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ICODECON (International Conference of Development and Economy), though still taking its first steps, has gained the trust of both the cooperating educational establishments and tens of researchers. Thus, the cooperating Universities, co-organising the second conference, are currently 6. They are: The Technological Educational Institute of the Peloponnese, the University Alexandru Ioan Cuza – Iasi - Romania, the Technological Educational Institution of West Macedonia - Greece, the Democritus University of Thrace – Greece, the University of National and World Economy Sofia – Bulgaria and the University of Peloponnese. The existence of this network of higher-education establishments creates the conditions required for direct and substantive cooperation in other sectors of science and research as well.

The trust vested in us by tens of researchers who have entrusted us with their work, is both an honour and a responsibility for us, and it is our pleasure to contribute in highlighting their work, especially that of young researchers.

In an intensely changing economic, social and geopolitical environment, the sciences dealing with the prosperity of people, are on the move and are very concerned with interpreting the phenomena, as they appear, and offering solutions for a better tomorrow. The papers that have been submitted, which will be presented during the conference, fall in the above categories, but also offer different perspectives and analyses, drawing from the experience of different countries.

ICODECON will continue the tradition of rewarding the three best papers of young scientists, through the Prize for best scientific research. We believe that it is important to help young researchers and highlight their work.

The 3<sup>rd</sup> Conference is placed under the auspices of the Greek Ministries of Education, Research and Religious Affairs, and Economy, Development and Tourism.

On this occasion, I would like to thank the Management of all six Educational Establishments, all the colleagues in the Scientific Committee and the Organising secretariat, as well as all those who contributed to the realisation of this International Conference. Finally, I would like to make special mention and extend our warm thanks to the George and Victoria Karelia Foundation for its faith in us and its support, for the second consecutive year. I would also like to express my gratitude to the "Captain Vassilis and Carmen Constantakopoulos" Foundation for their financial support. It is thanks to the support of the *George and Victoria Karelia Foundation* and *Captain Vassilis and Carmen Constantakopoulos Foundation* that we were able to organise this international scientific event with dignity.

I wish the Conference the best of success.

Dr. Dimitrios P. Petropoulos

Associate Professor, President of the Organizing and Scientific Committee of the Conference



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## Changes to the cost structure of Greek hotels at the aftermath of the financial crisis

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### *Abstract*

*This paper explores the cost behavior of the Greek hospitality industry, using panel data of more than 4,000 limited companies for the years 2005-2014. The aim is to identify determinants than enhance the management of cost in changing environments. During this period the industry operated in a turbulent environment, which includes phases of environmental stability, the financial crisis, and the beginning of recovery. The cost structure of hotels includes high proportion of fixed costs that, at least in the short term, is mostly uncontrollable by management. The findings suggest that the hotels did manage to adjust their cost structure to the changes, but also that they had great difficulties to control their cost during the first phases of both the negative and the positive changes of their environment.*

**Keywords:** *cost behavior, hospitality industry, financial crisis,*

*environmental change JEL classification codes: A2, COM12*

### **Introduction**

Among the normative academic knowledge of hospitality management accounting is the acceptance that hotels' cost structure includes high proportion of fixed cost, and consequently low proportion of variable cost. This is the result of two characteristics of the industry. The first is that hotels require heavy investments in assets from the very start of the operation. These investments determine the capacity of the hotel, the range of the market segments that is likely to compete, and in accounting terms the future depreciations, the levels and cost of staff, and the maintenance costs among others.

The second is that hotels need a lot of staff to operate, that is, they are labor intensive. In manufacturing this would be a sign that cost could be flexed according to production. However, the hospitality industry is part of the service industries and thus there is no clear connection between input and output. As mentioned above hotels have a given capacity and are designed from the start to serve given market segments. As such, the main factors that determine the levels of staff are the hotel's capacity and the expected range of occupancy for a future period. This is more intense in hotels competing in the upper market segments because they need to maintain their quality performance and, as such, highly qualified personnel even during periods of lower occupancy, for they cannot easily enroll qualified workers on the basis of the ups and downs of occupancy.

In short, those two characteristics make hotels part of the industries that operate with high fixed cost. Because fixed cost is mostly uncontrollable by the managers, at least in the short run, hotels are vulnerable in changes in demand, whether this is expressed in lower occupancies, or in fall of room prices, or in-hotel consumption, or a combination of these. The last two are probably the most difficult to cope with, for a full hotel in low prices and customer consumptions may still require high levels of staff to operate. However, sales



instability is another characteristic of the industry; there are annual cycles with high and low seasons and also weekly frustrations in hotel operations. The problem of the combined high fixed and uncontrollable cost and sales instability has led Kotas (1999) to propose that the industry should adopt a revenue accounting orientation, since managers have more capabilities to control revenue than cost.

That being said, there is enough research that confirms that cost oriented management accounting and cost management techniques and procedures are widely adopted in the hospitality industry (e.g. Faria et al., 2012; Harris and Brander Brown, 1998; Jones, 2008; Steed and Gu, 2009), and this also holds for the Greek hospitality industry (e.g. Diavastis et al., 2016; Makrigiannakis and Soteriades, 2007; Pavlatos and Paggios, 2008; 2009). However, Mattimoe and Seal (2011) do confirm the revenue orientation of the industry, noticing that accounting logics are present but it is the marketing logics that dominate the management of hotel operations. They move on to notice that marketing enables more space for management action; an observation in line indeed with the principles of revenue orientation.

While the characteristics of the industry discussed above refer to normal circumstances, there is another characteristic that has not attracted much research from an accounting point of view; the fact that tourism is extremely sensitive to unexpected negative events in its operating environment (Middleton and Clarke, 2001). These may be physical disasters like earthquakes, war in the surrounding areas, or indeed a financial crisis like the one that Greece witnessed. The latter crisis initially affected the tourist origin countries but quickly spread into Greece triggering financial shortage, social instability and a political crisis between the governments and the EU. All these had an impact on demand, that is, on the revenue axis of hotels. This makes an additional hardship for hotel management for, in these conditions, it is not only much of the cost, but also the revenue that is uncontrollable by them. As such, there is a question on what extend the hotels can adapt their costs to such changes. This paper aims to explore this question in the field of the Greek hospitality industry during the years of the crisis.

Based on data from over 4000 hospitality companies the next section presents the cost performance of hotels from the years 2005 to 2014. These years cover a pre- crisis, a crisis, and a recovery phase. The results suggest that the hotels did manage to control and adjust their cost, but also that it took them a time period for this to be realized. Surprisingly, this difficulty was also evident on the positive change or the recovery phase. The implications of these are discussed in the concluding section.

## Methodology and results

For the purpose of this study, we examined a large longitudinal dataset of 4433 Greek companies for the period 2005-2014. The data were extracted by the financial database of ICAP Hellas S.A. The choice of the sample included all firms from the tourism and hospitality sector, which is the largest service sector in Greece, therefore the analysis was made on a relatively homogenous sample.

Based on the revenue of our sample companies we were able to recognise three phases during the time period we examine (Table 2). The first is the pre-crisis phase (years 2005-2008). The second the crisis phase (2009-2011), in which the fall of revenue reaches almost to 41% from what was on 2008. Finally, the third is the post-crisis or recovery phase (2012-2014), where there is a considerable increase on revenue that not only returns the industry to the pre-crisis levels, but also goes 55% above it.

The first step was to perform the estimation of elasticities using the Panel EGLS method with diagonal correction of standard errors. We examined the relations between cost of sales to revenue, functional cost to revenue, cost of sales minus depreciation to revenue, total cost to revenue, Earnings Before Interest Taxes and Depreciation (EBITD) to revenue, and finally variable cost to revenue. We used EBITD instead of net profits because during the period we examined there were many cases that net results were negative and this created problems to some of our estimations as we did not want to exclude them from the analyses. We used proxy data for the estimation of the variable cost since from the sum of cost of sales plus functional cost we only removed depreciations. The results are presented in the following table:

Year	Cost of Sales / Revenue	Functional Cost / Revenue	(Cost of Sales – Depreciation) / Revenue	Total Cost / Revenue	EBITD / Revenue	Variable Cost / Revenue
2005	1.02	0.74	1.03	1.02	0.83	0.95
2006	1.01	0.77	1.03	1.02	0.84	0.96
2007	1.03	0.72	1.05	1.04	0.83	0.90
2008	1.03	0.76	1.04	1.03	0.84	0.95
2009	1.02	0.77	1.04	1.03	0.84	0.95
2010	1.03	0.76	1.05	1.04	0.86	0.95
2011	1.01	0.75	1.04	1.03	0.85	0.93
2012	1.01	0.78	1.03	1.03	0.88	0.94
2013	1.03	0.77	1.03	1.03	0.86	0.95
2014	1.00	0.76	1.03	1.02	0.82	0.94

Table 1. Elasticities

As it becomes obvious from table 1, the elasticity of all the items under examination is stable throughout the whole time period we examine. The following figure 1 visualises that cost of sales, functional cost, and EBITD follow more or less the direction of revenue.

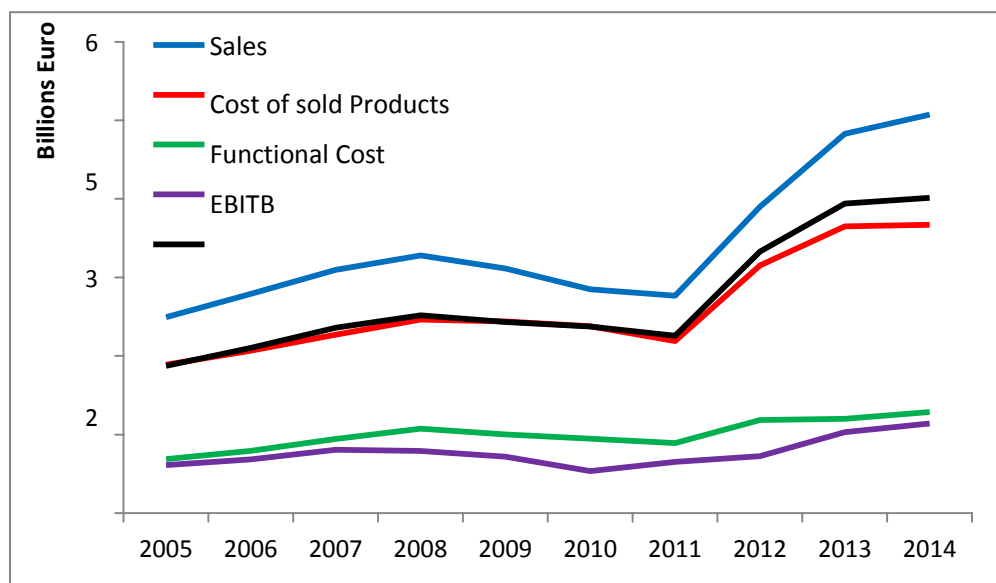


Figure 1 Revenue and cost items diagram for the examined period

However, figure 1 also points to two time-points of potential interest. The distance between the sales and the cost of sales lines lessens during the crisis period and remains narrow during 2012. Therefore, we moved on to further examine the cost structure of these years by performing vertical analyses on the cost items of the period. Table 2 that follows presents the results of the analyses per year, that use as a common size base every years revenue. The items that are included are cost of sales, functional cost, controllable cost, and EBITB. Controllable cost is a proxy variable, which we calculate as total cost minus depreciation minus interests. In order to make it easier to readers, the more important positive changes are in blue font, and the negative changes in blue font.

Year	Sales	Cost of Sales	Functional cost	Controllable cost	EBITD
2005	2,494,240,388	75.85%	27.66%	78.04%	24.50%
2006	2,793,049,225	74.13%	28.57%	77.67%	24.61%
2007	3,096,521,289	73.42%	30.56%	76.87%	26.09%
2008	3,281,312,533	75.17%	32.78%	78.97%	24.08%
Average of phase 1		<b>74.64%</b>	<b>29.89%</b>	<b>77.89%</b>	<b>24.82%</b>
2009	3,114,025,111	78.48%	32.23%	80.63%	23.03%
2010	2,847,095,147	83.63%	33.46%	85.03%	18.83%
2011	2,768,639,583	79.22%	32.29%	79.67%	23.56%
Average of phase 2		<b>80.44%</b>	<b>32.66%</b>	<b>81.78%</b>	<b>21.81%</b>
2012	3,899,858,626	80.86%	30.46%	83.85%	18.61%
2013	4,828,319,612	75.64%	24.95%	80.46%	21.38%
2014	5,071,361,515	72.37%	25.42%	79.40%	22.52%
Average of phase 3		<b>76.29%</b>	<b>26.94%</b>	<b>81.24%</b>	<b>20.84%</b>

Table 2. Horizontal analysis of the cost and EBITB items.

The financial crisis started in 2009, which is the start of phase 2. However, the crisis did not affect the whole year and there were small losses in all the items under examination. But in 2010 the rate of cost of sales to revenue (83.63%) went 5% higher than the previous year and 8.5% higher than the last pre-crisis year. Similar behaviour is evident to the controllable cost ratio. This is because we consider the latter as completely uncontrollable by managers). As a result there is a considerable fall to the EBITD levels (18.83%). However, in the next year (2011) although the crisis persists and there is also a small fall on revenue (-3%), the cost performance of the hotels improves. They manage to decrease by 4% the cost of sales percentage, 1% the functional cost, and 6% the controllable cost. As a result the EBITD comes close to the pre-crisis levels (23.56%) .

The recovery phase starts from 2012. However, the cost behaviour of the first year of the phase is rather surprising. There is a considerable increase of revenue, not only when considering the crisis period, but also in regards to the pre-crisis levels. At the same time, though, the cost performance is lower than the previous years and similar to the crisis phase; only functional cost had improved percentage, the percentage of the cost of sales was 1.5% higher and the controllable cost increased by 4% that was almost as poor performance as the lower value of the crisis period. This is reflected to EBITD that also reaches a negative record value. During the next two years the hotels gradually improve their cost performance behaviour. The cost of sales and functional cost ratios improve their values to outperform the pre-crisis levels.

However, the controllable cost and the EBITD although improved they still have some distance to cover. Figure 2 that follows next, diagrammatically presents these two turning points at the beginning of each phase.

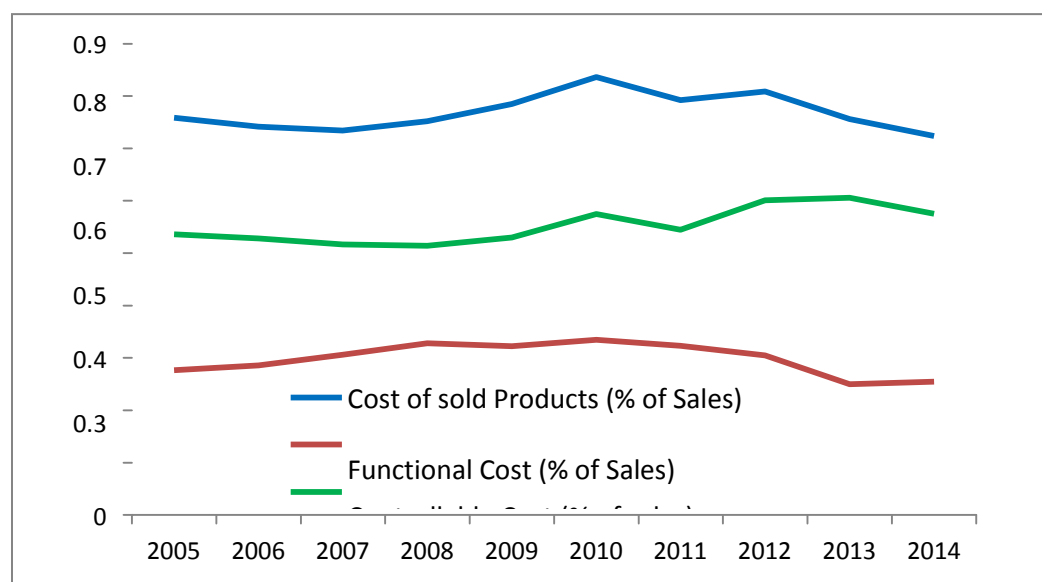


Figure 2. Cost of sold products, functional cost and controllable cost as % of revenue

	Sales	Cost of Sales	Functional cost	Controllable cost	EBIDT
2009	-5.10%	-0.92%	-6.67%	-3.11%	-9.24%
2010	-8.57%	-2.57%	-5.11%	-3.58%	-25.21%
2011	-2.76%	-7.87%	-6.16%	-8.89%	21.64%
<b>Sum of phase 2</b>	<b>-15.62%</b>	<b>-11.07%</b>	<b>-16.89%</b>	<b>-14.88%</b>	<b>-12.81%</b>
2012	40.86%	43.77%	32.90%	48.25%	11.25%
2013	23.81%	15.81%	1.40%	18.80%	42.26%
2014	5.03%	0.49%	7.02%	3.65%	10.63%
<b>Sum of phase 3</b>	<b>83.17%</b>	<b>67.32%</b>	<b>44.22%</b>	<b>82.54%</b>	<b>77.63%</b>

Table 3. Sequential vertical analysis

In order to verify the above, we also performed a modified vertical analysis that is presented in table 3. The table presents the percentage of change of the items under examination. The base values of each year are the previous year's values. The figures on the table confirm that the hotels faced considerable difficulties to adjust their cost items at the start of each period, namely 2010 and 2012, gradually improving their performance thereafter.

### Discussion and Conclusion

The paper explores the adaptive capacity of Greek hotels during the frustrating operating environment of the financial crisis. Hotels are considered to have difficulties in adapting their cost to environmental changes because their cost structure includes high fixed cost and much lower variable cost.

Despite the above difficulty, the data reveal that Greek hotels managed to adapt their cost on the changes of demand. However, it is also evident that they failed to manage their cost during the first periods of change. With the crisis starting in 2009, it was not until 2011 that the hotels managed an adequate cost performance. While this is a more or less expected finding, this was also the case, unexpectedly, on the positive turn of the post-crisis phase. The hotels realized in 2012 a major increase of 40% on their revenue. However, their cost performance was similar, and in the case of controllable cost close to, to the lower values of the crisis phase. Cost performance was gradually improved during the next two years.

The literature reviewed in the first section suggests that hotels widely adopt management and cost accounting techniques and procedures. However, the cost performance of Greek hotels during the frustrating environment of the examined period implies that they have not mastered the way to respond to a fast changing environment. Developments from the management accounting domain suggest that traditional management accounting and budgeting procedures do not facilitate companies operating in changing environments. Continuously updated future orientated procedures, like rolling forecasts (Hope and Frasser, 2003), or

continuous budgeting (Frow et al., 2010) are suggested to fit better in those environments. There is case study research that records the use of rolling forecasts, in parallel to budgeting, in the industry (Brander Brown και Atkinson, 2001; Cruz, 2007). Certain Greek hotels adopted continuous budgeting or rolling forecasts during the crisis to respond to the pressure of their environment (Makrygiannakis, 2017). Greece now starts to balance the effects of the crisis and its hospitality industry has entered a period of growth. However, the vulnerable environment of east Mediterranean does not exclude another crisis, even if this triggered by another reason. Therefore, the authors of this paper suggest that the Greek hospitality industry would benefit if these or similar management accounting techniques become more widely adopted.

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# CUSTOMS CONTROL AND ITS CONTRIBUTION AGAINST SMUGGLING AND TAX EVASION

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## ***Abstract***

*Hellenic Customs Administration, embracing European and international trends in the development of a modern Customs Administration, is developing its action, aiming at, facilitating legitimately trade and security and protection of society, fair and efficient collection of public revenues and creating trust and voluntary compliance relationships.*

*This article aims at: a) the theoretical approach of the role of the Customs Service and customs control as it is reflected in the Greek economic and social reality and b) the investigation of their effectiveness in the fight against smuggling and the prevention of tax evasion based on the business plan of the General Secretariat.*

**Keywords:** *Accounting and Auditing: Government Policy and Regulation, Tax Evasion and Avoidance,*

**JEL classification:** *M48, H26, M41.*

## **1. Introduction**

The Hellenic Customs Administration, embracing European and International Trends in the development of a modern Customs Administration, is developing its action, aiming at facilitating legally trade and protection of society, the fair and efficient collection of public revenues, as well as the establishment of trust and voluntary compliance relationships between economic operators. The present research aims at: a) the theoretical approach of the role of the Customs Service and customs control as reflected in the Greek economic and social reality and b) the investigation of their effectiveness in combating smuggling and preventing tax evasion, based on business plan of the General Secretariat for Public Revenues.

In order to meet the objectives and to complete the present article, a questionnaire is created which is to be filled by customs officers and a case study on customs control is implemented on smuggling of alcoholic beverages. Conclusions resulting from the application of this methodology largely confirm the need to establish and implement targeted and effective customs controls to ensure an equivalent control effect on the protection of the country's economic, social, environmental and cultural security.

Customs authorities, in accordance with Community law, apply and enforce Community policies in almost all areas of international trade. Customs are involved in the above procedures and are responsible for implementing and enforcing Community legislation on external trade, not only in terms of tariffs and commercial policy measures, but also in terms of environmental protection, cultural heritage, consumer protection, etc.



In order to ensure the effectiveness of customs procedures, it is necessary to carry out checks while taking appropriate anti-fraud measures. This entails customs controls both at the place of clearance of the goods and at the premises of the undertakings. Customs controls should be carried out effectively but without overburdening trade which is detrimental to trade and to the competitiveness of businesses.

The vision of the modern Customs Administration is that the Customs Service plays an important role in the economic recovery of the country, responds positively to the large segments required and adopts the European and international standards that characterize a modern customs administration.

At the same time, the Customs Authorities should apply and enforce the Community and national measures adopted for the general scheme, possession, movement, control and levying of excise duty on the products subject to it and the measures adopted to impose the registration tax on motor vehicles.

Customs controls are a powerful tool for responding to the increasing volume of freight flows and pressures to speed up their movement, which ensures:

- ✓ Correct application of customs duties on the import and export of goods and the collection within the prescribed time limits, taking into account the correct tariff classification of the goods, the correct application of the rules of origin and the correct calculation of the customs value.
- ✓ Proper compliance with the tax and other rules covering imports, exports and intra-Community movements of certain goods.
- ✓ Proper adherence to commercial policy measures where these are imposed.
- ✓ Proper compliance with the rules of the Common Agricultural Policy (CFP) in the part concerning customs procedures.
- ✓ Continuous and uninterrupted customs surveillance of goods for as long as necessary.
- ✓ Protecting the citizens of the Community, the environment, living organisms, cultural heritage, etc. in connection with ensuring the application of veterinary, phytosanitary, environmental and other rules governing the import or export of goods.
- ✓ Proper compliance with the rules for the enforcement of the CPC and Classification Fee

The KMs are responsible and responsible for the way in which they carry out customs controls to protect the Community's economic and national interests and the interests of its citizens.

The above elements are essential elements of the Customs Service's mission, which has escaped the narrow traditional boundaries of its role as a simple financial mechanism, focusing its efforts on facilitating trade, but without neglecting to show its practical interest in protection of society as a whole.

## ***2. Literature Review***

The General Secretariat for Transparency and Human Rights which published in 2013 concerns that the corruption and its derivatives are the main cause of the impoverishment, the collapse and eventually the destruction of the country. Smuggling and the trafficking of adulterated fuels are the strongest interlocking circuits with long-lasting effects and incalculable effects on the economy, national security and public health. Furthermore, the report mentioning that the loss of revenue amounts to € 2 billion per year.

Moreover, smuggling of cigarettes, in addition to leading to a loss of revenue for the State of around EUR 800 million a year, seriously damages health. It is important to mention that a document from the General State Laboratory, which was sent to the General Secretariat for Transparency and Human Rights, says: "... The manufacture of cigarettes is poor. The hygienic conditions in these laboratories are also unknown.

The tar, nicotine, and carbon monoxide levels ingested by the smoker in relation to those listed in the relevant legislation are very high ... ". To understand the magnitude of the problem, we need to look at the quantitative data that shows that seized cigarettes in 2012 were 456 million pieces.

It is of major importance to supply and install in X-ray systems to control lorries and containers so that it is possible to control the introduction of smuggling cigarettes, drug trafficking, fuel, alcohol, but also many others counterfeit products which are dangerous to public health

Also, a study conducted by IOBE (2013) on the spirits sector in Greece, which in recent years, mainly due to the increase in the rates of alcoholic beverages, is going through a period of deep recession. This increase is also due to the rise in illegal cross-border purchases from neighboring countries, which impose significantly lower rates, which in effect leads to a decline in activity in the domestic industry and ultimately a reduction in expected revenues to the state budget, as well as public health damage consumption of falsified and counterfeited alcoholic beverages.

In the study, proposals are made to ensure the sustainability of the enterprises in the sector. The gradual reduction of the EFCOP coefficient with the simultaneous imposition of additional measures, such as a) the intensification of customs controls both at the border and on the domestic market in order to limit the illegal trade b) the coordination of the control mechanisms for better detection efficiency illegal alcoholic beverages and (c) the creation of a working group involving relevant services and industry in the fight against alcohol fraud / smuggling are targeted interventions to combat the phenomenon and ultimately increase public revenues.

Mardas D., et al, (2014), presents measures to tackle the problem of fuel fraud and trafficking, which has been enormously explosive in the last few years without the ability to monitor the magnitude of the phenomenon. The Pan-Hellenic Federation of Fuel Dealers (POKEK) and the Association of Petroleum Trading Companies (ASEPE) in their effort to take measures to control the illegal handling of fuels among others suggest the following :

- 1) Continuous intensive controls by the competent customs bodies at the service stations, for the detection of deforestation mechanisms,
- 2) Electronic monitoring of the route of the means of transport to the internal market or export to the final destination by GPS,
- 3) Controls the points of sale, all imported and produced quantities of gasoline substitutes, supporting documents, suspected operators located in the wider area, the shipping of fuel virtual exports of fuels.

The results of the customs controls on smuggling of smoke during the period 2013-2014 are presented by Galouri I., (2014). Galouri states that, due to the intensification of the targeted post-the audit of the Attica and Thessaloniki Audit Offices, the issuing of a manual for the auditing of technical and working methods and joint actions with other Public Services in the field of combating the illicit trafficking of goods under NYCs, showed the following improvement over the past year. Of 5,119 audits in 2013, they rose to 11,907 in 2014. As a result, there were 110 infringements and 248 seizures of tobacco, which correspond to € 43,500,000 in respect of duties and taxes, much more than in 2013 where 18,500.00 customs duties and taxes were established, representing 95 infringements and 327 seizures respectively.

In the same year at an extraordinary general assembly of the tobacco smoker syndicate in Greece, the secretary general of the PPCC and the president of the Panhelion University Greek Criminologist, Mrs Bitsika, states that smoke is the most smuggling substance in the world . Approximately 700 billion cigarettes a year lead to a loss of revenue for states of around € 40 billion.

It is therefore of great importance to intensify checks using state-of-the-art machinery, to staff with the appropriate human resources of the country bordering on Balkan countries, to exchange information between services and states to detect illegal.

### 3. *Customs control*

Customs controls are the checks carried out by the competent customs control bodies under the Customs Code, which is the set of codified laws and provisions concerning the customs and customs clearance of goods, the control of the legal process of imports and exports, the prosecution of the offenses and the smuggling and the responsibilities of the accredited control bodies, which constitute the customs authorities of each country. The responsibilities of customs control include:

- ✓ Investigating, detecting and suppressing financial offenses such as money laundering, fraud and irregularities, commission-related offenses, subsidies and subsidies, illegal stock and financial transactions and generally financial fraud against the interests of the Greek State and the European Union, irrespective of the venue.
- ✓ Preventive enforcement of tax law provisions as well as temporary tax audit, in particular on withholding and withholding taxes, with emphasis on VAT, as well as the enforcement of the provisions of the customs legislation.
- ✓ Investigating, detecting and combating illegal transactions, frauds and activities, using electronic media, the Internet and new technologies.
- ✓ Prevention, prosecution and fight against other offenses such as illicit trafficking in drugs, weapons and explosives, precursors and psychotropic substances, toxic and dangerous substances (radioactive and nuclear materials, toxic waste, etc.), antiquities and cultural goods.
- ✓ Surveillance of the sea by carrying out controls to combat tax evasion and smuggling.
- ✓ The protection, in cooperation with the competent departments, of the seaside and the beach, as well as the exchangeable and public property, which is the responsibility of the Ministry of Finance, from the arbitrary abuses and constructions on them.

At Community level, customs controls are "specific acts of the customs authorities to ensure the correct application of the customs rules and other legal provisions governing the entry, exit, transit, transport and end use of goods moving between the customs territory of the Community and third countries and the presence of non-Community goods. Such acts may include:

- Examination of goods,
- Check the data of the declaration and the existence and authenticity of electronic or written documents,
- Control of accounting records and other business data; Control of the means of transport,
- Check baggage and other goods carried or carried by persons as well
- Carry out administrative inquiries and similar operations

The organization chart of the AADE includes a multitude of objectives, actions and obligations that are required to implement and implement all the Services contained therein. Structurally, targeting was developed on the basis of the five strategic objectives, as follows:

- 1) Improving voluntary compliance by taxpayers by improving the procedures for collecting arrears and compulsory collection methods with a view to enhancing the collection capacity.
- 2) Combating tax evasion and smuggling by modernizing the methods and tools of the control mechanism and improving the logistical infrastructure and information systems of audit services.
- 3) Facilitating trade through the strengthening and systematization of cooperation with third parties and the simplification of their start-up and operation procedures.
- 4) Effective and efficient Management, with an emphasis on serving the citizen through reform projects including modernization and improvement of services, the development of a Strategic Informatics project and the reform of the human resources management system

5) Protection of the social community, which is a major priority for the Public Administration through the laboratory and supervisory work of the responsible Chemical Services

In a report in January 2014, the European Parliament, and in particular the Directorate-General for Internal Policies, analyzed the relationship between EU policy and illicit trade in tobacco products. It examined three EU policies: [1] the European Community strategy and the action plan to tackle illicit trade in tobacco products [2], the revised Tobacco Products Directive [3] and the Agreements between the European Community, the individual Member States and the four major tobacco companies. In June 2013, the European Commission published its biennial strategy to tackle illicit smoke trade in the EU, while at the same time announcing that during 1996-2012, cigarette seizures in the EU were higher in the 1999-2000 period (around 6 billion euro per year).

However, the problems in this case of combating cigarette smuggling are enormous and are usually referred to:

a) the lack of suitable specialized staff (ie specialized training courses for counterfeit smokers),

b) the elimination of illegal smuggling; adequate and innovative technological equipment to help detect such phenomena and

c) incomplete cooperation and exchange of information between Member States and

d) minimal Member States to combat such phenomena. Suffice it to be an example, customs officials often rely on the tobacco industry itself to find out whether the cigarettes they bind are false or genuine when the industry itself has an incentive to classify seized cigarettes as forged.

The latest edition of the World Customs Journal, in 2015, commented on the significant progress made by the World Trade Organization (WTO) on the Trade Facilitation Agenda. Since then, however, there have been several barriers and therefore WTO action has not yet been clearly seen in the adoption of the Protocol to amend the Trade Facilitation Agreement. This agreement focuses on the importance and benefits of cross-border cooperation and exchange of information between Member States, as well as ways to improve cooperation between customs and environmental services and the fight against transnational smuggling.

The World Customs Community could benefit from such an effort as cross-border cooperation on tax evasion and other illegal cross-border economic activities. The World Customs Organization (WCO) has in recent years developed a variety of tools and tools to exchange customs information for its members, and recently the G20 has agreed to approve the multilateral exchange of automatic tax information to combat cross-border tax evasion. The ultimate goal of the exchange of tax information is to identify and impose taxes on hidden tax bases which, due to bank secrecy laws and national jurisdictions, remain hidden. In addition, customs administrations have realized that the exchange of information between Member States makes a decisive contribution to the taxation of cross-border trade and the pursuit of smuggling. It is noteworthy that revenue from customs administrations represents a significant share (in some cases up to 30%) of government tax revenues.

Also a study of the Center of the Republic of Bulgaria, in 2015, attempted to study the best management of the European border cooperation between the border guards of Member States, countries and customs administrations. The survey found although these partnerships actually help to improve the fight against smuggling appears to be accompanied by minimal resources - human, financial and technical, and often both are based on informal

relations between workers and on ad hoc solutions. For example, out of the twenty-five (25) countries included in the study, twenty-two (22) are based on informal agreements between them that function as a key operating mechanism. At present, however, cooperation at national level, especially in some Member States, is much more intense than at EU level.

The study examined 11 areas of cooperation: Strategic Planning, Communication and Information Exchange, BCP Workflow Coordination, Risk Analysis, Criminal Investigations, Joint Ventures, Mobile Units, Emergency, and proposed the following key recommendations to governments and the tax and customs authorities of the Member States members:

- ❖ Enhancement of Frontex's capacity for customs cooperation: At present, Frontex is staffed exclusively by Member States' border guards who have limited knowledge of customs matters. Efforts to increase Frontex's ability to cooperate with the customs administrations of the Member States could benefit from the presence of Frontex officers with a customs background as "liaison officers".
- ❖ Joint training: The Commission, in cooperation with the WTO, has developed common customs training programs that can be used by any other law enforcement. As this report shows, many Member States have implemented a wide range of joint training actions. Both border guards and customs officers could participate in the same training and the trainees could come from both organizations. Joint training will also offer exchange of best practices between the border authorities of the Member States and the customs.
- ❖ Support for research and development for multifunctional equipment facilitating cooperation which is currently purchased separately from customs or border guards. As a result, companies have little incentive to develop multifunctional equipment that could simultaneously serve the needs of both institutions. The EC should support the research and development of multifunctional technologies that could serve the needs of both organizations. Detection technology, for example, currently aims at either verifying the cargo content for customs purposes or detecting irregular migrants in the detection of chemical, biological, radiological and nuclear materials for the purpose of border guards.

Finally, in a recent report, INTERPOL reports that organized crime has shifted drastically from hierarchical unions in the past to a more flexible and relaxed collection of cooperative groups that can move quickly to exploit international trade opportunities for crime. Traditionally, areas of action for crime syndicates can be drug trafficking, illicit gambling, prostitution and trafficking in human beings. The word "mafia" has become synonymous with organized crime from Russia to Latin America, not only from the original trade unions but also from many other groups in many countries. Today, organized crime is globalized. The United Nations Office on Drugs and Crime (UNODC) estimates that international organized crime generated \$ 870 billion in 2009, equivalent to 1.5% of world GDP and almost 7% of global exports.

#### *4 .Methodology of the research*

For the purpose of this paper, customs officers from Northern Greece were selected, serving mainly in customs offices bordering on Balkan countries where there are high offenses of smuggling and employees in the framework of Mobile Smuggling Prevention Control Groups

The questionnaire which was used in electronic form was divided into five parts of questions. The 117 responses resulting from its completion, coupled with the conclusions drawn from the implementation of a case study on customs control on the smuggling of alcoholic beverages, confirm to a great extent the necessary establishment and

implementation of targeted and effective customs controls to ensure a an equivalent control effect on the protection of the country's economic, social, environmental and cultural security.

In order for the customs procedure to be carried out in a uniform manner, the normal movement of goods and the safeguarding of the interests of the State, certain formalities must be complied with, consisting either in the execution of a specific action or in the prohibition of an action. Failure to comply with these formalities in each particular case constitutes a customs offense.

Generally, therefore, according to Law 2960/2001, a customs offense is characterized by non-compliance with the formalities imposed by the customs legislation and related to the customs and customs services. However, a customs offense is also characterized by any means of escape or attempt to escape the payment of duties, taxes, etc., by any of the ways mentioned in Article 155 of the same law (smuggling) and is punishable by multiple charges, irrespective of the elements of the offense of smuggling.

According to Article 142 of the ETA, customs offenses are distinguished: (a) in the simple customs offenses, which refer to the non-compliance with the formalities required in the customs procedure and in which the subjective element is not assessed, ie it is not considered whether the act or omission is the result of deception or negligence; and b) smuggling, which is deprived of the State or the EU; from taxes and duties to be collected. Smuggling is the basic customs offense. This has as its characteristic the escape or attempted escape of the rights of the State. Smuggling is of a dual nature. It is a criminal offense and a customs offense and is penalized both criminally and administratively. Including smuggling, except for the objective element of avoiding payment of duties and taxes, requires the existence of a deception on the person of the perpetrator (subjective element).

In the event that the above provisions are found to be in breach, the following actions are:

RECOGNITION OF THE INTRODUCITOR FOR THE INFRINGEMENT
--

CERTIFICATION OF THE INFRINGEMENT BY CUSTOMS INFRINGEMENT PROTOCOL
---

ENCORPORATED WRITTEN TESTIMONY
--------------------------------

WRITTEN CATEGORY
------------------

STATUS REPORT
---------------

STATUS OF ARREST
------------------

VERIFICATION AND CHARGING REPORT OF DUTIES CORRESPONDING TO THE ITEMS SEIZED
---

REFERENCE REPORT
------------------

Criminal law is the tightest because, apart from the criminal punishment, the administrative punishment by the Head of the Customs Authority leads to the perpetrators of the smuggling offense under Article 152 of Law 2960/01.

Customs officers in the administrative part of the case are not subject to the orders of the Prosecutor, but to the administration, since the acts of administrative punishment of smuggling are administrative acts.

#### *4. Case study Results*

The specific part of the work is the most extensive and, in essence, the most important, since it includes all the research that has been carried out to draw conclusions from this work and will study the case of checking customs officers belonging to a service of the Independent Authority of Public Revenues, in a cafe-bar shop where there is a smuggling of alcoholic beverages.

Consequently, Customs officers carry out an audit under the authority of the Head of Customs. Customs officers who are appointed to carry out the audit receive the order from the Chief and pass that date and time to the specific control point. After the check is carried out by the officials responsible for the alcoholic beverages located in the shop, the quantitative counting protocol, which specifies the control number, the date of the inspection, the place, the holder and the person in charge of the shop, its staff, the provisions to which they refer, and the audit findings.

The steps that follow are analyzed below:

1. Attachment Report. Once the customs officers have detected the customs offense (smuggling), the officers shall seize the smuggled goods as follows, indicating the provisions of the smuggling committed by the culprit and if the act in question led to the levying of duties and taxes for the State
2. Capture Report. Upon detection of the smuggling and confiscation of the smuggled goods, the customs officers, after informing the Prosecutor of the Office, shall arrest the accused indicating the reasons for which the accused committed a smuggling operation and the duties which would be lost to the State in case of non-discovery trafficking
3. Defendant's apology. As soon as the responsible officers arrest the accused, they proceed to the investigation by investigating the reasons why the accused person has committed this act by first indicating the provisions to which the offense committed by him
4. Sworn testimony. Upon the finding of the offense and the execution of all the above acts, the responsible officers who committed the offense undertake on oath to witness the facts and all the facts of which they found
- 5. Reporting of customs duties.** The competent official auditor of the Office shall determine the leaked customs duties and other taxes on smuggling, the damage suffered by the State on the basis of which later the multiple charges to be imposed by the issue of the Counterfeiting Act
- 6. Protocol on Customs Offense.** In the PIT. all the facts and facts, the disclosed smuggling and the amount of the damage suffered by the State since it was committed shall be certified by the competent officials who have inspected
- 7. Referrers.** The following reference is now made by the Head of the Customs Office responsible for the discovery of smuggling to the Prosecutor of the Criminal Mortgage, which is in essence the written complaint of the smuggling crime prosecuted on its own motion for the prosecution
- 8. Call on a defendant's apology.** The competent Customs Office, after receiving the preliminary investigation file, carries out an administrative inquiry asking the person liable to provide all the documents to justify the act, providing in addition the appropriate explanations. Administrative inquiries include any investigation that the competent supervisor considers necessary to convince the offender and the guilty
- 9. Imputation act.** The Head of Customs Office, after receiving the entire file, shall issue a reasoned act either by exempting or identifying the persons responsible, the degree of their liability and the taxes involved in committing smuggling

10. Proof of performance. Lastly, in order for these acts to take effect and to ascertain the imposed fines and taxes, the above acts must be served on the perpetrators as follows

##### *5. Results of customs control*

It is immediately evident that proper and targeted customs controls lead to multiple benefits for the Greek commercial and social life of the country, part of which is the following:

- ✓ Combating fraud and financial contraventions at the expense of the Greek State's interests, where an example of the discovery of smuggling of alcoholic beverages is presented in this case study.
- ✓ Preventing tax evasion and securing the collection of public revenue by issuing an imputation order in which the corresponding amounts are established, ie in this case
- ✓ Certification of the tax charges that would be incurred by the culprit in the event of no detection of smuggling
- ✓ Imposition of a multiple charge as a sanction for the execution of the smuggling operation in order to prevent such acts.
- ✓ Protection of the social and public health from goods of unknown origin and of dubious quality, for which a sample is sent to the General Chemical Laboratory of the State for chemical analysis and opinion on their suitability, in accordance with the Code of Food and Beverages.
- ✓ Compliance with Customs Legislation and proper compliance with the rules governing intra-Community movement of goods subject to NCAs; on subsequent intra-Community acquisitions of spirits by that same but also by other similar undertakings.
- ✓ Protect the competitiveness of Greek companies which are obliged to comply with Greek legislation and pay all taxes and duties foreseen in case of acquisition of Greek merchandise of subjects subject to NFA and facilitating Greek trade through the suppression of these phenomena that operate irregularly to the Greek market and the provisions governing its operation.

##### *6. Conclusions*

The conclusions drawn from the research that preceded both a) a bibliographic review, b) the application of a case study on customs control to alcohol smuggling, and c) the use of a questionnaire for customs officers are quite important, they converge with each other and from their examination.

As mentioned in the first report of the General Secretariat for Transparency and Human Rights (2013), b) in the IOBE (2013) study, and c) in the study of the secretary general of the PPCC and the president of the Panteion Greek Criminology Association University, Ms. Bitsika, smuggling and trafficking of adulterated goods subject to NFA are the strongest interlocking circuits with long-lasting action and incalculable effects on the economy, national security, public health. Also, the alcoholic beverage industry in Greece has been experiencing a recession in recent years due to the increase in smuggling and smoke is now the most smuggling substance in the world. This conclusion is also concluding with the present work, where it is noted that the phenomena of tax evasion and smuggling, despite the effective and painstaking attempts to combat them by customs officers, remain to a considerable extent in our country, with negative consequences on the fiscal revenues, the economic growth, the competitiveness of Greek enterprises and the productivity of the state, and mainly concern cases of smuggling of goods subject to NCAs, s customs documents documentary.

Secondly, According to the above studies, as well as the study by Marda (2014), the problems in the fight against smuggling are enormous and are usually reported: a) the lack of suitable specialized personnel (ie specialized seminars detection of counterfeit products by



customs officers), the elimination of illegal smuggling, (b) the lack of adequate and innovative technological equipment to help detect such phenomena, and (c) the incomplete OOPERATION and exchange of information between Member States and d) the minimum funding of the Member States to combat such phenomena. These conclusions also result in the elaboration of the specific work as, according to the questionnaire used above, the customs officers consider that a significant problem for the effective conduct of customs controls is the low number of staff members of the Customs and the Customs Service. OE, and their inadequate training and training with seminars on the right ways and targeted control methods. It is also noted that the existing technological equipment is virtually non-existent or minimal and certainly not sufficiently modernized for the effective application of physical customs controls and the detection of smuggling. Lastly, a particular problem of the Customs Service is the very low use of ELENXIS, which is now difficult to use, which does not contribute significantly to facilitating customs controls. However, an important contribution will be made to the electronic interconnection of all audit services with this as well as the increased cooperation and communication of all the Services and authorities between them for the exchange of useful information where direct assistance is requested.

Thirdly, however, the most important problem identified by this work as well as the European Parliament Report in January 2014 remains that the legislative framework and administrative penalties and penalties provided for by existing laws are such that they do not actually help tax compliance of citizens, nor in the effective fight against smuggling. Both the identification of the phenomena of tax evasion and smuggling and the finding of effective ways of dealing with them have been and are the primary objective of the ADR. but these objectives do not fully correspond to the real possibilities of the Customs Service in accordance with the existing logistic structure and the existing legislative basis. The conclusion is the study of IOBE researchers in November 2013, as well as the diplomatic work of Theochari (2016), which states that the increase in smuggling is due to the lesser laws imposed by the neighboring states on the citizens and especially on the travelers with the obvious lower taxation rates and the lack of implementation in the country of innovative methods that will contribute radically to the fight against smuggling and tax evasion.

Fourthly, from the specific research carried out in this work, and in accordance with the World Trade Organization study in 2015 and the recent INTERPOL Report, it has been found that customs controls are effective enough to combat smuggling and prevent tax evasion, the maximum result should be the Customs Administration to provide its employees with:

- (a) efficient, easy-to-use and easily accessible information systems
- (b) increased and direct cooperation and communication of customs services with other authorities, services and control mechanisms
- (c) state-of-the-art equipment fully organized for the proper conduct of physical customs controls, (d) continuous training and knowledge of all appropriate and new methods and control tools compatible with the data of each period
- (e) adequate staff, appropriately trained for the proper staffing of all departments of the customs services and the CPCs;

Fifthly, at the same time, aiming at combating the smuggling of fuels, tobacco and alcoholic products, according to Mrs. Yialouri, General Director of Customs and Excise Service, a Coordinating Operations Center (SEK) has been established as a mixed inter-departmental collective a body aimed at coordinating the action of the administrative, investigation, control and prosecution mechanisms to deal with the smuggling of products subject to NFPs. Among other things, actions to combat smuggling and increase the detection of customs offenses and thus to increase public revenues include:

- The installation of integrated fuel input / output monitoring systems. ∞ Establishment of a Single Central Supply Chain Registry (EKMEA) of tobacco and manufactured products as a mechanism for the detection and monitoring of tobacco products.

- Creation of joint control teams to strengthen the control mechanism of products subject to NFA
- The extension of the new customs control system for the international freight transport in the border areas of Exohi and Ormeni, as applied in the area of Promahonas.
- Increase the number of Mobile Control Groups from the existing four to ten, bringing the new KOEs into operation immediately. in Patras, Larissa, Drama, Xanthi, while the operation of the KOE is expected. the customs offices of Heraklion and Komotini.
- Gradual procurement by technical means of persecution (x-rays, etc.).
- The development of a comprehensive plan to combat smuggling.

The need to enforce all the above measures results in the present work according to the questionnaire analyzed in the previous chapter as well as the published study by Marda (2014) as part of measures to control the illegal traffic of fuels.

In conclusion, from the review of the literature studied and also from the results obtained from the application of a case study in the present work, regarding the procedures related to securing the collection of customs debts, the following points are made:

- It is important to upgrade the Information System used by the Customs Departments of the Customs Authorities to support the electronic application that will allow the immediate seizure of the debtors of the Customs Administration.
- A review of the amounts (fines, multiple charges) imposed on customs offenses and found to be high, has been proposed, resulting in the accumulation of a large number of overdue debts, which are assessed as non-recoverable.
- A reconsideration of the "solidarity" of the debtors, which is required to repay the amounts committed in respect of customs offenses. There are a number of debtors who are prevented from paying their individual debt, as they are also jointly liable for the entire debt, resulting in a loss of public revenue.
- The incomplete legal support of officials of the judiciary and the Heads of Customs Authority to third parties was commented on, as a frequent presence of these in the Courts for the support of business affairs. Employees were also asked not to serve documents, which would lead to a loss of working hours to the detriment of the exercise of their control duties.

## Appendix

### QUESTIONNAIRE

1. Do you consider that it is possible to trace contraband goods subject to Excise in accordance with the existing technical infrastructure and the existing legal framework?
2. To what extent is there a ratio between actual customs controls and smuggling detection of infringements tobacco, alcoholic products and fuels?
3. There is a reasonable ratio between smuggling detection of infringements and crowd applied version of acts and charged amounts certificate?
4. There is a reasonable ratio between the amounts charged by certificate identifying smuggling and collectability of revenue?
5. High delinquency rate is detected during a posteriori customs controls customs documents?
6. To what extent is there a correlation between the carrying out of customs checks and finding infringements when checking small distillers ?
7. The number of customs officials to effectively carry out customs controls?
8. Do you consider that the creation of K.O.E. will contribute in countering smuggling and reduce the rate of delinquency?
9. Do you consider that the experience of customs officials is essential for the effective carrying out of customs checks?
10. Do you consider that customs inspectors have received adequate training to effectively carry out customs controls?
11. Do you think that the functioning of the Customs Academy as autonomous educational structure of A.A.D.E. will contribute to appropriate training of customs officials on the correct ways and target control methods?
12. Is adequate the existing equipment for conducting physical customs controls?
13. Do you consider that the existing equipment is appropriate for the proper conduct of physical customs controls?
14. Do you think that the modernization of customs administrations with adequate tools, methods and techniques will help the Customs officers so as to meet with success in countering smuggling and reduce the rate of delinquency?
15. What scale regarding carrying out customs checks you consider useful the Elenxis?
16. Elenxis interface with all auditing services think that will contribute to more effective and efficient carrying out customs checks?
17. Do you consider that the provision of information from other Service responds directly to the needs to carry out effective customs controls in retrospect and non?

18. Do you consider that the legal framework is such that the tax compliance of citizens?
19. Do you think that administrative penalties and sanctions provided for under existing laws are such that contribute effectively to the fight against smuggling and reduce tax evasion?
20. Do you consider that the objectives laid down by the Customs Administration based on the business plan meet the real potential of the customs service in accordance with the existing logistical structure and the existing legislative basis?

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# THE TAXATION AND REAL ESTATE IN GREECE: THE CASE OF REBUILDING IN SERRES REGION

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## ABSTRACT

*In this article we investigate the taxation on real estate in Greece. The investigation will be carried out with a bibliographic review on the taxation of real estate and the study of the relevant laws for the period from 1997 to 2017. It is now well known that the feature of the Greek tax system is the complexity and the majority of the taxes with which the property is currently burdened in Greece.*

*Furthermore, the purpose of this paper is to explain and analyse the concept of real estate taxation, its purpose and its effects in the Greek economy from the drachma period to the present day. We will refer mainly to the concepts of property ownership, taxation and to the types of taxes on real estate.*

**Keywords:** Accounting, Taxation, Government Policy and Regulation

**JEL classification:** M41, H20, M48

## 1.Εισαγωγή

Η φορολογία της γης και των λοιπών ακινήτων είναι μία από τις παλαιότερες και πλέον διαδεδομένες μορφές φορολογίας (Stotsky και Yucelick, 1995). Σήμερα οι περισσότερες χώρες του κόσμου, ανεπτυγμένες και αναπτυσσόμενες, φορολογούν την ακίνητη περιουσία, αν και υπάρχουν σημαντικές διαφορές από χώρα σε χώρα.

Είναι γεγονός ότι η φορολογία της ακίνητης περιουσίας προκαλεί διεθνώς τις μεγαλύτερες αντιδράσεις από κάθε άλλο φόρο. Ακόμη και σε χώρες με παράδοση αιώνων στη φορολογία αυτή, οι αντιδράσεις είναι συνεχείς. Στις ΗΠΑ, π.χ., τη δεκαετία του 1930 ο J.P. Jensen (1931) κατέγραψε τις επαναλαμβανόμενες έντονες διαμαρτυρίες των φορολογούμενων από τον 19ο αιώνα. Τριάντα πέντε χρόνια αργότερα καταγράφονται νέες διαμαρτυρίες (Netzer 1966, σελ. 3-8). Το 1978 στην Καλιφόρνια η «επανάσταση των φορολογουμένων» είχε ως στόχο την φορολογία της ακίνητης περιουσίας.

Σημειώνεται ότι ολοκληρωμένες εισηγήσεις για την επιβολή φόρου ακίνητης περιουσίας στην Ελλάδα υπήρχαν από το 1967 (ΚΕΠΕ, σελ. 122-130), με πλέον πρόσφατη αυτή του 2002 (Επιτροπή Αναμόρφωσης του Ελληνικού Φορολογικού Συστήματος, σελ. 133-139). Όλες οι εισηγήσεις και ιδιαίτερα αυτή του 1967, έθεταν συγκεκριμένες προϋποθέσεις για την επιτυχή εφαρμογή του φόρου, οι οποίες ποτέ δεν τηρήθηκαν.

Άρα, οι επανειλημμένες αποτυχίες φορολόγησης της ακίνητης περιουσίας στην Ελλάδα τα τελευταία σαράντα χρόνια, δεν θα λέγαμε ότι οφείλονται αποκλειστικά στις αντιδράσεις των φορολογουμένων, οι οποίες, ούτως ή άλλως, παρατηρούνται σε όλες τις χώρες του κόσμου, αλλά και ανυπέρβλητα εμπόδια κατά την εφαρμογή τους.

Στα πλαίσια της διπλωματικής αυτής εργασίας, θα ανατρέξουμε στο παρελθόν για να δούμε την πορεία του φορολογικού συστήματος και την φορολογική επιβάρυνση των ακινήτων στην Ελλάδα. Έχοντας συγκεντρώσει τους φόρους επί των ακινήτων μιας περιόδου περί τα είκοσι έτη θα εξετάσουμε την επίδραση αυτών στις επενδύσεις των ακινήτων.

Κατά 'ρχας θα ορίσουμε τις έννοιες του ακινήτου, και της ατομικής ιδιοκτησίας και πώς αυτή κατοχυρώνεται διαχρονικά από συστάσεως του Ελληνικού κράτους.

Θα γίνει διάκριση των φόρων, σύμφωνα με το ισχύον φορολογικό σύστημα. Θα εξετάσουμε την φορολογία των ακινήτων και στις τρεις περιπτώσεις, δηλαδή, κατά την απόκτηση του ακινήτου με όποιον τρόπο κι αν γίνεται π.χ. αγορά, δωρεά ή κληρονομιά, κατά την εκμετάλλευση (μίσθωση) του ακινήτου καθώς επίσης και για την κατοχή ακινήτου.

Η ανάλυση των φόρων επί των ακινήτων στην Ελλάδα θα αποτελέσει το μεγαλύτερο μέρος της εργασίας μας και στο οποίο θα εξετάσουμε την διάσταση της αξίας των ακινήτων και των φόρων που επιβάλλονται σε αυτά. Θα αναλύσουμε τις χρήσεις και τις εκμεταλλεύσεις των ακινήτων καθώς και τα είδη των ακινήτων από φορολογικής και δημοσιονομικής πλευράς καθώς και το ποιοι μπορεί να είναι οι κάτοχοι των ακινήτων. Στη συνέχεια θα αναφερθούμε στις επιδράσεις των φόρων επί των ακινήτων πραγματοποιώντας μια έρευνα σε τοπικό επίπεδο σχετικά με την ζήτηση των ακινήτων και . Κατόπιν θα παρουσιάσουμε την φορολογία των ακινήτων στην Ελλάδα.

## **2. Βιβλιογραφική Ανασκόπηση**

Στην Ελλάδα η φορολογία της ακίνητης περιουσίας έχει αλλάξει πολλές φορές. Για πρώτη φορά καθιερώθηκε με το Νομοθετικό Διάταγμα της 3ης Μαρτίου 1923 ως φορολογία κεφαλαίου. Δεν ήταν ένας περιοδικός και διαρκής φόρος, αλλά μια εφ' άπαξ έκτακτη φορολογία (είχε προοδευτικό φορολογικό συντελεστή και ο φόρος θα έπρεπε να

καταβληθεί μέσα σε μια πενταετία). (Παρούσα Α., Η φορολογία της ακίνητης περιουσίας).

Η κατοχή της ακίνητης περιουσίας παρέμεινε στη συνέχεια αφορολόγητη μέχρι το έτος 1975 όπου και εισάγεται για πρώτη φορά τακτικός φόρος κατοχής ακινήτου περιουσίας με το νόμο 11/1975. Ο φόρος αυτό όμως δεν λειτούργησε ικανοποιητικά στη πράξη, κυρίως λόγω της ανεπιτυχούς αντιμετώπισης του προβλήματος αποτίμησης της αξίας των ακινήτων. Χαρακτηριστικά αναφέρεται στο βιβλίο του *-Γεωργακόπουλου Θ, 1985 Η φορολογία περιουσίας στην Ελλάδα-* «Δεν είχε γίνει προφανώς αντιληπτό ότι η επιβολή φόρου ακίνητης περιουσίας είναι ένα πολύ δύσκολο εγχείρημα και απαιτεί σημαντική προετοιμασία και προπαρασκευή» και ότι ο τρόπος εκτίμησης της αξίας θεωρήθηκε ως «... η βασική αδυναμία του φόρου... που προδίκαιζε ... την αποτυχία του»

Οι αδυναμίες του Ν. 11/1975 επιχειρήθηκε να καλυφθούν με τις τροποποιήσεις που επήλθαν με το Ν. 231/75 και Ν. 542/77 ενώ τελικώς καταργήθηκε πέντε χρόνια μετά με το άρθρο 9 του Ν. 1078/1980.

Η φορολογική υποχρέωση για την ακίνητη περιουσία θεσπίστηκε εκ νέου με τις διατάξεις του Ν.1249/1982 οι οποίες καταργήθηκαν με τον νόμο 2065/1992 από 1.1.1993. ( Στο μεταξύ το 1989 το άρθρο 25 παρ. 11 του νόμου 1828 μετέλλαξε το ΦΑΠ σε τοπικό φόρο των δήμων και κοινοτήτων, ανεστάλη όμως η ισχύς του, με τις διατάξεις της παρ. 1 του άρθρου 15 του ν. 1882/90, έως ότου εκδοθούν τα προεδρικά διατάγματα. Τελικώς, η παρ.11 καταργήθηκε με την παρ.3 του άρθρ.37 του Ν.2065/1992 ).

Από το 1992 έχουν εφαρμογή οι διατάξεις του Ν. 2065/1992 όπου και διαφοροποιείται η φορολόγηση των ακινήτων των φυσικών από αυτή των νομικών προσώπων. Για τα φυσικά πρόσωπα υπάρχει η προοδευτική κλίμακα φορολόγησης του εισοδήματος από ακίνητα ενώ ο τρόπος φορολόγησης ακινήτων των νομικών προσώπων γίνεται ανάλογα με την μορφή της εταιρείας.

Στη θέση του Ν. 2130/ 1993 εισήγαγε το Τέλος Ακίνητης Περιουσίας το οποίο θεσπίστηκε ως ίδιος πόρος των οργανισμών τοπικής Αυτοδιοίκησης. Όπως προκύπτει από την Εγκύκλιο του Υπουργείου Εσωτερικών 22307/12.5.1993, επρόκειτο για εκχώρηση του ΦΑΠ από το Κράτος στους Ο.Τ.Α με τη νομική μορφή του τέλους.

Όμως, με το Ν. 2459/1997 (άρθρα 21 επ.) επιβλήθηκε παράλληλα προς το ΤΑΠ φόρος επί της κατοχής μεγάλης ακίνητης Περιουσίας (ΦΜΑΠ), αφού προηγήθηκε απογραφή όλων των ακινήτων με το έντυπο Ε9 από όπου και αντλούνται τα στοιχεία των ιδιοκτησιών για την επιβολή του φόρου. Ο νόμος 2459/97 συμπληρώθηκε μεταγενέστερα με τους νόμους 2515/97, 2579/97, 2648/98.

Δέκα χρόνια μετά, καταργήθηκε ο Φόρος Μεγάλης Ακίνητης Περιουσίας με την θέσπιση του νόμου 3634/29-1-2008 ο οποίος εισήγαγε το Ενιαίο Τέλος Ακινήτων. Την επόμενη χρονιά με την ψήφιση του Ν.3763/2009 επήλθαν μεταβολές στην επιβολή του ΕΤΑΚ.



Επιπλέον με τον Ν. 3808/2009 επιβλήθηκε έκτακτη εισφορά στη μεγάλη ακίνητη περιουσία φυσικών προσώπων.

Το Ενιαίο Τέλος Ακινήτων (Ε.Τ.ΑΚ.) αρχικά είχε ως στόχο την απλούστευση του φορολογικού συστήματος και τη μείωση κόστους δημοσιονομικής μεταχείρισης εφόσον στόχος του ήταν να αντικαταστήσει διάφορους φόρους και τέλη που επιβάρυναν την ακίνητη περιουσία (γι' αυτό και ονομάστηκε ενιαίο τέλος) , τελικά απλά αντικατέστησε τον Φόρο Μεγάλης Ακίνητης Περιουσίας (Φ.Μ.Α.Π) και δύο χρόνια μόλις μετά τη θέσπιση του, καταργήθηκε με τα άρθρα 27-58 του Ν. 3842/2010 και αντικαταστάθηκε εκ νέου από το φόρο ακίνητης περιουσίας (ΦΑΠ).

Το 2011-2012 επιβλήθηκε το Έκτακτο Ειδικό Τέλος Ηλεκτροδοτούμενων Δομημένων Επιφανειών (Ε.Ε.Τ.Η.Δ.Ε.) για το οποίο έγινε πολύς λόγος περί της νομιμότητας επιβολής του. Βασικά ο προβληματισμός που προκύπτει σχετίζεται με το πλήθος των φόρων που επιβάλλονται στα ακίνητα διότι είναι γεγονός ότι το ίδιο ακίνητο που υπόκειται στο ΦΑΠ υπόκειται και στο ΤΑΠ και στο Ε.Ε.Τ.Η.Δ.Ε. Την επόμενη χρονιά το 2013 το ίδιο τέλος μετονομάζεται σε Έκτακτο Ειδικό Τέλος Ακινήτων (Ε.Ε.Τ.Α.).

Τέλος από το 2014 έως και σήμερα θεσπίστηκε ο Ενιαίος Φόρος Ιδιοκτησίας Ακινήτων (ΕΝ.Φ.Ι.Α.) πρόκειται για ετήσιο φόρο που επιβάλλεται επί των ακινήτων. Για πρώτη φορά επιβάλλεται φόρος και στα αγροτεμάχια, καθώς επίσης η επιβολή αυτού του φόρου είναι ανεξάρτητη από το σύνολο περιουσιακής ιδιοκτησίας και δεν έχει αφορολόγητο όριο, φορολογείται έστω κι ένα στρέμμα αγρός.

### **3. Φορολόγηση της Ακίνητης περιουσίας στην Ελλάδα**

Πληθώρα φόρων βαρύνουν σήμερα την ακίνητη περιουσία στην χώρα μας. Παρακάτω θα τους αναφέρουμε όλους συνοπτικά.

#### **Α. Φόροι - τέλη - κρατήσεις επί του εισοδήματος από ακίνητα**

**1)** Φόρος Εισοδήματος μισθωμάτων. Επιβάλλεται στο ετήσιο εισόδημα των φυσικών προσώπων που προκύπτει από την εκμίσθωση των ακινήτων σύμφωνα με την κλίμακα που προσδιορίζεται από την εκάστοτε νομοθεσία.

**2)** Συμπληρωματικός Φόρος Εισοδήματος Μισθωμάτων. Επιβάλλεται στο εισόδημα των φυσικών προσώπων που προκύπτει από ακίνητα με συντελεστές επιβάρυνσης από 1,5%, σύμφωνα με τον, Ν.3842/2010. Ο συντελεστής του συμπληρωματικού φόρου γίνεται 3% εάν το εισόδημα από εκμίσθωση αφορά μισθώσεις κατοικιών μεγαλύτερες από 300 τ.μ.

**3)** Τέλος Χαρτοσήμου + ΟΓΑ. Επιβάλλεται στο ακαθάριστο έσοδο από ακίνητα . Ο συντελεστής χαρτοσήμου είναι 3% πλέον ΟΓΑ χαρτοσήμου 20% επί του χαρτοσήμου. Εξαιρείται από την καταβολή χαρτοσήμου το μίσθωμα από κατοικίες.

**4)** Τεκμήριο διαβίωσης σε ιδιόκτητη ή μισθωμένη α' και β' κατοικία. Επιβάλλεται φόρος στο εισόδημα των φυσικών προσώπων που προκύπτει από την τεκμαρτή δαπάνη

διαβίωσης από την ιδιοκατοίκηση ιδιόκτητης ή μισθωμένης πρωτεύουσας ή δευτερεύουσας κατοικίας.

5) Τεκμαρτό εισόδημα λόγω αγοράς πρώτης κατοικίας. Φορολογείται το τεκμαρτό εισόδημα που προκύπτει από την αγορά πρώτης κατοικίας μεγαλύτερης των 120 τ.μ. ή των 200.000 ευρώ σύμφωνα με την παράγραφο 7 του άρθρου 4 , και της παρ. 1 του άρθρου 8 του ν. 3899/2010 (ΥΕΚ 212 Α΄/ 17-12-2010).

