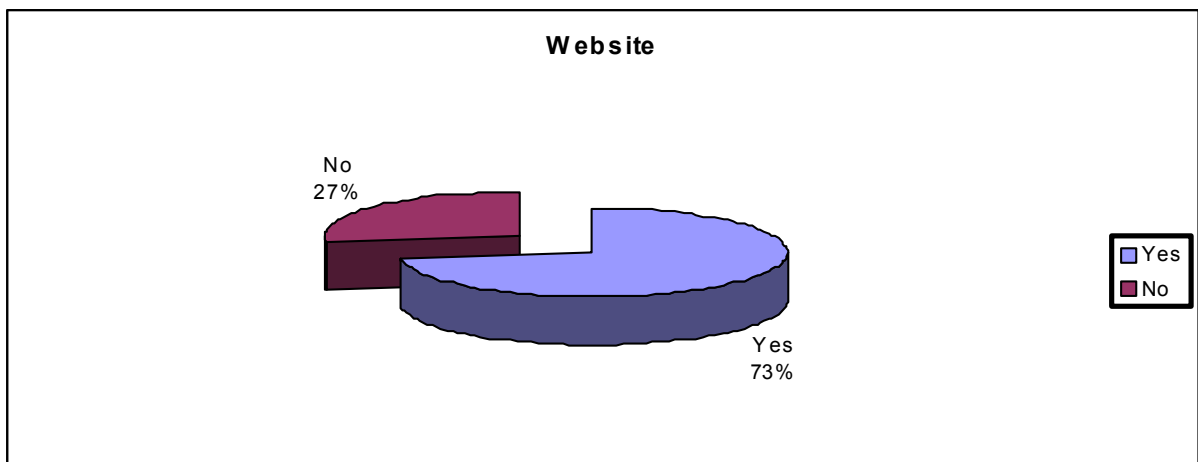**Access to the internet**

No
8%

Yes
92%

Yes
No

In the fourth, closed-ended question, "Does your organization have an e-mail address?" fifty-four of the interviewees said "yes" (90%) while the rest six (10%) said "no"(see Figure 8).

Figure 8: E-mail address

E-mail address

No
10%

Yes
90%

Yes
No

In the fifth, closed-ended question, "Does your organization have a website?" forty-four employees (73%) said "yes", while the rest sixteen (27%) said "no" (see Figure 9).

Figure 9: Website

Website

No
27%

Yes
73%

Yes
No

From the above organizations that have their own website, in the closed-ended question "What kind of services does your organization provide through its website?", forty of these organizations (91%) use their websites to provide general information and ways to handle administrative procedures and only four of them (9%) allow the citizens to download administrative forms and applications, submit administrative forms electronically and also complete their transaction, so as to fully substitute non on-line services (see Figure 10).

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[12]**Center for Democracy & Technology,** (2002), "The E-Government Handbook for Developing Countries",
http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan007462.pdf
[13]**Miles M. and A. Huberman,** (1994), Qualitative Data Analysis: An Expanded Sourcebook, Sage Publications Inc, 2nd ed.,California.
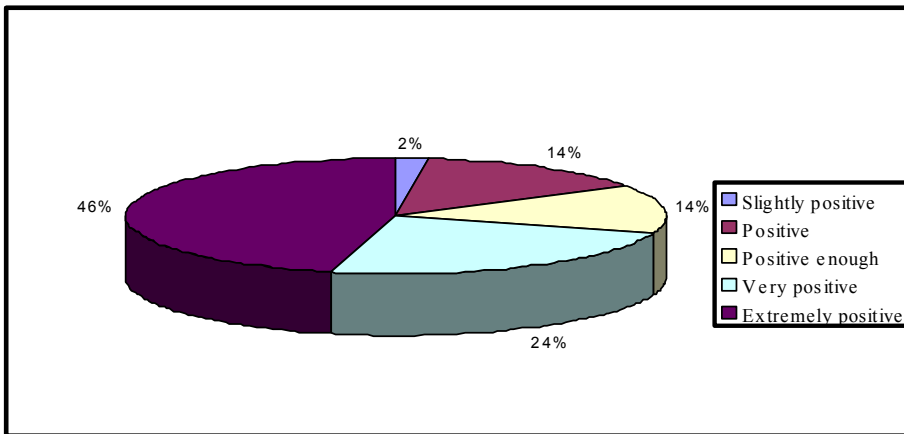
Figure 10: Services

3.2.2 The objectives of the implementation of e-government in the public sector

The majority of respondents (97%) answered "yes" to the sixth, likert-scale question, "Do you consider the electronic provision of public services to be a good thing for the citizens?". This percentage indicates that they support the use of e-government services. The extent to which they are positive is illustrated in Figure 11:

✓ Slightly positive 2%

✓ Positive 14%

✓ Positive enough 14%

✓ Very positive 24% and
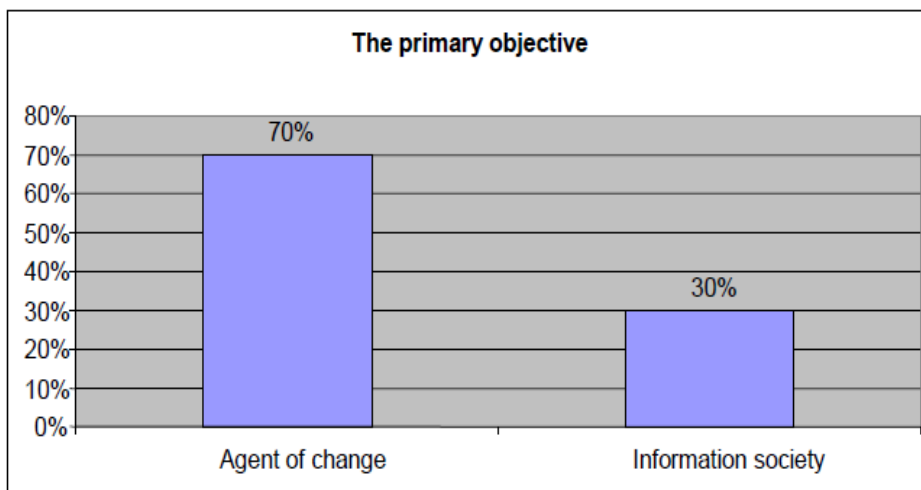
✓ Extremely positive 46%

Figure 11: People positivism towards e-government

In the seventh, open-ended question "Sort in order of priority the objectives of the implementation of e-government in the public administration", forty two people (70%) answered that the primary objective is to become the agent of change. It can be a major contributor to reform and modernization of public organizations. The rest eighteen (30%) said that it is to bring about a more advanced form of society, the information society (see Figure 12).

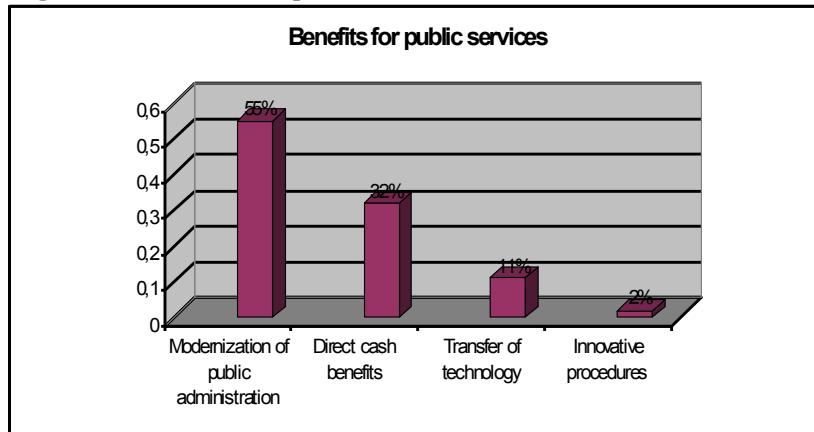**Figure 12: The primary objective of the implementation of e-government**

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[14]**McColl E., Jacoby A., Thomas L., Soutter J., Bamford C., Steen N., Thomas R., Harvey E., Garratt A., and Bond J,** (2001), "Design and Use of Questionnaires: A Review of Best Practice Applicable to Surveys of Health Staff and Patients", Health Technology Assessment, Vol. 5, No. 31

