

THE
CYPRUS
JOURNAL OF
SCIENCES

PUBLISHED BY AMERICAN COLLEGE

VOL.10 2013

The Cyprus Journal of Sciences

The Journal of American College

Editor

Charalambos Louca
American College

Co-Editors

Andreas Petasis
Yianna Danidou
Marios Charalambous
Christina Frangou
American College

Editorial Board

Andreas Andreou, University of Cyprus, Cyprus
Andros Gregoriou, Brunel University, Uxbridge, Middlesex, UK
Andreas A. Jobst, London School of Economics, London, UK
Andreas Kapardis, University of Cyprus, Cyprus
Anton Anthonissen, University of Utrecht, the Netherlands
Arie De Ruijter, Tilburg University, the Netherlands
Athanasios Laios, Democritus University of Thrace, Greece
Biser Petrov, Bulgarian Academy of Sciences, Sofia, Bulgaria
Caroline Ann Wiscombe, University of Wolverhampton, Wolverhampton, UK
Charles M. Beach, Queen's University, Kingston, Ontario, Canada
Constantinos-Vasilios Priporas, Athens Graduate School of Management, Thessaloniki, Greece
Costas Zafiropoulos, University of Macedonia, Thessaloniki, Greece
David Cooper, University of Salford, Salford, UK
David Songhurst, Wolverhampton Business School, Wolverhampton, UK
Demetris Vrontis, University of Nicosia, Cyprus
Eleni Berki, University of Tampere, Finland
Evangelos Charos, Merrimack College, North Andover, USA
Graham Orange, Leeds Metropolitan University, Leeds, UK

Irene Sciriha, University of Malta, Malta
Jan Katherine Bamford, London Metropolitan University, London, UK
Joseph S. Joseph, University of Cyprus, Cyprus
Kalliope Agapiou-Josephides, University of Cyprus, Cyprus
Krassimira Ilieva, Bulgarian Academy of Sciences, Sofia, Bulgaria
Leonidas A. Phylactou, Cyprus Institute of Neurology & Genetics, Cyprus
Marianna Sigala, University of the Aegean, Greece
Mary Koutselini-Ioannidou, University of Cyprus, Cyprus
Mary Vaxevanidou, Hellenic Open University, Greece
Paul Verweel, University of Utrecht, the Netherlands
Povey Ghislaine, University of Wolverhampton, Wolverhampton, UK
Savvas Katsikides, University of Cyprus, Cyprus
Sean W. Cleary, York University, Toronto, Ontario, Canada
Sergey Belousov, Bulgarian Academy of Sciences, Sofia, Bulgaria
Sofiane Aboura, Essec Business School, France
Suzanne Gatt, University of Malta, Malta
Vasiliki Vrana, Technological Educational Institute of Serres, Serres, Greece
Vasilios Grammatikopoulos, University of Thessaly-TEFAA, Trikala, Greece

Assistants to Editors

Andri Kyriacou
Andri Pouroutidou
Stella Georgiou
American College

CONTENTS

Editorial Board
Notes for Contributors

Inside Front Cover
Inside Back Cover

Articles

Humanities and Social Sciences

- The Role of Educational Policy in Shaping the Professional Identity of
Secondary School Teachers in Greece 3
*Skodra Eleni, Eliofofou-Menon Maria and
Athanasoula-Reppa Anastasia*
- The Demography of Disability in Greece: Evidence from the Labour Force
Survey of 2002 25
*Vasilis S. Gavalas, Panagiotis Stratakis,
Efstratios Papanis and Panagiotis Giavrimis*
- Persons with Development Disabilities and Special Needs:
A Comparative Efficiency Analysis 47
*Aikaterini Kokkinou, George M. Korres, Efstratios Papanis,
Panagiotis Giavrimis and Vasilis S. Gavalas*
- The Thorny Palestinian Question and its Resolution 69
Nicolas Panayiodides

Pure and Applied Sciences

- Artificialized Patches as a Measurement Tool in Urban Geography 87
George Sidiropoulos
- Bovine Leukemia Virus – Pathogenicity in Animals and
Potential Impacts in Humans 101
*Petar S. Dimitrov, Katerina S. Todorova,
Metody H. Petrichev and Russy V. Russev*
- Biological Potential of Soil Populations in Two Shetland Islands,
Livingston and Deception 111
Victoria Gesheva

Finance, Accounting and Marketing

Stock Price Anomalies in the Cyprus Stock Exchange <i>Christos N. Christodoulou-Volos</i>	119
Does the Adoption of a New Accounting System Improve the Decision-Making of an Organization? The Case of a Public Hospital in Serres Region <i>Nikos D. Kartalis, Nikos Sarriades, Fotini Gazepi and Tzanakakis Nikos</i>	141
International Marketing Research: Exploring E-Marketing Research and its Implications <i>Michael Anastasiou</i>	165

THE ROLE OF EDUCATIONAL POLICY IN SHAPING THE PROFESSIONAL IDENTITY OF SECONDARY SCHOOL TEACHERS IN GREECE

SKODRA ELENI*, ELIOFOTOU-MENON MARIA** and
ATHANASOULA-REPPA ANASTASIA***

ABSTRACT

In this paper the issue of the professional identity of Greek teachers in Secondary Education was explored. The factors which affect the work of teachers, the way teachers view their work and themselves as professionals and whether educational policy affects the levels of their motivation, commitment and their job satisfaction are investigated. The findings have shown that the majority of Greek teachers consider themselves to be professionals. Statistically significant correlations between professional identity and gender, between professional identity and educational policy as well as between educational policy, job satisfaction and years of working experience to a certain extent have been revealed.

Keywords: Professionalism; Professional Identity; Educational Policy.

1. INTRODUCTION

In the last years, teachers are required to re-examine their traditional roles and satisfy their students' needs as effectively as possible in a very different social environment. Teachers are no longer responsible solely for the communication of knowledge, the sterile teaching of their subject matter and the development of their students' cognitive skills, but they should also take up more responsibilities, such as facilitating their students' learning, catering for their psychological balance and promoting their social integration, broadening thus their role as educators. For this reason, teachers are often confronted with decisions that can have ethical consequences on the satisfaction of the multiple, diffused and even contradictory demands on the part of different "clients" (students, parents, community) (Kelchtermans, 1996).

The teacher's profession, like any other profession that has the human in its very centre, is characterized by high levels of stress. Modern teachers face more stressful conditions (Papa, 2006) than they used to, due to the general cultural, socio-economic and working conditions in which they find themselves and also because of the

* English Teacher Agia Thekli Junior High School, Kefalonia, Greece

** Associate Professor, Department of Education, University of Cyprus, Nicosia, Cyprus

*** Tutor, Department of Education, University of Cyprus, Nicosia, Cyprus

transformation of the structure of modern societies. Consequently, the teachers gradually are under the pressure to improve not only their teaching, but their students' performance as well, so that the latter can respond to the new socio-economic conditions more successfully (Osborn, 2006). Teachers should also be able to function in multicultural environments, to adapt to the new social conditions (like single-parent families), to encourage new learning methods through the use of New Technologies, to be able to manage the ever increasing influence of the media on the lives of young students, to be able to function in bureaucratic organisations (Esteve, 2000; Popa and Acedo, 2006), as well as to cultivate new skills in their students, like team-work and high-level thinking. Evidently, there is intensification of the modern teacher's work (Day, 2002; Day, 2008; Res et al, 2007).

However, all these require methods and ways of teaching to which more and more the teachers are not accustomed (Hargreaves, 2000), since teachers' education remains basically the same and as a result teachers are not prepared to face the new challenges. It is the case that the provision of education, and mainly of the secondary compulsory one, to all social groups has led to a radical transformation of the educational systems all over the world and thus more attractive working conditions should be created for the teachers. Still, though, Hargreaves (1994, in Day et al, 2006b) reports that research has shown that most reforms have not taken into account and they haven't paid any attention to the teachers' emotional needs, to their needs in pedagogical knowledge and to their overall identity. Teachers tend to be treated by the state more as mere recipients of the educational policies and reforms than active subjects. They may be regarded as an inextricable part of the implementation procedure of the educational policies and reforms, but not of their design, a fact that gives them only limited control over the whole process of improving education (Holmes, 1998 reference in van Veen and Slegers, 2006; Olson, 2002; Res et al, 2007). Generally, teachers, like all civil servants, are considered to be efficient only when they satisfy and meet the definitions of others concerning what an effective teacher or an efficient employee is etc (Day et al., 2006b). We should always take into account that the teachers live and work within relations of power, (i.e. their professional relationships are unequal) (Ginsburg, 1995). At the same time, on a daily basis they face a series of problems such as relationships with colleagues, their motivation, reduced self-esteem and their chances for professional development (Kelchtermans, 1993).

In conclusion, all of the above circumstances, and especially when there are intense and radical changes in the educational policy, have an influence on the concepts of teachers' professionalism and professional identity and affect their expectations and their working conditions and practices, while their emotional commitment towards their work might be at risk because of the way and the extent to which these changes are accepted, adopted, adapted and finally supported (Day et al, 2006a). Furthermore, reduced motivation and job satisfaction, as well as alteration of

the professional identity might even be noted (Day, 2002; McNess et al., 2003; Hodgkinson and Hodgkinson, 2005; Day et al., 2006b; Day et al, 2007).

2. RESEARCH CONTEXT

Within a traditionally centralized educational system, Greek teachers have to deal with reform agendas, as well as policies and practices rigidly dictated by the central government with limitations, contradictions and ruptures that didn't give and continue not to give proper attention to the teachers' experience (Res et al, 2007), not to take into account the national traditions and the class reality, something that leaves teachers exposed and makes them adopt policies with which they do not agree from the beginning and in the design of which they certainly did not participate. Most of the educational reforms seem to be fragmented without careful and sufficient planning, and first and foremost without the consent of the educational community (van Veen & Slegers, 2006). Educational policies are implemented without adequate evidence that they will have positive outcomes, having too broad or vague targets and goals (van Veen & Slegers, 2006), while none up to now have proven to be especially decisive (Muller et al, 2007). Educational laws aim at just the school level (measures for the school system), and not at the community/ society level. Moreover, there is much confidence in the dynamics of administrative changes, although research has shown that such changes on their own cannot make a difference in schools and professionalism, let alone in the social conditions vital to the success of these changes (Fullan, 2001 reference in Bolivar and Domingo, 2006). Papanauom (2005), talks about teachers' conflict and division because of the increased bureaucracy, the quality of school leadership, the lack of cooperation, understanding and the ability to manage change.

One of the greatest problems of Greek education is the insufficiency of financial resources. This is the result not only of the financial crisis, but also of the attempt of cutting down on public expenditures. The teachers' salaries are much lower compared to other European countries and there is also reduction in the subsidization of the educational system. The insufficiency of the budget available becomes more pronounced through the dense classes, the high teacher/students ratio and the inadequate school maintenance, classroom space, teaching aids and equipment. So, it becomes obvious that the teachers' working conditions are bad. There is also an unsatisfactory level of teacher education (O.E.C.D., 1997). Teacher education in Greece is circumstantial, coincidental and fragmented and thus it does not meet the teachers' real needs (Lignos, 2006; Muller et al., 2007). This is because the teachers are confined into the role of a passive recipient and they don't get the chance to decide and define their needs and the topics on which they would like to be trained; something which reflects the centralization of our educational system even in teachers' education (Papaprokopiou, 2002). Moreover, the great number of foreign

students who attend (Greek) schools brings forward the issue of effectively handling groups with different linguistic, cultural and social characteristics (Benekos, 2007). At the same time, teachers also have to satisfy the needs of more and more students with learning disabilities and behavioural problems who attend regular classes (Papa, 2006). Thus, the demands placed on teachers are great and especially within the Greek educational system which has a deeply exam-oriented nature, where there is no room for creativity, the teachers have to stick to (the same for many years) books (O.E.C.D., 1997) and to move within very specified teaching limits, irrespective of the specific teaching conditions (National Board of Education, 2006). Within these circumstances, teachers feel isolated since cooperation, support and horizontal communication among teachers and among teachers and Directors are absent (National Board of Education, 2006), while parental contribution to the learning and teaching process is also limited. The relationship between school and parents has a more typical rather than substantial nature (Papagiannidou, 2000; Gliaou-Christodoulou, 2005) and the “parents’ participation is characterized by a more typical-legal dimension rather than a substantial-pedagogical one, (which) is mainly expressed through the lawful consequences of age” (Athanasoula-Reppa, 2008).

3. THE RESEARCH

3.1. Aims and objectives of the paper

This paper aims at investigating the characteristics of the professional identity of secondary school teachers in Greece (through how teachers themselves view their identity and their professionalism), their job satisfaction within the Greek educational system and the extent to which the implemented educational policy can influence all these attitudes and beliefs. For this reason, the following research questions were posed:

1. How do teachers conceive their role and themselves as professionals?
2. Which are the main factors that have an influence on the work of teachers and their identity?
3. Does educational policy influence teachers’ professional identity, their motivation and commitment levels and their overall job satisfaction?

3.2. Research method

The research approach followed was basically quantitative. The research tool used was a questionnaire, which included closed and only two open-ended questions (“*I feel dissatisfied with my job, because....*” & “*I feel satisfied with my job, because...*”). The questions included were formed after extensive study of the relevant bibliography, while some of them were based on the questionnaires of: Day, Flores and Viana

(2004) entitled *Transitions in Professionalism: Teacher Identities in Times of Change*, Sarri and Papani (2007) entitled: *Work motivation and Job Satisfaction between private employees and civil servants* and Papani and Giabrimi (2007) entitled: *Development of a scale measuring the teachers' professional adjustment- job satisfaction, work stress and burnout*. The questions were divided into four big groups: Group A, where the subjects had to give answers in relation to how they see themselves as professionals; Group B, had to do with job satisfaction within the Greek educational system; Group C, asked from the teachers to rank the contribution of various factors to the quality and effectiveness of their work in order of importance, and finally there was Group D, where the subjects could agree or disagree with different aspects of the organization of our educational system. Before all these, there were questions regarding the demographic characteristics of the subjects questioned, as well as an ordering of the reasons that motivated each person to select the teaching profession. In total, 170 secondary school teachers participated in the research. Moreover, the data were supplemented by interviews given by five teachers who work in public schools in urban areas.

The majority of the subjects are women (67,5%), 33,7% between 31 and 40 years old, 33,1% between 41 and 50 and 17, 8% up to 30 years old. Just a 15,4% are between 51 and 60 years old. Nevertheless, it became obvious that, even though the 66,8% of the total respondents belongs to the 31-40 and 41-50 age groups, still the vast majority (67,6%) of the subjects has work experience no more than ten years. The type of schools where the teachers work is balanced, with vocational educational slightly falling behind (19,9%).

The statistical analysis was carried out with the help of SPSS 17.0 and content analysis was used for the analysis of the qualitative data.

4. FINDINGS

4.1. How teachers regard their role and themselves as professionals

Group A questions and the two open-ended questions that follow, answer to the first research question. For the analysis of these findings we will be using the five dimensions of the professional identity (self-image, self-esteem, job motivation, task perception and future perspective) according to Kelchtermans (1993). A first glimpse at the total sample leads us to the conclusion that the majority of the teachers, irrespective of gender, work experience or any other variable, view themselves as professionals (self-image) and agree to a great extent with the sub-questions that make up this picture (Figure 1). For example, a 54.7% answered to the phrase "I see myself as a professional" with I agree/totally agree, as opposed to the 18.9% which gave the answer I disagree/ I totally disagree. Generally, when subjects were asked to evaluate themselves as educators (self-esteem) and to specify their work (task perception), the

majority of them stated that they respect their job and are proud of it (69.4%), they feel satisfied with its quantity and quality (77.7%), they like taking up initiatives (70.7%), they use modern teaching techniques and approaches (71.8%) and they are familiar with the techniques and methods required for their work (71.7%). As a result, they successfully meet their students' learning needs (85.9%). Teachers feel that they have become more effective as years go by (88.2%), they consider themselves to be conscientious and consistent professionals (94.1%), adaptive within their workplace (78.2%), active (71.7%) and they feel that their superiors appreciate their work (65.3%) and that cooperation with their colleagues is constructive (68.2%). The interviews conducted confirm the same things. Most of the respondents replied positively to the question *"Would you characterize yourself as a professional?"*

"Yes, with room for improvement" (male, French teacher).

"I think "yes" (male, teacher of Economy).

"I achieved that to a fairly great extent. And the fact that my husband had his own business, it helped. The demanding private sector helped me to develop these characteristics; mainly consistency" (female, English teacher1).

"Certainly yes, and I do what I can to remain professional" (female, English teacher2).

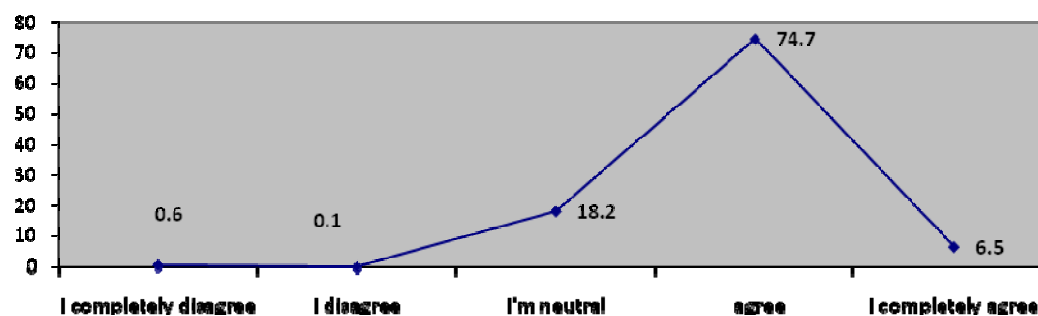
However, the way each teacher sees other teachers in general isn't always the same. In the interviews, the adjectives used to describe the modern teachers were: *ineffective, don't set targets, loose* (as to the working hours), *lack of concern, detached* (*"in the sense that they go into the class, they do what they have to do, without doing something more. They don't add emotion"*). Modern teachers are not characterized by their colleagues as especially professionals, either because of the existing conditions in the educational system, or because of the fact that *"most of the teachers have as their primary goal their rights and then their obligations"*. Only one teacher supported that:

"I think that modern teachers are professionals... that they are responsible towards their students, that they try to cover their subject matter... responsible, that they love their job, the students and I personally believe that they are not interested in money. They do it because they love children and their job, their teaching. In other words, altruistic" (female, Greek teacher).

As far as job motivation is concerned, 78.8% of the sample, see their professional interest and commitment declining as years go by and thus they have become more impersonal towards their students (81.8%). On the other hand, 89.4% have started questioning the importance of their work. 65.9% of the respondents believe that their job has become a daily routine and for this reason a 74.2% would change profession, if possible (future perspective). Such a stance comes in stark contrast with the previous positive image that teachers had for themselves as professionals. Such a differentiation can be attributed to external factors which can have an effect on professional identity, such as: personal problems (64.7%), the type of the school unit

where someone works (48.2%), the position of the subject someone teaches in the school timetable (57.6%), as well as students' attitude towards school (45.3%). After comparing the two independent samples (men-women), it became obvious that this tendency is mainly shaped by women.

FIGURE 1: VIEW OF THE SELF AS A PROFESSIONAL



4.2. Factors affecting teachers' identity

The second research question tries to trace the practical factors which affect teachers' professional identity. For this reason, a correlation analysis has been conducted which revealed a statistically significant correlation between professional identity and gender ($r = .155$ with $p < 0.05$), and also between professional identity and the various dimensions of the organization of the educational system (educational policy) ($r = .187$ with $p < 0.05$).

- Professional identity and gender

As for the first independent variable, if we examine the concepts of professionalism and professional identity separately in men and women, then we conclude that more women than men reply positively that they see themselves as professionals. That is, of the 74.6% of the subjects who state that they agree that they are professionals, the 70.6% are women as opposed to the 29.4% of men. At the same time, it is again women who keep a neutral position on the same issue. Obviously, the people who are neutral or disagree with professionalism, are more influenced by various parameters in their workplace, a fact that makes them question their work more and triggers feelings of doubt regarding the possibility of having an impact on their students' progress as well as the usefulness and the possibility of having ambitions within the framework of our educational system. What is more, as Papanis

& Rontos (2007) claim, a Likert scale does not help us decide whether neutrality means having doubts or not having a formed opinion (Table 1).

TABLE 1: HOW I VIEW MYSELF AS A PROFESSIONAL (TOTAL PICTURE OF THE SAMPLE- FREQUENCIES IN RELATION TO THE GENDER OF THE RESPONDENTS)

	Men			Women			Total		
	N	%	%	N	%	%	N	%	%
I completely disagree	1	100	1,8	-	-	-	1	100	0,6
I disagree									
I'm neutral	14	45,2	25,5	17	54,8	14,9	31	100	18,3
I agree	37	29,4	67,3	89	70,6	78,1	126	100	74,6
I completely disagree	3	27,3	5,5	8	72,7	7	11	100	6,5
Total	55	32,5	100	114	67,5	100	169		100

No answers 2

$X^2(3) = 5,0$ ($p < 0,05$)

- Professional identity and educational policy

The correlation analysis also revealed a connection between professional identity and the dimensions of the organization of our educational system.

Initially, by comparing the answers to the questions in Group C, which refer to the importance that various factors bear for the quality and the effectiveness of the teacher's work, with the answers to the questions in Group D, can give us a quite enlightening picture. Among the first three factors which the sample name as the most important ones for the teacher's work is public acknowledgement and the sense of moral and social contribution (always among the first three choices of the sample). Furthermore, teachers think that taking initiatives and implementing new ideas are also very important (1st and 2nd choice for the 25.9% and the 14.7% of the respondents respectively), as well as building a rapport between the school and the parents (1st choice for the 14.7% and 3rd choice for the 11.8%). Finally, there are also the dimensions of variety at work (2nd choice for the 11.8%), team work (3rd choice for the 11.2%) and infrastructure (3rd choice for the 12.4%).

Consequently, since these factors are assessed by the respondents as important, we should examine the extent to which all these are provided by our educational system, otherwise their absence or inadequacy may have an impact on the quality of the teaching process, the sense of self-effectiveness and in the long run on professional identity as well. The 68.8% of the teachers believe that our educational system doesn't encourage initiatives and doesn't welcome new ideas, and that it doesn't encourage

cooperation and team spirit (64.7%), although these two are considered to be really important for teachers. The 68.9% don't think that teachers are properly recognized by the society, a fact that can lead to a questioning of their status, since no one can realize *"the significance of the student's development through the educational process"*:

"Every day teachers confront the general public, who put the blame on them for the failure of the educational system"

"(The teacher's work) is not recognized by the parents and the state. The teachers who work for the public sector are not much appreciated by the community and this has an impact on the students and the teaching process".

"Usually this "job" is met with prejudice and stereotypical concepts by other social groups (e.g. teacher = lazy and "passenger")".

"Many times the work, the organisation, the zest are met with passivity or even with negative mood by students, colleagues and parents".

On the contrary, there is a balanced picture in the question *"The relations of the school with my students' parents have been developed to a satisfactory extent"*. The 53.6% are fairly or even very satisfied, while the 44.7 % are fairly or even very dissatisfied. The 65.9% support that their job has become a daily routine, so obviously there is lack of variety, and as far as infrastructure is concerned, this is unsatisfactory as well (in fact, in the open-ended questions it is listed as one of the reasons of disappointment in the job):

"There are noinfrastructures to improve my work",

"The infrastructures to help teaching become more constructive and interesting for both teachers and students are absent",

"My work is sub-subsidized by the State".

Additionally, teachers seem to be concerned about the lack of motivation to improve their work and their performance as well as the absence of opportunities for professional development, situations which are directly connected to the absence of meritocracy (the 64.7% agree with the statement) and evaluation. However, both meritocracy and evaluation could enable teachers and their work to be more widely acknowledged. The impasse grows bigger when there is not enough guidance and contact with the superiors (Directors, Counselors), which could substitute the afore mentioned weaknesses. However, this gap does not lead to complacency and worse performance according to the 42.4%. Moreover, as a good number of teachers stated, there is no solidarity between colleagues and there is not a common vision for education. Such situations *"make the introduction of alternative teaching and learning methods difficult"*.

Going further to more practical issues of school reality, there are references to low salaries, which *"do not correspond to the qualifications and the performance"*, so they are not considered to be adequate. Besides, the 64.1% believe that the teachers' salary does not correspond to their work and a 48.9% are not satisfied with the state social policy (leaves, benefits) in the field of education. Still, very few respondents

talked about satisfactory salaries which offer them the opportunity for a good way of life (very limited emphasis was placed on the financial rewards as compared to the organisational parameters of our educational system), about the working hours and the free time available, the permanency and the professional security that the teaching job provides. Consequently, priority was given to the moral rewards and psychological benefits of teaching rather than to the practical benefits.

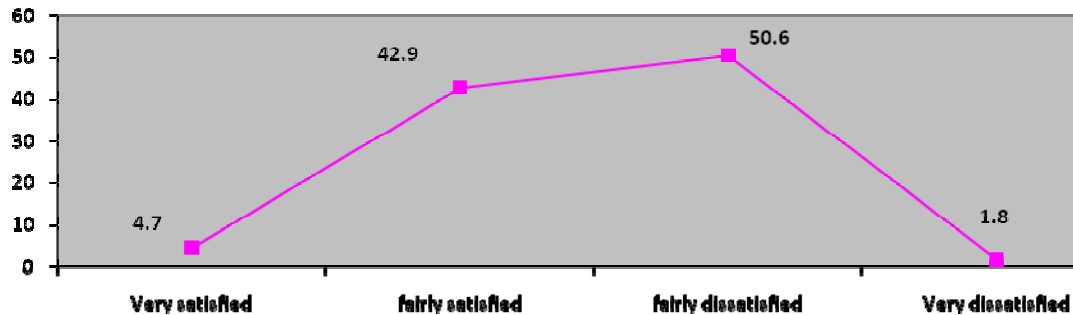
4.3. Educational policy: motivation, commitment and job satisfaction

This section answers to the last research question. Beyond the impact that educational policy has on professional identity, a correlation between educational policy and job satisfaction, as well as with working experience has arisen (Table 2). Overall, teachers seem to be either fairly satisfied (42.9%) or fairly dissatisfied (50.6%) with the structure and organization of our educational system (Figure 2).

TABLE 2: CORRELATIONS AMONG WORKING EXPERIENCE AND OTHER VARIABLES

Correlations						
		Working experience	Gender	Questions (Group A')	Questions (Group B')	Questions (Group D')
Working Experience	Pearson Correlation	1	-,049	,129	-,094	,169*
	Sig. (2-tailed)		,531	,094	,222	,028
	N	170	169	170	170	170
Questions (Group B')	Pearson Correlation	-,094	,021	-,119	1	-,386**
	Sig. (2-tailed)	,222	,789	,121		,000
	N	170	169	170	170	170
Questions (Group D')	Pearson Correlation	,169*	-,130	,187*	-,386**	1
	Sig. (2-tailed)	,028	,091	,015	,000	
	N	170	169	170	170	170

**FIGURE 2: TOTAL DEGREE OF SATISFACTION FROM THE (9) DIMENSIONS
OF THE TASK WITHIN THE FRAMEWORK OF
THE GREEK EDUCATIONAL SYSTEM**



By analyzing the answers of the five teachers in the interviews, we will realize that all of them claim that they are satisfied from their profession. As a respondent characteristically states:

“I feel very much satisfied and full. If I could turn back the time, I would give the same. Perhaps though, enriched ...» (woman, Teacher of English1).

If we take a close look at the sentences which make up this scale, we can see that the biggest rates of dissatisfaction concentrate around the lack of lifelong learning opportunities (the 68.9% replied either fairly or very dissatisfied), the absence of further development possibilities (70%) and motivation for improvement (70.6%). Also, the subjects are not satisfied as far as the available resources are concerned (59.4%). On the other hand, satisfaction rates are higher when there are questions where job satisfaction is related to somebody's personality and their personal ability to deal with their work (For example: Questions B1 and B2). The 74.7% of the subjects is fairly/very satisfied with the opportunities to take up initiatives and creative actions within the school, even though it is acknowledged by the 68.8% that our educational system does not foster new ideas and does not encourage initiatives. The 61.2% are very/ fairly satisfied with their ability to adequately cope with students who have (social) particularities, while the 53.6% consider that the relationship between the school and the parents have been developed to an satisfactory extent. Finally, the 74.7% are fairly/very satisfied with the working environment within which their teaching and administrative tasks are fully specified (59.4%), although generally the educational system as a whole doesn't set definite and articulate goals (58.8%).

Additionally, the answers did not reveal a correlation between education policy and motivation or commitment to one's work. For example, the permanency and the stability that the teaching profession offers don't necessarily seem to enhance the

teachers' commitment towards their work and to improve the quality of their performance (39.4%). Also, the lack of guidance from the superiors doesn't automatically lead to complacency and to a lower level of performance (42.4%). The public judgment of the educational system is not in itself capable of increasing passivity and to erode the teachers' enthusiasm and interest in the profession, according to the 65.9% of the respondents, while the frequent and fragmentary changes in education and the non-linearity between primary and secondary education don't concern the 78.8% and the 75.3% of the teachers respectively. On the contrary, in the interviews became clear that among the factors that are listed as those which can promote or undermine the teachers' enthusiasm and interest in their work, we could mainly find organizational parameters of our educational system. More specifically, the Greek educational system is exam-oriented which makes *"teaching in Lyceum to aim only at learning in order to enter University and not at studying for knowledge itself, so grade hunting prevails ("the marks do not correspond to the students' real value")*. In an effort to serve such a system, there is centrally specified teaching material and *"outdated curricula"* (Overview of the Greek Educational System, 1995) which the teachers regard as a kind of a commitment that make *"quality work difficult or even impossible"* and *"don't allow students to have free access to knowledge and to other activities"*. Consequently, teachers enter a vicious circle where: *"I am compelled to focus on knowledge and not on the cultivation of critical thinking"* and feel that: *"The effectiveness of my work is influenced by inconsistent examination systems"*. So, the teachers reach the limits of their efficacy and often have feelings of vulnerability (Kelchtermans, 1993; Kelchtermans, 1996; Kontelli, 2008), since *"the end result is sometimes really poor"*. However, a 69.5% disagree with the statement that the school's pedagogic dimension and the teacher's multi-dimensional role are undermined due to the exam-oriented nature of our educational system.

Moreover, teachers are often annoyed when they have to teach subjects that are not directly relevant to their own subject matter. They ask more teaching hours for some subjects and supportive structures, so that their work can be more effective. They feel that their task is not linear because of the frequent changes and the moving around between different schools. For some, classes with many students can also be a reason of disruption to their work (Papa, 2006; Kontelli, 2008), because *"the implementation of new pedagogical methods and innovative teaching techniques remains infeasible"*, a fact that can trigger a sense of incapability (the 85.9% consider big classes to be responsible for feelings of vulnerability among teachers):

"I feel disappointed when I see that I can't help students with deviant behaviour".

What teachers think would contribute to their greater commitment towards their work, is their more active participation and the more opportunities to take part in the decision making process within the school unit (73.5%).

As far as working experience is concerned, it became obvious that younger colleagues judge those aspects of our educational system which are included in the

Group D questions more harshly. In fact, though, the educational system has not received positive evaluation by none of the three categories which are presented in tables 3 and 4 apart from a very small percentage. Those who do not agree prefer to keep a neutral stance. Additionally, the biggest disappointment rates in our educational system are traced among those whose working experience is up to ten years, followed by those who have worked for 11-20 years, while at the end we find those who are in the last part of their teaching career.

**TABLE 3: TOTAL GRADE OF SATISFACTION FROM THE (9) ASPECTS OF
THE TEACHING TASK WITHIN THE GREEK EDUCATIONAL SYSTEM**

	Working experience											
	Up to 10 years			11 – 20 years			21 – 30 years			Total		
	N	%	%	N	%	%	N	%	%	N	%	%
Very satisfied	5	62,5	4,3	3	37,5	7,9	-	-	-	8	100	4,7
Fairly satisfied	45	61,6	39,1	18	24,7	47,4	10	13,7	58,8	73	100	42,9
Fairly dissatisfied	63	73,3	54,8	16	18,6	42,1	7	8,1	41,2	86	100	50,6
Very dissatisfied	2	66,7	1,7	1	33,3	2,6	-	-	-	3	100	1,8
Total	115	67,6	100	38	22,4	100	17	10	100	170		100

**TABLE 4: TOTAL PICTURE IN RELATION TO THE EXTENT OF
AGREEMENT WITH THE 17 DIMENSIONS OF THE ORGANISATION OF THE
EDUCATIONAL SYSTEM**

	Working experience											
	Up to 10 years			11 – 20 years			21 – 30 years			Total		
	N	%	%	N	%	%	N	%	%	N	%	%
I completely disagree	2	100	1,7	-	-	-	-	-	-	2	100	1,2
I disagree	72	72,7	62,6	19	19,2	50	8	8,1	47,1	99	100	58,2
I'm neutral	41	62,1	35,7	16	24,2	42,1	9	13,6	52,9	66	100	38,8
I agree	-	-	-	2	100	5,3	-	-	-	2	100	1,2
I completely agree	-	-	-	1	100	2,6	-	-	-	1	100	0,6
Total	115	67,6	100	38	22,4	100	17	10	100	170		100

Finally, though, the general conclusion we can draw is that there is only limited reference to issues of mentality and personal responsibility, while at the same time there is also limited self-criticism among the 170 questionnaires:

"Sometimes I do not impose as much as I should and in this way I waste time at the expense of my students who feel like learning".

"I don't totally achieve the teaching goals I set. I am not familiar with the new teaching methods, so as to make my class more pleasant".

"The civil servant mentality is pretty intense. There is irresponsibility among teachers".

"I can see indifference".

During the five interviews conducted, when the subjects were asked about whether the observed lack of willingness and commitment towards one's work is a reaction to the unfavourable working conditions or a matter of mentality and a characteristic of the civil servant identity, then again the external conditions were held responsible. Three out of five agreed that educational policy is to blame:

"The first one, because there is not a cohesive and stable educational policy...there is micro politics at the expense of the educational system. So, all these make you unwilling because you cannot set targets" (male, French Teacher).

"Not the civil servant identity. Not that, I mean I don't believe that the so-called permanency is to blame, I don't believe this. I believe it is the educational system itself that presses you..." (female, Modern Greek Teacher).

"It is a reaction towards the various unfavourable parameters that teachers are obliged to accept..." (female, English Teacher2).

One answered that mentality is mainly responsible:

"The second one basically. If it were a reaction, we would do much more to change it" (female, English Teacher1), while there was a reference to both factors:

"Both. We do our jobs in a formal way, but not substantially, and on the other hand there are the educational problems as well" (male, Teacher of Economy).

However, in the question *"Do you believe that the improvement of our educational affairs is mainly a legislative/administrative task or a personal concern?"* (removed from the final questionnaire), the respondents (four out of five) recognized that the improvement of our educational affairs should be not only a legislative/administrative task but a personal concern as well or even a combination of both:

"Reforms also help, but I think that it is a personal matter" (female, English Teacher1).

"I believe that we can do it ourselves" (female, Modern Greek Teacher).

"It is definitely a combination of both" (female, English Teacher2).

So, there a general tendency to attribute all the problems and difficulties either to a third party or to the bad organization of our educational system, which is definitely true and definitely causes complications. The impression given is that, although there is willingness on the part of the teachers to offer, still there are external obstacles which make the teaching task difficult, such as curriculum pressure, bad organization of the educational system etc. This is summed up in a teacher's words:

“I would like to offer in multiple ways, but...”.

5. DISCUSSION

In the present research, the way in which teachers view themselves as professionals and the factors which influence the teaching task and the professional identity (mainly the gender and the educational policy) were examined. Also an attempt was made to measure the impact of the educational policy on sustaining commitment, motivation and the overall job satisfaction among Greek teachers in Secondary Education. The professional identity was found to be determined by two basic factors: the educational policy and the gender of the respondents. Even though the Greek educational system does not fully meet the needs of its teachers for social recognition, implementation of new ideas, taking up initiatives, good infrastructures etc, still the teachers of the present sample feel the inner drive to complete their work successfully and at the same time they feel committed towards that. Therefore, they could be characterized as employees with motives (Whetten and Cameron (2002), reference in Sarri and Papani, 2007). They seem to be more motivated by inner motives (a need to satisfy personal needs), rather than external ones, like the financial motive or the motive for good performance or the good organisation, which are otherwise absent from the structure of the Greek educational system.

As far as gender is concerned, women respect their profession more and are more proud of it. Besides, being a teacher is a job that is traditionally considered to be the most suitable for women (Maragoudaki, 2008). Women seem to have a stronger sense of mission, they believe that they can make a difference in their students' learning and they feel that they correspond to their students' learning needs. This attitude can be attributed to the way women were socialized: their ability to recognize and understand not only their own feelings but the others' as well was deeply cultivated (Brody & Hall, 2000; Craig et al., 2009), so they are more compassionate (Mehrabian, Young & Sato, 1988). This ability renders women more responsive and responsible for the needs of others. A greater percentage of women state that they have become more efficient as the years go by, they feel full of energy and claim to be more consistent with their duties. Besides, when women grow older and reach their mid-careers, they receive greater satisfaction from their jobs and they feel greater self-accomplishment, since they manage to combine their family and working duties more effectively (Auster, 2001). However, the working conditions seem to influence women more, so that they see their commitment decreasing to a greater extent as the years go by, they become more impersonal, they question the importance of their work and they see their work turning into a daily routine which they would change if they got the chance.

As for the job satisfaction, the subjects' dissatisfaction was more connected to the structure of the educational system rather than the teaching profession itself, while in the questions which concerned the respondents' personality and their personal ability

to cope with their work, then the satisfaction rates were higher. Similar findings were reported by Botsari and Matsaggouras (2003), where teachers showed greater satisfaction with the recognition they received from parents, students, colleagues and superiors and less satisfaction with the system's meritocracy and the working conditions. Perhaps this is the case because the way in which teachers view their professional identity and the way the others see them are both basic parameters of motivation, commitment and their job satisfaction (Day, 2002; van Veen & Slegers, 2005) and maybe even more important than the educational policy itself. Papers from Sousamidou et al (2007) and Brouzos (2004) reported similar findings of high job satisfaction. On the other hand, gender was not found to influence job satisfaction. Within the Greek educational system, at least at classroom level and among plain teachers, one does not see many variations between the two sexes as far as salaries, promotions and favourable or unfavourable working conditions are concerned. Furthermore, a paper from Sousamidou, Milona and Tireli (2007) has shown that job satisfaction is fairly high among Greek teachers, without being conditioned by the gender factor. In the case of Greece, job satisfaction could also be related to the absence of other working prospects for teachers outside education, rather than being true and deep satisfaction with the conditions and the terms of the current job (Menon and Christou, 2002).

Furthermore, those with less years of working experience were stricter, while those with more years in education chose a rather neutral stance. As far as the latter is concerned, according to the socio-emotional selectivity theory (Carstensen et al., 2000), the age, because of the better adjustment of emotions, reduces the levels of negative emotions in people, and can make older people more conciliatory and less negatively predisposed. Or such an attitude can be attributed to the fact that the educators who are relatively new to the profession come in contact with the realistic image of learning and teaching (Lamote and Engels, 2010), which is in stark contrast with the most optimistic outlook of their abilities they carry from university and the experiences they gain during their training. However, since reality brings them down to earth and they should re-negotiate the limits of their efficacy, they become harsher judges of the educational system, while any incompatibilities between their expectations and the working reality can lead to disappointment in their work.

Finally, teachers, irrespective of the gender factor, produced high rates of positive self-image as far as their professionalism and their professional identity is concerned, with a high degree of consistency and conscientiousness towards their job and their students. On the contrary, the five interviewees' evaluation of their colleagues was not so favourable. Such contradiction could be explained by the fact that the respondents are asked to judge somebody on the basis of arbitrary personal beliefs, since they will never have access to the thoughts, the feelings and the motives of those they judge (MacDonald, 2008), something which certainly constitutes a weakness. This in combination with the fact that we as people most of the times tend to present a more

improved, than the real one, image of ourselves, even if what we claim does not necessarily reflect our true thoughts and intentions (Paulhus, 1991, reference in McDonald, 2008), leads to the aforementioned differentiation. Besides, the perception each person has for different things does not always reflect reality. Anyone can have a distorted idea about who he/she really is (John & Robins, 1994). Our personal convictions and our personal meanings about reality, as well as our understanding about relationships and our position in the world are shaped through our subjective emotional world (Day, 2002). Pronin (2008) reports that the way we see ourselves and the way we see others differ. For ourselves we are immersed in our own feelings, sensations and cognitions, the same moment that our view of others is guided by the external view of things. However, according to Pronin this asymmetry leads people to judge themselves and their behaviour in a different way from the way they judge other people's behaviour, a fact that leads to a conflict, which is also confirmed by the findings of the present research.

6. LIMITATIONS

The main research method used in this paper was the questionnaire, which included self-reference scales to measure teachers' self-image, their job satisfaction and the degree of their agreement with different aspects of our educational system. This type of collecting data may be more user-friendly, less tiring for the subjects and expected to produce less contradictory answers, yet responding on a pre-specified scale can lead to simplified answers or even to distortion of information (Birelson et al., 1987). Also, there is a systematic tendency on the part of the subjects to reply to such self-reference scales in a way that presents a more favourable image of themselves, without their answers necessarily reflecting what they truly think or do (Socially Desirable Response) (Paulhus, 1991, reference in McDonald, 2008).

REFERENCES

- Athanassoula-Reppa, A. (2008). *Εκπαιδευτική Διοίκηση & Οργανωσιακή Συμπεριφορά: η παιδαγωγική της διοίκησης της εκπαίδευσης [Educational Management & Organisational Behaviour: the pedagogy of educational management]*. Athens:Ellin Publications.
- Auster, R.E. (2001). *Professional Women's Midcareer Satisfaction: Toward an Explanatory Framework*. *Sex Roles*, 44(11/12), pp. 719-750.
- Benekos, D. (2007). Η εκπαίδευση ειδικών πληθυσμιακών ομάδων στην Ελλάδα: Η περίπτωση των Τσιγγάνων [The education of special population groups in Greece: The case of the Gypsies]. *Educational Issues Review*, 12, pp. 60-68.
- Birelson, P., Hudson, I., Buchanan, D.G., & Wolff, S. (1987). Clinical evaluation of self-rating scale for depressive disorder in childhood. (Depression self-rating scale). *Journal of Child Psychology and Psychiatry*, 28, pp. 43-60.

- Bolívar, A. and Domingo, J. (2006). The professional identity of secondary school teachers in Spain: Crisis and reconstruction. *Theory and Research in Education*, 4, pp.339- 355.
- Brody, L. R. and Hall, J. A. (2000). *Gender, Emotion, and Expression*. In M. Lewis and J. M. Haviland (Eds.), *Handbook of emotions* (pp. 338-349). New York: Guilford.
- Brouzos, A. (2004). Ικανοποίηση των δασκάλων από το επάγγελμά τους [Teachers' satisfaction from their profession]. Paper presented during the 4th Panhellenic Conference: "Greek Pedagogy and Educational Research". Alexandroupoli, 28-30 May 2004, 201-210 (eds. Chatzidimou, D., Taratori, E., Kougiourouki, M. and Stravakou, P).
- Carstensen, L.L., Pasupathi, M., Mayr, U. and Nesselroade, J.R. (2000). *Emotional Experience in Everyday Life Across the Adult Life Span*. *Journal of Personality and Social Psychology*, 79, pp. 644-655.
- Craig, A., Tran, Y., Hermens, G., Williams, L.M., Kempd, A., Morris, C., Gordon, E, (2009). Psychological and Neural Correlates of Emotional Intelligence in a Large Sample of Adult Males and Females. *Personality and Individual Differences*, 46, pp. 111-115.
- Day, C. (2002). School reform and transitions in teacher professionalism and identity. *International Journal of Educational Research*, 37, pp. 677-692.
- Day, C. Kington, W., Stobart, G. and Sammons, P. (2006a). The personal and professional selves of teachers: stable and unstable identities. *British Educational Research Journal*, 32(4), pp. 601-616.
- Day, C., Stobart, G., Sammons, P. & Kington, A. (2006b). Variations in the work and lives of teachers: relative and relational effectiveness. *Teachers and Teaching*, 12(2), pp.169-192.
- Day, C. (2008). Committed for life? Variations in teachers' work, lives and effectiveness. *Journal of Educational Change*, 9, pp. 243-260.
- Esteve, J. M. (2000). The transformation of the teachers' role at the end of the twentieth century: new challenges for the future. *Educational Review*, 52(2), pp. 197-207.
- Flores, M. A. and Day, C. (2006). Contexts which shape and reshape new teachers' identities: A multi-perspective study. *Teaching and Teacher Education*, 22, pp. 219-232.
- Fullan, M. (2001). *The New Meaning of Educational Change* (3rd edition). New York: Teachers College Press.
- Ginsburg, M. (1995). *Contradictions, resistance and incorporation in the political socialization of educators in Mexico*. In: Ginsburg, M., Lindsay, B. (Eds.), *The Political Dimension in Teacher Education*. Falmer Press, NY.
- Gliaou-Christodoulou, N. (2005). Η ανάγκη επιμόρφωσης εκπαιδευτικών στην κατεύθυνση ανάπτυξης αποτελεσματικής συνεργασίας σχολείου-οικογένειας [The need for teacher education towards the establishment of an effective school-parents cooperation]. *Educational Issues Review*, 10, pp. 74-83.
- Hargreaves, A. (1994). *Changing teachers, changing times: teachers' work and culture in the postmodern age*. New York: Teachers College Press.
- Hargreaves, A. (2000). Four ages of professionalism and professional learning. *Teachers and Teaching: Theory and Practice*, 6(2), pp. 151-182.
- Hodkinson, H. and Hodkinson, P. (2005). Improving schoolteachers' workplace learning. *Research Papers in Education*, 20(20), pp. 109-131.
- John, O. P. and Robins, R. W. (1994). Accuracy and bias in self-perception: Individual differences in self-enhancement and the role of narcissism. *Journal of Personality and Social Psychology*, 66, pp. 206-219.

- Kelchtermans, G. (1993). Getting the story, understanding the lives: From career stories to teachers' professional development. *Teaching and Teacher Education*, 9, pp. 443–456.
- Kelchtermans, G. (1996). Teacher vulnerability: understanding its moral and political roots. *Cambridge Journal of Education*, 26(3), pp. 307-324.
- Kontelli, A. (2008). Κίνητρα του δασκάλου. [online]. [Teacher's motives]. Available from: http://epapanis.blogspot.com/2008/02/blog-post_18.html (accessed 2nd June 2010).
- Lamote, C. and Engels, N. (2010). The development of student teachers' professional identity. *European Journal of Teacher Education*, 33(1), pp. 3-18.
- Lignos, D. (2006). Σκέψεις και διαπιστώσεις για την επιμόρφωση των εκπαιδευτικών [Thoughts and findings concerning teachers' education], *Virtual School, The sciences of Education* [Online]. Available from: <http://www.auth.gr/virtualschool/3.3/Praxis/LignosTrainingEducators.html>
- Makri-Botsari E. & Matsaggouras, H. (2003). Δομή της επαγγελματικής αυτοαντίληψης και της επαγγελματικής ικανοποίησης εκπαιδευτικών Α/θμιας Εκπαίδευσης [Structure of the Primary school teachers' professional self-perception and job satisfaction]. Paper presented in the 3rd Panhellenic Conference: Greek Pedagogy and Educational Research. Athens, 7-9 November 2002 (eds. Zoukis, N., Mitakos, T.).
- Maragoudaki, E. (2008). Ο παράγοντας φύλο στη Δευτεροβάθμια και Τριτοβάθμια Εκπαίδευση: Όψεις συνέχειας και μεταβολής [The gender factor in Secondary and Tertiary Education: Aspects of continuity and change]. In Deligianni- Kouimtzi, B., Ziogou – Karastergiou, S. & Frosi, L. (Eds.), *Φύλο και εκπαιδευτική πραγματικότητα στην Ελλάδα: Προωθώντας παρεμβάσεις για την ισότητα των φύλων στο ελληνικό εκπαιδευτικό σύστημα. [Gender and educational reality in Greece: Promoting interventions for the equality of the sexes in the greek educational system]*. Athens: KETHI.
- McDonald, J.D. (2008). Measuring personality constructs: the advantages and disadvantages of self-reports, informant reports and behavioural assessments. *Enquire*, 1(1), 1-19. [online]. Available from: <http://www.nottingham.ac.uk/sociology/prospective/postgraduate/enquire/enquire-pdfs/dodoricoj.pdf> (accessed 1st June 2010).
- McNess, E., Broadfoot, P. & Osborn, M. (2003). Is the effective compromising the affective? *British Educational Research Journal*, 29(2), pp. 243-57.
- Mehrabian, A., Young, A. L. and Sato, S. (1988). *Emotional Empathy and Associated Individual Differences*. Current Psychology Research and Reviews, 7, pp. 221-240.
- Menon, M. E. and Christou, C. (2002). Perceptions of future and current teachers on the organization of elementary schools: a dissonance approach to the investigation of job satisfaction. *Educational Research*, 44(1), pp. 97-110.
- Müller, J., Hernández, F., Sancho, J.M., Larrain, V. & Creus, A. (2007). Comparing three generations of European teachers in times of accountability and work restructuring. Στο: *Atlantic Crossings: Comparative Conversations on Professional Cultures of Teaching and Institutional Restructuring as a World Movement*. Chicago: AERA.
- National Board of Education (2006). Έκθεση επιτροπής για τη Δευτεροβάθμια Εκπαίδευση [Essay of the Committee for Secondary Education]. [online]. Available from: <http://omosp-goneon-athinas.org/omosp-athinas/nfblog/?p=141> (accessed 14th February 2010).