6) Τεκμαρτό εισόδημα ιδιοχρησιμοποίησης επαγγελματικής στέγης. Αποτελεί φορολογητέο εισόδημα το τεκμαρτό μίσθωμα που η επιχείρηση θα κατέβαλε αν δεν είχε στην κατοχή της το ακίνητο. Ο προσδιορισμός της αξίας του τεκμαρτού μισθώματος είναι ανάλογος της αντικειμενικής αξίας του ακινήτου και το ετήσιο τεκμαρτό μίσθωμα δεν μπορεί να είναι μικρότερο από το 3,5% της αντικειμενικής αξίας του ακινήτου (άρθρο 41 του Ν. 1249/1982).

7) Κράτηση στα μισθώματα από το Δημόσιο υπέρ ΜΤΠΥ. Επιβάλλεται φόρος 3% στα μισθώματα των εκμισθωμένων από το ελληνικό δημόσιο ακινήτων.

8) Κράτηση στα μισθώματα από τους ΟΣΑ υπέρ ΣΑΔΚΤ ποσοστό 2% , για ακίνητα που έχουν εκμισθωθεί από το δημόσιο.

## **Β. Φόροι - τέλη κατά τη μεταβίβαση ακινήτων**

1) Φ.Π.Α. στην αγορά νεόδμητων κτισμάτων και στην αντιπαροχή. Στα ακίνητα που η οικοδομική τους άδεια εκδόθηκε μετά την 1/1/2006 επιβάλλεται ΦΠΑ κανονικού συντελεστή (ποσοστό 24%). Ίδιος συντελεστής ΦΠΑ επιβάλλεται και στην αντιπαροχή ακινήτων.

2) Φόρος Μεταβίβασης Ακινήτων. Επιβάλλεται φόρος στο μεταβιβαζόμενο ακίνητο, βάση υπολογισμού του φόρου είναι η αξία κτήσης του ακινήτου , η οποία δεν μπορεί να είναι μικρότερη από την αντικειμενική αξία , ή τις συγκριτικές τιμές αν δεν ισχύουν στην περιοχή που ανήκει το μεταβιβαζόμενο ακίνητο οι αντικειμενικές αξίες.

3) Δημοτικός φόρος μεταβίβασης ακινήτων. Επιβάρυνση δημοτικού φόρου 3% επί του φόρου μεταβίβασης που υπολογίστηκε στο μεταβιβαζόμενο ακίνητο σύμφωνα με το άρθρο 1 του Ν. 1587/1950.

4) Φόρος Ανταλλαγής (συνένωσης οικοπέδων). Επί ανταλλαγής-συνένωσης οικοπέδων προβλέπεται φόρος ίσος με το ½ του φόρου μεταβίβασης ακινήτων

5) Φόρος Διανομής Ακινήτων. Αποτελεί το ½ του φόρου ανταλλαγής ακινήτων. Επιβάλλεται όταν το μεταβιβαζόμενο ακίνητο αποτελεί προϊόν διανομής εταιρείας που βρίσκεται σε εκκαθάριση.

6) Φόρος Χρησικτησίας Ακινήτων. Επιβάλλεται στην χρησικτησία ακινήτων με συντελεστές επιβάρυνσης ίδιους με τους συντελεστές μεταβίβασης ακινήτων.

7) Τέλος υπέρ Ταμείου Νομικών κατά τη σύνταξη συμβολαίων.

- 8) Τέλος υπέρ Ταμείου Νομικών κατά τη μεταγραφή.
- 9) Πρόσθετο Τέλος Μεταγραφής Συμβολαίων.

**Γ. Φόροι κληρονομιάς/γονικής παροχής & δωρεάς ακινήτων**

- 1) Φόρος Κληρονομιάς ή Γονικής Παροχής ακινήτων.
- 2) Φόρος Δωρεάς ακινήτων.
- 3) Φόρος μεταβίβασης ή αλλιώς πώλησης ακινήτου.

**Δ. Ετήσιοι - Περιοδικοί φόροι επί της κατοχής ακινήτων.**

- 1) Ενιαίος Φόρος Ιδιοκτησίας Ακινήτων (ΕΝ.Φ.Ι.Α.) από το 1/1/2014. Επιβάλλεται στην αντικειμενική αξία της ακίνητης περιουσίας φυσικών και νομικών προσώπων
- 2) Ετήσιο Τέλος Ακίνητης Περιουσίας (ΤΑΠ), επί κτισμάτων και οικοπέδων.
- 3) Ετήσιος Φόρος Ακίνητης Περιουσίας Υπεράκτιων Εταιριών.
- 4) Φόρος Αναπροσαρμογής Αξίας ακινήτων επιχειρήσεων (περιοδική εφαρμογή)

**Ε. Άλλοι φόροι, τέλη και εισφορές υπέρ Ο.Τ.Α. και τρίτων**

- 1) Δημοτικά Τέλη Καθαριότητας - Φωτισμού.
- 2) Δημοτικός Φόρος Ηλεκτροδοτούμενων Χώρων.
- 3) Ειδικό Τέλος Ανανεώσιμων Πηγών Ενέργειας.
- 4) Δημοτικά Δυννητικά Τέλη (με διάφορες αιτιολογίες).
- 5) Τέλη Αποχέτευσης ακινήτων (σύνδεση- χρήση).
- 6) Τέλος Εγγραφής ακινήτων στο Εθνικό Κτηματολόγιο.
- 7) Εισφορές σε γή & χρήμα για ένταξη σε σχέδια πόλεων (Ν.1337/83).
- 8) Τέλη Ανάπλασης Υποβαμισμένων Περιοχών υπέρ ΔΕΠΟΣ Ν. 2508/97

**Ζ. Φόροι, Τέλη και Εισφορές οικοδομικής αδείας -ανέγερσης κτιρίων - αυθαιρέτων κλπ.**

- 1) Τέλος έκδοσης οικοδομικής αδείας.
- 2) Τέλος οικοδομικών εργασιών.
- 3) Κράτηση υπέρ Δήμου, ΤΕΕ και ΤΣΜΕΔΕ
- 4) Εργοδοτικές εισφορές προς ΙΚΑ
- 5) Δημοτικά Τέλη Κατάληψης Πεζοδρομίου καταβάλλεται εφάπαξ.
- 6) Τέλος σύνδεσης ακινήτου με Ηλεκτρική Ενέργεια (υπέρ ΔΕΗ και Δημοσίου)
- 7) Πολεοδομικά πρόστιμα ανέγερσης αυθαιρέτων-αλλαγής χρήσης.

#### 4. Μεθοδολογία της Έρευνας

Για την εκπόνηση της παρούσας διπλωματικής εργασίας χρησιμοποιήθηκαν πρωτογενείς (primary sources) και δευτερογενείς (secondary sources) πηγές πληροφόρησης, που αφορούν την φορολόγηση των ακινήτων στην Ελλάδα. Πρωτίστως έγινε μια βιβλιογραφική ανασκόπηση δηλαδή έρευνα σε βιβλία, δημοσιεύματα και άρθρα οικονομικού περιεχομένου και επιστημονικά περιοδικά. Καθώς επίσης το υλικό που χρησιμοποιήθηκε για την παρούσα εργασία βασίστηκε σε μεγάλο βαθμό στην μελέτη Κυβερνητικών εγγράφων όπως είναι τα Προεδρικών Διαταγμάτων ( Π.Δ.), τα Νομοσχέδια που αφορούν την φορολογία των ακινήτων, οι διαταγές, οι Π.Ο.Λ., που εκδίδονται από το Υπουργείο Οικονομικών, έως το έτος 2016, πλέον Ανεξάρτητη Αρχή Δημοσίων Εσόδων (Α.Α.Δ.Ε.). Έτσι συγκεντρώθηκε το υλικό για την καταγραφή όλων των φόρων που επιβλήθηκαν στα ακίνητα τα τελευταία είκοσι χρόνια στην χώρα μας.

Στη συνέχεια έγινε μελέτη περίπτωσης, σχετικά με την ανοικοδόμηση σε τοπικό επίπεδο με σκοπό την συγκέντρωση πληροφοριών, την ταξινόμηση, την αρχειοθέτησή τους και την προετοιμασία για την στατιστική επεξεργασία αυτών. Τα αποδεικτικά στοιχεία για την μελέτη της περίπτωσης μας, προέρχονται από τα αρχεία της αρμόδιας υπηρεσίας (πολεοδομία). Τέλος συλλέξαμε δεδομένα από την αρμόδια Οικονομική υπηρεσία σχετικά με τους φόρους των ακινήτων, για μια δεκαετία.

Στο σημείο αυτό να ορίσουμε την έννοια της έρευνας ως μια μεθοδική αναζήτηση, που αναλαμβάνει κάποιος για να προσθέσει κάτι επί πλέον στις γνώσεις του και στις γνώσεις των άλλων, με την ανακάλυψη σημαντικών πραγμάτων ή την διαμόρφωση/διατύπωση σημαντικών απόψεων. Στην περίπτωση της έρευνας σε ανώτερα επίπεδα δεν αρκεί το ότι η διερεύνηση οδηγεί στην βελτίωση της αντίληψης για την υπάρχουσα γνώση, αλλά πρέπει να προσθέτει πραγματικά και κάτι σημαντικό σε αυτήν. Μορφές έρευνας θεωρούνται : εργαστηριακά πειράματα, πειράματα πεδίου, έρευνα πεδίου (δημοσκοπήσεις) και μελέτη περιπτώσεων (case study). Παρόλο που η ανάλυση περιεχομένου συνιστά περισσότερο μεθοδολογία, σήμερα θα μπορούσαμε να την κατατάξουμε ως ανεξάρτητη μορφή έρευνας.

Σημαντική υπήρξε και η άντληση πληροφοριών από δευτερογενείς πηγές όπως φορολογικά εγχειρίδια, επιστημονικά περιοδικά, άρθρα σε εφημερίδες και στο διαδίκτυο οι οποίες βοήθησαν να ολοκληρωθεί η μελέτη του θέματος και να διεξαχθούν τα αποτελέσματα.

#### 4.1 Σκοπός της έρευνας

Σκοπός της παρούσας έρευνας είναι, αρχικά, η καταγραφή όλων των φόρων επί των ακινήτων που εφαρμόστηκαν στην Ελλάδα την τελευταία 20ετία και η διεξαγωγή αποτελεσμάτων όσον αφορά την επίδραση των φόρων στην αγορά των ακινήτων και των κατασκευών γενικότερα.

Η μεθοδολογία που εφαρμόστηκε για την επίτευξη του στόχου αυτού, χρησιμοποιεί την ανάλυση περιεχομένου (content analysis) και την μελέτη περιπτώσεων (case study) όπου και έγινε ποσοτική έρευνα. «Οι ποσοτικές προσεγγίσεις έρευνας επεξεργάζονται ένα πλήθος από ποσότητες/αριθμούς που θα πρέπει να συγκεντρωθούν, να περιγραφούν και να αναλυθούν. Τα χαρακτηριστικά των ποσοτικών δεδομένων περιγράφονται και αναλύονται με ποσοτικά μεγέθη (π.χ. διαγράμματα, ιστογράμματα, πίνακες κ.α.)» (Lacey et al, 2001 στο Ανδρεάτου, 2007).

Συγκεκριμένα διεξήχθη έρευνα στα αρχεία της τοπικής πολεοδομικής υπηρεσίας της νομαρχιακής αυτοδιοίκησης του Ν. Σερρών από όπου πήραμε στοιχεία για τις εκδοθείσες οικοδομικές άδειες και άδειες δόμησης, που αφορούν την περιφέρεια του Δήμου Σερρών. Εδώ να σημειώσουμε ότι από το έτος 2012 οι οικοδομικές άδειες αντικαταστάθηκαν με τις άδειες δόμησης. Από την συγκεκριμένη έρευνα διαπιστώθηκε, και πρέπει να το τονίσουμε ότι οι άδειες δόμησης δεν αφορούν μόνο την ανέγερση νέων οικοδομών αλλά και άλλες περιπτώσεις όπως, την αντικατάσταση στέγης, την νομιμοποίηση αυθαιρέτων, την περίφραξη οικοπέδου, την ανακαίνιση ή επισκευή κατοικίας και κυρίως την προσθήκη κατά ύψος ή οριζοντίως σε μια οικοδομή.

Η μελέτη αυτών των πραγματικών δεδομένων αποσκοπεί στην διεξαγωγή συμπερασμάτων όσον αφορά την επίδραση που έχει η φορολογία των ακινήτων, στην ανοικοδόμηση, για την περίπτωση μας, στην περιφέρεια του Δήμου Σερρών και στις επενδύσεις σε ακίνητα.

#### 4.2 Η Επιλογή μεθοδολογίας και η οριοθέτηση του Αντικειμένου της Έρευνας

Για την διεκπεραίωση μιας διπλωματικής εργασίας, σημαντικό ρόλο παίζει η μεθοδολογία που θα χρησιμοποιηθεί για την έρευνα. Η μέθοδος της έρευνας θα πρέπει να φέρει τα σωστά στοιχεία και το προσδοκώμενο αποτέλεσμα, αυτή μπορεί να διαφέρει ανάλογα με τον τύπο και το θέμα της εργασίας.

Η επιλογή μεθόδου και η οριοθέτηση του αντικειμένου της έρευνας, και πιο συγκεκριμένα, η οριστική διατύπωση του θέματος ή του τίτλου της εργασίας, αποτελούν μια αρκετά δύσκολη και απαιτητική διανοητική διεργασία. Πολλοί και διάφοροι είναι οι

παράγοντες που ενδέχεται να επηρεάσουν την τελική διαμόρφωση και επιλογή του θέματος, όπως :

- η προσωπικότητα του ερευνητή
- το περιβάλλον μέσα στο οποίο κινείται και εργάζεται
- τα προσωπικά του κίνητρα, κλίσεις και τα ενδιαφέροντα του

Ωστόσο, το θέμα της εργασίας και το αντικείμενο που θέλουμε να εξετάσουμε, καθορίζει ουσιαστικά, την μέθοδο διεξαγωγής της έρευνας μιας εργασίας. Στην παρούσα εργασία χρησιμοποιήθηκε η μέθοδος της ανάλυσης περιεχομένου διότι πρόκειται για μια απλοποιημένη, σχηματοποιημένη, εύκολη και γρήγορη μέθοδο. Οι πηγές που αναλύονται είναι αξιόπιστες ώστε η μέθοδος να συνίσταται στην ταξινόμηση και αξιολόγηση των στοιχείων του κειμένου (λέξεων, φράσεων, παραγράφων κ.λπ.).

Η ανάλυση περιεχομένου έχει καθιερωθεί ως μία εκ των καλύτερων τεχνικών έρευνας εφόσον αυτή στοχεύει στην «αντικειμενική, συστηματική και ποσοτική περιγραφή του περιεχομένου της επικοινωνίας γραπτού ή προφορικού λόγου», με τελική επιδίωξη την ερμηνεία (Berelson 1948).

Η ανάλυση του περιεχομένου αναφέρεται κυρίως σε γραπτά κείμενα. Από αυτή την άποψη οι νόμοι, οι εγκύκλιοι, τα βιβλία κ.λπ. πηγές αποτελούν αντικείμενα μελέτης.

Καθώς επίσης για να προσθέσουμε επιπλέον στοιχεία, χρήσιμα για την διεξαγωγή συμπερασμάτων στην εργασία μας διεξήχθη ποσοτική έρευνα στα αρχεία της αρμόδιας υπηρεσίας του Δήμου Σερρών. Η ποσοτική έρευνα αφορά κυρίως αριθμούς, ποσοστά, δειγματοληψίες, εξετάζοντας έναν όγκο περιπτώσεων με σκοπό ένα μέσο συμπέρασμα. Τα αποτελέσματα πρέπει να μπορούν να μετρηθούν, να γίνουν μεταβλητές και να αναλυθούν στατιστικά.

Εν κατακλείδι μπορούμε να πούμε ότι στην παρούσα μεταπτυχιακή εργασία διατυπώθηκαν και αναλύθηκαν όλοι οι νόμοι, πολ., εγκύκλιοι κ.λπ. που εφαρμόστηκαν στην Ελλάδα τα τελευταία 20 έτη σχετικά με την φορολογία ακινήτων, οι οποίοι αποτέλεσαν την βασική πηγή άντλησης των δεδομένων στην συγκεκριμένη έρευνα. Μέσω της ποιοτικής μεθόδου που ακολουθήθηκε εξασφαλίστηκε η εγκυρότητα της ποιοτικής ανάλυσης του περιεχομένου των κειμένων η οποία πηγάζει μέσα από την αξιοπιστία των πηγών.

## 5. Αποτελέσματα της Έρευνας

Για τους σκοπούς της έρευνας ερευνήσαμε το αρχείο της ΔΟΥ Σερρών όπου και αντλήσαμε στοιχεία σχετικά με τους βεβαιωθέντες φόρους από ακίνητα, για τα δέκα τελευταία χρόνια. Καθώς επίσης μας δόθηκαν στοιχεία για τους εισπραχθέντες φόρους που σχετίζονται με την εργασία μας δηλαδή φόροι που αφορούν την κατοχή ακίνητης περιουσίας και πόσοι από αυτούς μένουν ανείσπρακτοι. Αρμόδιος υπάλληλος στην εφορία μας ενημέρωσε ότι για τις ληξιπρόθεσμες οφειλές στο Δημόσιο οι οποίες δεν έχουν ρυθμιστεί, το δικαστικό τμήμα της υπηρεσίας υποχρεούται από το νόμο να λάβει αναγκαστικά μέτρα (Ν.Δ. 356/1974). Τα μέτρα αυτά περιλαμβάνουν κατασχέσεις εισοδημάτων, καθώς και κινητών και ακίνητων περιουσιακών στοιχείων. Μετά τις αλλαγές που έγιναν στον Κώδικα Είσπραξης Δημοσίων Εσόδων γίνονται πλέον και κατασχέσεις στους τραπεζικούς λογαριασμούς των οφειλετών.

### ΚΑΤΑΣΤΑΣΗ ΒΕΒΑΙΩΘΕΝΤΩΝ / ΔΙΑΓΡΑΦΕΝΤΩΝ / ΕΙΣΠΡΑΧΘΕΝΤΩΝ ΓΙΑ ΔΕΚΑ ΧΡΟΝΙΑ ΕΤΑΚ / ΦΑΠ / ΕΝΦΙΑ ΣΤΗ ΠΕΡΙΦΕΡΕΙΑ ΝΟΜΟΥ ΣΕΡΡΩΝ ΜΕ ΗΜΕΡΟΜΗΝΙΑ 31/12/2017

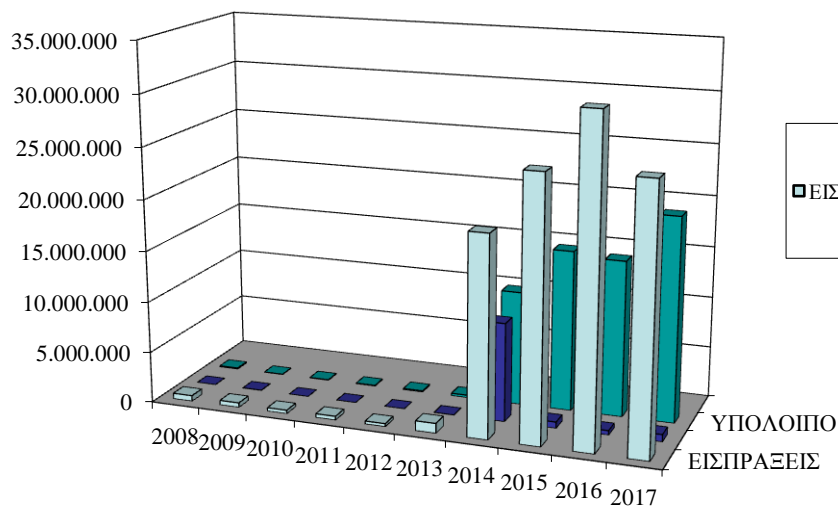
ΕΤΗ	ΒΕΒΑΙΩΜΕΝΟΙ ΦΟΡΟΙ	ΔΙΑΓΡΑΦΕΣ	ΕΙΣΠΡΑΧΘΕΝ	ΥΠΟΛΟΙΠΑ
2008	661.270,45	0	548.681,18	112.589,27
2009	516.590,36	28.116,40	443.003,03	45.470,93
2010	394.468,66	651,71	336.846,98	56.969,97
2011	442.928,24	0	366.598,03	76.330,21
2012	407.004,59	0	288.809,52	118.195,07
2013	1.216.355,70	15.070,38	958.700,17	242.585,15
2014	40.152.920,83	9.589.716,46	19.423.082,08	11.140.122,29
2015	41.601.902,60	607.955,95	25.358.347,34	15.635.599,31
2016	46.780.352,85	422.686,82	31.181.596,30	15.176.069,73
2017	46.117.477,79	706.467,37	25.550.425,63	19.860.584,79

Πίνακας 5.1 πηγή : ΔΟΥ Σερρών

Από την μελέτη των φορολογικών στοιχείων προέκυψε ότι με την επιβολή του ΕΝΦΙΑ οι φόροι που καλούνται να πληρώσουν οι φορολογούμενοι, στην περιφέρεια του Νομού Σερρών πολλαπλασιάστηκαν

Μέχρι το 2012 οι φόροι ακινήτων κυμαίνονταν από 400.000€ έως 600.000€ παρατηρούμε ότι το έτος 2013 οι φόροι διπλασιάστηκαν. Από το 2014 και μετά με την επιβολή του ΕΝ.Φ.Ι.Α., παρατηρούμε ραγδαία αύξηση στους βεβαιωθέντες φόρους της ακίνητης περιουσίας. Με τον ΕΝ.Φ.Ι.Α. καταργήθηκαν τα αφορολόγητα όρια και παράλληλα αυξήθηκαν οι αντικειμενικές αξίες σε κτίρια και γη. Σύμφωνα με τους αρμοδίους ο ΕΝ.Φ.Ι.Α. σχεδιάστηκε με τέτοιο τρόπο, ώστε να « ελαφρύνει φορολογικά τις κατοικίες τα μαγαζιά και τις επιχειρήσεις που επιβαρύνονταν μέχρι τώρα, και να φορολογήσει με λογικό και αναλογικό τρόπο τα κτίρια και τη γη που δεν επιβαρύνονταν ».

Στα πλαίσια αυτής της αναλογικότητας βρέθηκαν π.χ. οικόπεδα στην επαρχία να υπερεκτιμούνται και να πληρώνουν ΕΝ.Φ.Ι.Α. μερικές χιλιάδες ευρώ ενώ πριν τον ΕΝ.Φ.Ι.Α. η αντικειμενική τους αξία ήταν μικρή και αφορολόγητη. Το διάγραμμα 5.5 απεικονίζει τους φόρους ακινήτων που βεβαιώθηκαν την τελευταία δεκαετία στο Ν. Σερρών, πόσοι από αυτούς εισπράχθηκαν, πόσοι διαγράφηκαν και πόσοι φόροι παραμένουν ανείσπρακτοι μέχρι και σήμερα.



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
ΕΙΣΠΡΑΞΕΙΣ	548.681	443.003	336.846	366.598	288.809	958.700	19.423.082	25.358.347	31.181.596	25.550.425
ΔΙΑΓΡΑΦΕΣ	0	28.116	0	0	0	15.070	9.589.716	607.955	422.686	706.467
ΥΠΟΛΟΙΠΟ	112.589	45.470	56.969	76.330	118.195	242.585	11.140.122	15.635.599	15.176.069	19.860.584

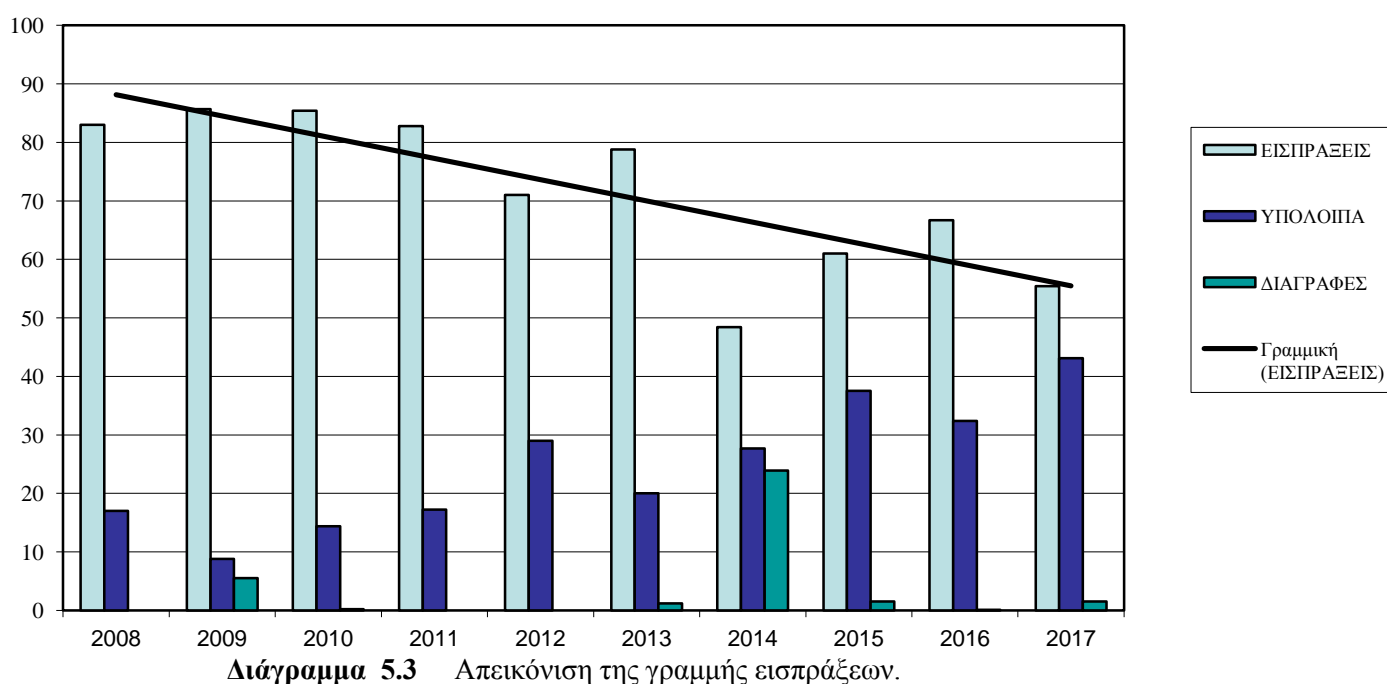
**Διάγραμμα 5.2** Απεικόνιση των εισπράξεων, διαγραφών και υπολοίπων από τους βεβαιωθέντες φόρους ακίνητης ιδιοκτησίας



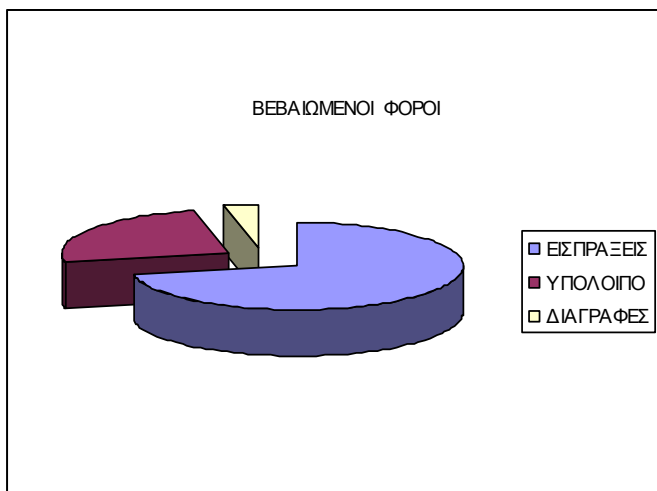
Το διάγραμμα 5.2 μας δείχνει τις εισπράξεις των βεβαιωμένων φόρων σε ποσοστιαίες μονάδες στη περιφέρεια των Σερρών, τι ποσοστό των φόρων έχει διαγραφεί και τα υπόλοιπα που δεν εισπράχθηκαν.

Στη συνέχεια θα μελετήσουμε την τάση των φορολογουμένων για καταβολή των υποχρεώσεων τους. Από τα δεδομένα του πίνακα 5.2 υπολογίσαμε σε ποσοστιαίες μονάδες τις εισπράξεις, τις διαγραφές και τα υπόλοιπα. Από την μελέτη αυτή διαπιστώσαμε ότι οι πληρωμές των φόρων ακινήτων στην περιφέρεια των Σερρών έως το 2011 ξεπερνούσαν το 80%, τις επόμενες χρονιές 2012 και 2013 οι πληρωμές κυμάνθηκαν μεταξύ 70%-80%, η μείωση αυτή εκτιμούμαι ότι οφείλεται στην οικονομική κρίση. Από το 2011 άρχισε να γίνεται περισσότερο αισθητή η κρίση π.χ. περικοπές μισθών, κατάργηση των δώρων Χριστουγέννων και Πάσχα και παράλληλα επιβολή Ε.Ε.Τ.Η.Δ.Ε και Ε.Ε.Τ.Α. Το 2014 βλέπουμε κατακόρυφη μείωση των πληρωμών - εισπράξεων (για το δημόσιο) στο 48,4% και αύξηση των ανείσπρακτων φόρων, επιπλέον και οι διαγραφές των βεβαιωμένων φόρων ξεπέρασαν κάθε προηγούμενο, περί του 23,9% στο σύνολο των βεβαιωθέντων. Τα επόμενα χρόνια οι εισπράξεις κυμαίνονται σε ποσοστό 61%-66% ενώ τα ανείσπρακτα σε 37,5% και 32,4% αντίστοιχα το 2015 και το 2016.

Στο παρακάτω διάγραμμα φαίνεται η γραμμή μείωσης των εισπράξεων από το 2008 έως το 2017 σε αντιδιαστολή με τους απλήρωτους φόρους οι οποίοι έχουν αυξητική τάση από το 2008 έως σήμερα.



Την τελευταία δεκαετία ο μέσος όρος εισπραξης των επιβληθέντων φόρων ακίνητης περιουσίας ανήλθε σε ποσοστό 73,6%, οι διαγραφές μόλις στο 3,5% το ποσοστό αυτό διαμορφώθηκε κυρίως από το 2014 και μετά και αφορά απαλλαγές αναπήρων και εκπώσεις χαμηλόμισθων και πολυτέκνων, ενώ οι ανείσπρακτοι φόροι, οι οποίοι αυξάνονται συνεχώς από το 2014 και μετά ανέρχονται σε ποσοστό 22,7%. Παρακάτω το γράφημα αναπαριστά το μερίδιο των εισπράξεων, διαγραφών και υπολοίπων στο σύνολο των βεβαιωμένων φόρων ακίνητης ιδιοκτησίας στον νομό Σερρών.



**Γράφημα 5.4** Ο μέσος όρος της τελευταίας δεκαετίας των εισπράξεων, διαγραφών και υπολοίπων των φόρων ακινήτων που αφορούν την περιφέρεια Σερρών

## 6. Συμπεράσματα

Στην παρούσα εργασία έγινε καταγραφή και παρουσίαση όλων των φόρων της ακίνητης περιουσίας, που επιβλήθηκαν τα τελευταία είκοσι χρόνια στην Ελλάδα, καθώς επίσης έγινε μια προσπάθεια αποτύπωσης των μεταβολών που έχουν συντελεστεί και αναφορά σε σοβαρά ζητήματα που προέκυψαν από τους εν λόγω φόρους.

Τα μεγάλα και διαρκή δημοσιονομικά ελλείμματα, είχαν σαν αποτέλεσμα να κλονιστεί η οικονομία της χώρας. Το πρόβλημα του δημοσιονομικού χρέους άρχισε κατά το έτος 2008, συνέπεσε χρονικά με την αρχή της παγκόσμιας ύφεσης. Συγκεκριμένα στον κλάδο των ακινήτων παρατηρούμε έντονη αρνητική επίδραση η οποία οφείλεται αφ' ενός στην οικονομική κρίση, στα μνημόνια, στην αύξηση της ανεργίας και από την άλλη στην υπερφορολόγηση της ακίνητης περιουσίας. Όλα αυτά είχαν σαν αποτέλεσμα την συρρίκνωση των εισοδημάτων των Ελληνικών νοικοκυριών. Συμπερασματικά θα λέγαμε

ότι η πολιτική άντλησης περισσότερων εσόδων μέσω φορολογίας από το καταναλωτικό κοινό είτε άμεσα είτε έμμεσα, χωρίς ουσιαστική προσπάθεια περικοπής των σπαταλών-δημοσίων εξόδων, δεν αποφέρει τα επιθυμητά αποτελέσματα, παρά μόνον εξαντλεί οικονομικά τον φορολογούμενο πολίτη.

Το φορολογικό σύστημα στην Ελλάδα υπήρξε πάντοτε προβληματικό διότι ποτέ δεν δόθηκε η δέουσα προσοχή και πλημμελή προετοιμασία για την θέσπιση φορολογικής νομοθεσίας, αντιθέτως η ιστορία έχει δείξει ότι σημαντικές αποφάσεις περί φορολογίας ακινήτων παίρνονταν κάτω υπό το κράτος πανικού και άκρως πειστικών δημοσιονομικών αναγκών. Πολλές φορές είδαμε να θεσπίζεται έκτακτος φόρος καθαρά για εισπρακτικούς σκοπούς, χωρίς να ληφθούν υπόψη οι επιπτώσεις του νέου φόρου στην οικονομία και η συμβατότητα του με τους υφιστάμενους φόρους την ίδια χρονική περίοδο. Το ίδιο συμβαίνει και με τον φόρο ακίνητης περιουσίας, όπως αναφέρθηκε στο δεύτερο κεφάλαιο (επιβολή Ε.Ε.Τ.Η.Δ.Ε. και Ε.Ε.Τ.Α. παράλληλα με τον Φ.Α.Π. συγχρόνως και τεκμήριο διαβίωσης για το ίδιο ακίνητο) της παρούσας εργασίας.

Μελετώντας την φορολογική νομοθεσία των τελευταίων ετών συμπεραίνουμε ότι παλαιότερα η φορολογική επιβάρυνση της ακίνητης περιουσίας ήταν σαφώς μικρότερη σε σχέση με την τελευταία δεκαετία. Ειδικότερα μετά το 2010 υπήρξε καταγιγισμός φόρων επί των ακινήτων που είχε ως συνέπεια την μείωση της ζήτησης των ακινήτων από πλευράς των αγοραστών αλλά και την μείωση της εμπορικής τους αξίας κατ' επέκταση και την απόδοση τους. Όλα τα παραπάνω αποτελούν αποθαρρυντικούς παράγοντες προς τους επενδυτές για τα ακίνητα. Με αποτέλεσμα να πληγεί σοβαρά η αγορά ακινήτων αλλά και όλοι οι κλάδοι που σχετίζονται με τα ακίνητα και τις κατασκευές. Με την επιβολή του ΕΝΦΙΑ παρατηρείται η τάση των πολιτών να προσπαθούν να 'ξεφορτωθούν' τα ακίνητα τους πέραν της πρώτης κατοικίας.

Σύμφωνα με εκτίμηση της Πανελλήνιας Ομοσπονδίας Ιδιοκτητών Ακινήτων (ΠΟΜΙΔΑ), η φορολογική επιβάρυνση των ακινήτων τα τελευταία έτη είναι καταστροφική για την ιδιόκτητη κατοικία. Χαρακτηριστικά αναφέρει ότι η φορολογική τακτική που ακολουθείται τελευταία, καθιστά την ακίνητη ιδιοκτησία ασήκωτο βάρος και όχι δικαίωμα, ιδιαίτερα για τη νέα και συχνά άνεργη γενιά.

## **6.2 Λόγοι αποτυχίας των φόρων ακινήτων**

Εκτός από την γενική παρατήρηση, όσον αφορά τους επιβαλλόμενους φόρους επί των ακινήτων μπορούμε να διακρίνουμε κάποιους λόγους αποτυχίας, εφαρμογής φορολογίας ακινήτων στην χώρα μας, για τους οποίους ευθύνονται κυρίως οι φορείς που τους επιβάλλουν. Θα αναφέρουμε ενδεικτικά τους κυριότερους όπως είναι:

- 1) Η παντελής έλλειψη σοβαρής προετοιμασίας και προπαρασκευής πριν από την θέσπιση κάποιου φόρου π.χ. στο παρελθόν, συγκεκριμένα το 1975, τότε ήταν η σπουδή για την είσπραξη του **φόρου που αυτός άρχισε να ισχύει πριν ακόμη κυκλοφορήσει η εγκύκλιος του νόμου.**
- 2) Ένας ακόμη λόγος αποτυχίας, υπήρξε η έλλειψη περιουσιολογίου και κτηματολογίου δηλαδή μια ηλεκτρονική πλατφόρμα για την καταγραφή όλων των ιδιοκτησιών ακίνητης περιουσίας ώστε να αποφευχθεί η διπλή φορολόγηση στο ίδιο ακίνητο π.χ. επιβολή ΕΕΤΗΔΕ παράλληλα με τον ΦΜΑΠ.
- 3) Το Εθνικό Κτηματολόγιο θα πρέπει να ολοκληρωθεί το ταχύτερο δυνατό. Η προσπάθεια κατάρτισης του κτηματολογίου που συνεχίζεται για περισσότερο από δύο δεκαετίες και έχουν δαπανηθεί κονδύλια από τρία Κοινοτικά προγράμματα, ακόμη δεν έχει ολοκληρωθεί.
- 4) Η ταυτόχρονη επιβολή φόρων στα ακίνητα αποτελεί ένα ακόμη σημαντικό πρόβλημα για το επίμαχο θέμα στη χώρα μας. Το δίκαιο είναι, η θέσπιση ενός φόρου να συνδυάζεται με παράλληλη κατάργηση οποιαδήποτε άλλης φορολογικής επιβάρυνσης στο ίδιο ακίνητο, αυτό προϋποθέτει έλεγχο από τους αρμοδίους φορείς. Μοναδική και αξιοσημείωτη εξαίρεση αποτέλεσε η επιβολή του ΕΝΦΙΑ, που αντικατέστησε τον ΦΜΑΠ και το ΕΕΤΗΔΕ ορθώς συνδυάστηκε με τη μείωση του φόρου μεταβίβασης ακινήτων από 10% σε 3%.
- 5) Μια άλλη αιτία για την αποτυχημένη φορολογία στα ακίνητα είναι το αφορολόγητο όριο το οποίο, εκτός από τον ΕΝΦΙΑ, σε όλες τις άλλες περιπτώσεις φόρου ακινήτων ήταν εξαιρετικά υψηλά. Τόσο ώστε η πλειονότητα των ακινήτων να μην καλύπτεται από τον φόρο κι αυτό αποτέλεσε σημαντικό μειονέκτημα.
- 6) **Ένα ακόμη μειονέκτημα που μπορούμε να αναφέρουμε είναι ότι ο φόρος πάντα επιβαλλόταν και επιβάλλεται από την κεντρική κυβέρνηση. Αυτό καθιστά δυσκολότερη την εκτίμηση της αξίας των ακινήτων και την δίκαιη επιβολή του φόρου.** Παγκοσμίως ο φόρος επί των ακινήτων επιβάλλεται κατά κανόνα από τοπική αυτοδιοίκηση, η οποία βέβαια είναι καλύτερος γνώστης των τοπικών αναγκών- συνθηκών έτσι μπορεί να είναι πιο ακριβοδίκαιη η εκτίμηση όσον αφορά την αξία των ακινήτων της περιοχής. Είναι χαρακτηριστικό ότι σε δημόσιο διάλογο που έγινε σχετικά με την επιβολή του ΕΝΦΙΑ οι συμμετέχοντες στο διάλογο εκπρόσωποι των νησιών είχαν τελείως διαφορετικές απόψεις από τους συνομιλητές εκπροσώπους του Θεσσαλικού κάμπου. Είναι γνωστό ότι με τον ΕΝΦΙΑ έγιναν τραγικά και οφθαλμοφανή λάθη, τα οποία προσπάθησαν να διορθώσουν στη συνέχεια με επανεκτίμηση των ακινήτων, γεγονός που σημαίνει υπερβολικός φόρος σε περιοχές όπου τα ακίνητα δεν αξίζουν όσο τα εκτίμησαν.

Παραδείγματα μείωσης φόρου έως και 98%, εκ των υστέρων, έχουν δημοσιευθεί από τις εφημερίδες, ΚΑΘΗΜΕΡΙΝΗ με ημερομηνία 17/8/2014 και ΤΑ ΝΕΑ τον 8/2014 και τον 9/2014. Πιθανών αυτά τα σφάλματα να είχαν αποφευχθεί εάν η φορολογία των ακινήτων ήταν αρμοδιότητα της Τοπικής Αυτοδιοίκησης. Συγκεκριμένα για τον ΕΝΦΙΑ εκτιμούμαι ότι ήταν ακατάλληλη η χρονική στιγμή για την επιβολή του. Δεδομένου ότι η χώρα βρισκόταν ήδη πέντε χρόνια σε οικονομική ύφεση και οι συνθήκες στην αγορά ακινήτων ήταν ιδιαίτερα δυσμενείς.

Μέχρι και το 2010 οι φόροι που επιβλήθηκαν έδωσαν την εντύπωση προχειρότητας στην προετοιμασία αντί την επιβολή ενός ουσιαστικού και μόνιμου φόρου στην ακίνητη ιδιοκτησία.

Αυτό το συμπεραίνουμε από τα πολύ χαμηλά έσοδα που εισπράττονταν από τους φόρους ακινήτων, τα οποία έως και το 2010 δεν υπερέβησαν το 0,15% του ΑΕΠ.

### **6.3 Προτάσεις**

Η φορολογική επιβάρυνση των πολιτών στην Ελλάδα τα τελευταία χρόνια είναι δυσβάσταχτη και σε αυτό συμβάλλει και η πολλαπλή φορολόγηση των ακινήτων. Η οποία δυστυχώς στην χώρα μας τα σημερινά χρόνια είναι τόσο υψηλή που αποθαρρύνει την ανάληψη επιχειρηματικής δραστηριότητας κι επιπλέον αποτελεί σημαντικό παράγοντα για την μετανάστευση των νέων και δη «επιστημονικού επιπέδου» εργατικού δυναμικού στο εξωτερικό. Με αυτά τα δεδομένα είναι αδύνατο να ανακάμψει η οικονομία της χώρας. Η επιπλέον φορολογική επιβάρυνση θα οδηγήσει με μαθηματική ακρίβεια στην οικονομική κατάρρευση της Ελληνικής οικονομίας και την εξαθλίωση του Ελληνικού λαού.

Σε κάθε περίπτωση κατά την επιβολή οποιονδήποτε φόρων συμπεριλαμβανομένων και αυτών της ακίνητης ιδιοκτησίας, είναι σημαντικό να λαμβάνεται υπόψη και η αρχή της ανθρώπινης αξιοπρέπειας σύμφωνα με την οποία καμία φορολογία δεν δύναται να αφαιρεί τα απαραίτητα μέσα για την επιβίωση του ανθρώπου.

Συνεπώς, κρίνεται απαραίτητη η συνολική αξιολόγηση όλων των επιβαλλόμενων φόρων έτσι ώστε να εξυπηρετείται ο ταμειευτικός σκοπός χωρίς να παραβιάζονται οι βασικές δημοσιονομικές και συνταγματικές αρχές.

Λαμβάνοντας υπόψη όλα τα παραπάνω θα προτείνουμε, αποφάσεις στρατηγικής σημασίας, όπως είναι η επιβολή φόρων, να γίνονται κατόπιν προσεκτικής μελέτης από ειδικούς και σε συνδυασμό με κύριους άξονες της γενικότερης οικονομικής πολιτικής.

Συγκεκριμένα για την επιβολή φόρων ακινήτων, είναι απαραίτητο να υπάρχει κατάλληλα καταρτισμένο προσωπικό για την δίκαιη αποτίμηση της αξίας των ακινήτων, λαμβάνοντας υπόψη τις συνθήκες και τις ιδιαιτερότητες της κάθε περιοχής.

Προτείνουμε στους κυβερνητικούς φορείς να βρουν αντίμετρα, των φόρων σε όλους του τομείς και κατ' επέκταση και στην ακίνητη ιδιοκτησία, για την ελάφρυνση του Έλληνα φορολογούμενου πολίτη. Ένα τέτοιο μέτρο θα λέγαμε ότι είναι η πάταξη της φοροδιαφυγής . Απαραίτητο είναι να βρεθεί τρόπος για την καταπολέμηση της φοροδιαφυγής με παράλληλη σωστή διαχείριση και κατανομή των οικονομικών πόρων, έτσι ώστε να είναι εφικτή και η μείωση της φορολογικής επιβάρυνσης.

Ιδιαίτερη προσοχή συνίσταται στην αποφυγή της διπλής φορολόγησης σε ορισμένες περιπτώσεις όπως είναι η επιβολή του ΦΠΑ στις νεόδμητες οικοδομές δεδομένου ότι αυτός έχει ήδη καταβληθεί, ενσωματωμένος στην αγορά των υλικών. Μια ακόμη περίπτωση διπλής φορολογίας είναι αυτή των μισθωμάτων, θεωρούμε ότι δίκαιο θα ήταν να αφαιρεθεί ο φόρος ακίνητης περιουσίας που αντιστοιχεί στο συγκεκριμένο ακίνητο, και το υπόλοιπο των ενοικίων να προστεθεί στα άλλα εισοδήματα του φορολογούμενου προς φορολόγηση. Επιπλέον διπλή φορολόγηση αποτελεί και ο φόρος στο τεκμαρτό εισόδημα από ιδιοκατοίκηση, καθώς ο φόρος ακίνητης περιουσίας θεωρείται ότι φορολογεί αυτό το εισόδημα.

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# Change Management – Obstacles and Perspectives for the Integration of Changes in Greek Public Hospitals

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## Abstract

*Change management is the process of continuously updating the direction, structure and capabilities of an organization; it includes principles, methods and practices which are necessary to identify, process, and effectively manage changes in businesses and organizations. Health units are unique organizations with increased complexity, multidimensional goals and personnel diversity, operating in a constantly evolving environment. Changes in healthcare units are therefore ongoing, but their implementation is extremely difficult, since people with different outcomes' orientation should work together. This paper aims to clarify issues of change managing in healthcare units and in particular to reveal if there is a necessity for change in Greek public hospitals. If that is the case, the paper will investigate if hospital managers have the tools and the expertise to identify the needs for change and subsequently to manage the conditions of reformation. Hence the paper aims to provide answers to the following research questions: Are the tools for change being used efficiently by the hospital managers? How health personnel experience change in health care settings? What are the expectations for employees from the implementation of changes in hospitals? Are employees in Greek hospitals prone to change? Under which circumstances would they better adapt to change, embracing the need for reformation? The paper concludes that if change management is applied in Greek public hospitals, multifaceted benefits will derive from managing change successfully and thus achieving high levels of organizational effectiveness. The research was carried out in Kalamata's Hospital and was addressed to medical and administrative personnel. Questioners were filled in by 164 employees (out of the distributed 200) over the period of November 2017 to December 2017. The paper aims to contribute to the management of Greek hospitals by the implementation of change management.*

**KEYWORDS :** Change management, Resistance to change, Motivation, Cooperation

**JEL CLASSIFICATION CODES :** M10, M12, M14

## 1.Introduction

Every business or organization operates within a constantly changing social, economic and technological environment. In order to achieve sustainability and its evolution, the Agency should adapt through change. The management of change deals with the appropriate handling of situations and factors in order to introduce change functionally and effectively, as changes are inevitable and must be addressed (Kalogeropoulou and Mourdoukoutas, 2010).



But people are not always receptive to change. That is why the administration of change as a function concerns the management of the design and implementation of the changes. It consists of knowledge, models, methods and techniques that facilitate the understanding, anticipation and manipulation of changes in enterprises and organizations (Bourantas, 2002). The public health system is made up of small and large organizations, mainly hospitals. Hospitals are the most complex Organizations that man has devised so far. In a 400 bed hospital, over 1,000 employees work, from different educational backgrounds and different perspectives (Drucker, 2006). Changing into such an organization is a challenge.

Hospitals are in a constant state of change: politics, technology, relationships with patients, scientific discoveries. At the same time, there is a continuing requirement to increase the quality of health care services and patient safety. Health units should therefore act on the basis that they should improve through the adoption of changes to the standards of private enterprises (Noble et al., 2011) in order to achieve maximum efficiency with the given resources.

The purpose of this paper is to examine the management of changes in health units, with particular reference to the obstacles and the prospects of incorporating changes in the public health system. . Hence the paper aims to provide answers to the following research questions:

Are the tools for change being used efficiently by the hospital managers?

How health personnel experience change in health care settings?

What are the expectations for employees from the implementation of changes in hospitals?

Are employees in Greek hospitals prone to change?

Under which circumstances would they better adapt to change, embracing the need for reformation?

The expected outcome is to deliver a paper which will give answers on the above mentioned research questions. Also, it will provide an outlook of the changes and how they are managed in the current social and economic environment.

## **2.Literature review**

### **2.1. The concept of change and its significance**

Each passing day makes changes and significant discoveries in many scientific fields. Globalization dominates political and collective thinking, and people need to constantly learn new things in order to be able to follow the modern and ever-changing process. Organizations must also change their strategies, structures, systems, limits and expectations from their staff and supervisors in order to remain viable (Cameron & Green, 2015).

Change has been the subject of a study for many years. Books and the Internet are filled with philosophies, theories, models and techniques that suggest sustainable organizational changes of varying degrees of validity and success. Demand for studies looking at change is high, because it is recognized that there is no room for failures as businesses act in dynamic and complex competitive environments (Paton & McCalman, 2008).

Changes exist for individuals, groups, leaders and organizations. Changes that happen to people are the heart of everything that is achieved in business. When people have the motivation to do something different, the whole world is moving (Cameron & Green, 2015).

There are four approaches to how man is changing. The behavioral approach focuses on behavioral change, cognitive in the results, psychodynamics examines the change of the individual's inner world, and humanitarian psychology refers to maximizing potential within from change (Cameron & Green, 2015).

Changing as a composite of a business concept is linked to organizational change, change management, or a synthesis of all of the above, referred to as organizational change management. Essentially, organizational change is what is being sought, namely the transition from one situation to a new one. The change can be episodic or continuous. Episodic change is rare, discontinuous and intentional. It usually exists because of adaptation to new technological or other environmental conditions that are imperative. Continuous change is about the ongoing micro-transformations needed to balance the Agency. In the first case, the leader is the primary promoter of change, while in the second he redirects identifying the points he needs to focus on (Weick & Quinn, 1999).

In another categorization, Nadler and Tushman distinguish organizational changes by their importance in the marginal, gradual and strategic, while the stimulus in reactive and proactive. Proactive changes are based on forecasts and are the ones that bring evolution (Bourantas, 2002). Todnem By (2005) on a critical review of organizational change management classifies changes in organizations into three groups: 1. depending on how often they happen; 2. how they arise; and 3. how small or large scale changes. These categories are listed below in more detail.

## **2.2 Related researches**

Examples from international experience can help leadership in the country's healthcare facilities to cope with the problems arising from change. In Canada, they changed the way they treat health care for the elderly and interviewed workers in two structures. In one structure, workers feel that each of the employees, from the nurse to the auxiliary staff is worth, and the change was best. They now feel they do not have a strict hierarchy, but they belong to a group. In contrast, in the second structure the leadership obviously did not organize the change properly, and the workers did not understand what role they had and what they expected. It is clear that change was best accepted in the first structure (Cloutier et al., 2016).

In a further survey in Canada, it is presented how a change was planned in the way relieving health care is being addressed. 26 health care providers, community and hospitals, private health professionals, volunteers, patients and families were recruited to plan change. An extensive process was initiated with working groups and an organizing committee. A lead transition committee has been voted to complete the implementation, which remains to be seen if it will be successful in the future (Pereira et al., 2016).

In the Netherlands again, the study focuses on stress caused by changes in workers. From the observation of three cases, it was found that change can cause anxiety when the consequences affect the person's sense of self, especially when the sense of uncertainty coexists (Wisse & Sleafbos, 2016).

In Iran, they examined the impact of the new accounting system on a regional hospital and saw that the key points that affect change are the organizational structure, leadership and impact group, the absence or presence of incentives, the belief that implementation of the system would help and lastly that the workers have knowledge (Mehroolhassani and Emami, 2013).

Publishing articles on changes to healthcare units are mostly common in new information systems, as implementation of new technology is vital to the success of healthcare organizations. The new technology provides health care organizations with the opportunity to

acquire new patients, increase revenue, and remain competitive. In 2014, a hospital in Southern California successfully implemented a bronchial thermoplasty program. In order to apply this new technology, the administration created a strategy, identified economic risks and benefits, created an implementation model based on the Lewin change model, Roger's innovation dissemination theory, and recognized adult education needs through an inter-service and cooperative approach. In addition, the implementation of the bronchial thermoplastic program has enabled the Organization to meet its goals, mission and vision, which is the key to remain viable and profitable (Tetef, 2017).

Even more sensitive issues are undergoing a change management process and are being investigated in hospitals. When an external oncologist in a region of the United States has first asked for and supplemented and signed the Medical Orders for Life-Sustaining Treatment (MOLST), which is a form in which the patient with terminal disease decides to what extent he will receive mechanical or other support when his or her state of health is irreversible, then it was found that the hospital did not have such a form. The decision to get into the hospital's routine, you fell into moral dilemmas and established situations. However, in a process that took into account the theory of change management, it became possible for the hospital to have the form available to the oncology patients concerned (Evans et al., 2016).

With regard to which group or class of workers may affect the success of a change, nurses believe that intensive care units may be carriers of change in cases such as the application of clinical protocols to early identify and reduce the patient's delirium (Reimers and Miller, 2014).

### **3. Methodology**

#### **3.1. The context of the study**

The framework of the study was the General Hospital of Messinia - Nursing Unit of Kalamata, which for reasons of brevity is called Kalamata Hospital. The Hospital of Kalamata is the largest public hospital in the Regional Unity of Messinia, and there is also the interconnected Nursing Unit of Kyparissia according to the Law 121798/12 (Government Gazette 3477 / 31.12.2012 ) decision of the Ministers of Finance - Administrative Reform and eGovernment - Health. The area of responsibility of the hospital is extensive covering about 200,000 inhabitants, which in the summer months and other holidays grow to a great extent as in Messinia many regions receive thousands of visitors every year for tourism.

The General Hospital of Kalamata with an area of 24.273 sq.m. has been built on 43,000 sq.m. It includes the main building, the building of the Psychiatric Unit and the individual auxiliary buildings. The main building consists of 5 basic levels. It has 314 beds, an intensive care unit, an infant unit, twelve clinics of various specialties. The hospital employs 773 employees.

#### **3.2. Questionnaire**

The use of a questionnaire is the most widely used method of data collection and is the cornerstone of research. The questionnaire should be short and simple and start with a greeting and presentation of the researcher and the subject. There must be assurance that anonymity and confidentiality are respected. It is also important to explain why the completion of the research will help to improve some aspects of his or her life and, in general, it should address the feeling of altruism of the recipient of the questionnaire. The questionnaire used in this work had 29 questions. When a questionnaire is too long and time-consuming to fill it, it is in danger of failing its goal, because there will be large abandonment rates, which is not desirable and characterizes a survey as unsuccessful (Halikias & Sammanta, 2016). The time for completing this questionnaire was relatively short, and it took

about five minutes to complete. Initially, there were five questions about demographic characteristics: gender, position of responsibility (YES / NO), age, level of HE, DE, TE, IP, MA, Ph.D.) and employee category (Doctor, Nurse, Administrator, Other).

Then there were 21 general questions regarding the positions of employees regarding how they are experiencing changes in the nursing unit and their degree of agreement on specific suggestions that may facilitate the process of integrating a change. In the responses, the participant had to express his agreement to a five-level Likert-type scale with options. I totally disagree, disagree, agree, disagree, agree and agree totally. Then there were five questions about a technological change that ended only one year of operation, namely an electronic document handler at the Kalamata hospital. The questions related to whether it is easy or difficult to use the application, if the speed of document handling has improved, what is the main advantage and the main disadvantage of the electronic protocol and if the participant eventually uses the application or asks for the help of someone else .

Simple random sampling was applied, in which each employee was equally likely to be selected to complete the questionnaire. They were shared in various offices and clinical questionnaires, and regular visits were repeated to the offices and clinics to receive the completed questionnaires.

### **3.3 Statistical analysis**

The transfer of responses from the three-question questionnaire was initially done in the Excel accounting package. The data was transferred to the IBM SPSS Statistics 22.0 data processing program. The results were then analyzed with the same program. Frequencies were expressed in percent, and correlation control of independent and dependent variables was performed. The value of  $p < 0.05$  was defined as the significance criterion. The  $p < 0.1$  value was considered statistically significant and the  $p < 0.001$  statistically significant value.

## **4. Results**

The results showed several statistically significant correlations, but not particularly with respect to the independent variables. For example, gender was not found to have statistically significant correlation with some of the change management parameters. The level of education has a statistically significant ( $r = -0.277$ ,  $p < 0.05$ ) negative correlation with the question of the ease of assimilation of changes in the sense that the lower the level of education, the workers do not want the changes in work their. Regarding the category of workers, there is also a statistical correlation to the same question with physicians to make change easier, followed by nurses, while administrative staff appear to be more difficult ( $r = 0.182$ ,  $p < 0.05$ ). Same image and the question that changes should only be made when there is no other solution, with people declaring another category to think that this is the most correct decision ( $r = 0.167$ ,  $p < 0.05$ ).

The most powerful factor that has statistically significant correlation with most other parameters of the questionnaire is the belief that change is necessary in a hospital to allow for progression as there is a positive strong statistically significant correlation with experiencing the person change as ( $r = -0.166$ ,  $p < 0.05$ ), or change only when no other solution is available ( $r = 0.671$ ,  $p < 0.001$ ), negative correlation with  $r = -0.164$ ,  $p < 0.05$ ). In addition, there are statistically significant positive correlations with questions 7 to 17, ie the belief that employees need to know the benefits of adopting a change ( $r = 0.191$ ,  $p < 0.05$ ), the need for effective communication ( $r = 0.335$ ,  $p < 0.001$ ), employee involvement in the decision ( $r = 0.219$ ,  $p < 0.05$ ). Those who have a positive view of change also have a statistically significant relationship with the view that participation in change will improve relationships with colleagues ( $r = 0.330$ ,  $p < 0.001$ ) and bosses ( $r = 0.300$ ,  $p < 0.001$ ); and it will be an opportunity to show the person's abilities ( $r = 0.337$ ,  $p < 0.001$ ). At the same time, there is a statistically significant correlation with the idea that workers should be motivated ( $r = 0.267$ ,

$p < 0.05$ ), and remuneration ( $r = 0.229$ ,  $p < 0.05$ ), while educational programs =  $0.316$ ,  $p < 0.001$ ) and adjuvants ( $r = 0.214$ ,  $p < 0.05$ ).

Also this question states that individuals experience change as a positive process has statistically significant negative correlation with the question that they do not like changes in their work ( $r = -0.239$ ,  $p < 0.05$ ), and positive with questions about with correct communication ( $r = 0.303$ ,  $p < 0.001$ ), employee participation in the change decision ( $r = 0.182$ ,  $p < 0.05$ ). ( $r = 0.258$ ,  $p < 0.05$ ) and leadership, ( $r = 0.301$ ,  $p < 0.001$ ), demonstration of abilities ( $r = 0.259$ ,  $p < 0.05$ ). Finally, there is a significant positive correlation with the questions regarding the belief that the integration of modern information systems helps in efficiency ( $r = 0.187$ ,  $p < 0.05$ ), they will not oppose a change ( $r = 0.216$ ,  $p < 0.05$ ), and help their colleagues in case of changes ( $r = 0.201$ ,  $p < 0.05$ ).

For the question that participants agree that they feel better when there are no changes there is a statistically significant positive correlation with making changes only when necessary ( $r = 0.333$ ,  $p < 0.001$ ) and negative with the existence of communication channels ( $r = -0.177$ ,  $p < 0.05$ ) and motives ( $r = -0.154$ ,  $p < 0.05$ ).

The statement that workers should be fully informed about the changes is associated with a statistically significant relationship with the statement that they should be informed of the causes that led to the change ( $r = 0.607$ ,  $p < 0.001$ ), know the benefits of the change ( $r = 0.571$ ,  $p < 0.001$ ), communication channels ( $r = 0.279$ ,  $p < 0.001$ ) and workers involved ( $r = 0.291$ ,  $p < 0.001$ ). There is still a positive statistically significant relationship with the need for employee participation in the decision ( $r = 0.252$ ,  $p < 0.05$ ), training ( $r = 0.191$ ,  $p < 0.05$ ), technical support ( $r = 0.169$ ,  $p < 0.05$ ) and negative by opposing the change if they disagree with it ( $r = -0.194$ ,  $p < 0.05$ ).

The requirement to be informed about the causes that led to the change is associated with a statistically significant relationship with the statement that they should know the benefits of the change ( $r = 0.688$ ,  $p < 0.001$ ), communication channels ( $r = 0.2282$ ,  $p < 0.001$ ) and involve employees in the design ( $r = 0.227$ ,  $p < 0.001$ ). A very powerful factor is correct communication as it gives a perspective for achieving change. It is statistically associated with many of the previous parameters. Also, with employee involvement in the decision ( $r = 0.550$ ,  $p < 0.001$ ), the view that participation in change will improve relations with colleagues ( $r = 0.437$ ,  $p < 0.001$ ) and the supervisors ( $r = 0.382$ ,  $p < 0.001$ ), and will be an opportunity to show the person's abilities ( $r = 0.237$ ,  $p < 0.05$ ). At the same time, there is a statistically significant correlation with the idea that workers should be motivated ( $r = 0.437$ ,  $p < 0.05$ ), while training programs ( $r = 0.446$ ,  $p < 0.001$ ) have to be provided, ( $r = 0.326$ ,  $p < 0.001$ ), while still related to the view that work is done more efficiently ( $r = 0.277$ ,  $p < 0.001$ ).

## **5. Discussion**

This paper is a research study on prospects and obstacles to the incorporation of changes in the context of the management of changes in public nursing units. The survey was carried out at the General Hospital of Messinia - Nursing Unit of Kalamata, which is a medium-sized general hospital in the region, where changes are often made because as an organization evolves, develops and changes according to modern data. The study sample accounted for around one-quarter of the total number of employees. Health professionals completed a questionnaire on different dimensions resulting from changes in an organization. The questionnaire included questions on demographic characteristics and five questions for assessing a recent technological change in the hospital, namely the application of electronic document handling. The results of the survey are of particular interest.

There are several factors that affect the prospect of change. Kuipers et al., (2014) analyzing secondary 133 change management articles over a decade summed up the change management factors into four categories: context, content, processes, and results. The context

refers to the internal and external environment (Phillipidou et al., 2008). Our research also found that change helps to develop and evolve a hospital in a changing environment. The content factor is related to strategies, structures and systems (Armenakis & Bedeian, 1999). This research has shown that there must be strategies, such as training programs, in order to fully inform all participants of the forthcoming changes, otherwise there is dissatisfaction and refusal to adopt a change. Procedures in factor present urgent and emerging change processes (Armenakis & Bedeian, 1999). In any case, the change creates rearranges in which other workers are burdened and others are relieved of change. A key factor is also leadership (Higgs & Rowland, 2005), because leadership provides incentives, pay and organizes education.

In the present study, people who had a positive attitude to change were more likely to help their colleagues to implement a change, accept it as something positive, and participate in it even if they do not fully agree. In a very recent survey in Norway, resources, staff attitudes and organizational culture were considered to be related to the success of a change (Billsten et al., 2018).

Another issue that emerged in this paper is that employees want to be informed before a change is implemented, know the details, have successful communication, and if it is possible to decide together with the administration the adoption of a change. Also, there must be an assessment of change otherwise it is in danger of partial or total deprecation and failure (Bichani, 2006). Lavoie-Tremblay et al., (2017) interviewed by people working in health-related offices to report the great importance of transparency and flexibility, cooperation, detailed planning to ensure sustainability of change. Regarding the obstacles to the adoption of a change, this study referred to issues of lack of information and education. In changes that mental health professionals had to face in nursing homes, the lack of guidance was reported as an obstacle, and as supporting evidence it was argued that it was the regulatory framework, leadership and clear procedures (Engle et al., 2017; Asprides & Zournazidou 2000).

Many research in international literature focuses mainly on resistance to change. But here is an assumption that resistance to change is the opposite of accepting change and engaging in success and sustainability. Landaeta et al., (2008) tried to recognize the sources of resistance to change in the health care sector and mentioned a number of reasons that some see as being found mainly in the health sector and not in other areas, for example the business world. Some of these sources is the denial, the tendency to remain one in the old without wanting to try something new, communication barriers, the silence of the administration, in the sense that the administration did not disseminate the information nor the results of the decision, lack vision, pessimism and cynicism. In this work the majority of employees require participation, motivation and open channels of communication.