3.2.3 The advantages of the proper application of e-government in the public administration

In part A of the eighth, open-ended question, people were asked "Sort in order of priority the benefits of the proper implementation of e-government for public services". The majority of the questioned (55%) answered that the primary benefit is the modernization of public administration and the increase of the effectiveness of its services. 32% of the respondents said that the primary advantage deriving from the proper application of e-government is the direct cash benefits. There is a significant cost reduction in the publication and distribution of printed forms and a reduction of the time that civil servants have to spend to provide general information. 11% of the public servants mentioned as primary benefit, the transfer of technology and know-how among different public organizations, leading to increased productivity and competitiveness and the rest 2% said that it is the adoption of innovative procedures within the public administration, which will lead to the optimization of decision-making mechanisms (see Figure 13).
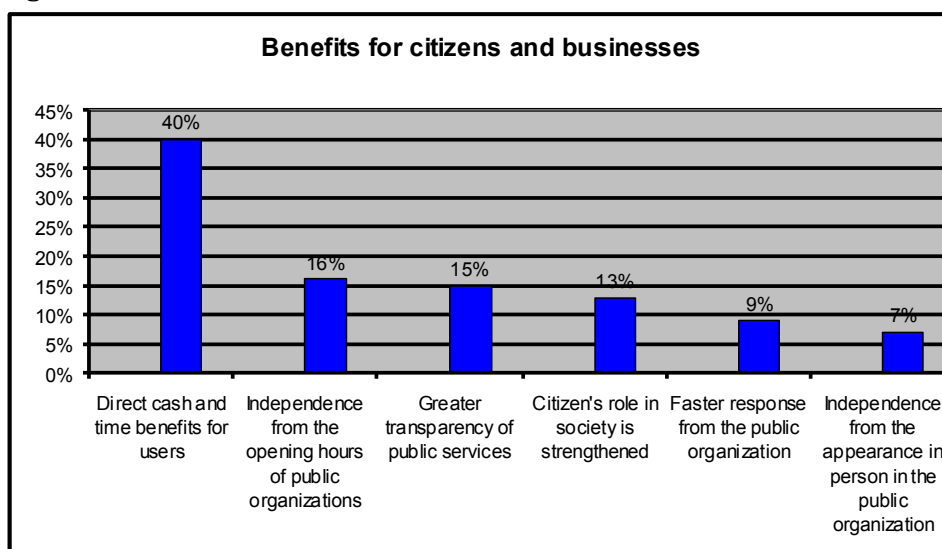
Figure 13: Benefits for public

In part B of the eighth, open-ended question, people were asked "Sort in order of priority the benefits deriving from the proper implementation of e-government for citizens and businesses". The majority of the interviewees (40%) answered that the primary benefits are the direct cash and time benefits for the users. 16% of them said that citizens do not have to depend on the opening hours of public organizations and 15% of the respondents mentioned that via the new technologies there is greater transparency in public services. 13% of public servants think that through the proper implementation of e-government, citizen's role in society is strengthened and 9% believe that via the internet and its applications there is a faster response from the public organization. Finally the rest 7% of the respondents consider as a primary advantage that citizens do not have to appear in person in the public organization (see Figure 14).

Figure 14: Benefits for citizens and businesses

3.2.4 The public servants' opinion about the Greek public websites

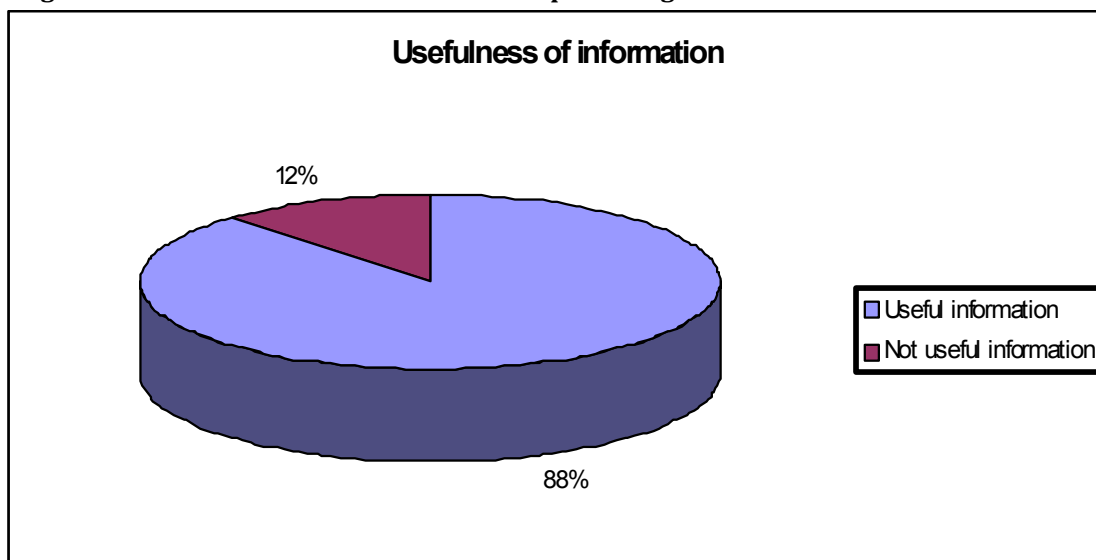The majority of respondents in the ninth, closed-ended question "Can websites of public organizations provide information that is useful for you (as a public servant, but also as a citizen in your personal affairs)?" answered, as Figure 15 illustrates, "yes" (88%). The rest 12% said "no". Those percentages indicate that people recognize the benefits that derive from the use of e-government services

[15]**Gouscos D., Mentzas G. and P. Georgiadis,** (2001), Planning and Implementing E-Government Service Delivery: Achievements and Learning's from On-line Taxation in Greece, http://74.125.155.132/scholar?q=cache:Fs5KGydaZRUJ:scholar.google.com/&hl=el&as_sdt=0
[16]"Greece in the Information Society: Strategy and Actions", (2002), http://www.epractice.eu/files/media/media_358.pdf

Figure 15: The usefulness of information of public organizations websites

Usefulness of information

- □ Useful information
- ■ Not useful information

In the following, likert - scale question, people were asked "On a scale from 1 to 5 (where 1=not at all, 2=a little, 3=good, 4=very good and 5=excellent) how would you rate the on-line websites of Greek public organizations?"

51% of the respondents believe that the ease of navigation of the on-line services is very good, 35% good, 10% not so good, 2% not good at all and the remaining 2% excellent (see Figure 16).
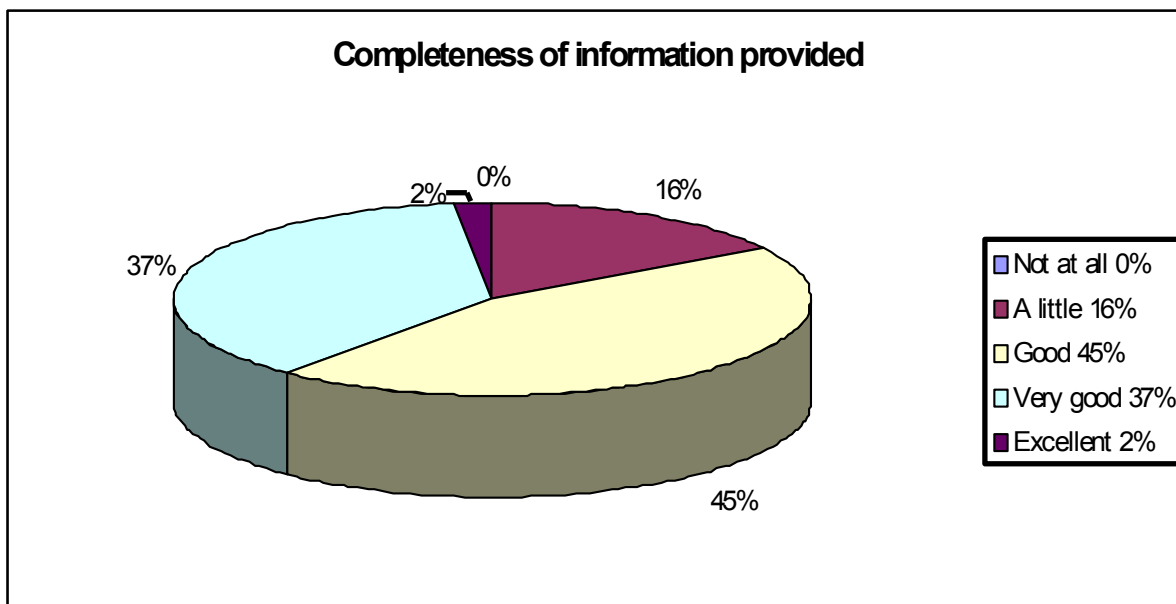
Figure 16: Ease of navigation of the on-line services

Ease of navigation

- □ Not at all 2%
- ■ A little 10%
- □ Good 35%
- □ Very good 51%
- ■ Excellent 2%

45% of the respondents believe that the organization and the arrangement of the material of the on-line services is good, 35% very good, 16% not so good and the remaining 4% not good at all (see Figure 18).
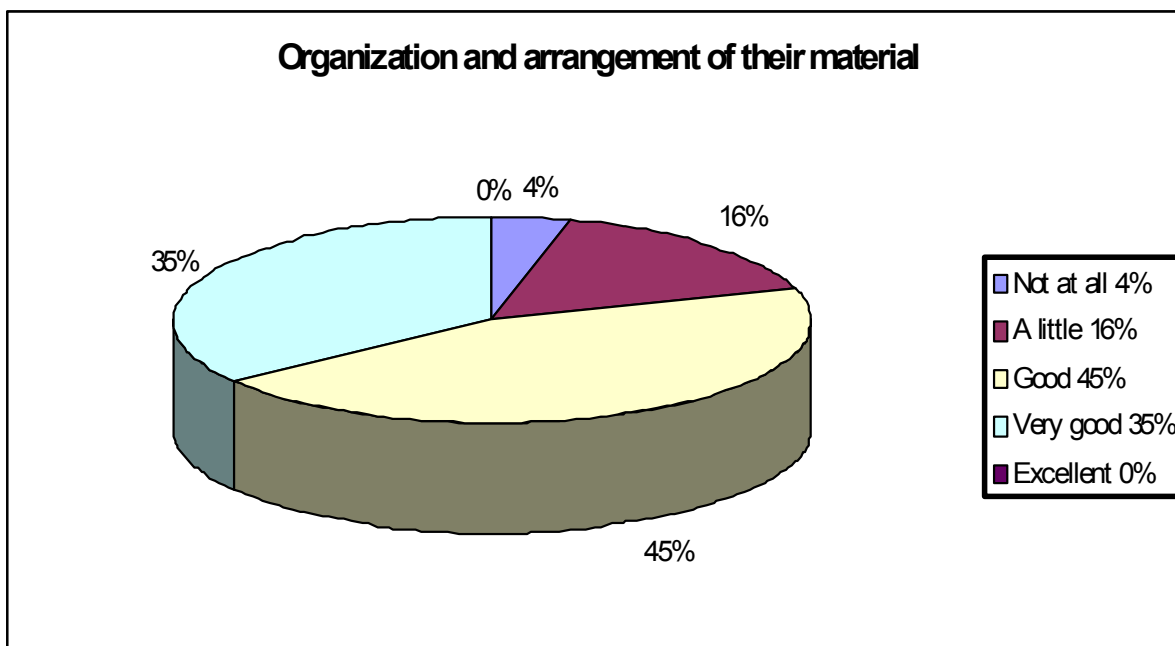
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[17]**Organisation for Economic Co-operation and Development (OECD),** (2004), OECD E-Government Expert Group Meeting, "The business Case for E-Government", 17 September, London, http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=GOV/PGC/EGOV(2004)3&docLanguage=En
[18]As above