- O.E.C.D. (1997). *Κριτική Επισκόπηση του Ελληνικού Εκπαιδευτικού Συστήματος από τον Ο.Ο.Σ.Α.* [Critical review of the greek educational system by O.E.C.D.]. [online]. Available from: <http://www.hri.org/docs/OECD.html> (accessed 17th December 2009).
- Olson, J. (2002). Systematic change/teacher tradition: legends of reform continue. *Journal of Curriculum Studies*, 34(2), 129-137.
- Osborn, M. (2006). Changing the context of teachers' work and professional development: A European perspective. *International Journal of Educational Research*, 45, pp. 242-253.
- Papa, V. (2006). Το στρες των εκπαιδευτικών και οι παράγοντες που συμβάλλουν στην επαγγελματική εξουθένωση [Teacher's stress and the factors that contribute to professional burnout]. *Educational Issues Review*, 11, pp. 135-142.
- Papagianidou, X. (2000). Σχέσεις γονέων και δασκάλων στην προσχολική εκπαίδευση [Teachers – Parents rapport in pre-school education]. *Modern Education*, 110, pp. 75-83.
- Papanaoum, Z. (2005). *Ο ρόλος της επιμόρφωσης των εκπαιδευτικών στην επαγγελματική τους ανάπτυξη: γιατί, πότε, πώς* [The role of teacher education in their professional development: why, when, how]. In Bagakis, G. (eds.). *Επιμόρφωση και επαγγελματική ανάπτυξη του εκπαιδευτικού* [Teacher education and professional development]. Athens: Metaixmio Publications.
- Papanis, E. and Rontos, K. (2007). *Η έρευνα στις κοινωνικές Επιστήμες* [Research in social sciences]. [online]. Available from: <http://epapanis.blogspot.com/search/label/%CE%AD%CF%81%CE%B5%CF%85%CE%BD%CE%B1%20%CF%83%CF%84%CE%B9%CF%82%20%CE%BA%CE%BF%CE%B9%CE%BD%CF%89%CE%BD%CE%B9%CE%BA%CE%AD%CF%82%20%CE%B5%CF%80%CE%B9%CF%83%CF%84%CE%AE%CE%BC%CE%B5%CF%82> (accessed 1st June 2010).
- Papanis, E. and Giabrimis, P. (2007). Ανάπτυξη κλίμακας μέτρησης επαγγελματικής προσαρμογής των εκπαιδευτικών (εργασιακή ικανοποίηση, επαγγελματικό άγχος και εξουθένωση) [Development of a scale measuring the teachers' professional adjustment-job satisfaction, work stress and burnout]. Available from: http://epapanis.blogspot.com/2007/09/blog-post_20.html (accessed 14th March 2010).
- Papaprokopiou, N. (2002). *Αλληλεπιδράσεις μεταξύ ακαδημαϊκής κοινότητας και εκπαιδευτικών θεσμών. Ο ρόλος του επόπτη καθηγητή* [Interactions among the academic community and the educational institutions. The role of the supervisor]. In Bagakis, G. (eds.), *Ο εκπαιδευτικός ως ερευνητής* [The teacher as a researcher]. Athens: Metaixmio.
- Paulhus, D. P. (1991). Measurement and control of response bias. In J.P. Robinson, P.R. Shaver, & L. S. Wrightsman (Eds.), *Measures of personality and social psychological attitudes* (pp. 17-59). San Diego: Academic Press.
- Popa, S. and Acedo, C. (2006). Redefining professionalism: Romanian secondary education teachers and the private tutoring system. *International Journal of Educational Development*, 26, pp. 98-110.
- Pronin, E. (2008). How we see ourselves and how we see others. *Science*, 320(5880), pp. 1177-1180.
- Res I., Varsamidou, A. and Filiopoulos, G. (2007). Αυτονομία της σχολικής μονάδας και επαγγελματική ανάπτυξη του Έλληνα δασκάλου: η απαξίωση μιας ρητορείας [Autonomy of the school unit and the professional development of the Greek Teacher]. Paper

- presented in the conference: Primary Education and the challenges of our era. Ioannina, 17-20 May, pp. 1511-1517 (eds. Kapsalis, A. Katsiskis, A.).
- Sarri, S. and Papanis, E. (2007). *Work Motivation and Job satisfaction between private employees and civil servants*. [online]. Available from: <http://epapanis.blogspot.com/search/label/work%20motivation%20and%20job%20satisfaction> (accessed 14th March 2010).
- Sousamidou, A., Milona, Z. & Tireli, V. (2007). Η επίδραση της ηλικίας, του φύλου και των ετών υπηρεσίας στην επαγγελματική ικανοποίηση των εκπαιδευτικών Πρωτοβάθμιας Εκπαίδευσης [The influence of age, gender and working experience on the primary school teachers' job satisfaction]. Paper presented in the conference: Primary Education and the challenges of our era. Ioannina, 17-20 May, pp. 1511-1517 (eds. Kapsalis, A. Katsiskis, A.).
- Van Veen, K. and Slegers, P.(2006) How does it feel? Teachers' emotions in a context of change. *Journal of Curriculum Studies*, 38(1), pp. 85-111.
- Whetten, D. and Cameron, K. (2002). *Developing Management Skills*. (5th edition). New Jersey: Prentice Hall.
- Woods, P., Jeffey, R. J., Troman, G. and Boyle, M. (1997). *Restructuring schools, reconstructing teachers*. Buckingham: Open University Press.
- Woods, P. and Jeffrey, B. (2002). The Reconstruction of Primary Teachers' Identities. *British Journal of Sociology of Education*, 23(1), pp. 89-106.

THE DEMOGRAPHY OF DISABILITY IN GREECE: EVIDENCE FROM THE LABOUR FORCE SURVEY OF 2002

VASILIS S. GAVALAS^{*}, PANAGIOTIS STRATAKIS^{**}, EFSTRATIOS
PAPANIS^{***} and PANAGIOTIS GIAVRIMIS^{****}

ABSTRACT

This study draws on the Labour Force Survey to map the demography and geography of disability in Greece and to pinpoint the need for reliable and detailed data in national level on this issue. A key finding is that disability is more prevalent to women than to men but part of this is due to the different age-structure of the two sexes (more women in old ages). Certain disabling conditions are more common to men, like speech problems, epilepsy and cardiovascular diseases, while others, such as lower limbs problems (including arthritis and rheumatism) are more common to women. The main causes of disability are age-related conditions, while occupational diseases make up the second most common cause of disability and present significant geographical variation. Economic activity of the disabled is very low and this is particularly obvious when comparing Greece with other European Union countries.

Keywords: Long Standing Health Problem or Disability; Age-related disability; Congenital Anomalies; Cardiovascular Diseases.

1. INTRODUCTION

Longevity in itself is considered a welcome condition both on personal and on societal level. High life expectancy at birth is an indicator of social development and of well-being of the population. However, the extended longevity that is observed in the developed world in the last decades, has allowed chronic illness and age-related disability to manifest in a greater part of the population, as more people, both in absolute numbers and proportionally, survive to celebrate their 70, 80, 90 and even 100 birthday. As Lynch et al. put it “At older ages eyesight and hearing fade, joints stiffen and weaken, circulation becomes impaired, lung capacity declines, bone density diminishes and as a result the prevalence of overall physical limitations tends to increase” (Lynch, Brown, and Taylor, 2009). Apart from age-related disability, there are of course people who were born disabled or became such in the course of

^{*} Lecturer in Population Geography, University of the Aegean, Department of Geography, Mytilene, Greece

^{**} Geographer, PhD candidate at National Technical University of Athens

^{***} Assistant Professor, University of the Aegean, Department of Sociology, Mytilene, Greece

^{****} Lecturer, University of the Aegean, Department of Sociology, Mytilene, Greece

their active life due to several reasons (various kinds of accidents, diseases etc). The demographic study of these people, their social and economic conditions and their labour force outcomes should be a major concern to any modern state in order to plan its policy regarding the welfare benefits, health provision and rehabilitation of this category of citizens.

A key question to policy makers and to researchers concerned with the issue is: who is disabled? Disability is not easily defined. Relevant research works have studied very disparate phenomena ranging from work limitations to mental conditions that may or may not render people dysfunctional (Burkhauser et al., 2002). Medical definitions tend to focus on loss of system function or the limitation of medically defined actions (Lynch, Brown, and Taylor, 2009:568). However, sociological studies on the disabled and their rehabilitation circumvent the biological traits of the disablement process and focus on the importance of social context. Thus, disability can be defined as limitation in performing everyday roles and tasks (Nagi, 1965 and Nagi, 1976).

This paper does not aspire to be a research report for policymakers and relevant administrators. It is rather an attempt to map the demography of disability in Greece and to pinpoint the lack of reliable and detailed data in national level on this issue. In this context the paper tries to answer the following research questions. What percentage of the population has a chronic illness or disability? Are there any socio-demographic differentials in disability? What kind of health problem or disability these people have and what are the causes of this problem? Is there a geographical variation of the disabled persons within Greece? Is there a geographical variation of specific causes of disability within the country?

2. DATA AND METHODS

In the second trimester of 2002 the Greek Labour Force Survey, which is customarily conducted in Greece every trimester since 1998, included in its questionnaire a set of questions concerning persons with “health problems or disability”. The sample consisted of 30,057 households totalling 77,451 persons and the data of this survey are the last nation-wide data we have on disability. The results of that Labour Force Survey (LFS) as published by the National Statistical Service of Greece (NSSG) give nation-wide information about the disabled persons graduated by sex and age-group. They also provide the most important health problems of the disabled persons and the causes of these problems. Finally, the labour force survey reports rates of social exclusion of people with health problems, as these people conceptualise social exclusion. In any case, the published results of the Labour Force Survey do not have any regional dimension, they refer to Greece as a whole and even then, they do not make full use of the row data.

Detailed data of the 2002 Labour Force Survey were commission from NSSG for the needs of this paper. Hence, we have the opportunity to elaborate these data and look at the geographic distribution of the disabled people in the Greek territory, explore further the sex differential disability by using age standardizing techniques and probe into the causes of health problems by age and sex. It is also interesting to investigate some labour market indexes of the disabled compared with the healthy.

It is also worth mentioning that NSSG did not include questions about disability in the 2001 census. The most recent data on disability regarding the whole population (not a sample of it) come from the 1991 census and this will remain so unless NSSG reinstates questions on disability in the forthcoming population census of 2011.

In the following text, our findings are usually compared with disability rates of other developed countries. One should bear in mind, however, that different surveys use different measures of disability. For example, the most common measures are Activities of Daily Living items, which measure whether an individual could bath, dress, feed himself/herself, use the toilet, transfer by him/herself and be continent (Lynch, Brown, and Taylor, 2009). The Greek Labour Force Survey is based on self-reporting to determine whether someone is disabled, his/her health problem and the cause of it. According to Eurostat directives, which are applied homogeneously to Labour Force Surveys of all European Union member-states, disabled persons are those who stated in the Labour Force Survey that they had a longstanding health problem or disability (LSHPD) for 6 months or more or expected their problem to last 6 months or more (Eurostat, 2003).

However, even when surveys use the same criteria to measure disability, results are not strictly comparable. This is because disability is, to some extent, socially and culturally defined and, therefore, what constitutes disability in one country does not necessarily constitute disability in another.

Another methodological issue is the reporting of disability rates. The published results of the Labour Force Survey report disabled persons by kind of health problem and cause of disability as percent of all disabled. We chose to relate the disabled persons to the general population and thus we report disabled persons by various categories (kind of health problem, cause of disability) as a percentage of the general population. In any case the general population is a mid-year estimate for 2002, as was provided by the NSSG.

3. RESULTS

3.1. The prevalence of disability in Greece and socio-demographic differentials in disability.

According to the Labour Force Survey 18.2% of the population of Greece in 2002 suffered from some kind of longstanding health problem or disability. Of those aged

15 years and over, 18.6% (or 1,661,774 people) were in that situation. This percentage was greater for women (20.1%) than for men (17.0%). When it comes to disability, age and sex are arguably the most basic demographic variables. It is widely understandable that disability increases with age, as the human body gradually loses its functionality and physical limitations come as a result. It is not so well-comprehensible, however, why women are more likely to experience disability and chronic illness while at the same time they have lower mortality at every age compared to men. This finding, which is consistent across developed nations, has often been called the “gender paradox” (Rieker and Bird, 2005). Greece is not exception to the “gender paradox” as figure 1 shows.

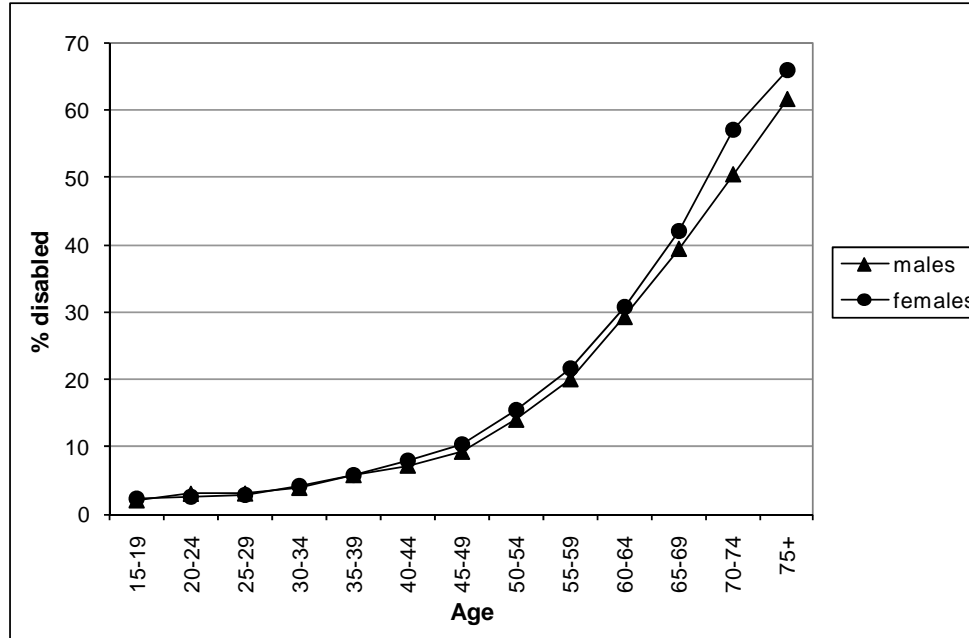
In the case of Greece women exhibit higher rates of disability than men do at the ages 40 and above. At younger ages the rates are either similar or ambivalent (i.e. at some age-groups men exhibit higher rates of disability as in the age-groups 20-24 and 25-29 and at some others women do).

Both social and biological mechanisms have been suggested to explain the sex-differential disability (Peres et al., 2005). It seems that women indeed have higher rates of disability but this is partly due to women’s increased life expectancy, which allows them to live to later ages when disability is most likely. To test if sex-differential disability is partly attributable to the different age structure of the male and female population, we calculated a standardized overall rate. This rate is based on the method of direct standardization; i.e. the age-specific disability rates for each sex separately are applied to a standard population, which in our case is the population of Greece in 1981, and the expected number of disabled people in each age-group and sex is derived. Afterwards, an overall rate (percentage) of disabled men and women is calculated, and this percentage is free from any effects of age structure. The standardized percentages of disability for those aged 15 years and over are 15.7% for males and 16.9% for females (compared with the non-standardized rates of 17% and 20.1% for males and females respectively). Two things are worth noting; firstly, the standardized percentages are lower than the non-standardized ones. This is because the population of 1981, which has been used as standard, had a much younger age structure than the population of 2002 and thus the overall proportion of the disabled in the population would be lower in 1981. Secondly, the difference between the standardized male and female rates is much smaller (1.2 percentage units) compared with the non-standardized rates (3.1 percentage units). This is conclusive evidence that a great part of sex-differential disability is due to the fact that there are proportionally more women in the old ages, where disability is more often.

Another factor that influences disability is socio-economic status. Educational level and income are usually employed as indicators of socio-economic status. However, our dataset, which comes from the Labour Force Survey, does not provide information on these variables. It does provide, however, information on the

occupation of the disabled (for those who are employed) and this variable can be used as a proxy for socio-economic status.

FIGURE 1: PERCENTAGE OF POPULATION AGED 15+ WITH LSHPD BY AGE AND SEX (GREECE 2002)



Source: Author's own calculations based on data from the Greek LFS, 2nd trimester 2002.

In 2002 7.1% of the working population suffered from a LSHPD (table 1). The occupational group with the highest rate of disability was that of farmers/stockbreeders. The rate of disability of farmers/stockbreeders was more than double that of the working population in general and this fact leads us to consider them a disadvantaged socio-economic group. Another disadvantaged occupational group were the non-specialized and manual workers, with a disability rate greater than that of the general working population (7.4% vs 7.1%). Occupational group influences disability through work-related accidents but other than that it may affect health care access and health behaviours. What is peculiar however is that the occupational group with the second highest rate of disability is that of managers and executives. Data on the kind of health problem by occupational group would be illuminating in explaining this finding, but unfortunately the commissioned data used in this study do not provide such information.

3.2. Kinds of disability

Another piece of information that is especially useful to policy makers and health planners is the prevalence of each kind of health problem in the general population. Table 2 shows rates on this issue together with a sex ratio that inform us which kind of health problem is particularly prevalent among men and which among women.

TABLE 1: PERCENTAGE OF EMPLOYEES WITH LSHPD BY OCCUPATIONAL GROUP, AGES 15+ (GREECE 2002)

Occupational Group	Employed Disabled Persons, as a Percentage of the Total Employees in the Respective Occupation
Clerks	3.9
Technical staff	4.4
Scientific and liberal arts	5.3
Salesmen and service providers	5.7
Specialized workers	5.9
Machine operators	6.7
Non-specialized and manual workers	7.4
Managers and executives	7.7
Farmers and stock-breeders	14.6
Total	7.1

Source: Greek LFS, second trimester of 2002.

The most common health problem of the Greek population is cardiovascular diseases, which affect 6.7% of the population aged 15 years and over. The second most common disabling condition is problems related with lower limbs and the third one diabetes mellitus. Cardiovascular diseases are slightly more common to men than to women, while the opposite is true for diabetes mellitus. Lower limbs problems, however, is a female disease: a woman is two times more likely to suffer from this kind of problem than a man. Other “female” diseases are skin problems, including relevant allergies, which are even more sex-selective than lower limbs problems, back and neck problems and degenerative and evolving conditions like cancer, AIDS, Multiple Sclerosis and Parkinson.

TABLE 2: PEOPLE WITH LSHPD AS A PERCENTAGE OF THE POPULATION AGED 15+ BY KIND OF HEALTH PROBLEM AND DISABLED MALES PER 100 DISABLED FEMALES BY KIND OF HEALTH PROBLEM (GREECE 2002)

Kind of Health Problem	% of the Total Population Aged 15+	Sex Ratio (Males per 100 Females)	
		Not Standardised	Standardised*
Speech problems	0.05	263	230
Epilepsy	0.08	195	217
Hearing impairments	0.23	106	116
Skin problems, allergies included	0.28	46	47
Upper limbs problems (including arthritis and rheumatism)	0.53	92	100
Other degenerative or evolving disease (AIDS, cancer, multiple sclerosis, Parkinson)	0.64	73	78
Vision impairments	0.84	82	86
Gastrointestinal or problems of the leaver and the urinary system	1.01	137	148
Back and neck problems	1.03	54	58
Mental, neurological or psychological disturbances	1.04	96	103
Other chronic illness/disability	1.14	71	74
Respiratory or thorax problems	1.17	105	115
Diabetes mellitus	1.20	81	89
Lower limbs problems (including arthritis and rheumatism)	2.63	48	55
Cardiovascular problems	6.68	103	116
All kinds of health problems	18.55	85	93

Source: Author's own calculations based on data from the Greek LFS, 2nd trimester 2002.

* The 1981 population of Greece has been used as standard so as to wipe out the effects of sex-differentials in age structure.

Disabling conditions that strike more men than women are speech problems – a man is more than twice more likely to suffer from a speech problem than a woman is – and epilepsy. Nevertheless, the finding that epilepsy is twice more common among men than among women is not consistent with the findings of surveys in other countries. Although epidemiological research has established that the overall incidence of epilepsy is higher in males (Kotsopoulos et al. 2002 and Hauser et al. 1993), such high sex-differential epilepsy (217 epileptic men for every 100 epileptic women), could not be found in the relevant bibliography. Furthermore, the prevalence of epilepsy in the general population in Greece is higher than the average for developed countries and even for developing ones. Prevalence in Greece is 75.8 per 100,000 according to the LFS data, while the median incidence rate of epilepsy in industrialized countries is 43.4 per 100,000 and 68.7 per 100,000 in developing ones (Kotsopoulos et al., 2002).

As far as the age pattern of the three more common health problems in Greece is concerned, figures 2, 3 and 4 are informative. All three kinds of problems, cardiovascular diseases, lower limbs problems and diabetes mellitus, are getting more prevalent as age increases. The prevalence of diabetes mellitus is relatively low to ages up to 45-49 but it rises steeply after age 50 and it turns out that around 4% of the population suffers from diabetes in ages 70 and over (figure 4).

The progress of the other two problems (cardiovascular diseases and lower limbs problems) is smoother with age but the age and sex pattern of lower limbs problems is noteworthy. Up to the age of 30-34 these problems are more common among men but from the age of 35 and above more women than men suffer from lower limbs problems. From the age of 55 and above the sex-gap in the prevalence of lower limbs problems is getting greater at an exponential rate such that in the age group 70-74 a woman is 2.71 times more likely to have a lower limb problem (including arthritis and rheumatism) than a man is. Peculiarly enough this odds ratio decreases to 1.94 in the ages 75+.

3.3. Causes of disability

In an aged population, as the population of Greece is, one would expect the main cause of disability to be physical limitations and degenerative conditions that occur with aging. This seems to be true, since the most popular problems among the disabled are cardiovascular diseases, arthritis, rheumatism, diabetes, cancer and other conditions that usually manifest themselves in the old age. Yet, 40% of those having a disability are younger than 65 years old, meaning that there are causes other than ageing, which produce disability. Understanding the etiology of disability is crucial to researchers and to policy makers.

Then main cause of disability is not accidents of any kind or congenital anomalies or birth related traumas, but diseases not related to work. This is evidence that the

main cause of disability is age-related conditions and diseases, and this makes sense in a population where about 17% of its members are 65 years old and over, as was the population of Greece in 2002. The second most common cause of disability is occupational diseases, which together with accidents at work render disabled almost 1% of the population aged 15 years and over.

Approximately 66 people in every 10,000 are born with some kind of disabling problem, while almost 20 people in every 10,000 are disabled due to a road accident.

Accidents at work are highly sex-selective. A man is over four times more likely to be disabled from a work accident than a woman is, and this is probably due to the fact that more males than females are employed in heavy and unhealthy occupations. There are manual jobs that are almost exclusively male, like builders and generally construction workers. These jobs are the most dangerous and accident-prone.

Causes of disability have an age-pattern as well. Diseases not related to work are mostly age-related and this is evident in figure 5. They progress smoothly with age in a curvilinear fashion which can be approximated by a quadratic regression model.

**FIGURE 2: CARDIOVASCULAR PROBLEMS PER 1000 POPULATION
BY AGE AND SEX (GREECE 2002)**

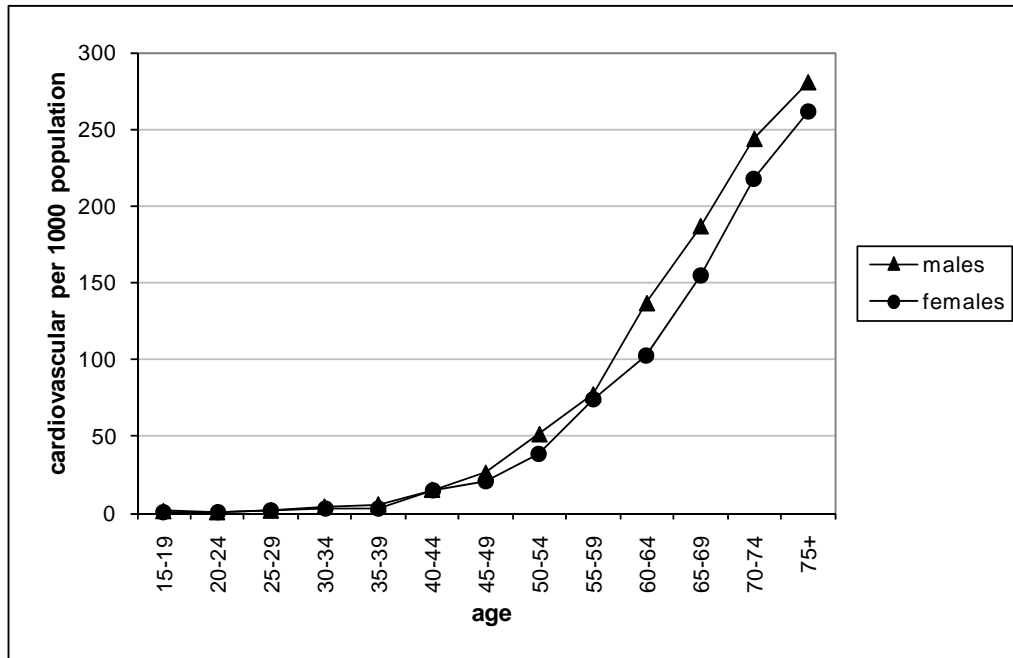
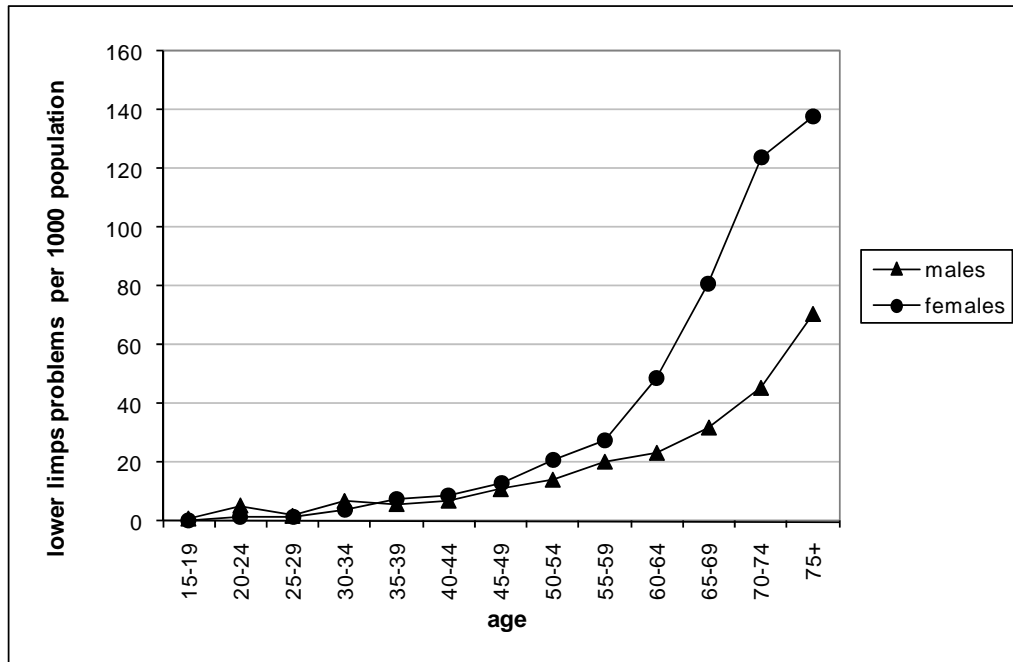


FIGURE 3: LOWER LIMBS PROBLEMS (INCLUDING ARTHRITIS AND RHEUMATISM) PER 1000 POPULATION BY AGE AND SEX (GREECE 2002)



Source: Author's own calculations based on data from the Greek LFS, 2nd trimester 2002.

The age and sex pattern of congenital or birth related disability is very erratic but, by and large, the percentage of those born disabled in the population is decreasing with age (figure 6). This implies that mortality among people with congenital anomalies or birth related disability is higher than that of the general population since fewer such people as percent to the general population, survive to successive age groups.

Disability caused by work accidents has a very different age-pattern for the two sexes (figure 7). The incidence of males who became disabled due to work accidents is generally increasing with age, as work accidents are accumulated over the lifespan of a cohort and it is reasonable to expect more incidence of work related disability in older ages. However, from the age of 65 and over disability due to work accidents in the general male population is decreasing spectacularly and this fact can have two explanations: The first explanation is that the mortality of the disabled due to work accidents is higher than that of the general population and this becomes obvious only after these people have been retired. Before retirement-age the higher mortality of the disabled due to work accidents is not obvious because at successive age-groups new

people are added to this category of disabled and thus their percentage in the total population is increasing in spite of their higher mortality rate. Yet, this is only an assumption, as we do not have any hard evidence to prove it. A second explanation for the peculiar age pattern of males observed in figure 7 could be that older birth cohorts, i.e. those aged 65 and over in 2002, were, for various reasons, less prone to work accidents. Nevertheless, given that safety rules in the work environment are getting stricter over time, the first explanation seems more likely.

The disability age-pattern of women who became disabled due to work accidents, on the other hand, is different from that of men. Incidences of disability increase erratically with age and do not drop after retirement age, as is the case with men. The most noteworthy difference, however, is the lower rate of disabled women from this cause (accidents at work), which reflects the different nature of jobs the two sexes are undertaking.

3.4. Disability and labour market outcomes

Disability, in many cases, constitutes a barrier to full participation in everyday life activities and consequently in the labour market. The extent (or the absence) of participation of the disabled to the labour market has, in its turn, a direct effect on the quality of life and the living standards of these people. Disability, therefore, may be responsible for a vicious circle where an individual cannot work because he/she is disabled and he/she cannot have an average standard of living because of his/her inability to work. For that reason disability and labour force participation is a vital area for investigation and policy concern.

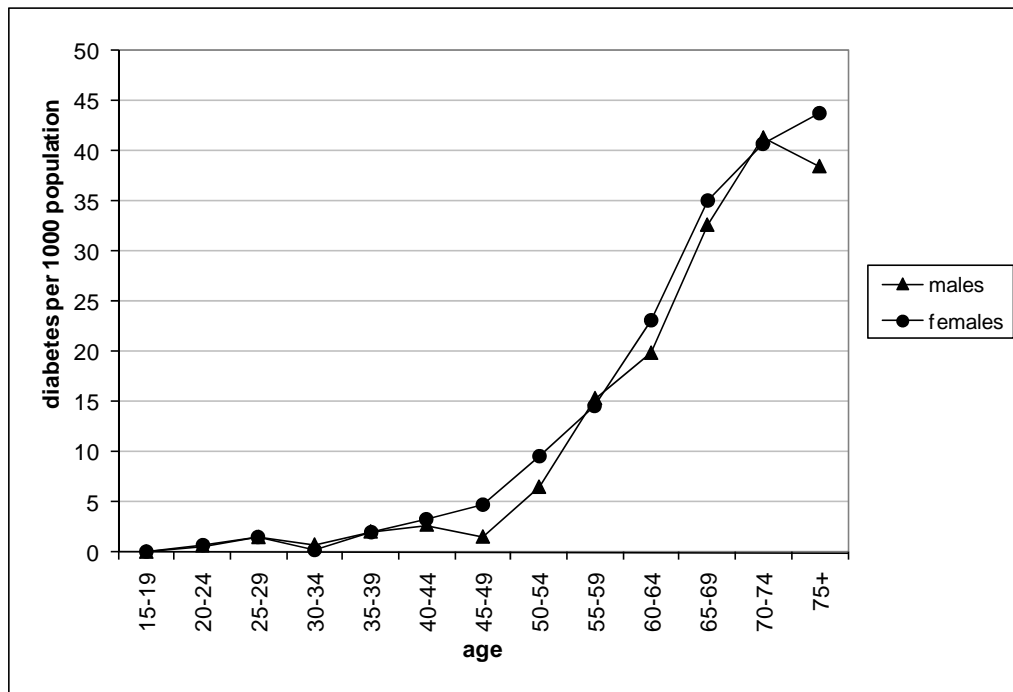
In 2002 in Greece only 18% of the disabled participated in the labour force, compared with 60% of those with no health problem (table 4). This difference between the two percentages gives an idea on the extent to which disability prevents people from working or seeking for a job. The variation in economic activity rates from one District to another is statistically significant (at the 10% level of significance) only for the disabled population. This variation may be due to the different age structure of the disabled population in the Districts. Districts with a younger disabled population are more likely to have greater rates of economically active disabled than Districts with a greater proportion of old disabled people. However, since LFS does not provide the disabled population of the Districts broken down by age, we cannot test the above hypothesis.

As far as unemployment is concerned, according to table 4 the unemployment rate of the disabled people in Greece in 2002 was slightly lower than that of the healthy ones (9.6% compared with 10%). Yet, the two rates are not comparable because of the very low participation of the disabled to the labour force. It may be the case that more disabled people were willing to work but were discouraged because of the reluctance of employers to hire disabled staff (especially in the private sector) and thus they

declare themselves economically inactive. Again there is no hard-data to support the above hypothesis, but there is an indication that this hypothesis may have some plausibility. In the LFS of 2002, were our data come, disabled people were asked if they confront problems of social exclusion. Those who believed that they were socially excluded were 42.5% and of them 53.6% consider unemployment as the main reason of social exclusion (NSSG 2002).

Another issue that is worth-examining is the geographic variation in the unemployment rates of the disabled. Such variation (statistically significant at the 10% level of significance) does not exist in the case of the healthy population. This may be evidence that some Districts (like Peloponnisos with an unemployment rate for the disabled only 2.6%), are more friendly to the disabled who seek for a job. The Districts with the highest unemployment rates of disabled people are West Macedonia (Dytiki Makedonia), the South Aegean islands (Notio Aigaio) and the conurbation of Thessaloniki.

FIGURE 4: DIABETES MELLITUS PER 1000 POPULATION BY AGE AND SEX (GREECE 2002)



Source: Author's own calculations based on data from the Greek LFS, 2nd trimester 2002.

TABLE 3: PEOPLE WITH LSHPD AS A PERCENTAGE OF THE POPULATION AGED 15+ BY CAUSE OF DISABILITY AND DISABLED MALES PER 100 DISABLED FEMALES BY CAUSE OF DISABILITY (GREECE 2002)

Cause of Disability	% of the Total Population Aged 15+	Sex Ratio (Males per 100 Females)	
		Not Standardised	Standardised*
Road accident not related to work	0.19	179	194
Accident not related to work	0.20	71	78
Accident at work (road accidents at work time included)	0.25	389	429
Congenital or birth related	0.66	115	114
Occupational disease	0.70	148	154
Disease not related to work	13.89	82	90
No answer/no knowledge	2.66	69	75

Source: Authors' own calculations based on data from the Greek LFS, 2nd trimester 2002.

- The 1981 population of Greece has been used as standard so as to wipe out the effects of sex-differentials in age structure.

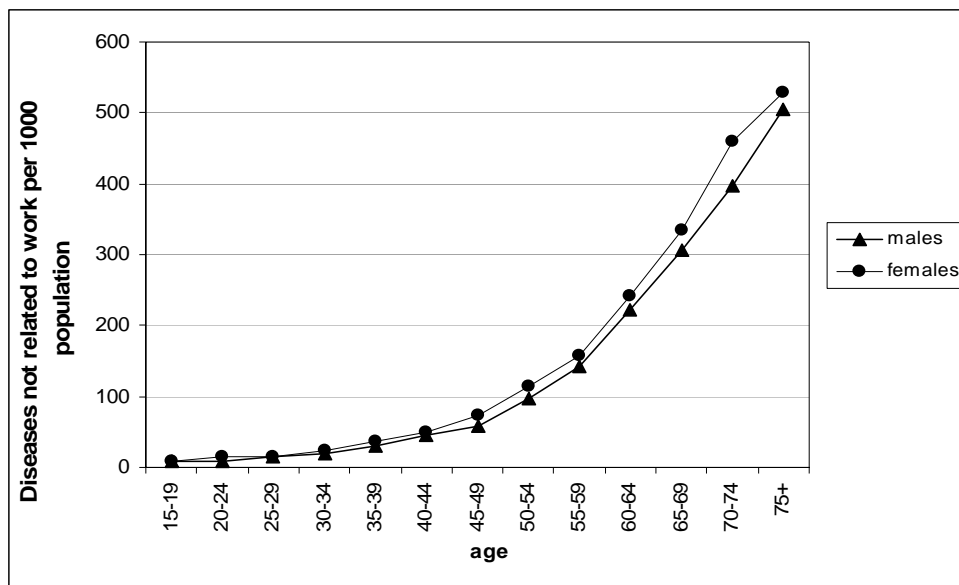
3.5. Regional variations in disability

Regional variations in the proportion of persons with LSHPD in Greece are not very acute. A series of goodness-of-fit tests were conducted to test whether there is statistically significant regional variation in the main kind of LSHPD, which is cardiovascular diseases, and in four causes of LSHPD (accidents at work, occupational diseases, traffic accidents and birth related disability). The only trait that presented statistically significant variation from one District to the other was occupational diseases ($\chi^2=36.4$ d.f.=14 p-value<0.001). The rest of the causes or kinds of LSHPD that were tested did not exhibit a statistically significant fluctuation from one District to another and the same holds true for LSHPD in general. However, regional variations in disability, even when they do not deviate largely from the national average with the criterion of statistical significance, may reflect regional differences in work conditions, medical infrastructure, access to health services and even road conditions; that is why we chose to present the geographical variation not only of occupational diseases (which is statistically significant) but also of LSHPD in general, in two thematic maps.

“Voreio Aigaio” and “Ipeiros” are the most aged Districts of Greece (22% and 21% of their population respectively consisted of people aged 65 year and over in

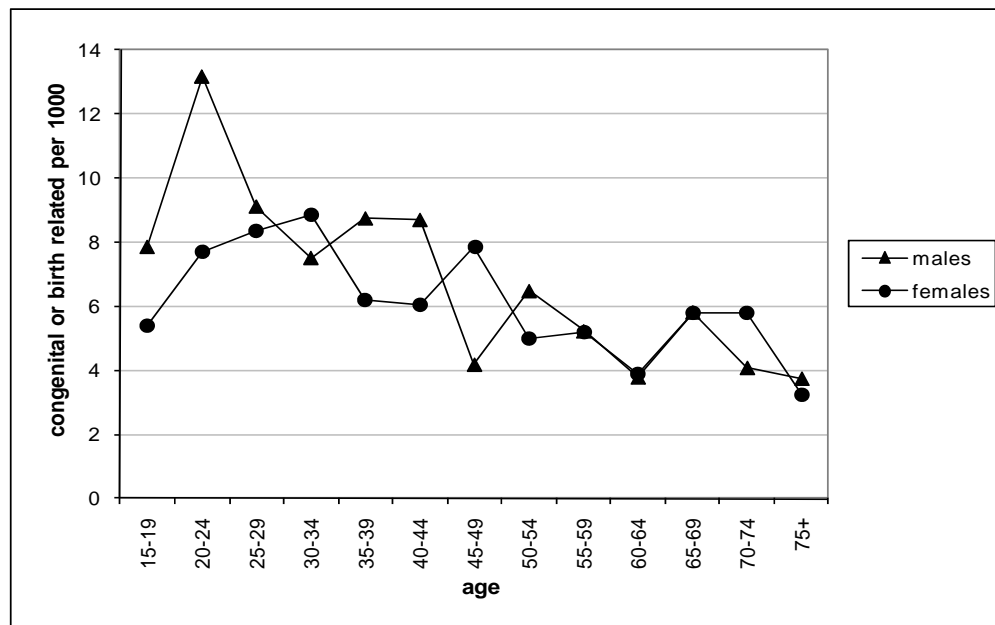
2001) and this may be the reason that they present higher percentages of population with LSHPD than the national average. “Notio Aigaio” on the other hand, though it belongs to the Districts with the highest percentages of persons with LSHPD, is one of the “youngest” Districts of Greece. Old people (65+) made up “only” 14.75% of its population according to the 2001 census (NSSG 2009). That means that the excess incidences of disability observed in this District is associated with factors other than the age structure of the population. One reason may be traffic accidents. “Notio Aigaio” is among the Districts with the highest rates of people with a traffic-accident-caused disability, with a rate of 3.8 per 1000 (the national average being 1.9 per thousand) (LFS 2002).

FIGURE 5: LSHPD NOT RELATED TO WORK PER 1000 POPULATION (GREECE 2002)



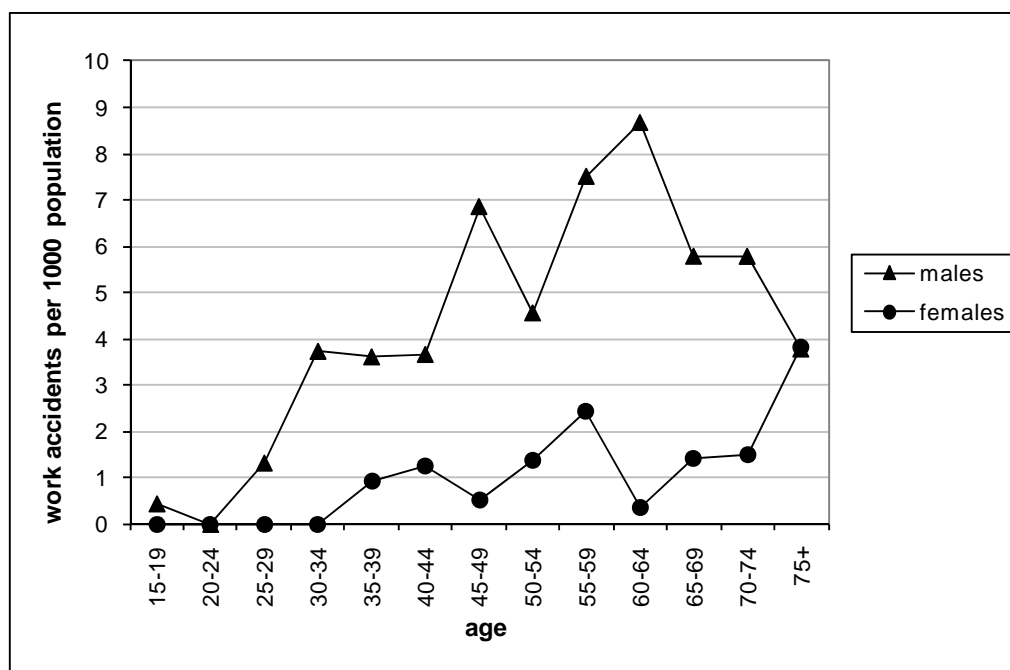
Source: Authors' own calculations based on data from the Greek LFS, 2nd trimester 2002.

**FIGURE 6: CONGENITAL ANOMALIES OR BIRTH-RELATED DISABILITY
PER 1000 POPULATION (GREECE 2002)**



Source: Authors' own calculations based on data from the Greek LFS, 2nd trimester 2002.

FIGURE 7: DISABILITY CAUSED BY ACCIDENTS AT WORK (ROAD ACCIDENTS AT WORK TIME INCLUDED) PER 1000 POPULATION (GREECE 2002)



Source: Author's own calculations based on data from the Greek LFS, 2nd trimester 2002.

TABLE 4: PERCENTAGE OF ECONOMICALLY ACTIVE AND PERCENTAGE OF UNEMPLOYED BY HEALTH STATUS (HEALTHY/DISABLED) AND GEOGRAPHICAL AREA (DISTRICT) OF THOSE AGED 15+ (GREECE 2002)

GEOGRAPHICAL AREA	% Economically Active (Disabled)	% Economically Active (healthy)	% Unemployed (Disabled)	% Unemployed (Healthy)
ANATOLIKI MAKEDONIA AND THRAKI	22.5	62.0	6.4	10.1
KENTRIKI MAKEDONIA (conurbation of Thessaloniki is excluded)	20.7	60.4	7.7	10.8
DYTIKI MAKEDONIA	16.4	56.8	15.3	13.8
IPEIROS	17.8	60.0	6.2	12.4
THESSALIA	17.0	57.6	7.1	11.4

IONIA NISIA	10.4	59.2	6.1	6.9
DYTIKI ELLADA	13.9	57.4	8.0	10.9
STEREA ELLADA	14.6	60.8	9.2	10.0
GREATER ATHENS AREA	14.6	58.8	11.3	10.7
PELOPONNISOS	18.3	60.7	2.6	8.2
VOREIO AIGAIO	14.6	55.4	6.1	10.2
NOTIO AIGAIO	30.2	65.6	14.8	15.8
KRITI	27.8	64.9	7.4	6.7
YPOLOIPO ATTIKIS	15.9	59.6	13.0	8.9
CONURBATION OF THESSALONIKI	19.9	56.6	13.8	11.2
GREECE	18.4	59.6	9.6	10.0

Source: Authors' own calculations based on data from the Greek LFS, 2nd trimester 2002.

Goodness-of-fit tests:

Economically active (disabled): $\chi^2=21.4$ d.f.=14; p-value = 0.09;

Economically active (healthy): $\chi^2=1.96$ d.f.=14; p-value = 1.00;

Unemployed (disabled): $\chi^2=22.1$ d.f.=14; p-value = 0.08;

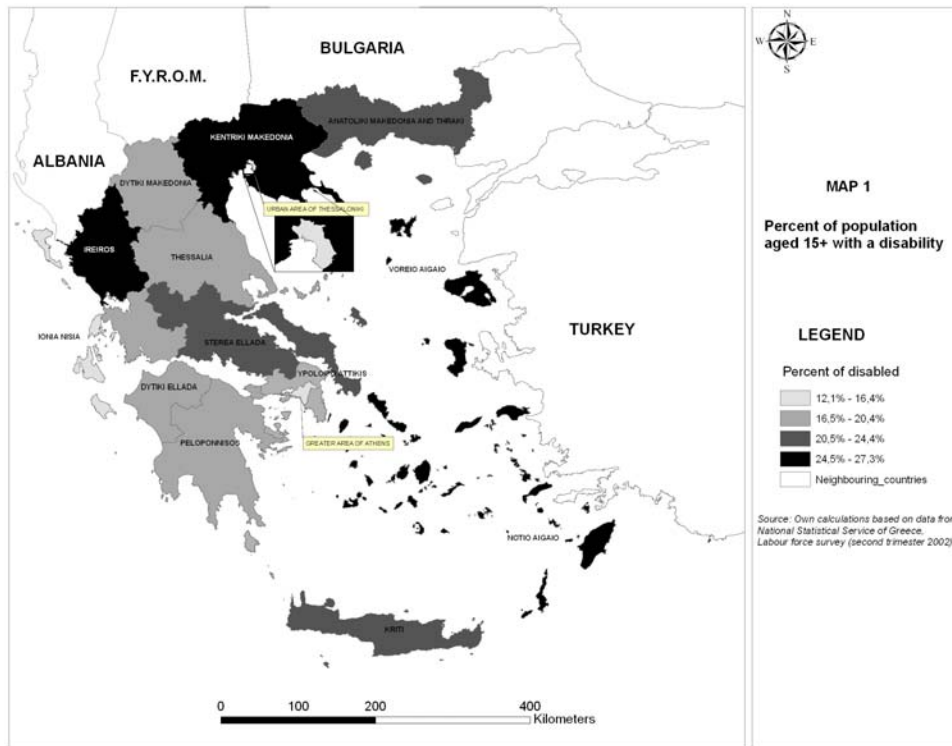
Unemployed (healthy): $\chi^2=7.6$ d.f.=14; p-value = 0.91.

A general observation on map 2 is that the Districts with the highest incidence of occupational diseases are those whose population is employed mainly in the primary and secondary sectors of the economy. According to the 2001 census 54% of the employed population of “Anatoliki Makedonia and Thraki” were employed in the primary and secondary sectors, while the national average was 41% (NSSG 2009). In the District of “Kentriki Makedonia” this percentage was 45%. This District had several industrial areas (mainly textile industry) and 24% of the employed population were occupied in the secondary sector (the national average being 22%) (ibid).

4. COMPARISONS WITH OTHER EU COUNTRIES

In this section Greece is considered in a general European context as far as disability is concerned. The comparison attempted is based on results of Labour Force Surveys conducted in 2002 in all EU member states. The questionnaire of these surveys was the same in all member states and the results were published by the Eurostat (2003). Before considering the data presented in these section one should keep in mind that we are talking about perceived health, which is something subjective and therefore the notion of good health may be defined differently by different individuals and although “utmost attention was paid to translation of the questions, the replies could have been mediated by cultural traits” (ibid: 1)

MAP 1: PERCENTAGE OF POPULATION AGED 15+ WITH LSHPD BY DISTRICT (GREECE 2002)



The percentage of Greeks in working ages with LSHPD was well below the EU15 average (Table 5). However, when it comes to labour force participation Greece lacks behind the EU average. Persons with LSHPD in Greece make up only 6.5% of all employed while the EU15 average was 12.7%. In fact only Spain and Italy had a lower percentage of employed persons with LSHPD than Greece (Eurostat, 2003). This may suggest some discrimination in the labour market of Greece against disabled people, but one would need a special survey on this issue to derive safe conclusions.

MAP 2: PERSONS BY DISTRICT, AGED 15+ WITH LSHPD PER 1000 POPULATION CAUSED BY OCCUPATIONAL DISEASE (GREECE, 2002)

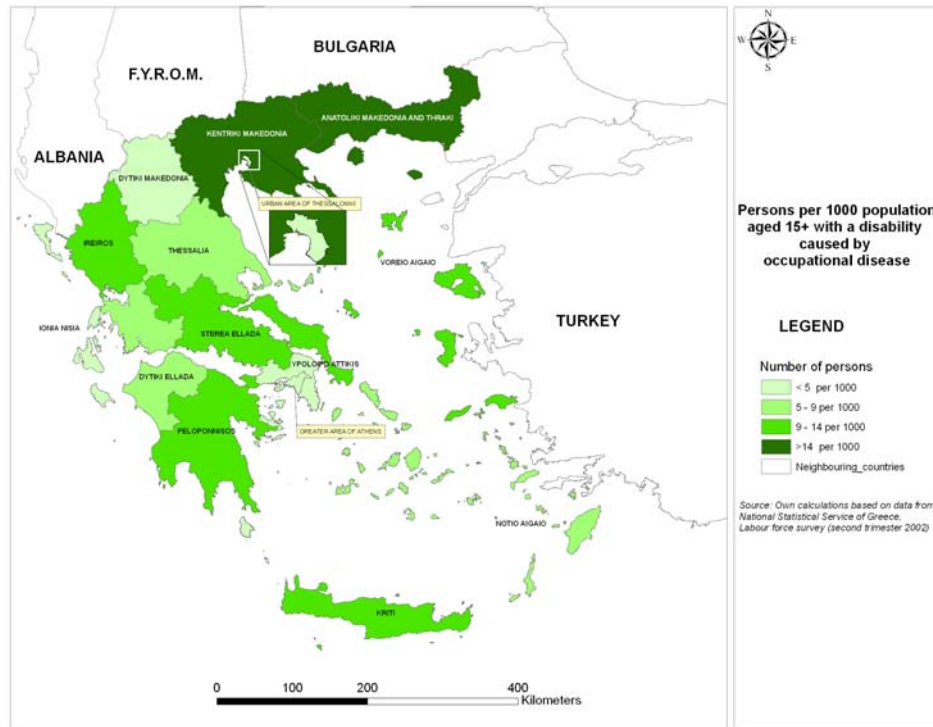


TABLE 5: PERCENTAGE OF POPULATION AGED 16-64 WITH A LONG-STANDING HEALTH PROBLEM OR DISABILITY (LSHPD/ EU15, 2002)

Geographical Area	% Aged 16-64 with LSHPD
Italy	6.6
Spain	8.7
Greece	10.3
Ireland	11.0
Germany	11.2
Luxemburg	11.7
Austria	12.8
Belgium	18.4
Denmark	19.9

Sweden	19.9
Portugal	20.1
France	24.6
Netherlands	25.4
UK	27.2
Finland	32.2
EU15	16.4

Source: Eurostat, 2003.

5. CONCLUSIONS AND POLICY IMPLICATIONS

Based on data drawn from the Labour Force Survey of 2002, this study sketched the demography and geography of disability in Greece. The main finding is that disability in Greece is mostly age-related since 60% of those who stated a health problem aged 65 years and over. Disability is also sex-selective since more women (20.1%) than men (17.0) aged 15+ reported a health problem. Higher rates of disability in women are presented at the ages 40 and above. However, part of this sex-differential disability is due to women's increased life expectancy, which allows them to live to later ages when disability is most likely. Age-standardized disability rates of those aged 15 years and over showed that the difference between the male and female rates is much smaller (1.2 percentage units) compared with the non-standardized rates (3.1 percentage units).

The most common health problems of the Greek population are cardiovascular diseases, problems related with lower limbs (including arthritis and rheumatism) and diabetes mellitus, in that order. Certain disabling conditions are more common to men, like speech problems, epilepsy and cardiovascular diseases, while others, such are lower limbs problems (including arthritis and rheumatism) are more common to women.