With regard to demographic characteristics, it can not be clearly ruled out that a gender is more positive about change than another. The same is true for age, ie it has not been found that younger people, for example, are more receptive to change, while older people reject them. There has been no reference in the international literature that opposes this finding. In the present study, the only difference found with regard to demographic data is that people with a lower level of education prefer not to change as much as possible in their work. The same applies to people who have declared a profession other than medical, nursing and administrative. It is worth noting that the educational level of the participants was very high, as the majority were graduates of higher education and therefore more receptive to change. Research specifically considered the profession of doctors and their willingness to participate in a change, found that physicians should first be satisfied that the change will help them in their work and decide to adopt it (Bhattacharjee & Hikmet, 2007) .

It is the administration that sets the vision for an organization and the one that takes the final decision to adopt a change and the strategy to be followed. In the present study, it was found that employees expect the management to prepare properly for success and a change. They

seek motivation, education, the availability of aids to seek information and some kind of pay. The manager himself is a driving force according to Andreasson et al., (2016) for the success of a planned change as a result of a survey in Sweden. The manager has to support changes in general, have a strong supportive team of supervisors who will lead them and also believe in change, clear supportive structures with rules and policies, and finally workers who want to take responsibility and consider them a challenge.

## **6. Conclusions and recommendations**

The sample of the survey was a large proportion of workers in a regional hospital. It is therefore a first step towards drawing conclusions on the issue of the management of change in Greece, but the results are indicative of future research without being able to safely say that they are generalizable to all health professionals of all public and private hospitals in the country. Future surveys can analyze the issue with a qualitative approach, namely to create an interview guide from this research and to make individual interviews, which will be analyzed with qualitative analyzes.

The present research has theoretical and practical application. Initially, individuals involved in managing health units and students or postgraduate students in their respective departments can learn theoretically about the management of change, its stages and potential obstacles. They can also, through research results, design similar research into other health concerns. Individuals who work in a hospital and have positions of responsibility can also learn how to be able to design and adopt a conflict-free change, but with consensus. So there will be economy and there will be no waste of hours and resources for changes that will end up in failure.

Changes are inevitable in a health care unit in order to be able to provide quality health services at the lowest cost and efficiency. The internal and external environment is evolving into a time when health resources are scarce and needs are constantly growing. The commander of each hospital must listen to the environment and make changes that bring economy, speed to the service of internal and external clients of the hospital. At the same time there must be transparency, ease of access and adaptability.

Employees, while wishing to do their job effectively, at the same time find it difficult to adapt to change for a variety of reasons. There is a chance they do not understand why a mechanism that is accustomed has to change. Also, each change can benefit a group of workers and overload one another. So while one group easily accepts change, another may think it is affected. From which it is fundamental is the proper communication and promotion of change. It should be understood that everyone is winning if a change is successful. If it is not, the administration should have the courage to withdraw it without fear of spoiling the image and showing itself vulnerable to pressure. There are prospects for the adoption and sustainability of change. But it has to be designed in detail. Once the problem has been identified, a group of staff should be set up to manage the project. Like any programming process, alternatives will have to come to the table, one of which is to do nothing. There must be even this case if a change has more positive than negative. Then solutions must be evaluated and found to be the most appropriate. Once the change is decided, a group of believers in this idea of workers must start communicating with it, and some more specialists need to specify the change in the environment and the particularities of the particular hospital.

In the present work some said that technological change was useless. You have to stand next to the user and see where exactly these points are unusable and how something could be modified for the better. Even change requires development. Others said that education was incomplete. In the age of technology, there is a great deal to communicate, such as emails, videos, remote access and screen sharing programs, to facilitate education without, of course, excluding personal contact that is always useful and necessary, especially for those they are not very familiar with technology.

The key issue is how a change is planned. So while a change can be done without rushing, with proper planning and updating, bad organization can destroy even the best design or the finest application. However, any obstacles that may arise should from the outset be anticipated and reduced. The team that designs the change can anticipate future problems through brainstorming. It may be necessary to carry out research outside of the environment of the particular hospital in hospitals that have encountered similar problems and to find out how they have faced such a challenge.

Management must also be a team player and communicate the problem in a timely manner. It must set up working groups to act as ambassadors of change. The change should have a stage of non-mandatory implementation before it is fully adopted. At this stage, the aim will be to identify why some employees do not want to try change. Employees must be motivated to participate in change and, more generally, to reward innovation. If a change is positive, it can be a subject of a good practice conference. So those who participated in it will feel the satisfaction of their success. This move will motivate others to accept and participate in innovations.

The change can also start with an idea of a worker who does not belong to the official hierarchy and be successful, provided the administration generally supports change within a change-oriented organizational culture environment. Research has also shown that workers are tired of stagnation and seek to become members of a creative environment. But even after the change is established, it is necessary to evaluate it. Check by the management whether the benefits gained were the expectations, assess any discrepancies and then make corrective moves and feedback to the system, ultimately to achieve the maintenance of change.

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# PERCEIVED important DESTINATION IMAGE COMPONENTS BY BABY BOOMERS

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## ABSTRACT

*A key factor, which influences the perception as well as the possibility of choosing and visiting a destination, is the impression that potential visitors have for it. Knowing that the perception of a destination is not objective, it is of great importance for marketers to understand the elements that future tourists want and consider while selecting a destination for vacation and leisure reasons. Desired destination elements are affected by different factors, among them being the tourists' generational cohort that he/she belongs in. The Baby Boomer Generation includes people born between 1946 and 1964 and consists of a very large potential tourist population, having a birth year span of nineteen years. Therefore, marketing managers ought to be aware and comprehend what this consumer cohort desires about destination elements to target them. This paper refers to the Greek Baby Boomer Generational cohort as tourists and measures which destination elements consider important for producing a favorable destination image. It also segments them based on these desired elements. An extensive bibliographic review has been conducted, accompanied by qualitative research producing forty-two destination image elements which synthesized the field survey questionnaire. For the quantitative research a non-probability sampling method was used. Criteria for taking part in the survey was having visited at least one-holiday/leisure destination during the years 2016-2017 and belong in the Greek Baby Boomer generational cohort. Social media, e-mail and face to face interviews have been adopted for data collection and through this procedure 241 questionnaires were obtained. K-Means cluster analysis based on the eleven factors derived from factor analysis, produced four groups of the Greek Baby Boomer Generational cohort's desirable components that produce favorable destination image perception.*

**KEYWORDS:** *Perceived destination image; Destination marketing; Baby Boomers; Generational cohorts; Segmentation; Tourism marketing*

JEL: M31, M39

## 1. INTRODUCTION

Tourism appears to be a major dynamic and competitive economic sector in the global economy, playing a vital role in a country's GDP and trade; generating trillions of US dollars and millions of jobs worldwide (WTTC 2017, p.3). Destinations today operate under highly competitive conditions and destination marketing managers struggle in order for their destination to "survive" in the global competitive tourism environment. For this to be accomplished, they strive to retain loyal customers but also seek to attract new ones. In

accomplishing this difficult task, marketing managers realize the significance of the role of the image that their destination projects on current and potential tourists-customers (Chon 1990). Destination image in tourism literature has different definitions (Lawson and Baud-Bovy, 1977; Crompton, 1979, Hunt 1975). In all cases though, it is considered subjective (Gallarza, Saura & Garcia, 2002); affected amongst others, and by different personal characteristics, such as age, and even better by the generational cohort that the potential tourist belongs in (Oppermann, 1995). One generational cohort which is of interest in the tourism industry and has been quite fairly researched, compared to the other cohorts, is the Baby Boomer cohort since it's the emerging mature/senior travel segment (Jang & Ham, 2009). Even though it has been researched fairly, the desired destination components have not been tackled as an issue. Having the above in mind, this paper seeks to answer the following questions:

1. What are the desired elements of a destination that would compose a favorable perceived destination image to tourists belonging to the Greek Baby Boomer Generational cohort?
2. Can this Greek Baby Boomer generational cohort be further grouped based on the desired destination image variables?
3. If this is feasible, what are the characteristics of each group?

This paper fills in the following academic gaps: first, there is a scarcity of research regarding the Baby Boomer generational cohort and desired destination elements in the academic tourism area. Additionally, regarding the Greek Baby Boomer generational cohort, no research has been found regarding travel and tourism. This cohort was born 1946-1964 (Williams et al., 2010) and was 53-72 of age (in 2017, year of the research).

The rest of this paper is organized as follows. The literature review is presented followed by the methodology. Next, the results are offered, with the conclusions, limitations, and directions for further research.

## **2. LITERATURE REVIEW**

In respect of other studies concerning destination image and destination marketing, a plethora of previous studies exist and support that image research is tremendously valuable both for destinations and destination managers (e.g., Chang et al., 2015; Kamenidou et al., 2015; Xie & Lee, 2013; Kamenidou, Mamalis, Kokkinis, & Geranis, 2013; Kamenidou et al., 2009; Prayag, 2009; Ekinci, 2003).

Although there is abundant research on tourism, travel, and destination image, though, studies dealing with the different generational cohorts and tourism are relatively fewer (e.g., Beldona et al., 2009); especially those referring to the destination image. Generational cohorts are a quite understudied subject in tourism destination studies and are so, those concerning destination behavior and the Baby Boomer cohort, which is the focus of this study (Gardiner, Grace, & King, 2015).

Huang and Petrick (2010) examined information sources, preferred activities, and destination attributes of the U.S. Baby Boomer, Generation X, and Generation Y cohort. Beldona et al. (2009) examined online travel purchase behavior by the U.S. Senior, Baby Boomer, and Generation X cohort. Patterson & Pegg (2009) investigated the leisure experience of the Baby Boomer cohort as well as of those of older people. Leaver & Schmidt (2009) investigated the nature of music-based tourism of the Baby Boomer cohort as well as younger visitors. Lehto et al. (2008) examined the experiences sought and the actual vacation activities by the U.S. Silent Generation and Baby Boomer cohort. Beldona (2005) examined the online information search of the U.S. Baby Boomer and Generation X cohort. Pennington-Gray et al. (2003) studied the travel interests of the Canadian GI Generation, Silent

Generation, Baby Boomer, and Generation X cohort (n = 14,866). Furr et al. (2001) surveyed domestic travelers information search and booking behavior of the U.S. of the Mature travelers, Baby Boomers, and Generation X cohorts (n>11000 in 3 years 1997-1999). Muller and Cleave (2000) profiled segments of American, Canadian, Australian and New Zealand's (CANZUS countries) Baby Boomers' travel behavior. Cleaver, Green, & Muller (2000) researched motivation, vacation risk perceptions, and travel patterns among Australian Baby Boomers.

### **3. METHODOLOGY**

Qualitative research was carried out through depth interviews, and the phrases and conclusions combined with the literature review, produced forty-two items included in the final quantitative research questionnaire. A non- probability sampling method was used to obtain data. The research tool was developed in google docx form, to be forwarded online (Stavrianea and Kamenidou, 2017), and personal interviews with older Baby Boomers was practiced, employing convenience and snowball sampling. By this process, 241 valid questionnaires were gathered and considered appropriate for the analysis. The SPSS ver.24 was used, and analysis included descriptive statistics, the reliability of scale, factor, cluster analysis, and chi-square tests.

### **4. RESULTS**

#### **5.1 Sample profile**

As to gender, 51.0% of the sample was males and 49.0% females. Respondents were married (80.0%) with secondary education (30.3%) and university degree (29.0%). On a pension was the 35.3% of the sample and 28.2% were employees (federal and private) and with a net monthly family income up to 1000.00 euros (48.1%). Additionally, 23.0% had at least one family member fired from May 2010, the year when the memorandum of understanding was signed, and a 24.8% had no family member currently working, due to the economic crisis.

#### **5.2 Perceived important components of a destination image**

Table 1 presents the forty-two components evaluated as important or not by the Greek Baby Boomers to produce a favorable destination image, and for so, to be considered part of their evoked set of vacation destinations. The 5-point Likert-type was used (1= completely unimportant up to 5=completely important). Results revealed that two items/statements have as Mean Score (MS) >4.51, i.e. "Clean destination" (MS=4.62) and "Safe place at night" (MS=4.52). Also, 14 statements have 4.00<MS<4.50 and 11 statements have 3.51<MS<4.00, meaning that they are also considered important or tend to be important for them in choosing a destination. Moreover, five statements have 3.00<MS<3.50; nine have 2.00<MS<3.00 and one have MS<2.00. The two statements with the lowest MS are "Free camping" (MS=1.44) and the "Presence of famous and wealthy people" (MS=2.01).

Table 1: Important destination image attributes as perceived by the Baby Boomer Generation

The destination must be/ have/is (a/the)....	1	2	3	4	5	MS (StD)
Clean destination	0.4	1.7	5.0	21.2	71.8	4.62 (0.70)
Safe place at night	0.0	2.9	7.5	23.8	65.7	4.52 (0.76)
Security of things (e.g. car)	2.5	0.8	6.6	25.7	64.3	4.49 (0.86)
Suitable accommodations (hotels / rooms etc)	0.8	1.2	12.4	25.7	59.8	4.42 (0.82)
Adequate infrastructure (e.g. roads)	0.4	2.9	7.9	34.9	53.9	4.39 (0.79)
Easy access	0.0	2.9	10.8	32.0	54.4	4.38 (0.79)
Picturesque scenery	1.7	3.3	6.2	33.2	55.6	4.38 (0.87)
Good climate	0.8	0.4	14.5	34.4	49.8	4.32 (0.80)
Good quality of food	1.2	2.5	13.3	31.1	51.9	4.30 (0.88)
Sufficient modes of transport	1.7	4.1	10.4	32.0	51.9	4.28 (0.93)
Good value for money	0.8	2.5	14.5	34.9	47.3	4.25 (0.86)
Clean sea-waters for swimming- playing	0.8	3.3	14.2	35.4	46.3	4.23 (0.87)
Exciting place	0.8	2.5	12.0	45.2	39.4	4.20 (0.81)
Quite/peaceful	0.4	5.4	16.2	35.7	42.3	4.14 (0.91)
Cheap (e.g. accommodation and transport costs, museum entries, etc.)	1.7	5.0	17.4	31.1	44.8	4.12 (0.98)
Festivals	14.1	22.8	33.6	20.3	9.1	4.01 (0.98)
Variety of attractions	1.2	5.8	22.0	37.8	33.2	3.96 (0.95)
Variety of restaurants	1.2	4.6	24.9	37.3	32.0	3.94 (0.93)
Quality of attractions	2.9	5.4	20.7	37.8	33.2	3.93 (1.01)
Sandy beaches	6.2	4.1	24.9	31.1	33.6	3.82 (1.13)
Interesting place	3.3	4.6	22.4	47.3	22.4	3.81 (0.95)
Traditional destination (e.g. small village)	3.3	6.6	33.6	29.9	26.6	3.70 (1.04)
Destination for a family with children	5.0	9.2	25.4	33.3	27.1	3.68 (1.12)

Cultural attractions	6.2	12.4	30.7	28.2	22.4	3.68 (1.16)
Historical monuments	3.7	11.2	24.9	35.3	24.9	3.66 (1.15)
Good behavior of residents	1.2	6.2	21.6	32.4	38.6	3.65 (1.00)
Pleasant place	3.7	10.4	33.6	34.4	17.8	3.52 (1.02)
Variety of shopping stores	5.0	11.2	32.4	34.0	17.4	3.48 (1.06)
Alternative tourism in the area (e.g. spas, rafting, climbing, etc.)	9.7	15.1	26.9	27.7	20.6	3.34 (1.24)
Destination for couples	10.4	14.9	28.6	29.5	16.6	3.27 (1.21)
Exotic place	12.4	17.8	32.0	21.2	16.6	3.12 (1.24)
Absolute getaway	15.8	19.9	28.6	18.3	17.4	3.02 (1.31)
Adequate and good nightlife	21.2	15.8	29.9	18.7	14.5	2.90 (1.33)
Religious sights / monuments	5.4	12.0	19.9	34.4	28.2	2.88 (1.16)
Famous place	14.2	22.5	36.3	20.4	6.7	2.83 (1.11)
Bars	28.7	22.1	25.0	15.4	8.8	2.53 (1.29)
Destination full of mystery	24.1	24.1	38.6	10.4	2.9	2.44 (1.06)
“In” destination	30.7	27.0	28.6	10.8	2.9	2.28 (1.10)
Freedom of morals	42.7	17.4	27.4	5.4	7.1	2.17 (1.24)
Unrestrained alcohol consumption	47.7	12.4	23.2	9.1	7.5	2.16 (1.31)
The presence of wealthy and famous people	44.8	23.7	20.7	7.1	3.7	2.01 (1.13)
Free camping	77.6	7.5	9.1	4.6	1.2	1.44 (0.93)

### 5.3. Factor analysis - Segmentation based on desired elements for a favorable destination image

Exploratory Factor Analysis with varimax rotation was performed on the 42 destination image items. The analysis produced eleven factors (KMO=0.769; BTS=4173.218; df=741; p=0.000), explaining 67.3% of Total Variance (TV). The number of factors was defined with the >1.0 Eigenvalue criteria (Kaiser, 1958) and all factor loadings exceeded the 0.4 loading criteria (Ford, Mac Callum & Tait, 1986). In the procedure, three items were dropped, due to double loading or loading less than 0.4. These items were: “Famous place”, “Good climate” and “Free camping”. These eleven factors are named as follows: “Nightlife and entertainment”; “Sightseeing”; “Food and restaurants”; “Pleasant, interesting, and exciting destination”; “Transportation and safety”; “Value for money”; “Accommodation and shops”;

“Peaceful and traditional destination”; “Exotic destination”; “Behavior of locals”; and “Alternative tourism”. Table 2 presents the produced factors, the total variance explained (TVE); Cronbach a of the factor and Mean Factor Score (MFS). Total Cronbach a of the scale was  $\alpha=0.850$ , and three factors resulted in low reliability ( $<0.500$ ).

Table 2. Derived factors of desired elements for the perceived favorable destination image

Factor	Item	Loading
1 <sup>st</sup> factor $\alpha=0.830$ TVE=11.2%	Festivals	0.529
	Adequate and good nightlife	0.708
	Destination for couples	0.419
	Bars	0.748
	The presence of wealthy and famous people	0.630
	Freedom of morals	0.593
	Unrestrained alcohol consumption	0.657
	Destination full of mystery	0.616
	“In” destination	0.766
2 <sup>nd</sup> factor $\alpha=0.850$ TVE=9.6%	Variety of attractions	0.722
	Quality of attractions	0.733
	Picturesque scenery	0.507
	Historical monuments	0.896
	Cultural attractions	0.817
	Religious sights / monuments	0.665
3 <sup>rd</sup> factor $\alpha=0.692$ TVE=6.9%	Variety of restaurants	0.751
	Good quality of food	0.768
	Destination for a family with children	0.433
4 <sup>th</sup> factor $\alpha=0.785$ TVE=6.3%	Interesting place	0.823
	Pleasant place	0.795
	Exciting place	0.604
5 <sup>th</sup> factor $\alpha=0.790$ TVE=6.2%	Security of things (eg car)	0.796
	Adequate infrastructure (e.g. roads)	0.518
	Sufficient modes of transport	0.403
	Safe place at night	0.660
	Clean destination	0.462
6 <sup>th</sup> factor $\alpha=0.717$ TVE=5.3%	Cheap (eg accommodation and transport costs, museum entries, etc.)	0.753
	Good value for money	0.787
7 <sup>th</sup> factor $\alpha=0.568$ TVE=5.2%	Easy access	0.551
	Suitable accommodations (hotels / rooms etc)	0.653
	Clean sea-waters for swimming-playing	0.492
	Variety of shopping stores	0.568

8 <sup>th</sup> factor a=0.530 TVE=4.9%	Quite/peaceful	0.731
	Traditional destination (eg small village)	0.758
9 <sup>th</sup> factor a=0.627 TVE=4.1%	Absolute getaway	0.622
	Exotic place	0.642
10 <sup>th</sup> factor a=0.493 TVE=3.9%	Good behavior of residents	0.775
	Sandy beaches	0.558
11 <sup>th</sup> factor TVE=3.7%	Alternative tourism in the area (eg spas, rafting, climbing, etc.)	0.811

Continuously, the eleven factors were treated as new variables and upon them was based segmentation analysis with K-means cluster analysis. Table 3 presents the four clusters, the number of subjects in each cluster, their Final Cluster Centers (FCC); F-value and significance from the ANOVA tests. All clusters are statistically different in all cases. The four groups derived are almost equal in the number of Baby Boomers.

Table 3. Baby Boomers segmentation of perceived important destination image components

a/a factor	Factor name	Cl.1 N=63	Cl.2 N=64	Cl.3 N=50	Cl.4 N=61	F	Sig.
1 <sup>st</sup>	Nightlife and entertainment	2.84	2.15	2.00	2.97	29.675	.000
2 <sup>nd</sup>	Sightseeing	3.51	3.86	4.07	4.04	6.972	.000
3 <sup>rd</sup>	Food and restaurants	3.52	3.85	4.07	4.50	22.303	.000
4 <sup>th</sup>	Pleasant, interesting, and exciting destination	3.53	3.67	3.65	4.51	27.433	.000
5 <sup>th</sup>	Transportation and safety	3.85	4.53	4.84	4.70	53.727	.000
6 <sup>th</sup>	Value for money	3.64	4.34	4.49	4.34	15.794	.000
7 <sup>th</sup>	Accommodation and shops	3.62	4.16	4.34	4.43	33.002	.000
8 <sup>th</sup>	Peaceful and traditional destination	3.27	4.20	4.24	4.03	24.754	.000
9 <sup>th</sup>	Exotic destination	2.85	2.80	2.28	4.18	53.153	.000
10 <sup>th</sup>	Behavior of locals	3.29	3.92	3.88	4.58	32.583	.000
11 <sup>th</sup>	Alternative tourism	3.29	1.97	4.44	3.95	100.622	.000

*Cluster N. 1 "Practical Tourists"*. The 1<sup>st</sup> group consists of 26.5% of the total Baby Boomers and is the most indifferent group since all factors have MFS<4.00. This group desires a destination to have good transportation and be safe, be a good value for money and have adequate accommodation and shops. They want the essential components of a destination that will make their vacation easy without negative surprises. This segment consists of men (57.1%); married (88.7%) with a graduate or postgraduate degree (50.7%) being an employee (33.3%) or on a pension (22.2%) and having a family net monthly income ranging between 600.01-1000.00 euros (60.7%). This segment consists of the practical tourists. They want the necessary components of a destination that will make their vacation easy without negative surprises.



*Cluster N. 2 “Safe and calm destination seekers”.* The 2<sup>nd</sup> group is interested in four destination elements (FCC>4.00); i.e., infrastructure, value for money, peaceful and traditional destination, with suitable accommodation and shops. This segment represents 26.9% of the Baby Boomer cohort and consists of women (53.1%); married (76.6%); with a graduate degree (34.4%); being on pension (43.8%) and housewives (17.2%) and having a family net monthly income ranging between 600.01-1000.00 euros (28.1%) and 1500.01-2000.00 (21.9%).

*Cluster N. 3 “Safe and alternative destination seekers”.* This segment has seven out of eleven with FCC<4.00; two with FCC>3.51; and two with <2.50. The most desired attributes for this segment are infrastructure, value for money, and a destination providing with alternative tourism. This segment represents 21.0% of the total sample and has slightly more women (52.0%) and is married (88.0%). As to education, it is a low-educational segment, with illiterates (10%), primary education (38.0%), and secondary education tourists (40.0%). They also are on a pension (48.0%) and with a family net monthly income ranging up to 1000.00 euros (66.6%). This segment consists of the tourists who desire a safe destination, having the appropriate infrastructure, with alternative tourism (probably swimming in thermal waters or mud tanks) all combined with good value for money.

*Cluster N. 4 “Safe and friendly destination seekers”.* This segment represents 25.6% of the total sample and has four out of eleven elements with FCC≥4.50; five with 4.00<FCC<4.50; one with FCC>3.51; and one with FCC<3.00. The most desired attributes for this segment is infrastructure, value for money, and the good behavior of local people. This segment has more men (52.5%) is married (67.0%); with the highest percentage of the sample having a secondary education (45.9%). It also has the highest percentage of employees (24.6%) and people who have a family net monthly income ranging up to 1000.00 euros (36.1%). Conclusively, all four groups of Baby Boomers want a safe destination, good infrastructure, and value for money. Additionally, all four do not consider as a “must” for a destination the intense nightlife, and entertainment.

## 5. DISCUSSION -CONCLUSIONS

This research had as its goal to answer to three-placed questions. First to identify the desired elements of a destination that would compose a perceived favorable destination image to tourists belonging to the Greek Baby Boomer Generational cohort. This was accomplished three-fold: by an extensive literature review, and the qualitative research. They both produced forty-two destination elements rated in the quantitative research by 241 Greek Baby Boomers. The second question addressed was if it was plausible (and have logical hypostasis) to segment the Greek Baby Boomer generational cohort based on the desired destination image variables. This was accomplished by firstly reducing the forty-two items to a manageable group of variables through factor analysis and following via K-means cluster analysis four groups of the Baby Boomer tourists derived who do not perceive the destination components as of equal or same importance. the third question addressed was what the characteristics of each group are. This was answered with crosstabulation tests of the clusters and their demographic profile as well as by the highest FCC per element per group. Four groups of Baby Boomer were identified: “*Practical Tourists*”; “*Safe and calm destination seekers*”; “*Safe and alternative destination seekers*”; and “*Safe and friendly destination seekers*”.

Overall, results showed that as perceived by the Baby Boomers actual and future tourists, the three most essential components of a destination are that it should be a safe destination, with

good infrastructure, and with good value for money. These are all logical outcomes since they are the aging cohort and need at least the basic comforts at reach, which will guarantee their safety. Due to the economic crisis, and the consecutive cutoffs, especially from pensionaries, this cohort does have an additional interest for the “value for their money”.

## 6. LIMITATIONS - DIRECTIONS FOR FURTHER RESEARCH

This research has some unavoidable limitations which could trigger directions for future research. First, this research incorporated forty-two items of destination image components which were found in literature and were validated by the qualitative study. Other components might be of importance, that is why a follow-up study could validate current findings. Additionally, this research was restrictive to one generational cohort; i.e., Baby Boomers. Research with other generational cohorts would point out differences between generational cohorts' perceptions. A non-probability sampling method was employed for data collection, being restrictive of generalizability of findings. Research with a probability sampling method would confirm and generalize current findings. Even though this research has the above limitations, it is considered significant because it gives insight into the perceptions of a generational cohort that lacks research and in-depth knowledge of its way of thinking, preferences, and behavior.

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# **A SIMULATION MODEL OF ECONOMIC GROWTH. AN EMPIRICAL ANALYSIS FOR UNITED KINGDOM**

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## **Abstract**

This study investigates a simulation model of economic growth for United Kingdom for the period 1970-2017. The purpose of this study is to examine the main determinants of economic growth examining a structural system equation model. Two stage least squares method is used in order to examine the direct and indirect relationships between the dependent variables of the model. Finally, a Monte Carlo simulation method is applied in order to define the sensitivity analysis and predictive ability of the estimated system equation model.

Keywords: economic growth, system equation model, Monte Carlo simulation

JEL O11, C22

## **1. Introduction**

The theoretical ambiguity on the positive effect of trade openness and investments on economic growth is reflected in the modern empirical literature. Some researchers point out the strongly positive effects of trade openness on economic growth (Chang et al 2009), but others such as Harrison (1996) and Rodríguez and Rodrik (2001) are keenly supporters of the different aspect. According to Adam Smith's analysis of market specialization, trade openness promotes the efficient allocation of resources through comparative advantage, allows the dissemination of knowledge and technological progress, (Chang et al 2009). Furthermore, trade openness encourages competition in domestic and international markets increasing returns to scale (Grossman and Helpman, 1991). However, if market or institutional imperfections exist, trade openness can lead to under-utilization of human and capital resources and concentration in extractive economic activities, leading specialization not to technologically advanced and increasing-return sectors (Chang et al 2009). The recent revival of interest in the relationship between trade of openness and economic growth examines the insights and techniques of endogenous growth models. Endogenous growth theory also predicts that trade liberalization promotes economic growth facilitating the transactions of goods and services, the efficiency of investments and causing positive externalities for firms

(Rivera-Batiz and Romer, 1991). Many models emphasize that well-functioning financial intermediaries and markets promote economic growth through technological progress and innovation, so increase the demand of financial services and therefore foster efficient resources allocation by facilitating information and transactions costs (Greenwood and Jovanovic, 1990; Bencivenga, Smith, and Starr, 1996).

The main issue is not only concentrated on analysing some theoretical determinants of economic growth, but also is referred to the statistical analysis of a system equation model based on basic econometric methodology. Surely, this paper examines a very powerful economy which is characterized by higher rates of economic growth facilitating the investments growth and trade of openness growth. UK's economy is regarded as one of the most rich and widely developed countries worldly. The model hypothesis predicts that investments, trade of openness and consumption promote economic growth taking into account the negative effect of inflation rate and interest rate.

This empirical study has the following objectives:

- To examine the interrelation among economic growth, trade of openness, investments
- To make simulations by estimating a system equation model with Monte Carlo simulations method.
- To examine the predictive ability of the model by calculating the inequalities ratios indices of Theil.

The remainder of the paper proceeds as follows: Section 2 describes the methodology of empirical study, while section 3 analyses the empirical results. Finally, section 4 provides the conclusions of this paper.

## 2. Data and Methodology

**2.1. Data analysis:** In this study the method of ordinary least squared method is adopted to estimate the effect of investments, trade of openness and consumption on economic growth. Initially, ordinary least squares method is applied in order to find out the interrelation between the examined variables based on economic theory. For this reason basic diagnostic econometric tests are examined for their reliability and validity such as autocorrelation and specification tests for each equation relatively. Then a system equation model is estimated by using the two-stage least squares method and a Monte Carlo simulation model is applied for sensitivity analysis.

Suppose that each equation can be estimated separately with ordinary least squares method and then a structural system equation model is estimated by using the two-stage least

squares method. All variables are transformed to their logarithmic form in order to obtain better statistical estimations:

$$LGDP_t = c_1 + c_2 LI_t + c_3 LOP_{t-2} + c_4 LCS_t + [ar(1)=c(5)] + u_{1t} \quad (1)$$

$$LI_t = c_6 + c_7 LGDP_{t-1} + c_8 LIND_{t-1} + [ar(1)=c(9)] + u_{2t} \quad (2)$$

$$LOP_t = c_{10} + c_{11} LGDP_{t-1} + c_{12} LOP_{t-1} + c_{13} LR_{t-3} + u_{3t} \quad (3)$$

$$LCS_t = c_{14} + c_{15} LGDP_{t-2} + c_{16} LOP_{t-1} + c_{17} LCPI_{t-2} + [ar(1)=c(18)] + u_{4t} \quad (4)$$

regarding each variable as a dependent one with other independent variables respectively where:

GDP = gross domestic product

I = investments

OP = trade of openness

CS = consumption

CPI = inflation rate

R = interest rate

L = logarithmic symbol

t = time trend

Following the empirical studies of Adamopoulos (2010a), Vazakidis and Adamopoulos (2011a), the variable of economic growth (GDP) is measured by the rate of change of real GDP, investments are expressed by gross fixed capital formation, inflation rate is expressed by consumer price index, while trade of openness denotes the sum of imports and exports to gross domestic product.

Basic hypotheses of system equation model are presented as follows:

Hypothesis H<sub>1</sub> :  $\uparrow I_t \Rightarrow \uparrow GDP_t$  through  $\uparrow IND_t$

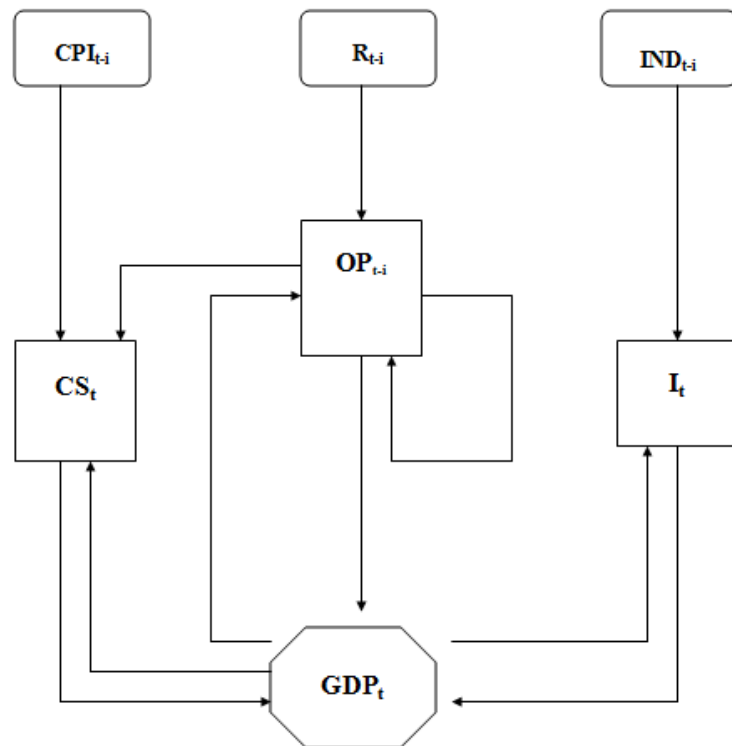
Hypothesis H<sub>2</sub> :  $\uparrow OP_t \Rightarrow \uparrow GDP_t$  through  $\downarrow R_t$

Hypothesis  $H_3$  :  $\uparrow CS_t \Rightarrow \uparrow GDP_t$  through  $\downarrow CPI_t$

Analyzing theoretical hypotheses of the system equation model we can infer that

- an increase of investments causes an increase of economic growth through the relative increase of industrial production
- an increase of trade openness causes an increase of economic growth through the relative decrease of interest rate
- an increase of consumption causes an increase of economic growth through the relative decrease of inflation rate

The system equation model is presented by the following diagram





In this empirical study annual data are used for UK and the time period ranges from 1970 to 2017, regarding 2010 as a base year. The statistical data are transformed in logarithmic valued and are obtained from statistical database of European Committee Economic and Financial Affairs. (AMECO, 2017), The graphs of examined variables are presented as follows (Figure 1).

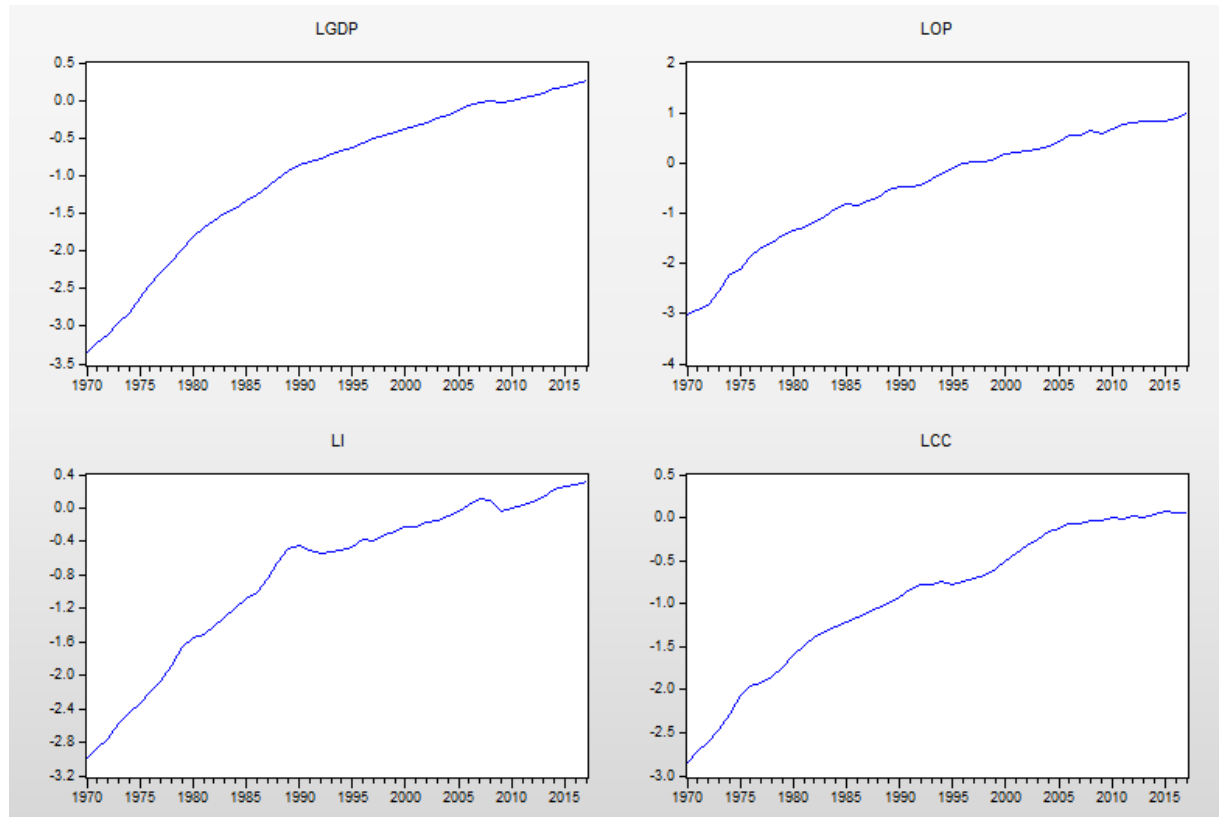


Figure 1. Graphs of dependent variables

## 2.2. Methodology

The structural system equation model is consisted by four logarithmic equations. The dependent variables are ( $LGDP_t$ ,  $LI_t$ ,  $LOP_t$ ,  $LC_t$ ) and the independent variables are ( $LGDP_{t-1}$ ,  $LGDP_{t-2}$ ,  $LOP_{t-1}$ ,  $LOP_{t-2}$ ,  $LIND_{t-1}$ ,  $LCPI_{t-2}$ ,  $LR_{t-3}$ ). Each equation is examined for statistical significance based on the statistical diagnostic tests such as possible existence of autocorrelation problem, heteroskedasticity test, normality test and specification test. The Eviews 10.0 (2017) software package is used to conduct these tests.

### 2.2.1. Ordinary least squares method

Initially, ordinary least squares method is applied to estimate a linear regression model. for statistical significance. This method defines that the regression line is fitted to the estimated values by minimizing the sum of squared residuals which indicates the sum of the vertical distances among each point and the relative point on the regression line. The smallest distances the better regression line is fitted. A regression model has a general form as follows:

$$Y_t = a + bX_t$$

Estimating a regression model with ordinary least squares method, mainly we have to find the estimations of constant term ( $\hat{a}$ ) and the slope of equation model ( $\hat{b}$ ), namely to solve the following patterns (Katos, 2004)

$$\hat{b} = \frac{n \sum X_t Y_t - \sum X_t \sum Y_t}{n \sum X_t^2 - (\sum X_t)^2} \text{ and } \hat{a} = \bar{Y}_t - \hat{b} \bar{X}_t,$$

where  $\bar{Y}$  is average of values of Y (dependent variable) and  $\bar{X}$  average of values of X (independent variable).

The final estimated model has the general form as follows (Katos, 2004)

$$\hat{Y}_t = \hat{a} + \hat{b}X_t$$

### 2.2.2. Diagnostic tests

The estimation of a regression model is mainly based on some basic specification tests (Vazakidis, 2006). If the assumptions of these specification tests are violated then there are problems of statistical significance. In order to examine whether these diagnostics tests are violated we use some statistical tests as Durbin Watson test statistic for autocorrelation, Breusch-Godfrey-Pagan test statistic for heteroskedasticity, Ramsey Reset test statistic for functional form, Jarque-Bera test statistic for normality test, Engle test statistic for ARCH effect (Ramsey, 1969, Durbin and Watson, 1971, Breusch, 1978, Jarque-Bera, 1980, Engle, 1982). Autocorrelation test refers to the way of residuals are distributed randomly and correlated. Autocorrelation test is violated when the residuals are not distributed correctly around the regression line and are not correlated In order to test autocorrelation we use Breusch-Godfrey (1978) (B-G) test which is regarded more reliable than Durbin and Watson (1971) (D-W) test statistic.

The null hypothesis defines that there is no autocorrelation in residuals, while the alternative defines that there is autocorrelation in residuals. We reject null hypothesis when

the value of Breusch-Godfrey (BG) test statistic is larger than the value of chi-squared distribution  $\chi^2(2)$  (Breusch, 1978, Godfrey, 1978, Seddighi et al 2000,)

In order to correct the existence of autocorrelation problem, we can use the first order autoregression model. The autoregressive coefficient defines that each disturbance equals to a portion of a preceding disturbance plus a random effect expressed by  $v_t$  namely

$$u_t = \rho u_{t-1} + v_t \quad |\rho| < 1 \quad \text{where } \rho = \text{autoregressive coefficient}$$

Ramsey (1969) reset test statistic is used for specification test of equation model. The null hypothesis defines that there is correct specification in the equation model, while the alternative defines that there is misspecification. We reject null hypothesis when the value of Ramsey Reset test is larger than the value of chi-squared distribution  $\chi^2(2)$ .

Breusch-Godfrey-Pagan test statistic is used for heteroskedasticity test. Under heteroskedasticity, the residuals of the estimated model don't have constant variance. The null hypothesis defines that there is homoskedasticity in estimated residuals, while the alternative defines that there is heteroskedasticity. We reject null hypothesis when the value of Ramsey (1969) Reset (RR) test is larger than the value of chi-squared distribution  $\chi^2(2)$  (Breusch and Pagan, 1979, Katos, 2004)

$$\text{BGP} = n \cdot R^2 = n \cdot \frac{\sum (\hat{Y}_t - \bar{Y})^2}{\sum (Y_t - \bar{Y})^2}$$

Normality test for residuals is examined by Jarque-Bera test statistic. The null hypothesis defines that the residuals are normally distributed in the equation model, while the alternative defines that the residuals are not normally distributed. We reject null hypothesis when the value of Jarque-Bera test statistic is larger than the value of chi-squared distribution  $\chi^2(2)$ . Jarque-Bera (1980) (JB) test statistic examines whether the coefficients for skewness and kurtosis are jointly zero (Seddighi et al 2000, Katos, 2004)

$$JB = n \left[ \frac{m_3^2}{6} + \frac{(m_4 - 3)^2}{24} \right] \quad \text{where } m_3 = \frac{Eu^3}{s^3} \quad \text{and } m_4 = \frac{Eu^4}{s^4}$$

Finally, the existence of ARCH effect is examined by Engle (1982) test statistic. The null hypothesis defines that there is no ARCH effect in the equation model, while the alternative defines that there is ARCH effect. We reject null hypothesis when the value of Engle test statistic is larger than the value of chi-squared distribution  $\chi^2(2)$

$$EN = (n-p) \cdot R^2$$

where n is a sample size, p expresses the degrees of freedom and  $R^2$  is the coefficient of determination (Seddighi et al 2000, Katos, 2004).

### 2.2.3. Two stage least squares method

Two stage least squares method is used for estimation of structural system equation model. Simulation defines the simultaneous solution of the system equations model., while a Monte Carlo simulation method is used for making predictions in the estimations of system equation model (Katsouli 2003, Katos et al 2004).

### 2.2.4.1 Sensitivity analysis

*Simulation policies* are useful to test for *predictive ability* of the estimated model. The main goal of simulation method is to examine whether a possible exogenous shock in one independent variable effects on the other dependent variables. In order to *make simulation policies* we have to estimate the dynamic multipliers of dependent variables of the system equation model. For this reason we estimate the percentage change of experimental values of dependent variables to simulated values as follows:

$$mpl = \frac{x_t^{\text{exp}} - x_t^{\text{sim}}}{x_t^{\text{sim}}} * 100 \text{ or } mpl = \frac{x_t^{\text{exp}}}{x_t^{\text{sim}}} \text{ (Katos, 2004).}$$

where  $x^{\text{exp}}$ =experimental values of x and  $x^{\text{sim}}$ =simulated values of x

Furthermore, the best predictive ability of the system equation model is achieved by estimating the inequalities ratios indices of Theil, specifically bias ratio, variance ratio and covariance ratio as follows:

$$U = \frac{\sqrt{\frac{1}{T} \sum (x_t^{\text{sim}} - x_t)^2}}{\sqrt{\frac{1}{T} \sum (x_t^{\text{sim}})^2 + \frac{1}{T} \sum (x_t)^2}} \text{ Theil index} \quad (1)$$

$$U^M = \frac{(\bar{x}^{\text{sim}} - \bar{x})}{\frac{1}{T} \sum (x_t^{\text{sim}} - x_t)^2} \text{ bias ratio} \quad (2)$$

$$U^S = \frac{(s_{x^{\text{sim}}} - s_x)^2}{\frac{1}{T} \sum (x_t^{\text{sim}} - x_t)^2} \text{ variance ratio} \quad (3)$$

$$U^C = 1 - (U^M + U^S) \text{ covariance ratio} \quad (4)$$

The smaller dynamic multipliers and inequalities ratios indices the better predictive ability of the system equation model. Bias ratio( $U^M$ ) measures the distance between the average of simulated values of time series and the average of actual values of time series. Variance ratio ( $U^S$ ) measures the distance between the variance of simulated values of time series and the variance of actual values of time series. Covariance ratio ( $U^C$ ) is a non-systematic prediction failure. The smaller values of inequalities ratios indices the better fitting of simulated values of time series to actual values of time series. Perfect adjustment exists when Theil index equals to zero (Katos, 2004).

### **3. Empirical Results.**

The significance of the empirical results is dependent on the variables under estimation. The number of fitted time lags and the usage of first order autoregressive term was selected for the best estimations results and for existence of statistical significance in each equation model. Based on Levine and Zervos (1998) and Shan (2005) studies the model of economic growth is mainly characterized by the direct effect of investments, trade of openness, and consumption, while there is an indirect effect of inflation rate, interest rate and industrial production

Estimating each equation with ordinary least squares method we can infer that there is statistical significance in coefficients of independent variables based on probabilities and t-student distribution test statistics. Their estimated values have the expected statistical sign based on economic theory. The coefficient of determination in each equation is very high (0,99) and is close to unity, so the model is very well adjusted (Table 1).

The same conclusion is easily confirmed by studying probabilities and F- distribution test statistics. All probabilities values are lower than 5% and t-student and F-student test statistics are greater than critical values obtained by statistical tables of t-student and F-distributions for 5% level of significance. Durbin Watson test statistic indicates that there is a possible problem of autocorrelation, while there is a possible existence of multicollinearity problem due to the highest values of coefficients of determination (Table 1).

Examining the economic interrelation between dependent and independent variables we can infer that investments, trade of openness and consumption have a positive effect on economic growth (equation 1), economic growth and industrial production have a positive effect on investments (equation 2), economic growth has a positive effect on trade of openness, while interest rate has a negative effect on it (equation 3), and finally economic growth and trade of openness have a positive effect on consumption (equation 4), while

inflation rate has a negative effect on consumption (equation 4). The results of ordinary least squared method estimations appear in Table 1.

**Table 1: Method: Ordinary Least Squares**

Equation 1: Dependent Variable: LGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.1286	0.0371	-3.4585	0.0013
LI	0.4380	0.0595	7.3503	0.0000
LOP(-2)	0.2514	0.0470	5.3490	0.0000
LCS	0.3819	0.0734	5.2026	0.0000
AR(1)	0.7972	0.0962	8.2849	0.0000
R-squared	0.9995	Akaike info criterion		-4.6897
Adjusted R-squared	0.9994	Schwarz criterion		-4.4512
F-statistic	17423.59	Durbin-Watson stat		2.1217
Prob(F-statistic)	0.0000			

Equation 2: Dependent Variable: LI

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.3091	1.2184	-1.8951	0.0650
LGDP(-1)	0.8403	0.0375	22.3520	0.0000
LIND(-1)	0.5275	0.2636	2.0007	0.0519
AR(1)	0.7952	0.0872	9.1165	0.0000
R-squared	0.9971	Akaike info criterion		-2.9877
Adjusted R-squared	0.9968	Schwarz criterion		-2.7909
F-statistic	3657.39	Durbin-Watson stat		1.7429
Prob(F-statistic)	0.0000			

Equation 3: Dependent Variable: LOP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.4410	0.1393	3.1659	0.0029
LGDP(-1)	0.1636	0.0969	1.6884	0.0989
LOP(-1)	0.7646	0.0968	7.8951	0.0000
LR(-3)	-0.0698	0.0256	-2.7176	0.0096
R-squared	0.9971	Akaike info criterion		-2.9663
Adjusted R-squared	0.9969	Schwarz criterion		-2.8057
F-statistic	4825.19	Durbin-Watson stat		2.1346
Prob(F-statistic)	0.0000			

Equation 4: Dependent Variable: LCS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.2783	0.0627	-4.4384	0.0001
LGDP(-2)	0.6906	0.1424	4.8470	0.0000
LOP(-1)	0.3762	0.0945	3.9785	0.0003
LCPI(-2)	-0.5086	0.1126	-4.5164	0.0001
R-squared	0.9933	Akaike info criterion		-2.5657
Adjusted R-squared	0.9928	Schwarz criterion		-2.4067
F-statistic	2096.64	Durbin-Watson stat		0.4338
Prob(F-statistic)	0.0000			

The empirical results of ordinary least squared method (based on Table 1) are summarized as follows:

$$LGDP_t = -0.12 + 0.43 LI_t + 0.25 LOP_{t-2} + 0.38 LCS_t + [ar(1)=0.75] + u_{1t} \quad (1)$$

$$LI_t = -2.30 + 0.84 LGDP_{t-1} + 0.52 LIND_{t-1} + [ar(1)=0.79] + u_{2t} \quad (2)$$

$$LOP_t = 0.44 + 0.16 LGDP_{t-1} + 0.76 LOP_{t-1} - 0.06 LR_{t-3} + u_{3t} \quad (3)$$

$$LCS_t = -0.27 + 0.69 LGDP_{t-2} + 0.37 LOP_{t-1} - 0.50 LCPI_{t-2} \quad (4)$$

As we can see from the above results an increase of investments per 1% causes a relative increase of gross domestic product per 0.43, an increase of trade of openness per 1% causes a relative increase of domestic product per 0.25, an increase of consumption per 1% causes a relative increase of gross domestic product per 0.38 (Equation 1). Also, an increase of gross domestic product per 1% causes a relative increase of investments per 0.84, an increase of industrial production index per 1% causes a relative increase of investments per 0.52, (Equation 2).

Furthermore, an increase of gross domestic product per 1% causes a relative increase of trade of openness per 0.16, while an increase of interest rate per 1% causes a relative decrease of trade of openness per 0.06 (Equation 3). Finally, an increase of gross domestic product per 1% causes a relative increase of consumption per 0.87, an increase of trade of openness per 1% causes a relative increase of consumption per 0.19, while an increase of inflation rate per 1% causes a relative decrease of consumption per 0.47 (Equation 4).

Examining each equation for statistical significance based on the statistical diagnostic tests we can conclude that there are statistical problems in the specification tests in third and fourth equation models, due to the lower probabilities of 5% level of significance. In first and second equations there is statistical significance in all diagnostics tests. Finally, there is no arch effect only in fourth equation model and there is statistical significance in normality tests in all equation models. The results related to diagnostic tests appear in Table 2.

**Table 2: Diagnostics tests**

**Ramsey RESET Specification Test:**

Equation 1			
F-statistic	1.3750	Prob. F(1,39)	0.2481
Log likelihood ratio	1.7861	Prob. Chi-Square(1)	0.1814
Equation 2			
F-statistic	1.9603	Prob. F(1,41)	0.1690
Log likelihood ratio	2.4445	Prob. Chi-Square(1)	0.1179



Equation 3

F-statistic	7.9805	Prob. F(1,40)	0.0073
Log likelihood ratio	8.1862	Prob. Chi-Square(1)	0.0042

Equation 4

F-statistic	5.0369	Prob. F(1,41)	0.0303
Log likelihood ratio	5.3300	Prob. Chi-Square(1)	0.0210

**Heteroskedasticity Test: Breusch Godfrey Pagan**

Equation 1

F-statistic	0.2677	Prob. F(3,42)	0.8482
Obs*R-squared	0.8633	Prob. Chi-Square(3)	0.8343

Equation 2

F-statistic	0.0845	Prob. F(2,44)	0.9190
Obs*R-squared	0.1800	Prob. Chi-Square(2)	0.9139

Equation 3

F-statistic	0.3159	Prob. F(3,41)	0.8138
Obs*R-squared	1.0167	Prob. Chi-Square(9)	0.7972

Equation 4

F-statistic	0.5021	Prob. F(3,42)	0.6828
Obs*R-squared	1.5929	Prob. Chi-Square(9)	0.6610

**ARCH Test:**

Equation 1

F-statistic	0.0655	Prob. F(1,43)	0.7992
Obs*R-squared	0.0684	Prob. Chi-Square(1)	0.7936

Equation 2

F-statistic	3.2077	Prob. F(1,44)	0.0802
Obs*R-squared	3.1256	Prob. Chi-Square(1)	0.0771

### Equation 3

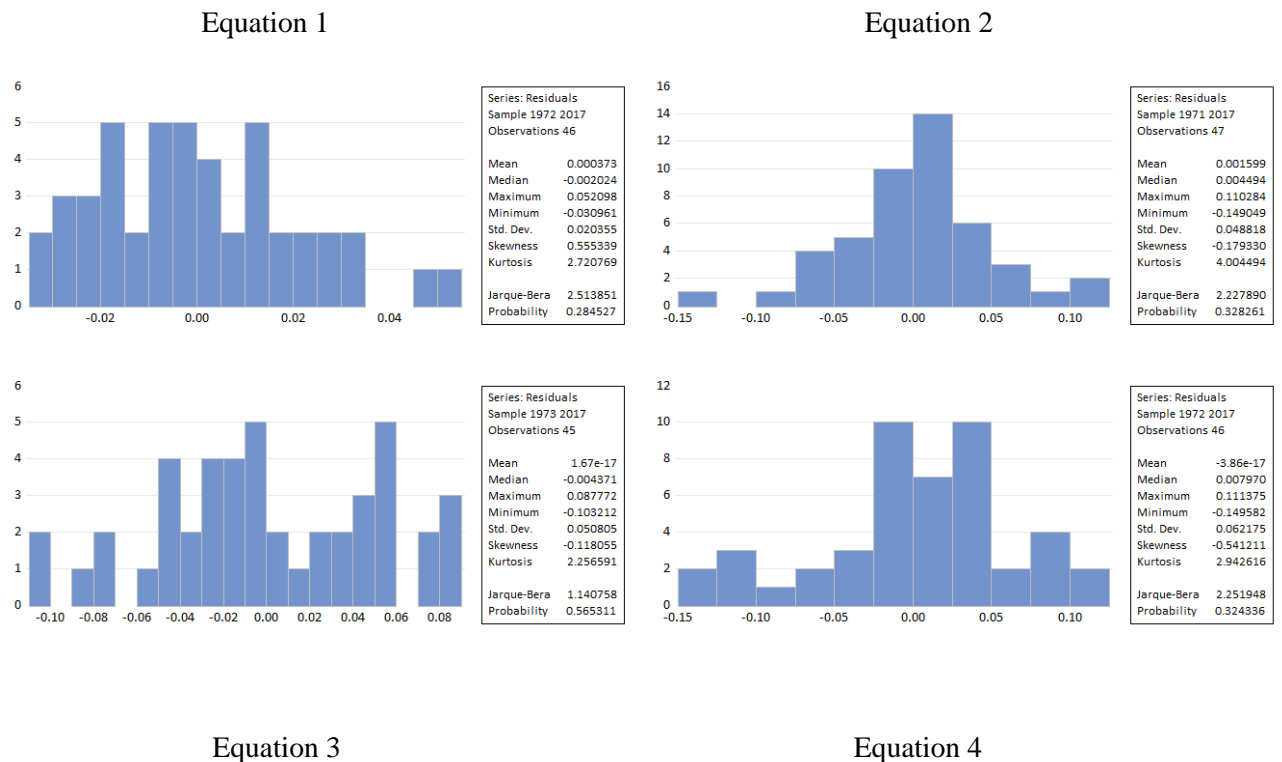
F-statistic	0.0472	Prob. F(1,39)	0.8292
Obs*R-squared	0.0493	Prob. Chi-Square(1)	0.8243

### Equation 4

F-statistic	31.4934	Prob. F(1,43)	0.0000
Obs*R-squared	19.0245	Prob. Chi-Square(1)	0.0000

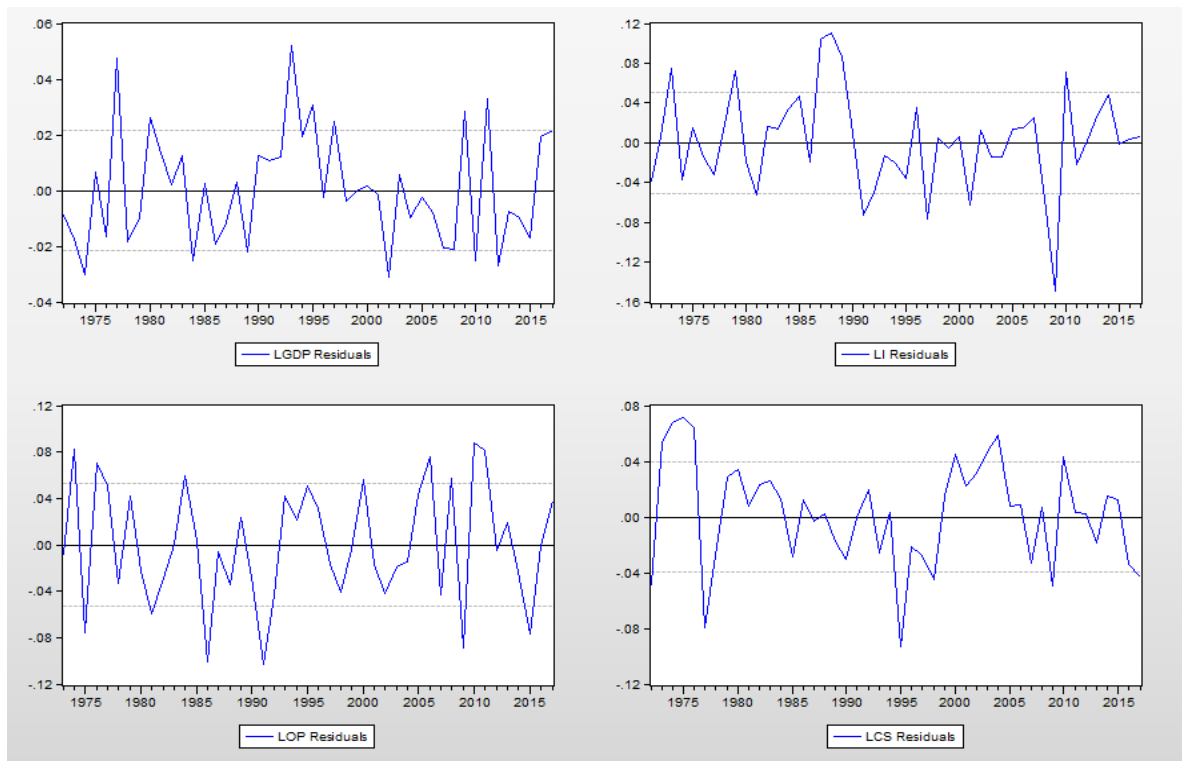
The results related to normality test of residuals by estimating Jarque-Bera statistic test appear in Table 2.

### Normality test



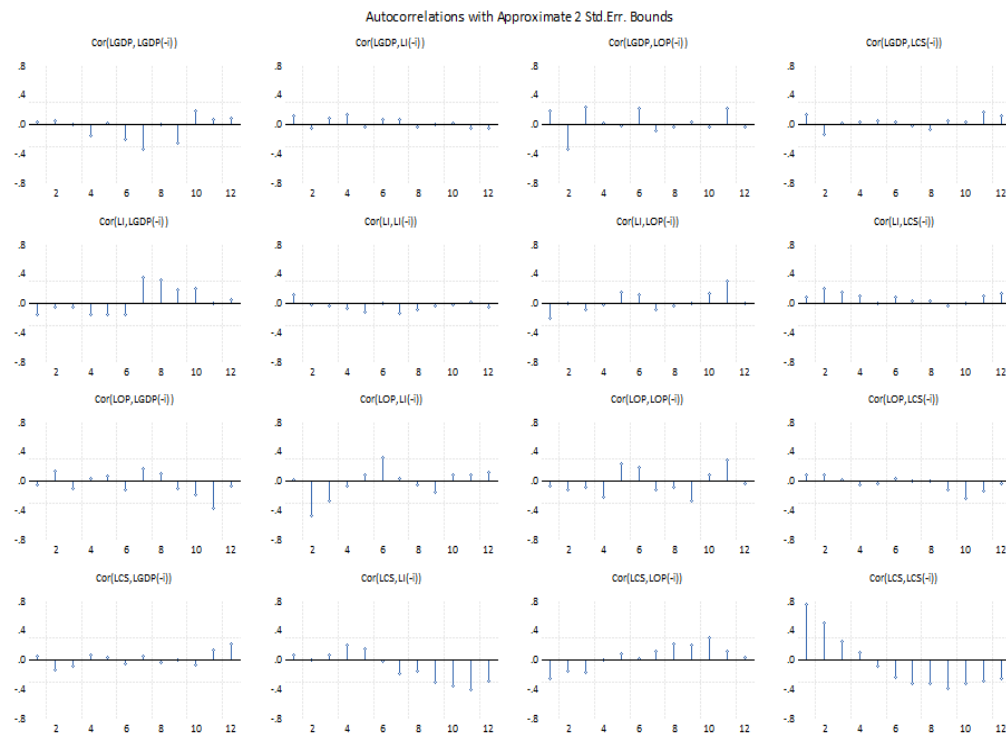
The graph of estimated residuals shows that there are normally distributed estimated residuals (Figure 2).

Figure 2 - Graph of estimated residuals



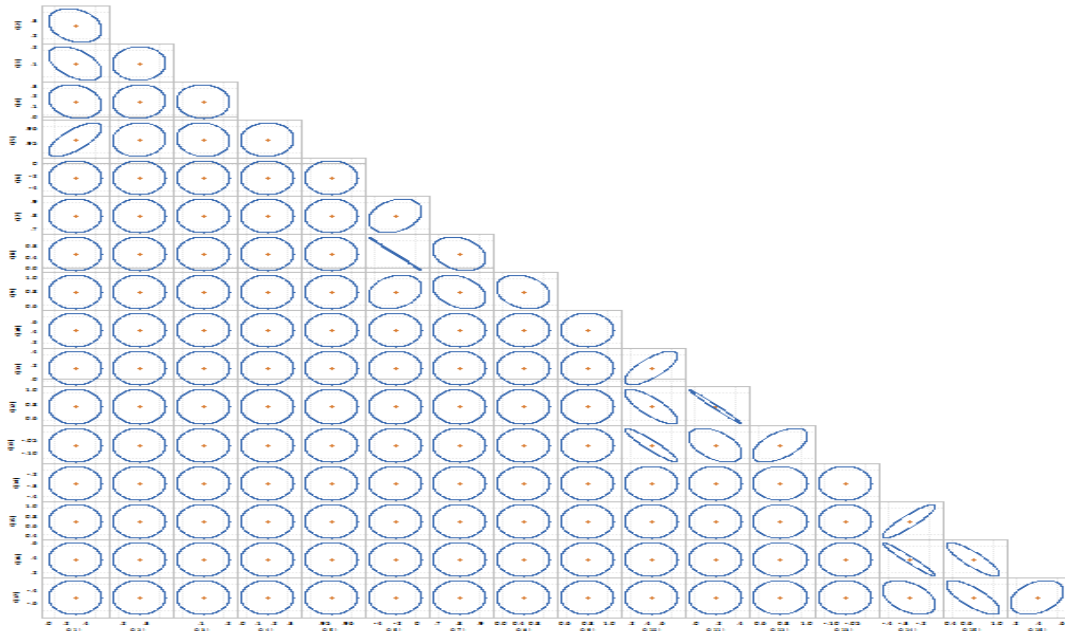
Also the correlogram of residuals indicates that there is a problem in autocorrelation test (Figure 3).

Figure 3 - Correlogram of residuals



Finally, the graph of confidence ellipse of coefficients of estimated equations model indicates the existence of statistical significance (Figure 4).

Figure 4 - Graph of confidence ellipse of coefficients



Estimating the system equation model with two stage least squared method we can see that there is statistical significance in coefficients of independent variables based on probabilities and t-student distribution test statistics. Their estimated values have the expected statistical sign based on economic theory. All probabilities values are lower than 5% level of significance. Durbin Watson test statistics indicates that there is a possible problem of autocorrelation (Table 3). Table 3 presents the results from two stage least squared method.