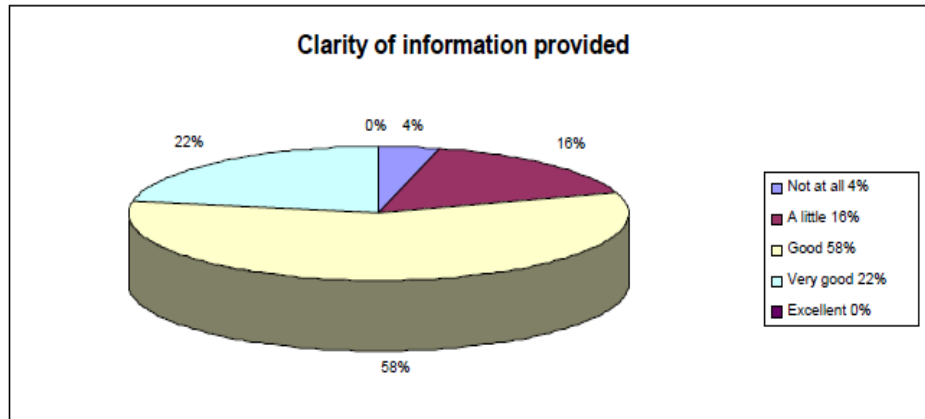**Figure 17: Completeness of information provided of the on-line services**

45% of the respondents believe that the organization and the arrangement of the material of the on-line services is good, 35% very good, 16% not so good and the remaining 4% not good at all (see Figure 18).

Figure 18: Organization and arrangement of their material, of the on-line services
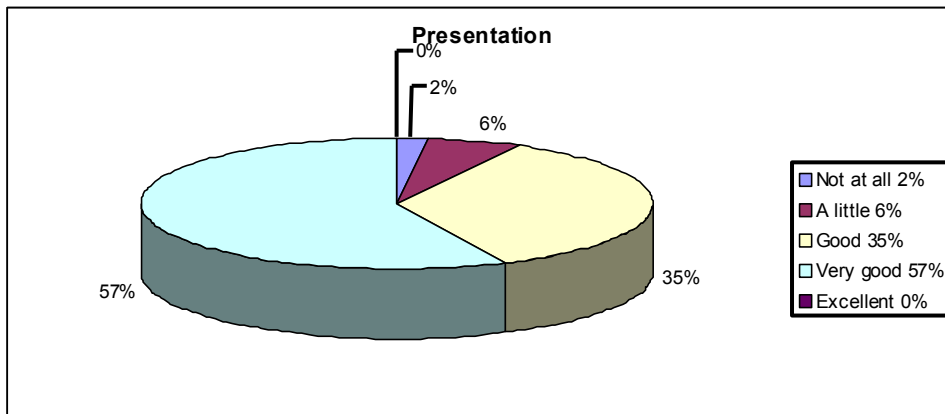
58% of the research participants mentioned that the clarity of the information provided of the on-line services is good, 22% very good, 16% not so good and the remaining 4% not good at all (see Figure 19).

Figure 19: Clarity of information provided of the on-line services

Finally, 57% of the respondents said that the presentation of the on-line services is very good, 35% good, 6% not so good and the remaining 2% not good at all (see Figure 20).

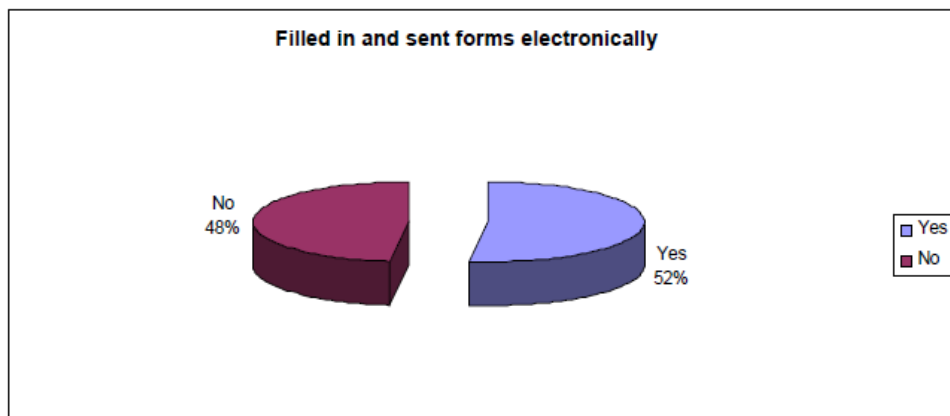**Figure 20: Presentation of the on-line services**

3.2.5 Main problems and difficulties on e-government applications

In the tenth, closed-ended question "Have you filled in and sent forms of public organizations electronically?" thirty one public officers (52%) answered "yes". The rest twenty nine (48%) of them had never tried to send any form of public organization electronically. From the officers that have tried to send forms via the Internet, eight people (25%) mentioned that they had some problems trying to send these forms electronically (see Figures 21 and 22).

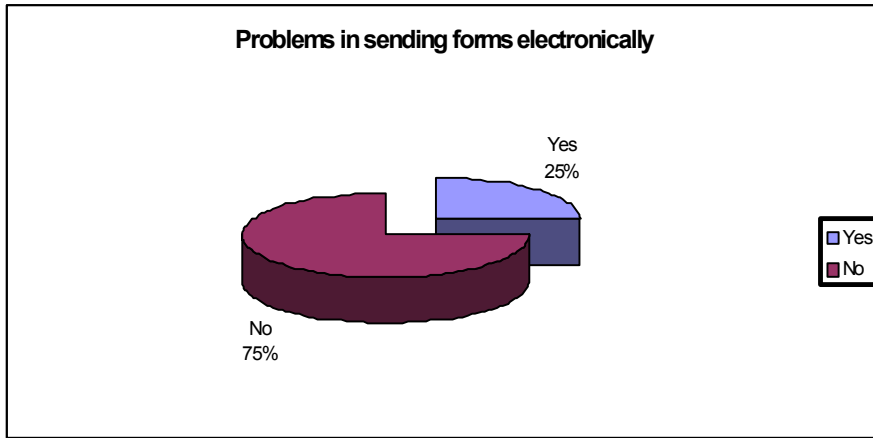**Figure 21: Public servants that filled in and sent forms electronically**

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[19]**Organisation for Economic Co-operation and Development (OECD),** (2003), "The E-Government Imperative: Main Findings", OECD Publications Service, France, http://www.oecd.org/dataoecd/60/60/2502539.pdf
[20]As above
[21]**Organisation for Economic Co-operation and Development (OECD),** (2004), OECD E-Government Expert Group Meeting, "The business Case for E-[22]Government", 17 September, London, http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=GOV/PGC/EGOV(2004)3&docLanguage=En
 Li J., (2010), "Suggestions on the Improvement of E-Government Performance", Business Administration Department, Henan University of Urban Construction, Pingdingshan city of Henan Province, China, http://ieexplore.ieee.org/search/srchabstract.jsp?tp=&arnumber=5566350&queryTex

Figure 22: Public servants that had problems sending forms electronically
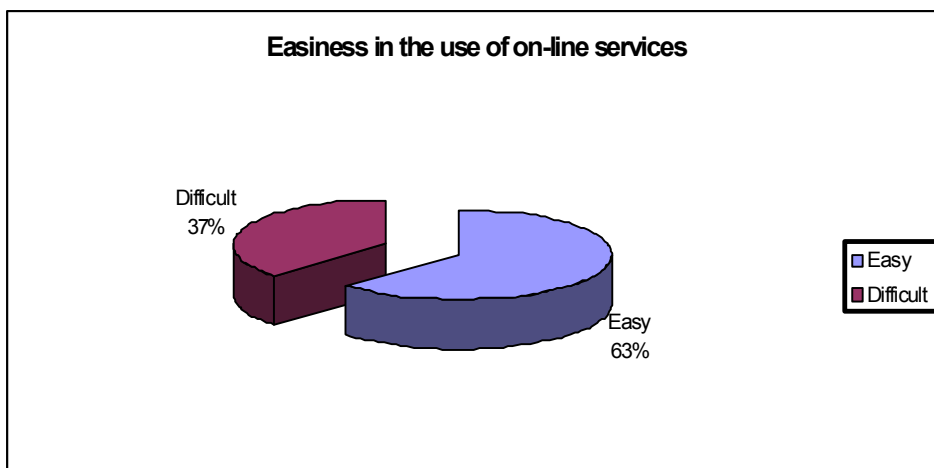