The main causes of disability are age-related conditions and diseases that affect the elderly, while occupational diseases make up the second most common cause of disability. Traffic accidents are also a cause of disability, more common in Greece than in other European countries. In the population aged 15 years and over, almost 2 out of every 1000 people are disabled due to a traffic accident.

Only 18% of the disabled are economically active compared with 60% of those with no health problem. For the economically active disabled unemployment rates are about the same as those of the healthy population (around 10% in 2002). However, there is a great geographic variation in the unemployment rates of the disabled, which (variation) does not exist in the case of the healthy population. This may be a clue that some Districts (like Peloponnisos with an unemployment rate for the disabled only 2.6%) are friendlier to the disabled who seek for a job. The regions with the highest

unemployment rates of disabled people are West Macedonia (Dytiki Makedonia), the South Aegean islands (Notio Aigaio) and the conurbation of Thessaloniki.

Compared with other European countries, Greece has very low participation of the disabled in the labour force. Out of all EU15 member-states only Spain and Italy present lower than Greece participation of the disabled in the labour force (table 5). Trying to understand why this comes about and how best to address it is crucial for policy makers. It would worthy, for example, to re-examine the criteria and procedures for disability benefit reciprocity, since the percentage of working-age population (15-64 years old) who state a disability increased dramatically in Greece from 2.2 % in 1991 (NSSG, 1998) to 9.5% in 2002 (LFS, 2002). Research on disability and labour force participation has showed that on average, OECD countries spend at least twice as much on disability-related programmes as they do on unemployment programmes (OECD, 2003).

The National Statistical Service of Greece stopped including questions about disability in its highly respected Population and Household Census in 2001. Without nation-wide data on disability one cannot think how a modern state can plan its policy on the well-being and rehabilitation of its disabled citizens. Disabled citizens in Greece are recorded by their insurance agency and they receive a welfare benefit or a disability pension. However, given the plenitude of insurance agencies in Greece, their registers cannot take the place of a coherent body of data that only a national census can provide.

In the end of 2009 a new survey entitled “National Health Survey” (NHS) took place in the framework of the project “European Health Interview Survey”. Results from the newly-established NHS are expected to come out by the end of 2010. It is hoped that this new survey will cover the existing lack of data on disability and will facilitate policy planners and programme administrators in key positions at the governing mechanism.

REFERENCES

- Burkhauser, RV., Daly, MC., Houtenville AJ. and Nargis, N. (2002). Self-reported work limitation data: What they can and cannot tell us. *Demography*, 39, pp. 541-555.
- Eurostat (2002). *Eurostat Yearbook 2002*. Office for Official Publications of the European Communities Luxemburg.
- Eurostat (2003). Employment of disabled people in Europe in 2002. *Statistics in Focus, Population and Social Conditions*, 26, pp. 1-8.
- Eurostat (2010). European Industrial Relations Observatory on-line [electronic resource]. EU: Eurofound. <http://www.eurofound.europa.eu/eiro/2006/01/feature/eu0601204f.htm>.
- Gannon, B. and Nolan, B. (2004). Disability and Labour Force Participation in Ireland. *The Economic and Social Review*, 35 (2), pp. 135-155.

- Kotsopoulos, I., Van Merode, T., Kessels, F., De Krom, M. and Knottnerus A. (2002). Systematic review and meta-analysis of incidence studies of epilepsy and unprovoked seizures. *Epilepsia*, 43 (11), pp. 1402-1409.
- LFS (2002). Unpublished data of the Greek Labour Force Survey provided by NSSG.
- Lynch S., Brown, S. and Taylor, M. (2009). Demography of Disability In: Uhlenberg P. (ed.) *International Handbook of Population Aging*, Springer Science +Business Media, pp. 567-582.
- Nagi, S.Z. (1976). An epidemiology of disability among adults in the United States. *Milbank Memorial Fund Quarterly/Health Soc*, 54, pp. 439-467.
- Nagi, S.Z. (1965). *Some conceptual issues in disability and rehabilitation*. In: Sussman, M.B. (ed.) *Sociology and rehabilitation*. Washington DC: American Sociological Association, pp. 100-113.
- National Statistical Service of Greece (1998). Results of the population and housing census of 17 March 1991. Athens: NSSG, 6 vols.
- National Statistical Service of Greece (2009). Results of the population and housing census of 18 March 2001. [electronic resource]. Athens: Hellenic Statistic Authority. www.statistics.gr
- OECD (2003). *Transforming Disability into Ability*. Paris:OECD.
- Peres, K., Jagger, K., Lievre, A. and Barberger-Gateau P. (2005). Disability-free life expectancy of older French people: gender and education differentials from the PAQUID cohort. *European Journal of Ageing*, 2 (3), pp. 225-233.
- Ricker PP., Bird CE. (2005) Rethinking gender differences in health: Why we need to integrate social and biological perspectives. *The Journals of Gerontology*, Series B: Psychological Sciences, 60, pp. S40-S47.

PERSONS WITH DEVELOPMENT DISABILITIES AND SPECIAL NEEDS: A COMPARATIVE EFFICIENCY ANALYSIS

AIKATERINI KOKKINO^{*}, GEORGE M. KORRES^{**} EFTSRATIOS PAPANIS^{***},
PANAGIOTIS GIAVRIMIS^{****} and VASILIS S. GAVALAS^{*****}

ABSTRACT

Nowadays, European Union is considerably active in encouraging social and economic inclusion of people with development disabilities and special needs, with European Council adopting resolutions on equality of opportunity. Furthermore, in Lisbon Treaty a proposal has been made for member states to take account social exclusion in their employment, education, training, health and housing policies, defining priority actions for specific target groups, including people with disabilities and develop all necessary actions intended to social inclusion. This paper reviews the disability policy efficiency, as emerging from rules and practices of social insurance and social assistance institutions and public policy in selected European Union member states. The paper also attempts to analyse the relevant data in an inter-comparative study regarding persons with developmental disabilities and special needs in European Union member states.

Keywords: Persons with Developmental Disabilities; Persons with Special Needs; Social and Public Policy.

1. DEFINING DISABILITY

Even though estimates of worldwide and country-wide numbers of individuals with disabilities are problematic, demographers agree that the world population of individuals with disabilities is very large (OECD, 2009).

The World Health Organization defines disability as an umbrella term, covering impairments, activity limitations, and participation restrictions. Impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations. Thus disability

^{*} Department of Economics, University of Glasgow, Glasgow, Scotland, UK

^{**} Associate Professor, University of Aegean, Department of Geography, Mitilene, Lesbos, Greece; Visiting Fellow, University of Newcastle, Centre of Urban and Regional Development Studies, CURDS, Newcastle, United Kingdom

^{***} Assistant Professor, University of Aegean, Department of Sociology, Mitilene, Lesbos, Greece

^{****} Lecturer, University of Aegean, Department of Sociology, Mitilene, Lesbos, Greece

^{*****} Lecturer, University of the Aegean, Department of Geography, Mytilene, Lesbos, Greece

is a complex phenomenon, reflecting an interaction between features of a person's body and features of the society in which the person lives (DePoy and Gilson, 2004).

In general, the severity of a disability is described in terms of how much it limits one's daily activities, in main areas such as: learning and applying knowledge, general tasks and demands, communication, mobility, self-care, domestic life, interpersonal interactions and relationships, community, social and civic life. Some of the challenges faced by persons with disabilities include (Johnstone, 2001):

- physical barriers (poor access to enter buildings, lack of transportation and support services to keep appointments, to receive medical care)
- financial barriers (having lower wage jobs and no health insurance)
- lack of reliable health information and services that address their needs that is communicated in the appropriate communication modality, i.e. Braille, sign language, appropriate grade level of written material

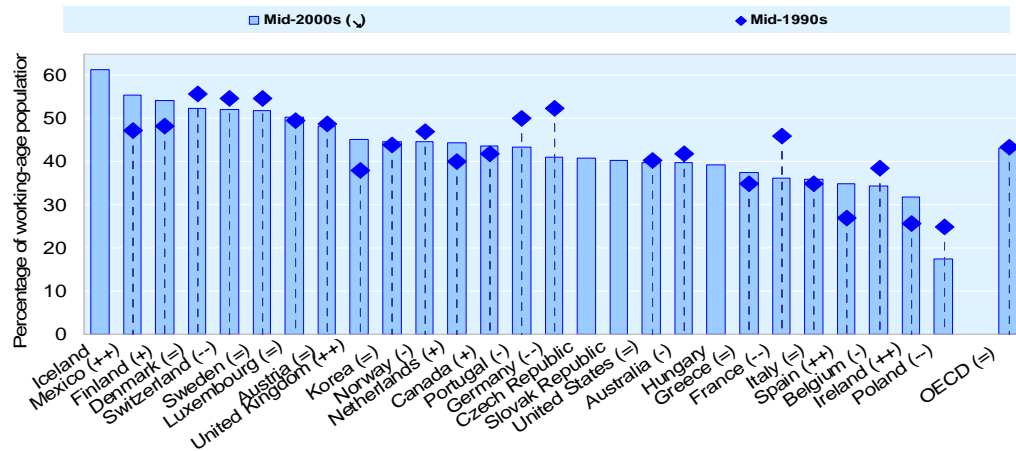
2. MODELING DISABILITY

According to the International Classification of Functioning, Disability and Health (ICF), produced by the World Health Organization, a variety of conceptual models has been proposed to understand and explain disability and functioning, which it seeks to integrate. These models may be summarized in the medical, the social and the economic model (Castles, 2004):

1. The medical model is presented as viewing disability as a problem of the person, directly caused by disease, trauma or other health condition which therefore requires sustained medical care provided in the form of individual treatment by professionals. In the medical model management of the disability is aimed at a "cure," or the individual's adjustment and behavioral change that would lead to an "almost-cure" or effective cure. In the medical model, medical care is viewed as the main issue, and at the political level, the principal response is that of modifying or reforming healthcare policy.
2. The social model of disability sees the issue of "disability" as a socially created problem and a matter of the full integration of individuals into society. In this model, disability is not an attribute of an individual, but rather a complex collection of conditions, many of which are created by the social environment. Hence, the management of the problem requires social action and is the collective responsibility of society at large to make the environmental modifications necessary for the full participation of people with disabilities in all areas of social life. The issue is both cultural and ideological, requiring individual, community, and large-scale social change. From this perspective, equal access for someone with an impairment/disability is a human rights issue of major concern.

3. The economic model defines disability by a person's inability to participate in work. It also assesses the degree to which impairment affects an individual's productivity and the economic consequences for the individual, employer and the state. Such consequences include loss of earnings for and payment for assistance by the individual; lower profit margins for the employer; and state welfare payments. Protection is extended to anyone with a physical or mental impairment that substantially limits one or more of the major life activities of an individual, or a record of such impairment, or being regarded as having such an impairment. The second and third criteria are seen as ensuring protection from unjust discrimination based on a perception of risk, just because someone has a record of impairment or appears to have a disability or illness.

FIGURE 1: EMPLOYMENT RATES OF PEOPLE WITH DISABILITY, MID-1990s AND MID-2000s



Source: OECD (2009) Annual National Accounts and Social Expenditure database.

Notes: (□) in the legend relates to the variable for which countries are ranked from left to right in decreasing order. (++)/(--) refers to a strong increase/decline of 2% or more; (+)/(-) refers to a moderate increase/decline between 0.75% and 2%; (=) refers to a rather stable trend between -0.75% and 0.75%; percentages refer to the annual average growth rate in employment rate of persons with a disability. OECD refers to the unweighted average of the 27 countries; the Mid-1990s average is an estimate based from the 23 countries from which data are available.

3. SOCIAL SECURITY POLICIES FOR PEOPLE WITH DEVELOPMENT DISABILITIES AND SPECIAL NEEDS

The pioneer in social security policies for people with development disabilities and special needs has been the United Nations which first launched the International Year for Disabled Persons (1981), later re-named the International Year of Disabled Persons. The UN Decade of Disabled Persons (1983–1993) featured a World Program of Action Concerning Disabled Persons. On December 13, 2006, the United Nations formally agreed on the Convention on the Rights of Persons with Disabilities, the first human rights treaty of the 21st century, to protect and enhance the rights and opportunities of the world's estimated 650 million disabled people (Waddington 1996).

Social protection encompasses all interventions from public or private bodies intended to relieve households and individuals of the burden of a defined set of risks or needs, provided neither a simultaneous reciprocal nor an individual arrangement is involved (Pearson, 2006).

Table (1) summarizes which expenditures are social and which are not, as well as provides further detail on categorization of benefits:

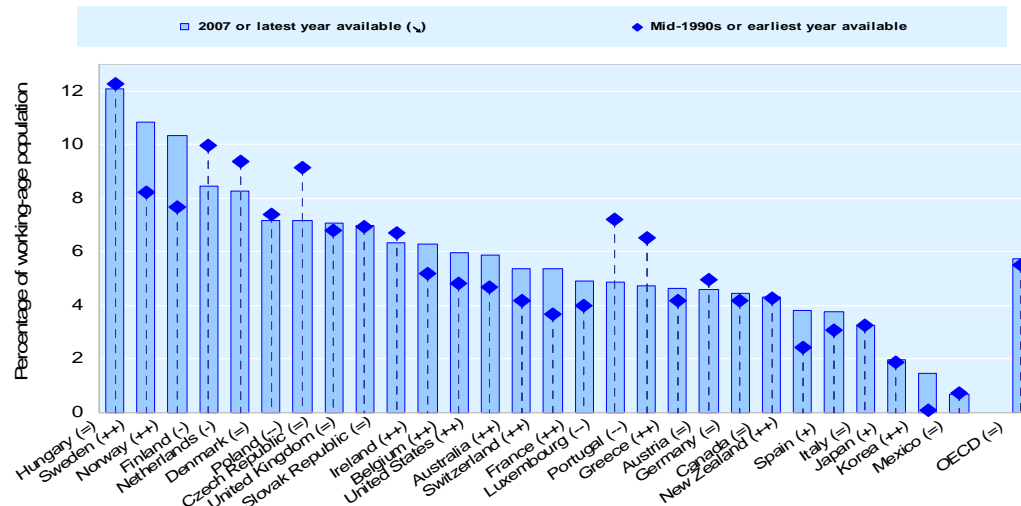
TABLE 1: SOCIAL POLICY EXPENDITURES

	Public		Private	
	Mandatory	Voluntary	Mandatory	Voluntary
Redistribution	Means – tested benefits, social insurance benefits	Voluntary participation in public insurance programs	Employer provided sickness benefits, benefits accruing from mandatory contribution	Tax – advantaged benefits
No Redistribution	Benefits from government managed individual saving schemes		Non tax – advantaged benefits	Exclusively private: Benefits accruing from insurance plans bought at market process given individual preferences

Source: Adema and Ladaique (2005, 2009)

Regarding these policy schemes, since 1980, gross public social expenditure has increased from about 16.0% to 20.6% of GDP in 2005 on average across the OECD countries (OECD 2007).

FIGURE 2: DISABILITY BENEFIT RECIPIENTS IN PERCENT OF THE POPULATION AGED 20-64, MID-1990S AND LATEST YEAR AVAILABLE



Source: OECD (2009) Annual National Accounts and Social Expenditure database.

Notes: (□) in the legend relates to the variable for which countries are ranked from left to right in decreasing order. (++)/(--) refers to a strong increase/decline of 2% or more; (+)/(-) refers to a moderate increase/decline between 0.75% and 2%; (=) refers to a rather stable trend between -0.75% and 0.75%; percentages refer to the annual average growth rate in disability reciprocity. OECD refers to the unweighted average of the 28 countries.

Table (2) presents the total expenditure on social protection programs per capital in European Union countries, during 1991 – 2006. It is apparent that the traditionally ‘high per capita income’ countries allocate the higher per capita amount on social protection expenditure. Respectively, Table (3) presents the social security benefits for people with disabilities as a percentage of the total social benefits with Netherlands, Finland and Portugal presenting the highest percentages during the same time period.

TABLE 2: EXPENDITURE ON SOCIAL PROTECTION PER CAPITA, 1990 – 2006

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Austria	4.725	5.132	5.736	6.219	6.615	6.698	6.596	6.762	7.178	7.365	7.615	7.906	8.154	8.356	8.562	8.845
Belgium	4.417	4.804	5.362	5.627	5.867	5.991	5.927	6.053	6.299	6.514	6.875	7.260	7.712	8.157	8.557	9.078
Bulgaria															454	491
Cyprus										2.148	2.300	2.562	2.996	3.112	3.324	3.496
Czech Rep.					714	833	909	997	1.054	1.168	1.312	1.582	1.602	1.669	1.874	2.064
Denmark	6.252	6.658	7.283	8.075	8.479	8.614	8.579	8.782	9.147	9.384	9.775	10.205	10.800	11.201	11.570	11.764
Estonia										623	664	725	808	933	1.043	1.209
Finland	5.938	5.588	5.025	5.606	6.159	6.204	6.154	6.096	6.235	6.403	6.714	7.097	7.427	7.761	8.005	8.317
France	4.804	5.184	5.674	5.878	6.133	6.363	6.388	6.584	6.779	6.990	7.240	7.631	7.946	8.320	8.622	8.908
Germany	4.724	5.398	5.896	6.183	6.673	6.896	6.729	6.873	7.162	7.349	7.548	7.808	7.975	7.974	8.070	8.088
Greece	1.536	1.574	1.680	1.763	1.885	2.097	2.316	2.438	2.758	2.967	3.250	3.420	3.671	3.956	4.320	4.632
Hungary									913	983	1.125	1.417	1.556	1.689	1.927	1.989
Ireland	2.139	2.361	2.407	2.535	2.669	2.827	3.201	3.231	3.518	3.835	4.502	5.791	6.259	6.649	7.078	7.584
Italy	4.166	4.383	3.940	3.945	3.660	4.243	4.615	4.693	4.913	5.169	5.467	5.735	5.983	6.216	6.420	6.689
Latvia							345	402	492	547	566	590	591	624	699	859
Lithuania						240	341	426	477	559	574	610	646	701	802	936
Luxembourg	5.517	5.956	6.910	7.371	8.019	8.305	8.394	8.630	9.455	9.876	10.673	11.602	12.660	13.358	14.122	14.672
Malta					1.198	1.356	1.539	1.617	1.720	1.845	1.945	2.022	2.021	2.091	2.179	2.271
Netherlands	5.068	5.415	5.852	6.050	6.340	6.282	6.262	6.369	6.614	6.923	7.392	7.942	8.307	8.550	8.765	9.683
Poland										950	1.164	1.159	1.054	1.075	1.262	1.373

Persons with Development Disabilities and Special Needs: A Comparative Efficiency Analysis

Portugal	1.129	1.395	1.547	1.627	1.823	1.862	1.991	2.186	2.399	2.599	2.857	3.091	3.192	3.390	3.589	3.724
Romania										238	267	298	305	423	523	632
Slovak Rep.					517	604	694	741	717	793	830	921	996	1.089	1.192	1.316
Slovenia						1.952	2.149	2.350	2.516	2.613	2.794	3.001	3.060	3.173	3.306	3.517
Spain	2.391	2.625	2.574	2.439	2.505	2.668	2.657	2.730	2.873	3.175	3.343	3.593	3.845	4.074	4.409	4.652
Sweden			7.397	7.499	7.393	8.135	8.112	7.998	8.447	9.053	8.692	9.341	10.011	10.233	10.286	10.589
United Kingdom	3.749	4.017	4.134	4.340	4.217	4.519	5.527	5.848	6.183	7.185	7.459	7.410	7.116	7.658	7.999	8.429
Norway	6.092	6.470	6.527	6.637	6.927	7.421	7.946	8.185	9.010	9.911	10.753	11.699	11.875	11.744	12.521	13.004
Switzerland	6.019	6.501	7.409	8.095	8.781	8.971	8.987	9.370	9.622	10.161	10.889	11.573	11.417	11.585	11.769	11.762

Source: Eurostat (2008a,b, 2009), <http://epp.eurostat.ec.europa.eu>, Online Database.

TABLE 3: SOCIAL BENEFITS FOR DISABILITY, AS A PERCENTAGE OF TOTAL BENEFITS, 1990 – 2006

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Austria	9,8	9,7	9,5	9,5	9,7	9,8	9,6	9,7	9,4	9,7	9,4	9,1	9,0	8,8	8,6	8,2
Belgium	7,4	6,8	8,1	8,1	8,8	8,7	8,7	8,8	9,1	9,3	9,2	9,8	7,1	7,1	7,0	6,4
Bulgaria															8,4	9,1
Cyprus										3,4	3,8	3,9	3,7	4,2	3,7	3,9
Czech Republic					7,5	7,8	7,9	8,0	7,9	7,7	8,0	7,8	8,1	7,9	7,8	8,6
Denmark	9,9	9,9	10,0	10,1	10,6	10,7	10,8	11,6	12,1	12,0	12,5	12,9	13,5	13,9	14,4	14,9
Estonia										6,6	8,2	8,9	9,3	9,1	9,4	9,5
Finland	15,3	15,1	15,1	14,9	15,0	14,7	14,7	14,4	14,2	13,9	13,7	13,4	13,3	13,2	12,9	12,7

France	6,2	6,0	5,9	5,9	5,9	5,9	5,9	5,9	5,9	5,9	5,9	6,0	5,9	5,9	5,9	6,1
Germany	7,4	7,0	7,2	7,4	7,4	7,0	6,6	6,6	6,5	6,5	6,3	6,2	6,2	6,2	6,2	6,2
Greece	6,2	5,7	5,4	5,1	4,8	4,8	4,8	4,8	4,8	4,8	5,0	5,2	5,1	5,0	4,9	4,7
Hungary									9,7	9,6	10,2	10,1	10,3	10,3	9,9	9,6
Ireland	4,5	4,4	4,4	4,5	4,8	5,0	5,0	5,0	5,0	5,3	5,2	4,7	4,8	5,0	5,3	5,4
Italy	7,0	6,9	7,2	7,4	7,1	7,2	6,7	6,3	6,3	6,1	5,8	6,2	6,3	6,1	6,0	5,9
Latvia							8,7	8,4	7,9	7,9	7,9	7,9	7,5	7,9	7,5	7,3
Lithuania						9,2	7,4	7,3	7,7	8,4	8,9	9,1	9,6	10,3	10,4	10,7
Luxembourg	13,1	12,6	12,1	12,5	12,7	12,7	12,9	12,4	14,3	13,4	14,3	13,8	13,3	13,5	13,1	13,2
Malta					4,7	5,3	5,1	5,4	5,7	5,9	5,8	5,9	6,5	6,7	6,6	6,3
Netherlands	16,5	16,2	15,6	13,8	12,6	12,2	12,0	11,8	11,8	11,8	11,5	11,2	11,0	10,6	9,7	8,5
Poland										14,0	13,7	12,8	12,2	11,5	10,7	9,3
Portugal	14,9	14,5	14,2	14,4	11,8	12,6	13,0	12,7	12,2	12,7	12,3	11,7	11,5	10,4	10,0	10,0
Romania										7,9	9,0	8,6	9,9	7,1	6,8	7,4
Slovak Republic					6,8	6,4	6,7	6,5	6,8	7,6	8,1	8,8	8,9	7,9	8,1	8,7
Slovenia						8,5	8,5	8,4	8,9	9,0	8,7	8,6	8,3	8,2	8,5	8,5
Spain	7,7	7,3	7,1	7,4	7,4	7,6	7,6	8,0	7,8	7,9	7,7	7,7	7,4	7,4	7,5	7,3
Sweden			10,6	11,3	11,9	11,7	11,6	12,0	12,8	13,0	13,2	13,6	13,9	14,6	15,0	14,9
United Kingdom	9,3	9,3	10,0	10,5	10,9	10,5	10,3	10,2	9,7	9,4	9,3	9,6	9,4	9,3	8,9	8,7
Norway	16,5	16,4	16,5	16,2	16,3	16,2	16,3	16,3	16,9	16,4	16,5	17,6	17,9	18,7	19,1	18,8
Switzerland	9,6	9,6	9,9	10,4	10,6	10,8	10,8	11,2	11,5	11,7	12,2	12,4	12,7	12,6	12,7	12,5

Source: Eurostat database (2008a, b, 2009).

As illustrated by the data above, there are significant differences across countries in the extent to which social policy goals are pursued through the tax system or in the role of private provision within national social protection systems (Hennessy and Warin 2004). These differences point to substantial variance in the re-distributional nature of social systems. Some private social programs may generate a more limited re-distribution of resources than public ones, and tax advantages towards private pension and health plans are more likely than not to benefit the relatively well-to-do (Adema and Ladaïque, 2005, 2009). Private employment-related social benefits mostly re-allocate income between the employed population, and the same holds largely true for fiscally-advantaged individual or group retirement plans (Caminada and Goudswaard, 2005). Cross-national differences in redistribution are not just related to individual program design, but also to the overall level of social spending (Table 4).

TABLE 4: PUBLIC AND TOTAL SOCIAL EXPENDITURE, 2008

	Public social expenditure		Total social expenditure	
	Gross	Net	Gross	Net
France	39,3	35,3	43,3	39,0
Belgium	35,9	31,5	42,1	36,4
Germany	35,5	33,4	39,5	35,8
Sweden	40,5	31,9	44,3	34,2
Luxembourg	38,4	32,1	40,2	33,6
United Kingdom	26,9	25,5	36,0	32,8
Italy	35,2	30,3	38,1	32,5
Austria	36,9	30,1	39,5	32,0
Portugal	33,5	30,4	34,8	31,4
Netherlands	28,1	23,8	39,3	31,3
United States	19,6	21,1	32,1	31,1
Denmark	38,3	28,8	42,0	30,7
OECD-26	29,0	25,5	32,8	28,4
Japan	24,1	24,0	28,9	28,3
Canada	22,2	22,3	29,6	27,8
Australia	24,5	23,6	29,8	27,6
Czech Republic	29,0	26,7	29,6	27,1
Iceland	24,6	22,1	31,8	26,9
Finland	32,7	25,6	34,2	26,6
Spain	29,3	26,1	30,0	26,3
Ireland	26,7	24,2	28,9	25,7
New Zealand	28,0	24,2	28,6	24,7

Norway	27,8	23,0	30,5	24,5
Poland	29,6	24,2	29,7	24,2
Slovak Republic	24,7	22,2	26,2	23,4
Korea	9,2	9,5	12,6	12,7
Mexico	9,0	10,6	9,2	10,8

Source: OECD (2008), *Social Expenditure database*, (www.oecd.org/els/social/expenditure)

Note: Countries are ranked in decreasing order of total net social spending; since adjustments are required for indirect taxation, net social spending is related to NNI at factor costs rather than to NNI at market prices.

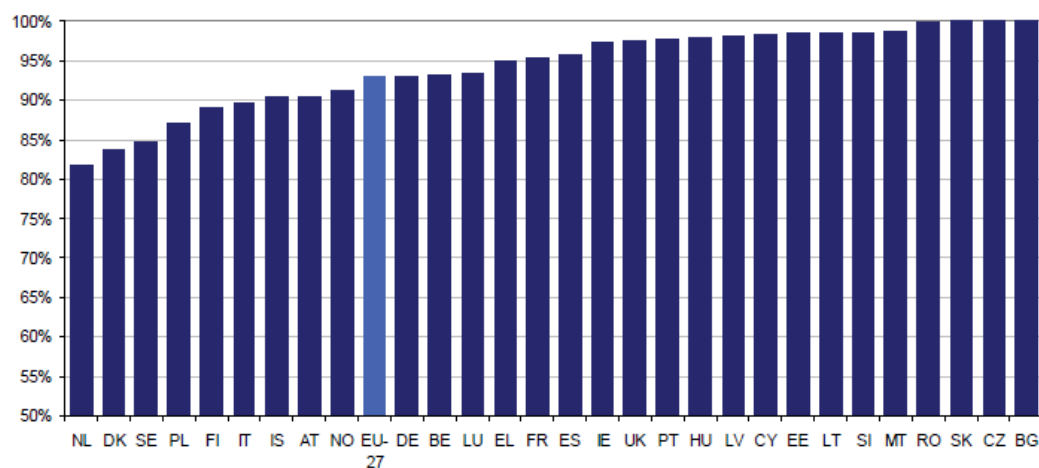
4. TAXATION OF SOCIAL EXPENDITURE

In some E.U. countries benefits are taxed in the same way as earnings, while in other countries most benefits are taxed at a reduced rate. Yet in other countries, almost all benefits are paid net of direct taxation. Moreover there are considerable differences between how different types of benefits are being taxed. In general, unemployment assistance, social assistance and housing benefits and family benefits are generally not taxed. In contrast, public and private retirement and disability pension payments are generally taxed, but frequently at reduced rates, while continued wage payments in case of absence due to sickness are taxed as earnings. Illustratively, across the E.U., net social protection expenditure in 2008 was around 93% of the gross expenditure (Figure 3) meaning that governments clawed back over EUR 200 billion of benefit expenditure through taxation.

In Bulgaria, the Czech Republic, Slovakia and Romania benefits are either not taxed, or so little affected that net expenditure is 99.8% or more of gross. On the other hand, net social protection expenditure is less than 90% of gross expenditure in six countries (the Netherlands, Denmark, Sweden, Poland, Finland and Italy) and less than 95% in a further five EU countries (Austria, Germany, Belgium, Luxembourg and Greece) and in Norway and Iceland. The sheer scale of social protection expenditure means that recouping part of the total amount disbursed through the fiscal system can have a significant impact on the net costs as a share of GDP (Figure 4).

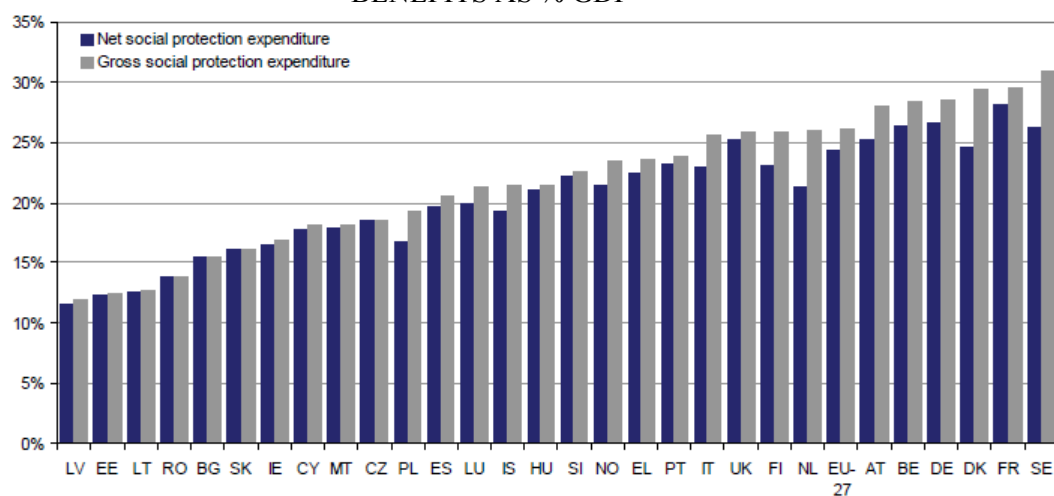
The difference between gross and net social protection expenditure depends on the proportion of gross benefits that are liable to taxes and/or social contributions and the effective rates at which these levies are applied. A little more than half of all social protection benefits in the EU (54.5% by value) were potentially liable to some form of obligatory levy. Benefits are more commonly liable to taxes on income (52.8% of gross benefits) than to social contributions (35.8%). These differences are presented in Figures (5) and (6).

FIGURE 3: NET EXPENDITURE ON SOCIAL PROTECTION BENEFITS AS % GROSS



Source: Mattonetti (2009)

FIGURE 4: NET AND GROSS EXPENDITURE ON SOCIAL PROTECTION BENEFITS AS % GDP

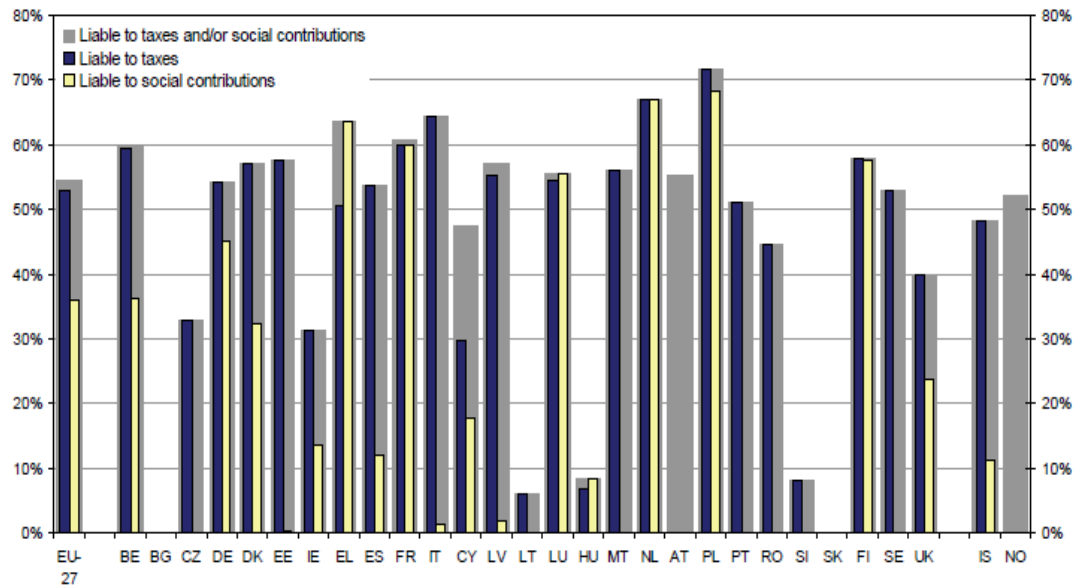


Source: Mattonetti (2009)

Within each country, the different types of social protection benefit may be subject to different regulations regarding the application of taxes and social contributions. Firstly, as might be expected, benefits that are means tested (i.e. payable only when individual/household income is below a certain threshold) are generally not taxable – across the EU27 less than 9% of all means tested benefits are liable to taxes and/or social contributions compared to over 59% of non means tested benefits (Fig.6).

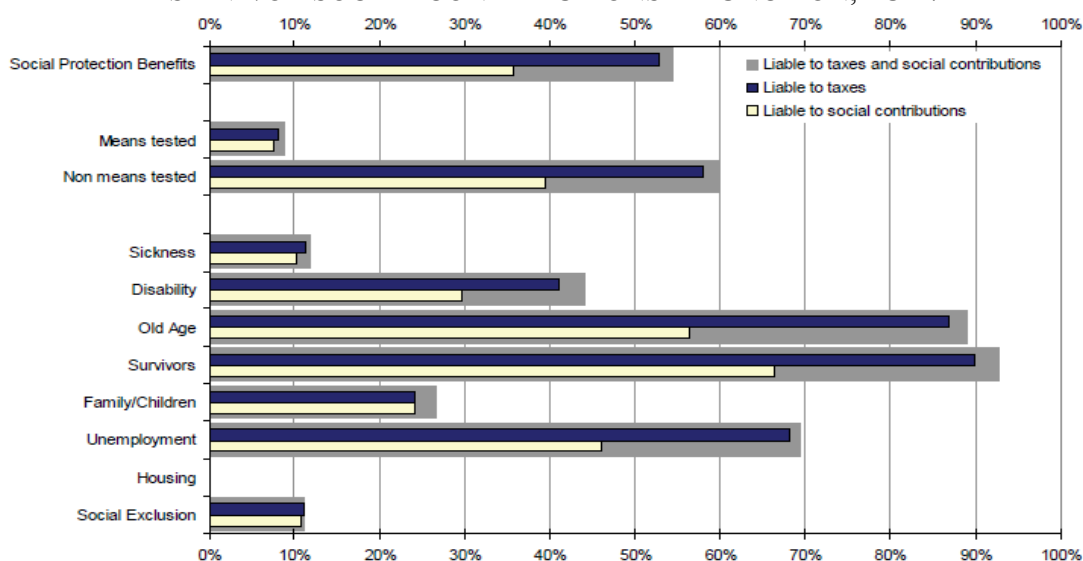
Although more than half of all social protection benefits are potentially liable to taxes and/or social contributions, this does not mean that all recipients of those benefits pay taxes – many will have an income that is below the threshold at which taxes become payable and will therefore enjoy the full value of the benefits disbursed. The data collected by Eurostat attempts to take this into account and measure the effective rate of tax and social contributions that apply to the total value of gross benefits paid out and, therefore, the net cost of those benefits. Across the EU, the effective combined rate of taxes and social contributions applied to those benefits that are taxable was 13.0% but there were considerable variations between countries (Fig.7).

FIGURE 5: PROPORTION OF SOCIAL PROTECTION BENEFITS LIABLE TO TAXES AND/OR SOCIAL CONTRIBUTIONS



Source: Mattonetti (2009)

FIGURE 6: PROPORTION OF SOCIAL PROTECTION BENEFITS LIABLE TO TAXES AND/OR SOCIAL CONTRIBUTIONS BY UNCTION, EU-27

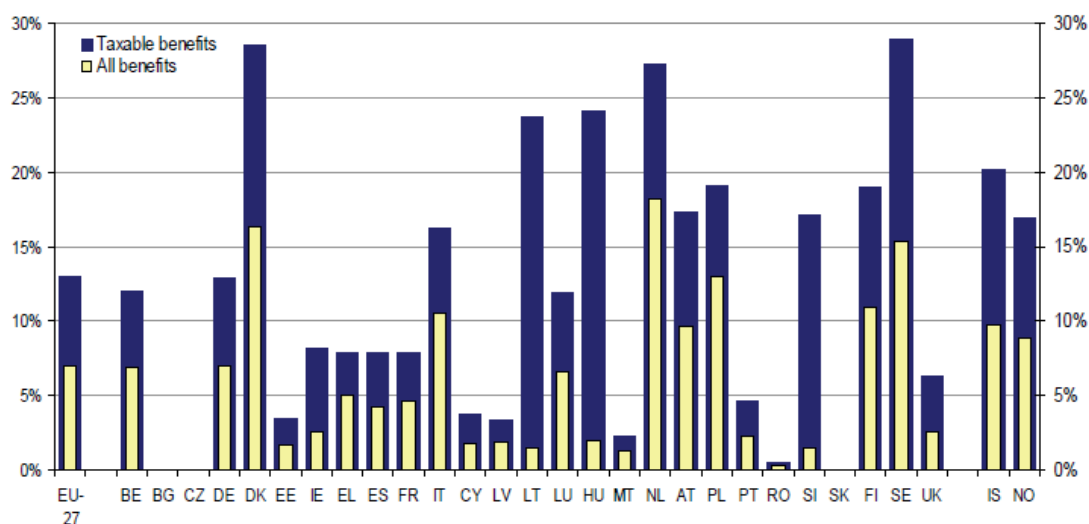


Source: Mattonetti (2009)

Note: In figures 5 and 6, the grey bar represents the proportion of benefits that are liable to taxes and/or social contributions. The darkest bar represents the proportion of benefits liable only to taxes. The light bar stands for the percentage of benefits liable only to social contribution.

Moreover, as discussed above, the proportion of benefits that is liable to taxes and/or social contributions varies considerably and it is the combination of the effective tax rates applied to taxable benefits and the proportion of benefits that are taxable that determines the overall value of net benefits compared to gross. Therefore, even when the combined rate applicable to taxable benefits is quite high, the effective rate of tax on all benefits can be quite low if only a small proportion of benefits are taxable. This can be seen most strikingly in Lithuania and Hungary which both have some benefits that are effectively taxed at over 20% but because in both cases the taxable benefits amount to less than 10% of all benefits by value (Fig.3), the effective combined rate of tax applied to all benefits is just 2% in Hungary and 1.4% in Lithuania (Fig.5). In the EU as a whole, 54.5% of social protection benefits are liable to taxes and/or social contributions at an effective combined rate of 13.0% so that overall the effective rate applied to all benefits is 7.0% and the final net value of social protection benefits is therefore 93% of the gross value.

FIGURE 7: EFFECTIVE COMBINED RATE OF TAXES AND SOCIAL CONTRIBUTIONS APPLIED TO SOCIAL PROTECTION BENEFITS



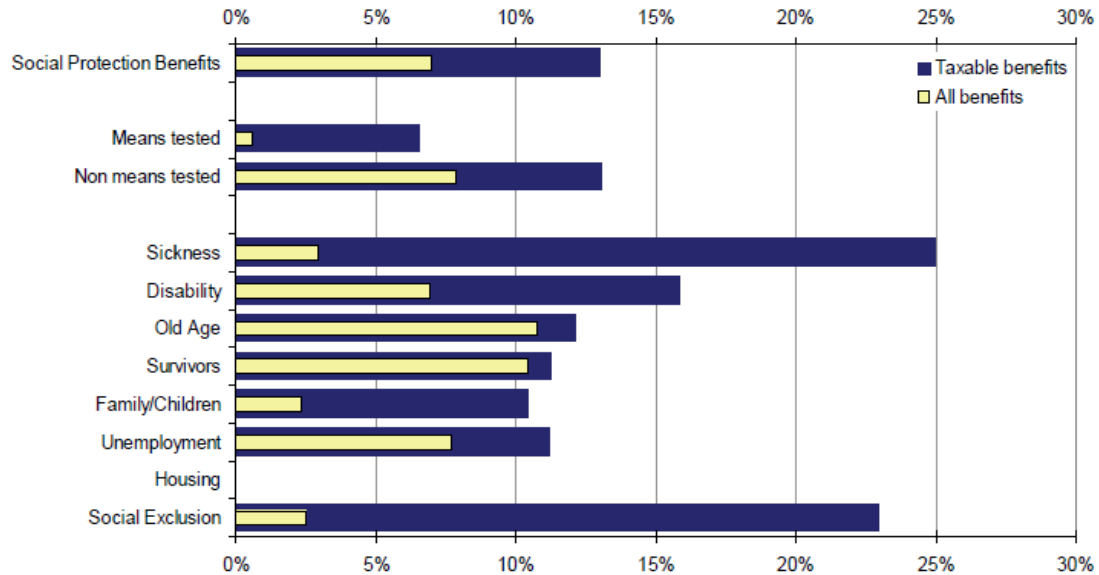
Source: Mattonetti (2009)

The effective combined rate of taxes and social contributions applied to social protection benefits varies not only between countries but also between the different types of benefit and the risks that they are designed to counteract (Thornton and Lunt 1997). On average across the EU, means-tested benefits that are liable to taxes and/or social contributions are subjected to half the effective combined tax rate that is applied to non means-tested benefits (6.5% and 13.1% respectively, Fig.8), which probably reflects the likelihood that a much lower proportion of the recipients will have income over taxable thresholds. Moreover because only a small proportion (8.8%) of means-tested benefits is liable to any form of levy (Fig.4), the effective combined rate applied to all means-tested benefits is just 0.6% compared to 7.8% for non means-tested benefits.

The picture of social exclusion as a type of benefit liable to relatively high tax rates is perhaps surprising but it should be noted that such benefits are liable to taxes and/or social contributions only in four EU countries (DK, CY, LU and NL) and two of these (DK and NL) are countries where the effective rates are high on most types of benefits. In any case for both sickness and social exclusion the majority of benefits paid out across the EU are exempt from any kind of obligatory levy (Fig.4) so that overall the effective combined rates of taxes and social contributions applied to all benefits of these types are amongst the lowest – 3.0% for sickness benefits and 2.5% for social exclusion benefits. Indeed, the highest effective rates applicable to all

benefits of a particular type apply to old age (10.8%) and survivors' benefits (10.5%) which are the two functions with the highest proportion of benefits liable to taxes and/or social contributions (Fig.8).

FIGURE 8: EFFECTIVE COMBINED RATE OF TAXES AND SOCIAL CONTRIBUTIONS APPLIED TO SOCIAL PROTECTION BENEFITS BY FUNCTION, EU-27



Source: Mattonetti (2009)

Note: In figures 7 and 8, the dark bar represents the effective combined rate of taxes and social contribution applied to those benefits that are liable to some form of levy; the light bar is the equivalent rate calculated on all the benefits supplied.

5. THE POLICY AGENDA AND PLANNING FOR PERSONS WITH DEVELOPMENT DISABILITIES AND SPECIAL NEEDS

Regarding individual E.U. countries, their policy agenda is as follows:

1. Austria: In Austria, existing schemes are funded from the one billion allocated to people with disabilities. These funds have been resulted from a redistribution of tax revenues raised from taxing accident disability pensions. The plan is to cut the social security benefits of accident disability pension recipients and re-apply part of the new tax revenues raised to the poor. The main provisions for workers who become disabled

are the Berufsunfähigkeits-, Invaliditäts- and Erwerbsunfähigkeits- pensions. These are contributory benefits. Those without a contribution record are reliant on general social assistance, Sozialhilfe, to meet their income needs.

2. Belgium: The two main income support provisions for people unable to work due to injury or illness in Belgium are the insurance-based invalidity pension (indemnité d'invalidité/ invaliditeitsuitkering) and the non-contributory income replacement allowance for the disabled (allocation de remplacement de revenus/ inkomensvervangende tegemoetkoming). There is in addition a general social assistance scheme (the Minimex). In practice the recipients of the non-contributory income replacement allowance are likely to be those who also receive an 'integration' allowance relating to care needs and social contact.

3. Denmark: On the most vulnerable groups, there are individual sections describing what has been and will be done for the long-term unemployed, people with disabilities, alcohol abusers, and the homeless. The plan appears to introduce no new measures for these groups, action plan, a mental health plan, an integration act, and pilot schemes. Short-term schemes and initiatives have also been set up for some of these groups from which assessments have been done and information collected to inform social policy. Funding has also been provided for trainer training or further training programs. In particular the goals are: economic exclusion (poverty), extension of the allowance period for the rehabilitation of youths with disabilities and exclusion from the labour market promoting employment for people with disabilities. The Law on Social Pensions provides for three levels of early or before-time pension (førtidspension). The medium førtidspension can be awarded when a person's 'vocational ability' is reduced by at least two-thirds due to a medical condition; the highest pension where his or her remaining vocational ability is negligible. The lowest level (almindelig førtidspension) is awarded when the claimant's working ability has been reduced by at least half for medical and/or social reasons. All the benefits are non-contributory and almindelig førtidspension is means-tested.

4. Finland: Finland has a national pension system covering the whole population, along with a contributory employee pension system and some private voluntary provision. About two-thirds of disability pension recipients receive benefits from both systems; others receive only a national pension because of insufficient contributions, or receive the partial employee pension national pensions are only payable for 'full' incapacity to work.

5. France: There are two main income support provisions for people unable to work due to illness or injury in France: the insurance-based pension d'invalidité and Allocation pour l'Adulte Handicapé (AAH), which is a social assistance measure. Work incapacity is assessed in different ways for the two benefits, by separate institutions. AAH pre-dates the general social assistance system, RMI, which was introduced in 1988. The introduction of RMI led to a discussion about the rationale for AAH and other

categorical assistance benefits. RMI provides for each recipient to have a contract of 'insertion' which should take his or her particular needs into account.

6. Germany: The main provision for income support for people with reduced capacity to work in Germany is Erwerbsminderungsrente, EMR. This is a contributory insurance benefit. Social assistance is also available to people with disabilities but the tests of disability for social assistance revolve around care and mobility needs rather than work incapacity.

7. Greece: A coherent and overall strategy is missing, along with clear objectives and targets. Generally one is given the impression that the issue of social exclusion is a natural parameter of Greek society. Social Policies have nonetheless to be related to Social research. What is of interest, is the new areas of actions that relate to new measures for the protection and the support of vulnerable groups. The main provisions for people unable to work due to invalidity in Greece are:

- employee pension schemes, including the general scheme, IKA, and the schemes for public sector workers;
- insurance schemes for farmers and the self-employed, who make up a large part of the Greek labour market; and
- non-contributory social assistance for those unable to work with special needs and special programmes for particular medical conditions.

The determination of the degree of disability under these provisions is the same: differences arise in the contributions record necessary to receive a pension and in the provisions for accumulating other income along with the pension. Furthermore, the Health Committees which determine the degree of 'medical' disability also determine whether there is a sufficient link between the workplace and the injury/ disease and/or the resulting impairment to qualify for the work injury and occupational disease provisions.

8. Ireland: Some other issues which are not well identified or responded to in the Plan include: Defence of the rights of groups in danger of unemployment, low pay, insecure employment and exploitation. The danger of exploitation of people with disabilities, young people and immigrants. In Ireland there are two income support benefits for people whose work capacity is permanently reduced by illness or impairment: a contributory Invalidity Pension and a non-contributory and means-tested Disability Allowance. Note also that the short-term contributory sickness benefit (payable for up to a year) is currently called Disability Benefit, but is being re-named Sickness Benefit.

9. Italy: The Italian plans already implemented in the country, such as employment, social services, health, education - and four sectoral ones – children and adolescents, drug users, disabled, elderly. It gives for the first time in Italy, a common framework of action and it creates a union between the different planning sections and the specific projects already in place. The discussion here concentrates on the Assegno ordinario di invalidita (Ordinary Invalidity Grant), which is a contributory allowance

payable to people who have lost 67%+ of their capacity to work in their previous occupation. There are also non-contributory income support measures, notably the *Pensione di inabilita*, which is payable to those assessed as having lost 100% of their work capacity in any occupation, and the *Assegno mensile*, a monthly grant for those whose working capacity is reduced by at least 74%. Assessments for these latter benefits, along with grants for people needing care and accompaniment, are done by Medical Panels of the National Health Service. These assessments are oriented towards relatively severe disabilities and will be discussed further in the context of care service provision.

10. Netherlands: While technically a contributory benefit, the contribution requirements are minimal. There is a separate provision for young people who have never worked. Partial awards of WAO can be combined with partial receipt of unemployment benefit. General social assistance may also be claimed to top up WAO but no other test of inability to work is involved.

11. Portugal: Portugal has a contributory invalidity pension (*pensão de invalidez*) and a non-contributory 'social invalidity pension' (*pensão social de invalidez*). Both are now governed by a single law (17/2000), but this law is not yet fully in force. There is also a general social assistance provision, the *rendimento minimo garantido*.

12. Spain: The plan does not specify the formulas which will be applied to assess the effectiveness. Incorporating into the job market general groups at risk of exclusion, and particularly groups of young people, the over 45s, women and people with disabilities. Activities in favour of specific groups of the most vulnerable members of society include the improvement of the situation of disabled people who are excluded or at risk of exclusion, single-parent mothers, immigrant women, disabled and ill-treated women, etc., with a view to improving the plan for equality and protection against domestic violence. The main employment action for people with special difficulties is divided into one measure to promote the integration of the disabled, and another measure promoting employment integration for those people at risk of exclusion from the labour market. In both cases, the actions that are being co-funded must adopt the form of integrated insertion itineraries. With regard to the programmes with a national or multi-regional vocation, there is one dedicated to combating discrimination. There are two main forms of income support for disabled people: contributory incapacity pensions and non-contributory invalidity benefits. The contributory scheme has been in existence for many years (most elements of the current system were in place by 1966; the previous system (SOVI) was abolished from 1 Jan 1967 although some transitional elements remain in place). The non-contributory benefit was envisaged by the general law on the social integration of the disabled (LISMI: Ley 13/1982, 7 April, Ley de integracion social de los minusvalidos). The law governing both benefits is now consolidated in the General Law on Social Security (Ley General de la Seguridad Social, LGSS). However, the definitions of disability used in

the two schemes differ considerably, and the institutions involved in their administration are also quite separate.