**Table 3: Estimation Method: Iterative Two-Stage Least Squares**

Sample: 1973 2017 -Observations 45

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.176031	0.037105	-4.744177	0.0000
C(2)	0.575161	0.043447	13.23821	0.0000
C(3)	0.278652	0.058765	4.741797	0.0000

C(4)	0.193018	0.073869	2.612975	0.0098
C(5)	-1.636717	0.921235	-1.776655	0.0775
C(6)	0.829357	0.021280	38.97381	0.0000
C(7)	0.379657	0.197845	1.918964	0.0567
C(8)	0.441096	0.139326	3.165932	0.0018
C(9)	0.163627	0.096912	1.688410	0.0932
C(10)	0.764641	0.096850	7.895131	0.0000
C(11)	-0.069811	0.025688	-2.717636	0.0073
C(12)	-0.232703	0.062803	-3.705285	0.0003
C(13)	0.822086	0.146847	5.598264	0.0000
C(14)	0.304730	0.095072	3.205256	0.0016
C(15)	-0.607072	0.115184	-5.270470	0.0000

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Determinant residual covariance	2.34E-11
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Equation:  $LGDP = C(1) + C(2)*LI + C(3)*LOP(-2) + C(4)*LCS$

R-squared	0.9987	Durbin-Watson stat	0.5925
Jarque-Bera test	0.4596		

Equation:  $LI = C(5) + C(6)*LGDP(-1) + C(7)*LIND(-1)$

R-squared	0.9905	Durbin-Watson stat	0.4089
Jarque-Bera test	0.9385		

Equation:  $LOP = C(8) + C(9)*LGDP(-1) + C(10)*LOP(-1) + C(11)*LR(-3)$

R-squared	0.9971	Durbin-Watson stat	2.1346
Jarque-Bera test	0.5706		

Equation:  $LCS = C(12) + C(13)*LGDP(-2) + C(14)*LOP(-1) + C(15)*LCPI(-2)$

R-squared	0.9933	Durbin-Watson stat	0.9933
Jarque-Bera test	0.7002		

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The empirical results of two-stage least squared method (based on Table 3) are summarized as follows:

$$LGDP_t = -0.17 + 0.57 LI_t + 0.27 LOP_{t-2} + 0.19 LCS_{t-1} + u_{1t} \quad (1)$$

$$LI_t = -1.63 + 0.82 LGDP_{t-1} + 0.37 LIND_{t-1} + u_{2t} \quad (2)$$

$$LOP_t = 0.44 + 0.16 LGDP_{t-1} + 0.76 LOP_{t-1} - 0.06 LR_{t-3} + u_{3t} \quad (3)$$

$$LCS_t = -0.23 + 0.82 LGDP_{t-2} + 0.30 LOP_{t-1} - 0.60 LCPI_{t-2} + u_{4t} \quad (4)$$

As we can see from the above results an increase of investments per 1% causes a relative increase of gross domestic product per 0.57, an increase of trade of openness per 1% causes a relative increase of gross domestic product per 0.27, an increase of consumption per 1% causes a relative increase of domestic product per 0.19 (Equation 1). Also an increase of gross domestic product per 1% causes a relative increase of investments per 0.82, an increase of industrial production per 1% causes a relative increase of investments per 0.37 (Equation 2).

Furthermore, an increase of gross domestic product per 1% causes a relative increase of trade of openness per 0.16, while an increase of interest rate per 1% causes a decrease of trade of openness per 0.06 (Equation 3). Finally, an increase of gross domestic product per 1% causes a relative increase of consumption per 0.82, an increase of trade of openness per 1% causes a relative increase of consumption per 0.30, and finally an increase of inflation rate per 1% causes a relative decrease of consumption per 0.60 (Equation 4). Testing for autocorrelation we can infer that there is a problem in autocorrelation in all equations except from equation 3, due to lower probabilities values of Durbin-Watson test, however on the other hand, multicollinearity problem is avoided.

Therefore, estimating the system equation model with Monte Carlo simulation method we can infer that the estimated simulated values are very close to actual one, so the model is very well simulated (Figure 5). Examining the changes of a possible increase of industrial production of 10% in 1972 in estimations of the simulation model, we can infer that there is a rapid increase of dynamic multiplier of investments in 2005, but a rapid decrease in 2006, while there is a rapid increase of dynamic multipliers of trade of openness in 1997, but a rapid decrease in 1998. Furthermore, we can infer that there is a rapid increase of dynamic multiplier

of consumption in 2010, but a rapid decrease in 2011, while there is a rapid increase of dynamic multipliers of trade of openness in 1997, but a rapid decrease in 1998, while there is a rapid increase of dynamic multipliers of economic growth in 2007, but a rapid decrease in 2008 (Figure 6).

Figure 5 - Graph of Monte Carlo simulation model

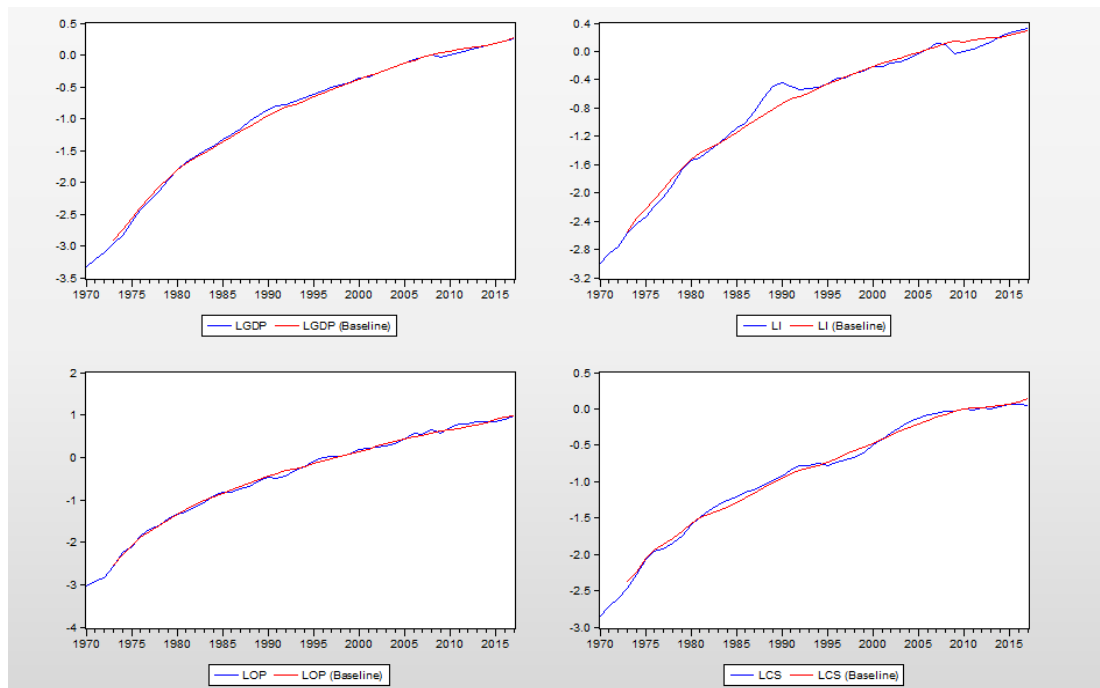
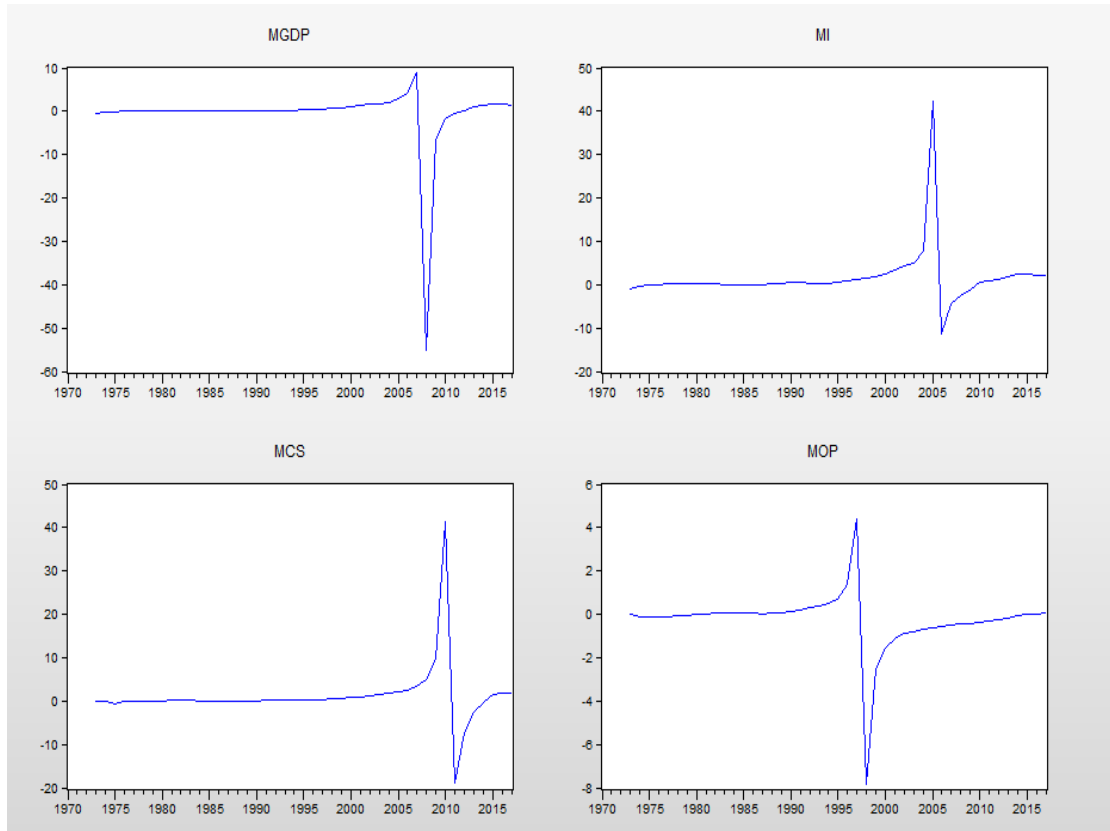


Figure 6 - Graphs of dynamic multipliers of estimated simulated model



The results of estimated inequalities ratios indices of Theil, suggested that there is a good predictive ability of simulated system equation model (Table 4).

**Table 4: Estimations of inequalities ratios indices**

	<b>U</b> <b>THEIL</b> <b>INDEX</b>	<b>U<sup>M</sup></b> <b>BIAS RATIO</b>	<b>U<sup>S</sup></b> <b>VARIANCE</b> <b>RATIO</b>	<b>U<sup>C</sup></b> <b>COVARIANCE</b> <b>RATIO</b>
<b>LGDP<sub>t</sub></b>	0.0632	0.4586	0.3144	0.227
<b>LI<sub>t</sub></b>	0.1130	0.0309	0.9408	0.0283
<b>LOP<sub>t</sub></b>	0.0298	0.0316	0.4227	0.5457



<b>LCS<sub>t</sub></b>	0.3250	0.5193	0.1551	0.3256
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#### 4. Conclusions

This study examines a simulation model of economic growth for United Kingdom for the period 1970-2017. The purpose of this study is to estimate a simulation model of economic growth examining a structural system equation model. Initially, the results of two-stage least squares method suggested that economic growth is mainly characterized by the direct effect of trade of openness, investments and consumption and by indirect effect of industrial production index, inflation rate and interest rate.

Furthermore, the empirical results of Monte Carlo simulation method indicated that the system equation model is very well simulated, since the simulated values are close to actual values of examined variables. A possible change in industrial production index in 1972 causes a rapid increase of dynamic multipliers of economic growth in 2007, but a rapid decrease in 2008. Finally, the results of estimated inequalities ratios indices of Theil suggested that there is a good predictive ability of simulated system equation model.

Many empirical studies examining the main determinants of economic growth differ relatively to the sample period, the examined countries and the estimation methodology. The empirical results of this paper are agreed with the studies of Vazakidis (2006), Vazakidis and Adamopoulos (2011a). However, more interest should be focused on the comparative analysis of empirical results for many other countries in future research.

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# **CORRUPTION AS FORM OF ECONOMIC CRIME AND GOVERNMENT EFFECTIVENESS”**

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## **1. Introduction**

Corruption as form of economic crime is a global security issue and has finally been recognized as a first-tier international security challenge closely related to economic and social development. Many view corruption as a “victimless” crime and bribery only as a different way of doing business, but today there is wide acknowledgement that corruption infringes on the fundamental human right to equal treatment. Current studies yield important insights on the nexus of transnational organized crime (TOC) and corruption as major threats to political stability, human security, democracy and economic development.

Money laundering, bribery, embezzlement, fraud, extortion, nepotism, cronyism and monopoly are among its manifestations. Research shows a very strong nexus between corruption and organized crime. This situation is common in post-communist and post-conflict countries where power vacuums and weak rule of law have created opportunities for criminal activities and unlawful actions. Any comprehensive analysis of the growing threat of TOC must consider the role of corruption in its role as an enabler for these activities. Today, TOC networks are much more sophisticated and challenging to fight. New TOC groups are constantly diversifying their methods and structures, and, enabled by the forces of globalization such as technology and innovation, have increased their impact on society. By adapting new technologies and methodologies, organized criminal networks have dramatically increased their reach into the lives and affairs of ordinary people, governments and private companies. Globally, institutions such as the EU, the Council of Europe, the Organization of American States, Transparency International, the World Bank and the G-20, the group of countries accounting for 85 percent of the world economy, have recognized corruption as a global problem and are engaging in producing solutions.

Furthermore, the matter in question highlights its tremendous impact on the geopolitical dimension as the basic pillars of last - economic one, political one, as well as the pillars of defense and security – are being influenced considerably by. In other words, the geopolitical factor “corruption”, according to the systemic geopolitical analysis constitute a basic component concerning both the investigation and monitoring of power’s distribution among actors/ players in the geopolitical game.

## **2. What is corruption?**

The simplest definition is: Corruption is the misuse of *public* power (by elected politician or appointed civil servant) for private gain. In order to ensure that not only public corruption but also private corruption between individuals and businesses could be covered by the same simple definition: Corruption is the misuse of *entrusted* power (by heritage, education, marriage, election, appointment or whatever else) for private gain. This broader definition covers not only the politician and the public servant, but also the CEO and CFO of a company, the notary public, the team leader at a workplace, the administrator or admissions-officer to a private school or hospital, the coach of a soccer team, etc. A much more difficult, scientific definition for the concept ‘corruption’ was developed by professor Dr. Petrus van

Duyne: Corruption is an improbity or decay in the decision-making process in which a decision-maker consents to deviate or demands deviation from the criterion which should rule his or her decision-making, in exchange for a reward or for the promise or expectation of a reward, while these motives influencing his or her decision-making cannot be part of the justification of the decision. Major corruption comes close whenever major events involving large sums of money, multiple 'players', or huge quantities of products (think of food and pharmaceuticals) often in disaster situations, are at stake. Preferably, corruption flourishes in situations involving high technology (no one understands the real quality and value of products), or in situations that are chaotic. The global community reacts quickly but local government might be disorganized and disoriented. Who maintains law and order? Or maybe the purchase of a technologically far advanced aircraft, while only a few can understand the technologies implied in development and production of such a plane. Mostly, the sums of money involved are huge, a relatively small amount of corrupt payment is difficult to attract attention. Or the number of actions is very large, for instance in betting stations for results of Olympic Games or international soccer-tournaments which can easily be manipulated. Geopolitics might play a role like e.g. the East-West conflict did in the second half of the 20th century, in which the major country-alliances sought support from non-aligned countries.

Corruption (or a focus on corruption), may be the means toward very diverse ends and each may have a different impact on the society. While in some societies corruption may correctly be seen to be the "cause" of forms of social disorganization, in other situations corruption may be the "result" of larger changes. Understanding the processes within a specific context allows one to understand the nature of the corruption. Corruption rhetoric may too easily become a political platform for ranking and evaluating nations as to their worth based on criteria that lose meaning when applied across jurisdictions (M. E. Beare, 1997, p.1)

- ***Corruption on the Palermo's Convention (Article 8)***

- ***Criminalization of corruption***

*1. Each State Party shall adopt such legislative and other measures as may be necessary to establish as criminal offences, when committed intentionally:*

*(a) The promise, offering or giving to a public official, directly or indirectly, of an undue advantage, for the official himself or herself or another person or entity, in order that the official act or refrain from acting in the exercise of his or her official duties;*

*(b) The solicitation or acceptance by a public official, directly or indirectly, of an undue advantage, for the official himself or herself or another person or entity, in order that the official act or refrain from acting in the exercise of his or her official duties....*

- ***Definition according to the legislative level (Article 2 / European Civil Convention Against Corruption - Strasbourg 1999). (It has been incorporated into Greek law by Law 2957/2001 "Ratification of the Council of Europe Convention on Civil Law on Corruption (Government Gazette 260 A) ): "Corruption" means any pursuit, offer, supply or acceptance, directly or indirectly, of an unlawful supply or other undue benefit affecting the normal exercise of a function or the expected behavior of the person benefiting from the unlawful supply or unpaid benefit or from promise of such unpaid benefit.***

- ***Definition according to International Transparency: Abuse of power that people have entrusted to others for private gain.***

### **3. Impact of Corruption on Economic Development**

Although historically some theorists have argued that corruption (and in some cases even fraud) was a natural stage of development or a means of transferring resources from wealthy individuals or entities to those of more modest means, it is widely accepted that both fraud and corruption hinder economic development, inter-alia, for the following reasons:

- a. they are anomalies that degrade the performance of the economic system as a whole and harm a country's or region's long-term economic efficiencies
- b. they cause mistrust among communities hence hinder economic cooperation and development
- c. they increase the cost of the development process
- d. they diverge the allocation of scarce resources into unnecessary, uneconomic or illicit uses
- e. they create economic instability and divert foreign investments to more stable economies
- f. they lower asset life, as resources are directed away from maintenance toward new equipment and projects
- g. costs of fraud and corruption are often borne disproportionately by the poor, while the "gains" are skewed towards the rich, the powerful, and the politically well connected
- h. Corruption & fraud undermine laws, create disrespect for values and rules, and perceptions of unfairness- e.g. 'he did it, why not me?'

In economic terminology, they increase transaction costs in an economy, increase real- and perceived- risks for undertaking economic activity and generate a 'dead weight loss' which increases inefficiency. According to Johann Graf Lambsdorff (KYKLOS, Vol. 56 – 2003 – Fasc. 4, pp. 457–474), there exists strong empirical support for the adverse impact of corruption on the ratio of investment to GDP (Mauro 1995 and 1997, Knack and Keefer 1995, Campos, Lien and Pradhan 1999, Brunetti, Kisunko and Weder 1997: pp. 23, 25 and Brunetti and Weder 1998: pp. 526, 528). Equally there is substantial evidence for an adverse impact of corruption on foreign direct investments and capital inflows (Wei 2000, Lambsdorff 2003). Corruption was shown to reduce growth (Mo 2001, Leite and Weidmann 1999: p. 24, Poirson 1998: p. 16, Knack and Keefer 1995, Mauro 1997: p. 92). But this evidence is still ambiguous because other researchers provide inconclusive results (Brunetti, Kisunko and Weder 1997: pp. 23, 25). Mauro's (1995) results are insignificant once the regressions are controlled for the ratio of investment to GDP. Wedeman (1997) uses simple cross tabulation to argue that many corrupt countries experienced high growth rates. It is arduous, it seems, to reliably relate growth to corruption. But even when assuming an impact of corruption on growth, this does not allow conclusions with regard to productivity.

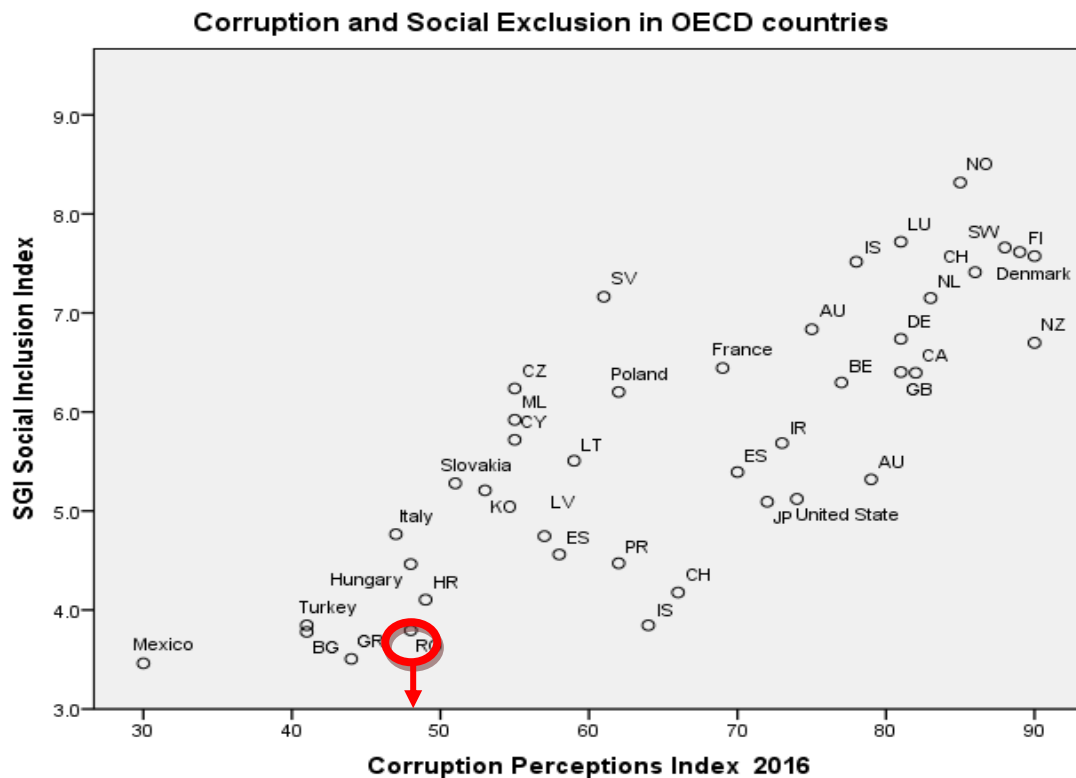
In case that corruption lowers productivity, there still might be no effect on growth. We might regard the absence of corruption as a factor of production, comparable to human capital. Corruption (and its absence) does not change quickly from year to year. Investments undertaken in the past will suffer from corruption (or prosper from integrity) just as more recent investments will be affected. Subsequently, while a new investment project produces higher output for corruption-free countries, there is not necessarily an increase in growth. Growth is measured as changing GDP relative to absolute levels of GDP. But both values, changing GDP and its absolute level, will equally gain from a corruption-free environment so that their ratio may remain constant. Steady-state growth rates, as determined in neoclassical growth models, are therefore unaffected by singular productivity shifts.

According to estimations by the World Economic Forum, the cost of corruption is estimated at 5% of global GDP and the amount of money paid annually for bribes is over \$ 1 trillion. (World Bank data); In addition, it is estimated that corruption increases the total cost of business activities by an average of 10% (World Economic Forum data); At European Union level, corruption is estimated to cost € 120 billion a year, equivalent to 76% of the Union's annual budget (€ 157.9 billion in 2017) and 0.8% of GDP (€ 14.824, 8 billion in 2016).

The diagram below show the relationship between the corruption scores in the Corruption Perceptions Index (CPI) and the degree of social exclusion as measured by the

Social Inclusion Index for OECD countries (from the Bertelsmann Foundation's Sustainable Governance Indicators) and by the Welfare Regime indicator for the rest of the world (from the Bertelsmann Foundation's Transformation Index). The higher scores signify less corruption/exclusion. The data show a strong correlation between corruption and social exclusion.

**Figure 1**



Sources: Transparency International, Bertelsmann Foundation

#### **4. Causes of Corruption**

Corruption within an organization arises due to various factors, including:

- ❖ The lack of an effective ethical and control awareness culture
- ❖ Ineffective corporate governance, policies, procedures and internal controls  
Inappropriate, ambiguous and/or overly complicated rules and procedures offering large and unclear scope for interpretation, with little oversight
- ❖ Lack of transparency and inadequate communication channels
- ❖ Low wages of staff, limited job satisfaction or an unfair remuneration/benefits system, perceptions of unfair treatment.

#### **5. Different levels of relationship between O.C. and Corruption**

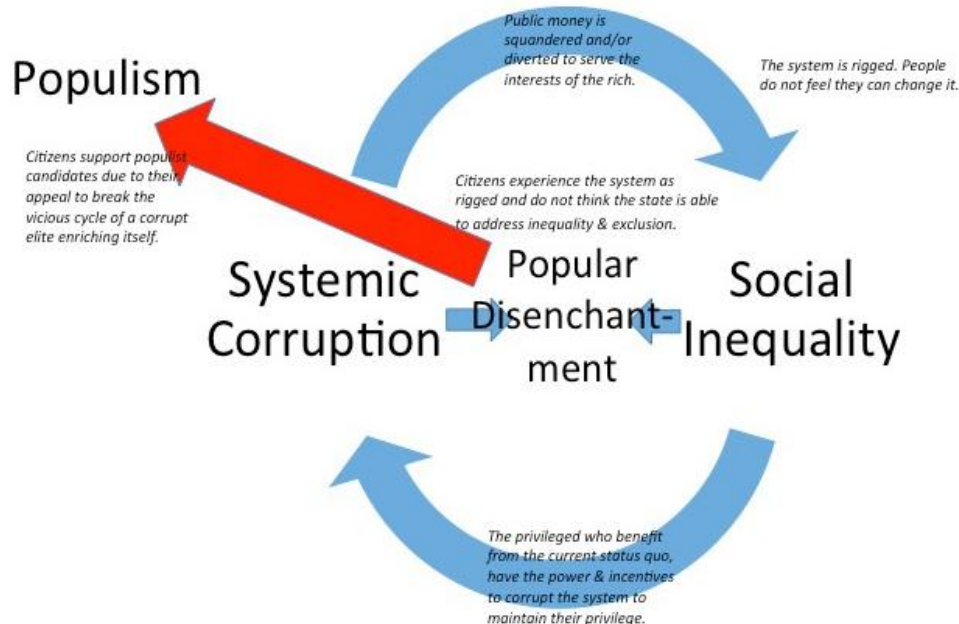
- **1st Level: Bribery**
- **2nd Level: Continuous Acts of Bribery (“On payroll”).** Bribe payments are on going. Ensures a continuous flow of information and protection from police intrusion into criminal activities. O.C. Groups obtain constant access to confidential information allowing them to maintain patterns of illegal activity. The O.C. Groups remain “one step ahead” of Law Enforcement Authorities.

- **3rd Level:** Infiltration into Government Agencies. Infiltration is sporadic within lower ranking official positions. OC members and friends gain employment in law enforcement agencies, judiciary Prosecutor's Office and other operations.
- **4th Level:** Infiltrating the Government (*Higher level*) This infiltration can encompass entire branches or higher ranking officers. Top Officials in Law Enforcement, Prosecutor's Office and other sensitive government offices are OC members.

Methods Used to Infiltrate the higher levels of Government:

- a) **Placement of Corrupted Officers into Higher Office.** The O.C. group use bribery and blackmail to support Officers previously corrupted by their organization to higher ranks with broader access to information. This "support" is repaid to OC with increased protection and access to more useful secret police information.
- b) **Control of the Chief of Section/Region.** Bribery, blackmail and coercion is used to control the chief decision-maker of an entire branch of government. OC can continue operating with very little risk of discovery or successful prosecution.
- **5th Level:** Infiltrating the Political Arena. Participating in Political Campaigns (*giving money, media support and others*). Buying votes for candidates and corrupting the democratic election process, lobbying other politicians for support using bribery and blackmail, exploiting O.C. Members' family links, creating "debts" for politicians to "repay" later by using blackmail and extortion.

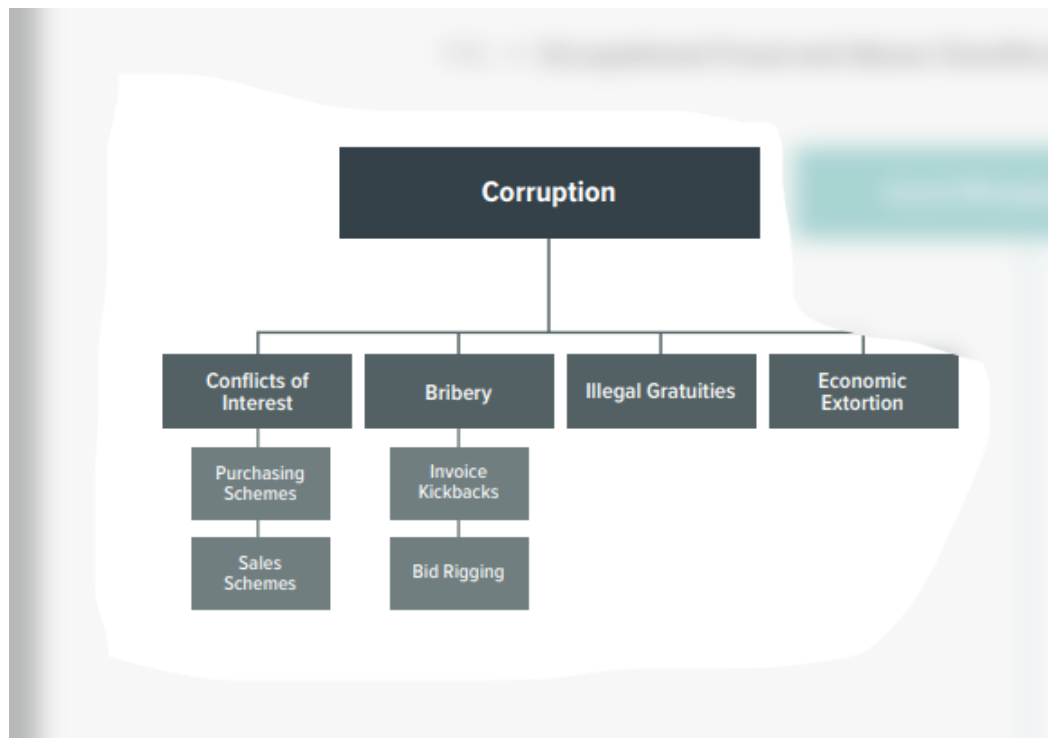
**Figure 2. Corruption –Populism- Social Inequality**



Source: Transparency International



**Figure 3. Corruption Aspects**



## **6. Brief Overview of theories of Corruption as a Component of Economic Crime**

### BEHAVIORAL SCHOOL (Hansen, 2009)

- Social learning theory / differential learning theory
- Self-control theory
- Theory of exchange
- Theory of social bonding
- Theory of politically exposed individuals
- Fraud Theory (pressures, opportunities, attitudes & behaviors, rationalization) [Ilter, 2009]

### ORGANIZATIONAL SCHOOL (Gross, 1978)

- Theory of rational choice (Lyman & Potter, 2007)
- Learning Theory (Lyman & Potter, 2007)
- Theory of Social Networking (Vruinsma & Bernasco, 2004)
- Game Theory (Krebs, Costello & Jenks, 2003)

### ADMINISTRATIVE SCHOOL

- Representation Theory (Garupa, 2007)
- Alliance Theory (Von Lampe & Johansen, 2003)
  - [(a) Personalized Confidence, (b) Reputation due to the Reputation and Brand Name (c) Generalized Confidence, (d) Confidence Through Perception]
- Network Theory (Beare, 2000).

## 7. Corruption Formula

Klitgaard (The formula originally appeared in Klitgaard's 1998 book, [\*Controlling Corruption\*](#)) who is one of the giants of academic anticorruption researcher over the last half-century, once pithily (and influentially) summed up his perspective on the causes of corruption in a "corruption formula":  $C = M + D - A$ , or (to put this back into words): **"Corruption equals monopoly plus discretion minus accountability."**

This model suggests that corruption will tend to emerge when an organization or person

- ✓ has monopoly power over a good or service which generates rent,
- ✓ has the discretion to decide who will receive it (thus on how rents will be allocated),
- ✓ and is not accountable.

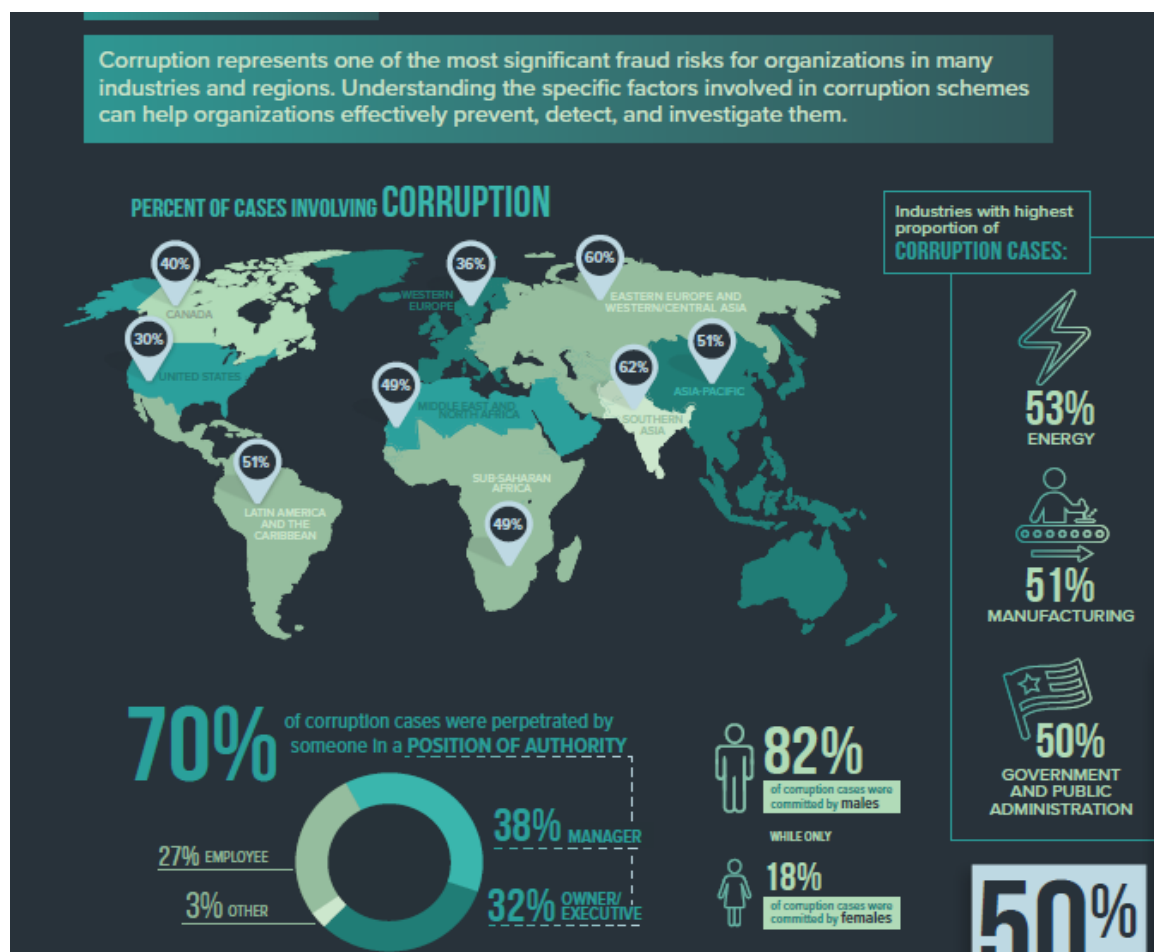
The monopoly, whether private or public, provides the power to charge the highest rather than the optimal price for a service, which is provided at a lower rate.

Discretionary means that the public officer has the power to say yes or no, or how much, without any legal measure to limit his power.

And lack of accountability means that these transactions become opaque.

**Figure 4.**

Cases involving Corruption, Industries with highest proportion of corruption cases and corruption cases perpetrated by someone in a position of authority, worldwide

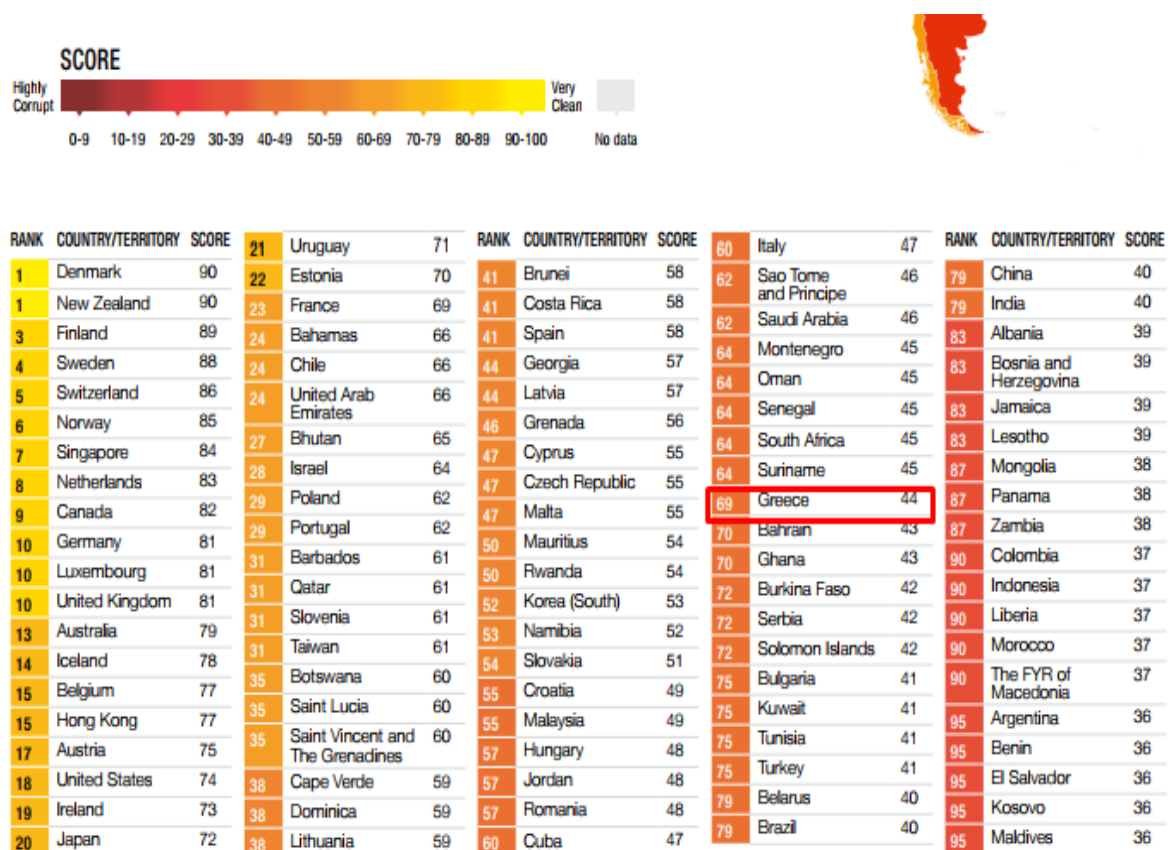


Source: *Report to the Nations 2018 Global Study on Occupational Fraud and Abuse*, ACF.

As far as Greece concerned, according to the **Corruption Perception Index 2016** presented below, occupied the 69th place among 176 countries in 2016, retreated 11 places in the ranking compared to 2015. The relative index for Greece stood at 44 points, marginally higher than the total average (42.9 points). It is noted that among the member states of the European Union, only Bulgaria was in lower position in 2016.

These data suggest a "middle-class" corruption situation in the country. In addition, it is noted that in the period 2012-2015 there was a gradual improvement in the ranking of Greece, as from 94th place it rose to 58th position, as measured by this composite index. Therefore, this negative development in the last year highlights that efforts to combat corruption must be continuous and that there should be no rest, as year-on-year changes may be intense

**Figure 6. Corruption Perception Index 2016**



Source: Transparency International

## 8. Models, Data, and Methodology

The following model and methodology has been formed by Shrabani Saha and Rukmani Gounder in their paper: *Corruption and Economic Development Nexus: Variation Across Regions and Income Levels* ( Paper presented at the New Zealand Association of Economists Annual Conference, James Cook Grand Chancellor, Wellington, 1st to 3rd July, 2009)

*“The models, data and the methodology used to estimate the hypotheses to explain the levels of variations in corruption across countries and regions. Similar to most past empirical*

work in the corruption literature, the dependent variable corruption is measured by corruption perception index. The base model is formed by incorporating economic, social and institutional variables, i.e. right-hand side variable. These include real per capita GDP to focus on the influence of per capita income on corruption, gini coefficient (that measures income inequality), unemployment rate, tertiary level of education, and adult literacy rate that examines the effect of social factors, and democracy and economic freedom variables that reflect the institutional impact.

The base model specification takes the following form:

$$CPI_{i,t} = \beta_0 + \beta_1 \log(RGDP)_{i,t} + \beta_2 GINI_{i,t} + \beta_3 UNEM_{i,t} + \beta_4 ALR_{i,t} + \beta_5 LED_{i,t} + \beta_6 DEMO_{i,t} + \beta_7 EF_{i,t} + \varepsilon_{i,t}, (1)$$

where CPI is corruption perceptions index,

RGDP is the real per capita GDP,

GINI is the gini coefficient for measuring income inequality,

UNEM is the unemployment rate,

LED is the tertiary level of education,

ALR is the adult literacy rate,

DEMO is a democracy index,

EF is an economic freedom index,

*i* is country,

*t* is time, and

$\varepsilon$  is error term.

Given the theoretical explanation in the economics and political science, as noted above, the signs of the coefficients  $\beta_1$ ,  $\beta_4$ ,  $\beta_5$ ,  $\beta_6$  and  $\beta_7$  in equation (1) are expected to be negative whereas the signs of  $\beta_2$  and  $\beta_3$  are expected to be positive. The base model shown above is extended to incorporate regional and income classification of countries. The extended models allow us to ascertain whether the estimated relationships between corruption and other explanatory variables are robust across alternative model specifications, and whether they provide additional evidence on the effects of the other variables themselves on corruption across regions and income-group of countries.

Estimating the level of corruption by regions and income classifications of countries are expressed in equations (2) and (3), respectively, as follows:

$$CPI_{i,t} = \beta_0 + \beta_1 \log(RGDP)_{i,t} + \beta_2 GINI_{i,t} + \beta_3 UNEM_{i,t} + \beta_4 ALR_{i,t} + \beta_5 LED_{i,t} + \beta_6 DEMO_{i,t} + \beta_7 EF_{i,t} + \beta_8 \text{Asia} + \beta_9 \text{Latin America} + \beta_{10} \text{Africa} + \beta_{11} \text{Middle East} + \beta_{12} \text{East Europe} + \mu_{i,t}, (2)$$

$$CPI_{i,t} = \beta_0 + \beta_1 \log(RGDP)_{i,t} + \beta_2 GINI_{i,t} + \beta_3 UNEM_{i,t} + \beta_4 ALR_{i,t} + \beta_5 LED_{i,t} + \beta_6 DEMO_{i,t} + \beta_7 EF_{i,t} + \beta_8 \text{Middle-income countries} + \beta_9 \text{High-income countries} + v_{i,t}, (3)$$

where  $\mu$  and  $v$  are the error terms.

The dependent variable in this study is a subjective measure of corruption based on the perceptions of corruption. Transparency International's (TI) annual corruption perceptions index (CPI) is used as a principal measure of corruption. The TI data set is regarded as most reliable for cross-national comparisons and covers a large number of countries. The original ranking of CPI has been converted to a scale from 0 (least corrupt) to 10 (most corrupt) for simplicity, consistency with other variables and the ease of exposition. For consistency of CPI data the number of countries used in the estimations is 100 nations for the period 1995 to 2004.

The explanatory variables RGDP, GINI, UNEM, DEMO, EF, LED and ALR are obtained from Groningen Growth and Development Centre (2004), World Institute of Development Economic Research (2004), World Income Inequality Database, Political Risk Services Group (2004), Heritage Foundation (2005) and World Bank (2005). Following Nelson and Singh (1998), democracy index (DEMO) is the average of political rights and civil liberties indices, which has been re-scaled from 0 to 10 as that of economic freedom index, i.e. higher values represent higher levels of democracy and economic freedom. The EF

variable is included as a control variable to measure the impact of amount of regulation on economic activities in a country on corruption.( Economic freedom is equally weighted index based on eight individual freedoms: business freedom, trade freedom, monetary freedom, freedom from government, fiscal freedom, property right, investment freedom and financial freedom. We have taken out freedom from corruption component from the original economic freedom index constructed as corruption is the dependent variable in the study.)

The panel estimation methodologies are utilised based on equation (1) and (2) to evaluate the hypotheses for the period 1995 to 2004. As the effect of economic development on corruption is likely to be long term, it is useful to use a longer period rather than single year estimation. Also, the analysis of variance (ANOVA) of CPI values show that variation between countries explained 68 percent of the total variation whereas, 33 percent variation is within countries over time. The evidence supports the use of panel estimations in the analysis” ...

### **8. Proposals for implementation anti-corruption policies/ practices**

- ✓ Extending the computerization of administrative procedures to minimize the contact of civil servants / civil servants
- ✓ Implementation of Law 4305/2014 concerning both the provision and use of public sector's documents, information and data.
- ✓ Development of Regulatory Compliance Units and Internal Control Systems based on international standards and practices in the public sector.
- ✓ Empowering and consolidating the legal framework for reporting whistleblowing..
- ✓ Implementation of targeted educational actions for public officials.
- ✓ Zero tolerance of corruption and the use of effective tracking tools - Providing efficiency incentives to public officials - Rewarding - Evaluation based on targets achieving
- ✓ Principle of "good legislation".
- ✓ Strengthen the socio-economic status of public officers with fair and competitive salaries
- ✓ Implement strong penalties for breaches of public duties
- ✓ Train and assign Integrity Officers to corruption-prone government operations
- ✓ Reduce individual discretion
- ✓ Transparency in the hiring process including public notification of potential candidates.
- ✓ Strengthening promotional testing and strict secrecy of test questions
- ✓ Vetting process thorough background investigations and polygraph test (updated financial statements, family ties, etc.)
- ✓ Public disclosure of assets
- ✓ The State should increase financial support of political parties and campaigns
- ✓ Strengthening the laws of media concentrations, combating monopolies
- ✓ Increasing the transparency of contributions
- ✓ Public disclosure of candidate background including criminal records and links
- ✓ Strengthening banking and securities' regulatory capacities

### **9. Concluding Remarks**

a) Corruption renders governments incapable or unwilling to achieve public welfare as a result of x-inefficiency, wasteful rent-seeking or distorted public decisions (Bardhan 1997, Rose-Ackerman 1999, Lambsdorff 2002a). The allocation of capital goods will not be optimal when affected by corruption because those projects that promise large side-payments and exhibit low risks of detection are preferred to those that benefit the public at large.

b)The best-connected contractors and those most willing to offer bribes are preferred to those offering the best product. The quality of investments will suffer from corruption

because control mechanisms, required to guarantee the contracted quality level, can be circumvented.

c) The results of the analysis reported here have shown that levels of organized crime and of corruption in the public sector are determined first and foremost by the quality of core public state institutions, such as the police, prosecution and the courts. That relationship seems to hold for countries at all levels of development. It is also clear that the institutional forces at work in introducing improvements in the legal fight against corruption and organized crime must be held accountable. These are the conditions that foster the “right” institutional environment within which criminal justice can be offered in an unbiased and transparent fashion. Independently from these institutional determinants, high levels of organized crime and corruption are linked to low levels of human development. This result points to the vicious circle of poverty exploited and compounded by organized crime and grand corruption. In extreme cases, dysfunctional state agencies are “captured” by organized crime.

d) Corruption arises because of an opportunity for bureaucrats to appropriate public funds by misinforming the government about the cost and quality of public goods provision. The incentive for each bureaucrat to do this depends on economy-wide outcomes which, in turn, depend on the behaviour of all bureaucrats. We establish the existence of multiple development regimes, together with the possibility of multiple, frequency-dependent equilibria. The predictions of our analysis accord strongly with recent empirical evidence on the causes and consequences of corruption in public office.

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# Pharmacists' perceptions on the health services provided by the community pharmacies

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## ABSTRACT

*Over the past few decades, community pharmacies around the world deliver health and pharmaceutical care services to their patients. However, the relevant available information and data are rather scarce in Greece, due to the limited research on this topic. Moreover, the delivery of health services is not legally vested by the Greek government and healthcare bodies, even though the majority of Greek pharmacists provide them willingly.*

*Objective: The purpose of this research is to investigate pharmacists' (proprietors or employees) perceptions of the health services provided by the community pharmacies.*

*Methods: A questionnaire survey of 123 pharmacists, that were owners or employees of community pharmacies, was conducted. The questionnaire consisted of questions concerning the health services delivered by the Greek community pharmacies, the role and competence of the contemporary pharmacist and the barriers that pharmacists face at the provision of pharmaceutical care.*

*Results: Data analyses revealed that pharmacists rightfully understand the meaning of health services and they provide them to their customers daily. Concerning their role, they are interested in both health and business matters, but they tend to be more concerned with the business aspects of their profession. Furthermore, pharmacists stated that feel more competent for the measurement of patients' various health parameters and the provision of instructions for medicines' proper use. However, the main barriers they face are related to the health system.*

*Conclusions: Regulatory authorities, community pharmacists and patients ought to take initiatives for the advancement of the pharmaceutical profession, by adopting an even more patient-oriented approach. Furthermore, it is recommended that the authorities create a health service protocol, organize a reimbursement system, provide a lifelong training system for pharmacists and promote public awareness concerning the pharmaceutical services.*

**KEYWORDS:** Pharmaceutical Marketing, Pharmaceutical care, Health/Healthcare services, Pharmacists' perceptions, Questionnaire Survey, Community Pharmacies

## 1. Introduction

The pharmacy sector has entered into a new and more demanding era, as a new biopsychosocial model of health and disease interpretation has prevailed, where the role of the natural and social environment and human behavior are now at the center of concern. The modern pharmacy's mission is to take care of the health of society and to ensure the social well-being. Thus, the modern pharmacist must upgrade his role beyond the simple execution of a medicines' prescription, becoming an administrator of a patient's medication (Assa-Eley et al., 2005).

The systematic provision of health advice and services, through specialized and personalized recommendations to patients-customers, constitutes a unique, competitive advantage for the pharmacy, on which each pharmacist's strategy should be based, namely a service differentiation strategy, not low cost. Since the basic role of the pharmacy as part of the health system is social, these services should only be provided by suitably educated and adequately trained staff. However, the business role of the pharmacy should not be overlooked, thus, the pharmacy's success nowadays should lie on the development of its business role in the context of its social and scientific role, placing the patient-customer at the center of interest and emphasizing the services provided by the pharmacist (Dounas, 2012).

The importance of the pharmacists' role and the impact of pharmaceutical care on the society's health are some of the most popular areas of health research in recent years, which focus on examining the type of services provided by pharmacies, their quality, patients-customers' satisfaction, pharmacists' perception of about them, as well as the general barriers



to their implementation. (Eades et al., 2011; Beshir et al., 2014; Laliberté et al., 2012; Cordina et al., 2008). Unfortunately, prior research in such issues in Greece is quite limited.

Considering the aforementioned, this study aimed to investigate pharmacists' (owners/employees of a pharmacy) perceptions of the health services provided by the community pharmacies.

More specifically, the research Objectives of this study concerned the inquiry of the following issues:

- Pharmacists perceptions about the health service concept and the services they offer at present and the services that they are willing to offer in the future,
- The role, skills and self-confidence they feel as health professionals, and
- The barriers they face at the provision of health services to their customers.

The outline of the paper is structured as follow: Next section deals with the literature review in relation to pharmacists' willingness to offer health services to patient-customers, their perceptions regarding their role, skills and necessary education/training as health professionals and the barriers they face at the provision of health services to patients-customers. The methodology and data sample are then presented, followed by our research results. The paper concludes with a discussion of our findings, limitations of our work and recommendations.

## **2. Literature Review**

### *2.1. Pharmacists' willingness to offer health services to patient-customers*

The services offered by the vast majority of pharmacies today are divided into three categories: a) basic services, b) pharmaceutical services, and c) health care services. Traditionally, pharmacists emphasize more on basic services, but, in recent years, several countries at European and world level have incorporated more specialized services into their pharmacies (Shuai et al., 2012). In particular, the pharmacists in Quebec stated that nowadays pharmacists should be involved, to a great extent, with activities and services related to the prevention and promotion of health, such as advice on smoking discontinuation, promoting balanced nutrition, maintaining sexual health and controlling dyslipidaemia, diabetes and hypertension (Laliberté et al., 2012).

Moreover, pharmacy graduate students of the Paris-Descartes University were particularly positive about the expansion of the modern pharmacist's roles, indicating their preference to services such as the provision of pharmaceutical advice, the creation of an electronic pharmaceutical archive to record patients' prescribed and non-prescribed medication used, to administer drugs for minor health problems and to monitor the progress of patients with chronic diseases (Perraudin et al., 2011).

### *2.2. Pharmacists' perceptions regarding their role, skills and necessary education/training as health professionals*

Rosenthal et al. (2011) revealed that half of the pharmacists in Canada stated that they were more product- and sales-oriented, while 3 out of 10 were more patient-oriented. Elvey et al. (2013) analyzed pharmacists personal interviews and established 9 different pharmacist roles, among which the most prominent is the scientific role. Pharmacists utilize their scientific knowledge in practice, through the provision of medicines, and, in theory, by providing advice on medication. However, pharmacists face the everyday challenges of balancing between their two primary roles; those of the entrepreneur and the health scientist. Moreover, Rayes et al. (2015) found that pharmacists in Dubai perceive themselves more as scientists and less as entrepreneurs.

Regarding the required education and training that a modern pharmacist should have to meet the needs of his/her new roles, these include training in clinical pharmacy and pharmacology. It is generally considered that the undergraduate studies in pharmacy in most European countries are not sufficient for the pharmacists to provide pharmaceutical services to their patients-customers, and therefore, additional specialization of the pharmacist through postgraduate education is necessary (Spain, Portugal). In addition, prior research in the United

Kingdom showed that postgraduate studies have a positive impact on the service quality provided by pharmacies, constituting them rather necessary and obligatory. The European Association of Faculties of Pharmacies (EAFP) has published several reports on how the undergraduate courses of pharmaceutical schools across Europe should be reorganized to enable pharmacists to provide pharmaceutical care, while in many European countries clinical pharmacy has been introduced into the curriculum of a prospective pharmacist (Foppe van Mil et al., 2006).

Cordina et al. (2008) investigated the pharmacists' perceptions concerning their skills and education/training for the provision of health services in Moldavia. The pharmacists reckoned that their ability is very good in administrative activities, such as ensuring good quality and appropriate storage conditions for medicines, evaluating the pharmaceutical characteristics of a treatment, providing guidance to patients-customers on the proper use of a drug, as well as advising them about side effects, contraindications and potential interactions with other drugs. On the other hand, the Moldovan pharmacists judged their ability as moderate to good concerning the provision of health advice, the patient's medication-tracking after receiving a drug and the resolution of drug-related problems. Moreover, they deemed their ability to measure health parameters was moderate to poor. Additionally, 4 out of 10 pharmacists in New Zealand perceived that they were insufficiently trained to offer pharmaceutical services (Bryant, 2009).

### *2.3. Barriers that pharmacists face at the provision of health services to patients-customers*

Perri (1996), concluded that the most important barriers to pharmaceutical care in the United States are: 1) limited access to patient information; 2) insufficient training; 3) pharmacist resistance to the likelihood of abandoning his/her traditional role; 4) patient understanding and acceptance of pharmaceutical services; 5) pharmacy design and layout; and 6) failure to pay the pharmacists for the services offered.

Dunlop et al. (2002) classified the barriers to the implementation of pharmaceutical care in New Zealand into groups. One group includes pharmacists' inability to understand the concept of pharmaceutical care, as well as their lack of self-confidence, therapeutic knowledge, and clinical problem-solving skills. Another pertains to resources availability and consists of the lack of time, the insufficient financial resources and the lack of space and enthusiastic staff. Lastly, the most important factors related to the system are, the absence of a compensation system, limited patient demand and the inability to access patients' medical records. Considering the abovementioned factors, in total, the most important were the lack of time and the lack of an organized reward system for the services offered by pharmacists.

The study of Hopp et al. (2005) in Denmark showed that a major obstacle was the lack of staff skills, creativity and self-confidence, as well as some structural issues, such as the way the pharmacy was organized, the time availability and the lack of the necessary infrastructure. In addition, pharmacists, in Quebec, mentioned the lack of time, the lack of coordination with other health professionals, the lack of staff and resources, the lack of financial rewards for the services offered and the lack of clinical tools (Laliberté et al., 2012).

## **3. Methodology**

### *3.1. Questionnaire Survey*

A descriptive, quantitative, questionnaire survey was employed to investigate the pharmacists' perceptions of the health services offered to their patients-customers. The questionnaire design was based on the key findings of the literature review conducted through scientific sources like Scopus, Heal Link and PubMed using keywords such as pharmacy services, community pharmacies and evaluation of community pharmacy services. Then, the initial draft questionnaire was pilot-tested by 15 pharmacists and the final version of the questionnaire that incorporated their comments required around 8 to 10 minutes to be completed.

The questionnaire consisted of 4 sections with closed-ended questions. The first section explores the pharmacists' perceptions and attitudes towards health services (Laliberté et al., 2012). The second section examines the role and capabilities of a modern pharmacist

(Bawazir, 2004; Eades et al., 2011) and the third section inquires into the barriers that pharmacists face in providing health services (Eades et al., 2011; Dunlop et al., 2002; Bryant, 2009; Björkman et al., 2008; Bush et al., 2009; Perri M., 1996). The final section included the respondents' demographics such as the gender, age, education, working experience, health services training and the pharmacy's customer flow per day.

### 3.2 Data selection

A convenient sample was employed in this survey consisting of 123 pharmacists (Table 1). The great majority (87 out of 123) of questionnaires were completed through online interviews and the rest through a face-to-face interview. The survey lasted around one and half months from the end of March to the mid of May 2015. Around 60% of the participants were women, which was expected, as the pharmaceutical profession, both in Greece and abroad, is considered a sector dominated by women (Janzen et al., 2013). Because of the online method of data selection, the sample is biased in favor of the relatively young pharmacists. Moreover, half of the pharmacists own or work in relatively small pharmacies with daily customer flow ranging between 20 and 50 customers. Additionally, more than half of the participants stated that they had attended seminars on the provision of health services, which is rather encouraging.

**Table 1.** Sample of the survey (% of respondents, N=123)

<i>Gender</i>		<i>Age</i>		<i>Education</i>	
Male	40.7	< 25	7.3	BSc in Pharmacy	82.0
Female	59.3	25-34	53.7	MSc	17.2
		35-44	21.1	PhD	0.8
		45-54	13.8		
		55-64	4.1		
<i>Working experience</i>		<i>Health services training</i>		<i>Customer Flow / Day</i>	
< 5 years	52.8	Yes – Seminar	55.7	< 20	13.0
5-10 years	16.3	Yes – Self-trained	31.1	20-50	49.6
11-20 years	17.1	No	9.0	51-100	29.3
> 20 years	13.8	Other	4.1	101-200	7.3
				> 200	0.8

### 3.3 Data analysis

SPSS Version 24.0 was used for data analysis which included frequencies, some descriptive measures (i.e. mean, standard deviation), as well as non-parametric tests such as the Friedman (K-Related samples).

## 4. Results

### 4.1. Pharmacists' perceptions about the health services offered to patients-customers

The study results revealed that almost all pharmacists rightfully understand the meaning of health services defined as the services offered by health professionals aiming to maintain or improve the health of a population (Table 2). In this line, it is rather encouraging that only 3.3% of the respondents perceived that services are offered by anyone. Dunlop et al. (2002) reported that 60% of the pharmacists participating in their survey had a good understanding of the pharmaceutical care process, while 22.3% of them failed to agree with the right choices.

**Table 2.** Pharmacists' perceptions about the concept of health services (% of respondents, N=123)

Concept	N	Valid %
A service or set of services offered by anyone aiming to maintain or improve the health of a population	4	3.3
A service or set of services offered by health professionals aiming to maintain or improve the health of a population	119	96.7
A service or set of services offered by healthcare professionals for the treatment of minor injuries not requiring hospitalization	26	21.1
A service or set of preventive medicine services offered by health professionals to reduce critical issues (e.g. epidemics) and health risk factors (e.g. obesity, alcoholism)	40	32.5

According to Table 3, all pharmacists offer health services to their patients-customers and actually, the vast majority of them offer health services daily, indicating that health services are an inextricable part of the modern Greek pharmacy. The frequency of health services provided by Canadian pharmacies ranges to a much lower level compared to our research, as most of them offered preventive health services sometimes weekly or monthly (Laliberté et al., 2012).

**Table 3.** Frequency of health services' provision by pharmacists to their patients-customers (% of respondents, N=123)

	Valid %
Daily	93.5
Sometimes weekly	5.7
Sometimes monthly	0.8
Sometimes annually	0.0
Never	0.0

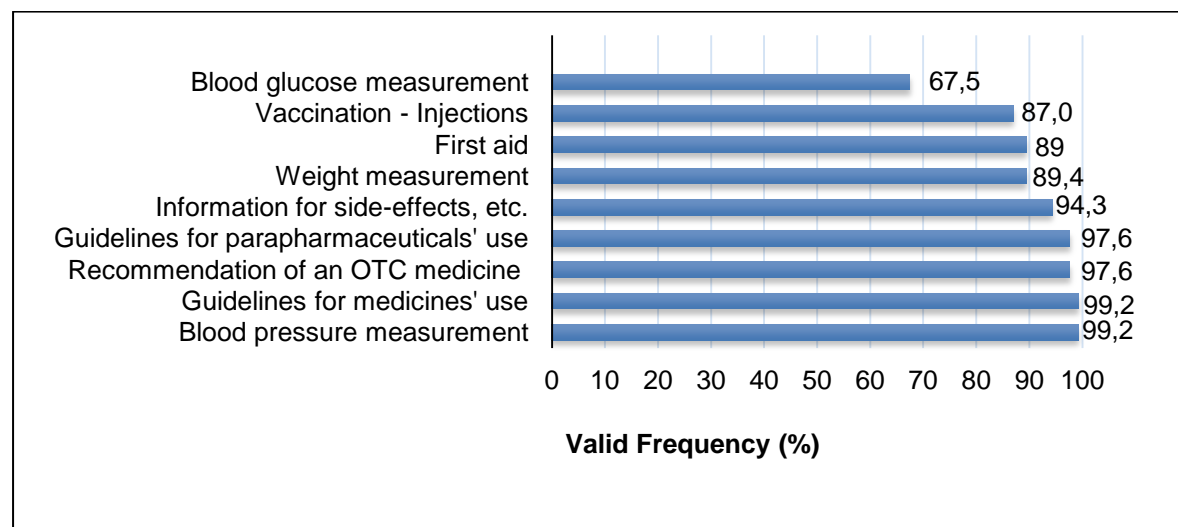
Most of the pharmacists (60%) in our survey supported that they dedicate on average 5-10 minutes to each patient-customer for the provision health services, while 20% of them dedicated 11-15 minutes (Table 4). Laliberté et al. (2012) found that most pharmacists in Quebec, Canada, devoted 10 minutes or less to providing a proactive health service to their clients. Almost half of the pharmacists (49.5%) in Dubai reported to spend on average 3-5 minutes for explanations and counseling on their patients-customer and only 36.4% of them dedicated 5 to 10 minutes (Rayes et al., 2015).

**Table 4.** Average time spent for health services' provision to patients-customers (% of respondents, N=123)

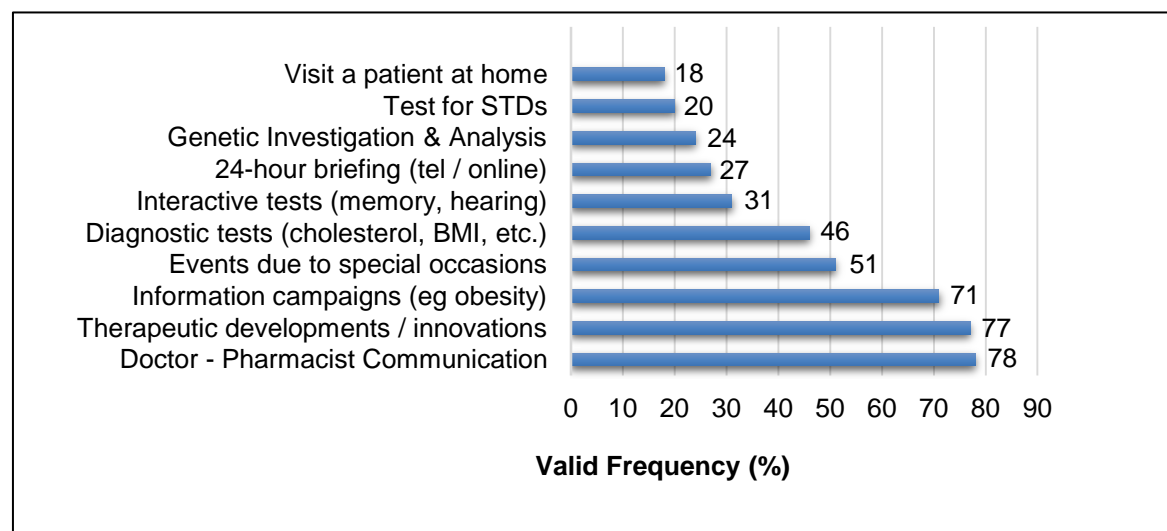
	Valid %
Less than 5 minutes	12.2
5-10 minutes	60.2
11-15 minutes	20.3
More than 15 minutes	7.3
I do not provide health services	0.0

Figure 1 reports the health services offered by pharmacists to their patients-customers. The study results are particularly positive as they confirm that the health services' provision is a daily practice for modern pharmacists. The top 5 health services offered more often to patient-customers include blood pressure measurement, guidelines for the medicines' proper use, recommendation of an OTC medicine, guidelines for parapharmaceuticals' products use and information for medicines' side-effects, contraindications etc.