A primary problem was the slow access to internet networks. Greek people consider that they don't have as fast internet as they would like it to be. Interviewees also mentioned that most of the times, there was unclear instructions on how to fill and sent forms of public organizations electronically. That they had difficulties in filling various fields of the electronic forms and that the provided forms did not cover all possible cases. Another problem was, that in some cases, there were no way to correct the form sent, in case of mistake. Except of the above, it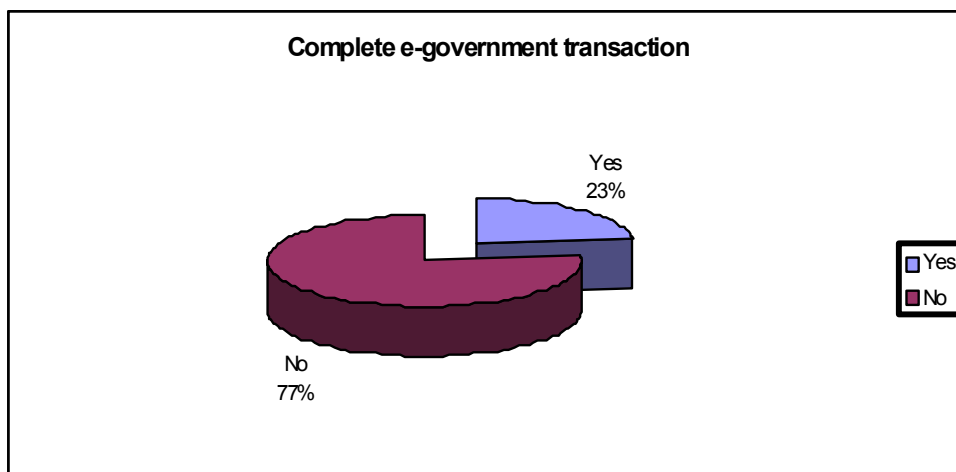 was mentioned, that most public organizations did not provide any notice that they had received the forms, people sent electronically.

In the next, closed-ended question "Can you use the on-line services of public organizations easily?" thirty eight people (63%) answered "yes" but only twenty three officers (38%) had a complete transaction with a public organization electronically, so that it was not required to appear in person in the public service in order to get what they needed (see Figures 23 and 24).

Figure 23: Easiness in the use of on-line services

Figure 24: Realization of a complete transaction with a public organization electronically

Center for Democracy & Technology, (2002), "The E-Government Handbook for Developing Countries", http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan007462.pdf
European Commission, (2010), "E-Government Fact-Sheets: E-Government in Greece" , http://www.Observatory.gr/files/meletes/eGovernment_in_GR_April_2010_en.pdf
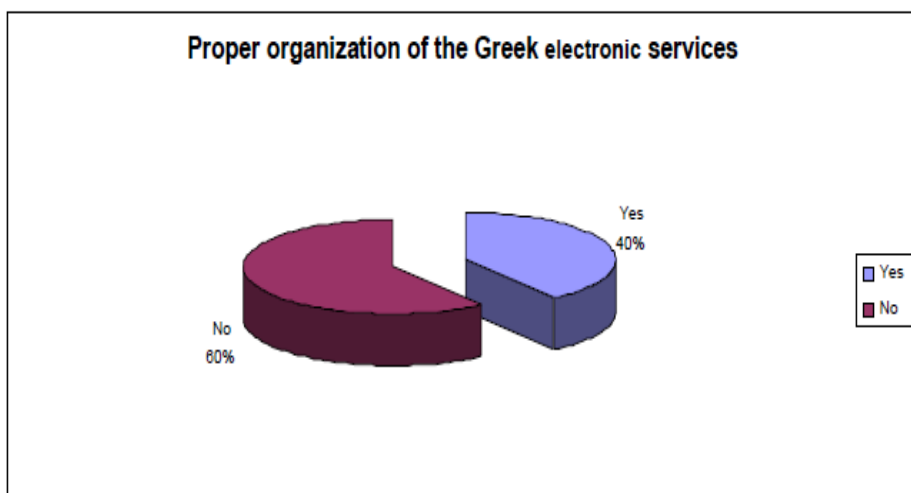
In the open-ended question "Why do you think that there are difficulties in the use of the on-line services of public organizations?" public servants mentioned, apart from the slow and bad access to internet networks, that they consider that the programs used for the provision of electronic services, are difficult, without good instructions and guidance for someone to use them. They don't feel secure and confident to use them and they prefer the traditional ways to complete their transactions. Moreover they don't think they are adequately educated in the use of new technologies and they fear that there is a risk of interception of sensitive personal data.

In the thirteenth, closed-ended question "What do you think about the Greek public websites, in the field of the organization of the electronic services?" the 60% of the interviewed believe that, the Greek government's on-line services are not organized in order to provide complete transactions to their citizens, while the rest 40% believe the exact opposite (see Figure 25).
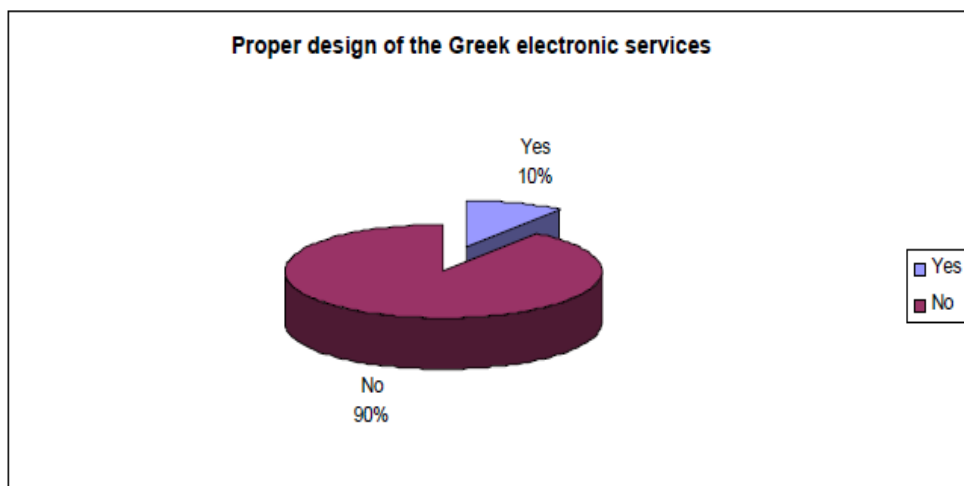
Figure 25: Proper organization of Greek on-line services

In the field of the design of the Greek electronic services, 90% of the interviewed believe that the Greek government's on-line services are not designed so that they can be used by people with disabilities (e.g., deaf people) or people who are not familiar with new technologies, while the rest 10% believes that there is no problem for those people (see Figure 26).

Figure 26: Proper design of Greek on-line services

In the field of the management of the Greek electronic services, 68% of the public servants believe that the structure of the Greek public administration does not facilitate the use of new tech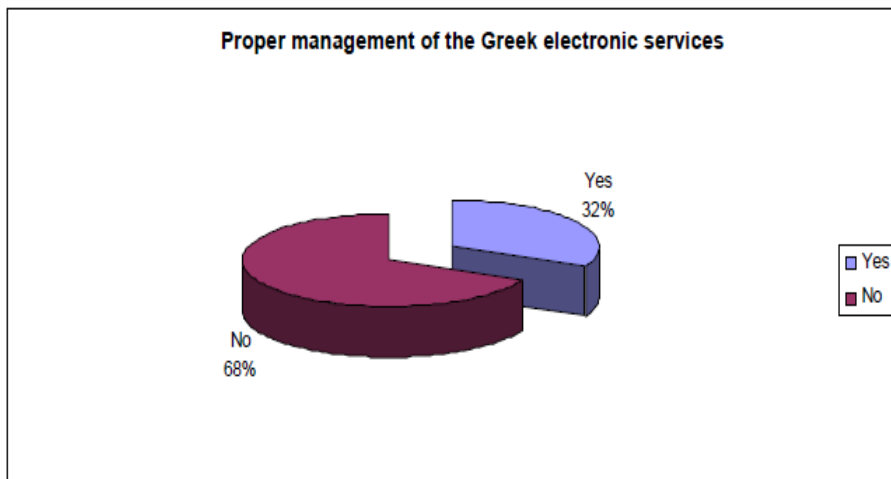nologies in the transaction between citizens and State. The rest 32% consider that the use of new technologies is enhanced through the current structure of the public sector (see Figure 27).

[25]"Greece in the Information Society: Strategy and Actions", (2002), http://www.epractice.eu/files/media/media_358.pdf
[26]As above
[27]As above

Figure 27: Proper management of Greek public administration

Proper management of the Greek electronic services

Yes
32%

No
68%

Yes
No

In the field of the control of the Greek electronic services, 75% of the interviewees officers believe that the Greek public administration does not control the management of the e-government policies in a sufficient way while the rest 25% states that there is sufficient control (see Figure 28).