13. Sweden: Living conditions in Sweden have changed over the past twenty years. Studies point to a significant rise in the menace of social exclusion. Increasingly more people have financial worries, the general state of health has got much worse, and working life has become increasingly uncertain. Immigrants, people with disabilities, young people and single mothers are among the worst affected groups. People with disabilities and ethnic minorities are the two main groups of people hardest-put to find work, but older workers and lonely parents, especially single mothers are also vulnerable. People with disabilities have low skill levels, which makes them most disengaged from the labour market experience and more at risk of social exclusion. Half of those with a reduced working capacity never manage to find a job, compared to 25% for other groups. And while disabled people earn 20% less than other groups of workers, they often have higher impairment-related work expenses to meet. Disabled people, ethnic minorities, young unemployed and low-wage households are discriminated against in policy and practice. The issues may relate to financial difficulties, the lack of alternatives and physical access. There is a wide gap between the employment rate of disabled people and immigrants on the one hand, and the rest of the population on the other hand. The aim should be to provide fulfilling work up to retirement age for everyone with a working capacity of at least 25%. It is not enough to ensure that physically disabled children and young people benefit from the same resources as other schoolchildren and students, proper efforts must also be made to see that they perform as well as non-disabled children. The main long-term income support provision for people unable to work due to illness or injury is the early retirement or 'before time' pension, the *förtidspension*. For people without a work / contributions history, this is a flat-rate pension; for those who have contributed to social insurance, it is earnings-related. In addition to sickness benefit (usually paid for a maximum of one year), rehabilitation benefits can be paid for several years.

14. United Kingdom: The Social Exclusion Unit has identified three strands to its work: new deals for the unemployed, lone parents and disabled, alongside initiatives to address issues such as family, schools, crime and public health. The British government has specific programmes to help the most vulnerable alongside the programmes already mentioned. There are initiatives to increase access to nursery and after-school provision and more locally focused health and social care and increasing consultation on how services are managed and delivered through primary care groups and estate action groups. In addition, programmes aimed at excluded groups include initiatives to reduce the numbers of children being excluded from school and support for children from poor households to stay at school; increasing access to the employment market to lone parents and disabled people. The main provision for income support for people unable to work due to illness or injury is Incapacity Benefit (IB). There are three levels of Incapacity Benefit: short-term lower rate, payable for up

to 28 weeks of sickness absence, short-term higher rate (up to 52 weeks) and long-term (over 52 weeks). Many people who become sick when in work would receive Statutory Sick Pay (SSP) from their employer in place of the lowest level of Incapacity Benefit for the first 28 weeks. The predecessor to Incapacity Benefit, Invalidity Benefit (IVB), was a contributory benefit. A separate benefit, Severe Disability Allowance (SDA), was payable to those disabled from a young age who had an insufficient contributions record to qualify for Invalidity. People unable to work due to poor health may also receive social assistance from the general scheme, Income Support (IS). Extra amounts are payable to people with disabilities receiving Income Support. However, disability in this context is related to mobility and care needs and does not involve any test of the effect of the health condition on a person's ability to work.

6. CONCLUSIONS

Social policy for people with development needs as defined in this paper, is an essential factor for the independent living and empowerment of disabled people as active and responsible members of their local communities and society as a whole. It enables access to employment, leisure, education and social interaction.

Disabled people need access to information about the opportunities for independent living. At the present time the majority of resources are devoted to institutionalised services. This disempowers disabled people and is not an effective, efficient and there is no economical use of these resources. Disabled people require a range of options from which to choose the best personal support system for themselves.

In the area of income support measures, we find that disability is basically taken to mean inability to work. Differences between countries appear in the methods used to discern when a person is unable to work, particularly in the way in which the interaction between a person's health status and the demands of the labour market is treated. In the area of employment policy, we find a wider range of potential meanings attached to disability. Disability may signify reduced productivity or other limitations to employability, or the need for adaptations to facilitate productive work. In developed countries, the debate has moved beyond a concern about the perceived cost of maintaining dependent people with disabilities to an effort of finding effective ways to ensure that people with disabilities can participate in and contribute to society in all spheres of life.

Many are concerned however, that the greatest need is in developing nations—where the vast bulk of the estimated 650 million people with disabilities reside. A great deal of work is needed to address concerns, ranging from accessibility and education to self-empowerment and self-supporting employment and beyond.

REFERENCES

- Adema, W. and Ladaïque, M. (2009). How Expensive is the Welfare State?: Gross and Net Indicators in the OECD Social Expenditure Database (SOCX), *OECD Social, Employment and Migration Working Papers*, No. 92, OECD Publishing.
- Adema, W. and Ladaïque, M. (2005). Net Social Expenditure, 2005 edition, *Social, Employment and Migration Working Papers*, No. 29, OECD, Paris.
- Caminada, C.L.J. and Goudswaard, K.P. (2005). Are Public and Private Social Expenditures Complementary? *International Advances in Economic Research*, 11(2), pp. 175-189.
- Castles, F. (2004). *The Future of the Welfare State*, Oxford, United Kingdom: Oxford University Press.
- DePoy, E. and Gilson, S.F. (2004). *Rethinking disability: Principles for professional and social change*. Pacific Grove, CA: Wadsworth.
- Eurostat (2008a). *ESSPROS Manual - The European System of integrated Social Protection Statistics (ESSPROS)*, Luxembourg.
- Eurostat (2008b). *European Social Statistics, Social Protection, Expenditure and Receipts, Data 1997-2005*, Luxembourg.
- Eurostat (2009). Databases [online]. Available from: <http://epp.eurostat.ec.europa.eu>.
- Hennessy, P. and Warin, T. (2004) One Welfare State for Europe: A Costly Utopia? *Global Economy Journal*, 4(2), Article 7.
- Johnstone, D. (2001). *An Introduction to Disability Studies*, 2nd edition.
- Mattonetti, M. L. (2009). *Population and Social Conditions*, Eurostat, Statistics in Focus, 102/2009.
- National Action Plans for Employment from Austria, Belgium, Denmark, Finland, France, Germany, Greece, Luxembourg, The Netherlands, Spain, Sweden, and United Kingdom, [online]. Available from: http://www.europa.eu.int/comm/employment_social/news/2007/may/naps2007_en.html
- OECD (2007). *Benefits and Wages*, OECD Publishing, Paris. [online]. Available from: www.oecd.org/els/social/workincentives.
- OECD (2008). *Social Expenditure database*. [online]. Available from: www.oecd.org/els/social/expenditure.
- OECD (2009). *The Jobs Crisis: What are the implications for Employment and Social Policy – Further Material*, OECD Publishing, Paris. [online]. Available from: www.oecd.org/els/employment/outlook.
- Pearson, C. (2006). *Direct Payments and Personalization of Care*, Edinburgh, United Kingdom: Dunedin Academic Press.
- Thornton, P. and Lunt, N. (1997). *Employment policies for disabled people in eighteen countries: a review*, Social Policy Research Unit, University of York.
- Waddington, L. (1996). Re-assessing the employment of people with disabilities in Europe: From quotas to anti-discrimination laws, *Comparative Labour Law Journal*, 18(62), pp.62-101.

THE THORNY PALESTINIAN QUESTION AND ITS RESOLUTION

NICOLAS PANAYIODIDES*

ABSTRACT

This article is a macroscopic analysis of the Arab-Israeli conflict. After considering the origins of the problem, it deals with its development and the Peace Process as well. In our analysis we also consider the thorny questions that gap the two parties and prevent the settlement of the conflict. At the same time, we examine the peculiarities of the Jewish political system, a crucial element in the whole process-according to our opinion- that removes the required autonomy from any government in Israel- the strong part in the conflict- to negotiate and reach a peace deal with the Palestinians. Additionally, we explore the rift between Palestinians, their reconciliation agreement and what implications may have on the Peace Process in a period that democratic freedoms and democratic change is more imperative than ever.

Keywords: Arab-Israeli Conflict; Occupied Territories; Six Days War; Resolution 242; Oslo Agreements; Camp David Summit; Refugee Problem.

1. INTRODUCTION

Another international initiative for the resolution of the Arab-Israeli conflict had an inglorious end. The exploratory talks that began in Amman on January 2012 aimed at resuming peace negotiations between Israel and Palestinians failed. The Palestinian leadership blamed Israel for the failure and said that they will explore alternative ways to bring about a Palestinian state¹ in the West Bank and Gaza Strip. The reason for the failure was once again the settlement activity of Israel in the Occupied Territories.

The same story occurred in late 2010 when the Israeli government announced that it would not continue the moratorium over settlement construction in the West Bank. At the same time the Palestinians refused to continue the talks and the peace process was again stalled.

The Israeli-Palestinian conflict is one of the most complex and difficult to solve problems, which is composed and decomposed by many individual questions (status of Jerusalem, Palestinian refugees, Israeli settlements, borders, water resources etc.), which render its resolution more difficult. In the years from 1967 through 1992, six American Presidents were involved actively in the conflict (Quandt, 1993) without particular success, until the Oslo Agreements (September 1993), which established a process of progressive autonomy of occupied territories, which however, was degenerated and as a result now it constitutes a dead letter. The imbalance of power between Israelis and Palestinians, which in such cases favours the powerful actor in

* Lecturer, American College, Business Department, Nicosia, Cyprus

the conflict, allowed in the Israeli governments to violate article 31, clause 7 and 8, of the agreement and to continue ceaselessly the colonisation of the West Bank (Pappe, 2007), but also the division of territorial integrity of the occupied areas with the creation of line of bypasses and tunnels that link these territories with Israel.

On the other hand, Political Islam, the warheads in the Palestinian camp, Hamas and Islamic Jihad did not believe to the peace process and as a result they tried to avert any peace settlement between the two parts².

At the same time, some Israeli leaders make statements that do not contribute to the re-establishment of trust between the two parties. For example, the Israeli Prime Minister Benjamin Netanyahu, declared that Jerusalem (East) is not a settlement, to add that the “Jewish People were building Jerusalem 3000 years ago and the Jewish people are building Jerusalem today. Jerusalem is our capital”, he concluded³. However, according to the resolution 242 of Security Council, East Jerusalem <<is occupied territory>> and Israel must withdraw in the border of 4th of June of 1967, that is, one day before the outbreak of the <<six days wars>>. The <<Land for Peace formula>>, is based on the assumption that the Israeli armed forces will withdraw from the territories occupied in the war, in exchange for “termination of all claims or states of belligerency and respect for and acknowledgment of the sovereignty, territorial integrity and independence of every state in the area and their right to live in peace within secure and recognized boundaries” (Cattan, 1998). In other words, the 242 resolution is based on the principle of “mutuality”, demanding from Israel to give up any claim on the occupied territories and from Palestinians to recognize the Israeli state and cease any military actions against it.

Consequently, the <<two- state solution>>, is the only way for a peaceful settlement of the problem. Other solutions, such as a federate or a confederate state, where Palestinians and Israelis will live together are not realistic, due to the fact that the main political protagonists have insistently rejected them in the past. So, the main way to solve the problem is two states that will exist peacefully side by side and respect each other. Otherwise, the Palestinian problem will remain the number one source of terrorism, a threat to regional and global stability. In addition to this, the Israeli state and society will remain trapped in the logic of living permanently in a <<state of fear and belligerency>>. At this point, we will examine in short the origins of the problem.

2. THE ORIGINS OF THE PROBLEM

Many political scientists and analysts of the Palestinian Problem maintain that the origins of the problem lie in the British policy during the First World War, but also soon afterwards, when Britain undertook the mandate in Palestine. According to this point of view, Britain, in order to perpetuate its regional interests in the Middle East, gave contradictory promises to Arabs and Jews. More specifically, Britain pledged to

the Sharif of Mecca Hussein that the United Kingdom would support his vision for the creation of an Arab caliphate (Arab state) in the area of Middle East (McMahon-Hussein correspondence, July 1915-March 1916), if he revolted against the Turks. So, although Hussein was a Muslim, he ordered the revolt against the dwindling Ottoman Empire. On the other hand, Britain and France agreed in May of 1916, to divide the Middle East in Spheres of influence (Saïks-Pico agreements). These agreements, however, were in full contradiction with the pledges Britain gave to the Arabs, because some areas such as Palestine and Iraq that Hussein believed were included in the boundaries of his state, in fact were shared between British and French. Things complicated much more, when Britain decided in November of 1917 (Balfour Declaration)⁴ that it would pledge to the Jews that it would support their vision to establish a <<national home>> in Palestine (Stein, 1983). Consequently, Britain with its policy created a <<conflict of interest>> between Arabs and Jews, because both national communities wanted to safeguard what they thought as pledge from the mandatory power. However, this was impossible to occur, without the use of force. As the Governor of Jerusalem, Hugh Foot, noted “The failure of the British administration in Palestine was inevitable. The double sin had been committed of raising false hopes both with the Arabs and with Jews. The hopes were false because they were conflicting. The Arabs who fought with Great Britain in the First World War to throw the yoke of the Turkish Empire were led to believe that they were fighting for their freedom. The Jews were led to believe by the Balfour Declaration in 1917 that they would win a national home for the Jewish people in Palestine. Relying on British assurances they too fought and worked with us but Palestine was populated and owned by Arabs” (Foot, 1964).

The continuous influx of Jews settlers in Palestine during the late 19th and at the start of the 20th century provoked great suspicion and concern to the Arabs, who started to realize that their civil and political rights were threatened (Khalidi, 1997). The relations between Jews and Arabs in the British Mandate were more than bad. The two national communities faced each other as complete enemies. As a result, clashes erupted in various Palestinian towns between Jews and Arabs in February of 1920, in May of 1921 and during 1929. Bicomunal strife reached its heyday when the Arabs decided to revolt against the British Mandate on 1936 (Morris, 2001). In October of 1936, Arab Higher Committee declared a general strike in Palestine and organised various demonstrations against the Britons. These developments forced Britain to reevaluate its policy over Palestine. In November of 1936, a “Royal British Commission” under Lord Peel arrived in Palestine in order to evaluate the general situation and make proposals.

In the meantime, the collision escalated and the Arabs started to attack Britons in 1937 at various strategic and supply sites⁵. We must also note that during the revolt the Jews coalesced with Britons against the Arabs, a fact that increased much more their suspicions against British policy in Palestine⁶. On July 7, 1937, the Commission

published its report. According to this, the conflict in the mandate was “irrepressible” within the framework of one state, (Morris, 2001) and the mandate was unworkable. We have to underline the fact that this is the first time that Britain introduced the idea of the partition of Palestine. The Jews were to receive less than one fifth of the territory, the remainder would be united with Transjordan creating a large independent state. A small enclave, including Jerusalem, Bethlehem and some places of strategic importance was to remain in British hands. The Arab Higher Commission rejected the Peel Report, while the Zionist Leaders (Ben Gurion, Chaim Weizman) accepted it.

In Palestine British troops arrested the Leaders of the revolt, inflicting a major blow to the Arabs. At the end of 1939 the rebellion was over. Britain anxious about the developments in Palestine issued the “White Paper”, in order to placate the Arabs. The Second World War was coming and Britain wanted their support. In this statement, Britain declared that a Palestinian state should be created in ten years. Parallely, British officials stated that from now on, limitations should be put on Jew’s immigration in Palestine. This was the main diverging point in the relations between Britons and Jews. The latter started to face British with great resentment and suspicion. They conceived “White Paper” as British efforts to revoke the Balfour Declaration (see above) and nullify their dreams for a <<national home>> in Palestine. All the efforts of the Foreign Office and the British politicians to find a solution to the problem, failed. Sir Hugh Foot is again revealing about the position, United Kingdom found itself: “In 1915 we supported King Feisal’s desert rising. In 1917 we signed the Balfour declaration. The surprising thing is that it was twenty years after those actions before the Arabs revolted and almost another decade before the Jews turned to violence and rebellion. By trying to please both Arabs and Jews we lost the friendship and respect of both and eventually earned the contempt of the world by an ignominious withdrawal” (Foot, 1964). As Hugh Foot notes, at the end of 1945 and the start of 1946 the Jewish organisations Hagana and Stern left aside their differences and attacked the British forces in various sites. Their strategic target was to <<paralyse British transport and communications systems>> (Cohen, 1982) and by doing so, to question the strategic value of the mandate. Simultaneously, Zionists transferred their attention to the emerging power of the international system, USA. There was a vivid Jewish community in the States and the Zionist leaders were well aware that the Americans could help them succeed in their goals. American President, Harry Truman wanted to use the Jewish electoral influence for the congressional elections of November 1946. So, he supported the partition of Palestine (Cohen, 1982) in October 1946 (Yom Kippur Statement). An additional factor that urged Truman to support Zionist goals was the revelation of the holocaust and the need to rehabilitate Jews in a state where they could live in safety.

Britain, incapable of solving the problem alone, and in order to overcome the impasse, referred the question to the United Nations (April 1947). Two alternative plans were proposed. According to the first, Palestine should be divided into an Arab

and a Jewish state (majority plan), while the latter proposed a federated state, with broad autonomy for the two national communities (minority plan). On November 29, 1947, with the Resolution 181 the General Assembly decided that Palestine should be divided. The Palestinians rejected the plan and complete chaos emerged in Palestine. Ben Gurion declared on 14th of May the establishment of the Jewish State. The next day, 15 May 1948, four Arab states, Egypt, Syria, Jordan and Iraq, intervened militarily in Palestine⁷. However, Israel more organised militarily and having its indefinite variables of power in a better level than that of its rival states managed to win. At the aftermath of the war the Israeli state found itself possessing the 78 per cent of the territory of Palestine, though according to the partition plan it should acquire the 55 per cent of Palestine. Another consequence of the war was that a great number of Palestinians were displaced. Approximately, 750000 persons were rendered refugees in the neighbouring Arab states. The resolution 194 (Azchenbbaum, 2003) of the General Assembly, that <<dictates that the Palestinians should be left to return to their homelands as soon as possible and live in piece with their neighbours... >>, is just a piece of paper with only moral value. Until now, nobody was able to enforce it.

Some years later, in 1959, a Palestinian organization, the “FATAH”, that means victory, starts to carry out attacks against the Israeli state. Those who carry out the attacks are recruited from the communities of the displaced Palestinians. From now on the displaced are called “Fedayin”, a major threat for the Israeli state and its citizens. Moreover, in 1964, the Palestinian Liberation Organization (PLO) would be created, with Egyptian support. As the first president of PLO, Ahmed El Sokiri will state: “the reasons that led to the foundation of organisation were the need for co-ordination of the struggle for the liberation of the occupied part of Palestine and the Palestinian population and simultaneously the aid of moral and his possibilities for the continuation of the struggle”. Under these circumstances, the balance of power in the Middle East was very fragile. It was a matter of time for a new war to occur.

3. THE TRANSFORMATION OF THE ISRAELI-PALESTINIAN CONFLICT: “FROM THE SIX DAYS WAR UNTIL THE OSLO ACCORDS”

On June 5, 1967, the Israeli state by strategically surprising its neighbors and supporting that initiated a preventive war, (Sayigh, 1999) attacks Egypt, Syria and Jordan. Using the <<preponderant gun>>, namely the supremacy of its aviation, it destroys on the ground all the Egyptian and Syrian aviation and roughly half of the Jordanian fighting jets. In six days the Israeli army puts under occupation the West Bank, including East Jerusalem (former Jordanian territory), the Sinai, the Gaza Strip (under Egyptian administration before the war) and Golan Heights, Syrian territory. The Israelis had conquered an area three and a half times larger than the Israel itself. The whole war was a <<watershed>> for the Egyptian Leader, Gamal Abdel Nasser, and his dreams for Arab Unity, but especially for the weak actor, the Palestinians.

Another generation of Palestinians became refugees, many of them for the second time. Approximately, 200,000 Palestinians resort to the neighboring states. The aftermath of the war creates new data for the conflict: The <<six days war>, transformed the Israeli-Palestinian conflict from a << pure conflict>> to one << where conflict is mixed with mutual dependence>>, (Spiegel, 1992). More specifically, the conflict in the Palestine until 1948 was a local question, concerning two national communities that were found initially under Ottoman sovereignty and later under English hegemony. Afterwards, the struggle was carried out between the newly established Israeli state and the neighboring Arabic states that did not accept it. The Palestinians exiled in the around Arabic states did not have many margins of act, or choice. However, after the 1967 war, one million Palestinians are placed under direct Israeli occupation. From now on, they become the epicenter of international diplomatic activity, but more importantly, they have to decide for their future.

The next Arab –Israeli war of Yom Kippur or October War of 1973, (Vatikiotis, 1997) does not solve the Palestinian problem. Despite the initial success of Anwar al Sadat, he does not manage to win the war. The indirect involvement of the super powers in the conflict by supplying ammunition to the belligerents provokes escalation of the crisis, between the superpowers, in the international level. A nuclear war is avoided the last minute. American President's Carter initiative helps the Egyptians, under the Camp David Accords to recapture gradually the Sinai, but the Palestinian case remains frozen without success. Although, one part of the accord "Framework for peace in the Middle East", provided for a process of Palestinian self government in the West Bank and Gaza, was not welcomed, neither by PLO, nor by the Arab states. Egypt is ousted from the Arab League and Sadat is assassinated on October of 1981 by a fundamentalist member of the Islamic brotherhood.

Meanwhile, the situation in the occupied territories deteriorates. The bad economic condition of the Palestinians in the West Bank and Gaza in combination with the proliferation of the Israeli settlements in the area creates the conditions for binational strife. In many cases Palestinians are collide with armed settlers in the occupied areas. Moreover, the confiscation of Arab land in the West Bank and Gaza by Israel and the humiliation that the Palestinians suffer from the " iron fist policy" of the Israeli authorities, as well as the frustration with Arab governments for their failure to give priority to the Palestinian Question lead to the Uprising of December 1987. The Intifada as it is called in Arabic had as a strategic target to <<create domestic and external pressure to Israel so as to withdraw from the Arab Territories (Sakin, 1981). In an international level, the Palestinians wanted to convince worldwide public opinion that they were the weak actor, who was fighting with ropes and stones against the all-powerful Israel army. Although they succeeded in this and the World media broadcasted scenes of Palestinian children fighting against the fully armed Israeli soldiers, they did not succeed in liberating the occupied territories.

4. THE PEACE PROCESS IN 1990s: TOWARDS A TWO-STATE SOLUTION OF FALSE HOPES?

In 1989, however, a major transformation of the international system was occurring. With the demise of the former Soviet Union the international bipolar system ceased to exist. As Robert Gilpin (2004) noted: “The structure of international system is important because of its deep consequences in the cost of exercising power and consequently in the cost of changing the international system. The number of superpowers and the distribution of possibilities between them influence the ability of the creation of winning coalitions or counter forces.” This situation is not irrelevant with the position that Yasser Arafat and PLO found themselves when Soviet Union could not support more its strategy. On the other hand, George Bush without abandoning USA’s commitments for the security of Israel declared that it should leave aside its ambitions for the “Greater Israel” and find a realistic solution for the problem. Moreover, the regional developments with the invasion of Iraq in Kuwait, isolated much more the Palestinian Authority, which was forced to accept to participate in the international conference of Madrid (October 1991). The secret negotiations that ensued in the start of 1993 in Oslo, between Israel academics and Palestinian Officials had as a result the Declaration of Principles that was signed in 13th of September 1993 in Washington, between the State of Israel and PLO. Nevertheless, as he have already mentioned above, these agreements as well the other successive agreements, Oslo II (September 1995), Paris, Why River, Sharm El-Sheikh, were not fully implemented. Indicatively, we can mention that while the Oslo Agreements provided for the withdrawal of the Israeli army from the 90 per cent of the West Bank (Bishara, 2002), the PLO exercises control only on the 17 per cent of the occupied territories. Neither the Camp David Summit (July 2000), nor the Road Map (2003) that the Quartet (EU, USA, Germany and England) tried to implement bore any fruits (Hahn, 2005, pp. 101-102)⁸.

In light of the failure of the Road Map and the Israeli unilateral disengagement from Gaza the Arab League on March 2007 reaffirmed in Riyadh the Arab Peace Initiative of 2002 in an effort to overcome the obstacles and give thrust to the stalled Arab-Israeli Peace Process. The Arab Peace Initiative⁹ provided for full Israel withdrawal from all the occupied territories and a just solution to the Palestinian Refugee problem in accordance with UN Resolution 194. If Israel complied with the terms of the plans, the Arab states would establish normal relations with the Jewish States. The Arab Peace Initiative was a very important proposal for the resolution of the conflict for many reasons: First it was approved by the 22 states of the Arab league, the higher Arab Institution and the plan was initiated and led by Saudi Arabia, which enjoys a special status in the Arab and Islamic World as the custodian of the Islamic holy places. Unfortunately, although Ehud Olmert, the Israeli prime minister and Foreign Minister accepted certain parts of the initiative, they rejected the plan on

the ground that it provided full withdrawal to the 1967 borders, thus making the Arab Peace Initiative, an other missed opportunity that could terminate the conflict and lead to a Two-State solution.

The “twenty-two days war” of December 2008-January 2009, rendered clear with the most indisputable way that the Middle East is very far away from a peace settlement. At this point we will consider the individual themes that gap the two parts in the conflict as obstacles to peace:

4.1. The question of Jerusalem

A major obstacle to peace between the two parts is the issue of Jerusalem’s sovereignty. According to the resolution 181 of 1947, Jerusalem should be a “corpus separatum”, a separate body to be run under an international UN administration. However, after the first Arab-Israeli war the UN supervised armistice agreements of 1949 determined that Jerusalem would remain divided between Jordan and Israel. As we have already mentioned, during the <<Six Days War>>, Israel seized East Jerusalem. Soon afterwards, on the 27th of June 1967 Israel annexed East Jerusalem. Israel’s action was not recognized and it was condemned by the international community. Thirteen years later on the 30th of July of 1980, Israel’s Knesset passed the principal constitutional law that declared the <<reunited Jerusalem>>, as it’s <<eternal capital>>. We have to point out that in East Jerusalem there are all the religious monuments of primary importance for both Jews and Palestinians. Palestinians reject any solution that does not define East Jerusalem as their capital. In order to indicate how important Palestinians regard Jerusalem, Arafat’s companion Abou Mazen (Mahmoud Abbas) at the Camp David Summit on 17th of July 2000, had said to the American foreign minister, Madeleine Albright, that any solution without Jerusalem, would endanger Arafat’s life (Enderlin, 2003).

4.2. The Refugee problem

Approximately 3.7 million Palestinians are refugees. They are the descendants of all those who were forced to abandon their homelands, after the first Arab-Israeli war of 1947-1948 (Morris, 2004). There are also another 200,000 refugees from the second Arab-Israeli war of 1967. According to the resolution of the General Assembly 194 (December 11, 1948), Israel must allow those who want to return to their homes and compensate those who decide not to return. In Israel, however, all political parties, from the far right to the far left agree that the refugees must not be left to return back to Israel. If something like this happens, they argue, Israel’s character as a Jewish state will be threatened. At this point, we have to note also that after the 1948 war 160,000 Palestinians, who now comprise the 20 percent of the overall population of Israel, stayed in the country. They comprise a huge Arab minority in Israel. On July of 1948

Israeli Knesset issued a resolution against the return of Palestinian refugees. Israel proposes compensations for the Palestinians refugees, something that the Palestinians leaders reject. Some efforts to solve the problem, in Lausanne on April of 1949 under the Palestinian Conciliation Committee (PCC) of United Nations did not bear fruits. Israel accepted the repatriation of 100,000 refugees, while the Arab states were united that all the refugees should return to their homeland.

4.3. The settlements

After the 1967 war, Israel started to settle the occupied territories of the West Bank and Gaza. Nowadays, it is estimated that 250,000 settlers live in the West bank and another 200,000 in occupied East Jerusalem. According to the 4th Geneva Convention of 1949 (article 49), the occupying power <<shall not deport or transfer parts of its own civilian population into the territory it occupies>>. Consequently, international law safeguards the international regime that must prevail in similar situations. Nevertheless, Israeli governments continued to settle the territories. This is also against the OSLO Agreements. Particularly, few months before the signing of the Oslo Accords there were 95,000 settlers in the West Bank. However, during the labour's governing (1993-1996) the number of the settlers increased to 147,000. We must point out that there is an ideological aspect of this issue: After the six days war an Israeli Messianic and political movement, Gush Emunim, was created (Lustick, 1993, p.354)¹⁰. This movement is committed to establish Jewish settlements in the West Bank. Gush Emunim supporters believe that the coming of the Messiah can be hastened through Jewish settlement on the "Eretz Israel", the land they believe God has allotted to the Jewish people as outlined in the Hebrew Bible. The settlers are armed and in many cases they clash with the Palestinians. So, the settlements are a major obstacle to peace because they create demographic and geographic data on the ground. This happen because they cut in to pieces the territory that in the future is going to be the Palestinian state.

4.4. The water resources

The management of aquatic resources in the Middle East is an ancient problem, because it is an area with reduced reserves. Any future solution that will produce a stable peace between Palestinians must include a just regulation for the distribution of water. Palestinians accuse Israeli authorities that abuse the water resources in order to cover the needs of the continuously expanding settlements. More specifically, Israel receives 1/3 of its water from Galilee Sea, 1/3 from its own resources and 1/3 from the West Bank. According to Palestinians 83 per cent of the West Bank's water resources is used by Israelis, and they use only the 17 per cent (Mazis, 2001). Consequently, any solution must divide fairly the water resources. We must bear in mind that confidence

and trust between the states of the area is much reduced. Relevantly, this issue acts upon as factor of intensity of already existing litigations.

4.5. The Boundaries of the future Palestinian State

As we have mentioned above, the 1967 war was a shock for the Palestinians who found themselves under direct Israeli occupation. Arafat's acceptance of resolution 242 and 338 meant that the Palestinian leader accepted the <<Land for Peace>> formula. Consequently, the Palestinians accepted that their future state will be created into the 22 per cent of the Historical Palestine.

According to the resolution 242 of the Security Council, Israel must withdraw from the territories that seized during the six days war. However, Israel interprets the resolution differently, arguing that according to the English text of the resolution, it is not compelled to withdraw for all the territories, but only to withdraw behind boundaries if it will decide that <<they will be safe>>. According to Oslo II (September 1995), the West Bank gained a peculiar status, divided in three zones: In "Area A", Palestinian Authority gained full control (responsible for security and public order) of the main evacuated Palestinian cities. In "Area B", containing the most Arab towns and villages and some 68 percent of the Palestinian population, the PA would wield full civil authority and would regulate public order, but Israel would have ultimate authority over security (Joint Control). And "Area C", covering the largely unpopulated state lands in the West Bank, the Israeli settlements and military camps, that Israel would retain responsibility for security and public order, but the Palestinians would have responsibility for the civil services (health, education etc.) of the Arabs. However, 25 years after these agreements the Palestinian areas are not contiguous, but fragmented in to 8 posts, surrounded by the Israeli settlements and the Israel checkpoints (Finkelstein, 2004). Moreover, the huge Israeli Wall of 723 kilometres that is under construction along the West Bank will exclude 16 percent of its ground as well as dozens of Palestinian towns and villages from the West Bank. This situation renders very difficult the organization and operation of a viable Palestinian state in the future. In conclusion, we must point out that so far Palestinians control only the Gaza Strip and approximately 17 percent of the West Bank (5 per cent of historical Palestine)¹¹, despite the fact that Israel under the Oslo Agreements should withdraw from the 90 percent of the West Bank .

4.6. The defence

The last thorny issue of the Israeli-Palestinians negotiations is that of the armed forces of the future Palestinian state. Israelis do not seem willing to accept any foreign army to exist in the West Bank. According to the Oslo Agreements, a Palestinian Police Force was created consisting approximately of nine thousand men, who were

equipped from light personal weapons, and forty five armoured vehicles. But this is not enough for the Palestinians who regard the creation of armed forces as vital for their security. Moreover, according to the agreements <<Israel maintained the responsibility for the total foreign security, as well as the total responsibility for the total security of Israelis>> (Finkelstein, 2004). So, in the name of security Israel can persecute, anywhere, and anytime, any Palestinian. However, the same does not happen with the Palestinian police, that in no case can it arrest any Israeli. So, Palestinians remain unprotected from settler's attacks in the West Bank. Israel maintains also the << exclusive responsibility>> at the checkpoints, denying the exit from the Palestinian territories of any person that wants to go to Israel.

5. CAMP DAVID II AND AFTER: ANOTHER CHANCE TO PEACE?

At Camp David Summit (July 2000) the then Prime Minister of Israel, Ehoud Barak, was willing to concede to the Palestinian Authority 84-90 percent of the West Bank and almost all of the Gaza Strip (Morris, 2001). These were the most far reaching concessions ever offered to the Palestinians. However, Yasser Arafat did not seem ready to accept a solution that did not give to him the whole of the West Bank, the 22 per cent of the historical Palestine. According to Palestinians this was the big compromise they had already done and they could not go further. Moreover, Arafat rejected any solution that did not put under direct control the walled Old City and, more particularly the Haram al Sharif (Temple Mount for Jews), the third Holiest site of Islam. Inevitably, the negotiations collapsed and Palestinians frustrated with the lack of progress in the peace process answered in September of 2000 with the second Intifada (Al-Aqsa Intifada).¹²

After the failure of Camp David, the peace process stalled and the insecurity and fear dominated both sides that were not sure about the intentions of each other. At that time the international intervention was more that necessary. As we have noted above, the Road Map (2003) that was adopted by the USA, the European Union, Russia and the United Nations was an effort to revive the whole process and to create measures of mutual confidence. Particularly, the Road Map managed to restore the gradual implementation interim obligations as the Oslo Accord required. However, the whole procedure did not provide the appropriate "carrots and sticks", in order to compel the two parts to implement their obligations (Ajchenbaum, 2003). Palestinians and Israelis did not participate in the consultations, and they were called to place their opinions only when the whole plan was completed. The vague procedure was ended by the war of Gaza (December 2008-January 2009).

Which are the obstacles to a peace settlement though? As it is, the electoral system in Israel favours the creation of coalition governments. From 1948 until now, only once a single party held the 61 seats needed for a majority government (the Alignment from 1968 until the 1969 elections). Therefore, aside from that one exception, since

1948 Israeli governments have always comprised coalitions or ‘national unity’ governments. These situations render fragile any coalition if the parties comprising it, do not agree in any potential solution for the problem. As Rogen Owen (2004) notes, describing the difficult situation in Israel: “ difficulty in formulating clear policies; Mutual suspicion; and the sense that at least one of the partners was looking for the right occasion to bring down the government and to fight another general election on terms favourable to itself”.

Netaniahu’s Government in 1996 for example lasted only three years because of the political crises in the country, regarding the Palestinian Problem. The hard-liners in Netanyahu’s Government were against any further IDF withdrawals from the West Bank and convinced the Israeli Prime minister to suspend the implementation of the Wye River Memorandum (Morris, 2001)¹³. The Israeli Knesset voted her dissolution (4 January) (Enderlin, 2003) and on May 17 1999, Ehoud Barak was elected Prime Minister of Israel. His premiership, however, lasted only 19 months. Amid a deep political crisis on July 9 2000, the Shas, NRP and Yisrael Ba’aliya ministers resigned because Barak refused to discuss an agreed political line (Morris, 2001) in the impending Israeli-Palestine Summit of Camp David (July 11-25 2000). The same week Knesset voted 54 to 52 in favor of no-confidence motion but this fell short of the 61 votes needed by law to topple the government. As we note the situation was again fragile over issues closely related with the peace process. Ehud Barak’s coalition fell apart because of his proposed concessions to the Palestinians at Camp David. On November 28, Barak agreed to general elections and then, on December 9 2000 he surprised everyone by announcing his resignation. Arab Violence convinced the middle class Israeli to switch their votes to the right and to the hardliner Ariel Sharon, who on February 6 2001 won 62,4 percent of the vote to Barak’s 37,6 percent. Consequently, this situation described above complicates things in Israel and in any event of disagreement, it makes it difficult for the Leader of the government to decide to make peace and consequently to convince the public opinion that the solution serves the national interest.

6. FATAH AND HAMAS: TOWARDS RECONCILIATION?

At the same time the Palestinians (Fatah and Hamas) remain divided. Despite the reconciliation ceremony held in Cairo between Hamas and Fatah on 5th of May 2011,¹⁴ there are still many problems that have to be settled between the two Palestinian organizations with many political implications on the regional and on the international arena as well. More specifically, in a speech to the gathering, Hamas leader, Khaled Meshaal, said that his organization sought a “Palestinian state in the West Bank and Gaza devoid of any Israeli settlers and without giving up a single inch of Land or the right to return of Palestinians refugees.”¹⁵ Challenging Israel to peace,

Meshaal offered to work with Abbas and Egypt on a new strategy to solve the Arab-Israeli conflict, but said he did not believe Israel was ready for peace.

On the other hand, Israeli Prime Minister Netanyahu as soon as he briefed about Cairo Agreement he said the following: "What happened today in Cairo is a tremendous blow to peace and a great victory for terrorism."¹⁶ So, these kinds of statements do not let us to be optimistic about the future of the peace process. Diachronically, Palestinian Arabs could not set aside their differences in order to promote their national interest, in contrast with Jews who were always very well organized and more able to maneuver in the international arena. Whether the unity deal succeeds is an open question, but many analysts believe that reconciliation between Fatah and Hamas is necessary for a peace deal with Israel (Byman, 2011). In any case, a unified Palestinian Authority and leadership governing a less divided society and its politics are ultimately more conducive to peace talks and delivering the Palestinian side of any agreement. In addition, keeping Hamas outside the negotiations and excluded from the legitimate Palestinian political system could also jeopardize the outcome of the peace process. It is in the interest of all parties to involve Hamas in the talks in order to encourage the moderates within the movement. On the contrary, if Hamas is excluded from the peace talks, this will play in the hands of the most extreme elements¹⁷. Undoubtedly, the "Arab Spring" has an impact on the Palestinian Problem. This is the reason that the military council in Egypt has adopted a more conciliatory attitude towards Hamas that reflects the massive electoral popularity of the Muslim Brotherhood in Egypt. On the other hand, Mahmoud Abbas needs to integrate the political Islam (Hamas) into broader political system. The Arab Uprisings across the Middle East do not leave the Palestinian Problem unaffected, something that the Palestinian Leader knows very well. Concurrently, Israeli leadership should understand that reconciliation could provide a good opportunity for a productive dialogue with Hamas that may lead to the settlement of the problem.

7. CONCLUSION

The Palestinian Problem constitutes an open wound in the Middle East Region. Any resolution to the conflict will bring the whole region in an orbit of stability, economic development and peace. Otherwise, the Palestinian Problem will be the primary source of Instability for the whole area and prospective terrorists will exploit the whole situation in order to advance their goals. As we have shown in this paper, despite years of negotiations between Israel and Palestinians they did not lead to a two- state solution, a goal that was clearly agreed by both parts at Annapolis Conference in 2007. Various reasons block the whole procedure:, The inability of Israel - the strong part in the conflict, to make the necessary concessions to the weak part, the Palestinians, the peculiar conditions that surround the Jewish political system

but most of all the unwillingness of the USA to press its valuable ally in the Middle East to consent to a just and viable solution for the Palestinian Problem.

The tragic irony for the Palestinians is that the 1947 partition plan offered them the 48 percent of Historical Palestine but they did not accept it. After the 1967 war, Palestinians accepted to create their state in the 22 percent of historical Palestine. Now, in 2011 Palestinians control only 5 percent of Historical Palestine. The Arab Spring and the imperative demand of people for democratic freedoms and human rights have a direct impact on the Palestinian Problem. The revolutionary wave in the Middle East sent messages to the international community that it owes to Palestinians the inalienable right, a state of their own.

On September 23, Palestinian President Mahmoud Abbas appealed to the United Nations for the establishment of a Palestinian state, saying: “At a time when the Arab peoples affirm their quest for democracy—the Arab Spring—the time is now for the Palestinian Spring, the time for independence.” Consequently, the International Community and especially the great powers cannot remain indifferent¹⁸ to the rights of the Palestinian people, especially now that the people’s demand for “Freedom, Justice and Liberty” is more imperative than ever.

In conclusion, we have to underline that Israel must renounce any messianic ambitions for the “Land of Israel”. As time has shown, the arguments that the West Bank must be annexed for security reasons (creeping annexation) are not persuasive. The continuation of Israel’s “Hegemonic relation”, (Lustick, 1993) with these territories, can bring about much more problems to Israel’s security than it will solve. On the other hand, in the event of any solution Palestinians must be ready to punish hard those who will try to upset the whole process. Will a new Yitzak Rabin and a new Yasser Arafat be there ready to make peace? This is the stake that must be answered. Only a new Oslo that will include final status negotiations will bring about regional stability to the frail and unstable region.

NOTES

1. Sami Aboudi (2012). Palestinians-Israel/Palestinians blame Israel for exploratory talk’s failure. *Reuters*, 01 January.
2. Hamas denounced the Oslo Accords and condemned “Palestinian Capitulation in the Face of the Zionist entity”. As Beverley points out, Hamas believed that both sides, Israel and PLO had agreed to eliminate the impact of Political Islam in the territories. Consequently, Hamas and Islamic jihad announced that the DOP was a betrayal of the struggle for liberation and vowed to continue their Jihad against Israel. In the first six months following the Oslo Agreements, Hamas and Islamic Jihad were responsible for the death approximately 120 Israelis. (Beverley, 1996)
3. Jeffrey H. and Andrew Q. (2010). *Netanyahu in U.S. Jerusalem not a Settlement*. *REUTERS*. 23 April.

4. War Cabinet 261, Minutes of a Meeting of the War Cabinet Held at 10, Downing Street, S. W. On Wednesday, October 31, 1917, CAB 21/58. According to this and other relevant documents, James Balfour, the then Foreign Minister of UK, supported the idea that from a political and diplomatic perspective it should be made a favorable statement for the Jews. As he said, the majority of Jews that live in USA and Russia are in favor of Zionism. According to the English politician if England made a similar statement, then the Jews could make very useful propaganda in their countries in order to convince the political leaderships of Russia and USA to support the allies during the world.
5. Military Lessons of the Arab Rebellion in Palestine 1936, WO/191/70.
6. For the tactics of British army and the collaboration between Britons and Jews see (Elpeleg, 1993).
7. For the First Arab-Israeli war see (Herzog, 1984)
8. The Road Map an initiative promoted by Bush administration composed a “ performance-based and goal-driven road map, with clear phases, timelines, target dates and benchmarks aiming at reciprocal steps by the two parties in the political, security, economic, humanitarian and institution-buildings” (Hahn, 2005).
9. Elie P. (2007). The Arab Peace Initiative: A Missed Opportunity?, *Palestine- Israeli Journal of Politics, Economics and Culture*, Vol.14, No.4.
10. The Leaders of the Movement were inspired by Rabbi Tzvi Yehuda Kook’s and his father Rabbi Abraham Kook teachings. According to their ideology, it is imperative to reclaim all the Land of Israel, as the decisive step toward messianic redemption. The movement created many settlements in the West Bank, the major among them, the municipality of Kedumim.
11. Israeli and Palestinian Security Controlled Areas, PLO Negotiations Affairs Department, available from, www.nad-plo.org.
12. The fateful event that sparked the the second, or ‘al-Aqsa’ Intifada, was a visit on 28 Septeber 2000, by right-wing Leader Ariel Sharon to the Temple Mount (Haram al – Sharif), a move viewed by the Palestinians as provocative because of the location of the site and due to the position of Israeli “right”, that the Land of Jerusalem will not be returned to the Palestinians.
13. On the other hand the centrist moderates in Netanyahu’s Government threatened to vote no-confidence and topple the Government if Wye was not implemented. So, as Morris notes, “Netanyahu was placed in an impossible position; the coalition lacked a majority for either implementation or not implementation or not implementation of the agreement.”
14. Sami A. and Edmound B. (2011). *Palestinians end a four-year Rift at Cairo ceremony*” 4 May.
15. *ibid*
16. *Ibid*
17. Ghassan K. (2011). Israel Plays a Role, A Palestinian View. Bitterlemons-org, available from, http://www.bitterlemons.org/previous_ins.php?opt=1&id=41#184
18. Nicos P. (2012), Is Arab Spring Israel’s Winter? Strategic Instability in the Middle East. *International Journal n World Peace*, XXIX(1), p. 27.

REFERENCES

- Ajchenbaum, Y. (2003). *Israel-Palestine: One land, Two Nations 1948-2002*. Athens: Melani Publications.
- Bishara, M. (2002). *Israel-Palestine: Peace or Apartheid*. Athens: Lagoudera Publications.
- Byman D. (2011). *Israel's Pessimistic View of Arab Spring*. *The Washington Quarterly*, 34, p.128.
- Cattan, H. (1998). *The Palestine Question*, London: Croom Helm.
- Cohen, J. Michael (1982). *Palestine and the Great Powers, 1945-1948*. Guilford, Surrey: Princeton University Press.
- Edwards, B. and Milton, E. (1996). *Islamic Politics in Palestine*. London: Tauris Academic Studies.
- Elpeleg, Z. (1993). *The Grand Mufti Haj-Amin Al-Hussaini: Founder of the Palestinian National Movement*. London: Routledge.
- Enderlin, C. (2003). *The Israeli-Palestinians Negotiations*. Athens: Scripta Publications.
- Finkelstein, N. (2004). *Image and Reality of the Israel-Palestine Conflict*. Athens: Ekdoseis tou Eikostou Protou.
- Foot, H. (1964). *A Start in Freedom*. London: Hodder and Stoughton.
- Giplin, R. (2004). *War and Change in International Politics*. Athens: Poiotita Publications.
- Herzog, C. (1984). *Arab-Israeli Wars*. New York: Vintage Books.
- Hahn, P. (2005). *Crisis and Crossfire: The United States and the Middle East Since 1945*. Virginia: Potomac Books, Inc.
- Heller, J. and Quinn, A. (2010). Netanyahu in U.S. Jerusalem is not a Settlement. *Reuters*, 23. [online]. Israel and Palestinian Security Controlled Areas, PLO Affairs Department. Available from: <http://www.nad-plo.org>.
- Khalidi, R. (1997). *Palestinian Identity: The Construction of Modern National Consciousness*. New York: Columbia University Press.
- Lustick, I. (1993). *Unsettled States, Disputed Lands: Britain and Ireland, France and Algeria, Israel and the West Bank*. New York: Cornell University Press.
- Mazis, I. (2001). *Geopolitics of Water Resources in the Middle East: Arab Countries-Israel-Turkey*. Athens: Papazisi Publications.
- Morris, B. (2001). *Righteous Victims: A History of the Zionist Arab Conflict 1881-2001*. New York: Vintage Books.
- Morris, B. (2004). *The Birth of the Palestinian Refugee Problem*. New York: Cambridge University Press.
- Owen, R. (2004). *State, Power and Politics in the Making of the Modern Middle East*. London: Routledge.
- Pappe, I. (2007). *History of Modern Palestine*. Athens: Kedros Publications.
- Quandt, B, W. (1993). *Peace Process: American Diplomacy and the Arab- Israeli Conflict since 1967*. Berkeley: University of California Press.
- Sakin, A. (1988). *Israeli Colonialism and Intifada*. Athens: Publications of the Diplomatic Representation of PLO in Athens.
- Sayigh, Y. (1999). *Armed Struggle and the Search for State*. Oxford: Oxford University Press.
- Spiegel, S. (1992). *The Arab-Israeli Search for Peace*. Boulder: Rienner Publishers.

- Stein, L. (1983). *The Balfour Declaration*. Jerusalem-London: Jewish Chronicle Press.
- Vatikiotis, P. J. (1997). *The Middle East: From the End of the Empire to the End of the Cold War*. London: Routledge.
- War Cabinet 261 (1917). Minutes of the War Cabinet. October 31, 1917. WO 191. *The National Archives*: London, Kew.

ARTIFICIALIZED PATCHES AS A MEASUREMENT TOOL IN URBAN GEOGRAPHY

GEORGE SIDIROPOULOS*

ABSTRACT

This study tries to recognize the limits of growth of the Greek city. In Greece, the less systematic recording of quantitative data, the lack of specific measurements and the peculiarities in space organization, give it a special character. The questions asked to bring relating to the techniques recording the limits of urban development, the consistency degree of each case and the performance of mapping methods in time cross sections. The first section briefly explores the international practice and the existing theoretical framework, then refers to the current regime in Greece and finally is addressed to specific local examples. The aim is to draft the “artificialized patches” as a measurement tool in urban geography.

Keywords: City Limits; Urban Sprawl; Cartographic Visualization; Semiology of Graphics.

1. INTRODUCTION

The phenomenon of urban development is particularly important today. The development of urban space, linked directly to population growth and changes in lifestyle, jeopardizes the balance of natural and rural areas. The urban sprawl is an important phenomenon, because of its scale and of its implications. This, however, requires careful analysis.

How is “urban space” defined? What does this spread mean in fact? What is its size? Where is it? These are questions that will be analyzed in the present study.

Our work focuses on the analysis of a particular model, the interpretation of urban artificialized patches. The work tries to understand why it can detect and analyze effectively the phenomenon of urban growth and other related phenomena like peri-urbanisation, urban sprawl, etc.

2. URBAN DATA

In the 21st century, culminating two centuries of unprecedented urban growth, questions about current trends in urban development are of particular importance for the future. The urban environment of today has its own characteristics. The concepts of the emerging city, the town, and the urban sprawl of suburban area require sophisticated management tools. The development of urban space, which is

* Assistant Professor, Department of Geography, University of the Aegean

implemented by more and more complex processes, is directly linked to population growth and changes in lifestyle.

The phenomenon of urbanization in the sense of geographical spread is considerable. It seems that in many cases this distribution is not proportional to the population growth. In France between 1982 and 2004, the built space grew by 43%, over the same period the population growth did not exceed 11%. The land use is much faster than the population (Agence Europeene pour l'environnement, 2006).

2.1. The context: urbanization, sub-urbanization, urban diffusion

There are two main issues in the complex process of urbanization which should concern us. The urban concentration, **urbanization**, in very large cities, that works the relative decline of small and medium-sized cities, and diffusion in the **peri-urban** area, characterized by the loss of the centers of large cities in favor of suburban areas. Population and activities data in urban areas, indicate that the space-time frame may affect the results and the final interpretation of the observations. The delimitation of the city at the level of residential area seems particularly important.

The sub-urbanization and the urban sprawl are two phenomena associated with each other and also, both connected with urbanization. **Sub-urbanization** is the concentration of population and housing in the suburbs of a city. The concept refers to structural changes in the city and a series of secondary effects particularly in reducing the role of the center (Emmanuel, 1999). **Urban sprawl** concerns also the suburban area, but in a haphazard and disorderly manner, that there is no longer a distinction between the city, the suburb and the rural areas (sprawl). A consequence of the expansion is that the distance between the center and the periphery is increasing; causing ambiguity of the city limits (Koutsaftouli, 2008). This expansion is characterized as uneconomical and difficult to manage and in addition, it is contrary to international models (EUR-Lex, 2009) that want the urban environment guided by mixing land uses, the existence of clear urban boundaries, the strong center with supra-local functions, the concentration of development around transportation poles, modeled on the compact city (compact city).