**Figure 1.** Health services offered to patients-customers



In terms of the health services that pharmacists wish to offer to patient-customers in the future (Figure 2), these primarily include the direct communication and collaboration with doctors and other health professionals on issues related to the medication of a patient (78.0%) and the patient information on therapeutic developments and innovations regarding their disease (77.2%). The organization of information campaigns on critical health issues such as weight gain and obesity (70.7%) is next, followed by the organization of awareness and information events on specific occasions, such as the World AIDS Day (51.2%) and the measurement of specific health parameters such as cholesterol and body mass index (BMI) (46.3%).



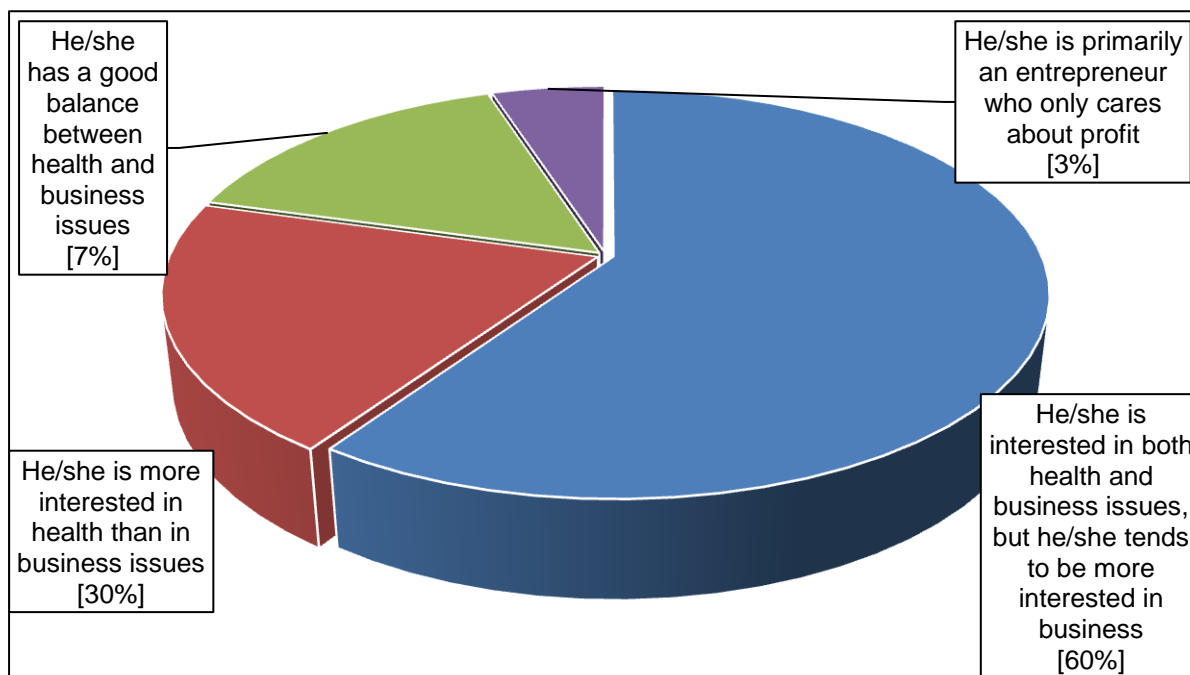
**Figure 2.** Services pharmacists would like to offer to their patients

#### 4.2. Pharmacists' perceptions about their role, skills and self-confidence as health professionals

The pharmacists were asked to choose the alternative that best expresses them concerning the role of the modern pharmacist and his/her balance between the business and scientific aspects of his profession. According to Figure 3, 60% of the respondents purport that the modern pharmacists are interested in both the health of their clients and the business issues of their

profession, but they tend to be more interested in business. On the other hand, 30% of the participants stated that the pharmacist is primarily a health scientist with social responsibility and interest in the health of his client-patient, while 7% of them believe that the current pharmacist maintains a good balance between business and scientific profile.

The tendency of pharmacists to be more interested in the business than in the scientific aspects of their profession may be attributed to the intense competition, the continuous reductions in profit margins and the NHS's long delays to pay the pharmacies for the prescribed medicines. As a result, pharmacists are unable to cope even with their basic operating expenses and thus, they have to focus on more the para-pharmaceutical products to increase their sales and improve their enterprise's profitability. It is, therefore, necessary to provide pharmacists with incentives to follow a more patient-oriented and scientific approach of their profession.



**Figure 3.** Role of the contemporary pharmacist

The pharmacists' self-assessment revealed that they feel very capable to offer health services, especially those concerning the measurement of health parameters, informing patients about the correct use of a medicine and providing health advice (Table 5), as the vast majority of them judged their capability as "good" (4) or "excellent" (5). Additionally, they are quite self-confident about their competency to informing patients about a drug's side effects/contraindications and providing first aid, with the mean value of their answers close to 4, corresponding to "good" capability. However, the survey participants seem to be less certain about their adequacy in promoting the patients' health, as the mean value of 2.85 is close to the corresponding answer of "moderate" capability". We notice that pharmacists do not feel adequately trained and prepared for more demanding services.

**Table 5.** Pharmacists' self-assessment about their capability to offer health services

	Mean	Std. Dev.
Informing patients about the correct use of a medicine	4.32	0.56
Informing patients about a drug's side effects / interactions	3.89	0.75
Providing health advice	4.24	0.63
Promoting the patients' health	2.85	1.08
Provision of first aid	3.86	0.85
Measurement of health parameters	4.51	0.67

#### *4.3. Pharmacists' perceptions about the barriers they face in the provision of health services to patients-customers*

The barriers faced by pharmacists in the provision of health services have been categorized into five groups: 1) barriers related to pharmacists' behavior, 2) barriers related to patients-customers' behavior, 3) pharmacists' skills and training, 4) resource availability barriers and 5) barriers related to the health system. Pharmacists were asked to state how important each barrier is by using a 5-points itemized rating scale, ranging from 1 to 5, where 1 corresponds to "no at all significant" and 5 to "very important".

The survey participants consider that the barriers related to their behavior hinder, to a relatively low extent, the provision of health services to their patients-customers (Table 6). Their lack of interest, lack of incentive and fear of change of the pharmaceutical profession were the most important hurdles, with mean values of answers close to 2.5. Moreover, pharmacists reiterate that they feel rather confident about their skills and competencies.

Pharmacists reckon that some of the examined obstacles related to patients-customers' behavior are indeed important, to a moderate extent (mean values ranging between 3.05 and 3.37), in the provision of health services (Table 6). Specifically, they think that their patients-customers do not trust them, to the extent they would wish, which, inter alia, may be attributed to patients-customers' ignorance of the pharmacist's role and knowledge, and their insufficient understanding of the health services concept. Consequently, the patients-customers may feel embarrassed or insulted by personal questions.

Regarding the third group of restraints, pharmacists believe that the lack of an organized system of compulsory, lifelong training and education mitigates substantially (answers' mean 3.64) their capability to health services' provision (Table 6). Additionally, they seem not to be rather satisfied with their training to solve clinical problems and to offer health services, with the answer's mean value being 3.25 and 2.86, respectively.

Pharmacists' complex responsibilities are the most important resource-related barrier to health services' provision, closely followed by the lack of facilities, equipment and clinical tools (answers' mean 3.65 and 3.41, respectively). Considering the unprecedented financial crisis that Greece faces, it is not surprising that the insufficient financial resources impede health services' provision, not only directly (mean 3.28), but indirectly, as well, leading to lack of staff and, consequently, to insufficient time to dedicate to each patient-customer (mean 3.11 and 3.28, respectively).

The survey participants supported that the provision of health services is mostly constrained by the barriers related to the health system (Table 6). Indeed, the answers' mean for the lack of an appropriate regulatory framework, the lack of an organized compensation system and the lack of support from other healthcare professionals to the new role of pharmacists were the highest of all groups of barriers, well above 4.00 (4.11 to 4.21). However, even the rest barriers examined seem to complicate significantly pharmacists' attempt to offer health services. Specifically, the answers' mean values for difficulty in the collaboration with other healthcare professionals, limited access to patients-customers' medical records and insufficient data regarding the benefits of health services for the NHS ranged between 3.48 and 3.80.

**Table 6.** Pharmacists' perceptions about the barriers of health services' provision

	Mean	Std. Dev.	Mean Rank <sup>a</sup>
<b><i>Pharmacists' behaviour</i></b>			
Pharmacists' lack of interest	2.52	1.06	12.60
Pharmacists' lack of incentive	2.56	1.29	12.86
Pharmacists' lack of confidence	1.97	1.05	8.90
Fear of change of the pharmaceutical profession	2.49	1.37	12.63
Pharmacists' family reasons	1.67	0.93	6.77
<b><i>Patients-Customers' behaviour</i></b>			
Patients' insufficient understanding of the health services concept	3.29	1.05	18.98
Ignorance of the pharmacist's role and knowledge	3.37	1.26	19.17
Lack of confidence to the pharmacist	3.13	1.17	17.50
Patients' reluctance to change the existing situation	2.32	0.99	11.17
Patients' embarrassment or feeling of insulting on personal questions	3.05	1.17	16.80
Patients' rush and lack of time	2.26	1.00	10.75
Patients visit the pharmacy irregularly	2.54	1.20	12.72
<b><i>Pharmacists' skills and training</i></b>			
Insufficient training for service provision	2.86	1.14	15.33
Insufficient training to solve clinical problems	3.25	1.11	18.47
Insufficient knowledge of pharmacology & drugs' clinical use	2.37	1.04	11.29
Insufficient communication ability	2.21	1.08	10.35
Lack of organized system of compulsory, lifelong training and education	3.64	1.22	21.59
<b><i>Recourses availability</i></b>			
Insufficient financial resources	3.28	1.13	18.49
Inadequate store's layout	2.77	1.19	14.59
Non-availability of a private place for counselling	2.89	1.31	15.53
Insufficient time	3.28	1.19	18.49
Lack of staff	3.11	1.24	17.19
Inappropriate way of organizing work	2.50	1.26	12.69
Complexity of pharmacist responsibilities	3.65	1.17	21.40
Lack of facilities, equipment and clinical tools	3.41	1.14	19.65
Lack of the necessary drug databases	2.72	1.21	14.27
<b><i>Health system</i></b>			
Lack of an appropriate regulatory framework	4.11	0.92	24.78
Lack of an organized compensation system	4.21	1.00	24.92
Other healthcare professionals do not support the new role of pharmacists	4.14	0.97	24.86
Difficulty in the collaboration with other healthcare professionals	3.62	1.10	21.22
Limited access to patients-customers' medical records	3.48	1.12	19.91
Insufficient data regarding the benefits of health services for the NHS	3.80	1.05	22.14

N	Chi-Square	df	Asymp. Sig.
123	1134.137	31	0.000

<sup>a</sup>: Friedman (K-Related Samples) Test

## 5. Conclusions, recommendations and limitations

The survey results revealed that almost all pharmacists rightfully understand the meaning of health services. In terms of the health services offered to patients-customers, nearly all participants supported to provide blood pressure and body weight measurement services, patient information for the proper use of drugs, parapharmaceuticals and cosmetics,



recommendation concerning the appropriate medical product for minor health problems and patient information about potential side effects, contraindications and interactions among drugs. Additionally, they expressed their intense willingness to offer new and more specialized health services such as the direct communication and collaboration with doctors and other health professionals on issues related to the medication of a patient, the patient information on therapeutic developments and innovations regarding their disease, and the organization of information campaigns on critical health issues such as weight gain and obesity. Moreover, all the participants supported to provide health services to their customers daily, dedicating, most of them, on average 5-10 minutes to each patient-customer.

Most of the pharmacists claimed that they are interested in both the health and the business issues of their profession, but they tend to focus more on business aspects. However, one-third of them considered their role primarily as a health scientist with social responsibility and interest in the health of his patient-customer. Additionally, they feel quite capable, in general, to offer health services, and especially those related to the measurement of health parameters, informing patients about the correct use of a medicine and providing health advice.

The survey respondents maintained that the health system related barriers were the most important in their health services' provision compared to those associated with pharmacists' behaviour, patients-customers' behaviour, pharmacists' skills and training and resources availability. The lack of an appropriate regulatory framework, the lack of an organized compensation system and the lack of support from other healthcare professionals to the new role of pharmacists were considered as the barriers that mostly constrain the provision of health services.

Considering the above, it emerges that regulatory authorities, pharmacists and patients should assume initiatives to develop the pharmaceutical profession by placing patients-citizens and their needs in the center. In particular, it is recommended that the authorities rearrange the curriculum of pharmaceutical schools focusing more on clinical pharmacy, pharmacology and first aid. Additionally, they should establish a lifelong training program for pharmacists by setting up a credit control system that will accurately determine the number of units that a pharmacist has to obtain per year, as well as periodically assess the skills of trained pharmacists (Eades et al., 2011; Beshir et al., 2014). Moreover, it is suggested that the state assumes initiative to educate and provide detailed information to patients about the healthcare content, as well as the skills and knowledge of the modern pharmacist (Gastelurrutia et al., 2006). Besides, it is imperative the legal recognition and establishment of the services allowed by pharmacies to offer to their patients-customers, so as to avoid overlapping and conflict of interest among health professionals, and the introduction of a compensation system for pharmacists for each of the services they offer.

Moreover, it is suggested that pharmacists attend lifelong training programs on their own initiative and they rearrange their pharmacy's layout and organization of work to improve the provision of health services to patients-customers. Finally, it is recommended that patients trust more the pharmacists and they cooperate further with them for the provision of health services.

The findings of our study are subject to limitations, which are rather common to similar studies. Investigating pharmacists' attitudes inevitably entails a self-assessment bias. Moreover, it was difficult to attain a large sample of pharmacists and, in particular, in terms of a longitudinal study. Thus, we should generalize the findings of this survey with caution, given, as well, that data were collected primarily through online interviews, and particularly, the sample is rather representative of the young professionals that attended seminars on the provision of health services.

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# **Bussines model for sustainable development of alternative touristic services: case study the religious tourism**

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## **Abstract**

*The effective introduction of an innovative business system, as alternative tourism is to the traditional one, as well as the achievement of sustainable development requirements are presented in this paper. Namely, a detailed description of the business model of interest shall introduce the reader into the concept of quantitative and qualitative specification of its operational characteristics. Through this process, a justification mechanism shall point out the specific characteristics that may foster sustainability. The triple bottom line approach [1] shall be utilised in order to measure success rates. Furthermore, analysis shall be based on business model canvas [2], depicting the main characteristics of the sustainable alternative tourism enterprise. Paper concludes with profiles and recommendations of sustainable alternative tourism business models focusing in particular in the religious cultural path sector.*

**Keywords:** Sustainable tourism, triple bottom line, alternative tourism, religious cultural paths.

## **Introduction**

The advent of alternative tourism concept brought hope to the relevant business practitioners that a new frontier in the market sector has evolved. Nevertheless, this new frontier, as complementary to the traditional touristic product as it may be, confronts limitations. These limitations are originated from the immaturity of the market sector as well as from the overall capacity of the environment of application. Maturation of the market is based both on the awareness raising and the training of the stakeholders while the capacity of the environment is acknowledged on every aspect: environmental, fiscal, social, productive etc.

Alternative tourism is a result of market maturation as well as technological innovation advent. The traditional sector of tourism has evolved in order to support the market share extension over all the year (365 days tourism) as well as to enhance market segment size by the incorporation of diversified origin customers. As such, alternative touristic services are complementary to the traditional ones, enabling the integration of customer satisfaction into a “complete experience”. This kind of experience combines offered services through a customised manner for specific audience. Segmentation of the interested parties into groups allows for the manipulation of the offered services according to the clients’ unique characteristics and personal interests. Namely, adventurers may accomplish energetic activities while spiritual oriented ones may enjoy mental intensive activities.

What differentiates tourist from traveller is that the former expect to change the ordinary way of life [3]. Nowadays, tourists may choose among a set of alternative activities, either spiritual or physical, achieving a new level of enjoyment: the integrated experience. In order to get

there, several things must happen, including customer satisfaction as realised by quality of provided products or services, availability and adequacy of the offered services.

Even if boundaries between religious and spiritual tourism can not be discriminated easily though there are dissimilarities: religion is part of local culture and collective perspective while spirituality is more personal, a quest. For those tourists the product is associated with the whole travel experience, including activities at destination [4]. Religion influence people behaviour and attitude for life and as such travel motivation as well [5]. Religious tourists tend to travel with family or in same age groups, and in a seasonal manner taking in mind not only climate but also the occurrence of holidays. Still, there is no obvious way to define religious tourism and the characteristics that specify it because there is absence of a unanimously accepted consensus [6].

Scope of this paper is to present business models capable to drive the cluster of alternative though sustainable tourism in the forthcoming era. The tools that shall be utilised in order to compose the business model shall be presented in the next section, followed by their application in model development.

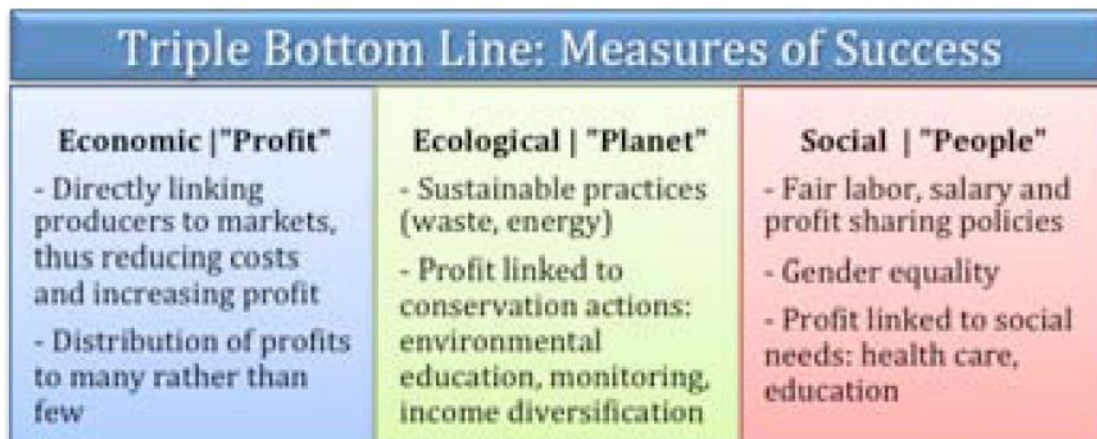
### ***Business Model foundation***

Business model as a concept (not a term) was introduced by Peter Drucker with the term “assumptions about what a company gets paid for” [7]. Where Drucker’s opinion converged with (then) modern business model theory was to Michael Porter’s definition of strategy [8]. In addition to what a company is paid for, “these assumptions are about markets. They are about identifying customers and competitors, their values and behavior. They are about technology and its dynamics, about a company’s strengths and weaknesses.”

As such, in the business model play role not only the money transfer mechanism but the social welfare and the technological integration as well. Fiscal initiatives reflect the economical impact of the environment of application to the business process [9]. Namely, a business friendly environment makes business easier and more prosperous. Human factor has tremendous effect, regardless the side of the business process. Values and wishes confront a layer of transactions that specify the adoption of offered business opportunities and services. At the same time, technology plays a catalytic role to all the above as its adoption enables the effective operation of the business.

### **Triple Bottom Line concept**

Taking in mind the concept of a sustainable tourism enterprise model we should consider the enterprise as an SME as their characteristics are much familiar through financial viability and growth of the enterprise itself. A sustainable tourism enterprise must success the same as any other small business. In order to measure the sustainability success of such enterprises, the triple bottom line concept is employed.



**Figure 1 Triple Bottom Line (TBL) concept for sustainability evaluation [1].**

According to the model, success is achieved through an integrated perspective rather than a focused one. The measurement scope takes in mind accomplished achievements in economic, ecological and societal perspective altogether. In order to reach the level of success the enterprise should be aware and working towards all the above directions at each ingredient of its functional model. This diversifies enterprise's functional model, the business model, into three separate layers. Layered functionality allows for the discrete analysis of the business model and the constitution of sustainable requirements. Except from the economic layer, the other ones require a so called "social" aspect in business process.

Studies have introduced an evaluation model based on the cognitive component as well as on the affective dimension. Cognitive part refers to the beliefs or knowledge a person has for a destination, while the affective part is represented by the individual's feelings toward this destination [10]. As such, environmentalism, social relaxation, cultural coherence and so on are taken as cognitive part, while satisfaction, enthusiasm, admiration and so on are taken on the affective part. In this approach [11], the methodology applied measured the affect that each of those categories had on the destination image. The result showed that cognitive criteria had direct and credible effect on building destination image, contrary to the affective ones.

### Business Canvas concept

Business model canvas has been developed according to nine blocks [12] according to BMO ontology. In BMO a business model describes the value a company offers (what?) to one or several segments of customers (who?) and the architecture of the firm and its network of partners for creating, marketing and delivering this value and relationship capital (how?), in order to generate profitable and sustainable revenue streams (how much?) [13], [14], [15]. the above are diversified in blocks grouped in clusters. These blocks are enlisted below:

1. Customer target groups
2. Customer value propositions
3. Distribution channels
4. Customer relationships
5. Revenue streams
6. Key resources
7. Key activities
8. Key partnerships
9. Cost structure

where the order of presentation of the different issues does not follow the order from 1 to 9, but the sequence of questions to be answered establishing the business model. In the following we shall analyse the nine blocks according to the business idea of alternative religious tourism in three cluster structure: (a) customer, (b) supply and (c) synergies. The analysis of each block shall be done in detail in the next section.

### ***Business Model Composition***

The composition of the sustainable religious tourism enterprise shall be based on the tools analyses in the former sections. The model shall be built on canvas and evaluate on TBL so as to reach the goal. In the following the model analysis shall follow a stepwise manner in thematic clusters.

#### **Customer cluster**

Customer cluster consists from (a) target groups, (b) value proposition and (c) relationships. We will start our discussion from (b) value proposition as it more important at the moment of describing the concept of religious cultural paths product.

##### **(b) Value proposition**

As such, the product contains the proposition of mental enlightening, empirical participation and spiritual uplift.

- Mental enlightening is an outcome of information transfer that integrates a complete picture of historical and religious data according to the issue in interest. Information may be presented in a stepwise approach, following the evolution of the “cultural path” through space and time.
- Empirical participation is realized with the introduction of the people to the holy places and through witnessing the ceremonies become part of them, living the experience.
- Spiritual uplift follows up the former activities as the participants have reach a certain level of mentality that allows for an enhanced comprehension of the surroundings and themselves inside them.

The value proposition to the participants fulfills their need for participation in religious affairs and/or ceremonies, better comprehension of the divine through incarnations and their real life examples as well as the dematerialization of their mental existence towards a spiritually purified one. The above can be supported by an integrated product but are separate entities and can be offered separately.

Valuing the effect of triple bottom line we could claim that value proposition:

- has positive impact on economic affairs as profit is shared among local economy
- tourism growth shall reach 150% increase in average over the next 30 years on energy and water consumption, emissions and waste [16]. As such has tremendous impact on ecologic affairs.
- has positive impact on societal affairs as it provides added value to the society welfare. Nevertheless, risks of sustainable tourism should be considered [17]

##### **(a) Target group**

The above value proposition targets mainly religious people. People that have faith and like to strengthen it. The characteristics of the target group can be qualitative diversified according to:

- their age: older people tend to dedicate more time and faith to religious matters
- their experiences: often people that lived a religious experience are keen to seek the next one

- their religious literacy: people that have religious background are aware of opportunities and eager to participate in religious matters
- tourists: people that have the interest to learn how religious matters truly are.

Trying to quantify the above analysis we can say that:

- the age group follows a backward distribution, favoring the elders and lacking youngsters
- people with religious background may enjoy a certain percentage of the general population. This part of the population has the sense of religious duty and the intention to fulfill it.
- people that have experienced a religious act (a “mystery”) are part of the society. Still they do not publicate their status so as to be aware of their population distribution. We will assume that in a religious society 1 out of 3 persons have such experiences; a greater less proportion enjoyed intense ones.
- tourists may be taken as opportunists that have to enjoy their stay a little more through alternative experiences. As such their population is rather limited in relation with former groups

Valuing the effect of triple bottom line we could claim that target group:

- has neutral impact on economic affairs as people do not earn or loose profit from the activities
- has positive impact on ecologic affairs as targeted people tempt to care environment
- has positive impact on societal affairs as a fair profit sharing with a non marketable cluster

#### (c) Customer relationships

The provision of services is largely based in human-to-human transfer mechanism in a form of word of mouth. Participants share knowledge and testimonies in order to achieve a level of common understanding. Further on, they join the religious matters through their participation in events and trough this they achieve spiritual consensus. Witnessing the culture and the religious way of living is a result of visual rather than oral experience gathering. Often visitors seek to conclude their experience by taking along with them part of their former experience through the form of souvenirs.

The provision of time enduring products like hymnals, recorded ceremonies, religious paintings and traditional products have significant importance for the visitors. Still, the local economy lacks the required capacity to satisfy demand, as destinations are located in the rural while craftsmanship is gathered in urban areas [18]. A development of this sector could potential impact the negative import-export balance of cultural products (38%), the diffusion of craftsmanship in rural areas (42%) as well as the fair development (39% of the employees, 25% of the NPV).

As such the relationships may be classified as following:

- Guided tour through monuments and traditions
- Pilgrim, ceremonies participation and events witnessing
- Historical documentaries (analogue or digital) and e-services
- Provision for souvenirs acquisition

Valuing the effect of triple bottom line we could claim that customer relationships:

- have strong impact on economic affairs as profit is shared among local economy
- have positive impact on ecologic affairs as it allows income diversification, anticipating the negative effect of visitors’ potential non-compliant behavior
- have neutral impact on societal affairs as customers do not share common understanding



## Supply cluster

Supply cluster maintains the ingredients of the business, namely the process of transforming market goods to products. Cluster is diversified in three sections of key aspects for the enterprise: (a) resources, (b) activities and (c) partnerships. In this section we will start our analysis with the third concept

### (c) Key partnerships

It is easy to conceive that in order to provide services a partnership with religious institution is necessary. This institution may be a cultural center or a monument operator. The partnership shall provide access to a place of resources gathering as for example:

- visual (architectural, painted, code of dressing)
- oral (spoken tradition, ceremonies)
- written (documents, informational pages)
- ritual (ceremonies, events)
- actors (clergy, clerks)

It is crucial for the participants that all those are original symbols of faith and have the added value that they are used for religious reasons.

In order to access the place of interest a transportation phase should be implemented. As such, participants should be separated in groups and guided to the place. This phase may be utilized to “dress” the main destination meaning that additional information may be provided as a preparation stage to the experience to be lived. For example a certain psalm may be memorized in order to be song in chord latter on. The path can be escorted to other cultural aspects of interest in the direction to the destination as logographic, historical evolution etc.

At place of interest care should be given to maximize the effect of the experience that the participants are living. In case that a fair for example accompanies the pilgrim concept it should be integrated into the cultural path product. Even more, a chanter or even a choir may be mobilized in order to introduce audience to the ceremony. Souvenirs are also in interest so providers from local economies should be brought forward to accomplish this need.

Valuing the effect of triple bottom line we could claim that key partnerships:

- have strong impact on economic affairs as profit is shared among local economy that is saturated
- have negative impact on ecologic affairs as economic activities have not necessarily environmental awareness
- have neutral impact on societal affairs as it is more focused than fair

### (a) Key resources

The core of the business system of religious cultural paths is the opportunity to share mentality and experiences among a group of diverse people. The recipe of success incorporates several ingredients as:

- discrete thematical orientation: everyone should understand the concept in order to achieve efficient satisfaction and at the same time to behave appropriately

- comfortable transition: transportation manner as well as crossing “path’s” leeway should be comfortable for all participants in order maintain interest of the core activities in high esteem.
- Sufficient knowledge background: the knowledge transfer mechanism should consider religious and historical resources as well as traditions and tenets of the involved persons

Valuing the effect of triple bottom line we could claim that key resources:

- have neutral impact on economic affairs as it incorporates activities that are not marketable with the strict mean of the term
- have substantial impact on ecologic affairs as “last mile” activities come rather spontaneously than disciplined. This effect may be leveraged by the implication of modern techniques like ticket dematerialization and travel/traffic information sharing<sup>1</sup>
- have strong impact on societal affairs as it focuses on personality ascension

#### (b) Key activities

The concept of religious cultural paths contains the aspect of religion. Religion may be understood as a faith dogma, a way of living, a world of expressions or even experiences that do not originate from this material world. The above may be translated into services that the enterprise may offer to their customers as following:

- address the main religious characteristics of a place in interest (i.e. St. Andreas at Patras)
- collect the information regarding the core religious subject of the place in interest and prepare them for presentation on site, off site (i.e. web) and on the road
- chart the path to the place of interest so as it attracts the interest (i.e. finding peaces of information along it)
- allow the cohesion of inclusion spirit along the way to the participation event
- address the proper guides and escorts to make it easy and efficient for the participants
- maintain a diary with major religious events and ceremonies that public can attend.

Valuing the effect of triple bottom line we could claim that key activities:

- have positive impact on economic affairs as it allows for business
- have neutral impact on ecologic affairs as activities do not affect environment
- have neutral impact on societal affairs as it is focuses on businessman

### **Synergies cluster**

Providers are required in order to produce enterprise’s outputs and through their merchandise make profit. The process of profit making is based on provisions through (a) distribution channels, (b) costs structure based on production, operational and other and (c) revenue streams as following

#### (a) Distribution channels

In order to reach the target groups certain initiatives should be taken. As we speak for group activities the more prosper away of making aware of the enterprise offerings is through areas of gathering. That is tour operator offices, tourist information web sites, POIs web portals, and targeted publication for religious organizations.

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<sup>1</sup> [www.mobilitypoint.it](http://www.mobilitypoint.it) (access on May 2018)

- Tour operators' office is a common hot spot for traveling and as such the alternative product of religious cultural paths could be promoted or even bound to a holiday travel packet. As the tour operator may distinguish target groups according to their characteristics it is possible to deploy a specific campaign for the alternative product.
- Informational web sites are accessed from tourist that want to gain more insight on an area's opportunities for welfare. Through them they flourish their informational background on the place of interest and gain awareness of events and offered services.
- POIs' web portal is a treasure of information retrieval. If combined to the enterprise initiatives and compose an integrated promotional strategy the effect on the interested persons would be tremendous. This is because the origin of information is not questioned and the interest of the visitors is exaggerated over the services provided for experiences.
- Due to the subject of the product, a marketing strategy towards keen organizations could attract the interest of more people than that when addressed to the general public. The focused publicity takes advantage of the willingness of the target group to attain a better position or self image in the society of origin. Inside these organizations word of mouth and experience sharing have tremendous effect to others.

Valuing the effect of triple bottom line we could claim that distribution channels:

- have strong impact on economic affairs as they evolve comprehension of economic activity and convergence towards a joined market
- have neutral impact on ecologic affairs as activities as economic activities produce outputs with CO<sub>2</sub> footprint nevertheless this could be limited
- have positive impact on societal affairs as it distributes profit to stakeholders as well as maintaining a good image of the local culture

#### (b) Revenue streams

The enterprise profit comes directly from the participants by their contribution fee. As such a mechanism should be established to collect and deliver the money to the enterprise. The mechanism takes advantage of modern ICT technologies but basically the key actors mentioned earlier.

- fees payable at the point of origin (tour operators)
- fees payable at the point of awareness (web site)
- fees payable at the point of offering (on site)

The price of the product should be calculated on the below facts:

- participants are willing to pay for a sufficient experience no matter the cost
- they majority has a certain though low level of buying power
- they combine the alternative product with traditional visits to a place, meaning they share cost with accommodation and travel

As from the above the price of the product could be established according to the seasonality as well as to the importance of the offered services.

Valuing the effect of triple bottom line we could claim revenue streams:

- have neutral impact on economic affairs as long as the product price remains in affordable for the majority of the customers levels
- have neutral impact on ecologic affairs as long as payment methods follow traditional ways
- have negative impact on societal affairs as profiting on religious aspects has serious effect on people's opinion

(c) Cost structure

Costs are based on production, operational and other.

Production costs incorporate

- contracts with key partnerships,
- acquisition of key resources or licensing for their usage,
- infrastructure for storing and maintaining required resources and information

Operational costs include:

- guide/escort reimbursement
- enterprise's office and equipment supply and services (power, etc)
- staff salaries
- marketing campaign and publication materials cost
- financing cost and cost of money
- certifications and regulations compliance

Other cost include

- insurances
- sales returns – cancellations
- reserves
- image building and corporate social responsibility

Valuing the effect of triple bottom line we could claim that cost structure:

- have neutral impact on economic affairs as long as costs are compatible with revenues
- have neutral impact on ecologic affairs to the extend that business model keeps up with operational standards
- have positive impact on societal affairs as it supply market with job opportunities share revenues' share.

### **Business Model Canvas completion and interpretation**

The following picture sums up the findings of the business model analysis and presents them in a compact manner. As it can noticed, the cluster with most extend is the supply one, followed by customer and synergies. This means that the supply cluster should gain more attention during the operation of the business so as the model to prosper. This heterogeneous dependence leaves little room to the entrepreneurs to operate their business. Further more, they are addressed to a mature market where opportunities to start up are great but profitability is stagnant due to competition. Furthermore, we should also consider the quality characteristics that an extrovert business should meet. The key area that an alternative tourism model focusing on religious cultural paths could attain sustainable market entrance is that it achieves coherence with customers' preferences and integration with local destination characteristics. As a conclusion the most critical cluster of the canvas is that colored blue, the customer one, where the destination image is built up.

<b>Key Partners</b> <ul style="list-style-type: none"> <li>•Cultural Center or Monument operator</li> <li>•Transportation operator</li> <li>•Guides and escorts</li> <li>•Service providers</li> <li>•Souvenirs and product merchants</li> </ul>	<b>Key Activities</b> <ul style="list-style-type: none"> <li>•Address main religious characteristics</li> <li>•Collect information</li> <li>•Chart the path</li> </ul>	<b>Value Proposition</b> <ul style="list-style-type: none"> <li>•Enhance knowledge on religious matters</li> <li>•Experience through participation</li> <li>•Spiritual uplift</li> </ul>	<b>Customer Relationships</b> <ul style="list-style-type: none"> <li>•Guided tours</li> <li>•Participation in ceremonies</li> <li>•Events witnessing</li> <li>•Documentation</li> </ul>	<b>Customer Segments</b> <ul style="list-style-type: none"> <li>•Elder people</li> <li>•Religious oriented people</li> <li>•Experience oriented people</li> <li>•Tourists</li> </ul>
<b>Key Resources</b> <ul style="list-style-type: none"> <li>•Discrete thematic orientation</li> <li>•Comfortable transition</li> <li>•Sufficient knowledge background</li> </ul>			<b>Distribution channels</b> <ul style="list-style-type: none"> <li>•Tour operators</li> <li>•Informational web sites</li> <li>•POIs web portals</li> </ul>	
<b>Cost structure</b> <ul style="list-style-type: none"> <li>•Production costs</li> <li>•Operational costs</li> </ul>			<b>Revenue streams</b> <ul style="list-style-type: none"> <li>•Tour operators and other mediators</li> <li>•Web site and online booking</li> </ul>	

**Figure 2 Produced Business Model Canvas**

### TBL application

Another perspective is the effect of the triple bottom line in the enterprise sustainability. As shown in the above analysis, there are areas of positive (+), negative (-) and neutral (=) impact. The strongest and weakest areas of the business model are listed in the following table.

**Table 1TBL sustainability evaluation results.**

	1.a value proposition	1.2 Value proposition	1.c Customer relationships	2.a Key resources	2.b Key activities	2.c Key partnerships	3.a Distribution channels	3.b Revenue streams	3.c cost structure
Economy	=	+	++	=	+	++	++	=	=
Ecology	+	--	+	--	=	-	=	=	=
Society	+	+	=	++	=	=	+	-	+

The block of key resources gathers the more diverse impact on business model survivability as it has all the kinds of effects but in exaggerated mode as well. An area of prosper is the cooperation of the enterprise with local economy through key partners and distribution channels. An area of concern is the key resources block and their implication with environmental impact. From economical point of view, the idea of alternative tourism in religious thematic areas has positive impact, while from societal point of view the only concern is the revenue model and its fairness to the goods it offers.

## Discussion on results

Looking at Global Sustainable Tourism Criteria (GSTC) vice versa, it is clear that an innovative business idea has certain constraints to overcome in order to become sustainable enterprise. Running through the 40 recommendation points we could stand on the following trying to consolidate a roadmap for the enterprises entering this market sector:

- point A.7 that elevates the convergence of the visitors with the destination
- point B.4 that merges sustainable development with local economy's outputs
- point C.1 mentioning behavioural guidelines and the expected impact to the destination, and
- D.2.5 regarding environmental friendly activities of the business process

These points integrate to the qualitative findings as well as with best practices proposed in literature [20].

From the quantitative analysis we may expect some figures. Nevertheless such figures cannot be drawn without a thorough market research. Focusing on tourists, with the mean of incoming visitors, we may figure out some numbers.

## Conclusions

In this paper we analysed the business process of an enterprise activated in alternative tourism and in particular in the thematic area of religious cultural paths. The process was described based on the business model canvas methodology in order to depict its major areas. Further more, the triple bottom line was introduced in order to measure the effect of the business process to the society applied, at the same way as SMEs do. The analysis concluded to qualitative results that illustrate the opportunity of the business sector. Quantitative analysis requires more data that may not be available at the moment of the paper composition.

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## Determinants of Tourism in Southern European Countries: A Gravity Model Approach

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### Abstract

*A steady progress of tourism brings many benefits for both the tourist origin and destination countries. This industry contributes directly and indirectly to the mitigation of poverty in the host countries, the enhancement of infrastructure, and the stimulation of trade flows and economic growth. The travel and tourism sector helps in new job opportunities for the local communities in numerous different areas. It also encourages a cultural exchange among the home and host populations, and contributes to the conservation of local traditions and historic and archaeological sites.*

*The main objective of this work is to identify the most important demand and supply factors of international tourism flows to Southern European (SE) Countries, given the relevant role of tourism on the respective economies. We estimate an original gravity equation, which includes classic and experimental independent variables. According to the gravity theory, the response variable, which is a flow of assets, goods or humans, depends on some factors related to the origin and destination countries, and other factors that approximate the corresponding distance. Tinbergen (1962) and Pöyhönen (1963) were the first authors to apply the gravity theory to international trade flows. Since then, a significant number of authors have estimated the gravity equations to explain trade, migration, foreign direct investments or tourism flows. The resulting coefficient of determination for these equations is usually high, an evidence of a high explanatory power.*

### JEL CLASSIFICATION CODES

C23, Z32

### KEYWORDS

Southern European Countries, gravity models, tourism

### Introduction

A steady progress of tourism contributes directly and indirectly in gross domestic product growth and plays a crucial role in the creation of new jobs and business opportunities. The development of tourism is positively related with the enhancement of infrastructure, which is a benefit for local communities. This industry helps in the diversification of the economy and increases governments tax revenues. On the other hand, tourism also implies many social benefits for hosting countries such as an increased cultural exchange, and the preservation of local traditions and archaeological resources.

According to many scientific works and official reports, Southern Europe, also called Mediterranean Europe, includes France, Spain, Malta, Italy, Albania, Greece, Turkey, Croatia, Portugal, Montenegro and other smaller countries such as Gibraltar, San Marino, Andorra and Vatican. The definition of this area is based on several common economic, political, geographic and cultural characteristics. The world annual growth of international tourism was about 7% in 2017, the highest value in 7 years. Europe remains the continent with the highest number of tourists, with an annual growth of 8% in 2017, whereas Southern and Mediterranean European countries experienced a remarkable growth of 13% in the same year. France, Spain and Italy ranked among the 5 most visited destinations in the world, with respectively about 83 million, 76 million and 52 million visitors in 2017.<sup>2</sup>

The main objective of this work is to identify the most important determinants of international tourism flows to SE countries, given the relevant role of tourism sector on the respective economies. We describe in section 2 the gravity model, based on the Newton's law of universal gravitation, and its applications to trade, migration, tourism etc. Section 3 continues with the empirical applications of the gravity theory and the estimation of a gravity model for tourist arrivals in SE countries. We report in section 4 the concluding remarks.

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<sup>2</sup> World Tourism Organization (UNWTO) data, 2018.



### Gravity theory and tourism

After realizing the positive impact of tourism on economic and social development, there is a natural need to identify the possible determinants of tourism flows, valid for the relevant policy-makers. The number of international tourists may be affected by social and cultural variables, such as the population structure and lifestyle; economic variables such as income (in the origin and destination countries), bilateral trade, exchange rate, tourism marketing and (relative) prices; technical variables, such as, technology advancement, infrastructure condition, security at the destination and geographical distance between the respective countries; and some other variables more complex to be anticipated, such as, possible political conflicts, meteorological conditions and natural catastrophes.

We apply in this work the gravity theory for explaining international tourism flows. The Newton's law of universal gravitation states that the gravitational force between two objects is directly proportional to the product of their masses and inversely proportional to the square of the corresponding distance. We have:

$$F_g = G \frac{m_1 m_2}{r^2}$$

where  $F_g$  is the gravitational force between objects 1 and 2,  $G$  is the gravitational constant,  $m_1$  is the mass of the first object,  $m_2$  is the mass of the second object and  $r$  is the distance between the objects. In the gravity model of tourism, countries substitute the objects, whereas masses can be estimated by indicators of the size of economy or populations. In this case we have:

$$FLOW_{ij} = C \frac{M_i^\alpha M_j^\beta}{DIST_{ij}^\gamma}$$

where  $FLOW_{ij}$  is the tourism flow from the origin country  $i$  to destination country  $j$ ,  $M_i$  is the economic mass of origin country  $i$ ,  $M_j$  is the economic mass of destination country  $j$ ,  $DIST_{ij}$  is the bilateral distance, whereas  $C$ ,  $\alpha$ ,  $\beta$  and  $\gamma$  are coefficients that can be estimated through different econometric techniques. We take into consideration the logarithmic transformation of the above equation and include the error term  $\varepsilon_{ij}$ , which is given by the difference between the observed dependent variable and the respective estimated value. The linear relationship between the dependent variable and the explanators is useful for several estimation methods in econometrics. We consider the following theoretical model:

$$\ln(FLOW_{ij}) = C + \alpha \ln(M_i) + \beta \ln(M_j) - \gamma \ln(DIST_{ij}) + \varepsilon_{ij}$$

Tinbergen (1962)<sup>3</sup> and Pöyhönen (1963) were the first authors to apply the gravity theory to international trade flows. According to Tinbergen (1962) model, bilateral trade flows depend on the respective economic sizes, which were estimated by the gross national products (GNPs), and the corresponding distance, as an estimator of transportation costs. The author also tested other independent variables related with trade policies and the existence of a common border, respectively. After the logarithmic transformations of variables, the author estimated different linear equations, obtaining, on average, a high proportion of explained variance ( $R^2$  of 0,8). The signs and the respective effects of economic sizes and of distance were consistent with theoretical expectations, whereas in most cases the variables of trade policies and of common border were statistically insignificant. Pöyhönen (1963) also affirmed that trade flows between two countries are positively related to the respective sizes and negatively related to the distance. Since then, a significant number of authors have estimated and tested the gravity equations for different types of international flows, such as, tourism, foreign direct investments, bilateral trade, migration and tourism. There is still a necessity for further theoretical and empirical knowledge regarding the determinants of international tourism demand.

### Empirical analysis

Only a relatively small number of works have been done in order to estimate the gravity models of tourism or the quantitative relations between SE tourism inflows and the corresponding explanatory variables. Crouch (1994) analyzed the practices of 85 empirical studies of international tourism

<sup>3</sup> In 1969, Jan Tinbergen and Ragnar Frisch won the Nobel Prize in Economics "for having developed and applied dynamic models for the analysis of economic processes".

demand and concluded that there is a great number of independent variables to take into account, depending on home and host countries, the considered sample and data frequency, etc.

Khadaroo and Seetanah (2007) analyzed the role of transport infrastructure in international tourism functions. Results showed that the number of tourists from America, Europe and Asia is strongly related to Mauritius transport infrastructure. Tourist income, bilateral distance and relative prices are also important variables in the tourism demand equation. Fourie and Santana-Gallego (2010) estimated a gravity model of tourism flows for 200 countries from 1995 to 2006 and evidenced the direct benefit of the *mega-events* in tourism inflows. The authors concluded this type of events stimulate tourism but the profit is dependent on the type of mega-event, the involved countries, the level of development of the organizing country, and the period of the year when the event takes place. Culiuc (2014) analyzed the impact of macroeconomic supply and demand tourism factors for a huge number of hosting countries through the gravity theory. The author affirmed that the gravity model explains tourism flows better than goods trade for identical equations. Furthermore, the GDP of the origin country parameter is lower than for goods trade. Results showed that both tourist arrivals and durations of stay are strongly related to the destination country's real exchange rate. The parameters of GDPs of the two economies, real exchange rate and bilateral trade are higher in the case of OECD countries, because of the larger share of business travel. Results also indicated that tourism to small islands is less dependent to changes in the host country's real exchange rate, but more sensitive to the existence of direct flights. Santeramo and Morelli (2015) studied the international demand for agritourism in Italy through the gravity theory. The authors estimated a panel data quantile regression using data of thirty-three countries of origin from 1998 to 2010. Results confirmed the statistical significance of income, distance, mutual agreements and urbanization rates in origin countries on the number of incoming tourists. Kaplan and Aktas (2016) estimated a gravity model for Turkish tourism inflows applying the Poisson Pseudo Maximum Likelihood (PPML) method, which takes into account the heteroscedasticity problem. The authors concluded that incomes in home and destination countries are positively related to tourism demand, whereas the bilateral distance and negative events such as the 2008 global financial crisis and the 2010 Arab Spring crisis impact negatively the tourism inflows. Zhang, Li and Wu (2017) analyzed the effects of Hofstede's six cultural dimensions on international tourist flows. The authors estimated a panel data gravity model for the number of tourists between 81 origin countries and 32 host countries from 1995 to 2008. Results indicated that tourism flows are higher in countries with higher Individualism, lower Power Distance, lower Masculinity, higher Indulgence and higher Long-Term Orientation.

We estimate in this section a particular gravity equation for SE international tourism flows, including basic and new explanators. The basic gravity equation includes the population or economic sizes and the distance between the origin and destination countries, which approximates tourism costs. We estimate the corresponding country sizes through the Gross Domestic Products (GDPs) per capita. We consider the following gravity model of tourism, where the variables are expressed in natural logarithm. The equation includes the error term  $\varepsilon$ , which follows a known distribution with a expected value and constant variance.

$$\begin{aligned} flow\_odt = & \alpha_1 + \alpha_2(gdpcap\_ot) + \alpha_3(gdpcap\_dt) + \alpha_4(tiims\_dt) + \alpha_5(psavt\_dt) \\ & + \alpha_6(dist\_od) + \alpha_7CURR\_od + \alpha_8CLIMA\_od + \alpha_9BORDER\_od + \varepsilon\_odt \end{aligned}$$

Table 1 shows the definition and expected sign for the considered variables. We include in our sample tourist arrivals from the 15 most important origin countries, which constitute almost 70% of all international visitors to the considered SE countries for the selected time period. The model has been estimated for the following destination countries from 2007 to 2017: France, Spain, Italy, Albania, Greece, Turkey, Croatia, Portugal, Montenegro. International tourists arrivals were sourced from the respective national statistical offices. Indicators of political stability and absence of violence/terrorism, GDP and population data were gathered from the World Bank. Bilateral distances between destination and origin countries were collected from the CEPII GeoDist database (Mayer and Zignago, 2011). Transport infrastructure investments and maintenance spending data were gathered from the Organisation for Economic Co-operation and Development (OECD). The 'climate similarity' dummy variable is based on the Köppen-Geiger climate classification system.

Table 1. Variables definition and expected sign.

<b>Variable</b>	<b>Definition</b>	<b>Expected sign</b>
<i>flow_odt</i>	<i>Natural logarithm of tourism flow from origin o to destination d year t.</i>	<i>Dependent variable</i>
<i>gdpcap_ot</i>	<i>Natural logarithm of GDP per capita in origin o at year t.</i>	+
<i>gdpcap_dt</i>	<i>Natural logarithm of GDP per capita in destination d at year t.</i>	+
<i>tiims_dt</i>	<i>Natural logarithm of transport infrastructure investment and maintenance spending in destination d at year t.</i>	+
<i>psavt_dt</i>	<i>World development indicator of political stability and absence of violence/terrorism in destination d at year t.</i>	+
<i>dist_od</i>	<i>Natural logarithm of the distance between origin o and destination d.</i>	-
<i>CURR_od</i>	<i>A dummy variable that equals one if the respective origin and destination countries share the same currency, and equals zero otherwise.</i>	+
<i>CLIMA_od</i>	<i>A dummy variable that equals one if the respective origin and destination countries have a similar climate, and equals zero otherwise.</i>	+ or -
<i>BORDER_od</i>	<i>A dummy variable that equals one if the respective origin and destination countries share the same border, and equals zero otherwise.</i>	+

We report in table 2 the estimated coefficients, the corresponding p-values and the adjusted R-squared of the estimated models. We consider two estimation techniques for panel data, fixed effects and random effects, respectively. In the case of the fixed effect estimation, we determine the effect of time-varying predictor variables, assuming that each country-pair has some specific features that can impact the explanatory variables. This means that we have correlation between the error term and the predictor variables. By applying the fixed effect method, we eliminate the impact of these (fixed) individual features that do not depend on time and evaluate the influence of the explanatory variables on tourism flows. On the other hand, the random effect technique is based on the assumption that the variation between country-pairs is unsystematic and it is not correlated with the explanatory variables. In this case, we determine the effect of variables that do not vary with time, as well. The coefficients are statistically significant at 5% level for both the estimation methods, whereas the adjusted R-squared is higher in the case of the fixed effects model. Variables signs follow theoretical expectations and are similar to other studies (e.g. Marrocu and Paci, 2013; Chasapopoulos, den Butter and Mihaylov, 2014; Santeramo and Morelli, 2015; Kaplan and Aktas, 2016; Zhang, Li and Wu, 2017).

Table 2. Estimated coefficients, p-values and adjusted R-squared of the estimated models.

<i>Dependent variable: flow_odt</i>				
	<i>Fixed Effects (FE)</i>		<i>Random Effects (RE)</i>	
<i>Supply-side variable</i>	<i>Estimate</i>	<i>Pr(&gt; t )</i>	<i>Estimate</i>	<i>Pr(&gt; t )</i>
gdpcap_dt	0,908	0	0,694	0
tiims_dt	0,383	0,002	0,319	0,003
psavt_dt	0,217	0	0,194	0
<i>Demand-side variable</i>	<i>Estimate</i>	<i>Pr(&gt; t )</i>	<i>Estimate</i>	<i>Pr(&gt; t )</i>
gdpcap_ot	0,635	0	0,873	0
<i>Frictions</i>			<i>Estimate</i>	<i>Pr(&gt; t )</i>
dist_od			-1,8	0
CURR_od			0,06	0,015
CLIMA_od			-0,18	0,009
BORDER_od			1,4	0
<i>Constant</i>			3,85	0
<i>Adjusted R<sup>2</sup></i>	0,591		0,683	
<i>Observations</i>	1485		1485	

### Concluding remarks

The main objective of this work is the identification of SE countries tourism determinants through the gravity theory. Our equation includes basic and experimental independent variables and it was estimated by two well-known methods for panel data: fixed effects and random effects. The considered sample constituted about 70% of the total tourism arrivals in the considered SE countries over the period 2007 - 2017. Empirical results showed that international tourism flows to SE countries are positively related to GDPs per capita in origin and destination countries, transport infrastructure investment and maintenance spending, political stability and absence of violence/terrorism. Furthermore, dummy variables related to the existence of common borders and currencies were also statistically significant and positive. On the other hand, the tourism demand for SE countries is negatively related to the distance between origin and destination countries, and the respective climate similarities. The adjusted R-squared for the fixed effects and the random effects model were 59% and 68%, respectively, showing a relatively high explanatory power of the estimated equations.

The industry of tourism contributes to the economic growth, new job opportunities and social development of SE countries. Authorities and policymakers of SE countries should stimulate the competition in the tourism sector, increase the investments in infrastructure and contribute to political stability in order to increase the number of international visitors in the region.

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## **The Relationship between Leadership Behaviors and Job Satisfaction: The Case of Athens Municipal Sector**

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### **Abstract**

**Background:** *Effective leaders act in ways that have an impact on their subordinates and the organization as a whole. They are able to see the results of their actions, make a difference and be confident in their own abilities. A basic premise is that the leader's way of thinking, acting, and personality characteristics are critical factors affecting the employees' level of satisfaction, motivation, and performance. The objective of the study is to explore the relationship between leadership behaviors and job satisfaction.*

**Methods:** *Data were collected from 21 department managers and 229 employees in the City of Athens Cultural, Sports, and Youth Organization, 126 of them were women and 124 men aged from 29 to 63 years old.*

**The results:** *The results indicated that department managers and employees adopted a transformational, rather than a transactional leadership behavior, with significant differences in terms of gender, work experience, and tenure. Concerning job satisfaction, employees reported a moderate level of job satisfaction regarding the nature of work and the relationship with co-workers, being the most important dimensions. Job satisfaction was found to be affected by gender, age, educational background, marital status, and tenure. In addition, findings revealed a significant positive relationship between transformational and transactional leadership behaviors and job satisfaction.*

**Conclusions:** *The findings add new knowledge that can be used to improve organizational practices for the retention of high committed and satisfied staff members in the municipal service sector.*

**Key words:** *Leadership, transformational leadership, job satisfaction, municipal organization*

### **JEL classification CODES :**

*H83 Public Administration • Public Sector Accounting and Audits*

*O15 Human Resources • Human Development • Income Distribution • Migration*

### **Introduction**

Performance management has become a central priority for public organizations in OECD countries since the late 1980s under the New Public Management (NPM) movement. Transformation is a challenge and an opportunity to adapt to the continuous changes and improve organizations efficiency level by implementing goal alignment, which in turn increases employee motivation at all levels (Cunningham, 2016). Key institutional drivers of efficiency seem to be the functional and political decentralization, the appropriate human resource management policy and the increments of the operations scales (Currstine, Lonti & Joumard, 2007). Several environmental factors and challenges stand out in public context, such as political influence, increased bureaucracy, unclear goals, problems of coordination and collaboration, strong commitment to the public good and focusing on results (Burg-Brown, 2016; Akrivos & Koutras, 2009; Morse, Buss & Kinghorn, 2007).

On the other side, the New Public Service model emphasizes the increasing role of public administrators in achieving an optimal organizational performance and change (Muterera, Hemsworth, Baregheh & Garcia-Rivera, 2018; Hansen & Villadsen, 2010). One of the most important roles of public leadership is to create a common vision that influences employees in achieving the goals of the organization (Northouse, 2007). Within this concept, the distribution of leadership among all levels of the organization's hierarchy (Hall & Lord, 2005) maintains open lines of communication with employees (Aronson, Sieveking, Laurenceau & Bellet, 2003), and ensures joint work and shared accountability (Morse, Buss & Kinghorn, 2007). In the public sector, managers face the increased need for change and adaptation in order to deliver valuable services to the citizens. Change-oriented leadership behaviors have been found to improve the performance level of public organizations and increase job satisfaction (Fernandez, 2008; Rad & Yarmohammadian, 2006).

### *Leadership styles in public sector*

A substantial number of studies and meta-analysis in the public setting distinguished two major leadership styles, the transformational (Andersen, 2010; Hansen & Villadsen, 2010; Lowe, Kroeck & Sivasubramaniam 1996) and the transactional leadership (Akrivos & Koutras, 2009). The key assumption of transformational leadership is that it tends to be one of the most reliable predictors of desirable performance outcomes, not only on an individual level, but also in teams and in organization as a whole (Wang, Oh, Courtright & Colbert, 2011). Leaders that adopt transformational behaviours, have the ability to motivate and encourage followers to challenge their assumptions by making suggestions and generating new ideas (Avolio, Zhu, Koh & Bhatia, 2004). A main consequence of these leadership behaviors is to expect the motivation of employees to achieve performance beyond expectations, to facilitate creative thinking (Gong, Hung & Farh, 2009) and the creation of a strong commitment to change the organization's goals and strategy (Van Wart, 2014). One of the most determinant leader's roles in influencing the employee's willingness to cooperate is the quality of interpersonal relationships (Vigoda-Gadot & Beerli, 2011; Polychroniou, 2008). By adding those change-oriented behaviours of the followers, they are encouraged by exchange relationships and actions that support their needs and increase the sense of fulfilment of job duties.

There is evidence that government leaders, rather than business leaders, frequently engage in directive intellectually stimulating transformational behaviours (Arnold & Loughlin, 2013). Also, results have indicated that federal managers are perceived to exhibit high average of leadership behaviours that are related to individual consideration and low average of inspirational motivation (Trottier, Van Wart & Wang 2008).

According to employee's behavior and competence, the transactional leadership style is structured around reward or punishment (Xiaoxia & Jing, 2006). Transactional leaders are operating within and according to the framework of an existing system or culture, without trying to change. They introduce a strong sense of vision, work with the organization's culture, and follow existing rules, procedures, and operational rules (Van Wart, 2014; Bass & Avolio, 1993). Public managers appeared to use a combination of aspects of transactional and transformational leadership, when dealing with unique circumstances and environments (Aldoory & Toth, 2004). Finally, those managers who adopt passive leadership behaviors appeared to have provided very little or no supervision to their subordinates and let them have the freedom to carry out their assigned tasks without direct supervision (Wu & Shiu, 2009).

Several studies have examined the relationship of gender, age, education and other work experience variables, such as tenure and experience. As stated in Eagly, Johannesen-Schmidt and van Engen, (2003) findings, older and more experienced women seem to exhibit more transformational leadership behaviors than men. In particular, employees of both genders have rated women leaders' transformational behaviors, such as charisma and individualized consideration, which appear more frequently on average than men (Bass, Avolio & Atwater, 1996). It is further supported that younger but tenured employees are more likely to be engaged in change-oriented citizenship behaviors (Vigoda-Gadot & Beerli, 2011). Similarly, Rasor (1995) found that younger leaders received higher evaluations by superiors and subordinates, and Vecchio and Boatwright, (2002) added that employees with a higher educational level and greater job tenure preferred less task oriented leadership behaviors.

### *Employee satisfaction in public sector & factors affecting the satisfaction level*

Employee satisfaction in relation to the organization is considered as one of the most important factors for organizational success. In order to achieve goals and objectives, the organization creates a strong and positive relationship with the employees and directs their efforts towards high performance achievement (Vermeeren, Kuipers & Steijn, 2014; Moynihan & Pandey, 2007). The level of satisfaction is influenced by the extent to which the job and working environment meet the needs, desires and expectations of the employees. Employees through high exchange relationships perceive that the organization cares about their well-being and appreciates their contributions (Gould-Williams, 2007).

As job satisfaction is considered a multi-dimensional concept, it consists of a great variety of organizational and personal determinants. A great number of different job attitudes is perceived to be of greater value or worth to employees. Some examples are the actual work, the freedom to take initiatives, the degree of participation in decisions, opportunities for career development, promotion at work and recognition (Herzberg, Mausner & Snyderman, 2011).

According to Robbins, Judge and Langton, (2013), the number of organizational determinants can be classified into four primary categories. The first category is related to the level of how mentally challenging the work is, including working components such as offering employees a variety of duties, feedback and high levels of autonomy, as well as opportunities to use their skills and abilities. Public managers seem to value work environments that encourage high personal autonomy and participation in decision-making. It is argued that job autonomy is positively related to more participative leadership behaviors and lower levels of job autonomy to more directive leadership behaviors (Hansen & Villadsen, 2010). Furthermore, greater task communication and job autonomy were found to positively affect employee feelings of physical and mental level of employee engagement (Tummers, Steijn, Nevicka & Heerema, 2016) and less intent to quit the job (Lin, Lin, Lin & Lin, 2013). Also, the same authors (Lin, Lin, Lin & Lin, 2013) found that higher educational level and permanent staff were positively related to job autonomy, as well as older employees and those with high organizational tenure who had lower intention to leave their job.

Empirical research that examined the organizational variables that determine the employees' level of satisfaction in public organizations identified mission valence as the most significant, as well as the commitment to the organization, the person-job fitting, the work flexibility, the level of innovation, and the degree of involvement and trust (Cantarelli, Belardinelli & Belle, 2016). Additionally, the assumption of person-organization fit was found to partially mediate the relationships between work environment and job satisfaction (Langer, Feeney & Lee, 2017; Kim, 2012; Wright & Pandey, 2008).

The second category of determinants refers to salary and reward systems. Employees expect fair, reasonable and equitable salaries and rewards based on job demands and individual skill level. Research findings in public sector confirmed that job aspects of pay and promotion have a significant and positive impact on employees' job satisfaction level. Managers increased their work effort in exchange of a fair salary for their efforts (Zahoor, Rafiq, Zia & Rizwan, 2014).

The third category is associated to the ideal working conditions, including all those quality-related work environment conditions such as lighting, clearness, temperature and noise that provide a feeling of safety and comfort. Based on Parvin and Kabir (2011) results, the dimension of work conditions proved to have significant influence, which appeared as the second most important factor of job satisfaction.

Work group is considered as the last determinant. Many employees consider the opportunity for social interaction with friendly and supportive coworkers and supervisors of great importance. According to a research conducted by Parvin and Kabir (2011), employee satisfaction depends largely on relationship with the group members, which is recognized as the highest perceived job satisfaction contributor. Significant contributors that affect the professional pride of employees' job are work related factors such as receiving social support, supervisory mentoring, and the sense of job security. In other words, the degree to which an individual appreciates the subject of the job plays a significant role in his/her level of satisfaction (Borst & Lako, 2017; Gould-Williams, 2007). Additionally, in the municipality sector, Vermeeren, Kuipers and Steijn (2011) recognized the significant effect of the supervisor role at the overall job satisfaction.

Furthermore, many researchers studied the impact of personal determinants on job satisfaction. It seems that powerful predictors of job satisfaction include the educational level and the professional membership. For instance, several studies (Moynihan & Pandey 2007; Steijn, 2004; Wright & Davis, 2003) suggested that higher levels of education and long organizational membership affect the level of job satisfaction. The significant role of the organizational tenure was also mentioned in a research conducted among civil servants (Kim, 2012), where the more experienced employees reported greater levels of satisfaction in their jobs and committed to the organization. Similar results in federal employees (Grissom, Nicholson-Crotty & Keiser, 2012; Park & Rainey, 2008) supported gender differences in the perceptions of job satisfaction with females being more satisfied than males. Finally, Wright and Davis (2003) recognized the significant influence of age on job satisfaction, as they noticed that the levels of job satisfaction increased in ages 20-25, because of the greater amount of enthusiasm and decreased during the fourth decades (30-40 years old).

#### *Correlation between perceived leadership behaviors and job satisfaction*

The influence of leadership styles on employee job satisfaction is confirmed by several studies in the public sector. Positive leader behaviors that promote support and feedback, developing trust and acting with integrity are related to employees' affective well-being and less stress (Skakon, Nielsen,



Borg & Guzman, 2010). For example, in Ethiopian Public Universities it was found that among the three leadership styles, only the transformational leadership style had a clearly positive significant effect on faculty job satisfaction. Academic staff expressed their preference for transformational leadership behaviors that seemed to increase their degree of autonomy (Kebede & Demeke, 2017). Similar findings within U.S. government agencies revealed that perceived level of CEO transformational leadership behaviors have a great impact on a subordinate's job satisfaction levels and well-being (Muterera, Hemsworth, Baregheh & Garcia-Rivera, 2018) and greater contribution to predicting or clarifying organizational performance rather than in the case of the transactional leadership style (Burg-Brown, 2016). It is further supported that those subordinates who perceived their leaders as transformational ones, appeared to be highly motivated to exert extra-role behaviors, feeling more committed and loyal to the organization and providing voluntary help on their co-workers (Bottomley, Mostafa, Gould-Williams & León-Cázares, 2016).