Figure 28: Proper control of the management of e-government policies

Proper control of the management of e-government policies

Yes
25%

No
75%

Yes
No

In the field of the cooperation between public and private sector, in the closed-ended question "Do you think that there is sufficient cooperation between the public and private sector that have the necessary expertise in e-government issues?" 55% of the questioned answered "no" while the rest 45% answered "yes" (see Figure 29).

Figure 29: Existence of sufficient cooperation between the public and private sector

Existence of cooperation between the public and private sector

Yes
45%

No
55%

Yes
No

[28]**European Commission,** (2010), "E-government Fact-Sheets: E-Government in Greece" , http://www.Observatory.gr/files/meletes/eGovernment_in_GR_April_2010_en.pdf
[29]"Operational Programme for the Information Society", http://epractice.eu/files/media/media_406.pdf
[30]As above
[31]**Organisation for Economic Co-operation and Development (OECD),** (2003), "The E-Government Imperative: Main Findings", OECD Publications Service, France, http://www.oecd.org/dataoecd/60/60/2502539.pdf
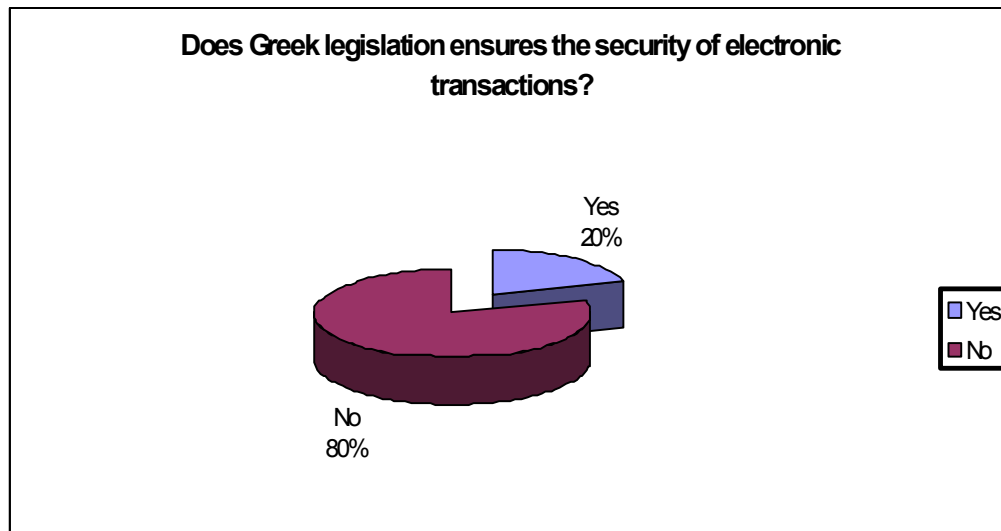
In the field of the development of new technologies, in the closed-ended question "Do you think that the current software in the Greek public sector can provide complete public on-line services?" only the 57% of the questioned answered "yes", the rest 43% answered "no" (see Figure 30).

Figure 30: Existence of sufficient software in the Greek public sector

Finally in the existing institutional framework, in the closed-ended question "Do you think that the Greek legislation has been upgraded, in order to ensure the security of electronic documents and electronic transactions?" 80% of the questioned answered "no" and only 20% said "yes" (see Figure 31).

Figure 31: Does Greek legislation ensures the security of electronic transactions?

3.2.6 The barriers of e-government applications in the Greek public administration

In the fourteenth, closed-ended question "Do you think that the e-government services have been integrated effectively into Greek citizens' everyday life?" 87% of the interviewed answered "no" and only 13% said "yes" (see Figure 32).

[32]**Center for Democracy & Technology,** (2002), "The E-Government Handbook for Developing Countries",
http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan007462.pdf
[33]**Information Society in Greece, Information Technology Committee,** "Greek Digital Strategy 2006-2013", http://www.infosoc.gr/infosoc/en-UK/sthnellada/committee/default1/top.htm
[34]**Center for Democracy & Technology,** (2002), "The E-Government Handbook for Developing Countries",
http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan007462.pdf
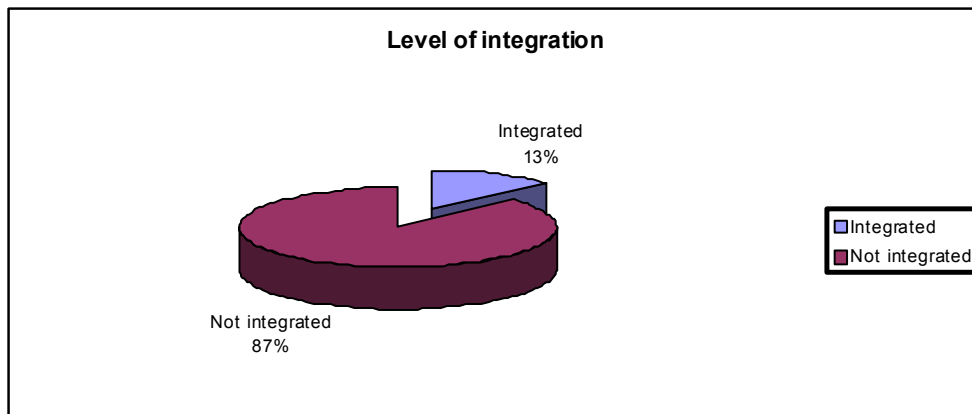[35] **IDABC e-Government Observatory,** (2005), "E-Government in Greece", http://www.logincee.org/remote_libraryitem/8661?lang=en
[36]**Center for Democracy & Technology,** (2002), "The E-Government Handbook for Developing Countries",
http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan007462.pdf
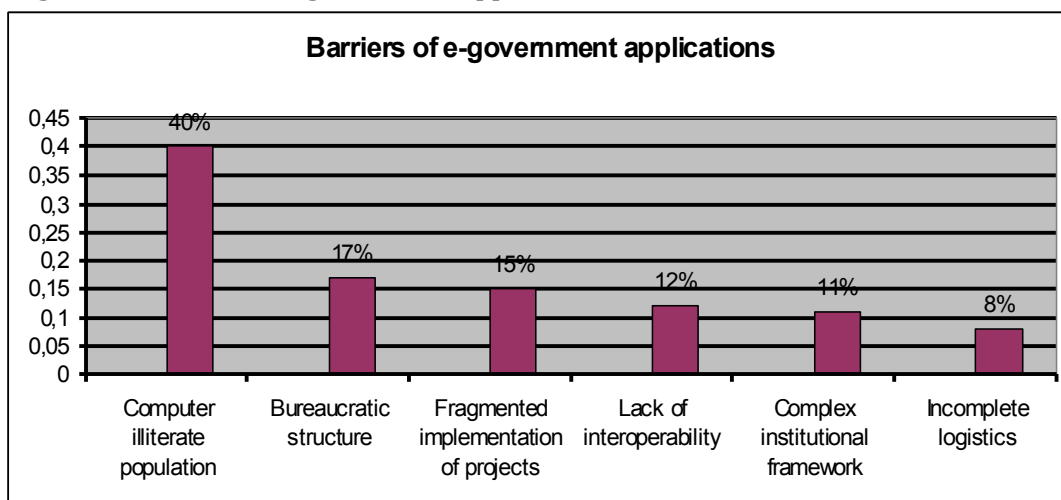
Figure 32: Level of integration of e-government services

In the next, open-ended question, people were asked "Sort in order of priority the reasons of the limited impact of e-government in the Greek public administration". The majority of the research participants (40%) answered that the primary barrier is the computer illiterate Greek population. 17% said that the most important reason is the public sectors' inefficiency caused by its bureaucratic structure. 15% mentioned the fragmented implementation of projects by public administration and 12% of them said that there is a lack of interoperability between systems and applications, resulting in inability to provide complete services, in the Greek public sector. 11% of the respondents consider as a major obstacle, the complex institutional framework and the rest 8%, the incomplete logistics by the Greek public administration (see Figure 33).

Figure 33: Barriers of e-government applications

3.2.7 The recommended solutions for the e-government applications in the Greek public administration

In the fifteenth open-ended question, people were asked "Sort in order of priority the facilities which will make the resulting public on-line services more convenient, friendly, accessible and addressing the needs of citizens". The majority of the interviewees (36%) answered that the primary facility is the modernization of the Greek public administration. 25% believe that primarily, there should be introduced smarter and easier to use electronic programs which can be used by people with disabilities (e.g., deaf people) or people who are not familiar with new technologies. 19% of the respondents consider most important the enhancement of training of public servants, in order to improve the services provided by the public sector and 17% said that they think, it is very crucial, the cooperation among public organizations in order to serve the citizen, without obliging him to appear in person in various organizations. Finally, the 3% of the research participants mentioned that there should be constant monitoring of e-government projects so that the necessary changes are brought about quickly (see Figure 34).

[37]**Organisation for Economic Co-operation and Development (OECD),** (2003), "The E-Government Imperative: Main Findings", OECD Publications Service, France, http://www.oecd.org/dataoecd/60/60/2502539.pdf

[38]**Center for Democracy & Technology,** (2002), "The E-Government Handbook for Developing Countries", http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan007462.pdf

[39]**Fang Zh.,** (2002), "E-Government in Digital Era: Concept, Practice and Development", International Journal of the Computer, the Internet and Management, Vol.10, No.2, pp.1-22

Figure 34: The recommended facilities

3.2.8 The future opportunities of Greek e-government policies

In the closed-ended question "What e-government policies would lead to the formulation of a new, more dynamic relationship between the citizen and the Greek State?" 59% of respondents answered with the provision of incentives for citizens to actively participate in the planning and provision of public services while the rest 41%, with the provision of incentives for citizens to assess the services provided, submitting comments and aiming to contribute to the subject they deal with (see Figure 35).