2.1.1. Urban artificial patches

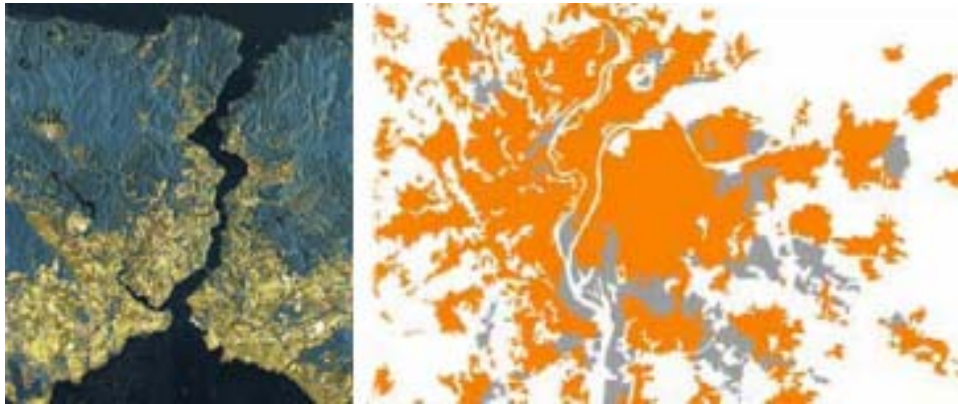
Many elements of the identity of a region are required by the relevant government departments and agencies within the process of analyzing, planning and decision-making. Additional databases of land are used for the needs of specific large range of applications, not just particularly for planning an area, but also for monitoring it. The specification of land cover data used most often at national level, such as Corine, is inappropriate for finer analysis at small scale.

Creating a reference tool such as urban artificial patches (urban spots) seems particularly useful to a large number of potential receivers. The geographic data is addressed both to the general description of the local area and to more functional and thematic approaches to a specific user.

The use of artificial patches can allow the creation of a history of growth in urbanization. Comparing data of cities and local communities will reduce the abundance of quantitative data, for the benefit of an instantly understandable, quantitative data embedded in the reading of the development (Figure 1).

A similar tank can promote knowledge by the observation of an urban patch, provided by a commonly accepted definition that allows the consistency of analysis for all the users. It will also enable the exchange of data through: a) the understanding of the urban area on a large scale in city center and outside the city, b) the possibility of extensive comparison of regional and national level, and c) also the periodic monitoring.

FIGURE 1: KONSTANINOPOLIS LAND COVER DATA DERIVED FROM SATELLITE IMAGERY - LYON ARTIFICIALIZED PATCHE.



Source: TerraSAR-Xe 2011, CERTU 2005

2.1.2. The origin of morphological

The concept of urban artificialized patches, allows initially approaching the city with the real map while in the second time the features of development through an "artistic" expression are attributed to this (Figure 2). The name of urban artificialized patches, urban spots, refers to a morphological visualization and symbolism that conveys the visual reading. The figure refers to a liquid spill.

The method primarily involves determining the physical expansion of urban spots, regardless of any limit and any administrative arrangements concerning the

status of local communities (towns, villages...). The interest in this approach becomes more pronounced by massive use of digital information, particularly through the Internet, allowing the free use and mainly confirms the results. A typical example is the use of Google Earth from the relevant Greek Ministry (Ministry of Environment, Physical Planning and Public Works). In France the primary information related to urban expansion intersected in the second degree with the results of each census.

FIGURE 2: ARTIFICIALIZED PATCHE: A MORPHOLOGICAL LOAN BY THE INK, WATER AND OIL SPOT.



2.1.3. Similar approaches

Attempting a similar consolidation for a tool of comparison and monitoring of urban development seems not isolated at a research stage. There are several examples, both in international and national level. In this direction is the "Urban Audit" of the European Union. Because of the importance of urban development, the EU with activities under the general title of the program "Urban Audit" (CE, 2007) tries to record the identity of cities with population over 100,000 inhabitants, corresponding to approximately 300 municipal assemblies.

In particular, in the program Geopolis, the project applies worldwide a single method, that is used to define the urban space. Urban areas are continuous housing areas (areas over 10,000 inhabitants). The maximum distance, defined in 200 m between houses, determines the continuity. The Geopolis is a dataset that allows an international comparison of the sizes of cities, beyond national particularities, concerning the local official definitions of the urban unit.

Some national mapping agencies have even tried to provide common standards in an effort to deal with a common way at the national level. At a national level, the French case, which used the method of urban artificialized patches, is also interesting

(tache urbaine). The French national cartographic agency (IGN) has made the study and adoption of common standards through the BD TOPO (CERTU, 2008).

2.2. Urban development and issues of institutional and organizational framework in Greece

Urban sprawl could be an interesting case to the study of urbanization and development in Greece. Nevertheless, the definitions used are different from one department to another and depend largely on who interprets the artificialized patches. Different approaches have emerged in various studies that follow the particular direction of each researcher.

An important specificity in Greece, in comparison to other European countries, is the strong dispersion of the urban area in the countryside. Historical circumstances and political choices justify the absence of limits that distinguish the city from the countryside and make the search of a more effective measurement imperative.

The establishment of urban plans begins just after the liberation of the country by the Turks by producing a series of town plans of major cities for the period 1828-1923 (Karidis, 2006). The logic of the operation was limited to the morphological view of the city. Each building is separately regulated, without facing the city like an integrated residential complex.

A second period identified from 1923 to the '70s¹. This period begins with the "Law of 1923" on the occasion of the arrival of 1.5 million refugees by the Asia Minor, and has been for fifty years the main legislative framework along with another law called "GOK"² (Christofilopoulos, 2007 and Giannakourou, 1999). Significant impact had the "off plan building", which produced systematical housing, leading to uncontrolled urbanization of many areas of rural space, through legal or illegal processes (Figure 3).

By the decree of 1923, which protected mainly the personal against the social rights (Karidis, 2006), the necessity of spatial and urban design with characteristics of treatment for the social space became obvious, and a new era in designing initiated with the passage of the 1975 Article 24³. This period covers the decade 1974-1981, slowing the application of the decree of '23 that favored the "off plan building".

The next decade 1980-1990 is tries or tried to create favorable conditions for the application of spatial planning in the same direction by understanding the complexity of procedures. The law allows the extension of the city plans by urban units, on a basis of a contribution in land and money based on social rather than spatial criteria. Consequently, they created Urban Control Zones (ZOE), around the villages and coastal areas for the effective control of land use and stemming the pressing housing development, by drafting zones Assistance (ZEE), Zone incentives (ZEK), Neighbourhood Committees (PEG) and involved residents in planning (Karidis, 2006).

FIGURE 3: ATHENS, URBAN SPRAWL.



Source: Sidiropoulos, 2009

3. METHODOLOGY

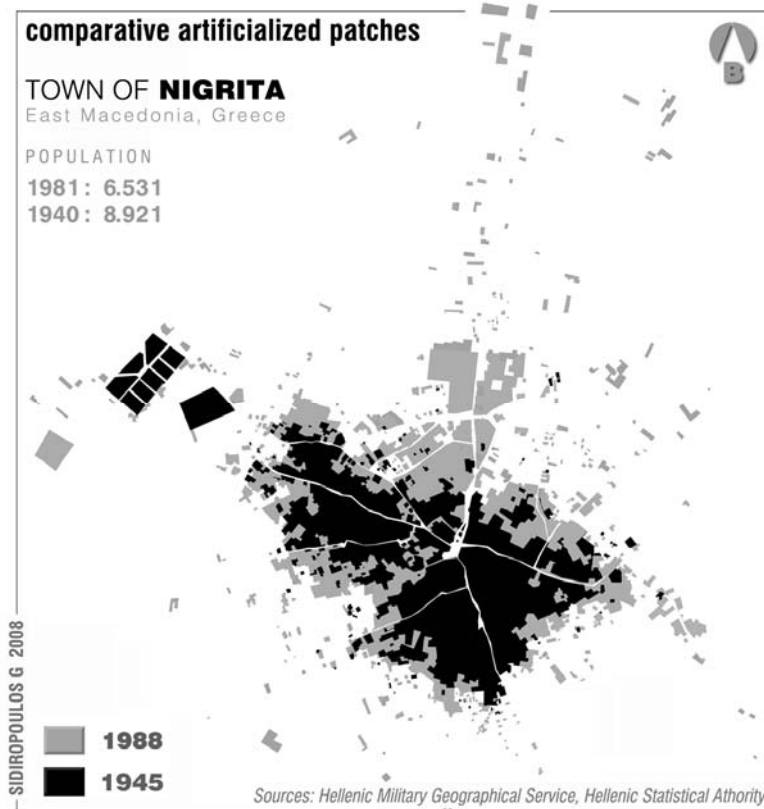
3.1. The non digital approach

The preparation of urban artificialized patches can result from both analog and automated process. The definition of urban sizes is made considering the morphology of the city (artificialized patches), which is the location and grouping of the housing stock. The analysis was conducted by studying the density of two additional scales. Locally, it examined the characteristics of the *dense city*, but on a larger scale it examined the features and distinguished the particularities of urban sprawl.

A strong building footprint characterizes the dense areas: small lots, high density, contoured area, often multifunctional, which means the presence of dense residential housing area. The diffusion zones (areas spread), are almost exclusively thin residential space. The plots are large and usually with vacant parcels. The spread areas are a grouping of some isolated buildings. The rural life, the dispersion and the beginning of urbanization are often found in this zone.

The simple “photo interpretation” approach, in which the basic requirement is an acceptable resolution of the photo, identifies the shapes on the ground and thus their interpretation. Based on a single color density is possible to do a minimum editing by defining the built environment and giving it the desired color characteristics. The interpretation by digitizing the outlines of observed dwellings is also possible (Fig. 4). A potential problem is the noise (useless information: trees, cars, trash...). The knowledge of space and the autopsy is necessary, complementary action for the accuracy of the measure.

FIGURE 4: ARTIFICIALIZED PATCHES. NON-DIGITAL APPROACH



3.2. The faster/grid approach

The urban artificialized patches allow to approach urbanism in its true form and to attribute the features of its development. Standardization, until it becomes an institutionalized instrument, has to go several treatments. The first concerns the simple photographic interpretation; the second approach concerns a faster processing of the photo-mosaic of digital maps. During the process, the important is the original scale of the map. An acceptable scale is 1/10.000 because it is better for the construction of the artificialized patches than the scale 1/100.000 used by Corine (GMES, 2010).

- The artificialized patches usually come from Corine Land Cover usable in an initial approach, but it is quite imprecise;
- The artificialized patches that come from satellite images have better accuracy and geographic precision. However, the resolution of these images and the acquisition time are determining factors. This method requires good technical and human resources, especially if the monitoring is periodic;
- The production of patches from vector data of a built-up area (DB Topo), is easier comparing to other methods, but has a difficulty in updating and in precision of the information;
- A combination of vector and satellite data can be used to create a time-series of changes of the artificialized patch. This method is easy to be applied, but is relative in exhaustiveness and suffers from by the heterogeneity of the source of information.

In addition, the degree of continuity or discontinuity of the urban area, which allow the opposition between urban and peri-urban agglomeration, should be investigated. The calculation involved schematically four factors: the population density, the build up area, the city area, and the surface of built-up areas with large dispersion.

Spatial data and offered techniques, give the opportunity to improve both the cartographic representation and also improve the analysis of understanding the urbanization. Remote sensing provides series of spatial data sets covering large areas of high detailed spatial data and high temporal frequency (Herold, 2003).

Modeling the urbanization is not a new phenomenon, as it started in late 1950. Traditional models of urbanization try to model and predict both the economic relationships and size between cities, and the internal socio-economic models in a city (Clarke et al, 1997). Today they have developed series of analytical and statistical urban models based on different theories.

A group of these models are based on the geometry of the urban land uses and the size of relationship between cities and the economic functions (Rafiee et al, 2009). Other models have been based less on geometry and economics and more to social and national standards, considering them as determinants of the city structure (Jacobs, 1961).

The French national statistical institute (INSEE) has produced two classifications, which reflect two different approaches linked to each other. In the first, urban sections refer to contiguous buildings unities, while in the second case, to areas associated with the town, not by continuous building unities, but by the volume of the people working in the city. The result could be the production of two distinct artificialized patches or the juxtaposition of two cases in one comparative classification at the same time (Prud'homme, 2005).

An urban unit shall be treated as a concentration of various sections, defined as a group of houses spaced less than 200 meters in one area of 2.000 people at least. If a build up area covers several municipalities, it is estimated as a single unit. If the settlement extends only to a municipality, that is a city. Municipalities belonging to an urban unit are considered as urban.

Despite the careful study during the mapping, any particular case has its own difficulties.

For example, a conventional method developed for cities in the metropolitan territory of France does not reflect the reality of the offshore department of the Reunion. A department is characterized by very large cities, recent cities which are often poorly structured. This forced the experts to adapt the model to make it proper for urban areas in rural regions like in the French Polynesia (AGORAH, 2008).

4. MONITORING OF URBAN DEVELOPMENT AND URBAN ARTIFICIALIZED PATCHES

The ecological and economical running costs of diffuse residential systems are very important. The costs result from service and operational needs due to lack of necessary social and urban infrastructure, such as transport and communications that are essentially based on the car causing the daily repetition of dysfunctional practices. In contrast, the production of structured and more compact housing systems could ensure a better functioning of the city by economies of scale.

The institutional context since 1975, in Greece, is characterized by discontinuity and fragmentation that does not provide a sufficient framework for managing critical spatial problems. The sprawl of housing development, deeply embedded on construction industry, is the most important factor in urban and periurban degradation.

The effort to "measure" urban development seems to be a continuous long care of urban geography. The urban artificialized patches can be the main tool to serve the question. The main characteristic is based on urban morphology to measure the growth and expansion of cities. The important point is that this reflects the real map of development, which especially in the case of Greece presents problems due to non convergence of the planning and construction.

The automated modeling procedures for the measurement of urban artificialized patches are flexible in basic data entry. If it is estimated, the global use of similar material (satellite images, databases, international organizations, etc.), it facilitates the usability of patches and allows the application of national agencies less equipped.

The comparison between artificialized patches of different chronologies (time approximate), is not only limited to similar data, such as buildings, but also to different thematic features such as population, economic activity etc (cross-sectional approach).

The leading issue is the data standardization, in order to urban artificialized patches to be a comparable size in national and international level.

The French government uses patches already like a recording and monitoring tool of urban development, and all other territorial issues like urbanization, periurbanisation, and diffusion (Figure 5). To get to this point a phase of theoretical and research studies was preceded, and then a stage of common standards was used throughout the French territory.

In those countries where there is a strong diffusion of building in rural areas the use of this tool seems to be mandatory. The nature of the application varies greatly in situations such as the United Kingdom, where the boundaries of the urban area are clearly defined.

Certainly, the French case is not the only one, and neither the use of urban artificialized patches is a peculiarity. The European Union endorses the use of this tool within the context of the importance of reading and monitoring urban development (urban expansion), with actions such as the “Audit urbain” program, trying to record the identity of cities with population over 100,000 inhabitants, in 300 urban agglomerations.

The method for making a similar tool should be appropriate for recording and studying both of the urban and rural area phenomena.

The result would be too broad in order to cover the entire urban area, but should be restricted to the zones of urbanization. However, it shouldn't be narrow, in order not to exclude a large part of constructions. The process should be automated and re-powered and fully compatible with official statistics of the National Statistical Services and the National Cartographic Organizations, aerial and satellite images available by international organisms.

The urban patches, according to the international practice, should include the principal build up area and zones of influence (parks, parking lots, abandoned streets etc.). A point of special attention seems to highlight, differences within the same urban area. Once we have developed a rigorous methodological approach to the definition of urban patches, a second time should be explored in town differences. In relation to the simple comparison of patches between two different dates, the above case is particularly interesting because it largely explains the dynamic during the process of urban sprawl.

5. CONCLUSION

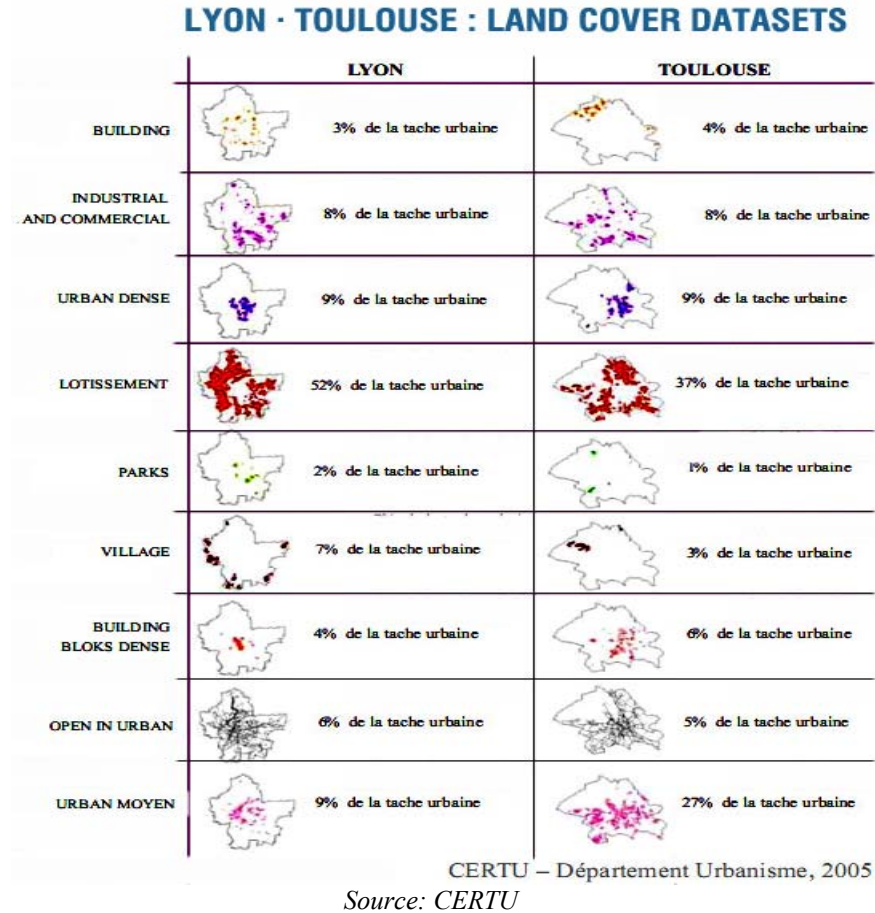
The phenomenon of urbanization since the 19th century and the Industrial Revolution to the present day, with the outstanding urban development is a dominant question, not only for space sciences, but more widely to the society. The measurement of urban development over time is the subject of urban geography. The urban models allow evaluation of the development allowing the investigation of the effects of decisions during the application of various policies of urban planning and management.

An operational tool in this direction is the measurement through the urban artificial patches. The central feature is the management of urban morphology, in order to understand the phenomenon of the development of the city. The aim is to capture the “real picture” of urban growth and to help them understand the characteristics of the spatial footprint of a national, social - economic reality like Greek.

Urban artificial patches allow both synchronic and diachronic analysis of the urban phenomenon. Relying on a simple idea of recording the morphology of the urban event may increase the complexity of inductive analysis. A basic requirement for a widespread use is the modeling of tank pumping data. In this way they can be commonplace for a comparison and analysis to broader spatial systems.

Besides the basic idea also adopted by national and international organizations, it is necessary to expertise for the detailed study of urban development. Specificities on the development of the urban phenomenon identify the scope for further research to enable the analysis of all possible scenarios, and therefore the enrichment of this particular tool with specific local experiences and practices.

FIGURE 5: DIFFERENT DATASETS



NOTES

1. ND/17.07.1923, "On city plans, villages and settlements building of the state".
2. GOK (Γ.Ο.Κ.) ND/03.04.1929. The national territory is divided into three categories: a) areas within the town plan, b) in areas outside the town plan, c) the settlements before 1923, under a special legal status.
3. In Article 24 of the Constitution of 1975 specified that the protection of natural and cultural environment is an obligation of the state and formulated guidelines for spatial and urban policy.

REFERENCES

- Agence Europeene pour l' environnement (2006). *Etalement urbain en Europe EE*. [online]. Available from: <http://www.eea.europa.eu>, (access October 2010).
- Agorah (2008). *Densification de la tache urbaine : tendances actuelles et perspectives 2020*, CE (2007). *Audit Urbain, EE*. [online]. Brussels. Available from: http://ec.europa.eu/regional_policy/themes/urban/audit/index_fr.htm (access September 2010).
- Certu (2008). *Détermination d'un MOS et calcul d'une tache urbaine à partir de la BD TOPO*, IGN, Paris. [online]. Available from: <http://www.certu.fr> (access November 2010).
- Certu (2005) *Les basew de donnees geographiques d' occupation du sol: volet tache ubaine*, Paris. [online]. Available from: <http://www.certu.fr> (access November 2011).
- Christofilopoulos, D. (1997). The legislative and organizational framework of urban planning in Greece, in Aravantinos A., Urban design: a sustainable urban environment. Athens, Ed. Symmetry.
- Clarke, K., Hoppen, S. and Gaydos, L. (1997). A self-modifying cellular automaton model of historical urbanization in the San Francisco Bay area. *Environment and Planning B: Planning and Design*, 24, pp. 247-261.
- Emmanuel, D. (2004). *Urban development, housing market and Periurbanisation: Some theoretical notes and the case of Athens*, in Economou D. and Petrakos G. (ed.) *The development of Greek cities. Interdisciplinary approaches to urban analysis and policy*, Volos: Thessaly University Press, Gutenberg, pp. 267-309.
- EUR-Lex (2007). Green Book: Towards a new culture for urbanmobility, EE, Brussels. [online] Available from: http://eur-ex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=el&type_doc=COMfinal&an_doc=2007&nu_doc=551. (access September 2010).
- Giannakourou, T. (2004). The institutional design of cities in Greece: Historical and contemporary transformations demands, in D. Economou, G. Petrakos, (2004), *The Development of Greek Cities: Interdisciplinary approaches to urban analysis and policy*. University of Thessaly-Gutenberg, Volos.
- GMES, (2010). *Atlas urbain européen*, EC, Brussels.
- Herold, M. Goldstein, N. C. Clarke, K. C. (2003). The spatiotemporal form of urban growth: measurement, analysis and modelling. *Remote Sensing of Environment*, [online], 86, pp. 286-302. Available from: http://ec.europa.eu/gmes/index_en.htm (access September 2010).
- Jacobs, J. (1961). *The Death and Life of Great American Cities*. Random House: New York.
- Karidis, D. (2006). *The seven books of urban planning*, Papatotiriou, Athens.
- Koutsafthouli E., (2008). *Medium-sized Greek cities, periurbanisation and sprawl development - the case of Larissa*. Master Thesis TMXPPA, Volos: University of Thessaly.
- Manuela, Brau (2011). *TerraSAR-X image of the month: Urban sprawl around Istanbul*, [online]. Available from: <http://www.dlr.de> (access 28 May 2011).
- Prud'homme, R., Dupuy, G. and Boret, D. et. al. (2005). *The new constraints of urban development*, Institute Veolia Environment, Report n°1, Paris, France.

- Rafiee, R. Mahiny, A.S. Khorasani, N. Darvishsefat, A.A. and Danekar, A. (2009). Simulating urban growth in Mashad City, Iran through the SLEUTH model (UGM). *Cities*, 26, pp. 19-26.
- Sidiropoulos, G. (2019). *Athens Sprawl* (personal record).

BOVINE LEUKEMIA VIRUS – PATHOGENICITY IN ANIMALS AND POTENTIAL IMPACTS IN HUMANS

PETAR S. DIMITROV, KATERINA S. TODOROVA*,
METODY H. PETRICHEV** and RUSSY V. RUSSEV***

ABSTRACT

Data on the spreading of Enzootic Bovine Leucosis (EBL) and the pathogenicity of Bovine Leukemia Virus (BLV) for different animal species and humans have been presented. Cattle are the natural host of the virus, buffaloes and capybaras are strongly sensitive, sheep and goats are susceptible as well. The infection in other species including human cells in vitro is not an exception. Certain authors attribute the increased percentage of leukemic disorders in men from regions with a high EBL seroprevalence and high rate of consumption of dairy and cattle products. BLV sequences have been detected in materials from breast cancer.

Keywords: Bovine Leukemia Virus; Human Leukemia; Breast Cancer.

1. ENZOOTIC LEUCOSIS IN CATTLE ON A WORLD SCALE

EBL is caused by the exogenous C type retrovirus BLV. This disease is widely spread throughout the world. According to serological studies the states of North and South America, Australia, Asia and Africa are the most affected ones. In North and South America the greatest numbers of herds infected with BLV are found in the USA, Canada and Argentina about 89 percent (Ott et al., 2003; NAHMS, 1997), 70 percent (Sargeant, 1997) and 84 percent (Trono, 2001) respectively.

Officially proclaimed as free from EBL are 16 EU member-states – Belgium, the Czech Republic, Denmark, Germany, Spain, France, Ireland, Cyprus, Luxembourg, the Netherlands, Austria, Slovenia, Slovakia, Finland, Sweden and the United Kingdom and some Italian and Polish provinces as well. In the rest of the European states EBL has been detected with the highest percentage of infected herds found in the states of Estonia, Moldova, Lithuania, Latvia, and these in the Balkan Peninsula (Romania, Serbia, Montenegro, Macedonia, Greece, Turkey) (Decision 2003/467/EC).

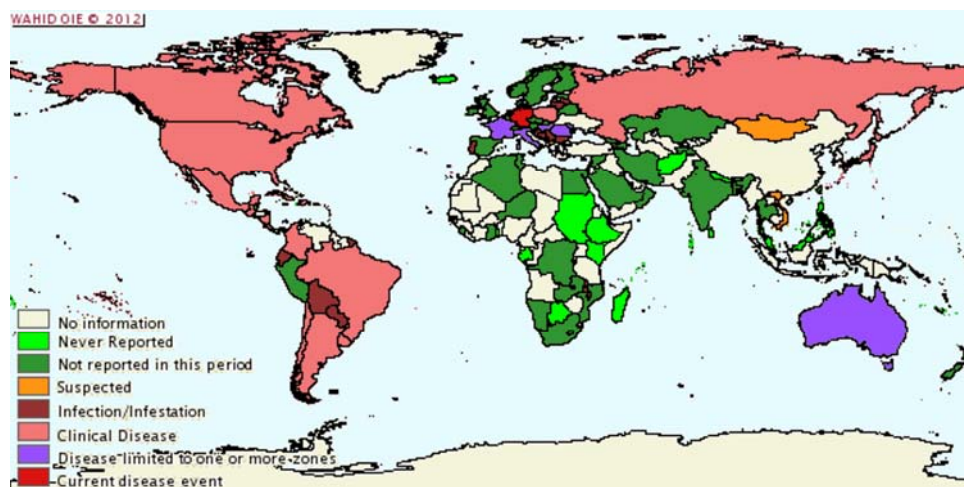
* Ph.D. student, Department of Pathology, IEMPAM-BAS

** Ph.D., Chief Assistant, Head of Laboratory of mycotoxicology and ecotoxicology, NDRVMI

*** Associate Professor, Department of Pathology, IEMPAM-BAS

Acknowledgments: This work was supported by the European Social Fund and the Republic of Bulgaria – Operation program “Development of human resources” 2007-2013, Grant № BG051PO001-3.3.04/46 from 28.08.2009

FIGURE 1: EBL WORLD DISTRIBUTION MAP
(OIE, 2012)



In Bulgaria there is a tendency for an increase of the number of the cattle seropositive to BLV. While for the period 1997-1999 the percent of these cows was 9,5 percent on the average, in the years 2003-2006 was risen almost twice – about 17 percent and in 2008 - 2010 was 20,4 percent (by unofficial data of the National Veterinary Service, Bulgaria). This fact is explained partially by the closing of the isolation farms and slaughter-houses and with the feeding of calves of healthy mothers with thermally unprocessed milk from cows with EBL.

The wide spreading of the infection with EBL is due to the diversity of mechanisms for its transmission from an animal to another, mainly by the implementation of multiple use and poorly sterilized instruments in the blood manipulations, the rectal examination, blood-sucking insects, prenatally from the mother to the fetus transplacentarily or postnatally via the milk in sucklings. On the other hand, the measures for fighting EBL are ineffective or are simply lacking. In most EU member-states the percentage of infected cattle is low and the radical approach such as “test and segregate (slaughtering)” is employed efficiently followed by strict regular serological screenings, which has led to positive results with a considerable decrease of the cases of the illness.

As for the USA, Canada, Argentina and a lot of other countries with a high percentage of BLV herds, this approach is not realistic and economically accessible because of the impossibility for compensations of the farmers’ losses.

2. INFECTIVITY OF BLV IN DIFFERENT ANIMAL SPECIES

Cattle are the natural BLV host. The virus there causes a persisting B lymphocytosis (PL) for life in 30 to 70 percent of the cases and up to 10 percent B-cell lymphomas are also formed. In most cases the infection is asymptomatic with up to 1 percent of the peripheral blood cells being infected with BLV. The virus is integrated into the host cells genome as a provirus and remains in a sleeping state for good. (Burny et al., 1988)

It has been established that BLV affects other species as well. Water buffaloes (*Bubalus bubalis*) and capybaras (*Hydrochoerus hydrochaeris*) are strongly susceptible. There are theories suggesting that buffaloes represent a natural reservoir of BLV (Meas et al., 2000). BLV is also infective for sheep and goats. Sheep are highly sensitive to an experimental infection with BLV developing a B-cell pathology similar to that found in the cattle in 90 percent of the cases. Up to 40 percent of the ewes in the course of a 6-year period post infection develop a B-cell lymphosarcoma (Schwartz et al., 1994). Goats are also receptive to the virus but it does not develop solid lymphoid tumors (Mammerickx et al., 1981).

Experimentally, BLV may cause an infection in pigs, rabbits, rats, cats, dogs, deer and some primates (Burny, et al., 1980). In most of the infected animals an immunodeficient disease similar to that induced by the HIV is caused in a protracted manner, ending in some cases lethally due to trivial infections (Altanerova et al., 1989). It has been serologically established that chimpanzees inoculated with BLV remain persistently infected with the virus (Van der Maaten and Miller, 1976).

The infectivity of the BLV has been in vitro proved for monkey, dog, goat, sheep and bat cells (Graves and Ferrer, 1976). Human cells have also been reported to be successfully infected by this virus (Altaner et al., 1989). In a recent study using the serological method Western blot (WB), Buehring et al. (2003) have found antibodies against the capsid BLV protein p24 in 74 percent of 257 volunteers – mostly white women aged between 24 and 49. In the same study the immuno-diffusion test did not elicit a positive reaction in any of the tested persons.

3. SENSITIVITY TO BLV IN HUMANS – PREREQUISITES AND INVESTIGATIONS

3.1. BLV is quite similar to the virus causing leukemia in humans (HTLV)

BLV belongs to the genus *Deltaretrovirus* of *Retroviridae* family (ICTV, 2002). In its genetic organization and mechanism of viral expression, BLV is almost identical with the human lymphotropic viruses belonging to the same genus such as HTLV 1 and 2. HTLV1 causes a T-cell lymphoma or leukemia in elderly patients (ATL), which is characterized by an aggressive malignization of the T-lymphocytes and

triggers the neurodegenerative disease “tropical spastic paraparesis/ HTLV1 associated myelopathy” (Grant et al., 2002). A total of 10 to 20 million people are infected with HTLV1 in the world with the Caribbean basin, Japan, Africa, South America and the USA being endemic zones (Bangham, 2000; Proietti et al., 2005).

As for the genome of BLV and HTLV (1 and 2), there is a similarity of over 50 percent in their nucleotide sequences. The basic framework of their genome looks as follows:

5'-LTR-GAG-POL-ENV-REX-TAX-LTR-3'

In addition to the structural GAG, POL and ENV genes are responsible for the synthesis of the viral particles. The genome of these viruses contains the X-zone situated between ENV and 3'LTR. The presence of this zone is the most distinctive genetic peculiarity of the HTLV/BLV group. Two well-investigated proteins TAX and REX are encoded in the X-zone which regulate the expression and replication of the virus and are crucial for its infectivity. The TAX protein is the transcriptive activator that augments the synthesis of viral proteins and is absolutely indispensable for the infectivity of these viruses in vivo. Besides, TAX displays an oncogenic potential and emerges as an immortalizing oncogen (Willems et al., 1993). REX regulates the expression of viral mRNA at the post-transcriptive level and is capable of inhibiting the RNA splicing in vitro at an early stage (Bakker et al., 1996). The REX proteins of each of the viruses from the HTLV/BLV group are structurally similar and functionally interchangeable (Kim, et al., 1991).

In the X-zone are also encoded the accessory regulatory proteins R3 and G4 for BLV corresponding to P12 and P13 in HTLV1. Mutants with a deletion of the sequences encoding for these proteins do not reduce the viral replication in cell cultures, but do reduce the capacity of the virus to replicate in animals – sheep (Willems et al., 1993; 1994). The animals infected with viruses with a mutation at G4 or R3 and G4 together do not develop the disease at all (Kerkhofs, et al., 1998).

Due to the extremely great genetic similarity, Maruyama et al. (1989) using ELISA and WB has established a cross-reaction between monoclonal antibodies from BLV against proteins of HTLV1 and vice versa. And to be more concrete: WB and competitive WB cattle antibodies, that are ELISA positive to BLV, react with one or some of the proteins P12, P15 and P24 of BLV and also with P24 of HTLV1. Human antibodies that are ELISA positive to HTLV1 react with P12 and P24 of BLV and with one or more of P12, P15, P19 and P24 of HTLV1. This result shows that BLV and HTLV1 have the capacity of causing a cross immune response in humans and cattle.

It becomes clear from the above-mentioned that BLV is widely spread, and infects animals of various species primates including infects in vitro human cells and in its genome, and the mechanism of expression is exceedingly similar to the human HTLV1 and HTLV2. That is why the question whether BLV can infect the human is

quite reasonable. A great number of authors have been working on that for many years. A considerable part of them have arrived at a negative conclusion (Bender, et al., 1988; Perzova, et al., 2000; Lee, et al., 2005). There exist, however, a number of facts which directly or indirectly indicate to a correlation between cattle and human leukemic ailments. Some of them are summarized here as follows:

It has been established that geographically the territories with the highest percentage of BLV infected cows are also characterized with ostensibly higher levels of human leukemia incidence (Linnet and Cartwright, 1996). Donham, et al. (1980) has proven an increase of the incidence of lymphoid leukemia in people from Iowa (USA) in the regions with a high concentration of cattle, and more exactly a clear territorial dependency between the peak of acute lymphoid leukemia (ALL) in humans and that of cow lymphosarcomatosis. A high percentage of leukemia is also detected in Russia where the EBL is widely spread and poorly supervised.

In a number of studies a statistically significant augmentation of leukemic cases in cow-breeding farmers has been established. A nearly two-fold increase of leukemic diseases has been found in Canada in the persons employed in farms for cows bred for meat. A study carried out in Germany also shows a considerable correlation between the contact with cattle and the risk of lymphoma, as well as a growing risk of lymphohaemopoietic neoplasms in people exposed to contact with cattle and the absence of such in persons in contact with other animals (Kristensen, 1996; Frittschi, et al., 2002; Becker, et al., 2004).

A three-fold increased risk of myeloid leukemia and non-Hodgkin lymphoma, as well as lung carcinoma has been established in people dealing with meat in supermarkets (Pearce, et al., 1986; Johnson, 1994; Metayer, et al., 1998). On a world scale, leukemia in humans is more common in populations consuming predominantly beef and cow's milk (Hursting, 1993; Howell, 1974).

3.2. BLV / Breast cancer

Several research teams have been working in the recent years aimed at looking for a BLV participation in the etiology of breast cancer in women. Despite the fact that B lymphocytes have been established to be the main target cells, it has been proved that BLV also infects epithelial cells of the mammary glands of cows hence the spread of the disease in a vertical direction (Buehring, et al., 1994). In addition, the immortalizing effect of BLV on a cell line of epithelial cells from murine mammary gland transfected with the complete BLV genome has been recorded *in vitro* (Kettmann, et al., 1994).

Large scale studies on a statistical basis demonstrate the proportional dependency between the consumption of cow's milk and the breast cancer incidence. Among Canadian Eskimos, the Chinese and Japanese who consume an exceptionally low

quantity of milk and do not feed the new-born babies on cow's milk, the breast cancer cases are negligibly low as compared with the rest of the world.

The difference in breast cancer incidence between the populations with the highest risk and those with lowest is over six times (for example the USA compared with Japan and South Korea) (Parkin, et al., 1992). It drops drastically and is balanced in the limits of two populations upon migrating from territories with a small risk to such with a high one for breast cancer. These facts considered in the light of the fact that the USA on one hand is one of the states with the most herds infected with BLV, and on the other that East-Asian states such as Japan and South Korea are known for their low consumption of beef products can provoke certain associations.

The presence of BLV has been proven in histological sections from breast cancer's materials in 10 out of 23 women. The majority of the breast tissues had evidence of a BLV proviral genome, and four out of 27 were positive for the BLV capsid protein (Buehring, et al., 2001). In the other studies of the same team by IS-PCR in 211 women, BLV DNA has been found in 62 percent of the breast patients as opposed to 23 percent in healthy ones (Buehring, 2005).

4. CONCLUSIONS

The evidence presented makes it clear that widely spread BLV is pathogenic among several animal species. The major hosts for the virus are cattle. Buffaloes and capybaras are naturally susceptible, and sheep and goat are strongly sensitive. On the other hand, EBL is of interest also due to the fact that BLV is biologically similar to the viruses causing lymphoid leukemia in humans, and BLV-susceptible laboratory animals could be used as a convenient model for the study of viral-induced leukemogenesis. The direct connection of BLV with certain neoplastic disorders in men is not to be excluded either. That is the trend in which the studies of a multitude of research teams working on the BLV problem are directed in the recent years.

REFERENCES

- Altaner, C., Altanerova, V., Ban, J., Niwa, O. and Yokoro, K. (1989). Human cells of neural origin are permissive for bovine leukemia virus. *Neoplasma*, 36(6), pp. 691-695.
- Altanerova, V., Ban, J. and Altaner, C. (1989). Induction of immune deficiency syndrome in rabbits by bovine leukaemia virus. *AIDS*, 3(11), pp. 755-758.
- Bakker, A., Li, X., Ruland, C., Stephens, D., Black, A. and Rosenblatt, J. (1996). Human T-cell leukemia type 2 Rex inhibits pre-mRNA splicing in vitro at an early state of spliceosome formation. *Journal of Virology*, 70, pp. 5511-5518.
- Bangham, CR. (2000). HTLV-1 infections. *Journal of Clinical Pathology*, 53, pp. 581-586.
- Becker, N., Deeg, E. and Nieters, A. (2004). Population-based study of lymphoma in Germany: rationale, study design and first results. *Leukemia Research*, 28, pp. 713-724.

- Bender, A., Robison, L., Kashmiri, S., McClain, K. L., Woods, W. G., Smithson, W.A., Heyn, R., Finlay, J., Schuman, L. M., Renier, C. and Gibson, R. G. (1988). No involvement of bovine leukemia virus in childhood acute lymphoblastic leukemia and non-Hodgkin's lymphoma. *Cancer Research*, 48, pp. 2919-2922.
- Buehring, G., Choi, K. and Jensen, H. (2001). Bovine leukemia virus in human breast tissues. *Breast Cancer Research*, 3 (Suppl 1), A14.
- Buehring, G., Kramme, P., Schultz, R. (1994). Evidence for bovine leukemia virus in mammary epithelial cells of infected cows. *Laboratory Investigation*, 71, pp. 359-365.
- Buehring, G., Philpott, S., Choi, K. (2003). Humans have antibodies reactive with Bovine leukemia virus. *AIDS Research and Human Retroviruses*, 19, pp. 1105-1113.
- Buehring, G. (2005). Bovine Leukemia Virus Infection and Human Breast Cancer Risk. [online]. Symposium abstract in *California Breast Cancer Research Program*. Available from: http://www.cbcpr.org/RESEARCH/PageGrant.asp?grant_id=1815
- Burny, A., Bruck, C., Chantrenne, H., Cleuter, Y., Dekegel, D., Ghysdael, J., Kettmann, R., Leclercq, M., Leunen, J., Mammerickx, M., Portetelle, D. (1980). Bovine leukemia virus: molecular biology and epidemiology. In: Klein G (Ed.), *Viral Oncology*, Raven, New York: pp. 231-289.
- Burny, A., Cleuther, Y., Kettman, R., Mammerickx, M., Marbaix, G., Portetelle, D., Van Den Broeke, A., Willems, L. and Thomas, R. (1988). Bovine leukaemia: Facts and hypotheses derived from the study of an infectious cancer. *Advances in Veterinary Science and Comparative Medicine*, 32, pp. 149-170.
- Decision 2003/467/EC (amended November 2010): COMMISSION DECISION of 23 June 2003 establishing the official tuberculosis, brucellosis, and enzootic-bovine-leukosis-free status of certain Member States and regions of Member States as regards bovine herds. Available from: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2003D0467:20101119:EN:PDF>
- Donham, K., Berg, J., Sawain, R. (1980). Epidemiologic relationships of the bovine population and human leukemia in Iowa. *American Journal of Epidemiology*, 112, pp 80-92.
- Fritschi, L., Johnson, K., Kliever, E., Fry, R. and The Canadian Cancer Registries Epidemiology Research Group (2002). Animal-related occupations and the risk of leukaemia, myeloma, and non-Hodgkin's lymphoma in Canada. *Cancer Causes and Control*, 13(6), pp. 563-571.
- Grant, C., Barmak, K., Alefantis, T., Yao, J., Jacobson, S., Wigdahl, B. (2002). Human T-cell leukemia virus type I and neurologic disease: events in bone marrow, peripheral blood, and central nervous system during normal immune surveillance and neuroinflammation. *Journal of Cellular Physiology*, 190, pp 133-159.
- Graves, D., Ferrer, J. (1976). In vitro transmission and propagation of the bovine leukemia virus in monolayer cell cultures. *Cancer Research*, 36, pp. 4152-4159.
- Howell, M. (1974). Factor analysis of international cancer mortality data and per capita food consumption. *British Journal of Cancer*, 29(4), pp. 328-336.
- Hursting, S. (1993). Diet and human leukemia: an analysis of international data. *Preventive Medicine*, 22(3), pp. 409-422.
- ICTV, International Committee on Taxonomy of Viruses (2002). [online]. Available from: <http://www.ncbi.nlm.nih.gov/ICTVdb/ICTVdB/00.061.1.05.htm#quickIDX0>

- Johnson, E. (1994). Cancer mortality among workers in the meat department of supermarkets. *Occupational and Environmental Medicine*, 51, pp. 541-547.
- Kerkhofs, P., Heremans, H., Burny, A., Kettmann, R., Willems, L. (1998). In vitro and in vivo oncogenic potential of bovine leukemia virus G4 protein. *Journal of Virology*, 72, pp. 2554-2559.
- Kettmann, R., Burny, A., Callebaut, I., Droogmans, L., Mammerickx, M., Willems, L., Portetelle, D. (1994). Bovine leukemia virus. *The Retroviridae*. 3, pp. 39-91.
- Kim, J., Kaufman, P., Hanly, S., Rimski, L., Greene, W. (1991). Rex transregulation of human T-cell leukemia virus type II gene expression. *Journal of Virology*, 65, pp. 405-414.
- Kristensen, P. (1996). Incidence and risk factors of cancer among men and women in Norwegian agriculture. *Scandinavian Journal of Work, Environment and Health*, 22(1), pp. 14-26.
- Lee, J., Kim, Y., Kang, C., Cho, D., Shin, D., Yum, Y., Oh, J., Kim, S., Hwang, M., Lim, C., Yang, K., Han, K. (2005). Investigation of the Bovine Leukemia Virus Proviral DNA in Human Leukemias and Lung cancers in Korea. *Journal of Korean Medical Science*, 20(4), pp. 603-606.
- Linnet, M. and Cartwright, R. (1996). The leukemias. In: Schottenfeld D, Fraumeni JF, eds. *Cancer epidemiology and prevention*, 2nd edn. New York: Oxford University Press.
- Mammerickx, M., Portetelle, D., Burny, A. (1981). Experimental cross-transmissions of bovine leukemia virus (BLV) between several animal species. *Zentralblatt für Veterinärmedizin Series B*, 28(1), pp 69-81.
- Maruyama, K., Fukushima, T., Mochizuki, S. (1989). Cross-reactive antibodies to BLV and HTLV in bovine and human hosts with retrovirus infection. *Veterinary Immunology and Immunopathology*, 22(3), pp. 265-273.
- Meas, S., Seto, J., Sugimoto, C., Bakhsh, M., Riaz, M., Sato, T., Naeem, K., Ohashi, K., Onuma, M. (2000). Infection of bovine immunodeficiency virus and bovine leukemia virus in water buffalo and cattle populations in Pakistan. *Journal of Veterinary Medical Science*, 62, pp. 329-331.
- Metayer, C., Johnson, E., Rice, J. (1998). Nested case-control study of tumors of the hemopoietic and lymphatic systems among workers of the meat industry. *American Journal of Epidemiology*, 147, pp. 727-738.
- NAHMS (National Animal Health Monitoring System). (1997). High prevalence of BLV in US dairy herds. [online]. Available from: <http://www.aphis.usda.gov/vs/ceah/ncahs/nahms/dairy/dairy96/DR96blv.pdf>
- Ott, S. L., Johnson, R., Wells, S. J. (2003). Association between bovine-leukosis virus seroprevalence and herd-level productivity on US dairy farms. *Preventive Veterinary Medicine*, 61(4), pp. 249-262.
- Parkin, D. M., Muir, C. S., Whelan, S. L., Gao, Y. T., Ferlay, J., Powell, J. (1992). Cancer Incidence in Five Continents, Volume VI, *IARC Scientific Publications*, (120), pp. 956-957.
- Pearce, N., Smith, A., Howard, J., Sheppard, R., Giles, H., Teague, C. (1986). Non-Hodgkin lymphoma and exposure to phenoxyherbicides, chlorophenols,

- fencing work, and meat works employment: a case-control study. *British Journal of Industrial Medicine*, 43, pp. 75-83.
- Perzova, R., Loughran, T., Dube, S., Ferrer, J., Esteban, E., Poiesz, B. (2000). Lack of BLV and PTLV DNA sequences in the majority of patients with large granular lymphocyte leukaemia. *British Journal of Haematology*, 109, pp. 64-70.
- Proietti, F. A., Carneiro-Proietti, A. F., Catalan-Soares, B. C., Murphy, E. L. (2005). Global epidemiology of HTLV-I infection and associated diseases. *Oncogene*, 24, pp. 6058-6068.
- Rice, S. and Whitehead, S. A. (2006). Phytoestrogens and breast cancer-promoters or protectors? *Endocrine-Related Cancer*, 13(4), pp. 995-1015.
- Sargeant, J. (1997). Associations between farm management practices, productivity, and bovine leukemia virus infection in Ontario dairy herds. *Preventive Veterinary Medicine*, 31(3-4), pp. 211-221.
- Schwartz, I., Bensaid, A., Polack, B., Perrin, B., Berthelemy, M., Levy, D. (1994). In vivo leukocyte tropism of bovine leukemia virus in sheep and cattle. *Journal of Virology*, 68(7), pp. 4589-4596.
- Trono, K. (2001). Seroprevalence of bovine leukemia virus in dairy cattle in Argentina: comparison of sensitivity and specificity of different detection methods. *Veterinary Microbiology*, 83(3), pp. 235-248.
- Van der Maaten, M. and Miller, J. (1976). Serological evidence of transmission of bovine leukemia virus to chimpanzees. *Veterinary Microbiology*, 1, pp. 351-357.
- Willems, L., Kerkhofs, P., Dequiedt, F., Portetelle, D., Mammerickx, M., Burny, A., Kettmann, R. (1994). Attenuation of bovine leukemia virus by deletion of R3 and G4 open reading frames. *Proceedings of the National Academy of Sciences USA*, 91, pp. 11532-11536.
- Willems, L., Kettmann, R., Dequiedt, F., Portetelle, D., Voneche, V., Cornil, I., Kerkhofs, P., Burny, A., Mammerickx, M. (1993). In vivo infection of sheep by bovine leukemia virus mutants. *Journal of Virology*, 67, pp. 4078-4085.

BIOLOGICAL POTENTIAL OF SOIL POPULATIONS IN TWO SHETLAND ISLANDS, LIVINGSTON AND DECEPTION

VICTORIA GESHEVA*

ABSTRACT

Microorganism soil communities of Byers Peninsula, Livingston and Deception, Antarctica were observed. Soils from Byers Peninsula are characterized by an abundance of cyanobacteria and actinomycetes. Among them the representatives of following genera are found, Streptomyces, Nocardia, Micromonospora, Bispora, Geodermatophilus. The fungi Penicillium, Aspergillus, Phialophora, Mucor, Cladosporium, Scopulariopsis, Mortierella are detected. In soils of Deception Island cyanobacteria dominated. The isolates are determined as Chaesiphon, Fischerella, Colleus, Nostoc and others. A variety of fungi was detected, Penicillium, Aspergillus, Mortierella, Sclerotium, Candida, Rhodotorula. Actinomycetes are presented by Streptomyces and Geodermatophilus. Some bacterial and actinomycete strains formed extracellular enzymes and others showed antimicrobial activities against Gram positive bacteria and fungi.

Keywords: Microorganism Soil Communities; Byers Peninsula; Livingston Island; Deception Island; Cyanobacteria; Fungi; Actinomycetes; Enzymes; Antibiotics.