Additional evidence of the significant role of leadership style on employees' satisfaction is provided by Vermeeren, Kuipers and Steijn (2014) in Dutch municipalities. In particular, stimulating leadership style of supervisors appeared to have an important positive effect on employees' degree of satisfaction, while the correcting leadership style had a negative effect. According to authors, a stimulating leadership approach reflects the treatment of employees by paying attention to their values and needs. In this regard, Voon, Lo, Ngui and Ayob (2011) identified the most distinguished transformational behaviors that influence job satisfaction components. Apart from all four dimensions of transformational leadership, only contingent reward and active management, by exception, dimensions of transactional leadership, appeared to be positively related to working conditions, work and assignment satisfaction.

#### *Objectives of the Study*

The primary goal of the study is to explore the relationship between leadership behaviors and job satisfaction in a municipal context applying the Full Range Leadership Model. In order for this goal to be achieved, the following five research questions were addressed in this investigation: (1) Which leadership style is exhibited most frequently by department supervisors, as perceived by their subordinates? (2) Are employee perceptions of leadership style being affected by demographic variables? (3) Which job satisfaction dimensions are exhibited most frequently? (4) Is employee's satisfaction level being affected by demographic variables? (5) Is there a positive relationship between perceived leadership behaviors and job satisfaction?

#### **Methods**

##### *Sampling*

The target population for this study included the employees of Athens Municipal sector (N = 830). A total of 310 questionnaires were collected in the period from April 2017 to May 2017 and only 250 questionnaires (52% RR) were valid. Out of the total number of respondents, 229 were employees and 21 directors, of whom 126 were female and 124 male, with an average of age ( $M = 44.66$ ) and the majority 34,8% belong to the age group of 41-45 years old.

##### *Questionnaire*

For the purpose of this study, two measurements scales were used. To capture perceptions of leadership, a 36-item scale of the Multifactor Leadership Questionnaire (MLQ) was used, which developed by Avolio and Bass (2004). Employees rated how often their supervisor showed the specific behaviors on a 5-point Likert-type scale, ranging from (0 = Not at all) to (4 = Frequently if not always). It measures three categories of leadership behaviors: transformational (20-items,  $\alpha = .948$ ), transactional (8-items,  $\alpha = .744$ ) and passive -avoidant leadership (8-items,  $\alpha = .858$ ). More specifically, transformational leadership consisted of the following five sub-scales: (1) idealized influence –attributes, (2) idealized influence –behavior, (3) inspirational motivation, (4) intellectual stimulation, and (5) individual consideration. In addition, the following two sub-scales were used to measure transactional leadership: (1) contingent reward and (2) management by exception – active. The scales that measure passive - avoidant leadership appeared to be: (1) management by exception - passive and (2) laissez - faire leadership.

Job satisfaction was measured using items from the following three existed scales: (1) The JDI (Job Descriptive Index, Smith, Kendal & Hulin, 1969), (2) The MSQ (Minnesota Satisfaction Questionnaire, Weiss, Dawis, England & Lofquist, 1967), and (3) and JSS (Job Satisfaction Survey,

Spector, 1985). The total number of questions was 16 including five factors: relationship with co-workers ( $\alpha = .765$ ), nature of work ( $\alpha = .728$ ), opportunities for skills and personality development ( $\alpha = .737$ ), salary and evaluation ( $\alpha = .775$ ); and work conditions and safety ( $\alpha = .708$ ). Responders were asked to rate the extent to which they agree or disagree with each attribute using a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Moreover, the first part of the questionnaire included questions in relation to demographic characteristics of the respondents such as: gender, age, educational background, marital status and tenure.

The content validity of the questionnaire was determined by a panel of experts, which consisted of four academics and practitioners in the fields of management. The cronbach  $\alpha$  coefficient of the Multifactor Leadership scale was found to be  $\alpha = .858$  and the for job satisfaction scale  $\alpha = .866$ .

#### *Procedure*

Data were gathered through a questionnaire and responders took 10-20 minutes of an average for its completion. The participants were informed about the right to privacy and voluntary participation, the anonymity and confidentiality.

#### *Data Analysis*

Data were analyzed through the use of the Statistical Package of Social Science (SPSS) version 23.0 software. In the descriptive section of the results, means and standard deviations presented for each of the leadership and satisfaction factors were measured. In the inferential statistics section, all the research questions were tested. In order to test which factors affect the perceived leadership and job satisfaction, t-test and ANOVA analyses were used. To test the existence of relationship between leadership and job satisfaction, the Person  $r$  correlation was performed. The statistical significance of all measures was set at the .05 level of confidence.

### **Results**

#### *Demographic Data*

The total sample of this study consisted of 250 employees of Athens Municipal sector, 226 of whom were employees and 21 headmasters, with the majority being women ( $n = 126$ ). Their age ranged from 29 to 63 years old, and the majority belonged to the age category of 41-45 years old (34,8%). The 61,2% of the participants had a bachelor's degree, (32%) high school/vocational studies diploma and the rest 6,8% a master's degree. Depending on their working department, the greatest part of participants worked in sport ( $n = 101$ ), in music ( $n = 58$ ), in financial ( $n = 24$ ), in culture ( $n = 24$ ), in management ( $n = 22$ ), in the youth and vocational training center ( $n = 24$ ) and four in the legal assistance department. As for their marital status, the majority of the sample was married with children (50,4%). Regarding their work experience, more than half ( $n = 54$ ) had from one year up to five years experience, followed by those who had 12-14 years ( $n = 50$ ) and those from six years up to eleven years ( $n = 49$ ).

#### *Perceived leadership behaviors from subordinates perspective*

The most dominant leadership style of department supervisors, as perceived by their subordinates was the transformational one ( $M = 2,50$ ,  $SD = ,79$ ) with the highest rated behaviors being the idealized influence-behavior ( $M = 2,61$ ,  $SD = ,81$ ), followed by the idealized influence-attributes ( $M = 2,56$ ,  $SD = ,96$ ) and individual consideration ( $M = 2,51$ ,  $SD = ,90$ ). Referring to the idealized behaviors, public managers were perceived to focus on values and beliefs, instill a sense of purpose, take moral and ethical decisions and instill a collective sense of mission to their subordinates. Regarding their idealized attributes, they seemed to focus on the benefit of the group and show respect. With respect to individual consideration, managers appeared to recognize the individual needs-abilities-aspirations and emphasize on people coaching and development.

The second most frequent leadership style was the transactional one ( $M = 2,31$ ,  $SD = ,73$ ). Public managers appeared to exhibit higher levels of management by exception-active ( $M = 2,34$ ,  $SD = ,78$ ) and less contingent rewards ( $M = 2,28$ ,  $SD = ,84$ ). Distinguished behaviors of management by exception-active were monitoring for problems when they arise and correcting these proactively. Correspondingly, those managers who adopted contingent rewards behaviors were clarifying what subordinates can expect when goals were achieved and expressed their satisfaction of a success.

Finally, it was found that employees also perceived a lower degree of poor leadership behaviors ( $M = 1,34$ ,  $SD = ,86$ ), with their supervisors adopting passive ( $M = 1,54$ ,  $SD = ,92$ ) and avoidant behaviors ( $M = 1,14$ ,  $SD = ,92$ ). Such poor leading actions were perceived to be the avoidance of even taking action in problems on time or making decisions when needed.

#### *Norm Comparison of Subordinates' MLQ perceptions*

In this section, comparing the participants' leadership scores against norms and ideal scores that derived from Avolio and Bass (2004) was considered important. The gaps identified between the subordinates' reported behaviors and those behaviors that are distinctive through norms and ideal scores, were estimated to provide useful insight for future supervisor leadership development plans. The overall scores of transformational leadership proved lower than norms and dissatisfaction within the ideal score, with the greatest score of difference found in challenging the assumptions of subordinates' beliefs (-0,66) and in representation of a vision by the leader (-0,62). Similarly, in transactional leadership behaviors they also scored lower than the norms, with the greatest deviation in proving rewards (-0,8). Finally, municipal leaders seem to exhibit passive leadership behaviors more frequently by not taking action during problems on time (+0,31) and avoiding involvement (+0,26). Table 1 summarizes the results of the norm comparison among subordinates' leadership perceptions scores.

**Table 1** *Norm Comparison of Subordinates' MLQ perceptions*

MLQ Scale	Mean	Norm	Mean Difference	Ideal score
<b>Transformational</b>				>3.0 <3.75
Idealized Influence (Attributed)	2,56	2,66	-0,1	
Idealized Influence (Behavioral)	2,61	3,21	-0,6	>3.0
Inspirational Motivation	2,46	3,08	<b>-0,62</b>	>3.0
Intellectual Stimulation	2,46	3,12	<b>-0,66</b>	>3.0
Individual Consideration	2,51	2,87	-0,36	>3.0
<b>Transactional</b>				2-3
Contingent Reward	2,28	3,08	<b>-0,8</b>	>2.0
Management-by-Exception (Active)	2,34	2,43	-0,09	<1.5
<b>Passive/Avoidant Leadership</b>				0-1
Management-by-Exception (Passive)	1,54	1,23	<b>+0,31</b>	<1.0
Laissez Faire	1,14	0,88	<b>+0,26</b>	<1.0

0=never, 1=once in a while, 2=sometimes, 3=fairly often, 4=frequently if not always

#### *Differences in leadership behaviors based on demographic variables*

From the demographic characteristics, only gender, tenure and work experience seemed to differentiate the perceived leadership behaviors. Analytically, male subordinates perceived their supervisors use more frequently transformational  $t(214) = 2.21$ ,  $p = .028$  and transactional  $t(222) = 2.23$ ,  $p = .027$  leadership behaviors than female ones. Regarding tenure, it was found that work experience in the same position had a main effect on the transformational  $F(29,207) = 1,60$ ,  $p = .033$  and transactional  $F(30,214) = 1,62$ ,  $p = .028$  leadership behaviors. Furthermore, the total years of job experience had a significant effect on the transformational  $F(31,205) = 1,83$ ,  $p = .007$  and transactional  $F(31,213) = 1,61$ ,  $p = .027$  leadership behaviors.

#### *The most determinant dimensions of job satisfaction*

As for the analysis of the results, employees seemed to be overall satisfied on a great level ( $M = 3,55$ ,  $SD = ,52$ ). The respondents' most important determinants of job satisfaction were: the relations at work, either superior-subordinate relationships or/and colleague satisfaction ( $M = 3,95$ ,  $SD = 0,76$ ); the nature of work ( $M = 3,94$ ,  $SD = 0,76$ ) and the salary and evaluation ( $M = 3,34$ ,  $SD = 0,68$ ). The lowest satisfaction level was found to be in the following two dimensions: skills and personal development ( $M = 3,31$ ,  $SD = 0,71$ ) as well as work environment and safety ( $M = 3,21$ ,  $SD = 0,87$ ).

#### *Differences in job satisfaction based on demographic variables*

The overall job satisfaction level was greater in men ( $M = 3,63$ ) than women ( $M = 3,47$ ) [ $t(248) = 2.43$ ,  $p = .016$ ] in the following three dimensions (1) relations at work  $t(248) = 2.32$ ,  $p = .021$ , (2) skills and personal development  $t(248) = 2.05$ ,  $p = .041$ , and (3) and salary evaluation  $t(248) = 2.24$ ,  $p = .026$ . Moreover, it was found that age influenced the level of satisfaction in the dimension of salary and evaluation  $F(3, 246) = 3.22$ ,  $p = .023$ . More specifically, those employees aged 41- 45 were more satisfied than those aged 51-63. Similarly, in the dimension of work environment and safety  $F(3, 246) = 3.68$ ,  $p = .013$ , those employees who belonged to the age category of 41- 45 years, were more satisfied than those being 51 - 63 years old. Regarding educational background, it was found that it significantly affects their appreciation of nature of work  $F(2, 247) = 7.06$ ,  $p = .001$ , with graduates appearing more satisfied than postgraduates and high school graduates. Moreover, in the dimension of skills and personal development  $F(2, 247) = 4.31$ ,  $p = .014$ , as well as salary and evaluation  $F(2, 247) = 4.23$ ,  $p = .016$ , graduates were more satisfied than high school graduates. Marital status was also indicated from the analysis as having a significant effect on the dimension of relations at work  $F(3, 246) = 2.78$ ,  $p = .002$ , with those employees being married with children being more satisfied than single ones. Lastly, a significant effect of tenure was found in the dimension of work environment and safety  $F(4, 245) = 2.40$ ,  $p = .012$ , where employees with 12-14 years of experience in the same job expressed higher levels of satisfaction than those with 6-11 years of experience.

#### *Correlation between the perceived leadership behaviors and job satisfaction*

Finally, in an attempt to answer the fifth research question, regarding the perceived leadership behaviors, which relate to job satisfaction, Person  $r$  correlation coefficient was used. From the results of the analysis, there was a significant positive correlation between (a) the transformational  $r(250) = .45$ ,  $p < .01$  and (b) the transactional leadership  $r(250) = .42$ ,  $p < .01$  and job satisfaction. Those employees who perceived higher transformational and transactional supervisor's behaviors were more satisfied with their job. In addition, a significant negative correlation was found between passive leadership  $r(250) = -.34$ ,  $p < .01$  and level of job satisfaction, with employees that rank their supervisors as highly passive leaders being less satisfied with their job.

### **Discussion**

The main objective of the study was to explore the relationship between leadership behaviors and job satisfaction. In relation to the first research question, the descriptive statistics showed that department supervisors are perceived to exhibit higher levels of transformational rather than transactional competencies. The competences that seemed to stand out as the best ones were the Idealized Influence (behavioral) followed by the Idealized Influence (attributed). Supervisors are perceived to place greater emphasis on behaviors that instill pride in followers for being associated with the leader and to display a sense of power and confidence through a collective mission and a strong sense of purpose. The adoption of a more transformational leadership style than a transactional one in the public sector is consistent with the findings of previous studies (Andersen, 2010; Hansen & Villadsen, 2010; Lowe, Kroeck & Sivasubramaniam, 1996). However, the overall scores of transformational leadership proved lower than the norms and the ideal scores, with the lowest averages mentioned in competencies of intellectual stimulation and inspirational motivation.

Recognizing the importance of change oriented leadership behaviors such as the questioning of old assumptions and beliefs (Muterera, Hemsworth, Baregheh & Garcia-Rivera, 2018; Fernandez, 2008; Rad & Yarmohammadian, 2006), it is critical for public organization leaders to engage more in such behaviors that foster change in the lives of employees and their organizations. What is more important, is that transformational behaviors have been confirmed as having a significant input in the employees' well-being (Muterera, Hemsworth, Baregheh & Garcia-Rivera, 2018; Skakon, Nielsen, Borg & Guzman, 2010), the encasement of their degree of autonomy (Kebede & Demeke, 2017) and

their job satisfaction (Muterera, Hemsworth, Baregheh & Garcia-Rivera, 2018; Bottomley, Mostafa, Gould-Williams & León-Cázares, 2016; Vermeeren, Kuipers & Steijn, 2014).

Referring to the transactional leadership style, public managers appeared to exhibit much higher behaviors than the ideal scores, which were recommended based on Full Range Leadership Model. More specifically, which focus on irregularities and mistakes by monitoring subordinate performance and taking corrective actions in case of deviations. Correspondingly, they seemed to provide contingent reward lower than the norms. Taking into account that contingent reward and active management by exception competencies, are both positively related to working condition and work assignment satisfaction (Vermeeren, Kuipers & Steijn, 2014; Voon, Lo, Ngui & Ayob, 2011), it is crucial for public managers to increase the level of providing rewards and reduce their correcting leadership style approaches. Another interesting result was that public managers seemed to adopt high levels of passive leadership. In particular, they seemed to avoid intervening or accepting responsibility for subordinate actions. Such low quality relationships can cause low levels of job satisfaction, because passive/avoidant management is characterized as a reactive rather than a proactive way of leading. There is evidence that employees appreciate the level of task communication and job autonomy as they feel more engaged with the organization and more loyal (Tummers, Steijn, Nevicka & Heerema, 2016; Lin, Lin, Lin & Lin, 2013). Therefore, public managers should provide more supervision and task support to their subordinates by recognizing high levels of performance and intervene when needed, in order to prevent serious performance mistakes in their beginning. Thus, it is recommended for public managers to maintain open lines of communication with employees (Aronson, Sieveking, Laurenceau & Bellet, 2003), in a context of joint work and shared accountability (Morse, Buss & Kinghorn, 2007).

With regard to the second research question, it was found that gender, tenure and work experience significantly influenced the perception of leadership behaviors. Based on gender, it was men, rather than women who perceived their supervisors use more frequently transformational and transactional leadership behaviors. This is a surprising finding as the majority of studies supported that women exhibit higher levels of transformational leadership compared to men (Eagly, Johannesen-Schmidt & van Engen, 2003; Bass, Avolio & Atwater, 1996). Furthermore, it can be seen from the results that both tenure and the total years of working experience influenced the way that subordinates perceive transformational and transactional leadership behaviors. These findings are consistent with the existing bibliography (Vigoda-Gadot, Beerli, 2011; Eagly, Johannesen-Schmidt & van Engen, 2003; Vecchio & Boatwright, 2002).

The third research question investigated the most determinant dimensions of job satisfaction. As a result, the study herein showed that the overall job satisfaction score of public employees was high. In terms of the importance levels of each factor, the relations at work, the nature of work and salary as well as evaluation, were considered to be the most important ones. These results indicate, firstly, that relations among employees and with supervisors are recognized as the most determinant contributor of job satisfaction, which lies in accordance with previous findings (Vermeeren, Kuipers & Steijn, 2014; Parvin & Kabir, 2011; Gould-Williams, 2007; Moynihan & Pandey, 2007). Secondly, the nature of work was also found to positively affect the satisfaction level of public employees. Similar results that highlighted the significant role of the subject of the job exist in the respective bibliography (Borst & Lako, 2017; Gould-Williams, 2007). Particularly, a distinguished job attitude which appeared to be of greater value is the level of a mentally-challenging work which includes components such as a variety of duties, high levels of autonomy, as well as opportunities to use their skills and abilities (Tummers, Steijn, Nevicka & Heerema, 2016). The third most determinant job aspect was the salary and evaluation. Various researchers (Cantarelli, Belardinelli & Belle, 2016; Zahoor, Rafiq, Zia & Rizwan, 2014; Herzberg, Mausner & Snyderman, 2011) have confirmed the significant role of pay and promotion in employee satisfaction.

In relation to the fourth research question, among all the demographic variables, gender, age, educational background, material status, and tenure seemed to significantly affect the job satisfaction level. Similar differences have been further supported in the public sector based on gender (Grissom, Nicholson-Crotty & Keiser, 2012; Park & Rainey, 2008), age (Wright & Davis, 2003) and educational background (Moynihan & Pandey, 2007; Steijn, 2004; Wright & Davis, 2003). Finally, it was also found that tenure affected job satisfaction in the dimension of work environment & safety, with 12-14 year-old employees in the same job expressing higher levels of satisfaction than those had 6-11 years. These findings are comparable to Kim (2012) research conducted among civil servants, which found the significant role of the organizational tenure on the satisfaction level of experienced employees.

Finally, according to the results, there were significant differences in job satisfaction based on their marital status and tenure, where married with children and those employees with 6-11 years of working experience were more satisfied.

The last research question explored the relationship between perceived leadership behaviors and job satisfaction. In fact, those employees who perceived higher transformational and transactional behaviors by their supervisor were more satisfied with their job. In contrast, those employees that ranked their supervisors as highly passive leaders were less satisfied with their job. This positive relationship between perceived leadership and job satisfaction lies in consistence with several studies in the public sector (Muterera, Hemsworth, Baregheh & Garcia-Rivera, 2018; Kebede & Demeke, 2017; Bottomley, Mostafa, Gould-Williams & León-Cázares, 2016; Burg-Brown, 2016; Vermeeren, Kuipers & Steijn, 2014). More specifically, it is supported that transformational leadership behaviors have a great impact on subordinate's job satisfaction levels by increasing their well-being, feeling of commitment and loyalty to the organization.

#### *Limitations and Future research*

Although this study provides important insight into the positive relationship between perceived leadership and job satisfaction in the municipal sector, the research sample consisted only of one single municipality of Athens because of time and access constraints regarding samples. Therefore, the application of findings could not be generalized to the public sector or private sport sector. Future research on public leadership and job satisfaction should be expanded to include several forms of public organizations. Furthermore, due to the nature of the study, where the participants were asked to evaluate their supervisors, this might affect the employee's intention to answer correctly and provide honest answers about the organization. This responding bias in turn can affect the quality of the data. In addition, despite the promise of a strong relationship between leadership behaviors and job satisfaction, more construct validity evidence is needed by expanding the investigated factors related to job satisfaction. Finally, it is necessary to carry out a future research to explore leadership behaviors in more detail in order to extract information about the behaviors and the personality of managers.

#### *Implications*

This study will contribute to the body of knowledge about leadership behaviors within the Full Range Leadership Model, by establishing the preferred leadership style from the employees' perspective in the municipal public sector. Through a better understanding of an employee's needs and work expectations, public managers should consider how they might satisfy them, via inspiration, individual attention, and intellectual stimulation. To this extent, it is recommended that the department supervisors try to adopt more attributes and behaviors associated with transformational leadership, in order to develop their full potential and abilities and ensure high levels of job satisfaction among subordinates. With such leading approaches, public managers may be able to influence subordinates and shape their actions to be oriented in work quality.

It is also important for municipalities to recognize that leadership is a functional competency that should be operationalized, by being part of all supervisor behaviors and practices. Effective leadership should be considered like a vaccine to be used by local governments plagued by the significant social, economic, environmental and technological challenges they are faced with today.

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## Tables & Figures

**Table 1.** Norm Comparison of Subordinates' MLQ perceptions

MLQ Scale	Mean	Norm	Mean Difference	Ideal score
<b>Transformational</b>				>3.0 -<3.75
Idealized Influence (Attributed)	2,56	2,66	-0,1	
Idealized Influence (Behavioral)	2,61	3,21	-0,6	>3.0
Inspirational Motivation	2,46	3,08	<b>-0,62</b>	>3.0
Intellectual Stimulation	2,46	3,12	<b>-0,66</b>	>3.0
Individual Consideration	2,51	2,87	-0,36	>3.0
<b>Transactional</b>				2-3
Contingent Reward	2,28	3,08	<b>-0,8</b>	>2.0
Management-by-Exception (Active)	2,34	2,43	-0,09	<1.5
<b>Passive/Avoidant Leadership</b>				0-1
Management-by-Exception (Passive)	1,54	1,23	<b>+0,31</b>	<1.0
Laissez Faire	1,14	0,88	<b>+0,26</b>	<1.0

*0=never, 1=once in a while, 2=sometimes, 3=fairly often, 4=frequently if not always*

## Perceived Service Quality and Customer Satisfaction In Municipal Sport Services

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### Abstract

**Background:** The quality management in the municipal sport services is embedded to establish trust and customer engagement and also to ensure competitiveness based on business excellence criteria. Sport organizations, in order to gain a competitive edge in the sport services market, understand and predict customer's expectations, their needs and ultimately their purchasing intentions creating an added value. The aim of this particular study is to investigate the perceived quality and customer satisfaction in municipal sport services.

**Methods:** The sample of the study was 313 members of the municipal swimming programs in the Region of Haidari, of them 135 were men and 178 were women with an age variance from 14 to 86 years old ( $M = 42$ ). A self-administered questionnaire was used to analyze the service quality perceptions of customers of municipal swimming pool.

**The results:** Customers had very positive perceptions for the services provided, particularly in outcomes quality. The most determinant quality dimension was found to be the health/fitness ( $M = 4,53$ ) followed by relaxation ( $M = 4,49$ ) and social ( $M = 4,31$ ). In terms of demographic variables, the results indicated significant differences based on customer's age, educational level and employment status. Additionally, the length of membership, the weekly frequency of use, the duration of use per visit and the preferred program appeared to influence customer's quality perceptions.

**Conclusions:** The results of this study have important implications for the managers of the municipal sport services, as they provide valuable information on customer needs and areas for improvement in the field of quality.

**Key words:** perceived service quality, municipal sport services, customer satisfaction

### JEL CLASSIFICATION CODES:

L32 Public Enterprises • Public-Private Enterprises

L83 Sports • Gambling • Restaurants • Recreation • Tourism

### Introduction

Regular physical activity improves the quality of life by increasing mental and physical health. According to American Heart Association (2015), key health benefits are the weight control, the reduction in relative risk of cardiovascular disease and the improvement of the ability to do daily activities. Recognizing active living contribution in people's health, the implementation of physical activity for all adults as an integral and meaningful part of daily life, is critical. For this reason, governments around the world invest in developing effective sport and recreation policies and programs that encourage people regardless of their age, background or level of ability, to take part in sport for recreation or to improve their performance to whatever level they desire (e.g. Sport England: Towards an Active Nation strategy 2016-2021; Community Sport Strategy 2015-2020, New Zealand).

National sports policy frameworks should be designed carefully by focusing on key community challenges, critical impacts and global sport trends. For instance Eime et al. (2017) recommended that local government decisions in future investments in sport facilities, needs to take into account a community-level analysis of the population, sport participation rates and special motives of sport participation. In order to develop an effective sport policy, Benson and Henderson (2005) not only outline general practices to support a strategic direction by key performance indicators, but also the importance of focusing on providing different solutions to managerial problems and issues that professional sport and leisure managers are facing. Local government is primarily responsible for promoting physical activity and improvement of quality of citizen's life. Therefore the strategic focus of municipals is to reconstruct sport and recreation facilities such as fitness centers, aquatic centers and recreation parks in order to increase levels of participation. The public provider has a significant role in the promotion of community programs that are perceived enjoyable and valuable, reliable and safe (Steele & Caperchione, 2005). Furthermore, the delivery of quality

interventions in society, considerably affects positively the well-being of individuals, as life becomes more meaningful through social interaction (Engelhardt, 2013).

#### *Customer Satisfaction & Perceived Service Quality*

Customer satisfaction plays a key role in the public sector, as local governments through efficient and effective services try to attract residents and businesses to the local area. The customer's perception of quality reflects mainly their needs and expectations of public services. Furthermore, in some cases residents are charged for using community services such as swimming pools, and therefore are able to compare the services offered with the market value and make a choice (Robinson, 2004). At the same time, active consumers exert pressure on services providers to streamline their operations and improve their service delivery (Byers, 2009). Due to the increase of the citizens' demands, the quality management should be a main priority within the public sport services sector. The local government's obligation to promote services that fulfill the citizen's needs and high expectations can be accomplished through organizational changes such as effective communication, customer focus and commitment to continuous improvement (Pérez, Minguet, & Freire, 2010). Although, it was mentioned in the case of Spain municipalities the most predominant approach of service quality is measured by customers' satisfaction (32%), followed by ISO 9000 (26%) and EFQM (23%) quality assessment tools (Pérez, Minguet, & Freire, 2010).

In this respect, many scholars have attempted to evaluate the quality based on customer responses, since different motives and mechanisms seem to form consumer's judgment about a sport service excellence or superiority. By examining the unique characteristics of sport/leisure services that determine the level of quality perception, a sport organization can predict the level of customer satisfaction, which in turn influences the future intentions of current and potential customers (Mañas, Giménez, Muyor, Martínez & Moliner, 2008; Murray & Howat, 2002; Nuviala, Grao-Cruces, Pérez-Turpin & Nuviala, 2012) and customer loyalty (Barshan, Elahi, & Aghaei, 2017).

It is assumed that people concern various attributes of a given service and assign different weights to each attribute in their quality perceptions. Recognizing that quality is a multi-dimensional concept, Ko and Pastore (2004) identified four key dimensions that reflect the customer's view of quality in sport services. More specifically, attributes related to the program, the interaction, the outcome and the physical environment are considered as major contributors to service quality perceptions. The service quality consisted of elements of process such as service environment and delivery, as well as service outcome quality. This approach defines quality as process and standards as outcomes, so the quality assurance role is to confirm that the municipal services process will ensure high standards. With regard to community based sport services, Howat and Assaker (2016) noticed that quality models appeared to emphasize more on processes rather than outcomes.

#### *Program quality*

The first quality dimension is related to specific elements of the provided program as well as additional features such as range of activity programs, operating time and supplementary services. In other words, there are service features that are considered as must-be-requirements that customers are not aware most of the time, but if they are missing, customers feel unsatisfied. Several empirical analyses of the sport industry have indicated that tangible elements of the offered programs are a critical service quality dimension (Howat, Crilley & MacGrath, 2008; Nuviala, et al., 2012). Specifically, research findings from services provided in public aqua centers in Australia (Howat & Assaker, 2013; Howat & Crilley, 2007) and in the UK (Liu, Taylor, & Shibli, 2009) mentioned the importance of cleanliness in terms of water quality and cleanliness of the facilities, as well as the accessibility of public sport facilities. Other operating service quality elements that were recognized as highly important were the availability of operating hours, followed by information easy access up to date (Rozita, Zana, Khairulzaman, & Norlizah, 2014). Furthermore Mañas, Giménez, Muyor, Martínez and Moliner (2008) confirmed the dynamic role of facilities, equipment and service quality in the prediction of customer satisfaction and perceived value. In the same direction, Rozita, et al. (2014) stated that among all the quality dimensions, public sport service quality displayed the greatest predictor for the customer satisfaction and future intentions of reusing and recommending it to friends.

Research findings on municipal exercise programs in Athens (Rousseti, Koustelios, Kioumourtzoglou, & Diggelidis, 2005) revealed very low satisfaction levels of sport members in the services dimension. Similar low customer's perceptions of service quality reported by e Sa and Cunha (2017) where users of public swimming pool pointed out the need for maintenance of facilities and

equipment, as well as the need for facilities renovation. These research findings from countries such as Greece and Italy may stem from the limited investments by local governments in the area of sport and recreation facilities in recent years. Lastly, other major weaknesses of the public sport industry were pointed out to be the cleanliness (Liu, Taylor, & Shibli, 2009) and the information quality (Nuviala, et al., 2012).

#### *Interaction quality*

Customers' interaction with employees, as well as among customers appears as the second quality determinant dimension. Since sport participation is a social process, human variables such as attitudes, behaviors, and expertise (Brady & Cronin, 2001) are considered significant factors in the nature of service delivery, and influence to a great extent the customer evaluation of the services (Howat & Crilley, 2007; Howat & Assaker, 2013; Rouseti, Koustelios, Kioumartzoglou, & Diggelides, 2005). Staff responsibility and interest of employees in customer progress alternatively considered to be highly desirable for fitness customers (Afthinos, Theodorakis, & Nassis, 2005). Additional staff behaviors that have been recognized by customers of public sport facilities, were friendliness and trustfulness, social interaction and friendships which were developed with other program participants (Howat, Crilley & MacGrath, 2008; e Sa & Cunha, 2017; Mañas, et al., 2008; Nuviala, et al., 2012). The significant impact of staff behaviors on the perceived service quality has been further supported in physical activity and sport centers participation (Murray & Howat, 2002; Schijns, Caniëls, Le Conté, & Schijns, 2016).

#### *Outcome quality*

Outcome quality is the third primary dimension which refers to consumer benefits received from the service. According to the definition by Hurd and Anderson (2010), recreation is the activity that an individual chooses to participate during his/her free time. Based on this definition, it is very important to consider the different motives of sport participation as the activity itself is less important than the reason for engaging. Research evidence from the UK (Allender, Cowbum & Foster, 2006) indicated that among the participant motives in sport and physical activity, the aspects of having fun, enjoyment and social support, were the most common predictors of participation. Sport participants often perceive a sense of physical change that estimates the benefits of increased fitness level and/or performance and skill level (Brady & Cronin, 2001).

Customers of public aquatic centers were found to use the sport facilities in order to keep themselves healthy, to improve their fitness level and to feel less stressed (e Sa & Cunha, 2017; Howat, Crilley & MacGrath, 2008). The dimension of outcome quality received the highest overall satisfaction score, indicating that public aquatic center members recognized to a great extent the personal physical and psychological improvements that were gained through their participation. Another aspect of outcome quality is the sociability, which refers to positive appreciation of being with others who enjoy the same sport activity.

#### *Physical Environment Quality*

Physical environment quality is included as the last dimension having an important contribution to customer perceived quality and service evaluation. It consisted of (a) ambience; (b) design; and (c) equipment. Ambient condition refers to non-visual service characteristics such as temperature, lighting, noise, scent, and music (Ko & Pastore 2004). Another approach of physical environment is offered by Chelladurai and Chang (2000) who described the whole context of sport services in this dimension. This dimension includes: the quality of the facilities offered, their location, the provided equipment, the accessibility of the facilities and the ease of use of the equipment. The important role of physical environment is confirmed by Rozita et al. (2014) who mentioned that facility ambience was evaluated as the second highest quality factor in sport services.

#### *Demographic and sport participation characteristics differences in perceived quality*

There is evidence that service quality is a significant determinant of loyalty only for the novice customers of public sport and fitness centers in Greece and also the impact of overall satisfaction in future behavior is greater among experienced customers (Avourdiadou, & Theodorakis, 2014). Specifically, it is supported that members of public and private fitness clubs with more than 3 years of sport membership, appeared more satisfied than those with less sporting membership (GoharRostami, 2007). Furthermore, gender seems to differentiate the perceptions of sport services

quality. In a study of Lee, Kim, Ko and Sagas (2011) female golf club members appeared to pay more attention to physical representations, cleanliness and appearance of service dimensions. Moreover, the educational level of customers was supported to influence the quality perceptions, which indicates that educated individuals appeared with higher expectations, and as a consequence were the least satisfied (Salamat, Farahani, & Salamat, 2013; Theodorakis, Alexandris, Rodrigues, & Sarmento, 2004). Correspondingly, higher quality expectations were noticed by unemployed customers of public swimming pools compared with the unemployed (Oliveira, 2003).

Also, the characteristics related to the appearance of fitness club services, were perceived more critical for young and middle aged adults and for women than men. Older adults and women considered more convenience the extra amenities, and the time related factors of the provided services (Mullen & Whaley, 2010; Oliveira, 2003), as well as, the staff responsibility attitude (Afthinos, Theodorakis, & Nassis, 2005). The key role of the age is also supported by Mavridou et al. (2013). Another variable with a significant effect on quality perceptions is the preferred programs. In a study of Nuviala et al. (2012) was reported that those customers who took part in individual land-based sports were more satisfied with the quality of the offered services.

Evidence showed that there is a positive relationship between customer satisfaction levels and the frequency of visiting a fitness club (GoharRostami, 2007; Lamyuet, 2009; Salamat, Farahani, & Salamat, 2013), with those customers who had a regular participation of more than three times per week to be more interested, motivated and satisfied.

### **Problem Statements**

Despite the existence of extensive research on quality evaluation of health and fitness services, few current studies provided evidence of differences in the perceptions of service quality due to demographic and behavioral characteristics of the participants. The results of this study will contribute to the theory of service quality through the application of previous models to a specific sport service area of municipal swimming pool services.

Finally, with few exemptions (Alexandris, Papadopoulos, Palialia, & Vasiliadis, 1999; e Sa & Cunha, 2017; Ko & Pastore, 2004), the majority of previous studies applied a model of quality evaluation which was concentrated on processes than outcomes (Howat & Assaker, 2016). Therefore, further research needs to be conducted in order to examine the significant role of quality outcomes which are considered major motivational contributors to the perceived service quality. The present study will provide knowledge for fitness managers in public sector which is valuable in designing and delivering customer service excellence.

### **Aim of the research**

The aim of the study is to investigate the perceived quality and member's satisfaction of municipal sport services. For this target achievement, the following two research questions were addressed: (1<sup>st</sup>) what attributes determine the perceived quality of services from the customer perspective; (2<sup>nd</sup>) Is perceived service quality being affected by demographic or membership profile variables?

### **Method**

#### *Sampling*

The study population consisted of the total number of registered members in the municipal swimming pool of Haidari of Attika. More analytically, within the total members, only those clients that attended the municipal programs during the period of March to April 2017, had a membership experience more than one month and over 14 years old were selected. A total of 350 completed questionnaires were received, where the 37 were excluded from the final sample because were filled out incompletely. The final sample consisted of 313 active sport members, representing a 71% response rate (135 male and 178 female) between the ages of 14 and 86 years old with an average age of 42.

#### *Instrument*

The data were obtained from a questionnaire survey, which distributed to registered members of municipal swimming pool which is located in Haidari of Attika. A 27-item questionnaire was used based on Alexandris, Papadopoulos, Palialia and Vasiliadis (1999) Service Quality Scale, relating to perceived quality. The questionnaire was divided into two sections. The first section referred to

demographic and sport membership characteristics of the respondents, while the second included questions that measure the perceived service quality. Item response was on a five point Likert scale. Higher scores reflected a higher level of customer satisfaction. A panel of five professionals who were expert in the fitness industry and quality management validated the instrument content. The Cronbach-alpha coefficient for the whole scale was found to be 0.91, while the sub-scales reliabilities ranged from 0,8 to 0,86.

#### *Data Analysis*

Data were analyzed by using the Statistical Package of Social Science (SPSS) version 23.0 software. Descriptive statistics were used to evaluate the satisfaction levels of the customers based on their quality perceptions. Factor analysis was used to identify the underlying dimensions of service quality. Finally, an analysis of variance (ANOVA) was conducted for each service quality dimension, in order to investigate the existence of any differences in the perceptions of service quality due to demographic variables and membership characteristics.

### **Results**

#### *Demographic Profile*

The sport members of the municipal aqua center were predominately women (56,9%) compared with men and single (40,7%). Respondents' ages ranged from 14 to 86 years, 22,5 percent of whom were aged 25-39 years, while 20,4% aged between 49-58. The most of them were students or had a high school or vocational studies level of education (45,7%), and the rest (39,5%) had a bachelor degree. Regarding their work status most of them for various reasons were unemployed (51,3%) and from those who had a job the majority was working in the public sector (22,9%), followed by private sector (17,6%), Finally in terms of monthly income, the majority belonged to the monthly income category ranging from 601-1000 euros (32,3%).

#### *Sport Membership Profile*

Based on sport membership 38, 7% of the members had used the swimming facilities for less than a year, 29,1 % two to five years and 19,2% for more than 11 years. Almost half of the members were doing exercise from one to three times per week (50,8%), from five to six times (33,5%) and from one to two times (13,1%). Relative to their duration of stay at the swimming pool a large percentage of them (48,6%) reported one to two hours and less than one hour (39,6%). Referring to the time zone at which they were exercised, the most preferred hours were during the morning between 7.00am -12.00pm (41, 9%), and followed by 12.00pm-15.00pm (19, 5%). Finally, with regards to the programs preferred, most of the members attended the public hour program (63,9%), aqua aerobic lessons (18,5%), swimming lessons for kids (12,8%) and swimming lessons for adults (4,2%).

#### *Principal component analysis*

A principal component analysis of the 27-item scale was performed in order to determine the nature and the number of underlying dimensions of service quality. From the analysis, six factors emerged, which accounted for 67, 26% of the total variance and were defined as follows: (1) Facilities ( $\alpha = ,86$ ) where sport members who scored high in this factor appreciate the good condition of the equipment, the cleanliness, design and attractiveness of facilities and the accessibility. (2) Staff and Services ( $\alpha = ,86$ ), who summarized the customers' perceptions regarding staff attitude such as friendliness, helpfulness, coaching, well-trained and responding level, as well as the variety and the interest level of the offered programs. (3) Individual/psychological ( $\alpha = ,85$ ), where in this dimension was examined the degree to which participants satisfied their intellectual needs such as learning new things and using a variety of skills. (4) Health/fitness ( $\alpha = ,82$ ), where customers perceived as important the health benefits through their active participation. (5) Relaxation ( $\alpha = ,80$ ) where in this dimension they recognized the psychological improvements through their service participation. (6) Social ( $\alpha = ,78$ ), where customers acknowledge the quality of spending time with other people with common sport interests. The factors and the loading matrix are presented in Table 1.

Table 1. Principal component analysis of the Customer Satisfaction Scale

Principal Component Analysis of the Customer Satisfaction Scale						
	Facilities	Staff & Services	Individual/ psychological	Health/ fitness	Relaxa tion	Social
Equipment good condition	,835					
Well-designed facilities	,802					
Attractive facilities	,773					
Accessibility for people with disabilities	,763					
The facilities are clean	,576					
The staff is well-trained		,720				
Good instructions by staff		,715				
The staff is friendly		,696				
Provide accurate information on the daily timetable		,643				
Responding to customer requests is immediate		,639				
The staff is helpful		,607				
A variety of programs		,474				
Interesting programs		,471				
Get to know better myself			,795			
Use a variety of skills			,746			
Help to learn new things			,745			
Increase my knowledge in swimming			,699			
Improvements in health				,833		
Improving Fitness				,819		
Hel physical restoration				,749		
Help to relax					,848	
Help to reduce stress					,826	
Improvements to psychological state					,683	
Sense of accomplishment					,462	
Chance to socialize						,875
Chance of meeting new people						,863
Program participants are friendly						,503
Extraction Method: Principal Component Analysis.						
Rotation Method: Varimax with Kaiser Normalization.						

### Service Quality dimensions

As seen in Table 2, the results indicated high mean scores for all service quality dimensions with a mean distribution from 3,32 to 4,53. The health and fitness dimension had the highest score ( $M = 4,53$ ). Members perceived a high quality outcome mostly in benefits of fitness level improvement ( $M = 4,61$ ) and health improvement ( $M = 4,56$ ). The next quality outcome that revealed high scores was the relaxation dimension ( $M = 4,49$ ), indicating that members were pleased with their psychological state improvements ( $M = 4,57$ ) and stress reduction ( $M = 4,52$ ). In contrast, the facilities dimension received the lowest score ( $M = 3,32$ ), with the lowest-ranked aspects appeared to be the accessibility of disable population ( $M = 2,92$ ) and the good condition of the equipment ( $M = 3,10$ ). The lowest score dimension was the staff and services ( $M = 4,01$ ). In relation to staff attitudes, the good guidance provision revealed the lowest score ( $M = 4,12$ ). Services customers were perceived low quality at immediate response to requests ( $M = 3,56$ ), to variety of programs ( $M = 3,68$ ), and to the offered programs interest level ( $M = 3,78$ ). Table 2 shows the Mean distribution of service quality dimensions.



Table 2. Mean distribution of service quality dimensions

Service quality Dimensions	Mean	SD
Health/fitness	4,53	0,50
Relaxation	4,49	0,54
Social	4,31	0,60
Individual/psychological	4,04	0,69
Staff & Services	4,01	0,64
Facilities	3,32	0,84
<b>Total Perceived Quality</b>	<b>4,11</b>	<b>0,43</b>

*Demographic and membership profile differences in perceived service quality*

In terms of demographic variables, the results indicated significant differences between: different age groups in the facilities  $F(4, 272) = 5,66, p = ,000$ ; staff/services  $F(4, 272) = 6,86, p = ,000$ ; individual/psychological  $F(4, 273) = 10,38, p = ,000$ ; relaxation  $F(4, 274) = 3,81, p = ,005$ ; and social dimension  $F(4, 275) = 7,84, p = ,000$ . Respectively, the age category below 24 years old was found to be more satisfied than other age groups in all quality dimensions except in relaxation, where the age category below 24 years old revealed less satisfaction levels compared with other age groups. In terms of service quality perceptions which are related to education, significant differences found in facilities  $F(2, 305) = 5,34, p = ,005$ , staff/services  $F(2, 304) = 6,86, p = ,000$ , in individual/psychological  $F(4, 272) = 6,86, p = ,000$  and in social dimension  $F(4, 275) = 7,84, p = ,000$ . With reference to students' education, the high school graduates and vocational education students exhibited higher quality satisfaction level than graduates and postgraduates. Lastly, the employment status presented to affect the perceived service quality significantly in the following four dimensions: In facilities  $t(303) = 2,58, p = ,010$ ; in staff/services  $t(302) = 2,94, p = ,004$ ; in individual/psychological  $t(304) = 3,11, p = ,002$ ; and in social  $t(306) = 2,98, p = ,003$ . Particularly, unemployed individuals exhibited higher levels of satisfaction at swimming services.

Regarding to membership profile characteristics, the length of membership was found to differentiate significantly the perceived quality level of members' in Individual/psychological dimension  $F(3, 307) = 2,92, p = ,034$ . Members with more than 11 years of membership exhibited higher levels of satisfaction at swimming services than those with less than one year. Furthermore, significant differences were found in relation to the weekly frequency in Individual/psychological  $F(3, 307) = 8,52, p = ,000$ , social  $F(3, 309) = 3,30, p = ,021$  and health and fitness dimension  $F(3, 308) = 3,43, p = ,018$ . Data indicated that members, who visited the swimming pool 5-6 times per week, were more satisfied than those with lower frequency. Also, the duration of use per visit (hours) had a significant effect in individual/psychological  $F(2, 308) = 5,11, p = ,007$  and relaxation dimension  $F(2, 309) = 3,64, p = ,027$ . Members who visited the swimming pool more than two hours were more satisfied compared with those who spend one and 1-2 hours in relation to individual/psychological dimension. In contrast, members who had spent 1- 2 hours were more relaxed than those who spend more than two hours. The duration of use had also a significant effect in health/fitness dimension  $F(2, 309) = 3,11, p = ,046$ , although multiple comparisons did not reveal significant differences among groups.

Lastly, a significant effect was found at the preferred program of Individual/psychological dimension  $F(4, 306) = 5,53, p = ,000$  with higher satisfaction levels in participants in swimming lessons for kids than in public hour program. According to relaxation dimension, the preferred program had a significant effect  $F(4, 307) = 2,50, p = ,042$  on the perceived quality with members in public hour and in aqua aerobic programs perceived higher levels of relaxation than those who attended swimming lessons for kids.

## **Discussion**

Overall, two research questions were addressed in this research, (1) what attributes determine the perceived quality of services from the customer perspective? (2) Is perceived service quality being affected by demographic or membership profile variables?

As regards to first research question, the results revealed that members of municipal swimming pool had very positive perceptions for the services provided, particularly in outcomes quality. Members highly appreciated the benefits of swimming activities in relation to increased fitness level and sense of relaxation. The high scores of these outcome dimensions were supported in previous findings that emphasized that the activity itself is less important than the reason for engaging (Hurd & Anderson, 2010) and among all perceived benefits of sport participation, distinguished fitness and performance improvements (Brady & Cronin, 2001; e Sa & Cunha, 2017), and stress reduction (Howat, Crilley & MacGrath, 2008). Considering the importance of outcomes quality in customers' quality perceptions, it is allowed different strategies to be established by municipalities in order to meet customer's needs and expectations. Identifying the main goals and motivations in sport services participation, the development of new sport programs is recommended that fulfill their various needs, which are related to key motivators of sport engagement and other individual/psychological factors such as relaxation and well-being.

In reference to process dimension, study results indicated that users of municipal swimming services were less satisfied with quality facilities characteristics such as the accessibility for people with disabilities and the good condition of the equipment. Low scores in facilities/ services dimension have been mentioned in other similar studies (e Sa & Cunha, 2017; Rousseti, et al., 2005; Theodorakis et al., 2004). Users of municipal swimming services concerned about the maintenance of facilities and equipment, water cleanness and other related characteristics of the provided services. This finding can be interpreted due to the limited investments made by local governments in the area of sport and recreation facilities in recent years. Mentioning the important role of services quality, it is essential for local governments to put every effort to improve service delivery by implementing and maintaining excellence in the tangible elements of the facilities as well as in the supportive services.

In terms of the demographic variables influence on quality perceptions of customers, findings revealed significant differences in relation to age, educational background and employment status. Surprisingly, younger individuals perceived higher levels of service quality in all dimensions with an exception in relaxation. This outcome is in line with the findings of previous research (Afthinos, Theodorakis, & Nassis, 2005; Mavridou et al., 2013; Mullen & Whaley, 2010; Oliveira, 2003) who mentioned that older adults had higher quality expectations for the provided sport and fitness services and thus appeared less satisfied. Accordingly, it was found that members who belonged to the students' category, high school graduates and vocational education students, were more satisfied with the service quality dimension. Different expectations on educational groups are also supported by other studies in sport public sector (Salamat, Farahani, & Salamat, 2013; Theodorakis, Alexandris, Rodrigues, & Sarmiento, 2004). Lastly, the group of unemployed was more satisfied than the employed. Equivalent higher evaluations of service quality dimensions by the unemployed members of public swimming pools have been also mentioned by Oliveira (2003).

Among all membership profile characteristics only the length of membership, the weekly frequency of use, the duration of use per visit and the preferred program appeared to influence customer's quality perceptions. Respectively, the results revealed that customers with long membership evaluated higher the quality level of swimming facilities than the other categories of membership. This finding is in accordance with the research conclusions of GoharRostami (2007) who supported that members of public and private fitness clubs with longer membership tend to be more satisfied than the one with less. At this point, it is critical to be mentioned that only in novice sport members the service quality is a key determinant of loyalty (Avourdiadou & Theodorakis, 2014). These outcomes are important for the management of a public sport centers in order to ensure the retention of its new members.

The next determinant of sport participation was found to be the weekly frequency of use. In terms of frequency, those members who attended 5-6 times per week the swimming pool, appeared higher levels of enjoyment and social interaction. Also, they realized greater levels of positive benefits in their health and fitness (GoharRostami, 2007; Lamyuet, 2009; Salamat, Farahani, & Salamat, 2013). A possible explanation of this finding is provided by Oliveira (2003) who ascertained that those

members with regular frequency of visiting is believed that is more possible to achieve the benefits in relation to sport participation.

Lastly, as supported previously (Nuviala et al., 2012), the preferred program plays also a significant role in quality perceptions. For example, the results of this study indicated that participants in swimming lessons for kids had higher levels of enjoyment. From the other hand, participants in the public hour program and in aqua aerobic perceived higher levels of relaxation. Findings coming from the younger participants at the swimming lessons, offer additional evidence to the previous findings of the influence of the age in the perceived quality. .

#### *Managerial implications*

Through evaluation of the perceived quality, valuable information on organization performance was gathered and areas of improvements were identified. According to members perception there is space for further improvement in terms of the tangible element of the facilities. Local governments should be aware of customers' expectations and to implement those strategies to meet them, since there are clear evidence of the importance of quality management in the delivery of public sport and recreation services. Managers of public sport services would be able to deliver services of best value for the citizens, by identifying specific customer needs based on demographic and membership profile characteristics. The main practical application of the study is to establish those service quality determinants that management should focus on, in order to increase the number of satisfied and loyal customers.

#### *Limitations and Future Research*

Several research limitations were highlighted. Since the sample of this particular study included only a single public sport center, the results cannot be generalized to the public or private sport sector. Secondly, the survey was carried out over a short period of time and during a season of low visiting rates. Thirdly, it was not taken into consideration parents' opinions which are considered indirect customers. Finally, the sample consisted of a particular geographical area of Attica, where its members have a specific social stratification which is likely to have deviations from the general population.

Future studies are recommended to obtain quality assessments from an expanded sample of sport services customers within private and public sector including also the recreation facilities. Also, future research may explore service quality and customer satisfaction in conjunction with customer loyalty and retention, experience value, as well as financial indicators.

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## THE INTERDEPENDENCE BETWEEN INTERCULTURALITY AND INTEGRATION IN THE EUROPEAN UNION

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**Abstract.** *The theme of this conference focuses attention on development and economy. In this paper, I analyze the closed relation between intercultural area and the evolution of the integration applied to countries that belong to the European Union. In an intercultural european model I focus on the interactions between individuals in the society, the political regimes promoted in each European state, the level of study attended by citizens and the cultural dimensions highlighted by Hofstede. In analyzing the intercultural dimension I wanted to emphasize that as main reference we can consider the following areas: communication between members of society through the integration of minorities, vulnerable groups or people with disabilities; the adoption of foreigners by implementing a tolerant attitude towards diversity and the mass-media involvement in the process of acceptance of new cultures. In order to analyze the interdependence between interculturality and integration, I took in account the the degree of tolerance expressed by Europeans towards other cultures and the attitude in communicating with foreigners, accepting traditions and customs specific to each culture, adapting minorities or vulnerable groups to society and assimilating a common language for more effective communication. As the basis for this study are the introduction of laws at institutional level through which young people and adults can benefit from intercultural education courses aimed at changing the proximity of European society. The paper shows how the development of an european intercultural society must be trained in order to know how to integrate the foreigners.*

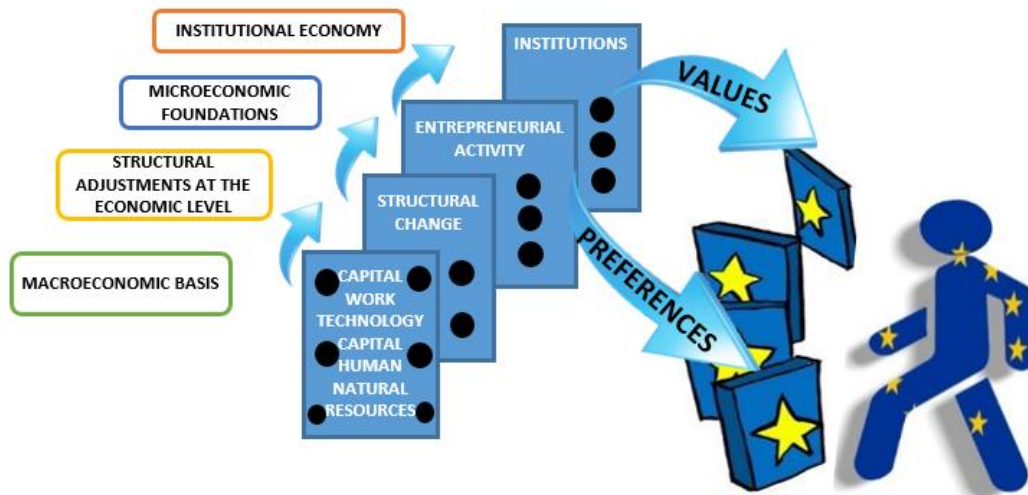
**Key words:** *interculturality, integration, tolerance, communication, European state*

**JEL:** *F15 Economic Integration*

In a free and democratic society, the institutions take on the role of conventional play, reflecting the constraints of people that lead to the formation of human interaction. The institution-building process is based on the provision of incentives among individuals, viewed as members of an active and dynamic society. The change comes from the desire to homogenize the political, social and economic sphere at European level through the implementation of common governance mechanisms. Institutional change outlines the pattern in which day-to-day societies evolve through the fingerprints of the past, thus constituting the "key to understanding historical development" (North, 2003,12).

The Australian economist Wolfgang Kasper and the German researcher Manfred Streit propose a model of continuous economic growth analysis (Figure 1). We can identify at the macroeconomic level the basic factors of the functional mechanism of the society and at micro entrepreneurial level. Thus, there is an interpenetration of the two spheres by the structural adjustment of the economic level which directly and irreversibly influences the development of the institutional economy. The analyzed model implies the creation at European level of specified preferences of the entrepreneurial class within the public consultations organized at the institutional level of the political class. The values created by legislative and normative changes lead to the functional uniformization of institutions at European level. This model can be attributed to the domino effect due to the continuous changes they make at the level of the contemporary society.





*Figure 1 Model of economic growth analysis*

*Source: The Economic Theory of Researchers Wolfgang Kasper and Manfred Streit*

The domino effect produces a lot of changes at the legislative level, as a number of incentives are created in order to achieve profit, thus influencing the development of entrepreneurship. Another aspect to be mentioned is that the change at the legislative level leads to competition at the institutional level. The state involved in institutional reform is seen as an "active assistant to the capitalist system that effectively strengthens and operates, but also provides legal infrastructure to protect property rights, establishing and imposing contractual relationships between entities" (Kornai, 2000, 32). Following the process of economic transition, the antagonism between newly created formal institutions and the inherited culture of the historical past is being discussed. "The interaction between the formal institutions of capitalism and the existing culture in the former socialist countries could be the main reason that explains the unequal results of institutional restructuring in Central and Eastern Europe" (Pejovich, 2003, 10).

Modern European society is founded on the fulfillment of higher education needs, the concerns of individuals focusing on the creative and innovative spirit, often implemented in the entrepreneurial field. The new society puts in the foreground the change of the environment by engaging in various volunteer activities that become socializing sources for active young people.

According to the Kantian vision, the human being is both a rule-maker and a member of a community that obeys pre-established norms. From my point of view, the political decisions can undergo changes in the course of time, due to the customs that exist at the society level. Their quantification is achieved through "traditions and customs, these being considered to be the bridge between the past, the present and the future, but also the key to explaining the path of historical transformation" (North, 2003, 15).

Specialized studies have highlighted that individual must be endowed with entrepreneurial spirit and communication skills to develop new opportunities for collaboration and cooperation. Modern society directly influences the involvement of the human being in the decision-making process, either from a citizen's hypostasis or from an actor involved in the management of public administration bodies. In an European context, we can analyze institutional quality, performance and stability in the governance process in order to identify the issues underlying the construction of a new and innovative society. This model puts the link between interculturality and integration within the European community.

The state powers focus on creating wealth, grounded in comprehensive legislation and competent administrative devices, in order to attract potential investors. Under these circumstances, the entrepreneurial area is stimulated, the state creating the favorable context for the concentration of large corporations. The European institutional arrangement respects the principle of conditionality in order to harmonize European societies.

Under these conditions, it is necessary to observe the general principles aimed for the proper functioning of the administrative bodies at the level of the European Union: the well-being of society must be the desideratum of the individual and the state; direct involvement in the decision-making process; continuous improvement of the educational system; "quality is not a random result, but the result of an intelligent process; quality can be achieved through a communication and cooperation process" (Militaru, 2011, 63).

Institutional quality must aim at the proper organization of economic, social and political entities. The most important aspect is to create homogeneous institutions at European level in order to boost prosperity. Thus, according to the vision of the promoters of neoinstitutionalism, the quality at the governmental level can only be achieved by the creation of performing entities in order to form a modern society promoting the liberal spirit.

The European Union promotes a value system based on the area of peace and security, democratic regime and human rights, becoming the main areas of action of competent public institutions. "The most important aspects of the structure are the rules and resources involved in institution building" (Giddens, 1984, 24).

The process of europeanization is a "concept originally developed in political science, international relations theory and comparative politics" (Feld, 2011,233-272). It pursues institutional transformations in the political and economic sector, with emphasis on improving the governance system. In a narrow sense, this phenomenon reconfigures the national institutional system of each European state, improving the leadership style, showing transparency to all stakeholders mentioned in the Wolfgang Kasper and Manfred Streit model.

Institutional performance and stability are considered to be the main instruments with the support of which the European Union operates at government level. The role of public institutions is to perform their laws in social, cultural, and environments. The institution in essence serves the interests of citizens, so as long as their functions are executed on time, the more efficient will be in order to promote the concept of good governance.

The European Union has gone through a period of change generated by the global crisis, leaving its fingerprints in a profound way to the structure of the economy. The European continent has crossed the economic crisis set up in 2008-2009, highlighting the economic and administrative challenges. The economic reality produces more rapid social effects than the political factor, this aspect being an alarm signal, leading to the restructuring of the administrative body. In this sense, the Europe 2020 strategy was created in order to obtain in the future a smart, sustainable and inclusive economy. These three pillars are being created to raise the European Union to an economic power, relying on a high level of employment, productivity and social cohesion.

An exemplary model of mobilization can be considered as the financial management of the European Bank in full economic crisis, by applying financial corrections and managing euro area policies, in order to avoid a sudden devaluation of the national currency. It is imperative to recover the European economy, which has been analyzed by specialists who have proposed the development of the Europe 2020 strategy by focusing the decrease in unemployment by attracting foreign capital in the investment area and creating a modern technological base.

The world economy is in continuous progress, our future economy depends on the Europe's answer to the impulses of the society. The multicultural process refers to the phenomenon of globalization, an intensely discussed topic, emphasizing that the focus of institutional forces should be channeling towards prosperity at European level in the future. Change can be the engine of collective action, which will create that economy characterized by innovation, sustainability and inclusion. Thus, the foundations of the Europe 2020 Strategy present an overall scheme of sustainable institutional development in Europe of the 21st century.

Globalization is the term often used to describe the transformations of modern societies in the evolution of the world economy, based free trade. The formation of the European Union indicates the elimination of barriers between states, creating an area of interdependence between Member States at the decisional and institutional level. The form of government adopted at European level must be "strongly connected with socio-historical variables, in order to succeed in modernizing contemporary society from a legislative and an identity point of view". (Steenkamp, 2001, 30). The mechanisms used at European level are mainly focused on creating the single market, providing financial support and implementing a viable foreign policy, in the desire to avoid possible economic and government bottlenecks.



A global perspective also relates to the cultural harmonization, an aspect studied by Geert Hofstede, which defines the cultural factor of modern society as the culture of "collective programming of thought that distinguishes members of a group of members of another" (Hofstede, 1996, 21).

The individual as a component part of society becomes the bearer of a pattern of thinking and feeling, which directly influences decision-making at community level. "Culture is a unique model of common meanings that characterize a society and distinguish it from other societies. Culture is the constellation of ideas and objects that determine what is acceptable in a society and to which all members of society subscribe" (Plată, 1997, 17). European society creates "a valuable mix of models of thinking, feeling of reality and action (behavior) that requires change" (Bratianu, 2003, 8).

Organizational culture at the state level has its roots in the historical area, encompassing the values and symbols of European society. It is possible to make a parallel between the national culture defined by the system of values and beliefs propagated in the reference space (at European level) and the institutional one characterized by the practices adopted at the level of the administrative bodies.

"There is no single currency in all European countries, and values are deeply rooted in history and seem to be very resistant to the passage of time. Cultural values are stable and can not be changed, leading to a world culture" (Mooij, 2000, 103), thus questioning the homogeneity of the institutional process at European level.

Considering what has been said, it is imperative to bring into discussion the vision of American researcher Edward Hall analyzing the cultural dimension, taking into account the structure of time and communication. At European Union level we identify mixed cultures (both monochronic and polyclonal) due to permanent (temporally speaking) evolution at the social level. Emphasis is placed on the ability of Member States to communicate (high or weak contextual cultures) and to develop institutional relations by respecting shared values, traditions and practices. It is important to consider the institutional administration and the mitigation of the cultural barriers by encouraging the cooperation of the state apparatuses. Cultural evolution can open new opportunities for collaboration at the administrative level through empathy, tolerance and sociability, all aspects aimed at making the communication process more efficient. Institutional changes made at European level analyze "fluid continuity between the past - present - future" (Ionescu, 1996, 127).

The study by the management expert, Fons Trompenaars, on the cultural dimensions of modern society puts the relationship between the human being, the time and the environment at the forefront. Thus, we can analyze the cultural components from the perspective of their coexistence at both European and state level.

At the level of the European Union, independent states promote a series of characteristics that refer either to universalism through strict observance of rules or particularism by promoting communication between the individuals of society, due to the existence of a cultural and institutional mosaic (which depends on the political regime promoted at the level of the member state). Another aspect developed by Trompenaars relates to the functioning of society as a group (collectivist community), or as an individual by supporting personal interests.

From the point of view of the emotional dimension, it can be noticed that there are open states to manifest their feelings, others being reserved, keeping a neutral posture. Institutional responsibility may be specific (in the case of individual Member States' decision-making), the diffuse area being completely absent from the European area. The scope of achievements is the overall proof of exemplary political organization and good governance. At organizational level, both at European and national level, political decisions can be applied both sequentially (one at a time) and synchronous (all simultaneously) to the desire to create a modern society, adaptable to change, to innovation. It puts under uncertainty the relationship between internal and external control, whether human capital influences the development of the environment or whether high-level decisions can boost society.

Specialized studies focus on cultural factors that differentiate institutional quality, performance and stability. In essence, traditions and habits, moral values and principles, the form of institutional organization, and the interaction between the individuals of society become components of culture and civilization, leading to the development of the state of modern law. The process of integrating cultural elements at the institutional level is a mechanism of persistence of a well-structured political system. In this context, belonging to the European Union is a major benefit as it is viewed globally as one of the most representative political formations that builds a viable, result - based economic system (attracting foreign investment capital).

Legislative homogenisation and the creation of common practices and policies have led to Member States' cooperation in their desire to create a representative body at global level. Removing cultural barriers through the desire to expand the European group to the Eastern region has produced a series of economic and legislative gaps (the governments of the Member States did not want to cede control of the foreign political system and the judiciary to the supranational body). In the future, this widening of prospects for eastern countries can be a real success in implementing the euro (if and only if the world financial institutions want to operate with this currency), which will lead to the stimulation of economic growth and the free movement of goods and services.