Figure 35: The e-government policies which would lead to a new relationship

In the next open-ended question, people were asked "Sort in order of priority the means – initiatives that could increase the active participation of citizens in the administration of the Greek e-government policy". The majority of the research participants (51%) answered that the primary initiative, is the creation of Internet Portals for transparency of public policies, as tools for information between public administration and its citizens, whether they work individually or as members of non-governmental organizations. 28% said that they consider very important the establishment of on-line polls and votes on specific matters of public administration and reporting of results in official websites, so that the citizen feels that his opinion is made public and counts, even at an advisory level. The rest 21% of the respondents believes crucial the creation of an electronic forum, through which, matters of evaluation of public policies will be discussed regularly (see Figure 36).

[40]**Center for Democracy & Technology,** (2002), "The E-Government Handbook for Developing Countries",
http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan007462.pdf
[41]**Organisation for Economic Co-operation and Development (OECD),** (2003), "The E-Government Imperative: Main Findings", OECD Publications Service, France,
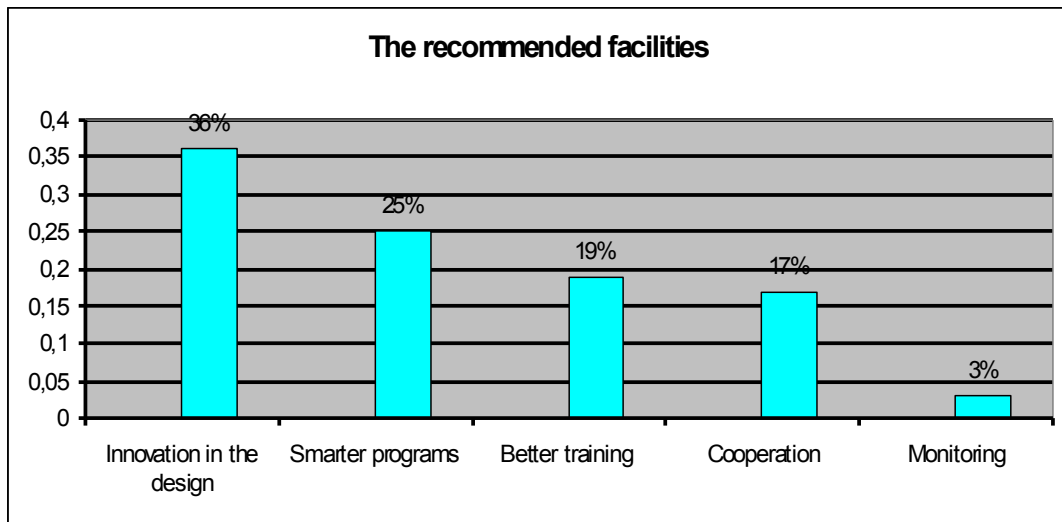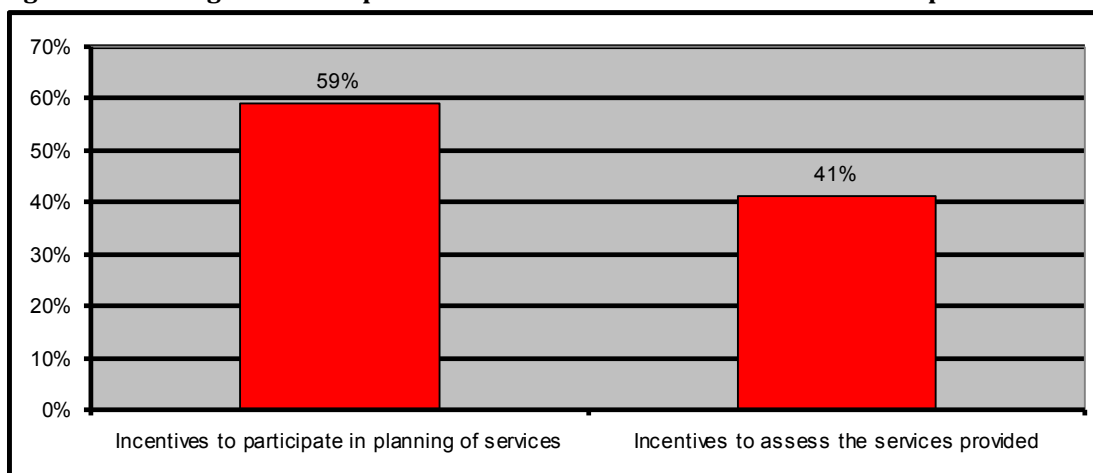http://www.oecd.org/dataoecd/60/60/2502539.pdf
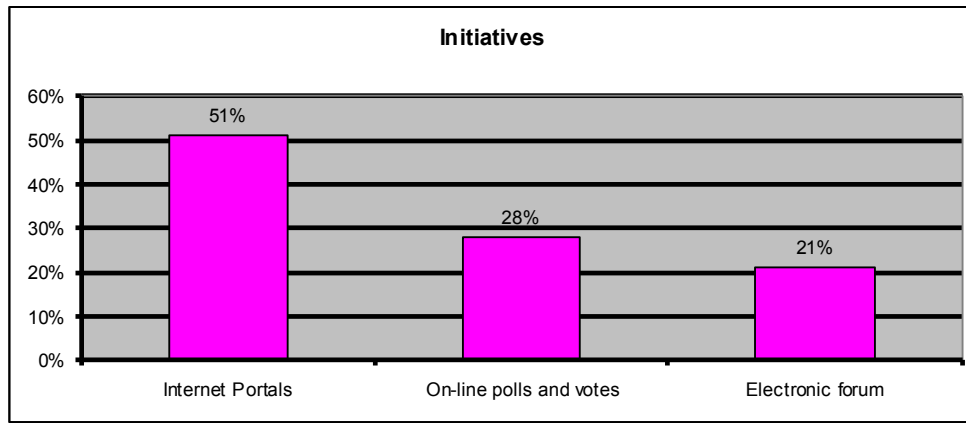[42]**European Commission,** (2010), "E-Government Fact-Sheets: E-Government in Greece", http://www.Observatory.gr/files/meletes/eGovernment_in_GR_April_2010_en.pdf
[43]**Center for Democracy & Technology,** (2002), "The E-Government Handbook for Developing Countries",
http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan007462.pdf
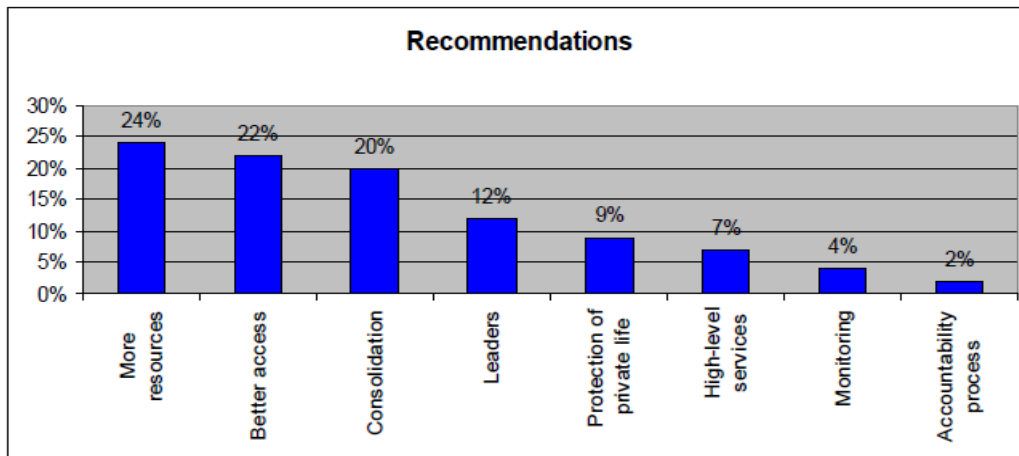
Figure 36: Initiatives for the participation of citizens in the administration

In the eighteenth question, people were asked "Sort in order of priority what you consider most important for a successful e-government". 24% of the research participants recommend the disposal of more resources to finance programs for new technologies and 22% of them, the improvement of the access for all citizens to on-line services. 20% of the interviewees believe important the consolidation of the public sector at all levels of administration and cooperation between agencies in order to maximize the effectiveness. 12% said that there is a need for leaders with political will and vision, who can cope with the turbulence of change and have dreams and plans for the future and 9% of the respondents believe that the primary need is the protection of citizens' private life. 7% consider crucial the provision of high level e-government services in order to encourage citizens to engage in the political process while 4% mention that there is a need for monitoring and evaluation of the work of Government. Finally, the rest 2% of the research participants recommend the strengthening of the accountability process for public servants and government, in order to be achieved a successful e-government (see Figure 37).

Figure 37: Recommendations for a successful e-government

Data analysis

4.1 Data analysis

4.1.1 The value and purpose of applying e-government policies in the Greek public sector

The present study is a policy study investigating the context and implementation of e-government policy in the public sector, examining the case of administration of e-government policy of the Greek public sector. Sample selection constituted of participants who work as officers, men and women, of different ages, of various public organizations and of all the positions in the hierarchy. They were randomly selected meeting the main criterion which is their work experience in the public sector. There was a diversified sample in order to have a more holistic understanding of the topic. The answers provided were approximately the same regardless of age, sex, or position in the hierarchy.