1. INTRODUCTION

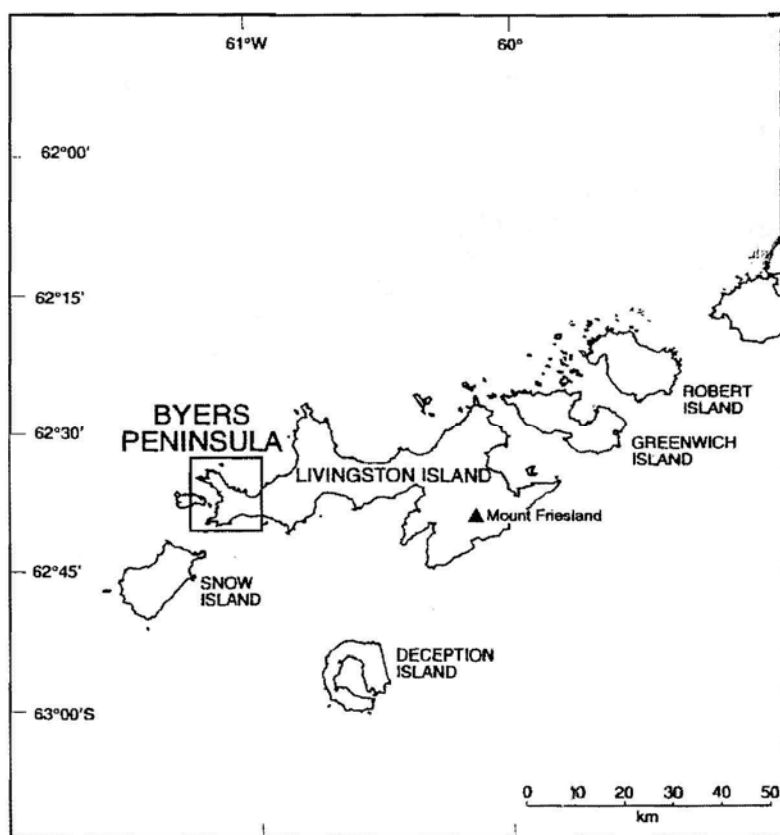
Livingston and Deception are located in a group of South Shetland Islands (Figure 1). Deception Island was gone to magmic eruption in 1980's that strongly influenced its biota. Byers Peninsula, Livingston Island is an extensive, large ice-free area at the western end of the Island and centred on 62°37'S, 61°03'W as approximately region consisting of 65.7 km². It has ground and minor traces of residual glacial regime remaining. Despite its extensive glacial landscape, there is an evidence of glacial erosion and moraines are scarce and poorly defined (Martinez de Pisón et al., 1996). There was a relative stabilization of the glacial that would favour a more continuous and abundant melt water flow with the consequent increase in the erosive capacity of the streams below that limit (Thomson and Lopez-Martinez, 1996). Some of the channels on Byers Peninsula had sub glacial origin. Post-glacial fluvial erosion due to glacial retreat is deeply visible at some stream heads. The climate is cold, dry and stormy. Plants can grow during the few summer weeks when there is water with

* Institute of Microbiology, Bulgarian Academy of Sciences, Sofia, Bulgaria

Acknowledgement: My thanks to Dr. W. Petz for soil samples from Livingston and Deception Islands.

dissolved mineral elements. Microorganisms are adapted to low temperatures and survived at periodical cycles of freeze- thaw. Some reports are devoted to soil microorganisms in the region of Bulgarian Polar Station, Livingston Island, (Nustorova et al., 1999, 2002; Kenarova and Bogoev, 2002; Golemansky, 2006; Pavlova et al., 2006) but there are not publications on micro biota in soils of the Byers Peninsula. Data about microbes in Deception Island are scarce (Broady, 1996). The aims of this observation were to study psychotropic microorganism communities in soils from the Byers Peninsula, Livingston and Deception and their biological potential.

FIGURE 1: MAP OF LIVINGSTON AND DECEPTION ISLANDS



2. MATERIALS AND METHODS

2.1. Location of samplings

Soil samples No.1-5 (Byers Peninsula, Livingston Island) and No. 6-8 (Deception Island) were taken from 0-3 cm depth by Dr. W. Petz. Number 1, moss, South Beaches, small valley above the Belgica River in land of the First moraine line; number 2, moss, South Beaches, 200 m from the southern Ocean, between the Belgica River and the Ballenas River, the area was apparently under water (Biedawater Pod); number 3, terrestrial moss about 8-12 m distant from water's edge; number 4, moss; number 5, *Deschampsia grass*, Campamsito.; number 6, Alto Crater; number 7, Punta Descendance; number 8, Grenotz.

2.2. Isolation and determination of microorganisms

The samples were treated to isolation procedures described by Gesheva (2002) on glucose agar, yeast extract agar, corn extract agar No.6, malt agar, Czapek agar, Küster agar (Gauze et al., 1983). Cultivation was carried out at 4°C and 13°C. The CFU was calculated by plate counts. Each value is an average of three replicates \pm standard deviation of mean value. Microorganisms were isolated and studied by morphology, sporulation, Gram staining and chemotaxonomy.

2.3. Cultivation and growth conditions

Cultures were grown in 500-ml Erlenmeyer flasks with 100 ml medium on a rotary shaker (220 rpm) at 18°C. Production medium M1 was used for actinomycetes and contained (g/l): soy meal, 10; glucose, 10; NaCl, 5; CaCO₃, 1. Production medium M2 was applied for bacteria and contained the following (g/l): glycerol, 20; corn extract, 10; (NH₄)₂SO₄, 3; ZnSO₄·7H₂O, 0.001, MnCl₂·0.001; FeSO₄·7H₂O 0.001. The flasks were incubated for 2-5 days. The supernatants and methanol extracts of biomasses were assayed for antimicrobial activities. Antibiotic investigations were performed by the agar diffusion method against test-cultures: *Bacillus subtilis* ATCC 6633, *Escherichia coli*, *Candida tropicalis*, *Cladosporium cladosporioides*, *Botrytis cinerea*, *Fusarium oxysporum*. α -Amylase was assayed as described by Gesheva (2002). β -glucosidase and β -galactosidase were carried out according to Williams and Cross (1971).

Isolates were tested for their ability to grow on MCM medium with 2 % n-paraffins. Anionic glycolipids were detected after growth on the same solid medium supplemented with cetyltrimethylammonium bromide (CTAB) and methylene blue (Siegmund and Wagner, 1991).

For the determination of amino acid content in cell, wall actinomycetes were cultivated in 500-ml Erlenmeyer flasks with 50 ml liquid yeast extract medium for 2 days on rotary shaker 220 rpm at 18°C, and harvested biomasses after acid hydrolysis were assayed by thin-layer chromatography according to Berd (1973).

3. RESULTS AND DISCUSSION

The soil samples No.1-4 were collected under moss, while the sample No.5 is under *Deschampsia* grass. It is known that soils in Livingston Island have a scarce content of nitrogen, phosphate and organic matter (Kenarova and Bogoev, 2002; Golemansky, 2006). The CFU of bacteria and fungi in soils of Byers Peninsula, Livingston Island is showed in Tables 1 and 2. The samples No.1 showed the high CFU of bacteria. In soil sample No. 2 an abundance of actinomycetes was established. Results from the morphology, sporulation and cell wall amino acid content of actinomycetes gave an assumption for determination of the following actinomycete genera: *Streptomyces*, *Bispora*, *Micromonospora*, *Nocardia*, *Geodermatophilus*. In the soil sample No. 3 representatives of *Micromonospora*, *Nocardia*, *Geodermatophilus* were found. Microflora of soil sample No.4 is consisted of numerous fungi and bacteria. Among them cyanobacteria, myxobacteria and actinomycetes from genera, *Streptomyces* and *Nocardia* were detected. In sample No.5 genus *Geodermatophilus* was found. Kenarova and Bogoev, (2001) in soils from the Livingston Island near the Bulgarian Polar Station “St.Kliment Ochridsky” reported an abundance of heterotrophic bacteria and fungi using different substrate, while Nustorova et al., (2001, 2002) found bacteria and actinomycetes that possessed the characteristics of *Streptomyces*.

Scientists have frequently reported about scarce actinomycete presence in Antarctic soils (Boyd et al., 1966; Johnson et al., 1978; Greenfield, 1981; Broady et al., 1987; Gesheva, 2005, 2008). Samples No. 2-4 in Byers Peninsula were collected near to two rivers and pond and water availability plays a significant role for the enrichment by actinomycetes. In all soil samples of the Byers Peninsula representatives of the following fungi genera were detected: *Aspergillus*, *Penicillium*, *Mucor*, *Scopulariopsis*, *Cladosporium*, *Mortierella*, *Phialophora*, *Candida*, *Rhodotorula*. Pavlova et al., (2006) showed that yeast strains isolated from soils near the Bulgarian Polar Station produced proteases and were determined as *Sporobolomyces*.

The CFU of soil samples No. 6-8 from Deception Island is presented in Table 2. In these samples the fungi are presented by genera *Penicillium*, *Aspergillus*, *Mortierella*, *Sclerotium*, *Cladosporium*, *Scopulariopsis*, *Rhodotorula* and *Candida*, while the actinomycetes, with genera *Streptomyces* and *Geodermatophilus*. In the soil microflora of Deception numerous presentatives of cyanobacteria, *Pleurocapsa* group, *Chaemosiphon*, *Fischerella*, *Colleus*, *Nostoc* and others were found. It is necessary to

note that the soil microflora of Deception Island is scarce in comparison with that of the Byers Peninsula, Livingston Island. This event might be explained by the volcanic eruption in the 1980's which killed the microbiota there. Broady (1996) had found cyanobacterium *Phormidium* sp. and microalgae: Chlorophyta, *Chlorella*, *Ulotrix* and unidentified Chrysophyta. It is known that cyanobacteria and microalgae are the first colonizers and play a significant role in the formation of soil structures (Hawes et al., 1992; Wynn-Williams, 1996).

Antimicrobial investigations of bacteria and actinomycete isolates are presented in Table 3. The total percentage of antibacterial antagonists is 25%. Particular cultural broths possessed both antibacterial and antifungal activities. Trends in observations of antifungal activities against phytopathogenic fungi are very important for agricultural practice. The results obtained indicate that streptomycete strains isolated from Byers Peninsula, Livingston Island are promising in the observations for antibiotic substances. Increasing attention has been devoted to psychrophilic microorganisms and their enzymes which are able to work at temperatures in the range 0-20°C at which homologous mesophilic enzymes have their catalytic efficiency severely reduced (Russell, 2000; Zecchinon et al., 2001). Cold-adapted enzymes have been proposed for different applications (Rothschild and Manchinetti, 2001). In the view of this the finding of the psychrophilic and psychrotrophic strains synthesized cold-active enzymes will allow their detail study.

TABLE 1: CFU OF MICROORGANISMS IN SOIL SAMLES NO. 1-4 OF BYERS PENINSULA, LIVINGSTON, ANTRCTICA

Medium	x10 ⁶ CFU/ g dry wt			
	Sample 1		Sample 3	
	Bacteria	Fungi	Bacteria	Fungi
Glucose agar	190± 12	12 ± 4	40 ± 5	10 ± 3
Yeast extract agar	210 ±15	10 ± 3	0.6 ± 0.1	10 ± 5
Corn extract agar No.6	120± 9	13± 8	10 ± 4	10 ± 6
Malt agar	60 ± 7	10 ± 3	6 ± 1	0.3 ± 0.1
Czapek agar	16± 4	8 ± 1	6 ± 0.9	10 ± 4
Küster agar	0.2 ±0.1	1.5 ± 0.3	2 ± 0.5	0.3 ± 0.1
	Sample 2		Sample 4	
	Bacteria	Fungi	Bacteria	Fungi
Glucose agar	0.2 ± 0.1	15 ± 4	20 ± 5	0.2 ± 0.1
Yeast extract agar	1 ± 0.4	1 ± 0.1	30 ± 5	10 ± 2
Corn extract agar No.6	3 ± 1	0.5 ± 0.1	0.6 ±0.1	10 ± 3
Malt agar	1 ± 0.3	10 ± 4	0.8 ± 0.2	20 ± 5
Czapek agar	2 ± 0.8	6 ± 1	0.4 ± 0.2	20 ±4
Küster agar	45 ± 16	15 ± 8	20 ± 6	30 ± 9

TABLE 2: CFU IN SOIL SAMPLES NO. 5 FROM LIVINGSTON AND NO. 6-8 FROM DECEPTION

Medium	$\times 10^4$ CFU/ g dry wt			
	Sample 5		Sample 7	
	Bacteria	Fungi	Bacteria	Fungi
Glucose agar	20 ± 4	30 ± 5	0.2 ± 0.1	0.2 ± 0.1
Yeast extract agar	10 ± 4	20 ± 6	0.2 ± 0.1	0.2 ± 0.1
Corn extract agar No.6	10 ± 3	103 ± 30	0.5 ± 0.1	0.6 ± 0.2
Malt agar	5 ± 2	30 ± 7	0.6 ± 0.1	0.5 ± 0.2
Czapek agar	3 ± 1	35 ± 6	0.5 ± 0.3	0.8 ± 0.4
Küster agar	6 ± 1	10 ± 4	0.4 ± 0.2	0.3 ± 0.1
	Sample 6		Sample 8	
	Bacteria	Fungi	Bacteria	Fungi
Glucose agar	0.4 ± 0.1	0.8 ± 0.2	0.2 ± 0.1	0.2 ± 0.1
Yeast extract agar	0.5 ± 0.1	0.2 ± 0.1	0.3 ± 0.1	0.6 ± 0.2
Corn extract agar No.6	0.3 ± 0.8	0.5 ± 0.2	0.6 ± 0.1	0.4 ± 0.1
Malt agar	0.2 ± 0.1	0.3 ± 0.1	0.4 ± 0.1	0.4 ± 0.1
Czapek agar	0.2 ± 0.1	0.4 ± 0.1	0.5 ± 0.2	0.5 ± 0.2
Küster agar	0.4 ± 0.1	0.2 ± 0.1	0.6 ± 0.2	0.3 ± 0.1

TABLE 3: PERCENT OF STRAINS WITH BIOLOGICAL POTENTIAL

Test	%	
	Bacteria	Actinomycetes
Enzyme activity		
α -Amylase	7	14
β -Glucosidase	8	5
β -Galactosidase	5	6
Antimicrobial activity against:		
Bacillus subtilis ATCC 6633	10	15
Escherichia coli	5	8
Candida tropicalis	2	9
Cladosporium cladosporioides	2	5
Botrytis cinerea	2	5
Fusarium oxysporum	1	6
Growth on n-paraffins	11	10
Production of glycolipids	6	7

The ability of some antarctic isolates possessing the features of actinomycetes and bacteria to grow at n-paraffins and synthesized glycolipids with surfactant nature is an

interesting property of microorganisms which may be used in the bioremediation of the north soils polluted with hydrocarbons.

REFERENCES

- Berd, D. (1974). Laboratory identification of clinically important aerobic actinomycetes. *Applied Microbiology*, 25, pp. 665-681.
- Boyd, W.L., Staley, J.T. and Boyd, J.M. (1966). Ecology of soil microorganisms of Antarctica. *Antarctic Science Serial*, 8, pp. 125-159.
- Broady, R., D., Given, L. Greenfield, L. and Thomson, K. (1987). The biota and environment of fumaroles on Mt Melbourne, Northern Victoria Land. *Polar Biology* 7, pp. 97-113.
- Broady, P.A. (1993). *Soils treated by volcanism*, In: E. I. Friedman (Ed.), Antarctic Microbiology, Wiley-Liss, New York.
- Gauze, G.F., Preobrazhenskaya, M. A., Sveshnikova, L. P., Terechova, L. and Maximova, T. S. (1983). *Key to actinomycetes*. Nauka Publications, Moscow.
- Gesheva, V. (2002). Rhizosphere microflora of some citrus as a source of antagonistic actinomycetes. *European Journal of Soil Biology*, 38, pp. 85-88.
- Gesheva, V. (2005). Microbiota of subantarctic soils from South Georgia Island. *Cyprus Journal of Sciences*, 3, pp.75-81.
- Gesheva, V. (2008). Distribution of microorganisms in soils of Victoria Land and their biosynthetic capabilities. *Cyprus Journal of Sciences*, pp. 93-100.
- Golemansky, V. (2006). Bulgarian contribution to the antarctic life study. *Journal of Bulgarian Academy of Sciences*, 49, pp.10-13.
- Greenfield, L. (1981). *Soil microbiology studies*, pp. 4-22. In: L. Greenfield and Wilson, C.W. (Eds.) Univ. Canterbury, Antarct. Exped. No. 19, Univ. Canterbury, Christchurch, New Zealand.
- Hawes, I., Howard-Williams, C. and Vincent, W. F. (1992). Desiccation and recovery of cyanobacterial mats. *Polar Biology*, 12, pp. 587-593.
- Johnson, R.M., Madden, J. M. and Swafford, J. R. (1978). Taxonomy of Antarctic bacteria from soils and air primarily of the McMurdo Station and Victoria Land dry valley region. *Antarctic Research Serial*, 30, pp. 35-64.
- Kenarova, A., and Bogoev, V. (2002). The abundance of microorganisms and substrate profile of heterotrophic microorganisms from soils of different habitats of Livingston Island-Antarctica. In: V.Golemansky, N. Chipev. (Eds.), *Bulgarian Antarctic Research, Life Science*, Pensoft, Sofia-Moscow, 3, pp. 15-20.
- Nustorova, M., Grozeva, M. and Gushterova, A. (2002). Study on soils from the region of Livingston Island (Antarctica). pp. 21-27, In: V. Golemansky, N. Chipev. (Eds.), *Bulgarian Antarctic Research, Life Science*, Pensoft, Sofia-Moscow, 3, pp. 21-27.
- Nustorova, M., Gushterova, A. and Getova, M. (2001). Ecological groups of microorganisms in the Antarctica. *Journal of Balkan Ecology*, 2, pp.1-12.
- Pavlova, K., Koleva, A., Savova, I., Koleva, L., Pishtiyski, I. and Metcheva, R. (2006). A study of antarctic yeasts for protease production. In: V. Golemansky, R. Metcheva (Eds.), *Bulgarian Antarctic Research, Life Science*, Pensoft, Sofia-Moscow, 5, pp. 63-74.

- Rothschild, L. J. and Manchinetti, R.Z. (2001). Life in extreme environments. *Nature*, 409, pp. 1092-1104.
- Russell, N.Y. (2000). Toward a molecular understanding of cold activity of enzymes from psychrophiles. *Extremophiles*, 4, pp. 83-90.
- Siegmund, I. and Wagner, F. (1991). New method for detecting rhamnolipids excreted by *Pseudomonas* species during growth on mineral agar. *Biotechnology Technology*, 5, pp. 265-268.
- Vasileva-Tonkova, E. and Gesheva, V. (2004). Potential for biodegradation of hydrocarbons by microorganisms from Antarctic soils. *Zhurnal Naturforschung*, 59, pp.140-145.
- Vasileva-Tonkova, E. and Gesheva, V. (2005). Glycolipids produced by Antarctic *Nocardioides* sp. during growth on n-paraffin. *Process Biochemistry*, 40, pp. 2387-2391.
- Williams, S. T. and Cross, T. (1971). *Actinomycetes, Methods in microbiology*, 4, Acad. Press, London, New York.
- Wyn-Williams, D. (1996). Response of pioneer soil microbial colonists to environmental change in Antarctica. *Microbial Ecology*, 31, pp. 177-188.
- Zecchinon, Z., Claverie, P., Collins, T., D'Amigo, S., Delille, D., Feller, G., Georlette, D., Gratia, E., Hoyoux, A., Meuwis, M. A., Sonan, G. and Gerday, C. (2000). Did psychrophilic enzymes really win the challenge? *Extremophiles*, 5, pp. 303-311.

STOCK PRICE ANOMALIES IN THE CYPRUS STOCK EXCHANGE

CHRISTOS N. CHRISTODOULOU-VOLOS*

ABSTRACT

Financial markets do not always adhere to the efficient market model. Therefore investors can take advantage of market anomalies. This paper investigates market imperfection in the daily stock returns of the Cyprus Stock Exchange during the period 1996-2006. The calendar anomalies that are analyzed are the January, Monthly, Holiday and the Weekend effect. The empirical research is conducted using Ordinary Least Squares and Generalized Autoregressive Conditional Heteroscedasticity models. Initially, the anomalies are tested separately and then together by embedding them into a single model. The results provide mixed evidence of the existence of calendar anomalies over the sample period.

Keywords: Asymmetric Effect; January Effect; GARCH; Seasonal Anomalies; Volatility.

1. INTRODUCTION

Despite strong evidence that the stock market is highly efficient, there have been scores of studies that have documented long-term historical anomalies in the stock market. These include seasonal regularities related to pre-holidays (Lakonishok and Smidt, 1988; Ariel, 1990; Kim and Park, 1994), the weekend (Cross, 1973; French, 1980; Jaffe and Westerfield, 1985), January (Rozeff and Kinney, 1976; Gultekin and Gultekin, 1983; Schwert, 2003), the time of the month (Ariel, 1987; Lakonishok and Smidt, 1988) and the turn-of-the-month (Ariel, 1987; Lakonishok and Smidt, 1988; Cadsby and Ratner 1992). These findings of the existence of seasonal anomalies in stock markets, which cannot be explained by the usual asset-pricing models, seem to contradict the weak-form Efficient Market Hypothesis (EMH). The weak form EMH states that the market is efficient in past price information and thus stock movements cannot be predicted using this historical information. As such, the findings of calendar anomalies appear to contradict the EMH since they imply that investors could design specific trading strategies to earn above-average profit from these seasonal regularities. Hence, identifying the nature of calendar anomalies, if any, is of great importance to the participants of the stock markets.

While the existence of these anomalies is well accepted in developed stock markets, the question of whether or not there are calendar (profitable) anomalies in the stock markets of emerging countries is still under investigation. The objective of this

* Associate Professor, School of Business Administration, Neapolis University Pafos (NUP), Pafos, Cyprus

study is to fill this void in the literature by investigating the presence of calendar anomalies in the emerging Cyprus Stock Exchange.

It is important to point out that while earlier studies of calendar anomalies had been commonly examined by regressing return on daily or monthly dummies, few of them had made an improvement in employing the more recently formulated generalized autoregressive conditional heteroskedasticity (GARCH) models to account for the time varying volatility of the stock returns. GARCH models have an advantage over the ordinary least squares (OLS) regression, in the sense that it takes into consideration not only the mean but also the risk or volatility of return. As such, both the risk and return, which constitute the fundamentals of investment decision process, are accounted for. In this respect, a better decision may be reached if an investor has prior knowledge of whether there are variations in stock returns by the calendar effects and whether a high daily or monthly return can be attributed to the correspondingly high volatility. Moreover, revealing the specific volatility patterns in returns might also benefit investors in risk management and portfolio optimization.

This paper examines the existence of calendar anomalies in the emerging Cyprus Stock Exchange (CSE). A period of ten years from April 1996 to July 2006 is investigated using the CSE-All Share Index. Using daily stock returns, the two main methods applied for testing are the OLS and the GARCH. The models take into account the relation between the values of previous returns and prices. The GARCH models are capable of capturing the three most empirical features observed in stock return data, leptokurtosis, skewness, and volatility clustering. Initially, the anomalies are tested separately and then together by embedding them into a single model.

This paper is organized as follows. Section 2 briefly reviews the literature. Section 3 discusses the empirical methodology used. Section 4 presents the empirical results and section 5 contains the summary and conclusions.

2. THE LITERATURE ON CALENDAR ANOMALIES

A substantial number of widely accepted studies have identified four main calendar seasonalities, which are the January, the Weekend, the Monthly and the Holiday effects, the parameters of which are explained below.

2.1. The January effect

Rozeff and Kinney (1976) were the first to document evidence of higher mean returns in January as compared to other months. Using NYSE stocks for the period 1904-1974, they found that the average return for the month of January was 3.48 percent as compared to only .42 percent for the other months. Later studies document that the effect persists in more recent years: Bhardwaj and Brooks (1992) for 1977-1986 and Eleswarapu and Reinganum (1993) for 1961-1990. The effect has been

found to be present in other countries as well (Gultekin and Gultekin, 1983). The January effect has also been documented for bonds by Chang and Pinegar (1986). Maxwell (1998) shows that the bond market effect is strong for non-investment grade bonds, but not for investment grade bonds. More recently, Bhabra, Dhillon and Ramirez (1999) document a November effect, which is observed only after the Tax Reform Act of 1986. They also find that the January effect has been stronger since 1986. Taken together, their results support a tax-loss selling explanation of the effect.

Rozeff and Kinney (1976), claim that the release of these new information accounting statements and financial records might give a possible explanation for the January effect. Another explanation is referred to the 'size effect' where Rogalski and Tinic (1986) have proven that small-size firms are riskier in January than in the rest of the year. A more recent study by Fountas and Segredakis (2002) tested for the January effect and the tax-loss selling hypothesis for 18 emerging stock markets and very little evidence has been found. As mentioned by Al-Saad and A.Moosa (2005) the above hypotheses that can explain the January effect can be grouped into three categories: hypotheses centred on measurement problems, hypotheses related to buying pressure at the beginning of the year, hypotheses related to the seasonality or the timing of information release.

2.2. The weekend effect (or Monday effect or the day of the week effect)

French (1980) analyzes daily returns of stocks for the period 1953-1977 and finds that there is a tendency for returns to be negative on Mondays, whereas they are positive on the other days of the week. He notes that these negative returns are "caused only by the weekend effect and not by a general closed-market effect." A trading strategy, which would be profitable in this case, would be to buy stocks on Monday and sell them on Friday. Kamara (1997) shows that the S&P 500 has no significant Monday effect after April 1982, yet he finds the Monday effect undiminished from 1962-1993 for a portfolio of smaller U.S. stocks. Internationally, Agrawal and Tandon (1994) find significantly negative returns on Monday in nine countries and on Tuesday in eight countries, yet large and positive returns on Friday in 17 of the 18 countries studied. However, their data do not extend beyond 1987. Steeley (2001) finds that the weekend effect in the UK has disappeared in the 1990s.

A possible explanation for this effect suggested by Gibbons and Hess (1981), who have proved the existence of the weekend effect in S&P 500 Index, is given by the measurement error hypothesis. After checking the individual stocks in the Dow Jones Industrial Index (DJIA), they have rejected this hypothesis since they found negative mean returns on Monday for these stocks as well. Once they have rejected the measurement hypothesis, they tested the settlement hypothesis. This hypothesis claims that, "the delay between trading and settlement favours trading on certain weekdays" (Tan and Tat 1998). Unfortunately, this hypothesis also failed to explain the weekend

effect, because the effect continued to appear even after adjustments for interests in the returns. The negative and positive mean returns for Monday and Friday respectively is a world wide phenomenon. Lakonishok and Levi (1982) gave their own explanation to the effect. According to them, the key idea is behind the clearing delay. The clearing delay is that in weeks without a holiday, stocks purchased on business days other than Friday give the buyer eight calendar days before losing funds for stock purchases, whereas stocks purchases on Friday give the buyer ten calendar days. Thus, buyers are willing to pay more on Fridays. Another possible explanation is the mood of market participants. Monday is the first working day of the week, and investors feeling a bit pessimistic are not willing to buy, whereas on Friday which is the last working day of the week, investors are happier and more optimistic and they are willing to buy.

2.3. The holiday effect

The holiday effect is separated as the preholiday effect and the postholiday effect. Lakonishock and Smidt (1988) were the first to examine the existence of the holiday effect using returns from the DJIA for a period of 89 years (1897-1986)¹. Even though the returns on days after holiday were negative, not significantly different from zero, they did not provide any evidence of unusual returns. According to Pettengill (1989) using a data sample for the S&P 500 Index over the period 1962-86 also concluded that “returns for the pre-holiday trading days are unusually high regardless of weekday or year”. Kim and Park (1994) has been investigating the existence of the preholiday effect in the New York Stock Exchange (NYSE) and the American Stock Exchange (AMEX) from 1963 to 1986 and the National Association of Securities Dealers Automated Quotations (NASDAQ) from 1973 to 1986. They have also provided evidence of the preholiday effect in the UK and Japanese markets independently of the results in the US market.

A possible explanation that Kim and Park (1994) give for the presence of the holiday effect is the good holiday mood. Research has been carried out to test for the existence of the post-holiday effect on the US, UK, Japanese, Malaysian and Singapore markets (French 1980; Pettengill 1989; Ariel 1990; Liano, Marchand and Huang 1992; Kim and Park 1994; Ziemba 1991). A more recent study on the holiday effect by Lucey and Pardo (2005) claims that one can take advantage by producing abnormal returns using Spanish and Irish indices based on the holiday effect.

2.4. The monthly effect

The monthly effect (or the turn-of-the-month effect) was first reported by Ariel (1987). Using daily US stock index returns from 1963 to 1981, Ariel discovered that in the last trading day and at the beginning of each month, positive mean returns are

concentrated². A more recent study given by Kunkel, Compton and Beyer (2003), documented evidence of the monthly effect for the period 1988-2000 for 19 countries, which provide solid foundations for the idea that the monthly effect is constant throughout the years. However, Cheung and Coutts (1999), who investigated the existence of monthly seasonalities in the Hang Seng index from 1985-97, failed to identify persistent monthly effect. In addition, Chang (1991) had been examining the existence of this anomaly in Hong Kong, Malaysia, Singapore and Taiwan over the period 1975-86. When testing for the whole data sample his attempt was unsuccessful, but after examining the data into small subperiods, the Singapore market showed evidence of the monthly effect for the period 1979 to 1982. Ariel (1987) recommended methodical acquisition by pension funds as a possible explanation for the monthly effect. However, vindication for this incongruity, diverge from the potential suggestion given by Ariel to the psychological desire of investors to delay decisions until the turn of each month. More specifically, Ogden (1990) ascribes the effect to the temporal pattern of cash obtained by investors.

Jacobs and Levy (1988) accredit this decision to the investors' psychological desire to defer decisions until the beginnings of periods. Hence, institutional investors, could be claimed that they gather their purchases at the end of the month in order to enhance the performances published in the specialized press, produced by this technique given that these are normally determined on the basis of end of the month prices. Marquering, Nisser and Valla (2006) conducted a study which investigates a number of stock market anomalies before and after they were published. Moreover, this study demonstrates that most of the anomalies examined diminish significantly, and some even cease to exist with the passage of time.

3. TESTING METHODOLOGY

A standard methodology is initially employed to test for daily seasonality, month of the year effect or the January effect, and holiday effect in stock market returns by using OLS regression. While this model is used to characterize the mean return, the GARCH model may be adopted to capture the time-varying volatility in the return series.

3.1. The day of the week effect

To test the day-of-the-week effect, the conventional methodology (French 1980, Gibbons and Hess 1981) was used. The model comprises lag prices and lag returns to test for deviations in the form of autocorrelations, together with a set of five Dummy variables for each day of the week. The model equation is,

$$R_{it} = \alpha \ln P_{t-1} + \sum_{i=1}^{p-1} \beta_i R_{t-i} + \sum_{i=1}^5 \gamma_i D_{it} + \varepsilon_{it} \quad (1)$$

Where, R_t denotes the stock return at time period t , R_{t-i} denotes the stock return at time period $t-i$, P_{t-1} denotes the stock price index at time period $t-1$, D_{it} are dummy variables for each day of the week such that $D_{it} = 1$ if that day is Monday and zero otherwise, α , β_i and γ_i are coefficients to be estimated, and ε_{it} denotes a random error term.

3.2. The January effect and monthly seasonality

In testing for any possible monthly seasonality, a similar methodology is employed. The regression estimated by the method of least squares is,

$$R_{it} = \alpha \ln P_{t-1} + \sum_{i=1}^{p-1} \beta_i R_{t-i} + \sum_{i=1}^{12} \delta_i D_{it} + \varepsilon_{it} \quad (2)$$

Where, D_{it} are dummy variables for each month of the year such that $D_{1t} = 1$ if day t falls in January and $D_{2t} = D_{3t} = \dots = D_{12t} = 0$ otherwise α , β_i and δ_i are coefficients to be estimated and ε_{it} is a random error term. The estimated coefficient δ_1 will be significantly positive if the January effect is present.

3.3. The Holiday effect

Following Pettengill (1989), Ariel (1990) and Tan and Tat (1998), we define a holiday as a day on which the stock market is closed as a result of a public holiday. In examining the holiday effect, we divide the trading days into three subsets: pre-holidays, post-holidays, and the remaining (ordinary) trading days. This is to reduce the bias resulting from the dependence in returns among these subsets of trading days (Coutts and Sheikh 2002). The estimated regression equation is,

$$R_{it} = \alpha P_{t-1} + \sum_{i=1}^{p-1} \beta_i R_{t-i} + \sum_{i=1}^3 \lambda_i D_{it} + \varepsilon_{it} \quad (3)$$

Where, D_{it} are dummy variables such that D_{1t} is a dummy variable which takes 1 if the day is a pre-holiday and zero otherwise, D_{2t} is a dummy variable which takes 1 if the day is a post-holiday and zero otherwise, and D_{3t} is a dummy variable that takes the value of 1 for all days except those prior and post to stock market vacations, λ_1 represents the mean returns for all days except those prior to stock market vacations, λ_2 represents the mean returns for all days except those post to stock market vacations, and λ_3 represents the mean return on the remaining days.

3.4. Relationship among calendar anomalies

These calendar effects can be investigated simultaneously by incorporating them into a single model for daily returns. The regression equation is,

$$R_{it} = \alpha \ln P_{t-1} + \sum_{i=1}^{p-1} \beta_i R_{t-i} + \sum_{i=1}^5 \gamma_i Dwde_{it} + \sum_{i=1}^{12} \delta_i Dme_{it} + \sum_{i=1}^2 \lambda_i Dhe_{it} + \varepsilon_{it} \quad (4)$$

Where, $Dwde_{it}$ are dummy variables for each day of the week such that $Dwde_{1t} = 1$ if that day is Monday, and zero otherwise for all other days of the week, Dme_{it} are dummy variables for each month of the year such that $Dme_{1t} = 1$ if day t falls in January and $Dme_{2t} = Dme_{3t} = \dots = Dme_{12t} = 0$ otherwise, Dhe_{it} are dummy variables such that Dhe_{1t} is a dummy variable which takes 1 if the day is a pre-holiday and zero otherwise, Dhe_{2t} is a dummy variable which takes 1 if the day is a post-holiday and zero otherwise, α , β_i , γ_i , δ_i , and λ_i are coefficients to be estimated, and ε_{it} denotes a random error term. If any coefficients α , β_i , γ_i , δ_i is significantly positive, it would imply that the high return for the anomaly under question is not caused by the other calendar anomalies.

3.5. GARCH model

To gain more insight knowledge of the different calendar anomalies, Bollerslev's (1987), Connolly's (1989) and Gregoriou *et al.* (2004) methodology was used by employing a GARCH specification for the conditional variance of daily stock returns. The GARCH model is defined as

$$y_t = h_0 + x_t^T b + \varepsilon_t \quad \varepsilon_t | \Psi_{t-1} = N(0, h_t)$$

The variance of disturbance for a GARCH (p, q) model is,

$$h_t = \alpha_0 + \sum_{i=1}^q \alpha_i \varepsilon_{t-i}^2 + \sum_{j=1}^p \beta_j h_{t-j} \quad (5)$$

or,

$$h_t = \alpha_0 + \alpha(L) \varepsilon_t^2 + \beta(L) h_t \quad (6)$$

which is actually an Autoregressive Moving Average (p, q) process, where, q indicates the number of the moving average components, and p the number of the autoregressive components. In the polynomial form, L denotes the lag operator.

The GARCH (p, q) process is described by $q+1$ coefficients $\alpha_i, i = 1, \dots, q, p$ coefficients $\beta_j, j = 1, \dots, p$, mean b_0 , k , linear regression coefficients $h_t, t = 1, \dots, k$, endogenous/exogenous variables y_t and x_t respectively, shocks ε_t , conditional variance h_t and the set of all information up to time t, Ψ_t .

Two of the most important empirical regularities of asset return are volatility clustering and fatter tails. As Madelbrot (1963) indicated, volatility clustering implies that any significant or small changes in value are usually followed by similar changes in the opposite direction. Secondly, the distribution of returns has fatter tails (leptokurtic) than those of a normally distributed variable (mesokurtic) (Alagidede and Panagiotidis, 2006). Additionally, as Connolly argued, “Bollerslev’s (1987) GARCH model offers several advantages: it incorporates heteroscedasticity in a sensible way (for a time series), it can be expanded to include other relevant variables in the conditional variance equation, and generally it offers more flexibility in robust modelling of stock returns”. (Gregoriou, Kontonikas, and Tsitsianis; 2004. pp 218).

In the empirical analysis of observed data, GARCH (1,1) or GARCH (1,2) models have often found to appropriately account for conditional heteroskedasticity (Palm 1996). Thus, a GARCH (1,1) model is used in this study. The test involves regressing the squared OLS residuals from the conditional mean equation ε_{it} against a constant and their lagged values.

4. DATA AND EMPIRICAL RESULTS

The data used in this study consist of stock index observations of daily frequency for Cyprus and they were obtained from the DataStream database. They reflect the daily stock market prices for the Cyprus All Share Index for the trading period from the 1st of April 1996 to the 12th of July 2006. The data used are not adjusted for dividends. Although, some studies suggest that seasonalities in dividends' payoffs might induce seasonal patterns in non-dividend adjusted returns (Philips-Patrick and Schneeweis, 1988), most of the calendar anomalies literature suggests that the exclusion of dividends may not be as important as it initially seems (Gregoriou, Kontonikas and Tsitsianis, 2004). The vast majority of studies documenting anomalies in stock prices have not recorded dividend-adjusted returns (Mills and Coutts; 1995, Fische, Gosnell and Lasser 1993, Lakonishok and Smidt; 1988).

The data were transformed into continuously compounded daily returns by taking the first logarithmic difference of the index series. That is, daily returns were calculated using the standard formula,

$$r_t = \log(P_t / P_{t-1}) = \log(p_t) - \log(p_{t-1}) \quad (7)$$

Where, \log denotes the natural logarithm, r_t denotes the log stock return at time period t , P_t denotes the stock price index at time period t and P_{t-1} denotes the stock price index at time period $t-1$. The main motivation to work with log returns is that they are usually (covariance) stationary. A second advantage of working with log returns, instead of levels, is that log returns present the behavior of the conditional volatility of the series in a more intuitive manner.

For the CSE-All Share Index, the sample size, sample mean of returns, sample standard deviation of returns as well as skewness and kurtosis are all reported in Table 1. The mean return of the series is marginally positive and is equal to 0.00021. Skewness is used to assess the symmetry of the distribution, and the kurtosis for peakness and fatness of the tails. If the skewness is positive, the distribution is skewed to the right, and if it is negative, the distribution is skewed to the left.

As can be observed from table 1, there are significant departures from normality. The CSE-All Share Index appears extremely nonnormal, as the series are positively skewed and leptokurtic. A positive skewness on the CSE series is found (1.42919). The data also display a high degree of excess kurtosis (leptokurtic), since the kurtosis coefficient is significantly larger than three (20.97494). Such skewness and kurtosis are common features in asset return distributions.

TABLE 1: SUMMARY STATISTICS OF LOG RETURNS

	CSE-All Share Index
Mean Return	0.00021
Standard Deviation	0.01790
Sample Variance	0.00032
Kurtosis	20.97494
Skewness	1.42919
Observations	2.513

4.1. OLS results

Tables 2 to 5 report the results from the application of the OLS regression methodology. These tables provide estimated coefficients of the variables presented in equations (2) to (5) together with the absolute values of the t-statistic. The error term has been tested for serial correlation up to twelfth order and heteroscedasticity using the Breusch-Godfrey Lagrange Multiplier and LM(1) tests, respectively. In cases where the error term was not white noise, the t-statistics were created using the Newey-West heteroscedasticity - and autocorrelation - adjusted standard errors (Newey and West, 1987).

4.2. Day of the week effect

Table 2 presents the OLS results of the day-of-the-week effect in the Cyprus Stock Exchange. The results are obtained by estimating equation 1. and the estimated coefficients along with their t-values are shown in the table. The D1 to D4 are dummy variables included to capture the effect of the outliers in the CSE data set. The results show that the day of the week effect is not present in the Cyprus Stock Market, as significant daily seasonal anomalies are not observed in this period, with a positive Monday and Friday effects. Even though the coefficient of Friday is the highest among the five coefficients of the week, indicating higher returns on Friday, it is not significantly different from zero. Additionally the Monday returns are not significantly lower than the other days of the week. Again the coefficient is found to be insignificant. Since all the coefficients were found to be statistically insignificant both at 5% and 10% level of significance, there is no supportive evidence of the day of the week effect in the Cyprus Stock Market.

TABLE 2: DAY OF THE WEEK EFFECT

Regressor	CSE-All Share Index	
	Coefficient	t-value
<i>LogPrice(-1)</i>	-5.02E-04	-0.8459
<i>Retruns(-1)</i>	0.18095	9.1252*
<i>Returns (-2)</i>	-0.04948	-2.5003*
<i>Returns (-3)</i>	n/a	n/a
<i>Returns (-4)</i>	n/a	n/a
<i>Monday</i>	0.00195	0.6616
<i>Tuesday</i>	0.00167	0.5681
<i>Wednesday</i>	0.00326	1.1066
<i>Thursday</i>	0.00227	0.7700
<i>Friday</i>	0.00364	1.2342
<i>D1</i>	0.08767	4.9554*
<i>D2</i>	0.03958	2.2394*
<i>D3</i>	-0.02117	-1.1991
<i>D4</i>	-0.0835	-4.7259*

Note: * indicates statistical significance at the 5% level.

The findings are consistent with those of Wong and Yuanto (1999), who found no day of the week effect in the Shenzhen Securities Exchange. On the other hand, the study of Ajayi et al. (2004) on a number of emerging markets, showed significant results for the existence of the anomaly in question. Specifically, a negative Monday effect was found in Estonia and Lithuania, a positive Monday effect in Russia and a positive Friday effect in Slovenia. The results are also in contrast with the study of Al-Loughani and Chappell (2001) who had found evidence of the day of the week in the emerging market of Kuwait.

4.3. The January effect and monthly seasonality

Table 3 presents the OLS results of month-of-the-year effect in the Cyprus Stock Exchange. It reports the estimated coefficients of equation (2) as well as their associated t-values. The results show the non-existence of January effect in the CSE. In fact, no dummy variables were statistically significant and none of the 12 monthly estimates (coefficients) is significantly different from zero, indicating the absence of any monthly seasonality and January effect.

TABLE 3: JANUARY EFFECT AND MONTHLY SEASONALITY

Regressor	CSE-All Share Index	
	Coefficient	t-value
<i>LogPrice(-1)</i>	-4.33E-04	-0.743
<i>Retruns(-1)</i>	0.17431	8.764*
<i>Returns (-2)</i>	-0.05303	-2.678*
<i>Returns (-3)</i>	n/a	n/a
<i>Returns (-4)</i>	n/a	n/a
<i>January</i>	0.0024	0.792
<i>February</i>	0.0027	0.879
<i>March</i>	0.001	0.309
<i>April</i>	0.0037	1.211
<i>May</i>	0.0014	0.458
<i>June</i>	0.0011	0.355
<i>July</i>	0.0013	0.451
<i>August</i>	0.0049	1.619
<i>September</i>	0.0004	0.118
<i>October</i>	0.0036	1.189
<i>November</i>	0.0029	0.96
<i>December</i>	0.0016	0.51
<i>D1</i>	0.09	5.079*
<i>D2</i>	0.0379	2.141*
<i>D3</i>	-0.0187	-1.060
<i>D4</i>	-0.0809	-4.573*

The superscript *, indicate significance at the 5% level.

The results are contradictory with the literature with regard to emerging markets. Mills et al (2000) using data from the Athens Stock Exchange found evidence of monthly effect. Moreover, Fountas and Sergedakis (2002), using data from 18 emerging stock markets, showed evidence of monthly seasonality in stock returns.

4.4. Holidays effect

Table 4 presents the OLS results of a holidays' effect in the Cyprus Stock Exchange. It reports the estimated coefficients of equation (3) and their t-values. The results show the non-existence of pre-holiday and post-holiday effect. All the coefficients that capture the holiday effect are statistically insignificant, with pre-holiday effect having the lowest coefficient and post-holiday effect having the highest

coefficient, suggesting no existence of abnormal returns both before and after the holidays. Thus, the CSE all share index, shows no indication of the presence of holiday effect.

TABLE 4: HOLIDAYS EFFECT

Regressor	CSE-All Share Index	
	Coefficient	t-value
<i>LogPrice(-1)</i>	-0.0008	-1.367
<i>Retruns(-1)</i>	0.1805	9.106*
<i>Returns (-2)</i>	-0.0486	-2.456*
<i>Returns (-3)</i>	0.0059	1.879**
<i>Returns (-4)</i>	0.0015	0.481
<i>Pre-Holiday</i>	0.0039	1.425
<i>Post-Holiday</i>	0.0889	5.031*
<i>No-Holiday</i>	0.0409	2.316*
<i>D1</i>	-0.0204	-1.159
<i>D2</i>	-0.0824	-4.670*
<i>D3</i>	-0.0008	-1.367
<i>D4</i>	0.1805	9.106*

The superscripts *, ** indicate significance at the 5% and 10% level.

The results contradict the findings of Mills et al (2000) who had found evidence of the anomaly in the Athens Stock Market.

4.5. Relationship among calendar anomalies

To investigate the interrelationship between the different calendar anomalies, all the calendar anomalies are put together into a single model, and surprisingly we get somewhat different results. The results of these tests are displayed in Table 5, which reports the estimated coefficients of equation (4) and their t-values.

Even though the mean returns are still statistically insignificant, they become negative (they have changed signs). Specifically, the mean returns (expressed by the coefficient of dummy variables) are found to be negatively statistically insignificant. The results in tables 2 and 3 show positive but insignificant mean returns, whereas the coefficients for every day and month in table 5 are all negative and still statistically insignificant. This in turn suggests no day of the week and monthly seasonality in the returns. The holiday effect is now present, since the coefficients are statistically

significant at the 5% and 10% level of significance. No plausible explanation can be given for this change.

TABLE 5: RELATIONSHIP AMONG CALENDAR ANOMALIES

Regressor	CSE-All Share Index	
	Coefficient	t-value
<i>LogPrice(-1)</i>	-0.0005	-0.840
<i>Retruns(-1)</i>	0.1745	8.769*
<i>Returns (-2)</i>	-0.0521	-2.629*
<i>Returns (-3)</i>	n/a	n/a
<i>Returns (-4)</i>	n/a	n/a
<i>Monday</i>	-0.0151	-0.915
<i>Tuesday</i>	-0.0154	-0.934
<i>Wednesday</i>	-0.0139	-0.843
<i>Thursday</i>	-0.0149	-0.906
<i>Friday</i>	-0.0136	-0.825
<i>January</i>	-0.0041	-0.327
<i>February</i>	-0.0041	-0.322
<i>March</i>	-0.0058	-0.461
<i>April</i>	-0.003	-0.240
<i>May</i>	-0.0054	-0.425
<i>June</i>	-0.0056	-0.445
<i>July</i>	-0.0054	-0.430
<i>August</i>	-0.0018	-0.143
<i>September</i>	-0.0065	-0.513
<i>October</i>	-0.0031	-0.243
<i>November</i>	-0.0038	-0.303
<i>December</i>	-0.0052	-0.409
<i>Pre-Holiday</i>	0.023	2.223*
<i>Post-Holiday</i>	0.0185	1.864**
<i>No-Holiday</i>	0.0217	2.083*
<i>D1</i>	0.089	5.026*
<i>D2</i>	0.0369	2.085*
<i>D3</i>	-0.0193	-1.094
<i>D4</i>	-0.0818	-4.623*

The superscripts *, ** indicate significance at the 5% and 10% level.

The results obtained so far are based on the OLS method, which does not take into account the varying daily and monthly volatility in the market returns. Such volatility

needs to be modeled in order to provide a clearer picture of the seasonal anomalies in the Cyprus Stock Exchange. GARCH (p, q) models are estimated for this purpose. The objective of this analysis is to determine whether the seasonal anomalies could be due to the varying volatility in the market returns.

4.6. GARCH results

Tables 6 to 9 report the results of the application of the GARCH regression methodology. The tables provide estimated coefficients of the variables presented in equations (3) to (6) together with the absolute values of the t-statistic.

4.6.1. Day of the week effect

Comparing the result of table 6 with those from table 3, the GARCH (1,1) coefficients α_0 and β_1 are significant suggesting that the use of the GARCH (1,1) model is highly appropriate. The α_0 however, although being statistically significant, one should also account for the low value associated with it.

TABLE 6: DAY OF THE WEEK EFFECT

Regressor	CSE-All Share Index	
	Coefficient	t-value
<i>LogPrice(-1)</i>	0.0007	-1.19
<i>Retruns(-1)</i>	0.2222	6.33*
<i>Returns (-2)</i>	0.0029	
<i>Returns (-3)</i>	0.0026	
<i>Monday</i>	0.0032	1.03
<i>Tuesday</i>	0.0034	0.93
<i>Wednesday</i>	0.0045	1.17
<i>Thursday</i>	0.1662	1.20
<i>Friday</i>	0.1466	1.58
<i>D1</i>	0.0007	1.76
<i>D2</i>	0.2222	1.06
GARCH coefficients		
α_0	2.39E-07	2.69*
α_1	0.2417	
β_1	0.7583	23.3*

The superscript *, indicate significance at the 5% level.

The results of the mean returns and variance equations of GARCH model for day-of-the-week effect are presented in Table 6. From the results, Monday and Friday still remains insignificant in the stock returns of CSE under the GARCH estimation. The coefficients are positive but statistically insignificant and the results obtained are in accordance with the application of the OLS methodology. All the daily mean returns are found to be positively statistically insignificant. The Monday effect is exhibited where the theory suggests significantly lower or negative abnormal returns on that day. Nevertheless, with regard to the Friday effect, even though the coefficient is statistically insignificant it bears the correct sign. Unfortunately, we cannot give an adequate explanation of why these daily seasonalities occur. In summary, the results (even though statistically insignificant) are in favour of the day of the week effect.

4.6.2. The January effect and monthly seasonality

The results of the mean returns and variance equations of GARCH model for the January effect or monthly seasonality are presented in Table 7. Comparing the results of the OLS (table 3) and the GARCH model, there is clear evidence that these are consistent in terms of significance, meaning that there is no indication of the January effect or any monthly seasonality. The results show that all dummy variables and all 12 monthly coefficients are statistically insignificant, indicating the absence of any monthly seasonality and January effect. However, the coefficients of the GARCH model are highly significant.

TABLE 7: JANUARY EFFECT AND MONTHLY SEASONALITY

Regressor	CSE-All Share Index	
	Coefficient	t-value
<i>LogPrice(-1)</i>	-0.0011	-1.20
<i>Retruns(-1)</i>	0.1863	5.26
<i>Returns (-2)</i>	n/a	n/a
<i>Returns (-3)</i>	n/a	n/a
<i>January</i>	0.0017	0.306
<i>February</i>	0.0058	1.36
<i>March</i>	0.0069	1.60
<i>April</i>	0.0052	1.17
<i>May</i>	0.0036	0.799
<i>June</i>	0.0052	1.18
<i>July</i>	0.0042	1.02
<i>August</i>	0.0065	1.56
<i>September</i>	0.004	0.969

<i>October</i>	0.0045	1.06
<i>November</i>	0.0048	1.19
<i>December</i>	0.0056	1.35
<i>D1</i>	0.1676	3.52*
<i>D2</i>	0.1423	3.06*
GARCH coefficients		
α_0	7.85E-07	2.38*
α_1	0.2369	
β_1	0.7631	15.00*

The superscript *, indicate significance at the 5% level.

4.6.3. Holidays effect

The results of the mean returns and variance equations of GARCH model for the holidays' effect are displayed in Table 8. By comparing the two models, OLS and GARCH, we get totally different results. The coefficients of the GARCH model are once again highly significant. In this case, there is strong evidence that the pre-holiday effect is present as the coefficient of the anomaly is positively statistically significant at the 5% or less level of significance, as opposed to an insignificant coefficient obtainable from the OLS model.

4.6.4. Relationship among calendar anomalies

The final model reports the results of the interrelationships of the anomalies in table 9. The only difference with the model reported in table 5 is the exclusion of the test for monthly seasonality due to non convergence. Once again the coefficients of the GARCH model are highly significant. The results of GARCH give a different picture. There is evidence of the Friday effect, since the returns are found to be positively statistically significant at the 10% level of significance. Also, the coefficient of the January effect is found to be statistically significant at the 10% level but bearing the wrong sign. The theory suggests positive abnormal returns, whereas the results in this paper present a negative relationship.