Europe's renaissance at an economic, social and political level can be achieved through the correct implementation of democratic instruments, by focusing on social cohesion, solidarity with other Member States that are crossing an unstable period and protecting the environment. From a legislative point of view, this strategy can be likened to a plan to create a supranational power based on technology, sustainable economy, high labor force, productivity and social cohesion. The European Union becomes in this context a global economic force characterized by a fierce desire to create the ideal state. Thus, the European Union becomes the main actor in the world taking the responsibilities of the legislative sector seriously, developing a strategic partnership with the main world economic powers. The institutional environment can be defined with the help of the free market, which is one of the tools used by neoinstitutionalists in explaining the interdependence between interculturality and integration.

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## **ADOPTION OF SOCIAL MEDIA IN BUSINESS-TO-BUSINESS (B2B) SMALL MEDIUM-SIZED ENTERPRISES (SMEs) IN GREECE**

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### **Abstract**

*Much literature currently exists concerning the adoption and use of social media in a Business-to-Consumer (B2C) context (Michaelidou et al., 2011). However, research concerning the adoption and use of social media in Business-to-Business (B2B) context is still in its infancy (Siamagka et al., 2015) especially from the SMEs perspective (Stockdale, et al., 2012). The main purpose of this research is to investigate the phenomena of social media and its adoption for business-to-business engagement among SMEs. To assess this, a qualitative case study will be conducted, followed by the use of a quantitative approach and supplemented by a novel netnographic technique (Kozinets, 2010). The research will highlight the implications for marketing theory and practice and will suggest a framework to highlight the factors of social media adoption by B2B firms. The research has a special focus on Business-to-Business Small and Medium Sized Enterprises (SMEs) within Greece.*

**Keywords:** Adoption, Business-to-Business Marketing, Social Media, Small and Medium-Sized Enterprises (SMEs), Greece

### **Introduction**

Social media is a global phenomenon and have changed the way we live, work and learn. To understand the power of SM, the first quarter of 2018, Facebook had 2.19 billion monthly active users on their site (Statista, 2018). The revolution of SM has given the consumer the most powerful voice they have ever had, and the new customer is a prosumer, a combination of consumer and producer (Chaffey & Ellis-Chadwick, 2016; Ritzer & Jurgenson, 2010). Both large and small businesses have new opportunities for marketing as we have a change from one-to-one communication into one-to-many and from “word of mouth” into “word of mouse” (Stokes and Nelson, 2013) or “electronic word of mouth” (Bulearca and Bulearca, 2010) conversations. Kietzmann et al. (2011) highlight that the adoption of new technologies has exceeded the progress of present academic research and social media has become an essential part of everyday life. Therefore, there is a need for exploring the influence of new technologies on business and especially on SMEs to minimise that gap between the theory and the practice (Durkin et al., 2013; Ainin et al., 2015).

SMEs are important for a country’s economy and are the base for future economic and employment growth (Ahmad et al., 2018). SMEs have lack of financial, human and organisational resources and that makes them exposed in their markets (Gilmore et al., 2011). SM are particularly appropriate for SMEs because they have low cost to implement, low barriers to participate and low level of required

IT skills (Durkin et al., 2013). Therefore, social media can have a positive impact on SMEs in terms of cost reduction, enhancement in customer relations and information accessibility (Ainin et al., 2015).

Due to the lack of literature in the area of social media use by B2B SMEs, this study will analyse both exogenous and endogenous factors that influence Greek B2B SMEs to adopt and use social media marketing. It will also try to identify the problems and challenges that SMEs face and the benefits that they experiment once they have embraced social media.

## **Research Contribution**

Through the extensive analysis of the literature, it has been found that social media adoption has been largely focused in a Business-to-Consumer (B2C) context (Huotari et al., 2015; Bulearca and Bulearca, 2010; Stockdale et al., 2012; Chua et al., 2009; Derham et al., 2011; Siamagka et al., 2015), whereas in B2B context is still in its “embryonic stage” (Siamagka et al., 2015, p. 89). This gap emphasises the importance to further research (Wiersema, 2013; Karjaluto et al. 2015) and especially in SMEs (Ainin et al., 2015).

According to Bodnar and Cohen (2012, p.3) “B2B social media marketing is a new set of marketing tools that integrates with existing marketing strategies to help B2B marketer work smarter instead of harder. When done well, social media marketing can reduce marketing expense, increase lead volume, and provide a clear and measurable return on investment for your marketing dollars”. Therefore, it is a significant area to study for SMEs who are wishing to find new approaches for identifying and communicating with their customers and stakeholders.

The primary aim of this research is to investigate the phenomena of social media marketing and its adoption for business-to-business engagement among SMEs and economic growth and to develop and to test an appropriate theoretical framework. The main research question is:\

RQ: What are the main challenges, benefits and barriers of social media marketing adoption by Greek B2B SMEs?

Moreover, in order to operationalize this aim, a series of objectives are required:

RO1: To explore the factors that influencing the adoption and use of social media by B2B SMEs in Greece

RO2: to examine business and economic structure of SMEs within the business ecosystem of Greece.

RO3: to examine the use, perception and growth of social media across the SMEs business ecosystem of Greece.

RO4: to critically locate the study through qualitative and quantitative studies.

RO5: to adopt netnography in the research

RO6: to critically interrogate and analyse the study data

This study will try to contribute to the current literature on the adoption of social media marketing in the context of B2B SMEs. The majority of research is focused on Asia and the USA (Dahnil et al., 2014) while the European context and especially the Southern European region is an underdeveloped area of study on social media adoption. Therefore, this study will examine the social media adoption within B2B SMEs in Greece to address this gap. The population of the study will be Greek SMEs as they represent 99.6% of the Greek private sector and 56% of the total employment of the Greek economy (Greek Institute of Small Businesses, 2016).

## **Theoretical framework**

This research draws the definition by Kaplan and Haenlein (2010, p. 61) who defined social media as “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content”. According to Stockdale et al. (2012), social media helps businesses to gain business value and competitive advantage and SMEs can have access to resources that were used to be available only for large companies (Kim et al., 2013). Social media marketing adoption and usage have an important impact on SMEs’ performance (Michaelidou et al., 2011; McCann and Barlow, 2015; Odoom et al., 2017).

Pitt et al., (2006, p. 600) argue that “the internet is becoming the most important vehicle for global business-to-business commerce”. According to Sharma (2002) B2B marketers use the internet to gain value for their brands via information, knowledge, conversations and relationships.

Several studies suggested that factors such as compatibility (Wang et al., 2010; Low et al, 2011; Ainin et al., 2015), cost effectiveness (Michaelidou et al, 2011; Odoom et al, 2017), trust (Ahamat et al., 2017) and interactivity (Odoom et al, 2017) are influencing social media adoption. Other essential determinants are perceived usefulness (Siamagka et al., 2015; Ahamat et al., 2017), perceived ease of use (Ahamat et al., 2017; Siamagka et al, 2015) and top management support (Low et al 2011; Cerasoni and Consoli, 2015). Additionally, Wamba and Carter (2014) identified factors such as organizational, manager and environmental characteristics which influence social media adoption by SMEs.

The adoption and use of social media create many benefits for SMEs, including: building brand relationships (Dahnil et al., 2014); eWOM branding (Michaelidou et al., 2011); real time information (Vlachvei and Notta, 2014); brand awareness (Cerasoni and Consoli, 2015); enhance customer relationships (Järvinen et al., 2012; Agnihotri et al., 2016) and benefits for their general marketing activity (Wang et al., 2016).

Previous literature (Michaelidou et al., 2011; Cerasoni and Consoli, 2015; Jussila et al, 2014) highlights that lack of understanding of how to do so, of technical skills, of perceived benefits, of time and resources and of measurement of ROI or performance are the main barriers of social media adoption. According to Mangold and Faulds (2009) B2B marketers are discouraged from adopting social media channels because of the lack of control over communication.

The adoption of new technologies has been studied from different theoretical perspectives (Oliveira and Martins, 2011; Chong et al., 2009). The Diffusion of Innovations (DOI) Theory by Rogers (1995) and the Technology, Organisation and Environment (TOE) framework (De Pietro et al., 1990) are considered as the most used models for technology adoption especially by firms (Oliveira and Martins,

2011). Other theoretical models used on the technology adoption literature on individual level include the Theory of Planned Behavior (Ajzen, 1985, 1991), the Theory of Reasoned Action (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980) and the Technology Acceptance Model (Davis, 1989). This study will use the TOE framework (see Fig.1). The TOE has been previously used to understand the adoption of new technologies by SMEs (Alshamaila, et al., 2013) and to investigate the use of new technologies by firms (Oliveira and Martins, 2011).

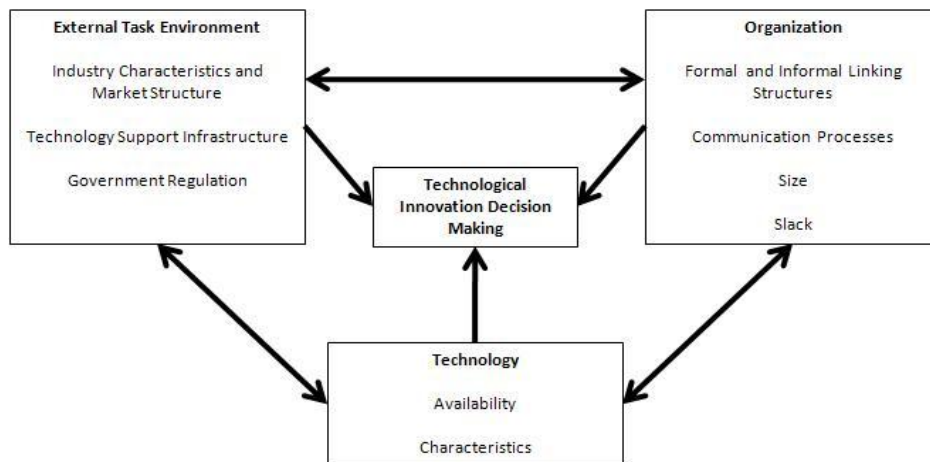


Fig.1: Technology, Organization and Environment (TOE) framework (DePietro et al.,1990)

By applying the Technology-Organisation-Environment Framework the study will develop and test a theoretical model that can be used to investigate the impact of different technology, organizational and environmental characteristics on the adoption of social media by Greek B2B SMEs. The TOE framework identifies three determinants that influence the adoption of new innovations in an organisation: the technological, the organisational and the environmental contexts.

1. The technological context includes the internal and external technology relevant to the organisation.
2. The organisational context includes the characteristics of the organization.
3. The environmental context is the area in which an organisation operates. This includes infrastructures, technology support, size and structure of the organization, competitors and government regulations.

## Methodology

Due to exploratory nature of the research, this study involves a qualitative case study research approach to gain insights into the field of research and related organisational contexts. According to LaPlaca and Lindgreen (2016, p. 1), “case method research is an in-depth investigation (description) of a specific situation or phenomena” and “it may be the only way to gain an understanding of the

underlying processes involved in industrial marketing”. The sample will consist of 5 Greek B2B SMEs from several industries based in Athens. More than 35% of Greek companies are located in the metropolitan area of Athens (Greek Institute of Small Businesses, 2016). The participating SMEs will be profiled regarding their overall social media activities. Semi-structured face to face interviews with business owners or key decision makers will be used to collect qualitative data for the SMEs. The findings will be analysed with NVivo software.

In the second phase, a quantitative online survey will be sent to a sample of Greek B2B SMEs and data will be analysed through SPSS software. The participants B2B SMEs will be categorized into three main groups: the adopters (those that had already adopted SM), the prospectors (those that intend to adopt SM in the next three years) and the non-adopters (those that do not intend to adopt SM).

Finally, the study will adopt a netnographic methodology with direct observation on social media sites and activities of these SMEs for at least two months. This qualitative observational research method applies ethnographic research into online communities to use them as a source of data (Bowler, 2010; Kozinets, 2002 and 2010). Kozinets (2002) defined four ethical research principles which marketing researchers should follow when conducting netnographic research:

1. The researcher should inform the studying online community members for his or her presence.
2. The researcher must guarantee the anonymity and confidentiality of the informants.
3. The researcher should request and include feedback from the online community members.
4. The researcher should ask permission from the community members every time that he or she wants to quote a particular posting.

Additionally, the social media content will be analysed through NVivo10 software using the NCapture function of social media.

## **Conclusion**

The study will contribute to theory in three ways. Firstly, will develop and test a theoretical model to explore social media adoption and will determine the factors that enhance B2B SMEs in Greece to adopt and use social media marketing. Secondly, will triangulate qualitative interview findings with quantitative data by Greek B2B SMEs to understand the main determinants of social media adoption. Finally, this research will be useful for academics who can find it as a base for further research on the adoption of social media by B2B SMEs.

In terms of practical implications, the study will help managers and owners, to build more effective strategies for social media adoption by SMEs within government and businesses. This study is one of the first which will try to develop an empirical framework of social media adoption and its impact on performance by B2B SMEs in Greece. It will also enhance to promote new business projects and the establishment of more start-ups and assist the proper and effective use of new technologies. Greek SMEs could use SM marketing to assess larger markets and to be more competitive not only locally but also in the global economy. Therefore, social media marketing tools can have a key role in the country's attempts to recover from the recession and to develop. Finally, this study will be interesting for academics who can find it as a base for further explanatory or descriptive research on the use of social media by B2B SMEs.

The research focuses only on B2B SMEs in Athens, the capital of Greece by excluding larger firms and therefore limits generalisability of the findings. Although Greek SMEs are more than 99% of the Greek firms, future researchers could conduct similar comparative analyses including firms of all sizes to enhance our knowledge about social media adoption in the industrial context. Another aspect of limitation would be the national character of the analysis. The focus on the Greek SMEs does not make it possible to generalize the results globally, as e.g. national and cultural factors might also play an important role in the area of social media marketing adoption.

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## **The contagion effect - (the) price for the global economy**

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### **ABSTRACT**

*In a globalized world, one of the most important aspects is the understanding of the connections that come to live in the decision making process. Nowadays, the situation involves the others too. One example in this case could be the last economic crisis. The contagion effect shows the way the problems of the economic power hold sway in the world's other economies. The economic booms and the bust can offer a clear image on the negative externalities diffused from one crashing market to another. It is interesting to observe the manner in which the economic connection can transfer the problems between different economies.*

*The present paper intends to offer a global perspective regarding the last economic crisis and its impact on the economic life of the society. Where is it the starting point? Which are the instruments that help spread the contagion effect in the entire world? The analysis is trying to establish whether the contagion effect in economy is or not the result of global economy. If the answer is yes, what is the price for that?*

**KEYWORDS:** contagion effect, crisis, world economy

**JEL CLASSIFICATION CODES:** F63

### **Introduction**

The impact of financial crises on the world economies is one of the most recent worries of the specialists in the field of economics. The last world crisis may be considered, without no doubt, one of the proofs that the economy is interconnected. Understanding the way in which the global economy is working can be easily demonstrated by using the similarities. For example, the *domino effect* can show the way economy works or not.

When the economic situation offers welfare for individuals and when the level of prosperity has an ascending trend, the situation will be the same in almost all of the world's countries. Although, the disparities between world economies create higher and higher inequalities, we cannot ignore that, in the periods of economic growth, the social-economic situation improves in each country, no matter if we speak about the developed countries or developing countries. The situation is different in underdeveloped countries. It's obvious that economic disparities cannot be stopped or completely reduced.

In crisis periods, if economies are highly developed, they collapse. For the developing countries, the situation is the same. This kind of reaction is, obviously, the result of the connection between world economies. Called *the contagion effect*, it represents the transmission of shocks across economies, the migration of market disturbances from one economy to others. This process can be observed through exchange rate, stock prices, bonds and capital evolution.

The aim of this paper is to expose and understand the contagion effect in the context of a global market, and to determine how the crisis spread from one country to another. Identification of global contagion issues and factors of contagion could be a starting point in finding a solution to help avoid future crisis situations.

## Literature review

The contemporary literature focus on contagion effect analyse. The transmission mechanisms describes the response of macroeconomic variables such as output, bank behaviour, interest rate and exchange rate to a variety of shocks. This fundamentals-based transmission mechanism reflects interdependence (Masson, 1999). The financial relationships and linkages between the world economies and macroeconomic similarity explain a part of financial crisis.

One of the most important impact factors for diffusion of economic crisis is the trade, and Eichengreen, B., Rose, A.K. (1999) speaks about it in ***Contagious currency crises: channels of conveyance***: *We have sought to test for contagion in foreign exchange markets using a framework that distinguishes two channels of international transmission of speculative attacks. The first channel is trade links, and the hypothesis is that attacks spill over contagiously to other countries with which the subject country trades. The second channel is macroeconomic similarities, and the hypothesis is that attacks spread to other countries where economic policies and conditions are broadly similar. The first approach emphasizes the implications for competitiveness of an attack elsewhere in the world. The second focuses on the information content of an attack (where the assumption is that an attack on one country reveals information about market sentiment regarding the viability of a particular economic strategy). The effect of contagion operating through trade is stronger than that of contagion spreading as a result of macroeconomic similarities.*

Lee, H.Y., Wu, H.C, and Wang, Y.J. (2006) affirm in *Contagion effect in financial markets after the South-East Asia Tsunami* that an important result is that contagion effects are more obvious in developing financial markets than those of developed one.

The global crises become more frequent during the last years and the main reason for it is the increased frequency of crises is an increase in capital mobility. The free trade and the liberalization improve the flow of funds to emerging markets around the world. When the crisis occurs an important part of the economic agents, these influence the others agents.

In World Bank point of view, there are different definitions for the contagion. One of the point define the contagion like a general process of shock transmission across countries or economies. This definition is related not only with negative effects, but also with positive spillover effects. Another one is more restrictive and affirm that contagion involves the propagation of shocks between two countries in excess of what should be expected based on the fundamentals after considering the co-movement triggered by common shocks. From this point, it's almost impossible to evaluate whether excess co-movements have registered and whether contagion is displayed. The last definition of contagion is the most restrictive and explain that contagion should be considered as the change in the transmission mechanisms that take place during a period of turmoil and it can be deduced basing on a significant increase in the cross-market correlation.

### **Where is it the starting point?**

The most integrated worlds markets are European Union and the North America (United States and Canada). For the time of the last economic crisis, United States transmits contagion effect to all over the world. The United States was the starting point of contagion. From here, the negative effects were spread all over the world. More than this, in this period, the economies become more and more vulnerable to the others shocks. Both, the Great Depression and also, the last economic crisis, the starting point was the element who *got sick* all the world.

The last crisis which began with the American risk-based mortgages crisis in 2008, has put pressure on financial markets from all over the world.

### **Which are the channels?**

One of the most important channels through which an international financial crisis affect upon the emerging market economy are as follows. The re-pricing of credit risk increases the cost of external financing. In this context, it is inducing a sharp decline in output

and domestic inflation, but also a depreciation of the domestic currency. During this period, financial markets are marked by large drops in asset prices, increases in market volatility and hence co-movements in asset price across markets.

Since the external risk premium is tied to the leverage ratio, firms reduce new borrowing in order to decrease the endogenous component of the risk premium. Moreover, the fall in domestic inflation and the depreciation of the domestic currency increase the real debt burden for leveraged households, leading to a decrease in consumption. The depreciation of the domestic currency enables the home country to compensate, at least partly, for the decline in consumption and investment demand. However, this only applies if the financial crisis originated in the domestic economy. In contrast, when the source of the financial shock is global, the export channel works in the opposite direction with global contraction leading to a fall in export demand for the domestic output resulting in a further decline in domestic economic activity.

The contagion effect is transmitted to the economy through 3 channels: the financial spillovers, the export channel and substitution channels. We find that when financial shock originates in the rest of the world – when the crisis is a global one – the more open an economy, the greater unfavourable consequences of the financial crisis for the domestic economy.

## **Conclusions**

In the absence of financial spillovers between countries, the domestic economy achieves lowest risk premiums and thus highest net worth, investment, output and consumption under the fixed exchange rate regime following the global financial crisis, a result that is overturned in the presence of financial contagion.

When the investors' perception about the distribution of the entrepreneurs' productivity changes, leading the domestic entrepreneurs becomes more risky, leading to a rise in the external risk premium on impact.

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## **Predictors of the economic crisis revisited: how much does social cohesion matter?**

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### **Abstract**

*In this paper we update the database and extent the time span of earlier research on social cohesion variables as a possibly strong predictors of the impact of the economic crisis on European Union Countries. More specifically, we proceed to compare variables of the aforementioned kind with other potential predictors, i.e., competitiveness and public debt. In order to obtain our empirical results, we use the sample of the 28 E.U. countries for two discrete time periods: one before and one for the years immediately after the “Great Recession”. Our main finding is that we obtain contradictory but rather meaningful results: in the pre-crisis period, relative poverty is inferior in comparison to other predictors while the opposite holds for the first years after the crisis.*

**Keywords:** economic crisis, social cohesion, competitiveness, public debt, crisis predictors

**JEL classification codes:** D3, D63, H12

### **Introduction**

In a quite recent article (Georgopoulos et. al.,2012) we established a strong relationship between the “Great Recession”, or in other words, the economic situation of the 27 E.U. members at the time, immediately after the so called official end of the crisis, 2010, and their respective relative poverty / inequality on the other. By comparing correlation findings of the above two indices with four others variables, namely, the GDP per capita, the World Economic Forum (WEF) competitiveness index and two Human Development Indexes (HDI), we found that all six are correlated with economic crisis variables and with the expected signs: positively with relative poverty / inequality (meaning that the higher the relative poverty / inequality the worse the economic performance during the crisis -and immediately after it- of the economy), and negatively with the other four. In addition, regression results, in the framework of dominance analysis, confirmed the relative importance of inequality and poverty compared to the rest of the variables. Although the per capita GDP, WEF competitiveness and perhaps the HDIs correlation findings would not surprise most economists, the relative poverty / inequality findings were almost unexpected; all the more so, as we observed that relative poverty / inequality correlations (and rescaled dominance coefficients) were significantly superior compared to the other ones regarding almost all crisis variables. The substance of our analysis was that relative poverty / inequality is an integral part of the crisis and, possibly, poverty a superior one.

### **Methodology and Results**

In our earlier paper we tried to establish a clear correlation between the “Great Recession” as well as the current economic situation of the 27 E.U. member states on one hand and their relative inequality /

poverty on the other. We first defined crisis multilaterally, focusing on items / issues emerging specifically during this crisis (the interest rate spreads, the CDS spreads, the joint IMF-EU-ECB stabilization programs), but without ignoring the conventional crisis variables (unemployment, GDP growth etc). We also compared correlation findings of the above two indices with four others, namely, GDP per capita, the WEF competitiveness index and the two HDI variables described above. We found that all six indices are correlated with economic crisis variables and with the expected signs: positively with inequality / poverty (meaning that the higher the inequality / poverty the worse the economic performance during the crisis and the current state of the economy), and negatively with the other four.

Now almost 8 years after, we are in a process of updating, expanding and integrating the above findings spatially and temporally. In the present paper we present some preliminary results referring to the total of 28 European Union states. We use GDP yearly changes in the immediate 7 years period before the crisis i.e. 2001-2007 and an equal distance after its beginning, that is 2008-2014, or the total period 2001-2014 as the dependent variable. And as independent, explanatory or predicting variables, we chose, in partial accordance with our earlier paper, the following ones:

- 1) an inequality variable, the relative poverty, represented by the *at-risk-of-poverty rate* (the share of persons with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income after social transfers),
- 2) a competitiveness variable represented by the World Economic Forum (WEF) Competitiveness index
- 3) a public debt variable, represented by public debt as a percentage of GDP.

The first two of the above variables (the inequality/relative poverty and the competitiveness ones were also included in our previous paper The third one, the public debt index is introduced in the current paper, in order to investigate and capture its burgeoning significance and place emphasis on public priorities especially for the years during and immediately after the crisis.

We run 3 regressions, one for the years 2001-2007, another one for the years 2008-2014 and a third one for the whole period 2001-2014 with the respective findings depicted below. We performed the empirical analysis using the Panel EGLS method with diagonal correction of standard errors for heteroscedasticity and autocorrelation (according to the White methodology).

Variables	Time Period	Time Period	Time Period
	2001 - 2007	2008 - 2014	2001 - 2014
	(a)	(b)	(c)
<b>Inequality</b>	0.525	-0.557***	0.253
	(1.55)	(5.54)	(0.70)
<b>Public Debt</b>	-0.283***	-0.104***	-0.184***
	(5.57)	(8.52)	(3.00)

<b>Competitiveness (rank)</b>	0.620***	-0.015	0.201***
	(19.23)	(0.83)	(2.91)
<b>Adj. R-squared</b>	0.943	0.573	0.201

\* Significant at the 10% level (two-tailed test), \*\* Significant at the 5% level (two-tailed test) \*\*\* Significant at the 1% level (two-tailed test).

*t* ratios are in parentheses. All equations include 2-digit industry dummies. Standard errors are White heteroskedasticity consistent.

## Discussion of the Results

A first finding refers to the public debt explanatory variable. In the two sub-periods as well as in the whole period, we see that, invariably, public debt has the right, rather expected negative sign and it is an important and statistically significant part of the explanation of GDP variations. In other words, we can say that, public debt was already from the beginning of the period, a significant, albeit negative, factor for economic growth, something which is expected based on traditional economic analysis (e.g. Reinhart and Rogoff, 2011, Agiomirgianaksi et al. ) - at least after a certain public debt level, which was almost reached in the beginning of the 2000s by a significant number of E.U. members. We expect that if we included a longer period, say perhaps after 1980s, the above finding would not be preserved, because in the early periods of public debt accumulation and before exceeding a certain level (usually 60% of GDP and mainly around 80%), it could positively impact economic growth mainly through busting demand, but at its early 2000 levels it was a liability factor already. In conclusion, public debt seems to be a good predictor of future economic problems.

The second finding refers to the competitiveness explanatory variable. We see that overall and for each sub-period separately, the competitiveness variable does not have the expected from economic theory negative and statistically significant sign (in the present formulation, a positive sign means negative competitiveness). That means that uncompetitive nations had the strongest growth trends in the years before crisis. As we know this was almost the case, since many, especially southern nations, which were comparatively uncompetitive, experienced the strongest growth rates back then. This happened because their economies and especially their non-internationally competitive sector were in a bubble. But, and this is a rather interesting point, in the years of the Great Recession and after, 2008-2014, economic competitiveness didnot alter its importance drastically. It became almost statistically insignificant but continued retaining the wrong sign. This means that economic competitiveness, although improved, moving towards the expected from economic theory sign, nevertheless it didnot reach it, even after the crisis. On the whole, for 2001-2014 the competitiveness variable sustains its unexpected but statistically significant sign. Overall, this rather odd finding is in line with our previous paper conclusions, that economic competitiveness is a rather overprized factor and predictor of GDP variations and growth in the years after 2000.

The third finding is about our cohesion variable, the relative poverty, an essentially inequality variable. Here we find contrasting results. Thus for the first sub-period (2001-2007), the relative poverty variable is positive, which means that the greater the relative poverty / inequality the higher the economic growth. This outcome in our understanding can be possibly explained either through

deficits and debt, especially private debt intermediation, or through an “efficiency versus equity” argument.

According to the first argument, if the debt variables increase, they usually tend to bust relative poverty / inequality after a while but, and this is crucial, in the opening years of such a process, the enhancement of relative poverty / inequality does not produce its negative results yet. Instead this is a boost in demand with initially positive economic outcomes. Further inquiry about deficits and debts (private and public) could substantiate the above argument.

According to the second argument, advances in productive efficiency are associated with decreases in distributional equity, or vice versa. For example, progressive taxes favor people with less ability to pay but decreases work motivation.

The exact opposite is true for the recession years. Here relative poverty / inequality becomes a very strong negative factor impeding economic growth. On the whole, for the 2001-2014 period, the two contrasting trends cancel mutually and someone could reach at a rather mistaken result, i.e. that inequality and relative poverty do not matter for economic growth - , negatively or positively. Nevertheless, the analysis in the two contrasting periods discloses that this is not true. Social cohesion variables were almost surely behind the recent tremendous economic upheavals, firstly boosting / accelerating growth through debts beyond their normal capacity and immediately afterwards decelerating it disproportionately, ending up in this recent big slump, the so called “Great Recession”.

## Conclusion

In the present paper we tried to confirm and at least partially update and expand, at a preliminary level, our earlier findings about important predictors of GDP performance between 2001 and 2014, and of the corresponding crisis. We found that the public debt variable forms an important predicting part of the partial and overall growth capacity and we verified our previous findings, that economic competitiveness, somehow counter-intuitively, is not a good predictor. The cohesion variable, relative poverty, displays a varying behavior, firstly contributing towards economic growth, then counteracting it, and overall, having a not clear direction as these two trends cancel out. Notwithstanding this rather paradoxical conclusion, relative poverty stands as a good although varying predictor of economic performance, producing opposite results, depending on the specific stage of the economic cycle.

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## **The relative affect of studies in graduates' employability skills and employment. best practices**

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### **ABSTRACT**

*Statement of the problem and purpose of the study:*

*Employability has been studied as an outcome of an effective education and as one out of many performance indicators of higher educational institutes. Specifically, the role of higher education in the direction of strengthening the employment of graduates is of considerable importance and it is expected to have a positive effect to the final result which is the job find. However, according to the international literature review it seems that the contribution of higher education to the above target is lacking according to the actual results. The aim of the present study is to research the relative impact level of studies in graduates' employability reinforcement and improvement of their employability skills.*

*Methodology/Approach:*

*For this purpose we have conducted extended literature review and concurrently primary empirical research, in multitudinous sample among students of different post and under graduate programs of studies and various universities in order to investigate the relative effect of under and postgraduate studies in graduates employability and enhancement of their employability skills.*

*Results/Findings:*

*In this paper we present the relative literature review to our topic while in the upcoming paper which will be follow this one, we will present the analytic statistic results of our empirical research on relative effect among under and postgraduate studies. According to an extended literature review there is a consensus regarding the positive impact of studies in graduates' employability, while at the opposite, there is evidence that curriculums don't have a remarkable contribution in enhancement graduate's employability skills*

*Conclusions:*

*In general, it is a consent that overall studies and the curriculums of higher education institutions should have a structure, organized and integrated actions with other shareholders, concluding cognitive subjects and collaborations with relative significant parties in a manner which reinforce the employability of graduates in connecting studies with work and eventually enhance higher educational institutes' effectiveness. There is much left to be done in this direction.*

*Keywords: under, post graduate studies, education, employability skills*

## Aim of the study

The role of the current research is to show up the importance and the complexity of the meaning of the employability and the employability skills and the phenomenon of shortage of these skills of HEI (Higher Educational Institutes) graduates. Moreover, purpose of the study is to show up the significant role of universities' to the direction of strengthening the employability skills of their graduates as well as to the improvement of their employment level adopting appropriate educational methods and technics' through effective under and post graduating curriculums' of their programs. Finally, the current study aim to present best practices of cooperation and partnership between all of the shareholders, that directly or indirectly have positive effect in graduates' employability

## The role of Higher Education in Employability

Governments', worldwide, have a particular interesting to the effective contribution of higher education what we call human capital the quality of which is of considerable importance and meaning for national wellbeing and people prosperity. For example, to this purpose the UK has create the institution of ESECT (Enhancing Student Employability Coordination Team) Yorke & Knight (2007). The same interesting we can see at many relevant studies such as Barrie (2004), Bowers-Brown and Harvey (2005), DEST (2002), Hager et al. (2002), Harvey (2002), Leadbeater (2002), Nguyen et al.(2004), Rao and Sylvester (2000), Reich (2002), Sheckley et al. (1993), and SHEFC (2004).

The transition from studies to work is of particular importance for employability. Youth unemployment features

For youth employment in particular, the transition process from studies status to job market it is of considerable importance. The continuously incrementing number of universities' graduates' and respectively the continuous increasing unemployment of them in many countries, facilitate this transition to work as a particular conspicuous problematic phenomenon, which mind ever increasing the public interesting and causes intensive concern. Teichler (1998); Teichler (2000); ILO (2004). It is important to mention some features of youth unemployment. For example youths as a percentage in comparison with other groups of unemployed is much more ILO (2004), the percentage of unemployed youth that disconnect from job market as well from education (NEET) increasing (OECD 2010), they are underemployment, have inferior quality jobs, and facing difficulties to their transition of education to work ILO (2013). Finally they are being discouraging and fail to find work. Thus they are coming face to face with problems such as losing their self-esteem/confidence, and depression disturbances. (Efremova, et al (2015). Generally unemployment causes serious problems' to people from health to suicides' Wanberg, (2012). Today's unemployment constitutes one of the most majors', crucial and painful problems worldwide and can induce a series of severe consequences' such as for example to reduce unemployed standards of living and their families, deterioration among

members of family, augmentation of social isolation, reduce feeling of self-confidence and self-esteem. Furthermore can lead to aggravation of mental and physical conditions even to previous healthy people Aysina and Suslova, (2013); Gychev, (2011); Nesterova, (2011); Tickle, (2007); Anderson and Winefield, (2011).

#### Employability definition and employability Skills

ILO refers to employability as the skills, knowledge and abilities which improve, enhance the ability of an employee or a candidate, to secure and hold on a job, to progress in his work, to cope with changes, to ensure a new job if she/he wills or if he has lost his previous job, to be able to enter to the job market more easily in different time periods of his life ILO (2004); ILO (2008); ILO (2013). It is the factors that are able to change the probability of entering a person to the job market or to make it easier to find a new job, or to improve the job position that already holds McQuaid & Lindsay (2005); De Grip et al (2004). It presupposed also the ability of networking and self-promotion of you to the job market, a kind of someone's ability to navigate him during his career life and to remain active employed through his life. ILO (2013). On the other hand, very a important meaning for employment is transferable skills which is the ability to use in one situation the skills and abilities that you have acquired in another different environment Lloyd Davies (2000, p. 438); Jennifer Gibb, (2004, p.141); ILO (2008). Those skills for example, among others, are the problem-solving skills, communication skills, team working, trade awareness, business skills and self-management. Tymon, (2013), and many others such as personal qualities which include for example the ability of self -learning, the willingness for learning and its reflections to particular outcomes according to other researchers' Lees' (2002)

#### From studies to work- what is going wrong? The shortage of employability skills

In most cases graduate candidates appear to the job market having only a hazy idea on how to promote the most important think that they possess that is their self. Kitchen, Philip, J. (1994). In general candidates' that they just have graduate of the HEI when they seek for their first job in their career life are not have, nor equipped with that personal transferable KSA'S which employers require of them Lloyd Davies. (2000). Many employee candidates for the job market don't know, or they don't have the necessary skills to show the hard qualifications' that employers' look for, even in the case they possess these KSA'S. ILO (2013). After graduating they have remarkable difficulty to cope with job market, they struggle to make their next step to employment. In large percentages emerged that they need help to find job, they felt poorly or unprepared for the job market and they were waiting much more consultancy from their university for their transition from studies to work world (Pollock, 2014). HEI graduates, in most cases show a low level of communicating, interpersonal and critical analysis abilities including those of business and accounting schools' graduates in Greece AAA, (1995); Hurt, (2007); Asonitou, (2014). Studies have shown in Greece as in other countries as well, that there is a gap between the skills and abilities that HEIS produce and those that employers require and anticipate



from graduates in many vocational fields Asonitou, (2014); Vitouladiti, (2013). In recent research employers have reported a shortage of graduate's in general working wisdom subjects, such as for example trade awareness, perception and knowledge general for the market, team work and maturity CBI, (2011a); CIHE, (2010), as well as relative working experience (CBI, 2011a). Many researches' worldwide, in different areas has shown that a large number of HEI graduates' have a shortage of the employability skills that employers require Rasul, et al (2012). Indeed, they believe that graduates' more often doesn't possess the soft skills than technical which are required for employment, and this causes an unwholesome situation of being well prepared for the job market Ramakrishnan and Yasin. (2010).

#### Hard skills versus soft skills and the role of HEI

Typical qualifications are often necessary but not effective itself to secure employment. Having a degree, once considered important factor for someone to differentiate his position in the market, but nowadays is considered as a basic, minimum requirement for most of the cases Brooks & Everett, (2009). As a consequence, many graduates gradually more and more participate in strategies that can provide them with a competitive advantage which among others are additional or post graduate studies Morgan, (2012); Brooks & Everett, (2009); Aamodt, et al (2010). However, as the number of the total graduates is multiplying rapidly, the competition between job's position that require higher credentials increases Baciu, E. and Lazar, T. (2011). For example, it is expected that until 2020 the number of most qualified candidates in the EU job market will increase by 20%. The issue of graduate's employability is a great chance for HEI (Jackson, 2014a). In this situation the development of appropriate graduate's skills and abilities constitutes major chance for HEI combined with the lack of communication between employers and educational institutions which is fundamental in order to recognize the anticipated factors for graduate's performance appraisal Daud, et al (2011); Gibbs, et al (2011); Hernandez-March, et al, (2009). The employability skills in general considered as a subset of graduates' attributes that make them effective employees. It is believed that Universities have the role and the responsibility for the development of such skills Litchfield, et al (2010). In general education improves the chance of someone getting or secures a better job, enhance the productivity and total income as well. OECD. (2011). The level of education has an important role and positive effects to the job search intensive. Wanberg, et al. (1999). Higher educational level not only affects the behavior of the candidates during job search but also is positive related with the outcomes of this process which mean that these people have more possibilities to find jobs and to reduce unemployment periods as well in comparison with people with lower educational levels. Kanfer, (2001); Addison & Portugal (2002). The level of education is also positive correlated with the quality-significance of candidate's network. In other words, candidates that have better educational level are favored in job search because they have better network acquaintances with employment people, who can provide them much and better market information Wahba & Zenou, (2005).

To the contrary, another research -separating precisely the academic qualifications from the professional, or else employability skills and particularly verbal skills –reports that particular high academic qualifications are negative related to a successful job search –employment outcomes, declaring by this way indirectly, that professional qualifications, or employability skills comparative to academic qualifications, are more significant to the job search success and outcomes or that there is the notion from employers point of view that those of possess high academic qualifications probably they don't accept easily job positions' that are considered unsuitable, for them McQuaid (2006).

Despite the fact that there are significant evidences that throw the enhancement of studies someone can augment his or her possibilities for get employment; however unemployment levels remain high for those who have advanced degrees, entitlements especially at developing countries Baciú, E. and Lazar, T. (2011). Today employers require from their employees to possess the so-called soft skills or non-technical skills in addition to them. Robins Resumes (2015); Joseph, D. et al (2010); Clagett, C.A. (1997). Centralization and attendance to the interest in what it is called soft skills is heavy, as distinctively reporting to Helmlinger's (2007) research by mentioning that 90% in job failures' can be find in iniquity, mismatch of those soft skills in personality, attitude, disposition, motivation and work pattern, habits. Moreover employees need help to develop skills and abilities in matters of self-assessment, self-presentation and self-career management. Individual should learn how to evaluate-assess their abilities, knowledge and skills and how to promote them προωθούν either inside or outside of a business or organization Johnson and Burden (2003); Bartram, et al (1995); Wade & Kinicki, (1997); Roebken, (2010)' Kinicki and Lockwood (1985); Bridgstock, (2009.) The perceptions above coincide with the continuing employers' concern in relation with mismatch between the skills that graduates possess after they finish their studies, with those skills that employers actually require. In these skills encompassed in particular with the job position technical skills, as well as employability skills Howse, (2014); CBI, (2011a); Archer & Davison, (2008). As the work environment today is in a stable continuing condition with many changes, employees have to be able to adapt to these changes developing skills in communication, critical thinking abilities, as well as to possess technical and academic knowledge that employers seek for Moradi, (2011). Nilsson, S. (2010) found in his research that even for mechanical graduates' who enter for their first time in Sweden's job market the importance of typical and technical professional qualifications reducing. In this general context personal soft skills and attributes such as leadership and interpersonal skills are much more important in relation to employment Aamodt, et al. (2010). The so called candidates' hard skills are significant and but not sufficient solely for a successful job interview and hire. To conclude having someone what we call hard skills, soft skills are apparently much more important among selection criteria. Garavan, (1999); Lips-Wiersma & Wright (2012); Vitouladiti (2013); Weib & Schuck (2016)

## The complication of counting the employability

The term employability, as well the effort to interpret it with only criterion the results of this process that steers to employment are confusedly. For example, the correlation of the term of employability with studies it is possible to be a continuing subject for counted results, such as for example the number of university's graduates' that manage to get fulltime employment in a certain period of time. Thus, as a result the term of employability considered, as a granted that is equated with the obtainment and retention of a complete and full time job position Hillage & Pollard, (1998). Employability as a term is rarely clear and explicitly defined, and there are many definitions' that connote what actual does it means. However, in all cases the dominant notion is relative with the possibility of getting a job. Nevertheless, more or less explicit definitions confused and overlapped with the above-mentioned dominant contextualization on the ground that someone, or all of the below reasons' which makes the term of employability not so easily interpretable. And that occurs because employability and it's precise definition has to do with the type of job, the timing, innate and attributes of selection process, additional studies and with the so called, employability skills. Lee Harvey (2001). The term of employability can separate in two broader approaches Harvey and Knight (2005, p.5). Employability in terms of someone gets a job, and employability in terms of someone developing skills necessary to graduate's employment. They point out that first interpretation is problematic for academic surrounding while in second case, academics' can have a contribution. Therefore, according to Harvey and Knight (2005, p.5) the meaning of employability refers to graduates' attributes which are helping them to attain, retain and to develop in a job. These attributes can rise to number eighty. Nevertheless, can be reduced, if someone focus on those attributes that concern management and business skills which can be transferred from one job role to another or from and used in every profession, in each stage of someone's' work career Raybould & Sheedy, (2005, p. 259). The mismatch and inconsistency between supply of employment skills and the correspondently demand for relative skills, constitute a crucial issue for universities since they generate more graduates; than the job market can absorb Baciú and Lazar (2011). Due to different factors, apart from specific skills that influences employability, and because of many definitions in relation to this term, is suggested a broader frame of contextualization which will includes them, as a common language, through will be more clear and explicit the definition of the term in relation to skills which correlates to employability. Goodwin, S., et al. (2012).

## Best Practices and Proposals

Research has shown that well developed skills affect significantly the employment, as the groups who have the responsibility for personnel selection, give significant credence to these skills, when they assess for hiring new graduates (Daud et al (2011); Finch et al (2013). Therefore, Higher Educational Institutions should incorporate those skills for their graduates' as part of their curriculum programs, as well as throw additional curriculums' and workshops for employment which can be deployed

concurrently. Hereon, encouraging for tighter bonds' among universities and businesses' will give prominence to modern tendencies and employers' demands' in terms of graduates' skills and abilities which are of high demand. Moreover, research has found that the skills that students developed through post graduate programs where skills in communication, practical skills, as well as the acknowledgment of their strong and weaknesses points Dickinson, et al (2015). In USA, consult and suggest for the importance of an increased level of communication among universities and businesses in order that the curriculums' of studies and consequently the degrees', to match and correspond better to employers demands, by teaching and developing, between other things the so called soft skills. Rosenberg, et al (2012). In a review (Wilson 2012) of the cooperation between business and universities, is underlined the positive affect from working experience, that graduates' acquiring through their participation in internships programs and other similar practices of gaining experience within employers, which develop their skills that employers seek for. Additionally the acknowledgment and verification of skills can be as good as it gets through information that employers can provide as they are closer to programs from which they hire people, and as well as they have a better notion and interpretation of the academic personnel who implement such programs' in which such skills are developing Stephens & Hamblin, (2006). In a research that conducted from Confederation of British Industries CBI (2011b), employers reported a variety of methods which they used in cooperation with universities' such as internships, collaboration in research and innovation, involvement in consulting committees' and as graduates' sponsors. These partnerships' can be mutual beneficial both for students' through the connection between educational and working experience, and for employers with the chance that will be given to them to update curriculums' of studies in order graduates' to develop and enhance the skills that they require from them in a hiring process. In the same research CBI (2011b), is pointed out, that the employability skills should be developed in studies curriculums of human resources management as a part of them, or even as a particular level of competencies in post graduates programs as an evidence of distinction among under and post graduates programs. Finally employers can co-work in partnership along with universities in developing such skills mainly through post-graduate curriculums' from which often they hire directly personnel. Maxwell, et al (2009). Another effective strategy is the establishment of mentoring programs and networks among successfully in employment graduates and incumbents who are prospective employees Jing, et al (2011). Finally looking in the future universities can support their students, graduates for active participation in social networks for an going information, search and acknowledge of new existing jobs Barrow, et al (2010); Jing, et al (2011). From the strategies which mentioned above, the predominant was the development of a graduates' portfolio and second was the strategic of mentoring and career consulting programs. Consequently, was in ranking the strategic of internship (Kinash, et al Knight. (2014)

## Conclusions

World of studies and job market world are different and distinguishable. The former has an impact to learning, while the later produce products and services. Nevertheless, non from itself can flourish and

progress in contemporary competitive economies and working environments'. Successful policies for developing required skills and abilities, implies collaboration between stake holders and building strong bridges' which will connect the two worlds in order to provide services in a united, common form, for a the same target, which is the reinforcement employability skills and increase if employability (ILO 2011). Bringing closely and together businesses, work, governments', and educational institutes, in local, industrial and national level, it is an effective mean to secure the relevancy of education towards to necessity changes of businesses and job market environment (ILO 2011). A powerful collaboration between governments', employers and universities' constitutes a fundamental, essential component feature for an effective and strong relationship between world of learning and world of work. (ILO 2011).

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## **A values framework for measuring the influence of ethics and motivation regarding the performance of employees**

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### **Abstract**

*Nowadays, there is an increased interest in exploring the exact way which corporate ethical values impact employees' motivation and performance [52], [60].*

*Corporate ethical values (CEV) have gained special interest in the last decades due to financial scandals (such as Enron, WorldCom) that had a great impact on economic world [17]. Literature [11] suggests that corporate ethics influence a firm's effectiveness and survival. This study approaches corporate ethical values as a motivating factor that affects employees' performance. Hence, it was studied among other motivators such as fair wages, promotion incentives, self-esteem and creativity shedding light on their impact on work performance.*

*A case study method was used and a sum of 189 questionnaires were gathered from a private institution and analyzed with SPSS software. For triangulation reasons, secondary data were also collected and an interview with a top manager was conducted.*

*Creative work and self-esteem were evaluated higher than the rest of the motivators. Regression analysis revealed that work performance was significantly explained by pay incentives, self-esteem and corporate ethical values. The predicting capability of the suggested model was noteworthy ( $R^2=0.209$ ,  $\text{sig}<0.000$ ), while corporate ethical values were found to have the greatest influence among all predictors. Moreover, considerable differences were detected between women and men in the majority of motivating factors such as the hierarchical advancement, security, the working conditions and responsibilities.*

*The results bring attention to the significant role that ethical values play in employees' performance as well as to the divergences to motivating attributes between males and females.*

### **KEYWORDS**

Corporate ethical values, Performance, Motivation, Greece

### **JEL CLASSIFICATION CODES**

M12, M14, M54

### **1. Introduction**

Public and private organizations function with people and through them. Human resources is the key factor that organizations are mostly judged for [57]. One effective way to improve an organization is ethical procedures, especially when various approaches are in use in order to shape an ethical work environment for the work force. Doubtlessly, some causes, like codes of conduct, influence of management and peers, ethics training, and heightened communication can bolster the commitment of individuals and the organization towards ethical business practices [1]; [27], [50]; [62]. Once this kind of commitment becomes broadly apparent, a work environment takes form inspiring employees to comprehend and conduct in an ethical way [15]; [22]; [38]; [61]. In order to develop an ethical context, one fundamental goal is advanced employee ethics, although organizations, more often than not, will experience further benefits established on positive interactions with the personnel. When companies maintain a context or practice favorable to ethical behavior, there is a

theory that is very likely for employees to respond favorably, such as having an increased motivation and performance [20]. Therefore, it is fair to assume that when an organization commits more time and resources to cultivate an ethical environment, the people who work there will respond approvingly, having positive work attitude and advantageous behavior [62].

The ethical values of an organization have been regarded for a lot years as the focal point of a company's policy and have been perceived as a strong influence that make a company stand out from another one [20]. As [20] stated, corporate ethical values, as an important part of corporate policy, set out the guidelines that shape the external adaptation and internal assimilation of companies. CEVs can be examined out of the scope of the training taking place in an organization, basic operating procedures, systems of reward and penalties, and official statements and more as an indicative of the true essence of the company [52]. The ethical values of a company direct the way for stepping in regarding shareholder groups, including consumers, opponents, channel partners, personnel, and generally the whole society [20]. Corporate Ethical Values can be perceived as being the company's real values as understood by the personnel and various other respective shareholders. Furthermore, these Values could be an essential factor that gives the chance to an organization to impact the perceptions of employees regarding the social responsibility that the organization has [66] and consequently increasing employee ambition. Corporate Ethical Values could enhance employee ethics [37]; [54] and have an influence on the mental outlooks associated with work [20]. The exact way which CEVs impact employees' motivation and performance is still partially unknown [52], [60].

There are couple of reasons why in the last years there has been an augmented interest in regards to workplace ethics. First of all, the new company ethical lapses, like Enron, WorldCom, and Tyco demonstrate what can happen from the non-formal unethical environment created by top management [2], [56]. Secondly, researchers have recently supported that viewpoints of suitable corporate conduct, like ethical socially responsible behavior, can influence the organization performance in a positive way [18] along with the attitude of costumers whilst purchasing [51]. Respectively, it is of high importance for managers to create an ethical context in which the personnel is inspired to behave ethically. Consequently, organizations would refrain from the aforementioned catastrophes, and also the organization's performance would be boosted.

Research in previous years has examined the aspects of various influences regarding ethical behavior [49]. In general, these influences are categorized as either personal or circumstantial. Personal attributes involve the aspects such as the levels of cognitive moral development, control point, and demographic characteristics like sex, age, and education level. Sadly, this series of research has generated conflicting findings [52]. More compatible outcomes have already been yielded from situation level variables, like ethics, systems of reward, regulations, social learning, and practice in an ethical manner [3], [12], [20]. There is a belief that this specific field provides a more thorough comprehension regarding the elements of ethical behavior in corporations. More specifically, popular notion suggests that ethical values, within the context of being a significant part in organizational culture, are crucial to maintain and increase business performance [52]. Being employed in a work place defined by these practices is more likely to affect employees' motivation, behavior, and performance.

Even though various former factors in regards to ethical conduct have been examined, the results of the ethical conduct of employees within the scope of an organization have not been explored as much. Efforts to increase ethical behavior would constitute a suitable end in, however it is reasonable to speculate that, taking into consideration the effort probable to be extended to increase ethical behavior, there is a high chance that other positive outcomes exist. One likely significant ethical behavior outcome could be an advanced unit-level achievement [44], including an increased

personalized output [59]. The present study considers motivation and performance as important outcomes of ethical behaviors.

This current research provides various probable contributions to the relevant literature. First of all, approaches of ethical values in an organization as motivating factors that influence the performance of employees. Second of all, a causal model is suggested and proved using cases of employees working in the private sector. The proposition of this present research is to demonstrate that ethical behaviors are innate positive, nevertheless, also, from a teleological point of view, that ethical behavior could result in organizational success [5].

## 2. Theoretical Background

It has been supported that ethical values influence the most the direction of individuals' actions in society in general and organizations in particular [43], [68]. When it comes to *society*, ethical values describe the "essence" of people – the things they adore, despise, or simply ignore. They assist in explaining the reason that people are willing to make sacrifices and to which level they are inclined to go so as to achieve their goals. Ethical values beset aspects of what people are, could be, and will become. When it comes to an *organization*, values help transfer the feeling of identity to its members, improve its social system stability, turn managers' focus to significant issues, shape manager's consequent decisions, and most significantly influence the peak performance of employees.

Companies might be comprised of various social norms and values that are dissimilar in their core, nonetheless, establishing all these definite values constitute corporate *ethical* values. These ethical values create and preserve the guidelines which outline the appropriate things to do and the ones that are beneficial to do [23]. Consecutively, these ethical principles can affect individuals' choices and lead to actions that organizations want. More particularly, when members of an organization share to a wide extent the ethical values that the organization stands for, the success of the organization will be increased [4]. As [40] underline in their research regarding accomplished corporations, practically all companies that demonstrate excellent performance have established at their core a proper-defined system of common values, more specifically ethical values.

The focus on organizational ethical environment has not been recent [14]. Corporate managers were interviewed by [6] in order to decide their beliefs of non-ethical behavior causes. Managers hinted that the conduct of people in higher ranks, peers, and official organizational codes constituted the key factors behind non ethical behavior. Research in the last few years has justified these aforementioned findings. [24] noted that the personnel viewed definite modes of corporate values, such as leadership and organizational culture, to hold a more important role than explicit forms, such as code of ethics and committees in structuring ethical conduct. Researchers have differentiated corporate values and culture, upon understanding the significance of ethical values in corporation. [20] carried out an inaugural study in order to analyse the difference between these two concepts, leading to the conclusion that organizational values are the focal point of organizational culture [14].

Corporate ethical values can be characterized as the subgroup of corporate culture, serving as multifaceted interaction among different "official" and "unofficial" behavioural control systems [20], [58]. The non-formal systems involve the body of beliefs, standards, and procedures that people working within a corporation share [28]. Adding to these factors, corporate ethical values can also be adapted within the more official systems, such as reward systems, procedures, and codes. Significantly, corporate ethical values, whether implicit or explicit, are not only associated with statements of mission and lists of essential values. Whether they represent a process or a result [52], CEVs constitute the ethical actions that an organization imposes.

Moreover, important research has examined the beneficial results of CEVs. As [64] supported, the workforce was more probable to base their perception regarding ethical environment within an organization on its policies, proceeding, and processes [14]. Corporate ethical values frequently shape systematized actions and define the guidelines that differentiate the right and the wrong things to do. There are higher corporate ethical values, once employees trust that ethics-related policies and processes are followed by managers and other people within the corporation [2]. For instance, managers could demonstrate these values by worrying about the aspects of ethics in their organization and by behaving in an ethical manner themselves, including praising ethical behaviour and dismissing unethical behaviour [2], [20]; [58]. Managers could be regarded as the levers of a corporation, as they aim to recruit and administer the personnel in order for the objectives of the organizations to be achieved. The philosophy behind the idea regarding the focal point on ethical values as being a way to influence the ethical behavior of employees is that people are anticipated to behave in a way compatible with the organization beliefs [19], [20]. Studies have supported the influence of ethical framework on such assemble as job fulfillment, organizational engagement, and turnout aim [49], and ethical strife with superintendents [48]. It rationally shows that ethical environment will have an influence on other behaviors of the employees, such as ethical behavior [2], [12], [20].

One highly valuable aspect for an organization or individual employees is job performance. A highly performing personnel is what organizations demand in order to assist towards the organization's goals, to exceed customers' expectations, and to assure that they constantly bring superior results, so as to stay competitive in the industry.

One work-associated result that is related to the achievement of the objectives of the organization as measured through performance evaluation regarding job-associated tasks is job performance. In order to form a performance concept, two behavioral elements must be distinguished, meaning the performance and outcome [69], [36], [42]. The behavioral aspect of performance regards the overall behaviors concerning the fulfillment of a certain job within work environment, according to [10]. On the contrary, the performance outcome aspect is associated with a person's certain behavior that will lead to a specific result or outcome. The majority of researchers admit, on a conceptual level, that performance and behavior are the same and hence it is broadly used in academic research [10], [35]. Practically, business-related organizations are more probable to assent on performance outcome. Consequently, this study characterized performance as equivalent to behavior.

Previous experimental data suggest that worries associated with ethics and the performance of employees are highly valuable to companies and, therefore, a further examination is needed [52], [9]. Past research [3], [49] argues that ethical environment is undoubtedly associated with work-related results. More specifically, previous studies demonstrate a positive link between a person's ethical behavior and performance. [12] support the positive connection between the ethical beliefs of an individual and his/her job accomplishment. The ethical judgment level was associated in a positive way with job conduct, as [53] experimentally established. Furthermore, [45] supported that ethics are an important distinguisher when it comes to successful and failing administrator. [7], referencing corporate ethical values, disputes that the positive ideas that employees have regarding the most important managers' beliefs and ideas will result to advanced performance results. [7] supports that people who recognize high coherence between the ethical values of an organization and their own, will feel more inspired. As supported by [49], the coherence between the ethical values of an individual and the ones of a corporation, will affect in a positive way the performance of the employee.

The worry about the motivation of employees is the number one factor of the public management research agenda, as the business setting becomes unsettled and less certain [32]. Actually, relevant management literature [25] affirms that personnel are the most valuable resource and the essential factor in accomplishing higher performance, present-day enterprises have to

reexamine the motivation question. In this manner, it appears that in contemporary times, the main challenge for managers is to the objectives of the organization in order to be effective and beneficial, whereas it preserves equivalent advanced ethical values and completes the employee needs for motivation, reward, and fulfillment.

A very thoroughly examined theme in the social sciences is work motivation. Academics have dedicated ample effort in developing a master motivation theory with an effort to include different features to the concept, as [8] supported. Principally, regarding the departments of HR management and managerial behavior, motive is frequently characterized as ‘inherent’ or ‘acquired’ [47]. Acquired motivation takes place “...when employees are able to satisfy their needs indirectly, most importantly through monetary compensation” [39]. Oppositely, the inherent one takes place when people’s conduct is directed towards the fulfillment of innate psychological wants, instead of acquiring material rewards [46]. Namely, motivation is inherent when individuals “... perform an activity for itself” [63], attempting to sense the fulfillment innate in the action or to protect “... the obligations of personal and social norms for their own sake” [34]. Innate motivation seems to be self-defined and self-sustained [32], and is promoted through dedication to the work itself that has to be fulfilling and also satisfying for the personnel [13]. In any organizational form (whether public or private), the personnel can be stimulated by inherent and acquired components which will achieve their beliefs in regards to achievement, reward, and content.

Frequently, research describes work motivation as a consolidate issue which unites a system of supplementary ideas. Surely, the connection and interrelatedness of performance, ambitions, work fulfillment and motivation are well entrenched in organizational literature [21], [30], [31]. When it comes to private sector, literature demonstrates that companies frequently associate the satisfaction of employees with the provision of financial rewards, such as wage and high-powered inducement. Besides financial rewards, evidence show a positive link between the satisfaction of employees and other inducements, such as corporate ethical values. The businesses of today have to create a functioning ethical environment that strengthens the motivation and performance of employees. Once the organizations create an environment or context useful to said exchanges (like when they are reliable, open-minded, or ethical), the possibility of getting favoring replies from employees, such as high productivity, is considered to advance [20].

The previous discussion, in concurrence with the entrenched relationship linking corporate ethical values and desirable organizational outcomes, guarantees the examination of the subsequent research issue. This present study approaches corporate ethical values as a motivating factor that influences the performance of employees. Depending on the preceding discussion, the subsequent research model and hypotheses are suggested: Therefore,

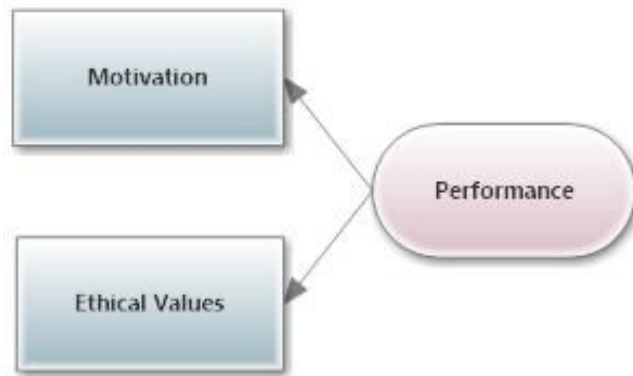
H<sub>1</sub>: Extrinsic motivators are anticipated to have a beneficial effect on employees’ performance

H<sub>2</sub>: Intrinsic motivators are anticipated to have a beneficial effect on employees’ performance

H<sub>3</sub>: Corporate ethical values are anticipated to be beneficially equated to employees’ performance



Figure 1.  
Proposed Model



## Methodology

The present research explores the aspects that influence an individual's job performance as measured from the analysis of a case study. Specifically, the research explores the motivating factors that influence employees' performance, placing emphasis on corporate ethical values as a motivating attribute. Specifically, extrinsic motivators such as fair wages, collaborative environment/cooperation, pay incentives, opportunities for hierarchical advancement, workplace security and working conditions were examined. Moreover, intrinsic motivating elements such as chances for expertise attainment, innovative work, need for esteem, recognition, need for skills and opportunities for responsibilities were studied.

The data derive from a private insurance company that employs 220 people based in Greece. A quantitative questionnaire was selected as the prevailing way of data collection. The questionnaire that was created for this present research was based on previous studies of same subjects and populations [32, [33], [20]. The assessment of the items was on interval scales and the given time for the survey completion was 10 -12 minutes. The response types for every item were categorized by Strongly Disagree (1) and Strongly Agree (5). The total usable questionnaires were 189 and were collected and analyzed with SPSS software. Furthermore, for triangulation reasons, derivative data from the website of the organization were collected, and an interview with the HR manager was carried out.

## Measures

Ethical values have been characterized as one of the "most difficult" concepts to measure and examine in organizations due to their time, location, and issue particularity [20]. A lot of the wide generalizations in the field are based only on theory or belief. Most of the preceding efforts to measure corporate ethical values have been extremely qualitative [5]. [20], expressing this worry, created a five-item scale designated to calculate corporate ethical values. The CEV measure was created to apprehend three widely-based perceptions: (1) the degree to which the personnel believes that managers behave in an ethical manner within their corporation, (2) the degree to which the personnel perceives that managers are worried about the ethical matters in their corporation, and (3) the degree to which the personnel perceives that ethical behavior is rewarded (disciplined) in their corporation. The response categories for the corporate ethical values scale were categorized by Strongly Disagree (1) and Strongly Agree (5). In this present survey, CEVs were measured with five items adopted from [20] study. In fact, the five items evaluate the extent to which the workforce discerns that managers act in an ethical way in the firm, the managers are interested in the firm's ethical issues as well as to the degree to which the workforce discerns that an ethical behavior is rewarded [20]. Cronbach's alpha score was 0.789 demonstrating an acceptable reliability result.

In general, the majority of the actual research has advanced our comprehension regarding the conceptualization of the topic, even though there are some contradicting findings in regards to work motivation. In this present analysis, twelve probable motivators are examined, based on the study which was carried out by [32]. [33]. Therefore, the motivators taken into account in this study were: (x1) fair wage provision, (x2) pay inducement provisions, (x3) contact and collaboration in work, (x4) hierarchical advancement chance, (x5) safety in the work environment, (x6) conditions in the work environment, (x7) chances to improve the field of employees' competence, (x8) creative work need, (x9) esteem and reputation needs, (x10) work acknowledgement, (x11) competence need, (x12) chance to undertake duties. Finally, performance was calculated with five items adopted from [67] scale; however two items were eliminated due to low factor loading. As a result three items remained in the study (Cronbach's  $\alpha = 0.857$ ).

All key variables were tested for normal distribution. The results of kurtosis and skewness were between -2 and +2 which are sufficient indicators of normality [16].

## Descriptive Statistics

The research sample was composed of 189 participants, of whom 83 were female and 106 were male. The average respondent was 39.9 years old ( $s=9.46$ ) with 55.46% being between 20 and 40 years old. The majority of the participants were at the time married or attached (55.6%) and 37% of them were single. In terms of education, 45% held a bachelor degree and 24.9% had completed their master studies. Most of the respondents (69.8%) earned more than €1,000 per month, while 20.6% earned more than 3,000€.

The average participant was 11.09 years ( $s=9.60$ ) in the organization and 7.82 years ( $s=7.52$ ) in the current position. Finally, 10.1% of the employees participated in the research were in top management positions.

Assessing different motivating factors in the organization as well as corporate ethical values intrinsic attributes such as creative work (mean=4.21) and need for esteem (mean=4.18) scored higher than the rest of motivators. Moreover, participants evaluated positively the organizations' corporate ethical values (mean=4.20). On the other hand, extrinsic motivators such as fair wages (mean=3.64) and opportunities for hierarchical advancement (mean=3.77) scored lower than the others (Table 1).