The majority of respondents (97%) admit that e-government services are important and recognize the resulting benefits. 70% of them believe that the primary objective of the implementation of e-government in the public administration is to become the agent of change. It can be a major contributory factor in reforming and modernizing public organizations. It can improve effectiveness in the delivery of public services. It can generate savings on data collection and transmission, and significant future gains are likely to happen,

[44]**Center for Democracy & Technology,** (2002), "The E-Government Handbook for Developing Countries",
http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan007462.pdf

as a result of greater sharing of data within and among public organizations .

The rest 30% believe that the primary objective is to bring about a more advanced form of society, the information society. The Greek Government's concern, as presented in the White Paper "Greece in the information society: strategy and actions" (2002) , is to ensure that the emerging information society will be a society for all, without discrimination. The information society is first and foremost a knowledge – based society. This creates the need for changes in education; the government should promote students' familiarization with computers and train teachers in the use of new technologies. The improvement of the citizens' quality of life constitutes another major goal. The application of informative and telecommunications ensure better health and welfare systems, greater protection from crime, better and safer transportation, as well as conservation of the environment and natural resources, of language and cultural heritage.

The modernization of public administration resulting to the increase of the effectiveness of its services is recognized by the 55% of the respondents as the primary benefit for public services deriving from the proper implementation of e-government. There is time saving as far as public servants are concerned; reduced processing time through common standards for data and processes, reduced need for multiple collections of data from single customers and reduced error rates and complaints from citizens. There are also information benefits, through the provision of more accurate, up-to-date and cleaner data and more reliable information .

32% of the respondents mention the direct cash benefits for public administration as the primary advantage. There is a significant cost reduction in the publication and distribution of printed forms and a reduction of the time that civil servants have to spend to provide general information. There is also additional revenue from newly available electronic services and reduced costs because of the reduced need for public officers' physical presence. There exist resources efficiency benefits as well, through more effective use of existing infrastructure and more integrated systems .

The rest 11% of the research participants consider as primary benefit from the proper application of e-government, the transfer of technology and know-how among different public organizations, leading to increased productivity and competitiveness. Public servants believe that e-government is more effective when different public organizations work together. Public services need to be integrated into broader policy goals and broader public management reform processes. They need to be able to operate within common frameworks to ensure interoperability, encourage collaboration and maximize implementation efficiency .

Finally, the last 2% of the interviewees believe that the primary advantage is the adoption of innovative procedures within the public administration, which will lead to the optimization of decision-making mechanisms. The utilization of new technologies has the potential of revolutionizing the way people interact with the government and each other. Strong political leadership is a prerequisite for the optimization of decision-making mechanisms. Committed leaders are required to deal with disruptive change, to

persevere when benefits take time to emerge, to respond when things go wrong and to establish visions and plans for the future. Leadership and commitment, on both political and administrative levels, are crucial to managing change .

The primary benefits which derive from the proper implementation of e-government for citizens and businesses are according to the 40% of the interviewees, the direct cash and time benefits for the users. Digital technology can facilitate decentralized access to services and save precious time for citizens who would otherwise have to travel greater distances. There is also a reduction in travel costs as well as a reduction of the cost of transmitting information, either by phone, post etc. Finally, there is a reduced need for multiple submissions of data for different public organizations involved .

The second advantage (16%) deriving from the proper application of e-government is that citizens do not have to depend on the opening hours of public organizations. People are empowered via the Internet. They can have easy access to services and easy communication with the public organizations from the comfort of their homes, 24 hours per day and 7 days per week .

The third mentioned benefit (15%) is that via the new technologies there is greater transparency in public services. On-line rules, regulations and requirements for government services minimize subjective actions by officials. Making government services available to citizens in a transparent and effective manner can also empower them against corrupt and arbitrary bureaucratic action. Citizen's role in society is strengthened (13%). By making rules simple and more transparent, e-government emboldens citizens and businesses to question unreasonable rules and procedures and their arbitrary application. Building trust between governments and citizens is fundamental for good governance .Public servants also believe (9%) that via the internet and its applications there is a faster response from the public organization. They strongly believe that via the internet there is reduced application processing time, improved interactive communication and improved response time to events. They believe that they have a more personalized service. Finally, the last 7% of the research participants consider important that they do not have to appear in person in the public organization.

4.1.2 The main obstacles of applying e-government policies in the Greek public sector and the recommended solutions

According to the "Governance in the Age of Web 2.0" study, conducted by the Observatory of the Greek Information Society in December 2009, in practice the penetration of electronic public services in the citizens' lives remains fairly limited . In the present research 87% of the interviewed believe that the e-government services have not been integrated effectively into Greek citizens' everyday life. 40% of the respondents believe that the most significant cause for this is the computer illiterate Greek population and 17% the bureaucratic structure of the public sector.

Another mentioned problem by the questioned people was the slow access to internet networks. Greek people consider

that they don't have as fast internet as they would like it to be. In the area of internet services provision in Greece today, there are a number of providers, with the largest market shares held by forthnet, OTEnet, Hellas on line and Compulink. In the framework of the operation of the country's trunk network, which has been entirely digital since the end of 1999, there have in recent years been substantial investments in the installation of fibre-optic cabling which, depending on the type and technology of the network components can be used in telephony, data transfer and multimedia services .

It should be noted that the development of the basic telecommunications infrastructure in Greece was in the past undertaken through public funds, in the framework of the investment plans of the public telecom operator OTE. After the liberalization of telecommunications the rate of further infrastructure development will depend on the investment programs of the telecommunication companies. As a large user and provider of information services, the Greek public administration will continue to play an important role in the development of the infrastructure .

4.1.3 The administration of e-government policies in the Greek public sector

In the field of the organization of the Greek electronic services, 60% of the interviewed believe that the Greek Government's on-line services are not organized in order to provide complete transactions to their citizens. Its inefficiency is caused mainly by its unqualified personnel in the use of new technologies and its bureaucratic structure.

73% of the respondents said that their organization has its own website. As implied by the above, the Greek public agencies are making efforts to follow up the new technologies and most of them have created their own websites, providing various types of information and, often, interactive services to visitors. Their presence in the internet remains, for the time being, a pilot project, with little information for citizens and limited capacity for the provision of on-line services. The content of their sites is however constantly enhanced .

The Greek Governments' digital strategy (2006-2013) aims to use information technologies to increase productivity in the field of economy and improve the citizens' quality of life, through the development of broadband internet connectivity and the design of digital services for people and enterprises. The contribution of the Greek "Operational program for the information society" to the exploitation of the new technologies in the public administration has been significant, with the implementation of large scale projects that result in more than 40 new digital public services.

In the field of the design of the Greek electronic services, 90% of the interviewed believe that the Greek Government's on-line services are not designed so that they can be used by people with disabilities (e.g., deaf people) or people who are not familiar with new technologies. There is a considerable digital gap among Greek population. There is a gap between people who have access to the Internet and those who do not. Those without access cannot learn essential computer skills, cannot access information that can provide them with economic opportunities, and cannot share the benefits of e-government .

In the field of the management of the Greek electronic services, 68% of the public servants believe that the structure of the Greek public administration does not facilitate the use of new technologies in the transaction between citizens and State. There are needed administration managers with e-government skills. Political leaders, who make e-government a priority and guide transformation, as well as, administrative managers who help translate political vision into an action plan. They must be able to lead the organization's information technology department and integrate its strategy within its broader goals .

Too often, governments develop web applications without any consideration of real citizen demand. People, especially if they are unfamiliar with technology may be reluctant to try e-government services. Governments should conduct research to ensure that on-line services respond to actual citizen needs, and develop publicity and training campaigns, which will inform the public about e-government initiatives . Within 2006, a Digital Greece awareness campaign has been tendered by the Greek Government, with the aim of familiarizing citizens across Greece with the benefits of information technologies and broadband connections .

Records Management is essential as well. Governments need information to provide useful analysis, quickly enough to react to social and economic developments. Accurate official records should provide the basis for the rule of law, economic development and accountability. Governments should take advantage of technologies that facilitate the cataloguing of records and help officials to identify the barriers for a more efficient government. The modernization of records management provides a means to the improvement of public sectors management . Within 2004, the Observatory for the Greek Information Society became operational. Its mission was to measure, analyze and evaluate the progress the public organizations made towards the information society. It shared know-how and disseminated best practices .

In the field of the control of the Greek electronic services, 75% of the interviewed officers believe that the Greek public administration does not control the management of the e-government policies in a sufficient way. There is a need for strong political leadership. Governors must understand that in order to achieve the e-government transformation they should elevate its public profile and press for its successful implementation. They should create an office and designate a senior official as a focal point for e-government innovation, planning and oversight, ensuring that all relevant departments and agencies support it .

Monitoring and evaluation of results of the different projects in order to limit the margins for error when putting future strategies in place, is also useful for e-government. Implementing e-government can be risky, expensive and difficult, but, it is also an opportunity for government to show its capacity to adapt to the challenges of the new globalized era .