TABLE 8: HOLIDAY EFFECT

Regressor	CSE-All Share Index	
	Coefficient	t-value
<i>LogPrice(-1)</i>	0.0008	-1.29
<i>Retruns(-1)</i>	0.2249	6.49*
<i>Returns (-2)</i>	n/a	n/a
<i>Returns (-3)</i>	n/a	n/a
<i>Pre-Holiday</i>	0.005	1.77**
<i>Post-Holiday</i>	0	0.02
<i>No-Holiday</i>	0.0037	1.32
<i>D1</i>	0.0068	0.07
<i>D2</i>	0.1482	1.07
GARCH coefficients		
α_0	7.86E-07	3.08*
α_1	0.2346	
β_1	0.7654	24.6*

The superscripts *, ** indicate significance at the 5% and 10% level.

TABLE 9: RELATIONSHIPS AMONG CALENDAR ANOMALIES

Regressor	CSE-All Share Index	
	Coefficient	t-value
<i>LogPrice(-1)</i>	-0.0008	-1.27
<i>Retruns(-1)</i>	0.2239	6.46
<i>Returns (-2)</i>		
<i>Returns (-3)</i>		
<i>Monday</i>	0.0032	1.11
<i>Tuesday</i>	0.003	1.09
<i>Wednesday</i>	0.0036	1.28
<i>Thursday</i>	0.0039	1.39
<i>Friday</i>	0.0046	1.64**
<i>January</i>	-0.0012	-1.65**
<i>Pre-Holiday</i>	0.0008	0.926
<i>Post-Holiday</i>	-0.0034	-1.55
<i>No-Holiday</i>	0.1661	1.76**
<i>D1</i>	0.1472	1.06

<i>D2</i>	0.0032	1.11
GARCH coefficients		
α_0	2.76E-06	3.2*
α_1	0.2363	
β_1	0.7637	24.6*

The superscripts * and **, indicate significance at the 5% and 10% level.

5. CONCLUSIONS

This paper has focused on the concept of calendar anomalies, for the Cyprus Stock Exchange. The calendar seasonalities that have been tested throughout this paper are the January, Monthly, Holiday and the Weekend effect for the period 1996 to 2006 for the CSE-All Share Index. The two main methods used for testing the appearance of these anomalies were the OLS and the GARCH. Initially, the anomalies were tested separately taking into account the previous values of the return and the logarithm of prices and then were tested together.

The results using OLS have shown that no calendar anomalies exist both when they have been tested separately as well as when they have been embedded in a single model, except for the holiday effect. Comparing these results with the available literature concerning several other emerging markets, it can be said that the results for the CSE contradict the presence of the January and monthly effect in these markets. However, the CSE results are in accordance with the literature for emerging markets in that there is no day of the week effect. The GARCH results show the presence of the Holiday effect, whilst the Friday at the 10% significance level, and the January effect, bearing a negative sign have been exhibited in using the single model.

The appearance of calendar anomalies question the EMH, thus contradicting the very principle which states that stocks must be priced correctly and efficiently. Once calendar anomalies are present, investors can generate abnormal profits by using trading strategies to take advantage of these predictable patterns of stocks behavior, that is detecting significant and different daily patterns of mean returns and their volatility in stock market terms have useful implications for trading strategies and investment decision.

NOTES

1. They showed that “the pre-holiday return is on average 0.22%, which is 23 times the return of the average day in their sample” (Marquering, Nisser and Valla 2006).
2. In more detail, 0.47% cumulative average return was found where on the other hand for any other four-day period a 0.061% average was calculated.

REFERENCES

- Agrawal, A. and Tandon, K. (1994). Anomalies or illusions? Evidence from stock markets in eighteen countries. *Journal of International Money and Finance*, 13, pp. 83-106.
- Ajayi, R.A., Mehdiian, S., and Perry, M. J. (2004). The Day-of-the-Week Effect in Stock Returns: Further Evidence from Eastern European Emerging Markets. *Emerging Markets Finance and Trade*, 40 (4), pp. 53-62.
- Alagidede, P., and Panagiotidis, T. (2006). *Calendar anomalies in an emerging African market: Evidence from the Ghana Stock Exchange*. Loughborough University 13, Department of Economics.
- Al-Loughani N. and Chappell D. (2001). Modelling the day-of-the-week effect in the Kuwait Stock Exchange: a nonlinear GARCH representation. *Applied Financial Economics*, 11 (4), pp. 353-359.
- Al-Shaad, K., and Moosa, I.A. (2005). Seasonality in stock returns: evidence from an emerging market. *Applied Financial Economics*, 15 (1), pp. 63-71.
- Ariel, R.A. (1987). A monthly effect on stock returns. *Journal of Financial Economics*, 18 (1), pp. 161-174.
- Ariel, R.A. (1990). High stock returns before holidays: Existence and evidence on possible causes. *Journal of Finance*, 45 (5), pp. 1611-1626.
- Bhabra, H.S., Dhillon, U.S. and Ramirez, G.G. (1999). A November effect? Revisiting the tax-loss-selling hypothesis. *Financial Management*, 28, pp. 5-15.
- Bhardwaj, R.K. and Brooks, L.D. (1992). The January anomaly: Effects of low share price, transaction costs, and bid-ask bias. *Journal of Finance*, 47, pp. 553-575.
- Bollerslev, T. (1987). A Conditional Heteroskedastic Time Series Model for Speculative Prices and Rates of Return. *Review of Economics and Statistics*, 69 (2), pp. 542-547
- Branch, B. (1977). A tax-loss trading rule. *Journal of Business*, 50, pp. 198-207.
- Chang, H.N. (1991). *The intra-month effect on stock returns in Hong Kong, Malaysia, Singapore and Taiwan*. Advanced Study Project, National University of Singapore.
- Cadsby, B. and Ratner, M. (1992). Turn-of-month and pre-holiday effects on stock returns: Some international evidence. *Journal of Banking and Finance*, 16, pp. 497-509.
- Chang, E. and Pinegar, M. (1986). Return seasonality and tax-loss selling in the market for long-term government and corporate bonds. *Journal of Financial Economics*, 17, pp. 391-415.
- Cheung, K. C. and Coutts, J. A. (1999). The January effect and the monthly seasonality in the Hang Seng index: 1995-1997. *Applied Economics Letters*, 6, pp. 121-123.
- Connolly, R. A. (1989). An Examination of the Robustness of the Weekend Effect. *Journal of Financial and Quantitative Analysis*, 28, pp. 497-513.
- Coutts, A. J., Kaplanidis, C. and Roberts, J. (2000). Security Price Anomalies in an Emerging Market: The Case of the Athens Stock Exchange. *Applied Financial Economics*, 10, pp. 561-571.
- Coutts, J. A. and Sheikh, M. A. (2002). The anomalies that aren't there: the weekend, January and pre-holiday effects on the all gold index on the Johannesburg Stock Exchange 1987-1997. *Applied Financial Economics*, 12 (12), pp. 863-871.
- Cross, F. (1973). The behaviour of stock prices on Friday and Monday. *Financial Analysts Journal*, 29, pp. 67-69.

- Dyl, E. A. (1977). Capital gains taxation and year-end stock market behavior. *Journal of Finance*, 32 (1), pp. 165-175.
- Eleswarapu, V. R. and Reinganum, M. R. (1993). The seasonal behavior of the liquidity premium in asset pricing. *Journal of Financial Economics* 34, pp. 373-386.
- Fama, E. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. *Journal of Finance*, 25 (2), pp. 383-417.
- Fishe, R. R. H., Gosnell, T. F. and Lasser, D. J. (1993). Good news, bad news, volume and the Monday effect. *Journal of Business Finance and Accounting*, 20, pp. 881-892.
- Fountas, S. and Segredakis, K. N. (2002). Emerging stock market return seasonalities: the January effect and the tax-loss selling hypopaper. *Applied Financial Economics*, 12, pp. 291-299.
- French, K. (1980). Stock returns and the weekend effect. *Journal of Financial Economics*, 8, pp. 55-69.
- Gibbons, M. R. and Hess, P. (1981). Day of the week effects and asset returns. *Journal of Business*, 54, pp. 579-596.
- Gregoriou, A., Kontonikas, A. and Tsitsianis, N. (2004). Does the day of the week effect exist once transaction costs have been accounted for? Evidence from the UK. *Applied Financial Economics*, 14 (3), pp. 215-220.
- Gultekin, M. and Gultekin, N. (1983). Stock market seasonality: international evidence. *Journal of Financial Economics*, 12, pp. 469-481.
- Jacobs, I. B. and Levy, N. K. (1988). Calendar anomalies: Abnormal returns at calendar turning points. *Financial Analysts Journal*, 44, pp. 28-39.
- Jaffe, J. and Westerfield, R. (1985). The weekend effect on common stock returns: the international evidence. *Journal of Finance*, 40, pp. 433-454.
- Kamara, A. (1997). New evidence on the Monday seasonal in stock returns. *Journal of Business*, 70, pp. 63-84.
- Kim, C. W. and Park, Y. (1994). Holiday effects and stock returns: Further evidence. *Journal of Financial and Quantitative Analysis*, 29 (1), pp. 145-157.
- Kunkel, R. A., Compton, W. S. and Beyer, S. (2003). The turn of the month effect still lives, the international evidence. *International Review of Financial Analysis*, 12 (2), pp. 207-221.
- Lakonishok, J., and Levi, M. (1982). Weekend effects on stock returns: A Note. *Journal of Finance*, 37 (3), pp. 883-890.
- Lakonishok, J. and Smidt, S. (1988). Are seasonal anomalies real? A ninety-year perspective. *Review of Financial Studies*, 1 (4), pp. 403-425.
- Liano, K., Marchand, P. H. and Huang, G. C. (1992). The holiday effect in stock returns: evidence from the OTC market. *Review of Financial Economics*, 2, pp. 45-54.
- Lucey, B. M. and Pardo, A. (2005). Why investors should not be cautious of the academic approach to testing for stock market anomalies. *Applied Financial Economics*, 15, pp. 165-171.
- Mandlebrot, B. (1963). The variance of certain speculative prices. *Journal of Business*, 36, pp. 394-419.
- Marquering, W., Nisser, J. and Valla, T. (2006). Disappearing anomalies: a dynamic analysis of the persistence of anomalies. *Applied Financial Economics*, 16 (4), pp. 291-302.
- Maxwell, W. F. (1998). The January effect in the corporate bond market: A systematic examination. *Financial Management*, 27, pp. 18-30.

- Mehdian, S. and Perry, M. J. (2002). Anomalies in US equity markets: A re-examination of the January effect. *Applied Financial Economics*, 12 (2), pp. 141-145.
- Mills, T. C. and Coutts, J. A. (1995). Calendar effects in the London Stock Exchange FT-SE Indices. *European Journal of Finance*, 1, pp. 79-94.
- Mills, T. C., Siriopoulos, C., Markellos, R. N. and Harizanis, D. (2000). Seasonality in the Athens Stock Exchange. *Applied Financial Economics*, 10 (2), pp. 137-142.
- Newey, W. and West, K. (1987). A Simple Positive Semi-Definite Heteroskedasticity and Autocorrelation Consistent Covariance Matrix. *Econometrica*, 55 (3), pp. 703-708.
- Ogden, J. P. (1990). Turn-of-month evaluations of liquid profits and stock returns: A common explanation for the monthly and January effects. *Journal of Finance*, 45 (9), pp. 1259-1272.
- Palm, F. (1996). GARCH Models of Volatility, in Maddala, G.S., Rao, C.R. *Handbook of Statistics*, pp. 209-240.
- Pettengill, G. N. (1989). Holiday closings and security returns. *Journal of Financial Research*, 12 (1), pp. 57-67.
- Phillips-Patrick, F. J. and Schneeweis, T. (1988). The 'Weekend effect' for stock indexes and stock index futures: dividend and interest rate effects. *Journal of Future Markets*, 8, pp. 115-121.
- Reinganum, M. (1983). The anomalous stock market behaviour of small firms in January: empirical tests for tax-loss selling effects. *Journal of Financial Economics*, 12, pp. 89-104.
- Rogalski, R. J. and Tinic, S. (1986). The January size effect: anomaly or risk mismeasurement? *Financial Analyst Journal*, pp. 63-70.
- Roll, R. (1983). The turn-of-the-year effect and the return premia of small firms. *Journal of Portfolio Management*, 9, pp. 18-28.
- Rozeff, M., and Kinney, W. (1976). Capital market seasonality: the case of stock returns. *Journal of Financial Economics*, 3, pp. 379-402.
- Schwert, G. W. (2003). *Anomalies and market efficiency*, Handbook of the Economics of Finance, in: G.M. Constantinides, M. Harris and R. M. Stulz (ed.), *Handbook of the Economics of Finance*, (1st ed.), chapter 15, pp. 939-974, Elsevier.
- Steeley, J. M. (2001). A note on information seasonality and the disappearance of the weekend effect in the UK stock market. *Journal of Banking and Finance*, 25, pp. 1941-1956.
- Tan, R. S. K. and Tat, W. N. (1998). The diminishing calendar anomalies in the stock exchange of Singapore. *Applied Financial Economics*, 8 (2), pp. 119-125.
- Watchel, S. B. (1942). Certain observations in Seasonal Movements in Stock Prices. *The Journal of Business*, 15 (4), pp. 184-193.
- Wong, K. A. and Yuanto, K. (1999). Short-term seasonalities on the Jakarta Stock Exchange. *Review of Pacific Basin Financial Markets and Policies*, 2 (3), pp. 375-398.
- Ziemba, W. T. (1991). Japanese security market regularities. *Japan and the World Economy* 3, pp. 119-146.

DOES THE ADOPTION OF A NEW ACCOUNTING SYSTEM IMPROVE
THE DECISION-MAKING OF AN ORGANIZATION?
THE CASE OF A PUBLIC HOSPITAL IN SERRES REGION

NIKOS D. KARTALIS^{*}, NIKOS SARRIANIDES^{**},
FOTINI GAZEPI^{***} and TZANAKAKIS NIKOS^{****}

ABSTRACT

Budgets always constituted a powerful tool in the hands of administration, and worked out rightly it is in position they realize all the above aims (Sweeny A. and Rachlin, R. 1987). One of the most important makings of central administration constitutes the preparation and approval of its budget, for the next economic period and the follow-up, the effective and efficient implementation, and its management. This making has serious extensions in economic, social and political level. The present article will adopt the approach of case study to examine the contribution of budget in the decision-making in the Hospital of Serres region. The theory of decision-making is connected unbreakably with the budget, which constitutes a leading tool of mapping out budgetary and monetary policy. For the analysis of the article work, individuals who have direct relation with the constitution and implementation of the budget (accountants - economic directors) as well as with the decision-making, such as members and the chairman were selected.

Keywords: Budgeting; Decision-Making; Case Study; Health Economics; Accounting.

1. INTRODUCTION

The budget of an organization is the cornerstone for its proper operation. This is an essential tool that sets out the annual goals and objectives of the organization. It is also a measure of its actual performance and a way to improve its position and ensure its viability.

New technology, adverse economic conditions and increased competition require proper planning for treasury management. In this constantly changing environment, the existence of cash is vital for the survival of all economic units/entities, including health care institutions. All key decisions (development of new services, searching for

^{*} Assistant Professor, Technological Education Institute of Western Macedonia, Department of Accounting, Kozani, Greece

^{**} Assistant Professor, University of Macedonia, Department of International and European Studies, Thessaloniki, Greece

^{***} Postgraduate Student, Technological Education Institution of Serres, Department of Accounting, Serres, Greece

^{****} Scientific Assistant, Technological Education Institute of Western Macedonia, Department of Accounting, Kozani, Greece

new markets, hiring personnel) require excellent financial management and available cash. Today, while the costs of providing health care have increased, the sources of capital are limited. For all these reasons, planning and budgeting requires excellent planning, continuous monitoring and accurate execution with no deviations from the original objectives, but only necessary adjustments.

Budgets are closely connected to the decision making of an organization. Budgets also constitute a "plan" to build the final "structure", meaning that the future plans of the management for the organization will take place. Still the "plan" does not provide the "structure", but a way for it to take place. The final "structure" will always be a decision of the administration. Therefore, if the business administration applies a number of target actions and makes effective financial management, it will always express the business' perspective and not a formal proactive methodology.

2. LITERATURE REVIEW

Argyris (1952), Schiff and Lewin (1968) and Lowe and Shaw (1968) all provide evidence to suggest the tendency of managers to bias budgets for control purposes. In Argyris' (1952) article, budgetary bias is defined as a deliberately created difference between the budgeting actors' forecast about the future and his/her submitted budget future. Three main areas of budgetary behaviour are distinguished: first, behaviour affecting the standards; secondly, behaviour affecting the reported results; and third, operative action affecting actual performance.

In order to avoid organizational conflict and tension, Macintosh (1994) stated that supervisors should participate in making or changing the budgets that affected them, in a genuine and not a quasi fashion. Another, alternative, suggestion was to bring all the supervisors together in small face-to-face groups. Here, supervisors could confront each other and their mutual problems, and reveal their own feelings, attributes and values toward budgets, in order to form new budgets. Macintosh (1994) stated that Argyris' (1952) research could be recognized as a seminal work, adding also that an avalanche of further research into the impact of management accounting systems, based on human relations of managers and employees, was stimulated by the specific research.

Otley, Broadbent and Berry (1995) conclude that the budgetary bias is understood as an ex-ante concept. Accordingly, biasing is a way of affecting the standards against which performance will be assessed. Biasing is also a subjective phenomenon, because every actor usually has his or her own unique picture of the possibilities of future economic performances, which are always subject to uncertainty. Demski (1967) and Anderson (1974) distinguished ex-post as the basic difference between the budget and the actual result in terms of (1) the estimation error, which includes the unintentional bias discussed by Otley; (2) budgetary bias; and (3) real inefficiency and ineffectiveness. Budgetary bias can further be divided into two components: (1)

budgetary slack, which occurs when the budget figure has been intentionally made easier to achieve in relation to the forecast; and (2) upward-bias, which refers to the opposite kind of biasing to the deliberate overstatement of expected performance in the budget.

Hofstede (1968), conducted research into the role of budgets within U.S. and European organizations, and concluded that budgets were extensively used in performance evaluation and control in the U.S. organizations. These budgets were associated with negative feelings on the part of many managers and dysfunctional consequences for the organizations. In contrast, the European experience reveals that budgets were seen positively but were infrequently used. On the other hand, there was an increasing interest in the behavioural consequences of control systems operation.

The use mode of the budgetary system has been studied a great deal since the 1970s. Most of the studies have analyzed the effects of different kinds of budgetary systems used on decision-making performance and on certain organizational and psychological factors (Govindarajan, 1984; Hirst, 1981; Hopwood, 1972; Otley, 1978). Hopwood (1972) found that in the evaluation of managerial performance, managers adopt three different styles of using budget and actual cost information, and these are discussed in the next section. He observed as well that managers evaluated under this style reported very high levels of job-related stress and tension, and poor relationships with both their colleagues and superiors, and that they exhibited a tendency to manipulate the accounting information that formed their budget reports. Hirst (1981) notes that when there are conditions of high uncertainty, accounting standards of performance will be a less complete description of adequate job performance. Govindarajan (1984) also suggests that if there is a high degree of uncertainty, managers are evaluated in a more subjective way.

The general opinion in the budgeting literature is that budgets affect the motivation to perform in two ways. First, budgets always have the role of targets; having targets motivates the actors, especially if the targets are internalized. The use of participation budgeting systems is important in achieving such internalization (Otley, 1978). Second, the motivation impact of budgets can be reinforced by linking the reward system to budgetary control (e.g., Amey and Eggington, 1973; Otley, 1978). Such motivation impact of this link needs to be understood in terms of a larger framework, such as the expectancy theory of managerial motivation (Ronen and Livingston, 1975; Vroom, 1964).

Budgeting is also related to the issue of power in organizations. According to Bacharach and Lawler (1980), two important types of power may be distinguished: authority and influences. The source of authority is the actor's status in an organization. Authority is usually static by nature, hierarchically downward directed, and leads to coercive actions towards the subordinates. In contrast, the sources of influences can be manifold: personality, expertise and opportunity. Influence is characteristically more informal, more flexible and does not lead to coercion; it is

essentially based on the acceptance of the object of power. There are situational factors which impact upon opportunities, i.e., to the individual characteristics of the situation at hand, which are continuously appearing and disappearing both as a result of human actions and of changes in the environment (Wright, 1976). Budgeting can be interpreted as a process of elaborating information. It may also be viewed as an organizational market for information, as the negotiating parties are offering and demanding information in accordance with their individual preferences.

Wildavsky (1964, 1975 and 1979) argued that budgeting systems achieve many purposes beyond control. Wildavsky argued that budgeting systems are at once forms and sources of power, and also serve both the guardians of scarce resources and advocates of budgeting units. Wildavsky also reasoned that inherently conflicting organizations may use budgets to establish and maintain existing power relations, stating that the bond between budgeting and politicking was intimate, and that realistic budgets were an expression of practical politics. Moreover, the allocation of resources necessarily reflected the distribution of power. Budgeting, according to Wildavsky's point of view, is so basic that it should reveal the norms by which humans live in a particular political culture, for it is the choices inherent in limited resources through which consensus is established and conflict is generated. Burchell et al. (1980) stated that control systems often become mechanisms around which interests are negotiated, counterclaims articulated and political processes explicated.

Consequently, these authors recommended that budgeting should be studied as a social and organizational phenomenon affecting organizations' political processes, rather than from within the traditional accounting perspective (Hopwood, 1974). Cooper (1981) concluded that internal accounting systems, by what they measure, how they measure and who they report to, can effectively delimit the kind of issue addressed. Internal accounting systems reflect the status quo, the appropriate and acceptable ways of doing things and talking about issues.

Another area of budgeting research worth reviewing is the relationship between budgeting and performance. Hofstede (1968) conducted research in the European context and argued that there are certain conditions under which budgets could be used to promote positive attitudes in managing task performance. Brownell (1981) found that the personality of the manager is the key factor in the link between participation and performance.

Ivancevich (1976), Milani (1975) and Steers (1975) found only relatively insignificant connections between budgetary characteristics and job performance. Emmanuel et al. (1985) argue that the findings of the above studies on the impact of accounting work are twofold. First, it is the way in which the accounting information is used by managers and that the rewards that are made contingent upon budget attainment are critical in determining the impact of the control system. Second, the effect of high reliance on budgetary measures of performance is contingent upon circumstances, such as the degree of knowledge we have about how managerial

behaviour contributes towards successful performance, and also the uncertainty that exists in the external environment of the organization.

3. DECISION-MAKING AND BUDGETING

3.1. Legal status that exists to prepare and implement the budget of a public hospital

3.1.1. Current regulations

Budget Office/Accounting Office is responsible for budgeting and submitting the budget to the Board for approval.

The budget for the Public Accounting is an administrative act and cash management of the Hospital shows its implementation during the year (listed on the N.D. 496/74 and N. 2362/95).

Budgeting, in terms of General Accounting, is a tool for the correct prediction of the functions of the hospital and also for the control over the degree to which the original objectives of the administration are being held. Changes in budget are directly related to the degree and way of implementation of the initial budget. According to section 3.3 of the P.D. 146/03, the budget, the budgetary implementation, and the assessment will now be monitored with the Double-Entry Accounting Method in a system of accounts in order. The budget state of revenues and expenses is prepared in accordance with the model of paragraph 3.3.400 of P.D. 146/03.

3.1.2. Training procedure

The Budgeting office or the chief financial officer calls - by memo - for cooperation with departments - clinics of the Hospital in order to identify the revenues and the expenses for the next year.

To determine the plans of each nursing department for the next year, there is a collaboration being made between the directors of departments including prediction for : number of hospitalized patients, hospital days, number of surgeries by category and type, number of surgeries with additional material, number of patients entering TEI – ICT, and number of medical exams they will receive. The prediction for nursing action is measured in money under the law that defines the closed hospital fee, materials to charge patients, closed integrated hospital fee etc. This is a way to predict the revenue of the hospital for the next year. It is also a way to determine, by statistical data, the loss of revenue of the hospital being caused by the cost of social policy regarding health services to needy people, foreigners, etc.

Regarding the determination of the costs to carry out the services mentioned above, the partnership begins by sending – to the departments/hospital clinics –

statements recording the types and quantities consumed per year. Various nursing and medical staff works in the departments-clinics, and all these people must write down their forecasts for next year needs and justify potential changes in quantities and types. This action must take place from May to June each year. The annual planning of the departments is given for approval to the Boards of Directors, who write down the partial budget and then they send it to the Director of Medical and Nursing Service.

After verification of the partial budgets compared with the objectives of each clinic and objectives set by the Administration Hospital, the partial budgets must be sent to the Budget Office/Accounting Office. The data are processed by programming the needs which have been sent from the departments. Situations are aggregated by type. Items are valued at cost to the hospital. Items are categorized (consumables, services, assets, etc.). Partial budgets are getting prepared, and so is the main budget. Thus, the income and the expenses of each clinic - department are determined, and then they are submitted to the Board for approval. The adoption of partial budgets of the hospital is commitment for the departments to implement them both in projected revenues and expenses.

The Budget Office/Accounting Office works with the Procurement Office, drawing up a recommendation to the Board for approval of the costs, by including them in the Ministry of Health Procurement Plan. Upon the approval decision of the Board, the Budget Office/Accounting Office has the responsibility of the Budget. It draws up the Budget by section and the general Budget to codes based in Public Accounting, with the use of suspense accounts (Group 10 of Presidential Decree 146/03). Moreover, the Budget Office/Accounting Office drafts all the relevant schedules, which are required by any instructions from the Ministry of Finance (State General Accounting Office), for the preparation of the budget. The Office also makes the final recommendation to the Board of the Hospital for the approval of next year's budget. The final form of the budget must include (comparatively) data as well as three-year data per department. Finally, the Office forwards next year's budget to the Health District for approval, no later than September each year. The final approval of the Budget comes from the competent Audit Office and the planning of the Hospital's Budget is now possible.

Next, is the registration/entry of the funds to the Public Accounts system of the approved budget. The registration/entry of the Budget in the Public Accounts system is followed by entries in the double entry system of accounting, in accordance with the system of accounts. Specifically, on the first day of the year (1/1/20XX), there is the accounting entry imaging budgeting by charging the account 02.00 "Expense Budget" and all its sub-accounts, and by crediting the account 06.00 "Revenue Budget" and all its sub-accounts. Following up, on the same date, there is the accounting entry, automatically generated by the system which opens the monitoring of budget execution fee by charging the account 02.10 "Run Budget Expenses" and all its sub-accounts, which represent the remaining appropriations of the Expenses Budget that

are not allocated, and by crediting the account 06.10 "Run Budget Revenues" and all its sub-accounts, which reflect the amounts of Revenue Budget that are not yet recorded or collected.

4. RESEARCH METHOD

4.1. Case studies

4.1.1. Definition - general information

With the help of case studies, we can find a way of empirical testing (and sometimes producing) hypotheses or theories, or both, and qualitative analysis. According to another definition, case study research is the systematic research focused on description, understanding, prediction and control of the individual case, which case may be one process, one person, one household, one business, one group, one industry, one culture or one nationality.

When talking about the case study, we define the general case as a text that contains facts, opinions, decisions and statements for one economic unit or one institution, which presents one or more problems that need solving. The problems may relate to all or specific activities (functions) of the economic unit or institution being studied. Some examples of problems that occur most frequently are:

1. A reduction in the company's sales.
2. Increased production costs of the company's products.
3. Concern as to whether the company should follow a program of staff training.
4. Discussion about the most appropriate type of administration for the company etc.

One of the major reasons for the extensive use of the case study method is that it is one of the main bridges between the rich qualitative data and current production research. Also "the systematic analysis of a small number of cases may be more promising than a more superficial analysis of many cases".

4.1.2. Process analysis of a case study

Although there is no consensus among experts as to which is the most appropriate way of studying a case, still the procedure, which is followed in most cases, includes the following actions:

- A detailed study of the case, focusing on the most important aspects and specific features;
- Identifying the problem or problems;

- Testing thoroughly as possible, of the internal and external environment of the operator to identify the cause (or causes) of the problem, and assessing the impact that several external and internal factors have on the operation and management of the company. This stage is the most important of all, and is linked to all other important stages of the study, including determination of the problem mentioned above, alternative proposals, the agenda etc;
- Establishment of reasonable and justifiable cases for the whole analysis;
- Presentation of alternative proposals to solve the problem. There should be a detailed exposition of the advantages and disadvantages for each proposal, taking into account the capabilities of the company and the impact of its environment on its operation;
- Select the proposal which has more advantages and fewer disadvantages; and
- Finally, if it's possible, there should be made concrete proposals for an action plan, which will implement the proposed solution.

4.1.3 Stages of research process in a case study

According to Yin (1994), one case study can be analyzed into 5 stages of research:

Stage 1: The determination of the issue to be studied, asking a question upon which to develop the theory.

Stage 2: The researcher selects the type of research and resources to use (archival footage, historical documents, questionnaires and interviews, previous studies on the same theme or general theoretical work) to obtain all necessary information that will be needed for future analysis.

Stage 3: The data are collected.

Stage 4: Data processing and analysis.

Stage 5: The researcher records the findings of the investigation, or composes a case study.

4.2. The research methodology

The survey is based equally on primary data and on a study of existing international and Greek literature. There was an extensive use of various articles, books, information from the internet, university research texts, archives, questionnaires. The empirical research was characterized qualitatively. Specifically, it is a case study (General Hospital of Serres). The aim was to collect qualitative data. In order to collect qualitative data, we used a questionnaire which consisted of both closed-and open-ended questions. The axes of the questionnaire and the questions were prepared in accordance with the existing literature and so they are tailored to the objectives of the investigation. Interviews were conducted directly without any difficulty and the duration of each interview was – on average - twenty minutes.

During the interviews, new questions were generated and were investigated in detail. This was the best way to understand the workings/functionality of that hospital. 15 questionnaires were totally completed by the hospital's employees, who held various positions and were in different levels.

TABLE 1: MANAGERS INTERVIEWED

Managers (by Seniority)	Alpha No.
Senior Managers	1
Middle Managers	4
Junior Managers	7
Total	12

TABLE 2: MANAGERS INTERVIEWED: INVOLVEMENT IN ACCOUNTING

Managers (by Seniority)	Alpha No.	
	Accounting	
	yes	no
Senior Managers	3	1
Middle Managers	2	1
Junior Managers	4	1
Total	9	3

Phase 1: Background information

Gaining access to the hospital was not difficult. The researcher was able to communicate easily with the managers of these companies, from the general manager

down to junior managers. The questionnaires were designed in such a way as to include diverse questions to fully understand the parameters of the use of accounting information and decision making in the organizations. Some questions focused on the background of the employees, such as age, educational background, position at the company and number of people supervised, and these were directly addressed to the person being interviewed and the questionnaire filled in by the researcher. This was helpful because this meant that the questionnaire was filled in on time. At this particular stage of the study, the researcher had plenty of time to spend with each interviewee, and was thus able to inquire into the operation of the company.

Phase 2: Documentary Evidence and Discussion

In the second phase of the study, the researcher gathered documents from the companies and also had conversations with individuals in all the organizations. First, the researcher visited different departments, had discussions with different individuals in various positions, and asked for various particulars that corresponded to different documents, particularly ones of some historic interest.

Second, the researcher focused on the procedures and processes of decision making and the role of accounting information. The answers given show that in all show cave companies, responsible for gathering information in the decision-making processes is the general manager. The aim of the questions and of the conversations generally was to gain an understanding of historic and other changes that have contributed to the development of the processes followed in decision making, as well as to the development of the companies. The discussions as well as the documents gathered helped the researcher comprehend the decision-making processes followed in the organizations. The purpose of gathering evidence of decision making processes was to get to know both the historic and the current processes used by managements in decision making and the underlying accounting practices that informed their decision making.

The organizational structures of the companies, as well as their goals and intentions, were also examined. Documents helped to support the answers of those questioned, as well as to throw light on matters left unclear in the discussions. The major problem at this point was that several documents were classified as confidential and therefore were not allowed off the company's premises. However, the researcher took notes of every relevant document.

Phase 3: Formal Interview

The third phase involved interviews with managers at various levels of decision making. A number of managers in each organization were interviewed (see Table 4.3), with each of the interviews lasting two hours on average. The interview questions

concerned accounting information, such as budget, cost management and procedures followed in decision making. It was understood by the interviewees that the main thrust of the research was about decision making. The interaction between interviewer and interviewee at times led to results that could not have been predicted. Some flexibility in the asking of questions sometimes led to the interview being extended, sometimes lasting over two hours. Many times during the interview interesting issues, which the researcher had not thought of arose.

The research process started with the researcher making contact with the people he sought to interview by telephone, before meeting them in person. The personal interview followed the telephone contact, with the researcher setting the questions in context. The interview procedure was that interviewees would be given the questions beforehand in order to prepare themselves, so they would be able to highlight some evidence. As a result of successive interviews, some of the questions were changed or new ones were introduced – the more time elapsed in the research process, the more the environment became familiar, and so even more questions related to hidden aspects of the given company came to light. The only problem affecting the interview process was that no tape-recordings were able to be made, as the participants wished to remain anonymous, and so the researcher had to make extensive notes during each interview. This led to some interviews going over time, with questions at times having to be repeated and interviewees' answers having to be clarified.

5. RESULTS OF THE STUDY

5.1. Analysis and results

In this section we proceed to a detailed analysis of data derived from the views of directors, senior and middle staff of the General Hospital of Serres, always based upon our questionnaire. Please note that, during the interviews, many further questions arose which were not included in the original questionnaire and answers to these questions were also included in this analysis. This helped us to understand the role of budgeting in a public hospital, and the contribution of budgeting in this hospital's decision-making.

5.1.1. Employee Profile

Our analysis starts from the first part of the questionnaire, which analyzes the profile of the interviewees. Recall that our research was conducted at the General Hospital of Serres, and all interviewees are employees. Therefore, we observe that our sample is aged 33 to 56 years and consists of 15 persons, 5 males and 10 females.

Regarding the educational background of respondents, 5 people have completed secondary education and 10 people have higher educational background. More

specifically, 3 people have completed Technological education and 7 people have completed University education (3 are holders of postgraduate degree and 2 are holders of PhD). In our sample there are 3 directors, 2 managers and 10 employees.

5.1.2. Employee/Department background

The second part of the questionnaire is to determine the background of the service/department. In this section we gathered general information regarding the workforce of the hospital, the employment relationship, as well as more specific information regarding the accounting system used and the budget.

All staff, therefore, is 1243 people and consists of:

Medical staff: 273

Paramedical staff: 113

Nursing staff: 592

Administrative-Technical-Assistants: 265

Most of these people are permanent employees/civil servants with the exception of a small number, about 40 people, who are working on temporary contracts (AS medical, nursing and administrative staff). The number of Accountants - Economists involved in budgeting is 7 people. Three of them (accounting staff) are involved in budgeting and are supervised and instructed by the head of financial services throughout the whole period, in order to address any problems arising. Then the budget is submitted to the Board for approval and once approved, then is forwarded to the competent H.D. (Health District) for approval. Final approval of the Budget comes from the competent A.O. (Audit Office).

The accounting system used for accounting and financial management of the hospital is "Public Accounting." At this point it is important to emphasize that the system of Public Accounting is single entry, i.e., each transaction is recorded in one-dimensional way, either as 'expense' or as 'revenue', and the concept of "revenues" and "expenses" according to Public Accounting is completely different from the corresponding concepts in accordance with the principles of accounting science.

An employee, in order to explain this concept, says: "Every time the hospital receives revenue (e.g. medical expenses), it issues one Bill Collection/Promissory Note, by updating a single code of budget revenue, and when the hospital pays money to settle the corresponding cash warrant (e.g. payment to a provider), then again only a single code of budget expenses is updated". He concluded saying that: "Codes of Public Accounts of this operation can only grow". Another officer highlights on the same issue: "Lately there has been a major effort for the application of double-entry

system at the hospital, which was kept only by an outside partner until 2009. In this effort, the staff trained properly to meet the new requirements".

5.1.3. The role of the budget

We proceed to the third part of the questionnaire, which has to do with the role of the budget in achieving the expected goals, as well as in the successful organization and functioning of the hospital. As we learned from the executives of the General Hospital of Serres, the formation and maintenance of budgets is mandatory. As mentioned in the second section, the budget is planned by 3 accountants, who are supervised by the head of Economic Department, and then they forward the budget to the Board for approval. When asked if the directors of departments have the opportunity to influence the budget, 60% of the respondents answered positively. The Officer replied that "the directors are trying to promote and meet as many needs they can".

All interviewees agreed that the present employees are not being asked during the whole process of budgeting. An official told us specifically: "The present employees only do paperwork, e.g registration of materials by type and quantity, in order to figure out what was used during the year and in which quantities and from these to identify the needs for the next year. The final determination of revenue and expenses for each clinic – department is something that the directors and heads of departments will have to deal with". Head of state says: «The partial budgets of the hospital are compiled and then submitted to the Board for approval. Their approval is a commitment that budgets will be implemented both in the amount of revenues and expenses". Every year, before the drafting of the Budget, reports are gathered from all departments and the final budget, which is drafted and forwarded to the Board, meets the levels of last year's budget while taking into account the instructions of the Ministry of Finance.

The budget of the hospitals has to do with the cash flow, ie revenues and expenses are considered in a way that the revenues are collected and corresponding expenses are disbursed in the same year.

When asked if the budget is influenced by extra-institutional factors, 73.3% of the sample responded positively, naming as major influencing factors the following: Ombudsman, trade unionists, journalists, parliamentarians, local factors such as mayor, bishop, etc. Regarding whether pharmaceutical companies are influencing decision-making, it was found that this is for the supply of higher quality and more modern materials, in order to use them to provide better services and better quality healthcare to their citizens. 53% of interviewees consider the budget as a bureaucratic tool, 26% consider the budget as an administrative tool, and 13% consider both. At this point we should mention that senior executives said they consider the budget as an administrative tool. Commenting on the above data, we could say that these rates are

expected because firstly, there is certainly a different approach to the budget in terms of the middle and lower clerical personnel between the private and public sector, and respectively, other chronic pathologies of public agencies and public hospitals (bureaucracy, overregulation and a huge number of circulars, entrenched attitudes, lack of staff in terms of quantity and quality, etc.) make the budgets less flexible, in a way that they are easily executable and they serve their purpose resulting to be bureaucratic tools. Senior executives are trying, with their capabilities and full support of middle and junior managers, to change this, hence their responses.

The objective of the budget, according to the respondents, is the correct management of available financial resources and the determination of achievable goals. As to whether the goal/aim is achieved, 60% of respondents answered affirmatively, despite everything mentioned above and despite the difficulties presented.

Only 26% of the sample (senior) considers that the budget is used as a planning tool, a motivation tool, and a tool to evaluate staff and service. Most employees agreed that there are huge differences between the budgets of public institutions and the budget of one single company. A manager told us: "The strong bureaucracy and entrenched law leave no room for flexibility throughout the process of drafting and implementing the budget."

When asked if the expenditure comes in a prudent way, 60% answered no and 40% answered yes. The Head said: "programming is prudent but drafting is not". The opinion of another employee on the same theme is: "The situation can only be changed, if you eliminate effects of waste and unnecessary actions".

5.1.4. Keeping the budget

The fourth and last part of the questionnaire and our analysis is meeting the budget, supervising this, and accountability when there are negative deviations from budgeted.

Regarding the extent applicable to the budget, 46.7% respond to a large extent, 40% satisfactory and 13.3% minimum.

The interviewees say that often there is checked compliance with the budget. Specifically, every month there are written statements that inform the administration about the budget and its deviations from the standard levels. Moreover, the review is submitted, at least every year, to the Ministry of Finance, within six months from the end of the fiscal year. The report shows the results of the annual budget, for each year by code of revenue and expenses, and also shows the final cash surplus or deficit of the year. Monthly and quarterly statistics are sent to NSSG (National Statistical Service of Greece). At this point an important reference to a new institution effectively applied by all public hospitals since the beginning of the year was made, i.e. the mandatory compliance with the Registry commitments. The Registry commitment

contributes to a clear definition of commitment and different species from the hospitals. An Employee who is designated responsible for the adherence reports: "In my opinion this Registry will set the basis to ensure all necessary conditions concerning the budget and its proper observance through close and systematic monitoring of commitments body ". Requesting more information on the subject, we learned that its purpose is to create modern financial rules and principles in the management of public money to restore the credibility of the budget of the hospitals and all public agencies in the country, taking into account that budget weaknesses led mainly to the complete lack of information about the true financial situation of Public Hospitals across the country, ranking at the bottom of quality and reliability in the international evaluation, in comparison with the models and practices of other EU countries. Officer commented: "It is a great innovation and introduces a new way of training, implementation, monitoring, accounting and auditing of the annual budget by streamlining and strengthening the effectiveness of financial control".

Two employees, who are involved in registration of all claims, told us that: The first said: "In simple terms what we do, is: after completing the formalities regarding the initial approval of requests for each section, each request comes to the accounting office and is recorded in a special file, in which the initial budget is registered. Automatically, the program credits the code which represents the type of request (eg consumables, orthopedic, material donations, etc.) and decreases the initial budget with the appropriate amount. If there is credit in the budget, the amount is 'freezing' and we proceed with the order of its kind following the legal procedures". The second employee said: "We put tremendous effort to respond to any difficulties encountered. We believe that ultimately we will succeed, if we collaborate properly, constructively, and responsibly with all departments involved in the process. So, close and systematic monitoring of the commitments of the organization will lead us to a better management of resources by preventing the waste of the irrational. "

When asked if during the year there are regular budget reformations, all staff responded that this happens 2 or 3 times a year when it is necessary. Specifically, one boss said: "A reform or otherwise modification of the budget (revenues and expenditures) can be made, after the Governor of the hospital decides so, and upon approval of the competent Minister and the General Accounting Office, provided that this will be made up to 30/11 in the current year". When we asked about the reasons of a reformation, a senior official said: "During the year there are reformations to transfer money from an OEM (Item code) to another, if the remainder of the first is not sufficient to serve needs of the hospital". The Head told us: "It is allowed to record or increase credits in the budget, with a corresponding reduction in other credits when a code displays exceeded". It was also reported that some OEM can be deleted, if they are not active/moving. All this, of course, can be made after a recommendation from the Board and always under reasoned decisions of the District Director, and the approval of the competent Minister.

In the case of failure to budget, all the correspondents believe that there assigned responsibilities to the extent that they should not be. 80% of respondents consider that the budget affects significantly the decision making. An Officer told us that the budget «is the compass of the organization, if it is displayed properly". A contrary view, derived from another simple employee, was as follows: "In the case of hospitals there is a state guidance and not a proper control, thus resulting to many excesses."

Finally, all interviewees agreed that government decisions on health issues affect the operation and financial condition of the hospital, either directly or indirectly.

6. CONCLUSION

The analysis of the interviews shows that the budgeting process assists the decision making for effective administration and proper functioning of the organization. The budgeting process of the General Hospital of Serres, is mandatory and strictly adhere to all statutory provisions. Indeed, the staff made heroic efforts to overcome all odds (no necessary - adequate staff, infrastructure, outdated attitudes, etc.) to achieve the budget, taking into account new data.

The accounting system used in this hospital, as well as in all others, makes clear that under the circumstance of "what goes in and what comes out of the fund", which is how the Public Accounts work, there can be made not an effective administration. The single entry method deprives the hospitals from a number of valuable and important information which is necessary for the pursuit of rational management. A quick introduction of the double-entry accounting system, which is a modern, comprehensive, and rich information system, is an action of high priority. This system will provide a scientific tool that will help those who will be invited to undertake the difficult task of effectively managing and conducting an effective health policy, to improve services to citizens. Of course, in this hospital many significant efforts are made for the transition from one system to another, and for maintaining the Register Commitments, thus helping in the effort of the administration to reorganize all financial services.

It was found that in the hospital of Serres, only senior executives are active in the process of budget preparation, while the lower employees are limited to do bureaucratic jobs. The demands of modern management in the public sector require convergence of the boundaries between those who decide and those who enforce, because the role of workers is constantly upgraded. Therefore, the existence of a flexible administration that would instantly communicate and collaborate with many people, would take more effective communication and dissemination of information in relation to decisions, and ultimately better budget execution, and thus better quality health services.

In today's time, when economic conditions make an absolute and urgent need for proper management of finances and budgeting in this direction, the budgets in the

General Hospital of Serres are up to the prudent management of costs, but there are some difficulties in the budget's implementation. These difficulties occur mainly due to the type of the organization and the social character of its services, and partly due to bureaucracy and the false notion that "good health services are offered only when many expensive materials are consumed ", which concludes to a degree of extravagance. It should not slip from our attention that due, to the continuous shrinking of state funding, this hospital (like most hospitals) is under a transition adjustment ("fiscal adjustment") in order to make a proper management of existing resources, and to provide better quality health services to citizens of the prefecture of Serres.

On the other hand, the objective of using the budget as a planning tool, as well as a tool for motivation and evaluation of staff and the service, is not reached in the hospital of Serres. This happens because the bureaucratic model of administration, the existing legislation on the management of human resources in public institutions, and the continuous intervention by the central government, do not allow such flexibility in the budget to achieve this purpose. Something that we must not overlook is the existence (in this hospital, as in others) of several types of employees. They have different scientific backgrounds, different attitudes and perceptions on industrial relations, productivity, evaluation and advancement in the hierarchy, and sometimes so completely different kind of work, that the planning-budgeting needs to be planned and drafted separately for each department, but simultaneously for the entire organization. This of course would be ideal if it could happen, but the enactment of such budget is a very difficult thing to do, not only in the hospital of Serres but in all hospitals across the country.

It is obvious, according to respondents, that the budget in this hospital applies to a large extent and that periodically there is a checking being made about its compliance. Thus, the budget is monitored on a monthly balance sheet, as vouchers offer a range of valuable information to the management, and help them understand if they finally achieve compliance with the original estimates. Adjustments are made where necessary and of course upon approval by the central government. However, in the event of failure of the budget, all the correspondents believe that there are no assigned responsibilities to the extent they should be. This is fully in line with the - years established - and general practice of impunity in the public sector. The misguided "esprit de corps" in this respect, the failure of administrators, and sometimes extra-institutional policies and interventions, may be some of the deep roots of this problem.

Coming to a conclusion, we can see that the budget (regarding the hospital we studied) has a significant influence on the decision-making, as it can be done in a public institution that has the features of a hospital.

However, it is clear that public hospitals, like the one we studied in this research, have been hijacked by the state budget, bureaucracy, centralization of power and failure to receive critical management decisions.

In conclusion, it was found on both literature and primary research that the theory of decision-making is inextricably linked with the budget. Although several occasions arise with significant problems of compliance, we should not forget that the budget is a forecast, and, like all forecasts, includes some risk. In such cases, therefore, the drafting of the budget and the decision-making are deposited in the hands of the government, which should be creative, and able to provide solutions to address any problems.

Appendix: Interview Questions

Please, read the questions very carefully and take your time giving your answers. Some of the answers require you to provide a descriptive account while others require you to provide ratings. If your answers exceed the appropriate space, please use a separate sheet. I would like to inform you that this conversation will be kept confidential and will only be used for academic purposes. The idea of the interview is to understand the operation of the accounting control system in your organization. I would also like to thank you for the contributions you will be making towards this research.

A. Employee Profile:

1. What is your age?
2. Please fill in your sex (M / F)
3. What is your position at the hospital?
4. How many years are you working in this position?
5. Prior to this position, did you have a similar experience in the same or another organization?
6. If you answered yes in the previous question, please describe the position held and indicate the time that you worked
7. What is the highest level of education you completed? (For higher education, please note the title of your basic degree)

B. Background Service

1. How many employees work in the organization?
2. How many of them are permanent?
3. How many Accountants, Economists are involved in drafting the budget?
4. Which accounting system is been used?

C. Role of Budget

1. Do you participate in the process of drafting the budget? If so to what extent and how?
2. Is the planning and use of the budget compulsory? Whom is the budget drafted from and by whom is it approved?
3. Can the directors affect the budget?
4. Are the employees being asked about the budget planning?
5. Do you believe that the budget is influenced by extra-institutional factors? If so by whom?
6. Would you say that the budget is used more as a bureaucratic or as a management tool?
7. What do you think is the purpose of the budget? Do you think that it is accomplished?
8. Is the budget being used as a planning tool, a motivation tool and as a tool to evaluate staff and service?
9. Do you believe that the management of expenditure is being made in a prudent manner?

D. Budgetary Compliance

1. In which degree do you believe that the budget applies?
2. Is the maintenance of the budget being carried out at regular intervals?
3. Are there cases of budget amendment?
4. Are there any liabilities being attached if the budget is non-compliant? For example, if there is a decision to reduce consumption of a consumable medical supplies such as sutures, bandages, medicines or reduce excessive laboratory tests, then this decision announced to the directors of clinics and then found out that has not been assigned, are there any responsibilities?
5. Would you say that the budget affects or guides decision-making?
6. Do you think that government decisions on health issues affect the operation or financial condition of the hospital?

REFERENCES

- Amey L. R. and Eggington, D. A. (1973). *Management Accounting*. New York: Prentice Hall Press.
- Anderson, P. (1974). *Lineages of the absolute state*. New York: Schocken.
- Argyris, C. (1952). *The impact of budgets on people*. Ithaca, NY: Controllershship Foundation.
- Abernethy, M. A. and Brownell, P. (1999). The role of budgets in organizations facing strategic change. *Accounting, Organization and Society*, 24, pp. 189-204.
- Adler, M. and Ziglio, E. (1996). *Gazing into the oracle: The Delphi Method and its application to social policy and public health*. London: Jessica Kingsley Publishers.
- Bacharach, S. B. and Lawler, E. J. (1980). *Power and Politics in Organizations*. San Francisco: Jossey-Bass.
- Brimson, A. J. (1998). *Driving Value Using Activity - Based Budgeting*. Wiley Cost Management Series.
- Brownell, P. (1981) Participation in budgeting, locus of control and organizational effectiveness. *The Accounting Review*, 56, pp. 844-860.
- Burchell, S., Clubb, C., Hopwood, A., Hughes, J. and Nahaplet, J. (1980). The Roles of Accounting in Organizations and Society. *Accounting, Organizations and Society*, 5, pp. 5-27.
- Cooper, D. (1981) A social and organizational view of management accounting. In M. Bromwich and A. Hopwood (eds) *Essays in British Accounting Research*. London: Pitman, pp. 178-205.
- David, B. (1998). Introduction Economics (In Greek), Scientific Library, (2ed), Kritiki, Athens.
- Demski, J. S. (1967). An Accounting System Structured on a Linear Programming Model. *The Accounting Review*, October, pp. 9-19.
- Emmanuel, C. and Otley, D. (1985) *Accounting for management control*. Wokingham, UK: Van Nostrand Reinhold.
- Emmanuel, C., Otley, D. and Merchant, K. (1997). *Accounting for Management Control*. London: International Thompson Publishing.
- Eisenhardt, K. (1989). Building Theories from Case Study Research. *Academy Management Review*, 34(4), pp. 532-550.
- Fernandez-Revuelta Perez, L. and Robson, K. (1999). Ritual legitimation, de-coupling and the budgetary process: managing organizational hypocrisies in a multinational company. *Management Accounting Research*, 10(4), pp. 383-407.
- Forman, E. and Selly, M. A. (2002). *Decision by Objectives*, Singapore:World Scientific Publishing Company.
- Garrison, R. H., Noreen, E. W. and Brewer, P. C. (2006). *Managerial Accounting*. (11th ed.). United Kingdom: McGraw Hill/Irwin.
- Govindarajan, V. (1984). Appropriateness of accounting data in performance evaluation: an empirical examination of environmental uncertainty as an intervening variable. *Accounting, Organisations and Society*, 10, pp. 51-66.
- Hansen, St., Otley, D. and Van der Stede Wim, A. (2003). Recent Developments in Budgeting: An Overview and Research Perspective. *Journal of Management Accounting Research*, 15, pp. 95-116.