According to the 15% of the research respondents, another main reason (obstacle), of the limited impact of e-government in the Greek public sector is the fragmented implementation of projects by public administration. Government leaders, planning e-government projects, should plan carefully,

streamline, and consolidate offline processes, before putting them on-line. They should draw on the ideas of those who will use the system and focus projects from the user perspective so as not to automate inefficiencies but eliminate them. They should ensure the commitment of resources for the long-term and try to dispel resistance of civic servants, by training them and giving them incentives to support the reform. There is need for the creation of new processes and relationships between governed and governor .

Furthermore, 12% of the interviewed believe that there is a lack of interoperability between systems and applications, resulting in inability to provide complete services. E-government planners should develop systems and record formats that work together and across departments. The development of on-line e-procurement has to include eliminating inconsistent procedures and requirements and adopting common formats so that all government agencies could use the same on-line system and work together seamlessly . The collaboration among government entities becomes a necessity. Agencies should overcome traditional reluctance and work with each other to maximize benefits of scale in e-government projects. Governments should encourage cooperation and integration between departments and should also take private sector advice and experience into account, when designing systems. Private sector experts, who deeply understand topics such as e-commerce, information technology, marketing and management, can advise government policymakers and help them meet the challenges of increasing efficiency, capacity and citizen satisfaction .

In the field of the cooperation between public and private sector, 55% of the respondents think that there isn't sufficient cooperation between the public and private sector while the rest 45% consider that there is no problem and public and private sector work together in harmony. Interviewees think that there should be collaboration between government and private sector expertise. Public sector cannot implement e-government projects alone. It is necessary to search for companies and institutions with expertise in technical applications, management of information and communication projects. Working with the private sector, Government employees increase skills, reduce risk and complete e-government projects in less time and at the lowest cost .

In the field of the development of new technologies, only 57% of the questioned believe that the current software in the Greek public sector can provide complete public on-line services. A significant barrier of the limited impact of e-government is the incomplete logistics by the Greek public administration.

In the existing institutional framework, in the question "Do you think that the Greek legislation has been upgraded, in order to ensure the security of electronic documents and electronic transactions?" 80% of the questioned answered "no".

There is currently no dedicated e-government legislation in Greece . Archaic laws and old regulatory regimes must be updated to include electronic documents and transactions. Greek Government should reform processes by simplifying regulations and procedures. In order for e-services to gain

widespread acceptance, they must have the same standing as the equivalent paper processes. There should be trust between government and citizens or businesses. The issue of trust involves :

a. Privacy issues. Governments must be responsible for the personal information they hold. They should educate and train government officials on the importance of privacy and they should design applications that integrate privacy protections. Finally, they should limit access to personally identifiable information and adhere to privacy best practices.

b. Security issues. Citizens may avoid and even shun the use of on-line services that ask for detailed personal information, if they don't feel certain about the security provided by the governmental systems. Governments should continually assess systems to make sure that security precautions are implemented. They should backup information regularly and store backups in a separate location and understand that trust is a vital component of e-government.

In the question "What e-government policies would lead to the formulation of a new, more dynamic relationship between the citizen and the Greek State?" 59% of respondents answered with the provision of incentives for citizens to actively participate in the planning and provision of public services. This is feasible, according to the interviewees, primarily with the creation of internet portals for transparency of public policies, as tools for consultation between public administration and its citizens, whether they work individually or as members of non-governmental organizations.

The rest 41%, of the respondents in the same question, answered with the provision of incentives for citizens to assess the services provided, submitting comments and aiming to contribute to the subject they deal with. Civic engagement is a very critical issue. The concept of e-government is directed at bettering the lives of ordinary people. Its success depends on an engaged citizenry, and efforts to foster civic engagement are essential. Governments should design applications that are focused on the needs of citizens and combine e-government with legal efforts, such as requiring public notice and comment in legislative and regulatory processes .

Conclusions

This study presents an approach towards the administration and effectiveness of e-government policies in the Greek public sector. It explores the objectives and the goals of the implementation of e-government in the public sector. It shows the advantages and the value of applying e-government policies as well as the opinion of public servants about the Greek public websites. It demonstrates the main problems, obstacles and difficulties of applying e-government policies. Finally it tries to shed light on the recommended solutions for the improvement of e-government administration in Greek public sector so as to meet its purposes.

The administration of e-government in the Greek public sector does not fully meet its' purposes. The institutional and organizational obstacles remain still insurmountable. The

[48]**Center for Democracy & Technology,** (2002), "The E-Government Handbook for Developing Countries",
http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan007462.pdf
[49]**Law 3861/2010,** "Increasing Transparency with the Mandatory Download of Laws and Acts of Government on the Internet "DIAYGEIA" Program and other Provisions",
http://et.diavgeia.gov.gr

most crucial problems for the transition to information society are the computer illiterate Greek population and the delays caused by the existing bureaucratic structure. There is also a digital gap among Greek population. Greek Government's on-line services are not designed so that they can be used by people with disabilities or people who are not familiar with new technologies. The structure of the Greek public administration does not facilitate the use of new technologies in the transaction between citizens and State and it does not control the management of e-government policies in a sufficient way.

A modern education system is needed. The White Paper "Greece in the information society: strategy and actions" (1999) presents the intention of Greek Government to upgrade its human resources, by training its employees on matters of administration and information technologies. The training courses cover all levels of administration and are conducted either at the National School of Public Administration or at the Training Institute. They aim to develop the public servants' skills so that they become competent users of the new technologies and improve their performance and effectiveness.

The modernization of the Greek public administration is the solution to the bureaucracy. There should be innovation in the design of computer programs in order not to be restricted just to the simple transfer of existing procedures in electronic environment. The conversion of existing public information into digital format and its structuring in databases will enable the provision of essential information to citizens and firms and the provision of complex and upgraded services. The State is the larger owner of information in Greece. In the last few years, a number of institutional and organizational changes in the Greek public sector are underway. The decentralization of responsibilities to the regions and prefectures (Kapodistrias project in 1999 and the most recent Kallikratis project in 2011) allows public administration to provide high quality services in a timely and cost-effective manner.

There are also some problems in the field of the cooperation between the public and private sector and the current software in the Greek public sector cannot provide complete public on-line services. There should be infrastructure development. Greek Government should also reform its institutional framework. Greek citizens believe that the current legislation hasn't been upgraded, in order to ensure the security of electronic documents and electronic transactions. The first e-government legislation in Greece is expected to result from the three projects which were prioritized as critical for e-government by the Ministry of Interior, Decentralization and E-Government, in July 2005 and were the following:

✓   The creation of the National Internet Portal "HERMES": It was officially presented in May 2009 by the Greek government. It is the new modern electronic service channel connected with the citizen service centers. It acts as a point of reference for citizens in their transactions with the public organizations.

✓   The creation of the Electronic Citizen Service Center for the protection of the personal data and the privacy of individuals in Greece. They will allow among other things electronic submission of appeals, applications for personal data processing and access to statistical data and

The National Authentication and Transaction Security System, which is responsible for the creation of *the public key infrastructure* (it provides digital certificates to government officials in card form), *the digital signature* (the user can submit a request using an electronic signature) and finally *the public sector* ✓ *digital certificate* (a project that will establish a unique root certification authority for defining certificate policies and standards and will link all the back-office systems integrated within the various public administration organizations).

E-government can play an essential role in revealing to the public the policies their government is adopting or the actions the government is taking. Citizens too rarely understand how government decisions are made. This lack of transparency prevents the public from actually participating in government. To fight that, governments should post on-line rules, regulations and requirements for government services to minimize subjective actions by officials. E-government sites should be designed and operated so that users can easily find the information they need, provide the information requested by the government agencies with which they are dealing, and, otherwise, perform all e-government transactions.

The Greek government introduced in 2010, the "DIAVGEIA" project, with the aim to achieve at the maximum possible level, publicity and clarity of the Greek government policies and administrative activities. It would ensure transparency and accountability on the part of the exercise of public authority. Through "DIAVGEIA" project:

✓   Launched for the first time in Greece, the duty of governmental institutions to download their decisions on the internet.

✓   The citizen can access at once all the laws and rulings issued by government agencies.

✓   No decision of Greek public administration is executed if it is not downloaded on the website (http://et.diavgeia.gov.gr).

The active participation of citizens in the administration of the Greek e-government policy could be increased by the creation of an electronic forum, through which, matters of evaluation of public policies will be regularly discussed. There could also be on-line polls and votes on specific matters of public administration and reporting of results in official websites, so that the citizen feels that his opinion is made public and counts, even at an advisory level.

5.2 Future Research

It is important to note that this study had some limitations that may influence its reflection of general practice. The sample in this study was limited to sixty employees of the Greek public sector. The research might have produced different results if the sample was larger and more

representative from more public organizations. As far as it concerns the reliability and credibility, interviewees were asked to provide objective opinions but it is common for people participating in studies to bias for themselves. The literature sources used about the effective administration of e-government in Greek public sector was also limited. Thus, it is wise to consider that this research is preliminary with limitations that might affect the generalization of results.

The above analysis contributes to the extraction of some fruitful conclusions about the importance of e-government not only for the public sector in Greece, but also for the Greek citizens. It was an attempt to shed light on existing e-government policies in Greece. Further research regarding the exact initiatives and policies the Greek Government should follow in order to meet the initiatives and guidelines of European Union could be conducted. Greek Government is under pressure. New technologies are forcing to be particularly attentive to time. The decisions taken today, commit administrations to a future that is changing. The transition to e-government is an opportunity for Greek government to show its capacity to adapt.

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