- Heywood, A. (2006). Introduction to Politics (In Greek). Athens : Polis.
- Hilton, R., Maher, M. and Selto, F. (2008). *Cost Management Strategies for Business Decisions*. (4th ed.). United States: McGraw Hill.
- Hirst, M. K. (1981). Accounting information and the evaluation of subordinate performance: a situational approach. *The Accounting Review*, 56, pp. 771-784.
- Hofstede, G. H. (1968). *The Game of Budget Control*. Assen: Van Gorcum & Company.
- Hopwood, A. G. (1972). An empirical study of the role of accounting data in performance evaluation. *Empirical Research in Accounting: Selected Studies, Supplement to Journal of Accounting Research*, 10, pp. 156-182.
- Huth, P. (1988). *Extended Deterrence and the Prevention of War*. New Haven(USA): Yale University Press.
- Jae, K. S. and Joel, G. S. (2006). *Budgeting Basics and Beyond*. 2nd ed. New Jersey: John Wiley & Sons, Inc.
- Ivancevich, J. (1976). Effects of goal-settings on performance and job satisfaction. *Journal of Applied Psychology*, 61, pp. 605-612.
- Khatri, N. and Alvin, N. (2000). Role of intuition in strategic decision making, *Human Relation*, 53(1), pp.57-86.
- Landman, T. (2003). *Issues and methods in comparative politics. An introduction*. London: Routledge.
- Lowe, E. A. and Shaw, R. W. (1968). An analysis of managerial biasing: Evidence from a company's budgeting process. *Journal of Management Studies*, 5, pp. 304-315.
- Lijphart, A. (1971). Comparative politics and comparative method. *American Political Science Review*, 65(3), pp. 683-85.
- Lioukas, C. S. and Papadakis, V. M. (2003). *Strategic decision processes and outcomes: Effects of context*, Academy of Management Proceedings, pp. 226-235.
- Macintosh, B. M. (1994). *Management Accounting and Control Systems: An Organizational and Behavioural Approach*. London: John Wiley & Sons.
- Masaaki, I. (1986). *Kaizen: The Key to Japan's Competitive Success*, United States: McGraw-Hill/Irwin.
- Milani, K. (1975). The relationship of participation in budget-settings to industrial supervisor performance and attitudes: a field study. *The Accounting Review*, 2, pp. 274-283.
- Modell, S. (2005). Triangulation between case study and survey methods in management accounting research: An assessment of validity implications. *Management Accounting Research*, 16, pp. 231-254.
- Muller P. and Surel, Y. (2002). State Policy Analysis (In Greek). Athens: Tipithito.
- Nauert, R. C. (1984). An Effective Way to Plan and Budget for Availale Resources. *Journal of Healthcare Financial Management*, 32(2), pp. 64-68.
- O'Donoghue, P. (2005). Participating in government budget decision making: A resource for trainers. *The Australian Council of Social Service*, pp.1-94.
- Otley, D.T. (1978). Budget use and managerial performance. *Journal of Accounting Research*, 16, pp. 122-149.
- Otley, D. T. (1980). The Contingency Theory of Management Accounting: Achievement and Prognosis. *Accounting, Organizations and Society*, 5(4), pp. 413-428.

- Otley, D. T. (1984). Management accounting and organizations theory: a review of their inter-relationship. In R.W. Scapens, D.T. Otley and R. Lister (eds.) *Management Accounting, Organizational Theory and Capital Budgeting: Three Surveys*. London: Macmillan.
- Otley, D. T. (1994). Management Control in Contemporary Organizations: Towards a Wider Framework. *Management Accounting Research*, pp. 289-299.
- Otley, D. T. (1999). Performance management: a framework for management control systems research. *Management Accounting Research*, 10, pp. 363-382.
- Otley, D. T. and Berry, A.J. (1994). Case study research in management accounting and control. *Management Accounting Research*, 5, pp. 45-65.
- Otley, D. T. and Dias, F. J. B. (1982). Accounting Aggregation and Decision-Making. Performance: an Experimental Investigation. *Journal of Accounting Research*, pp. 171-178.
- Otley, D. T., Broadbent, J. and Berry, A. (1995). Research in Management Control: An overview of its development. *British Journal of Management*, 6, Special Issue, pp. 31-44.
- Papadakis, V. M. and Barwise, P. (2002). How Much do CEOs and Top Managers Matter in Strategic Decision-Making. *British Journal of Management*, 13(1), pp. 83-95.
- Ronen, J. and Livingston, J. (1975). An Expectancy Theory Approach to the Motivational Impacts of Budgets. *The Accounting Review*, pp. 671-684.
- Schiff, M. and Lewin, A. Y. (1968). Where traditional budgeting fails. *Financial Executive*, pp. 57-63.
- Siggelkow N. (2007). Persuasion with Case Studies. *Academy of Management Journal*, 50(1), pp. 20-24.
- Sjoberg, G., Williams, N., Vaughan, T. and Sjoberg, A. (1991). The case study approach in social research. In Feagin, J., Orum, A., & Sjoberg, G. (Eds.), (1991). *A case for case study* (pp. 27-79). Chapel Hill, NC: University of North Carolina Press.
- Steers, R. M. (1975). Problems in the measurement of organizational effectiveness. *Administration Science Quarterly*. December, pp. 613-629.
- Sweeny, Allen H.W. and Rachlin, R. (1987). *Handbook of Budgeting*. 2nd edition N.York: John Wiley & Sons.
- Vroom, V. (1964). *Work and Motivation*. New York: John Wiley & Sons.
- Wallander, J. (1999). Budgeting – an unnecessary evil. *Scandinavian Journal of Management*, 15, pp. 405-421.
- Webb, A. (2002). The impact of Reputation and variance investigations on the creation of budget slack. *Accounting, Organization and Society*, 27(4), pp. 361-378.
- Welsch, G., Hilton R. and Gordon, P. (1988). *Budgeting, profit, planning and control*, 5th edition, Unites Stated: Prentice Hall.
- Wildavsky, A. (1964). *The Politics of the Budgetary Process*. Boston: Little, Brown and Publishers.
- Wildavsky, A. (1975). *Budgeting: A Comparative Analysis of the Budgeting Process*. Boston: Little, Brown and Publishers.
- Wildavsky, A. (1979). *Speaking Truth to Power: The Art and Craft of Policy Analysis* Oxford: Transaction Publishers.
- Wim, A. Van der Stede (2001). Measuring tight budgetary control. *Management Accounting Research*, 12(1), pp. 119-137.

- Wright, C. (1976). Language mastery and the sorites paradox. In G. Evans and J. McDowell (eds) *Truth and Meaning*. Oxford: Clarendon Press, pp. 223-47. Reprinted in Keefe and Smith (1997), pp. 151-173.
- Yin, R. K. (1994). *Case Study Research design and methods*. (2nd ed.). Thousand Oaks, CA. Sage.

INTERNATIONAL MARKETING RESEARCH: EXPLORING E-MARKETING RESEARCH AND ITS IMPLICATIONS

MICHAEL ANASTASIOU*

ABSTRACT

Top management needs to generate new knowledge about the global market and engage the organization in an on-going learning process. The advances in technology and telecommunications have minimized distances, and along with the use of Internet have contributed to international marketing research novel research ideas, methods and procedures. In e-marketing, research sampling issues and the homogeneity of the sample put the validity and the reliability of the collected data at risk. The interpretation of the collected data should follow scientific rules and theories and adequate statistical analysis and a centralized database could allow e-marketing researchers to exchange and cross-check information for mutual benefit. However, legal implications threaten the deployment of e-marketing research since competition raises issues and legal rights in privacy, intellectual property protection rights and consumer protection law.

Keywords: International Marketing Research, E-marketing, Sampling, Data Analysis, Trends, Internet.

1. INTRODUCTION

Change has become an instant and a continuous phenomenon for all individuals and organizations (Proctor and Doukakis, 2003). As a consequence, top management of modern organizations in order to response successfully to the challenges of change and competition should develop mechanisms that allow the organizations to construct new knowledge about the global market and engage the organization in an on-going learning process (Rowley and Gibbs, 2008). In particular, the increasingly turbulent and aggressive business environment displays that international marketing research is an important mechanism through which organizations might be able to better understand national and international markets (Craig and Douglas, 2001). Thus, organizations might develop products and services that accurately fit customer needs, eliminate the exploitation of production factors, and improve operational effectiveness and efficiencies leading to economies of scales. Hence, by generating new knowledge about the international market top management will be able to re-engineer market

* Senior Lecturer, Hospitality and Business Department, InterNapa College, Ammochostos, Cyprus

strategies in a way that anticipate and respond to the rapid pace of market change and product diversification (Proctor and Doukakis, 2003).

For this reason, overtime, information has become a crucial factor for a company's success in international competition, which tends to be more complex and diverse (Li, 2003). Valid and reliable information is an essential element in all marketing efforts and activities in order to provide an adequate basis not only for day to day market related decision-making, but also to be used as the company's pool of knowledge in the international business arena (Proctor and Doukakis, 2003). Corporations focusing on expanding abroad should conduct international marketing research in order to identify market segments, examine market opportunities and better integrate and coordinate marketing strategies across national boundaries.

2. MARKETING RESEARCH AND THE INTERNATIONAL ENVIRONMENT

According to Craig and Douglas (2001), in order to perform effective international marketing research with valid and reliable results, top management needs to understand first of all how the international market has changed over the last decades. During the 1970s and 1980s, domestic USA companies used to venture together in order to compete in the international market against Japanese and European companies. With smaller domestic markets, Japanese and European companies were pursuing economies of scales to form a competitive advantage and to respond to foreign competition (Craig and Douglas, 2001). During that period of time, all firms aimed to collect information and to identify and assess market opportunities in foreign countries, as well as to find the best way to position their products (Proctor and Doukakis, 2003). In this case the economic, political, linguistic and cultural status was the focal point of their entry strategy (Craig and Douglas, 2001).

2.1. International business environment

During the 1990s, the international market status had changed completely (Backely, 2002). Within the international market place, firms have expanded on an international scale where product markets are intergraded worldwide (Proctor and Doukakis, 2003). Research and information in industrial regions like North America, EU and Japan, acted as a "re-constructive market force". A homogenizing force that has removed market barriers, since consumers have become aware and familiar with global brands, developed a consuming culture welcoming new products and services, and has been affected by the phenomenon of the "global village" (Craig and Douglas, 2001). Research and information also enhances the development of national and international market infrastructure, where the increased mobility of labor-consumers

has created the tendency to form a diversified marketing strategy across countries and regions (Proctor and Doukakis, 2003).

Backely (2002) supported that labor mobility across countries and regions influences market entry policies and strategies at a high level. Especially in transitional economies like China, Russian and Eastern European Countries, market entry policies are a challenge in building the organization's wealth and constructing the social identity (Li, 2003). In developing regions like Asia, Latin America and Africa, "governments directly and indirectly embrace exports as a means to emerge from deprivation and poverty and participate in market globalization (Li, 2003, p 2). However, in both cases, there is a considerable information gap in examining differences and similarities, due to the lack of marketing research infrastructure (Backely, 2002). For organizations to examine the differences and similarities in consumer behavior, it is even more difficult to do so within emerging economies which was the trend at the end of the 1990s and the beginning of the twenty first century (Li, 2003). Emerging economies are characterized by lower living standards, purchasing power and doubting and complex attitudes towards foreign products (Backely, 2002). The lack of marketing research and technological infrastructure to develop, collect and analyze data led to a higher risk of failure (Craig and Douglas, 2001).

The technological advances in mass telecommunications technology, global and regional media during the 1990s, shaped a global market environment where people worldwide "develop a common set of expectations, familiarity with a common set of symbols, similar preferences for products and services, and an overall desire to improve their standard of living" (Craig and Douglas, 2001, p 83). This phenomenon is especially observable among teenagers where they present similar consuming behavior in clothing, music, and consumer products (Li, 2003). In addition to the challenge of consumer trends within the international environment, marketing research as pointed out by Rialp and Rialp, (2001) and Axinn and Matthyssens (2001) could play a vital role in explaining the behavior of companies within the international market place. Balabanis, Theodosiou and Katsikea (2004) stated that a market researcher should be aware of new and challenging themes and concepts within the international business environment, such as the high influence and inter-dependability of the global economy, and the transition from the industry-based economy to the knowledge-based economy (Ko, Kirsch, and King, 2005).

These forces-changes have not only reshaped international business behavior but have also questioned traditional internalization theories due to the development of trade blocks such as EU, NAFTA, and ASIAN (Sloman and Sutcliffe, 2004). As a consequence, international expansion according to Douglas and Craig (2006) is one way for organizations to survive, keep and sustain profitability. According to Craig and Douglas, (2001) market research will assist firms to identify market growth opportunities in non-industrial nations as well as to develop the appropriate

knowledge, skills and competencies to conduct and coordinate market research activities in a diverse international environment.

Therefore, according to Balabanis et al. (2004) another important segment of the global business environment that an international marketing researcher deals with is exports. Balabanis et al. (2004) identified several forces like technological, institutional, legislative and economical challenges that have a catalytic impact on market entry, growth and the sustainable development of the company. In such cases market researchers should identify and support a firm's export capabilities, and suggest corrective actions in order to comply with institutional, legislative and cultural requirements. Indeed, international marketing researchers might identify alternative ways to effectively transfer the capabilities of the organizations in international market. The International market researcher could establish marketing strategies that favor and support international market relations with international customers and partners (Rialp and Rialp, 2007).

2.2. Entrepreneurship and market research

Etemad and Right (2003), Styles and Seymour (2006) also highlighted the explosive phenomenon of entrepreneurship in global markets. Styles and Seymour (2006) wrote that "there is considerable scope for marketing academics to contribute to the nascent field of international entrepreneurship which would, in turn, advance marketing theory and research in the international environment" (p 126). Additionally, Sinkovics and Bell (2006) believe that entrepreneurship could be a supportive force in international business by cross-fertilizing international marketing research with novel ideas, methods and procedures. Furthermore, international entrepreneurship could fortify international marketing researchers with knowledge management and learning competencies that will allow researchers to investigate, analyze and understand the forces that shape national and international business culture and its impact on the market (Rialp and Rialp, 2007). Rialp and Rialp (2007) also stated that international entrepreneurship moved international marketing research a step forward due to telecommunication advances. The use of telecommunication advances such as the Internet should not only play an important role in facilitating and conducting market research globally but it should also exploit opportunities in building the firm's competitive advantage.

3. MARKETING RESEARCH ON THE INTERNET

In building the firm's competitive advantage Chao, Samiee and Yip (2003) and Rialp and Rialp (2007) underlined the Internet's contribution and importance. Even in countries (Asia and Africa countries) where governments control all the sectors of the economy, the Internet has become an integral part of the firm's operation (Chao,

Samiee and Yip, 2003). According to Harter (1999) since the Cold War the Internet has revolutionized Western World business and consumer behavior. McDaniel and Gates (2001) and Savage (2001) proposed that by 2020, 30% of market research will be conducted on-line and Wilson and Laskey (2003) emphasized several advantages in delivering market research through the Internet.

First of all, it is easy to use, as the researcher could avoid the sending and receiving of questionnaires. The Internet offers the advantage of immediately downloading the information directly onto a database for analysis (Iyer, 1996). Therefore, Wilson and Laskey (2003) stated that there is a cost advantage in using the Internet for market research, as it costs much less in comparison to postal surveys, it has a higher response rate than mail surveys (Taylor, 2000) and “online surveys tend to have response quality equal if not superior to the other forms of survey” (Wilson and Laskey, 2000, p 80).

However, Taylor (2000) emphasized that there are several sampling problems in on-line marketing research. According to Taylor (2000), although the number of people having access to the Internet has been increased to 35% of the UK population, Internet users are mainly young people possessing higher standards of education than the public at large. Response to any online survey might not reflect the “average opinion” leading to faulty results (Wilson and Laskey, 2000). Hence, Litvin and Kar (2001) stated that there is no centralized database of e-mail addresses which could provide information about demographics. Conversely, Avlonitis and Karayianni (2000) and Alshawi et al. (2003) noted that despite the above barrier, companies should use the Internet and face its challenges in a way that can assist them in advancing business activities and leveraging points to improve performance and productivity in market oriented activities.

Indeed, specialists in the field have identified the Internet in the modern international business environment as a Critical Success Factor (CSF) for business-to-business (B2B) transactions (Avlonitis and Karayianni, 2000). That is why the Internet should not only be seen as a resource issue but it should also be faced as an integral part of the firm’s marketing strategy (Chaffy et al., 2000). Hence, in on-line marketing research all activities should be characterized by truth and clarity, honesty and high standards of ethics (Alshawi et al., 2003). Thus, ethics should be priority for all the e-marketing researchers in order to secure validity and reliability of the findings (Castells, 2001). Berry (2004) believes that in order to secure validity and reliability, deontology should play a fundamental role for all e-researchers. Berry (2004) provided an example of “the professional codes of ethics drawn up by the Association of Internet Researchers (AoIR) that outlines responsibilities for the activities of social researchers online” (p 325). Deontology can play a vital role and it can act as a defense mechanism due to its strong links with moral standards and ethical principles (Castells, 2001). Deontology eliminates a researcher’s dilemmas regarding copyright and fair use of Internet resources in terms of plagiarism, copying and reporting fake

information. Deontology also provides flexibility and decentralized decision-making in on-line research where the researcher carries the ultimate responsibility to safeguard ethics and present valid and reliable results through an appropriate international marketing research process (Berry, 2004).

4. ON-LINE MARKETING RESEARCH AND SAMPLING ISSUES

According to Reynolds, Simintiras and Diamantopoulos (2003) in international market research there are simple difficulties like translations and more complex ones like the sampling policy (Kumar, 2000). Sivakumar and Nakata (2001) pointed out that there are two basic levels of sampling in international market research: (a) sampling of countries and (b) sampling of the individual respondents. Sivakumar and Nakata (2001) suggested also that sampling of the individual respondents can provide more accurate results. Also, Lohr (1999) identified the homogeneity of the sample as another serious problem of sampling in international marketing research. In international marketing research the “homogenous samples are drawn from subgroups of the general population and they are criticizing as not being representative of the entire population” (Craig and Douglas, 2000, p. 81). Lonner and Berry (1986) suggest that homogenous samples should be used in order to remove demographic differences between participants from the same country in order to improve the comparability of the sample among different countries and regions as well as to obtain a representative sample. Craig and Douglas (2000) mentioned that despite the fact that samples might be representative of the population, they might be unlikely to provide valid information for comparison between nations with regards to key demographic characteristics (income, education, age).

Hence, Lohr (1999) stated that unlike probability sampling, non-probability sampling does not allow probability sampling error to be estimated. Craig and Douglas (2000) do not see probability sampling in international marketing research as a viable choice since it lacks reliable population data and the absence of suitable sampling frames. Reynolds et al., (2003) emphasized the essentiality to secure validity of the findings and eliminate both internal and external validity threats. Internal validity threats stands for the processes and procedures that affect the ability of the researcher to proceed with correct inferences from the collected information (Silverman, 2009). External validity threats reflect the incorrect inferences made by the researcher from the collected information to other cases (Creswell, 2007). To collect valid data (internal and external validity of the findings), appropriate sampling strategy, and an implementation process, is of undoubted importance (Craig and Douglas, 2000).

4.1. Validity and reliability issues

Internal validity refers basically to the relationship between the variables, whereas external validity refers to the case where the effects observed in the research can be occurred and be applicable in other real world situations (Reynolds et al., 2003). Craig and Douglas (2000) noted that sampling is interconnected with the type of research question which can affect research objectives and design since the international sampling choices have a direct relation to the research's objectives. Another important consideration in international marketing research is the sampling size of the population and the analytical techniques that will be involved in order to analyze the collected data (Reynolds et al., 2003). According to Craig and Douglas (2000) the sampling size and the analytical techniques that will be used might become determinant factors for the validity and the accuracy of the data collected. Researchers should be very careful with the development of the sampling plan (sample unit, sample size and sampling procedure) due to the diversified forces-factors that shape e-marketing research (Berry, 2004).

5. DATA ANALYSIS AND THE PRESENTATION OF RESULTS IN E-MARKETING RESEARCH

Beyond sampling challenges in e-marketing research, international marketing researchers might face certain challenges in data analysis. Data analysis is a procedure through which a researcher looks at and summarizes data with the intention of extracting useful, accurate and authentic information. Thus, international marketing researchers should aim to construct reliable conclusions from the analysis of the collected data (Walsh, 2007). The contribution of valid and reliable information to any firm is crucial, since information is a vital component for effective and just-in-time decision-making. Top management might proceed with interventions leading to a company's better market entry and product positioning (Kumar, 2001). That is why the analysis of the data should be designed in such a way that the involved management will not lack the capability for a sophisticated data analysis model in establishing a new strategy or policy were several variables could be analysed in depth (Walsh, 2007). According to Ivankovic et. al. (2003) data analysis is not considered as knowledge only, but it also implies a multidimensional process which includes data acquisition, data selection and measurement, several processing techniques as well as a variety of statistical and scientific methods.

5.1. Simple and advanced data analysis

Data interpretation should take the form of a process that follows scientific rules and theories and adequate statistical analysis, considering that multiple variables can

develop forces with a catalytic impact on the decision-making process for market entry or product positioning (Kumar, 2001). Kumar (2001) made a distinction suggesting that in data analysis, e-marketing researchers should categorize the collected data into simple and advanced data analysis. A major criterion in both cases is the nature of market research and the research question. In the simple data, single objectives and variables are under investigation whereas in advance data analysis more complicated research design, objectives and methods are involved.

In contrast to Kumar (2001), Walsh (2007) expressed a different approach in analyzing collected data. According to Walsh (2007) due to globalization, consumers have become aware and familiar with global brands, have developed a similar consuming culture, and they are highly affected by the “global village” phenomenon (Craig and Douglas, 2001). In addition, intense labour mobility as well as the development of several trading blocks, do not allow e-marketing researchers to classify research questions into simple and advanced questions since all questions seek to explore unknown fields and discover hidden meanings.

5.2. Cultural and socio-economic factors

In analyzing and interpreting research, data in e-marketing research cultural and socio-economical “awareness”, is another crucial element for e-marketing researchers. E-marketing researchers need to build the cultural and socio-economical “awareness” through a systematic global information collection technique that is supported by an appropriate analysis model (Walsh, 2007). Wheeler (1998) believes that for a simple data analysis, the “content analysis model” could have an important contribution. The “content analysis model” could assist managers in incorporating internal and external factors within the research design which can influence data collection as well as data validity and reliability. The “content analysis model” involves the “objective, systematic, and quantitative description of the manifest content of communication” (p 43). According to Wheeler (1998) content analysis is a technique that studies cultures and population characteristics in order to determine belief, values, ideologies, perceptions and preferences as they can have a catalytic impact on marketing tactics applications. As a simple data analysis the demographics and the findings from such an investigation have become too complicated overtime and marketing researchers are experiencing a tremendous challenge in interpreting and explaining such information (Walsh, 2007).

For marketing researchers, to analyse data and to extract correct conclusions is even more difficult, especially in regions where they are experiencing demographic changes in the structure of the population (Wheeler, 1998). The analysis and the explanation of the findings from such a demographic investigation might be completely wrong, if e-marketing researchers do not consider the appropriate parameters in accurately explaining the demographic findings and changes (Walsh,

2007). With respect to demographic findings Bell and Montgomery (1995) supported the opinion that the "Database Approach" has become a common technique in data processing and it can help e-marketing researchers to extract correct conclusions.

5.3. The impacts of a centralized database

According to Bell and Montgomery, (1995) e-marketing researchers need to realize the multidimensional forces that shape and affect the global market. A centralized database could be a crossroad for exchanging information (Kiel, 2007). A centralized database could be a source of information, guidance and advice for e-marketing researchers where they could work together for mutual benefit (Maclaran and Catterall, 2002). Having access to research undertaken by other researchers or by cross-checking or by exchanging opinions on particular situations, e-marketing researchers could assist in minimizing data analysis risks. A centralized database could advance data analysis and double check the results from similar quantitative or qualitative e-marketing research (Kiel, 2007). According to Kiel (2007) simple or advanced data analysis has turned out to be "a mystical, magical world inhabited by computer boffins and statisticians who perform mysterious rites to produce intelligible computer output" (p 40).

5.4. Computer and software evolution in data analysis

In simple and advanced data analysis the computer and software revolution acts as a catalyst in marketing research as it allows a better application of several statistical techniques and models for both quantitative and qualitative analysis. The revolution of statistical software programs encourages the use of multivariate techniques and scaling methods (Maclaran and Catterall, 2002). Indeed, what has been achieved is the effective use of marketing research data and its successful application in the international market. Based on Kiel's (2007) argument, through the use of statistics, marketers can have a better and accurate analysis by eliminating data analysis problems through inferential statistics. The importance of using inferential statistics in simple and advanced data analysis relies on the fact that inferential statistics is focused on two main problems: (a) estimation of the population parameters and (b) tests of hypothesis (Kiel, 2007). The estimation of population characteristics (demographics) has entered a new era due to the global movement of labour (Maclaran and Catterall, 2002).

The application of different statistics software programs brought the e-marketing researchers and practitioners to a new level (Kiel, 2007). The statistics software programs allow researchers to examine several possibilities, interrelations and interconnections of the research's objectives and variables. According to Sheth (1977) "multivariate methods refer to those statistical techniques which focus upon, and bring

out in bold relief, the structure of simultaneous relationships among three or more phenomena”. As far as this applies mainly to advanced data analysis (also on simple data analysis), Kiel (2007) emphasized four important research implications that can affect the extraction of correct conclusions (p 46): (a) “ lack of understanding of the nature of the technique by both client and researcher, (b) use of the incorrect technique for a given problem, (c) reliability in the data leading to random or unstable results and (d) the loss of differentiation by researchers between exploratory and definitive studies.”

Maclaran and Catterall (2002) also underlined that the development of computer software programs is needed to ease the interpretation of simple and advanced qualitative data analysis as well. This was a result of the researcher’s tendency at the end of the ‘90s to assimilate the need for adopting innovative research methods and theoretical frameworks (Ereaut, 2002). Thorpe (2000) focused his attention on analyzing both simple and advanced data through ethnographic approaches and theoretical frameworks in order to interpret qualitative data in depth and to extract complete and safe conclusions. In addition, Ereaut (2002) stated that in commercial research the contribution of different disciplines is a must, and the adoption of “an interpretive framework, such as the phenomenology theory and the psychodynamic theory” (p 29) for both simple and advanced data analysis will help researchers to identify creative insights from data analysis, (Barker et al., 2001).

5.5. Opposing the use of computers and software in analysing qualitative data

Opposing this view, Robson and Hedges (1993) expressed the opinion that in the analysis of simple and advanced qualitative data, practitioners doubt the use of computer software programs. Robson and Hedges (1993) supported that in their analysis qualitative researchers prefer to use “imagination, insight and creativity when describing their analysis and interpretation processes” (p 30). In contrast, qualitative data analysis software programs are more focused on storing, indexing and retrieving data rather than analysing it. In analysing simple and advanced data, the emphasis should be given on the data’s classification in order to set a common denominator and face informational chaos (Hart, 1989). This happens due to the nature of qualitative research. Qualitative researchers deal with large amounts of data which they have to organize in ways that the researcher can grasp the content of the research in order to extract valid and reliable information (Robson and Hedges, 1993). In analysing simple and advanced qualitative data, computer software programs help in getting all the data together (storing), specifying themes and distinct categories in the collected data (indexing), as well as searching for links between the data (retrieving; Robson and Hedges, 1993). In interpreting simple and advanced qualitative data analysis, the use of computer software programs might eliminate the hazard of bias for all researchers (Hart, 1989).

5.6. Need for authenticity in results and a new approach in analysing collected data

However, e-marketing researchers in both qualitative and quantitative research, face the ultimate challenge of data accuracy and authenticity (Hassan, 2003). According to Hassan, (2003) the authenticity of information and knowledge has become a source of strength in the organization's operational process and a success determinant factor sustaining the organization's competitive advantage. In securing data accuracy and authenticity, computer technologies might contribute positively since e-marketing researchers deal with diverse data sets which can keep and enhance quality and usefulness of the obtained information (Lee and Siau, 2001). Computer software programs can provide researchers with accurate cross-analysis (use of statistical models as well) to check and to examine the interrelation and interconnection of the research's variables in both simple and advanced data analysis (Hassan, 2003). Walsh (2007) suggested that in order to secure accuracy and authenticity, researchers should simplify the problem and understand and accept that both simple and advanced data require a new approach in analysing collected data. The framework (market) that guards qualitative and quantitative research escorts a variety of multidimensional forces that need and request a separate study, examination and interpretation in order to extract correct, accurate and authentic results. Thus, the authenticity of the results themselves will directly affect the authenticity of the presentation as well (Lee and Siau, 2001).

6. E-MARKETING RESEARCH AND THE PRESENTATION OF RESULTS

The presentation and report of the research outcomes, from simple and advanced data analysis, is an essential part of the research process (Hassan, 2003). The primary goal of the presentation is to communicate the findings, outcomes and the conclusions from the research undertaken (Walsh, 2007). The presentation also targets to make research accessible to others and to place the research in the public domain, when it is not funded only for profit aiming purposes (Hassan, 2003). Simultaneously it helps science to advance and it allows researchers to present their results, their valuable contribution to the field.

In presenting the results, e-marketing researchers should take into consideration, first of all, the audience and its characteristics including educational background, knowledge, experience and specialization. Irrespective of whether the findings are presented to a group of CEOs or to low rank employees, e-marketing researchers should provide an introduction, a framework through which they will give an essence to the audience of what is going to follow. The provision of background information to the research question in order to clarify and specify to the audience what the research question is about, as well as its importance and relevance to the corporation,

is mandatory (Lee and Siau, 2001). A clear statement of the research hypothesis should be used in order to link a presentation's introduction with the presentation's main body and to provide reasoning for assumptions (Hart, 1989).

The second step in presenting results is to describe the data model and analysis method used in the research as well as to explain basic terminology which is necessary for the audience to become familiar with cargo. It is very important to explain the basic terminology as it will allow participants to understand how the researcher has investigated the research problem as well as to explain the technique used to analyse the data (Lee and Siau, 2001). Attributes should be defined and the researchers should state the research's strengths and limitations (Hart, 1989). Furthermore, simplicity is another important factor that should characterize the presentation of the results in e-marketing research. Results should be clearly stated in a well defined format in order to provide a sound explanation (Lee and Siau, 2001).

The provision of a graphical format, diagrams and figures with a brief explanation based on the analysis will assist audiences to have a better view of the results. They can also be used for comparison (Hassan, 2003). However, researchers should prioritize graphs, diagrams and figures and present those that are essential and straightforward. Figures and graphs should also focus on supporting the results simultaneously, providing short summaries on a regular basis in order to keep a strong structure for the presentation (Hart, 1989). The use of figures and graphs should describe trends, positive or negative relations between the variables, as well as compare results and findings from previous investigations for further discussions (Lee and Siau, 2001).

Discussion can be seen as the most productive part of the result's presentation (Walsh, 2007). In the discussion section, an e-marketing researcher should present the most important results, provide a critique of the findings, explain what the findings mean and restate the research objectives. (Lee and Siau, 2001). Therefore in that section, a researcher should develop several predictions of how results could be used and applied objectively in the marketplace. Objectivity should be a major characteristic in the discussion session as well as the presentation of the results (Walsh, 2007).

7. EMERGING TRENDS IN E-MARKETING RESEARCH

Malhotra and Peterson (2001) underlined two principal reasons for the potential growth of e-marketing research. Number one is the upright increase in the speed of doing business as is implied by the fusion of computer use and technological advances. As a consequence, digital technologies and telecommunication devices might improve the effectiveness of companies in responding to customers' demands. Moncrief and Cravens (1999) emphasized the importance of the technological trend in e-marketing research as it can assist companies to interpret and prevent managers from

misreading signals and hidden messages from the market place. E-marketing research might maximize its effectiveness and efficiency by providing organizations with the ability to have a direct and immediate access to the opinion and voice of consumers.

E-marketing research growth relies on the fact that companies nowadays need to be aware of consumption opportunities as well as the requirements from political, judicial, and delivery systems due to the re-formation of the global economy (Malhotra and Peterson, 2001). Since the collapse of the former Soviet Union, more and more countries have adopted an open market economic system and as a result international competition has forced firms to expand globally. Intense labour mobility, immigration and changes in the population structure (low birth rates, aging population) have altered certain demographic issues that companies need to consider prior to entering a new market (Moncrief and Cravens, 1999).

7.1. E-marketing research and continuous learning

According to Kotabe and Helsen, (1999) for a new market entry, e-marketing researchers might provide companies with essential knowledge about the new market and minimize potential risks. Malhotra and Peterson (2001) faced e-marketing research as a mechanism that can assist companies to be converted into learning organizations (Slater and Narver, 1999). As learning organizations, companies might turn market research into an on-going operational process which provides continuous support in effectively identifying new markets, targets and segments (Slater and Narver, 1999). Thus, e-marketing research might generate the essential knowledge to defend a company's competitive advantage during economic downturns. Market knowledge and intelligence has become a unique component of the company's strategy as it has a unique impact on the management's decision-making and the company's market success.

Intelligence is a process through which companies get knowledge of "what the competitors are up to and staying one step ahead of them, by gathering actionable information about the competitors and ideally, applying it to short and long term strategic planning" (Slater and Narver, 1999, p. 247). The implementation of market research in strategic planning will allow companies to penetrate the market "during times of economic boom" (Wee, 2001, p 245). Under these circumstances, firms are more averse to undertake business risks and to increase their possibilities of making the right decisions in order to face uncertainty, to monitor any business risks and to respond to competition (Wee, 2001).

7.2. Competition and internet

Competition requires "a systematic and objective identification, collection, analysis and dissemination of information for the purpose of assisting management in

decision-making” (Wee, 2001). The most important aspect of e-marketing research focuses on enhancing management’s thinking by testing conventional wisdom and commonly held assumptions that support market surveillance and intelligence techniques (Chao, Samiee and Yip, 2003). Such an approach helps management to develop adaptation mechanisms that allow organizations to timely respond to competitors’ actions and new policies. These mechanisms can secure and maintain the company’s market position (Malhotra and Peterson, 2001). In constructing the firm’s competitive advantage and market position through e-marketing research, Chao, Samiee and Yip (2003), emphasized the major role of the Internet since online marketing research should be an integral part in identifying important information that can contribute to technological innovations.

Avlonitis and Karayianni, (2000) argued that in the international business environment, the Internet is a critical success factor (CSF) for business-to-business (B2B) and business-to-consumers transactions (B2C; Alshawhi et al., 2003). Zugelder, Flaherty and Johnson (2000) pointed out that the emergence of the Internet in B2B and B2C transactions, electronic communications, e-commerce and international on-line marketing, have changed traditional marketing methods leading to several legal implications. E-commerce and e-business led small family companies to large multinational corporations from different trade blocks to a new form of exchanging, retailing and delivering products and services. In e-commerce and e-business, firms have the challenge to exploit a diverse number of opportunities existing on the net with huge profit potentials (Zugelder et al, 2000). The Internet has helped to overcome geographic boundaries, contributing to globalization with several implications.

7.3. Legal implications

Legal implications arise not only from local and regional legislation but also from international law and supranational agencies and treaties, such as the World Trade Organization and the World Intellectual Property Law Organization. When using the Internet, it is essential to understand what is legal and acceptable in one country might not be legal in another. For example, there are different legal systems among countries on a codified system of laws, religious principles or the writ of the ruling political party (Alshawhi et al., 2003). That is why e-commerce and e-business have led to complex law and rule implications. Additionally, important law issues, such as the specification of a contract differ in cyberspace, as does international tax harmonization and collection for on-line businesses. Legal issues also include intellectual property protection rights and most importantly the consumer protection law for international e-commerce clients for unfair trading practices and the consumer's right to privacy (Zugelder et al, 2000).

Despite the fact that businesses have increased through the Internet, there is ‘not a unitary regulatory system’ in order to manage transactions and as a result in the

international marketing field there is chaos with contradictory national and regional laws that might apply to the different transactions (Alshawi et al., 2003). Indeed, there is a huge possibility of violating the law of a second country were a transaction takes place. Such violations include the consumer protection legislation which protects unfair and deceptive trade practices and the consumer privacy law (Zugelder et al., 2000). Most of the Internet's visitors are not aware that when they are visiting a site, they leave their "digital footprints" due to several forms of cookies leading to the exposure of their identity and personal profile (demographics). E-marketing researchers consider it an important-success factor to gather personal information and more specifically demographics (Alshawi et al., 2003). A proof of the issue's sensitivity (personal data) is the legislation that has been adopted by the EU which basically "gives European consumers the right to check data that is held about them and to prevent its use" (Alshawi et al., 2003).

The defamation and disparagement law is another important and emerging legislation issue in international and e-marketing research. In e-marketing research, "the publication of an untrue statement of fact that damages the reputation of a person, a business, or its products or services may be considered defamation or disparagement" and it should be respected by all the involved parties (Zugelder, Flaherty and Johnson, 2003). Another sensitive area of e-marketing research is the violation of intellectual property rights. The market showed a variety of such violations that are connected with copyright and trademark infringement where there is a lack of a universal copyright law and copyright protection. Even "linking" on websites might become a serious violation. The "hypertext links" case, where internet users can be transferred from one website to another, might lead to framing. Framing is the case where "a user links to a second site, and then views the second site's contents framed by the logo and advertising of the first site" (Zugelder, Flaherty and Johnson, 2000).

Graeff and Harmon (2002) supported that competition also raises issues and legal rights in privacy. The intensified competitive forces, in relation to the consumers' desire for individualized attention and personalized communication, permitted private companies to interpret personal data for their own tangible benefits-profits. Awareness on the consumers' part and concerns for privacy on the part of the firms could be two important components that e-market stakeholders should consider. However, Graeff and Harmon (2002) supported the opinion that more and more consumers are not aware or they do not care and in many cases they find it acceptable for companies to use their own private information, and this should be seen as a warning sign and a serious issue in international and e-marketing research.

8. CONCLUSION

Modern organizations need to develop mechanisms that allow the organizations to construct new knowledge about global markets, and engage the organization in an on-going learning process to successfully face the challenges of change and competition. International marketing research and e-marketing research might provide organizations with the capability to develop products and services to better fit customer needs, by eliminating the use of production factors, and achieving economies of scale. Since the beginning of 1970s, the changing structure of the global economy led to the phenomenon of “global village”. The advances in technology and telecommunications minimized distances and developed a global consuming attitude where consumers welcomed new products. Through international market research, firms became more sophisticated, understand differences in consumers needs and improved the organizational capability in delivering products more effectively. Thus, the contribution of entrepreneurship in international marketing research with novel ideas, methods and procedures fertilized the field even more altering e-marketing in an alternative form of international marketing research. The contribution of the Internet had a catalytic impact on delivering on-line surveys of equal quality to traditional surveys.

However, in international market research and in e-marketing research, sampling difficulties and the difficulty to secure the homogeneity of the sample put the validity and the reliability of the collected data at risk. Internal and external validity threats tend to become a major weakness in e-marketing research that needs special consideration. Thus, in order to secure the accuracy of the findings, prior data interpretation, e-marketing researchers should follow scientific rules and theories and adequate statistical analysis considering that different variables might have a catalytic impact on the outcomes of the study. A centralized database could be a crossroad for exchanging information and crosschecking for validity and reliability of the findings for e-marketing researchers. Legal implications also threaten the deployment of e-marketing research since competition raises issues and legal rights in privacy, intellectual property protection rights and most importantly consumer protection laws. What is legal or ethically accepted in one country might not be acceptable in another. Legal and ethical implications will impair e-marketing research and the virtual arena.

REFERENCES

- Alshaw, S., Irani, Z. and Baldwin, L. (2003). Benchmarking information technology investment and benefits extraction. *Benchmarking: An international Journal*, 10(4), pp. 414-23
- Avlonitis, G. J. and Karayanni, D. A. (2000). The impact of internet use on business-to-business marketing: examples from American and European companies. *Industrial Marketing Management*, 29(8), pp. 441-59.

- Axinn, C. N. and Matthyssens, P. (2001). Reassessing the internationalization of the firm. *Advances in international marketing*, 11, pp. 3–11.
- Balabanis, G., Theodosiou, M. and Katsikea, E. S. (2004). Guest editorial. Export marketing: Developments and a research agenda. *International Marketing Review*, 21(4/5), pp. 353–377.
- Barker, A., Nancarrow, C. and Spackman, N. (2001). Informed Eclecticism: A Research Paradigm for the Twenty-First Century. *International Journal of Market Research*, 43, pp. 3–27.
- Bell, B. A. and Montgomery, T. (1995). Experience With Data Analysis Method: Dart. Thales Publication, 14, pp. 11–16.
- Berry, D. M. (2004). Internet Research: Privacy, Ethics and Alienation. *Internet Research*, 14(4), pp. 323–332.
- Buckely, P. J. (2002). Is the international business research agenda running out of steam? *Journal of International Business Studies*, 33(2), 365–373.
- Castells, M. (2001). *The Internet Galaxy*, Oxford University Press, Oxford.
- Chaffy, D., Mayer, R., Johnston, K. and Ellis-Chadwick, F. (2000). *Internet Marketing*, Prentice-Hall, London.
- Chao P., Samiee, S. and Yip, L. S. C. (2003). International marketing and the Asia-Pacific Region Developments, opportunities, and research issues. *International Marketing Review*, 20(5), pp. 480–492.
- Craig, C. S. and Douglas, S. P. (2000). *International Marketing Research*, (2nd ed). Wiley, New York.
- Craig, C. S. and Douglas S. P. (2001). Conducting international marketing research in the twenty-first century. *International Marketing Review*, 18, pp. 80–90.
- Creswell, J. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. UK, London: Sage Publications.
- Douglas, S. P. and Craig, C. S. (2006). On improving the conceptual foundations of international marketing research. *Journal of International Marketing*, 14(1), pp. 1–22.
- Ereaut, G. (2002). *Analysis and Interpretation in Qualitative Market Research*, Sage, London.
- Etemad, H., and Right, R. W. (2003). Introduction. Internationalization of SMEs: Toward a new paradigm. *Small Business Economics*, 20, pp. 1–4.
- Hart, S. J. (1989). Collection and Analysis of the Interview Data. *MIP*, 7, pp. 23–30.
- Harter, B. (1999). On-line data collection. *Wireless Review*, 16(18), pp. 54–62.
- Hassan, B. (2003). Examining Data Accuracy and Authenticity with Leading Digit Frequency Analysis. *Journal of Industrial Management and Data Systems*, 103, pp. 121–125.
- Ivankovic, D., Kern, J., Bartolic A. and Vuletic, S. (2003). Analysis of Data as Information: Quality Assurance Approach. *International Journal of Health Care Quality Assurance*, 6, pp. 9–12.
- Ko, D., Kirsch, L. and King, W. (2005). Antecedents of knowledge transfer from consultants to clients in enterprise system implementations. *MIS Quarterly*, 29, pp. 59–85.
- Kotabe, M. and Helsen, K. (1999). *Global Marketing Management*, John Wiley and Sons, New York, NY.
- Kumar, V. (2000). *International Marketing Research*. Prentice Hall: Englewood Cliffs, NJ
- Kumar, V. (1999). *International Marketing Research*. Prentice Hall, NY, USA.

- Lee, S. J. and Siau, K. (2001). A Review of Data Mining Technologies. *Journal of Industrial Management and Data System*, 101, pp. 41-46.
- Li, T. (2003). Reviving Traditions in Research on International Market Entry. *Advances in International Marketing*, 14, pp. 1-8.
- Litvin, S. W. and Kar, G. H. (2001). E-surveying for Tourism Research: Legitimate tool or a researcher's fantasy? *Journal of Travel Research*, 39(3), p. 308.
- Lohr, S. L. (1999). Sampling: Design and Analysis. Duxbury Press: Pacific Grove, CA.
- Lonner W. B. (1986). *Field methods in Cross-Cultural Research*, Sage Publications: Beverly Hills, CA.
- Maclaran, P. and Catterall, M. (2002). Analyzing Qualitative Data: Computer Software Program and the Marketing Research Practitioner. *Qualitative Marketive Research: An International Journal*, 5, pp. 28-39.
- Malhotra N. K. and Peterson, M. (2001). Marketing Research in the New Millennium: Emerging Issues and Trends. *Marketing Intelligence and Planning*, 19, pp. 216-235.
- McDaniel, C. and Gates, R. (2001). *Marketing Research Essentials*. (3rd Ed.), South-Western College Publishing, Cincinnati, OH.
- Moncrief, W. C. and Cravens, D. W. (1999). Technology and the changing marketing world. *Marketing Intelligence and Planning*, 17, 329-32
- Reynolds, N. L., Simintiras A. C. and Diamantopoulos, A. (2003). Theoretical justification of sampling choices in international marketing research: key issues and guidelines for researchers. *Journal of International Business Studies*, 34(6), pp. 68-78.
- Rialp, A. and Rialp, J. (2007). Introduction: State of the Art and Opportunities and Challenges for International Marketing research in the 21st Century. *Advances in International Marketing*, 17, pp. 1-13.
- Rialp, A. and Rialp, J. (2001). Conceptual frameworks on SMEs' internationalization: Past, present, and future trends of research. In: C. N. Axinn and P. Matthyssens (Eds), *Reassessing the internationalization of the firm. Advances in international marketing*, 11, pp. 49-78. Amsterdam: JAI/Elsevier.
- Robson, S. and Hedges, A. (1993). Analysis and Interpretation of Qualitative Findings. *Journal of the Market Research Society*, 35, pp. 23-35.
- Rowley, J. and Gibbs, P. (2008). From learning organization to practically wise organization. *The Learning Organization*, 15, pp. 356-372.
- Silverman, D. (2009). *Doing qualitative research* (3rd ed.). UK, London: Sage Publications. NY: Prentice Hall.
- Sheth, J. N. (1977). *What is Multivariate Analysis?* in Sheth, J.N. (Ed.), *Multivariate Methods for Market and Survey Research*, American Marketing Association, p. 3.
- Sinkovics, R. R. and Bell, J. D. (2006). Current perspectives on international entrepreneurship and the internet. *Journal of International Entrepreneurship*, 3(4), pp. 247-249.
- Sivakumar, K. and Nakata, C. (2001). The Stampede toward Hofstede's Framework: avoiding the sample design pit in cross cultural research. *Journal of International Business Studies*, 32(3), pp. 555-574.
- Slater, S. F. and Narver, J. C. (1999). *Market oriented is not enough: build learning organization* in Deshpande, R. (Ed.), *Developing A Market Orientation*, Sage Publications, Thousand Oaks, CA, pp. 237-66.
- Sloman, J. and Sutcliffe, M. (2004). *Economics for Business*. Pearson, London.

- Styles, C. and Seymour, R. G. (2006). Opportunities for marketing researchers in international entrepreneurship. *International Marketing Review*, 23(2), pp. 126-145.
- Taylor, H. (2000). Does Internet Research Work? *International Journal of market Research*, 42 (1), pp. 51-63.
- Thorpe, M. (2000). *The Ethnographic Imagination: Critical Ethnography and Styles of Mind*. AQR, London.
- Walsh, P. (2007). Market research data integration coming to intersections from two directions. *International Journal of Market Research*, 49, pp. 471-489.
- Wheeler, D. R. (1998). Content Analysis: An Analytical Technique for International Marketing Research. *International Marketing Review*, 52, pp. 39-47.
- Wilson, A. and Laskey, N. (2003). Internet Based Marketing Research: A Serious Alternative to Traditional Research Methods? *Marketing Intelligence and Planning*, 21(2), pp. 79-84.
- Zugelder, M. T., Flaherty, T. B. and Johnson, J. P. (2000). Legal Issues Associated With International Internet Marketing Research. *International Marketing Review*, 17, pp. 253-271.

SUBSCRIPTION INVOICE

Annual Institutional Rate

Annual Personal Rate

Euro €64 (Cyprus Rate)

Euro €22 (Cyprus Rate)

Euro €86 (International Rate)

Euro €35 (International Rate)

The subscription rates cover the postal fees.

You may make payments to American College, by **Swift Transfer**.

Please transfer the amount to the following account:

American College

IBAN: CY78 0060 0521 0000 0052

1339 0865

BIC: ETHNCY2N521

National Bank of Greece (Cyprus) Ltd.

Stasinou & Mboumboulinas, 1

P.O. Box, 21191, 1060 Nicosia, Cyprus.

Bank Telephone: +357-22674640

Bank Facsimile: +357-22670014

Subscribers are requested to notify the Editor of change of address.

Name/Institution:

Address:

City:

State or Province:

Country:Postal Code/ Zip.....

Date:

The Cyprus Journal of Sciences

NOTES FOR CONTRIBUTORS

The Cyprus Journal of Sciences is a refereed publication with an international character and a broad perspective. The journal aims to cover a wide spectrum of areas of interest, including among others, Humanities and Social Sciences, Pure and Applied Sciences, Economics and Management. It will publish empirical, theoretical and methodological articles. Survey research, commentaries and book reviews are also of interest. Papers submitted to *TCJS* should not be under concurrent consideration at another journal.

Manuscripts should begin with a cover page indicating the title of the paper and the full address (i.e., author's name, affiliation, address, telephone number, fax number, and email address) for each author. The second page should repeat the title and contain an abstract of no more than 100 words. The text should begin on page 3 and as far as possible should not exceed 7,000 words. Affiliations and acknowledgements should appear as a footnote at the bottom of the first page and should be preceded by an asterisk. Where possible, affiliations should include the author's department and institution. Footnotes should be labeled NOTES and should appear at the end of the main text. Bibliographies should be labeled REFERENCES and should be listed alphabetically at the end of the main text. Authors should adopt the following style:

Einav, L. and Levin, J. (2010). Empirical Industrial Organization: A Progress Report. *Journal of Economic Perspectives*, 24(2), pp. 145-162.

Enders, W. (1995). *Applied Econometric Time Series*. John Wiley & Sons, Inc.

In the text itself, these should be cited either:

Einav and Levin (2010) and Enders (1995) or (Einav and Levin, 2010) and (Enders, 1995).

Appendices should appear after the notes but before the references. The typeface for notes, appendices and references should be smaller than that used in the main text. Further authors' guidelines can be downloaded from the journal's website (<http://www.ac.ac.cy/easyconsole.cfm/id/344>). Authors may submit their papers electronically to the editor at the email address, charalambos.louca@ac.ac.cy in Microsoft Word format. The attachment must be ONE file that includes all components of the manuscript (i.e., title page, abstract, paper, endnotes, appendices and references). Alternatively manuscripts can be submitted via mail. If mailed, authors should include a copy of the manuscript on standard A4 paper and a disk containing ONE file that includes all components of the manuscript. Papers are acknowledged upon receipt.

Manuscripts should be submitted to:

Charalambos Louca, Editor
The Cyprus Journal of Sciences
American College
2 & 3 Omirou Avenue
Eleftheria Square
P.O.Box 22425
1521 Nicosia
Cyprus