**Table 1: Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Fair wages	189	1.00	5.00	3.642	.8741
Collaborative environment/ cooperation	189	1.00	5.00	3.875	.8727
Pay incentives	189	1.00	5.00	3.788	1.201
Opportunities for hierarchical advancement	189	1.00	5.00	3.767	1.170
Workplace security	189	1.00	5.00	3.777	.9011
Working conditions	189	1.00	5.00	4.010	.7061
Expertise attainment	189	1.00	5.00	3.904	.9000
Creative work	189	1.00	5.00	4.211	.8490
Need for esteem	189	1.00	5.00	4.185	.9744
Recognition	189	1.00	5.00	3.920	.7407
Need for competence	189	1.00	5.00	4.026	.9754
Opportunities for responsibilities	189	1.00	5.00	3.798	1.000
Corporate ethical values	189	2.00	5.00	4.198	.7318
Valid N (listwise)	189				

Examining potential differences between men and women in motivating factors, a series of independent samples t-test was conducted. Interestingly enough, significant differences were noticed between genders. In fact, men assessed higher all motivating factors than women, while statistically significant differences were resulted in the all except corporate ethical values and collaborative environment/ cooperation factors. The findings are displayed in Table 2.

**Table 2: Differences between genders**

	Gender	N	Mean	Std. Deviation
Fair wages	Female	83	3.3639	.84804
	Male	106	3.8604	.83503
Pay incentives	Female	83	3.2289	1.15109
	Male	106	4.2264	1.05364
Opportunities for hierarchical advancement	Female	83	3.3735	1.11214
	Male	106	4.0755	1.12714
Workplace security	Female	83	3.5181	.87459
	Male	106	3.9811	.87267
Working conditions	Female	83	3.8594	.63570
	Male	106	4.1289	.73832
Expertise attainment	Female	83	3.6145	.93484
	Male	106	4.1321	.80564
Creative work	Female	83	4.0120	.83365
	Male	106	4.3679	.83181
Need for esteem	Female	83	3.9157	1.05003
	Male	106	4.3962	.85834
Recognition	Female	83	3.7470	.69715
	Male	106	4.0566	.74850
Need for competence	Female	83	3.7831	1.05978
	Male	106	4.2170	.86194
Opportunities for responsibilities	Female	83	3.5663	.99011
	Male	106	3.9811	.97572

### Hypotheses Testing

A series of linear bivariate correlation analyses were carried out to study the relation between employees' performance and the motivation offered by each of the intrinsic and extrinsic attributes proposed by the model. Pearson score revealed that pay incentives, opportunities for hierarchical advancement and corporate ethical values have an important impact on employees' performance. Specifically, pay incentives and opportunities for hierarchical advancement were negatively correlated to performance. However, all motivating factors correlated positively and significantly to corporate ethical values.

Multiple linear regression analysis was conducted to explore the combined effect that the various motivating factors (intrinsic, extrinsic and corporate ethical values) had on the respondents' performance.

The findings of the regression analysis proposed that the motivating attributes explained 20.9% of the variance ( $R^2=0.209$ ,  $p<0.001$ ). It was revealed pay incentives, need for esteem and corporate ethical values to significantly predict employees' performance. The results of the regression are presented in detail in Table 3.

**Table 3: Regression analysis (N=189)**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.447	.266		12.967	.000
Fair wages	.070	.056	.111	1.246	.215
Collaborative environment/ cooperation	.105	.080	.165	1.314	.190
Pay incentives	-.136	.063	-.295	-2.180	.031
Opportunities for hierarchical advancement	-.110	.069	-.232	-1.604	.111
Workplace security	.097	.062	.158	1.559	.121
Working conditions	.022	.103	.028	.215	.830
Expertise attainment	.027	.061	.044	.445	.657
Creative work	.083	.075	.127	1.110	.268
Need for esteem	-.166	.070	-.291	-2.357	.020
Recognition	.032	.113	.043	.288	.774
Need for competence	-.025	.061	-.043	-.405	.686
Opportunities for responsibilities	.017	.058	.031	.295	.769
Corporate ethical values	.168	.070	.221	2.404	.017

### Conclusion and Discussion and Implications

Managers have to reexamine the significance of work motivation and its influence on performance, due to the ever-growing focus on corporate ethical values. The research literature demands more theory testing, whilst there are quite few studies that examine this topic. The scope of this study is to explore how the strong basis of the link amongst ethical values, motivation, and performance of employees is interpreted in the private sector of a more middle-level economy. More specifically, this current research has investigated the aforementioned relationships in Greece, by having them addressed to one private company. In particular, using a singular questionnaire-oriented survey, the authors identified the degree of corporate ethical values have an impact on employees' motivation and performance.

As motivation carries on to be one of the main challenges that organizations confront, the present study explores intrinsic and extrinsic motivating attributes that impact on employees' performance. However, considering the increasing attention devoted to corporate ethical values, managers have to reexamine the nature of job motivation and its influence on performance. While there is a lot of theoretical research that examines this topic, the literature urges for more theory testing. The scope of this paper is to explore how the well-established basis on the relation among ethical values, motives and employee performance is reflected upon the private sector of a more intermediate-level economy. Especially, the present research has examined the above mentioned relationships in Greece, being addressed to one private company.

Adding to research suggestions, the findings of this present study have various management-related implications. To begin with, to strengthen an ethical concept and improve organizational motivation and performance, the display of solid corporate ethical values is the beginning. It is crucial for managers to act in an ethical manner, for the perceptions of employees regarding their managers' principles have been associated with aims decline in participating in non-ethical conducts [41]. Corporations that create and comply with their codes of ethics, in addition to define suitable practices, and reward systems might be more able to implant an ethical environment, thus, enabling them to stimulate and preserve ethical highly-performing individuals within the organization.

As the proposed model recommend that people are appealed to corporations that demonstrate ethical values, they might be capable of constructing a powerful sense of fit amongst the personnel. For instance, when examining new candidates, a set of questions could be asked, so as to evaluate if the person's values are consistent with the ones of the corporation.

Furthermore, for individual-corporation beliefs to lead to advanced employee performance, managers might desire to eagerly look for people who score high on moral intensity. Some people appear to be more conscious in regards to ethical values and it is probable that these people will be less possible to undergo ethical lapses that are frequent incidence nowadays. Moreover, a group of questions could be asked in order to decide the degree to which people believe specific circumstances as either ethical or unethical. This could provide managers with a measure of the moral intensity level that is sensitivity, of the applicants.

To preserve an ethical environment, organizational managers would be advisable to examine to create systems of performance management that contain an ethical variable. Therefore, apart from grading employee task performance and job practices, conducts could also be evaluated measuring if employees followed the organizational policies upon task completion. Employees have to deal with ethical dilemmas daily and it could be more possible to opt for the appropriate choice, given that their work environment and administrators demonstrate ethical values.

The work motivation issue constitutes a central point for management not only on theoretical but also on practical basis [55] as it affects employees' conduct. However, the outcomes of our study demonstrate that only pay incentives and opportunities for hierarchical advancement were significantly correlated to performance and specifically they had a negative influence. Regarding the differences between males and females, results support previous findings [26], [32] noticing divergences in the vast majority of motivating attributes under study.

Otherwise, corporate ethical values had a positive and important influence on employees' performance not only in bivariate analysis but also when combined with the other motivating attributes. The results provide evidence that either the relationships among motivating factors and performance may be moderated by other variables or motivating attributes have changed during the last decades. In fact, [55] mention that theoretical progress on this field have been eliminated in the latest years, albeit serious changes have been conducted in the workplaces.

Corporate ethical values are important elements of an organization as they lead to ethical behaviors [2] and as a result they impact on individual's performance [52]. Our findings are in consistence with these results supporting our research hypothesis. Overall, understanding what

motivates employees to perform better is of major importance for human resources management. As [65] noted, employers should be aware of the elements that motivate the workforce, so as to ensure corporate success. Furthermore, engaging and maintaining motivated employees in a way that is better than the competitors do, firms could have the opportunity to have a competing advantage [29].

### **Limitations and further research**

As with any research, several limitations could be noticed in the present study. First of all, the survey has been carried out on a single private enterprise and as result alertness should be raised regarding the generalizability of the findings, providing useful evidence for further study. Moreover, another limitation that should be taken into account is the self-reported measures that were used in the questionnaire. In fact, these measures could cause biased responses especially in the performance part that our questionnaire included. Consequently, future research could comprehend more objective performance data, collecting information from different sources. Finally, future studies could be conducted in different sections, comparing motivating factors and ethical values across sections.

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## **An attempt to create the model of the Aristotelian Mesotis and Metron (mid – space and golden mean)**

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**Abstract:** *The article attempts to transfer Aristotelian thought, through the work of Aristotle "Politics", to a modern, socio-economic approach. Thermodynamics is used as a basic tool, through its basic principles, concerning the first two laws of energy. The process takes in full account the criteria of Aristotle's "Best City", since Aristotle's "polis" is considered to be the most comprehensive view of Sustainability, although we believe that "Best City" far outstrips the concept of Sustainability, since through the "well-being" he claims "Eudaimonia (Bliss)".*

*The said approach through Thermodynamics ends up in the developmental intervention on the basis of the Aristotelian "Mesotis" ([mid – space] metron - mesotis model), in which we interfere with the Solow income function (Y) and in particular the factor of production Capital (K). We divide the total employed capital into small - medium and great capital, and immediately afterwards, using a sinusoidal function, we limit large capital, in favor of the small-medium. We axiomatically consider that the relationship between the factors of production, Capital (K) and Labor (L), is always positive.*

**Keywords:** *ethics, upgraded - Waste Energy, Entropy, Disorder, surplus value, Small / Medium, great capital, Eudaimonia, bliss.*

### Explanation of terms:

*Mesotis: "mid – space".*

*Metron: "in moderation", but for this article we can also use the term "golden mean", as an interpretation*

### Introductory note.

*We need to clarify that our motivation is not to simply find the analogies between Economy, Philosophy and Physics, because this in itself does not solve any problem, however interesting it may be. The problem is wider, since questions of philosophical or epistemological content require immediate answers that have nothing to do with the purity of a science but with the least deterministic nature of human behavior and human freedom.*

1.0 *An attempt to approach Aristotelian thought through the combination of Thermodynamics and Economy.*

According to Aristotle, life is energy! "... *life is energy, not material creation. Therefore, the purpose of life is not the construction, the production of goods but the pursuit of ethics through the material goods ...* " This position of the philosopher gives us a start to look for help in other subjects for the study of his "Politicians". Since life is energy and its pursuit is ethics, obviously as a superior state of the human entity, it is induced that ethics is a kind of upgraded energy. But "Upgraded" Energy is the very opposite of "Degraded (waste)" Energy. The existence of the latter (waste-energy) is a prerequisite for the existence of Entropy, while the "upgraded" energy refers to states of Negative Entropy, in which Shannon (1948) referred to, with integrated information, and Ilya Prigogine with self-organization as well. This is how the Theory of Thermodynamics is involved in this attempt.

But how do we perceive Entropy in socio-economic life?

If we see each person as a member of an organization, that of the social whole, we find that the tendency to disorganize the social, organic whole into a sum of human units (ataxia - the phenomenon of Entropy) is demonstrated by the trivial terms "individualism" and "egocentrism". These terms constitute fundamental characteristics of market societies, they point to the individual (unit / member of the organization), but not to the organization (society), resulting in disharmony, problematic human relations, social alienation, degeneration. Terms and social phenomena that substantiate the existence of "ataxia", in which Entropy is constituted.

It is obvious that the degraded (waste) energy at the economic and social level concerns the energy of the citizens but which is not used by themselves but by those to whom it is assigned. This energy, as assigned, under Thermodynamics meets the criteria of the degraded (waste) energy that is necessary for entropy production, that is, the waste energy of the citizens. Degraded (waste) energy for the average citizen is:

- a. On a financial level, in surplus value (x) or else ( $MPK * K$ ), "accounting profit" - "pay" of the production factor "Capital".
- b. On a social level, in unpaid work ( $\delta$ ), which corresponds precisely to surplus value and transforms "work" into "labour" (Papakonstantinidis, 2005)
- c. At management level, in the awarding of degrees to the independent (a), to the administration (Levin, 2000).

According to the Levin approach to Rousseau's "General Will", the only solution is the de jure state and the non-class society, or even a society marginal to the class, such as Aristotle's "Politics". "... Best city is the one consisting of middle-class citizens." Assuming that, at present, at least, class society belongs to the realm of utopia, broadening the middle class is a realistic goal and a particularly important achievement for regional and local development.

According to Thermodynamics, the formula that gives us the Entropy of a system is:  $ds \geq DQ/T$ . The difference in entropy (ds) depends on the difference in incoming energy in system [DQ] to the existing system temperature [T]. In practice, if we want to reduce entropy, we will have to transfer heat (Q) from the system (Cengel & Boles, 2003), that is to reduce the numerator. If we attempt so far a reduction in the economy, we could consider the change in capital-intensive investments as [DQ] and [T] as the average income. Obviously there are two ways to reduce Social Entropy. Either significantly increase the denominator which we accepted to represent the average income or to change politics and

to limit capital-intensive investments or both at the same time. We selected the latter choice, because we thought it fit perfectly with the spirit of the Aristotelian “*mesotis*”.

How, however, will income (T) increase when large enterprises (DQ) spread? The model of Mesotis and Metron (*mid-space and golden mean*) that follows attempts to answer this question.

## 2.0 An attempt to create the model of Mesotis and Metron (*mid – space and golden mean*).

We thought to interfere with Solow's income function:

$Y = (K, L)$  and especially the capital factor (K), axiomatically assuming that the relationship between the factors of production, Capital (K) and Work (L), is always positive. Thus, we have divided the capital employed into the real economy in two, in the small-medium-sized and the large capital, or, at least, the capital considered above the medium-sized. We did not come up with the logic of defining criteria that would delimit small-medium-sized and large capital. Besides, at this juncture the documentation of the correctness of a reasoning, as a realistic intervention plan in a market, is concerned, rather than the details of a possible, direct implementation.

So a function was sought that would play the role of the “metron” (golden mean). That is, the requested function should be applied when it is applied to two uneven amounts of a sum to decrease the largest, while at the same time increase the smaller one, but at the same time it should also increase the overall result. An attempt to model the Aristotelian *Mesotis* by using a mathematical function as a “metron”. This function was found, applied (see Chap. 3.0 -3,3), and then we have seen that in a market, the restriction of large capital in favor of the small-medium has the effect of appreciably increasing the total capital employed. Of course, this application must stop early when we reach the maximum of the above-mentioned increase, because then the fall begins. Besides, the function is mid-space and as it is known: «*μέτρον ἄριστον*» (“*in moderation is best*”)! Additionally, we applied the function upside down for understandable documentation reasons. We have therefore attempted to further increase the Large Capital at the expense of the small-medium capital. There was a continuous, appreciable drop in total capital employed. Of course, when this drop reaches very low, near zero, then it again starts a rising course that will end up at the point where we started and a little higher. However, seeing the last diagram in contrast to the initial one, we thought to apply this function over time, to the “cosine”. This last application confirmed our initial suspicion that with the two previous charts, we probably created a Kondratiev wave. Something that looked clear if we placed the two charts sequentially. And for that to be the case, very simply, we should not stop the intervention even when the downward course on the first chart starts. Finally, our thought has been verified, since, indeed, the function over time (in the cosine) is a Kondratiev waveform.

## 3.0 Applying the model.

### 3.1 The determination of “metron” and the attempt to create the Model: “Metron - Mesotis”.

Our intervention is based on Solow's income function,  $Y = (K, L)$  and in particular, factor (K), axiomatically accepting that the relationship between the factors of production, Capital (K) and Work (L) is always positive. The mathematical problem set here was to search for and find a function (golden

mean) that would apply to a sum by reducing its largest term and increasing the smaller one so that the result of the sum increases. The growth rate of the sum total, at this very early stage, is irrelevant.

The required function for the sum  $K = k_0 + k_1$ , where  $K$  is the total capital employed in a market,  $k_0$  is the large –above the middle capital– while  $k_1$  is the small and medium Capital and  $k_0 > k_1$ , is a function of  $K$  of the form:

$$F(x) = k_0(1 - e^{-(x-k_0)^2/m/k_0}) + k_1(1 - e^{-(x-k_1)^2/m/k_1}).$$

$m = \text{arithmetic mean of } k_0 \text{ \& } k_1.$

The following chart shows some sample values. Thus,  $K=8$ ,  $k_0=5$ ,  $k_1 = 3$ , so the average  $m=4$ . We observe that there is a continuously increasing course of the total capital ( $K$ ), as a result of the intervention, which in our example reaches

$f(x) > 9.5$ . If our intervention does not stop, the fall begins until the system finally collapses.

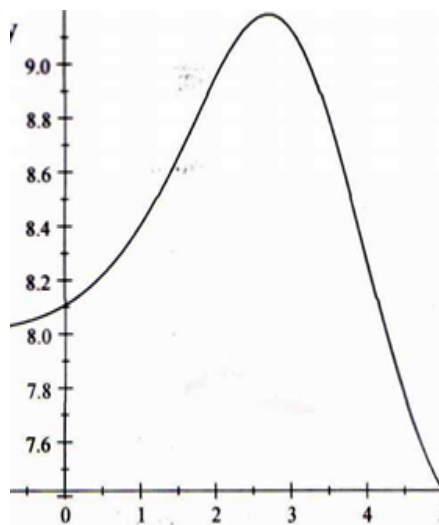


Figure 1.

The mathematical interpretation of the collapse after the approximation of about 10 units (the collapse begins when  $K > 9.5 \rightarrow 10$ ) may be very simple. At the beginning of the application,  $K$  was 8 points,  $k_0=5$  and  $k_1=3$  points. During application, however, the values constantly change to  $K > 9.5 \rightarrow 10$ , which is achieved by a continuous reduction or at least a slowdown that tends to stabilize  $k_0=5$  and a parallel increase of  $k_1=3$ . Therefore, it is logical that the values  $k_0$  &  $k_1$  change. A new equilibrium of the form  $k_0 \approx k_1 \approx 4.75$  is thus created. The further continuation of the intervention through the same function results precisely in the opposite results from what we initially requested, since  $k_1$  is now increasing at the expense of its equivalent  $k_0$ . Assuming the intervention continues, we will now have opposite results because the continuation of the intervention will convert  $k_1$ , to a large capital while shrinking  $k_0$ . This is shown more clearly in the retort of our model.

### 3.2 The Retort

A reasonable question arises from the attempt of approach. Since the logic of the approach is but the increase in the capital employed, why does the capital employed in production not grow upside down? Why should the increase in the total capital involved in production be controlled in favor of the small and medium-sized and at the expense of large capital? Just because Aristotle supported it 2500 years ago? Why not raise large capital at the expense of the small and medium sized?

In such a case we would apply the function upside down, namely:

$$F(x) = k_1(1 - e^{-(x-k_1)^{2/m}/k_1}) + k_0 / (1 - e^{-(x-k_0)^{2/m}/k_0}).$$

And the relevant diagram is as follows:

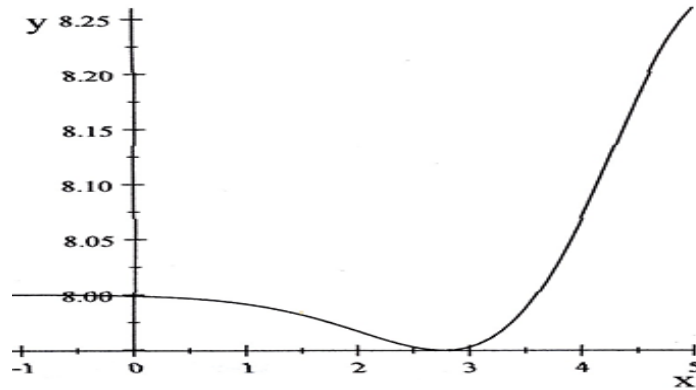


Figure 2.

We find that we start with a fall and somewhere close to zero the rising course begins again. After 8 units, the course is continuously slowing down and **"stabilizes" at about 8.25**. Because the desideratum is the capital, we can conclude that by applying such a method in essence, we achieve stagnation, having previously a downward phase course so that we can get back to where we were.

Consequently, we conclude that:

- ❖ The rise of large capital at the expense of small and medium-sized enterprises brings almost no increase in the total capital employed in production.
- ❖ It begins with a downward course and when it reaches about zero, it starts again to ascend to the point where the intervention began. We recall that when the intervention was started,  $K = 8$  to reach  $K = 8.25$ .
- This explains why in our initial intervention after the 9.5 points of capital began the downward course. Quite simply, we continued to apply the constraint of  $k_0$  in favor of  $k_1$ , but after  $K = 9.5$  the roles were reversed. The initially large capital " $k_0$ " remained limited, instead began to "inflate", to enlarge the then-small " $k_1$ ".

It is striking that the two shapes of our model, in succession Fig. 3<sup>a</sup> & 3<sup>b</sup> constitute a Kondratiev wave, and to make it more obvious we have computed the cosine function (see Fig.3.1), that is, over a long time.

fig.3<sup>a</sup>

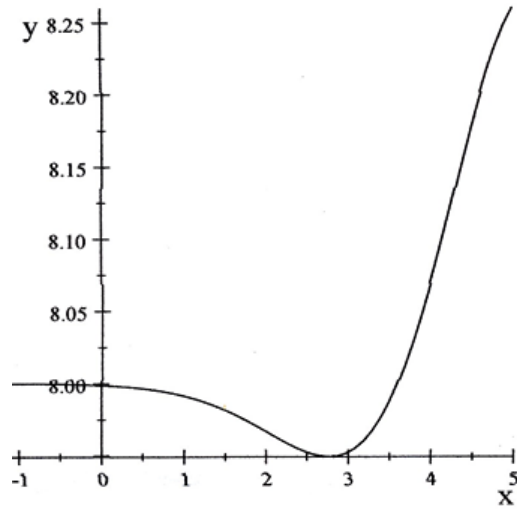
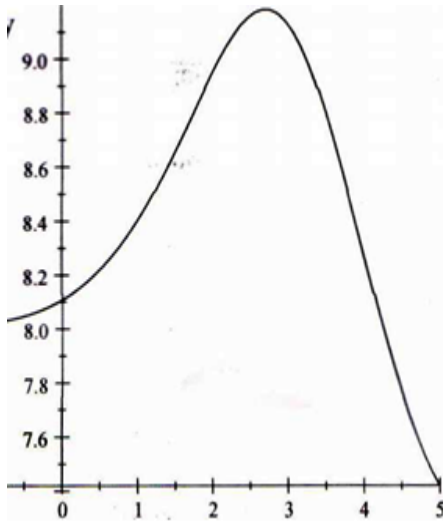


fig.3<sup>b</sup>

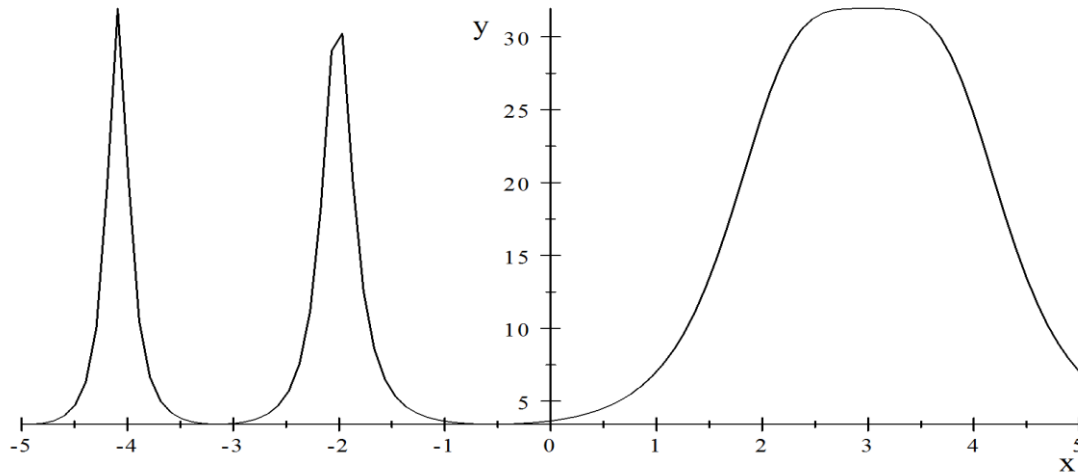


fig.3.1

In fig. 3.1, the initial function fig. 1 & 3<sup>a</sup>:  $F(x) = k_0(1 - e^{-(x-k_0)^2/m}/k_0) + k_1/(1 - e^{-(x-k_1)^2/m}/k_1)$  becomes:

$$F(x) = k_0(1 - e^{-\cos^{-(x-k_0)^2/m}/k_0}) + k_1/(1 - e^{-\cos^{-(x-k_1)^2/m}/k_1})$$

The theory of "K waves" by Nikolai Dmitriyevich Kondratiev and his followers supports the existence of large sinewaves, on the basis of which every capitalist economy evolves. These waves show an almost constant duration ranging from 40 to 60 years, with an average of 50 years. In each wave, two states, a continuous growth, with short lows and an opposite continuous shrinkage with brief blinks, alternate roughly. To date, five waves have been counted, but Kondratiev himself only had time to see the first two waves.



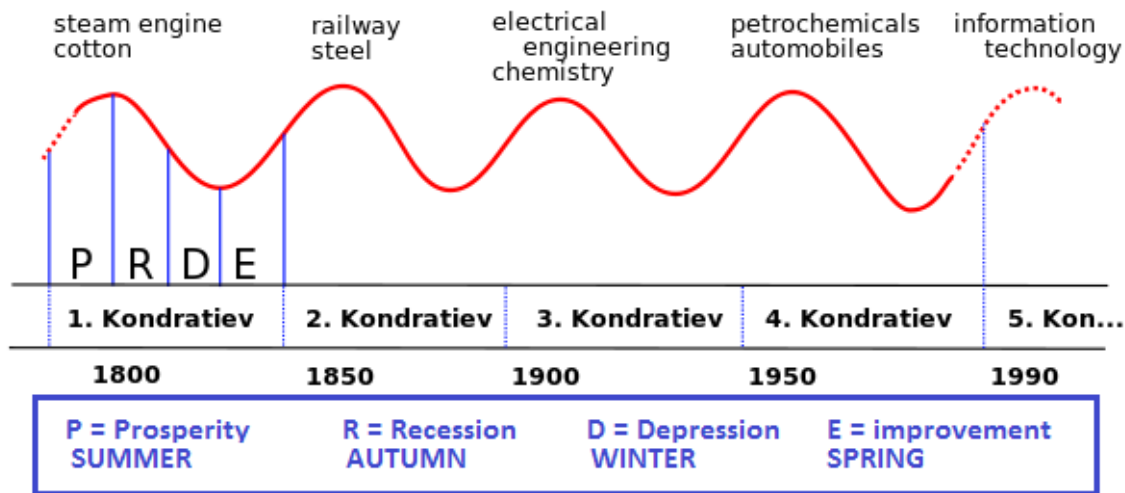


fig. 4. Waves K, source: Paligiannis, 2016

Since the time of Kondratiev, four wave theory schools have been emerging to try to explain the reasons for its existence in capitalist economies and focus on innovation and the introduction of sovereign new technologies (see fig. 4), massive capital investment and, of course, major economic crises .

### 3.3 The "Why?" of growth:

Our observation, in the very interesting approach of the Russian economist and his followers, lies in the concept of "concentration". That is, the main feature of technological upheaval in each era (Figure 4) is that technology and means have always been controlled by a relatively small political-economic elite. It is worth noting that what comes to "embarrass" all those involved with developmental subjects is that technological progress, innovation and developmental achievements that characterize each age eventually lead to economic crisis, war and destruction, since at least one wave corresponds to at least one war, as shown in fig. 5, which follows.

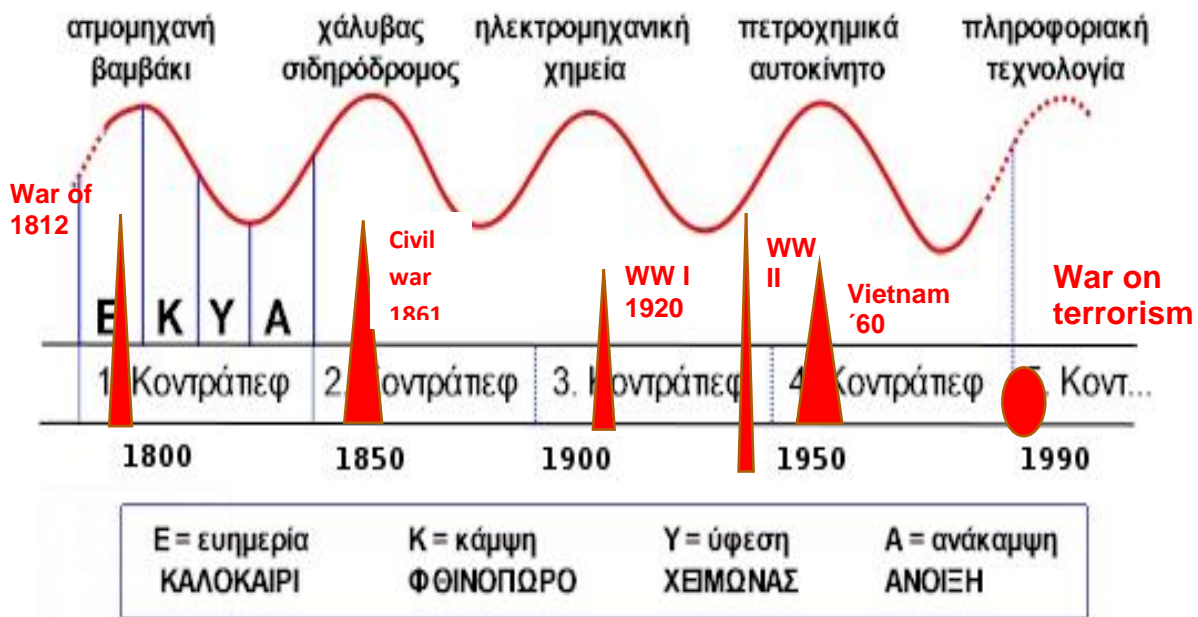


Figure 5 Waves K, source: Paligiannis, 2016 Our own interventions that show wars per wave.

The timeliness of the reflection he has developed has become clear. Nowadays, Papakonstantinidis (2005) has raised the issue of development when he put the "Why?" of growth, since the so-called "How?", which was the desideratum so far, gave an adequate response to the emergence of information technology, innovation and technology in general.

#### 4.0 Conclusions.

- A key feature of today's economic, political and social reality is the degraded (waste) energy, as a result of successive assignments to political-economic leaderships, which substantiates social entropy.
- These divestments consist of unpaid work "δ", surplus value "x" or "mpk \* K" and the independent "a". As a result of these social waste energy, the phenomenon of social entropy exists.
- But if life is energy then: Aristotelian "ethics" or "Eros" according to Herbert Marcuse, are the demanded, upgraded energy. Is this the energy that is a precondition for negative entropy, according to Ilya Prigogine?

- The model of the Aristotelian "mesotis", therefore, using sinusoidal functions in the role of "golden mean" interferes with Solow's income function, in particular, with the factor of capital production. This intervention led us to the following findings:

We sought and succeeded in achieving a significant increase in the total capital employed in the market and thus in the income, since  $Y = (K.L)$ , based on the upward course of small and medium capital and at the same time on the limitation of large capital and not on unilateral choices.

II. The logic of this attempt obeys the Aristotelian Mesotis, but it is also compatible with the effort to reduce Social Entropy. This is because it is in line with the formula

$ds \geq DQ / T$ , since the numerator is limited and the denominator increased, but also because a reduction in the degraded (waste) energy (δ) declared by the surplus value (x) results, since the surplus value produced is largely collected by the workers themselves. Small and medium-sized, and co-working forms have the dual status of employer and employee, usually. However, when decommissioning is minimized, degraded (waste) energy is minimized, and therefore entropy. Now the condition for the

"ethics", that is, the requested, upgraded energy of the "Best" city of the mid – space, this, of "Eudaimonia" (bliss), which, in our opinion, goes beyond the concept of Sustainability.

III. The very opposite course is the rise of large capital at the expense of the small-medium. Initially, the charts shows a downward trend of the total capital employed, and when approached, approximately zero, then an upward course is created, but it reaches the level before the intervention. That is, there is no increase in the capital employed in its upward phase.

IV. The comparison and combined study of the charts of our model with the charts and the theory of "K-waves" led us to some observations. Our observation, in the very interesting approach of the Russian economist and his followers, lies in the concept of "concentration". That is, the main feature of technological upheaval in every wave is that technology and means control always belonged or was always controlled by a relatively small political -economic elite. It is worth noting that what emerges from the study of the Kondratiev waves and comes to "embarrass" those who deal with developmental objects is that technological progress, innovation and developmental achievements that characterize each era eventually lead to economic crisis, war and destruction, making it so relevant nowadays, the "Why?" of Growth, just as Professor Papakonstantinidis had put it (2005).

V. It is obvious that, with the scope of the factor of capital production, the Aristotelian position, which wants mid-space (mesotis) as a result of both limbs at the same time (wealth and poverty), is strengthened and not as a unilateral policy of combating poverty, for example . Besides, the attempt to create the "mesotis" model was based on this very logic.

VI. Finally, the whole effort attempts to harmonize with the function of Aristotle's Eudaimonia (bliss) (Lianos, 2012),  $V = \varphi$  (wealth, freedom, health, friends, harmony ...) since it is thought that it also produces wealth, since it increases the capital employed in the real economy and restricts social entropy, which becomes an obstruction to the other parameters of the function.

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## **Economic Burden of falls and hip fractures among seniors**

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### **Abstract**

*Increased life expectancy has led to significant changes in the number of elderly and chronic illnesses that burden them, as well as in the consequent increase in the resources spent by healthcare systems. Of these chronic conditions, falls and the subsequent injuries appear to be a serious problem in recent years. This review attempted to investigate the economic and social burden caused by falls and hip fractures, which are the most serious injury. The literature review of the PubMed, Embase, Medline databases referring to epidemiological data and the economic burden of falls and fractures in the elderly over 65 years, did not give enough results for Greece. Usually, studies refer to osteoporotic hip fractures including those under the age of 65, such as women over 50 years at risk of osteoporosis. Considering the methodological differences of the studies with or without osteoporosis and with a minimum age of >65, reported that the prevalence and the cost of falls and fractures is high.*

*Falls occur in about 30% of people over the age of 65 at least once a year, and a third of them cause injuries and fractures. Worldwide, more than 1.3 million hip fractures occur every year, with an increasing trend. In 2010, 600,000 hip fractures were estimated in the European Union at a cost of €20 billion. According to the Hellenic Closed Consolidated Hospital, the cost for the hip fracture is set at €470 for two days of hospitalization, €2,765 for 9 days of hospitalization and €4,449 for 17 days of hospitalization, and it is mainly depends on the additional chronic diseases that increase the days of hospitalization, post-operative complications and patient's age. Furthermore, there is the cost of rehabilitation, home care, the admission to institutional care, while moreover there is the high risk of recurrent falls, re- admission and hospitalization. Falls and hip fractures results in a significant economic and social burden and studies have demonstrated the need for political and practical management, with emphasis on preventive programs. Cost-effectiveness evaluation of multifactorial fall-prevention programs is imperative and additional efforts are required to successfully disseminate cost-effective programs and promote widespread adoption at a community level.*

**Keywords:** Cost of Falls, Cost of Fractures, Elderly, Falls, Hip Fractures.

**JEL classification codes:** I10, I18, I19

### **1. Introduction**

Disease burden is the impact of a health problem measured by mortality, morbidity, financial cost or other measures. Cost of illness is a measure of burden quantified in monetary terms. Costs are generally classified as direct (healthcare and non-healthcare costs), indirect (arise from productivity losses) and intangible (constitute the monetary value of reduced health). Cost of illness studies provide relevant information concerning the consequences of a disease that may inform policy makers (Hernlund et al., 2013). Several chronic diseases of the elderly have been investigated in terms of the

economic and social costs they incur to healthcare systems. Numerous studies have also dealt with the cost of falls and subsequent fractures.

Falls occur in approximately 30% of people over 65 years old at least once a year (Korris et al., 2015; Craig et al., 2013), and one third of them lead to injuries and fractures of small or large severity (Hartholt et al., 2012), disability, degradation of quality of life and high mortality risk (Qin & Baccaglini et al., 2016; Craig et al., 2013). Even a mild fall may lead to serious injury mainly due to underlying medical conditions such as osteoporosis (Hartholt et al., 2012). In addition, frail elderly patients have a high risk of recurrent falls, re-admission and hospitalization (Pohl, et al., 2014).

In particular, hip fracture is an emerging public health problem in aging societies due to virtually high morbidity and mortality. The incidence of hip fractures has increased over the past 50 years even though in many Western countries there has been a decrease in incidence since the end of the previous century (Karlsson et al., 2013; Rosengren et al., 2012; Kannus et al., 2006). Worldwide, more than 1.3 million hip fractures occur every year with an increasing trend due to demographic changes and an increase in the number of elderly people (Gjertsen et al., 2017; Brauer et al., 2009; Johnell & Kanis, 2004). It is estimated that by 2050, it will reach approximately 6.3 million (Sullivan et al., 2016) or 4.5 million (Veronese & Maggi, 2018) worldwide. In 2010, 600,000 cases of hip fracture were estimated in the European Union (Hernlund et al., 2013). Approximately 10% of people with a hip fracture will die in the first 30 days and 30% in the first year with the highest mortality rates in men and over 80 years of age, while a large percentage will experience significant functional loss (Giannoulis et al., 2016; Thorne et al., 2016; Sullivan et al., 2016; Fisher et al., 2010; Haleem et al., 2008). Many older people recovering after hip fracture have coexisting medical, orthopedic, psychological or social problems that can be challenging for their functioning and rehabilitation (Thorne et al., 2016). The impact of these fractures on the quality of life of patients has also been studied in the literature (Gjertsen et al., 2016; Stoen et al., 2014).

The purpose of this study was to review the evidence of the cost arising from falls and hip fractures which are the most serious injury in the elderly.

## **2. Method**

A literature review was carried out of published articles in English in the PubMed, Embase, Medline, Cochrane Database, for publications from 2004 to 2018, referring to the cost of falls and hip fractures, using keywords and combination of these: «cost of falls», «cost of fractures», «elderly», «falls», «hip fractures».

## **3. Results**

### **3.1 Cost of falls and hip fractures**

Both the cost of falls and hip fractures are high, challenging and increasing demand for limited healthcare resources (Hartholt et al., 2012; Heinrich et al., 2010; Brauer et al., 2009). In this respect, they are considered to be a more serious public health problem than common chronic diseases of the elderly such as diabetes mellitus and heart failure (Hartholt et al., 2012).

Studies have estimated the cost associated with hip fracture, including acute hospitalization, acute care, long-term care, institutional care and rehabilitation (Lawrence, 2005). There are differences in

cost estimates between different countries, and different studies within the same country, which may reflect changes in the cost of the health care system over time, and differences in study design. Moreover, there is great variability in sample size, follow-up periods and sample composition, given that several studies focus only on postmenopausal women with hip fractures. Thus, cost analyzes are often difficult to generalize across countries due to differences in actual costs, healthcare systems and also treatment standards (Williamson et al. 2017; Nikitovic, et al., 2013).

There is evidence that patients with hip fracture often have a long length of stay (LOS) in the hospital and a extended rehabilitation period that presents a high financial burden on the limited resources of health services. In addition, in many hospitals, patients experience delays in surgery, and studies suggest that immediate surgery and reducing the length of hospitalization is a way to minimize costs after hip fracture (Lawrence et al., 2005). Studies showed that the costs of hospitalization after hip fracture is high and occur mainly in the first year. The presence of a second hip fracture increases cost considerably. The main predictors of one/year hospital cost were the second hip fracture, other fractures that required hospitalization and the complications associated with the hip fracture. Additionally, costs associated directly with age and inversely with income, with the cost increasing with the deprivation of income (Leal et al., 2016).

### **3.1.1 Global Data**

Systematic review and meta-analysis of Williamson et al (2017) for the cost of hip fractures worldwide, found that the pooled estimate of the cost for the index hospitalisation was US \$10,075. Health and social care costs at 12 months amounted to \$43,669, with inpatient costs being their main driver.

Hip fractures have a significant impact on the healthcare system in the United States, with an estimated incidence of 340,000 fractures/year and an annual economic burden of management estimated at US \$17-20 billion in 2010 (Sullivan et al., 2016). According to Brauer et al., (2009) in direct medical costs in the first year after a hip fracture was estimated at \$40,000 and nearly \$5,000 dollars in the coming years, while earlier study (Roudsari et al., 2005) estimated that cost of hospitalization for hip fracture (\$18,638) was the most expensive type of injury from a fall (the average hospitalization cost was \$17,483). In a systematic review of Budhia et al. (2012) for United States health care costs, the cost of hospitalization per person in the United States for hip fractures (associated with osteoporosis) ranged from \$8,358 to \$32,195, and medical costs ranged between \$15,294 and \$71,272. Owens et al. (2009) in the Healthcare Cost and Utilization Project (HCUP) present data from the Emergency Departments visits (Nationwide Emergency Department Sample/NEDS) of elderly people who suffered falls and fall-related injuries. Among these visits to the Emergency Department that led to hospital admission, the stay for fractures associated with falling between the elderly provided the second highest average hospital cost (\$11,700) and the second highest hospital LOS (mean LOS = 5.6 days) (Owens et al., 2009). Previous study also in the United States estimated direct medical costs of fall fatal injuries for 2000 to \$0.2 billion, and non-fatal injuries to \$19 billion. 63% (\$12 billion) involved hospitalization, 21% (\$4 billion) visits to the emergency departments, and while fractures involving only 35% of non-fatal injuries, represented for 61% of the cost (Stevens et al., 2006). In a more recent study, for the year 2012, direct medical expenses were estimated at \$616.5 million for fatal and \$30.3 billion for non-fatal injuries, and amounted to \$637.5 million and \$31.3 billion. respectively for the year 2015 (Burns et al., 2016). Florence et al (2018) estimated the cost of fatal and non-fatal falls to about \$50 billion. Total medical expenses for fatal falls were estimated at \$754 million. Health care costs vary depending to the type of service: 4.4% concerning the costs of hospitalization (\$12.9 billion), 5.7% physicians and other health professionals



(\$10.8 billion) 2.0% of prescription drug costs (\$2.1 billion). Average costs for home health care, long-term care facilities and permanent medical equipment amounted to \$29.2 billion (Florence et al., 2018). Another study estimated the cost of injuries from falling among Medicare beneficiaries to \$9,389 (\$5,969 - \$12,808). Hospitalization, physicians / outpatient, specialized nursing unit and home care, concerned 31%, 18%, 39% and 12% of the total, respectively. Out-of-pocket expenses were \$1,363.0 (\$889- \$1,837). Initial treatment costs for hospitalization / Emergency Departments visits / outpatient care, were \$21,424, \$6,162 and \$8,622 respectively (Hoffman et al., 2017).

### 3.1.2 Data from Europe

According to data provided by a sample of more than 200 hospitals across Europe, it can be estimated that every year within the European Union, 3.8 million elderly people visit the Emergency Departments with a fall-related injury, of which 1.4 million admitted for hospitalization. It is important to emphasize that the actual number of visits to Emergency Departments and falling-related admissions is likely to be much higher due to inadequate recording in many hospital data collection systems. Based on European studies, it can be estimated that at least €25 billion is spent to treat fall-related injuries across the European Union every year. In addition, demographic changes over the next 35 years could lead to annual expenditure of over €45 billion by the year 2050. It is expected that the annual number of fall related visits to Emergency Departments will increase to over 6 million by the year 2050, with more than 2.3 million hospital admissions and subsequent long-term care (Turner et al., 2015). In the European Union for 2010, estimated 610,000 relevant incidents, at a cost of €20 billion, representing 54% of the total cost of osteoporosis (Hernlund et al., 2013). According to the data provided by Hernlund et al (2013), analyzing the cost of the first year of hip fracture (acute care) associated with osteoporosis, lower expenditure was estimated in Bulgaria (€1,826), while the highest in Denmark (€25,000). Costs in Greece were estimated at €12,550 (Table 1).

Table 1. Cost of the first year after hip fracture (acute care) (Source: Hernlund et al., 2013).

Country	Cost (€)
Bulgaria	€1,826
Hungary	€3,594
Slovenia	€5,306
Greece	€12,550
Germany	€19,218
Italy	€19,602
Denmark	€25.000

In the study by Hartholt et al. (2012), medical costs for falls in the Netherlands were estimated at € 675.4 million per year, while 80% (€540 million) were attributed to fractures. Hip fractures showed the highest total cost by approximately €22,000 per case, followed by pelvic fractures (€14,000). Average costs per fall were €9,370 while they increased with age (from €3,900 between 65-69 years to €14,600 at age  $\geq 85$  years). Elderly  $\geq 80$  years accounted for 47% of all visits to the Emergency Departments related to a fall and 66% of the total cost. Regarding gender differences, women showed a higher average cost per fall because of the higher incidence of hip fractures. The cost of long-term care in the community and in nursing homes accounted for 54% of the total cost (Hartholt et al., 2012).

In the United Kingdom, there is an estimate of 101,000 annual cases of patients with hip fractures, by the year 2020, with the annual cost estimated at about £2 billion and increasing continuously (NICE, 2015; Giannoulis et al., 2016). According to Leal et al., (2016), hospitalization costs per case after hip fracture in the United Kingdom was estimated at £14,163 and £2139 in the first and second year after the fracture respectively, while the total cost was estimated at £1.1 billion. The main predictors of 1-year hospital costs were the second hip fracture (6.6% of the patients suffered a second hip fracture), other fragility fractures that required hospitalization, and complications were associated with hip fracture. It is remarkable that men showed higher hospitalization costs compared to women. In an earlier study in the United Kingdom, the cost of falls that led to fracture was £15,133, £2,753, £1,863, £1,331 and £3,498 for hip, wrist, arm, vertebral and other fractures respectively (Iglesias et al., 2009). In another previous study, in a sample of 100 patients with a mean age of 83 years and a mean inpatient length of stay of 23 days, the mean total hospital expenditure per patient was estimated at £12,163 (Lawrence et al., 2005).

A retrospective study in Finland investigated 221 consecutive patients with hip fractures operated on at two different hospitals. A total of 20 patients (9%) needed reoperations and this caused significant direct costs. The median costs of treatment per patient with one or more reoperations were €13,422 in hospital A (range: €1,616-€61,755), €11,076 in hospital B (range: €1,540-€17,866), and €12,850 in the total study group. In the case of infections, the mean costs per patient were €28,751 (range: €11,076-€61,755) (Lüthje et al., 2014).

A study in Germany involving 402 hospital patients estimated the mean total cost of acute care per patient at €8,853 €  $\pm$  €5,676 (Aigner et al., 2014).

In Norway, the mean annual cost per patient up to one year after the fracture, including care, for elderly over 70 years in the community amounted to €68,376. On average, care costs accounted for more than 50% of the total cost. Even for patients with good functional status prior to hip fracture, care costs accounted for 40% of total cost compared to hospitalization costs (38%) (Hektoen LF et al., 2016).

In Greece, several of the reports related to falls and fractures, link them to osteoporosis and female gender (after menopause) (Athanasakis et al., 2011)

Fixed data is the compensation (Figure 1) determined by the Greek Ministry of Health according to the Closed Consolidated Hospital Expense (Greek Ministry of Health. Closed Consolidated Hospital Expense). More specifically, the cost for each fracture and the mean length of hospitalization is determined by the Closed Consolidated Hospital Expense based on the internationally established Diagnostic Related Groups. Diagnostic-related group (DRG) is a system to classify hospital cases into one of originally 467 groups. Each of the three different types of hip fracture is recorded with a specific diagnostic code according to International Classification of Diseases (ICD-10 Diagnostic Code), whereby the compensation is based on it: (a) femoral neck fracture has the code S72.0, (b)

intertrochanteric has the code S72.1, and (c) subtrochanteric has the code S72.2. Mean length of hospitalization and compensation for the 3 types of hip fracture has been determined on specific days (figure 1) depending on the description of "hip and femoral surgery with or without destructive (systemic) comorbidities-complications" (with compensation codes: M08M, M08X, M78M, M78X).

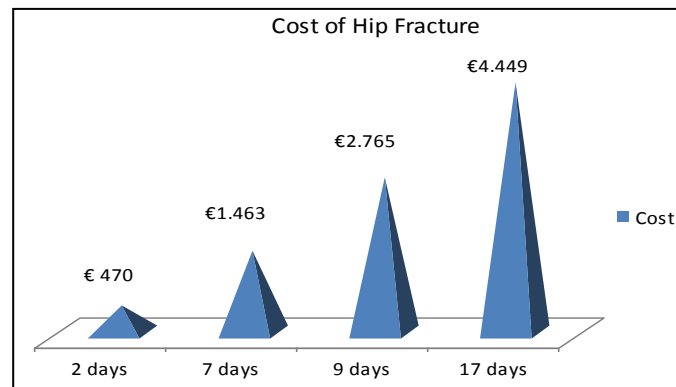


Figure 1. Depiction of hospitalization costs of hip fracture according to the length of stay (source: Greek Ministry of Health. Closed Consolidated Hospital Expense).

## Conclusions

Falls and hip fractures lead to significant economic and social burden, and studies have demonstrated the need for policy and practical management, with emphasis on prevention programs. Both the avoidance of falls through primary prevention measures and the reduction in the number and severity of their economic and social consequences by the application of secondary prevention methods are considered to be key elements. Most studies converge to the conclusion that the Cost-effectiveness evaluation of multifactorial fall-prevention programs, including exercise programs, re-evaluation of medication, adoption of new technologies, is imperative.

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## **Factors that Determine the Cost of Dementia**

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### **Abstract**

*Dementia has emerged as a serious public health problem, not only because of its high morbidity and disability but also because of the enormous costs that burden healthcare systems and thus national economies. Its socio-economic impact is a major challenge, given the ever-increasing number of patients. These impacts relate to the resources used for prevention, diagnosis, treatment, rehabilitation and care.*

*The long duration of the disease requires long-term care, which in turn requires both health and social care services. There is no single long-term care system, but different agencies should be involved in providing, supporting, organizing and financing care.*

*In addition, it varies from country to country, making it difficult to compare the type and extent of the services provided, as well as total funding. In general, total long-term care costs are usually estimated as the sum of health care and social services.*

*According to the most recent estimates from the World Alzheimer Report, for the year 2015, the worldwide cost of dementia, was estimated at US \$818 billion with an upward trend, with projections for 2030 approaching US \$2 trillion. Total expenditure, cost sub-categories (direct cost of medical care, direct cost of social care, costs of informal care) and cost per patient vary by region and remain concentrated in countries with higher income levels.*

*The objective of this review is to investigate the factors that determine the cost of dementia, mainly related to the patients' living arrangements (community care and institutional care), clinical presentation (stage of the disease, existence of behavioral symptoms, loss of functional capacity, etc.) and medication (selection of the appropriate antidementia drug).*

**Keywords:** *cost of dementia, economic burden, direct cost, social cost.*

**JEL classification codes:** *I10, I18, I19*

### **1. Introduction**

Dementia with main representative Alzheimer's disease is generally considered a major growing medical and social challenge. The average life expectancy is from 4 to 10 years after diagnosis, but it may range from 20 to 25 years, often with the longest time being spent in the severe stage. Based on the World Alzheimer Report (WAR), for the year 2015, patients with dementia worldwide were estimated at 46.8 million. Based on this report, Western Europe lists most patients after East Asia, which amounted to 7.4 million. While for Central Europe patients reach to 1.07 million and Eastern Europe to 1.94 million. Above 1 million patients are enumerated in France, Germany, Italy and the United Kingdom (Prince et al., 2015).

In Greece, the number of people with dementia in 2012 reached to 201,766, accounting for 1.77% of the country's total population (11.4 million), while by 2050 it is expected to exceed 600.000 patients. The number of people with dementia as a percentage of the population was higher than the average of European countries (1.55%) (Alzheimer Europe, 2013).

Dementia associated with high morbidity burden is a major social and economic problem for family, healthcare systems, and national economies, given the ever-increasing number of patients. Overall the impact of the disease on patients, their families and the wider community is tragic, as it leads to progressive cognitive and functional decline, causing high health expenditure as a result of increased needs for health care, social care and support carers. The long duration of dementia from its onset to death has a significant negative impact on public health, since much of this time is spent in a state of disability and dependency. Furthermore the chronicity of the disease requires long-term care, which in turn requires both health and social care services. There is no single long-term care system, but different entities should be involved in providing, supporting, organizing and financing. In addition, it varies from country to country, making it difficult to compare the nature and extent of the services provided, as well as total funding (Prince et al., 2013).

The use of health care services differs in patients with dementia compared to elderly with other diseases. Elderly with dementia have more hospital length of stay, up to three times stay in a specialized nursing care facility, and home care visits, compared to other older people. In addition, the use of health care services by people with severe medical conditions is strongly influenced by the presence or absence of dementia (Alzheimer Association Report, 2015).

## **2. Methods**

A literature review was carried out of published articles mainly in English and Greek language from the bibliographic databases Medline, PubMed, Embase, Psycinfo for the period 2005– 2017, using keywords and combination of these: «cost of dementia», «economic burden», «direct cost», «social cost». A total of 203 studies and reviews were reviewed and 25 of them were used in this review. The review focused on studies and reviews concerning mainly the factors that determine the cost of dementia.

## **3. Results**

### **3.1 Cost estimates**

In order to evaluate the cost of dementia, it has been divided into two types of expenditure, direct and indirect (non-visible) costs (Castro et al., 2010). In addition, the cost per person with dementia is divided into three subcategories: (i) direct medical costs (therapeutic interventions, medicines, laboratory tests, comorbidity, complications, use of diagnostic technology, time spent by medical staff and other health professionals, etc), (ii) Direct social care costs (paid and professional home care, nursing home care, long-term care facilities), (iii) The cost of informal care (unpaid) relating to the time spent on assistance with basic activities of daily living (BADLs) and instrumental activities of daily living (IADLs) and supervision by the informal caregiver (Wimo et al., 2017).

The total cost of dementia was estimated at the World Alzheimer Report (2015) at US \$818 billion, while estimates for 2018 reached one trillion (Wimo et al., 2017; Prince et al., 2015), while according



to other assessments were US \$957.56 billion in 2015, and will be \$2.54 trillion in 2030, and \$9.12 trillion in 2050 (Jia et al., 2017).

The total cost of dementia but also the cost per cost sub-category and per person with dementia vary between countries, but also in different regions of the world according to income (Jia et al., 2017; Wimo et al., 2017; Prince et al., 2015; Dodel et al., 2015; Schaller et al., 2015; Wimo et al., 2011). More specifically, while most patients live in middle income countries, expenditures seems to be concentrated in countries with higher income levels (Prince et al., 2015).

In North America, the cost for 2015 was estimated at US \$268.9 billion (Prince et al., 2015), while according to Alzheimer Association Report (2015) in the United States, total payments for 2015 were estimated at \$226 billion (AAR, 2015). In China expenditures reached US \$167.74 billion in 2015, and are expected to reach \$507.49 billion in 2030 and \$1.89 trillion in 2050 (Jia et al., 2017). In Western Europe, the cost for 2015 was estimated at US \$262.6 billion, in Central Europe at US \$15.0 billion and in Eastern Europe at US \$23.5 billion (Prince et al., 2015). In a previous study in EU 27, with the development of the EuroCoDe project, estimated the total cost of dementia at 160 billion euros (€) (Wimo et al., 2011). In Greece, the total cost of the disease (direct and indirect) is more than €3 billion annually and may approximate the €6 billion annually if data are used for this conversion, from developed economies with epidemiological and demographic profiles, similar to that of Greece (Sakka et al., 2014).

### **3.2 Distribution of expenditures worldwide per cost subcategory**

As regards the sharing of global expenditures, per cost subcategory, direct medical costs, costs of social care and informal care costs, were estimated at 19.5%, 40.1% and 40.4% of the total cost respectively. According to, Prince et al., (2015), the distribution in the cost sub-categories varies depending to the income level of the countries. By increasing the income level of a country, the relative contribution to the direct cost of social care also increases, and simultaneously reduce the cost of informal care. In high-income countries, the direct costs of social care is what drives costs, followed by informal care costs. In low income countries dominates the informal care costs, following the direct medical costs (20.4%), while the direct social care costs reaches only 10.4% (Prince et al., 2015). In high-income countries the challenge appears to be the funding of long-term care, while low and middle income and low income countries, raise the burden of informal care (Wimo et al., 2014).

Based on the World Alzheimer Report (2015), in Western Europe, US \$50.8 billion (19.3%) for direct medical costs, \$113.0 billion (43.0%) for direct social care costs and \$98.9 billion (37.6%) for the cost of informal care, were spent (Prince et al., 2015). Wimo et al., (2011) previously, estimated that 56% of costs in the EU-27 concerned informal care, while the remaining 44% related to direct costs.

### **3.3 Factors that determine the cost of a person with dementia**

Several factors determine the cost per person with dementia, and these are: the income level of the patient's country, cultural traditions, presence of behavioural and psychological symptoms of Dementia (BPSD), stage of the disease, dependence of the patient, type of dementia, comorbidity, pharmaceutical treatment, patient's living situation (living in the community or in long-term care facility) (Farre et al., 2016; Dodel et al., 2015; Prince et al., 2015; Lim et al., 2012). The time spent for care by family members, informal carers, increases with the progression of the disease. This produces a high cost of informal care in the early stages of the disease. In more advanced stages of the disease,

with the functional and cognitive deterioration and worsening in other areas, the costs are differentiated by the recruitment of a formal (paid) caregiver or the patient's institutionalization, hence the need for rehabilitation services, such as physiotherapy and occupational therapy, and where it may be of greater value in reducing the dependencies that occur as the disease progresses (Rattinger et al., 2015). Medicines approved for the treatment of dementia generally increase the direct medical costs. However, the impact on the overall cost seems to be beneficial, since it leads to a reduction of direct non-medical costs. Delay in the progression of the disease may also result in a partial reduction in direct social care costs such as institutionalization costs (Farre et al., 2016; Dodel et al., 2015; Vossius et al., 2014; Gillespie et al. 2013; Rapp et al., 2012). Cultural traditions in some countries, often make adult children reluctant to place their parents with dementia in nursing homes, with the result that the use of formal (paid) versus informal care is influenced by cultural peculiarities and, ultimately, to guide the Cost of Illness (COI) (Lim et al., 2012).

More specifically, as noted above, differences in cost per person with dementia are quite obvious in countries with different income levels, and in the WAR (2015), expenditures ranged from about US \$39,595 in high income countries to US \$939 in low-income countries. In Western Europe, estimated at US \$35,255 in Central Europe at \$14,056 and Eastern Europe at \$12,104 (Prince et al., 2015).

According to the 2015 Alzheimer's Association report (AAR), in the United States, the total cost of health care and long-term care, per person with dementia (beneficiary's Medicare program) over 65 years, was estimated for the year 2014 to US \$47,752, three times higher than the beneficiaries of the same age group without dementia, which was estimated at US \$15,115 per person. For people living in nursing homes and assisted living facilities, costs vary depending on the study and ranged from US \$19,642/person, to US \$28,501 in 2010 and US \$31,864 in 2014 (AAR, 2015). In a review of 27 studies from 14 different healthcare systems, the total annual cost for dementia has reached US \$70,911 per patient (mean estimate of total cost = US \$30,554). The main cost drivers were long-term care in the community, and institutional care costs rather than direct medical costs (inpatient, outpatient and medication services) (Schaller et al., 2015). In the European GERAS study, the cost of AD for patients living in the community in three European countries was estimated. The average monthly cost per patient was €1,881, €2,349, and €2,016 for France, Germany and United Kingdom, respectively, with the cost of informal care accounting for 50% to 61%. The cost-independent factors were the total score in ADLs, the patient's living status, the caregiver's working situation, and the caregiver's burden (Dodel et al., 2015). In a study in Spain, the mean estimated monthly cost of care for people with dementia in the community was estimated at €1,956, with informal care making a significant contribution to it at an mean cost of €1,215/month. The greater severity of the disease, dependence on ADLs, comorbidity and behavioral disorders were associated with higher costs. Behavioral disorders were the only cost-independent factor, and the group of patients with severe behavioral disorders demanded the most care resources at an average cost of €2,545.2/month (Farré et al., 2016). Costs in a study in the UK ranged from 29,000 pounds (£) for a period of one year in patients without symptoms of agitation and aggression to £57,000 at the most severe levels of agitation (Morris et al., 2015). In a Norwegian survey of three years of follow-up, it was found that the cost of formal care at baseline was estimated at €535 per month, while during the third year it was €3,611 with a mean cost of €2,420 during the whole observation period. The major cost driver was institutional care (74%). The costs for people with dementia with Lewy bodies (€3,247) were significantly higher than for people with Alzheimer disease (€1,855). The most important cost-predicting factors were the progression of the disease, living situation (with institutional care being the heaviest driver), the type of dementia, comorbidity, and daily living functioning. The use of cholinesterase inhibitors was related to lower costs (Vossius et al., 2014).

In Greece there are insufficient data regarding the cost of dementia, its subdivisions such as direct, indirect, costs of hospitalization, medication, comorbidity, etc. Research by Kyriopoulos et al. (2005), on the financial burden of Alzheimer's dementia, estimated that the monthly cost for a patient at the autonomy stage was €341, at the stage of dependence at home €957, and at the stage of dependency and institutionalization, €1,267. The annual cost was estimated at €4,092-€15,204, of which the largest percentage is related to the costs of informal care and loss of productivity. In a similar study by Hodologas et al. (2005), the cost of the disease was estimated at €20,996 per patient per year. In a recent survey by Kaitelidou et al. (2014), in patients in the community, it appeared that as the patient worsens and moves from the mild to the severe stage, both the cost of healthcare and non-healthcare sector and loss of productivity increases. The total annual cost of the disease was estimated at €12,140 for the mild stage, to €13,735 for the moderate stage and €22,666 for the severe stage, of which the largest percentage was related to the costs of informal care and loss of productivity (Kaitelidu et al., 2014).

The transition of patients to institutional long-term nursing care, which usually occurs at the most serious stages of the disease, increases the cost of accommodation and home care in the community (Wübker et al., 2015). In the study of Wübker et al., (2015) for comparing the costs of people with dementia living in the community (home care) and nursing home in eight European countries, it was found that the second, increases the overall cost. On average, institutional care costs amounted to €4,491 / month while in the community was €2,491. Costs in the home care setting were highest in France (€3,320) and Germany (€2,986) and lowest in Spain (€1,934) and Estonia (€761) and in institutional long-term nursing care, costs were highest in France (€6,093) and Sweden (€5,862) and the lowest in Spain (€3,561) and Estonia (€1,371). Scandinavian countries showed the highest cost. Estonia and Spain, as representatives of the countries of Eastern and Southern Europe, had the lowest cost. The most important predictor was independence in ADLs in all 8 countries except Spain and France, where it was, the severity of BPSD (Wübker et al., 2015). In a German study, which compared the cost of caring for community-based patients with those in nursing homes, it appeared that the average annual total cost including informal care was €29 930 (US \$43.997) for patients living in the community and €33,482 (US \$49,218) for patients in nursing homes. However, it appeared that deficits in basic ADLs, and more complex Instrumental ADLs and comorbidity, in community patients, significantly increased overall costs compared to living in a nursing home, mainly due to the higher cost of informal care (König et al., 2014).

#### **4. Conclusions**

The factors that determine the cost of dementia vary and relate to patient characteristics as well as dementia policies in different geographical areas. The distribution of total costs and costs subcategories vary depending on a country's income level in the sense that total expenditure concentrated in countries with higher income levels, but also with the increase in a country's income level, the relative contribution to the direct cost of social care also increases and at the same time reduces the cost of informal care. Social protection for the elderly with chronic diseases leads high income countries to unequal distribution in cost sub-categories with direct social care to outweigh. In contrast, in low-income countries, where the care of the elderly patient is mainly the responsibility of the family but also because of the lack of social structures, increasing the cost of informal care. The individualized approach and management of each patient, and the identification of the weak points of each healthcare system in the allocation of resources for dementia are important and considered that will help to contain expenditures.

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## **BUSINESS EVALUATION USING THE ALTMAN'S BANKRUPTCY PREDICTION MODEL "THE CASE OF ENTERPRISES IN THE FROZEN DOUGH INDUSTRY"**

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### **ABSTRACT**

*The interest in predicting corporate bankruptcy has occupied the scientific community since the late 1960s. Since then, many models of bankruptcy prediction have been presented. In this article, we analyze the Altman model, which belongs to the Multivariate Discrete Analysis. According to Altman, MDA (Multivariate Discriminant Analysis) is a statistical technique used to categorize a remark between two or more groups that have been predefined based on some common features. Altman model used numerical indicators. The prices for these indicators came from company accounting statements. with MDA combined the analysis of indicators with statistical techniques. The Altman model marks companies in consistent and inconsistent business. The aim of the paper is to present Edward I. Altman's bankruptcy prediction model and its application to the five most important dairy dough businesses in the food sector in Greece. The analysis takes place between 2002 and 2016, a period before and after the financial crisis. In the first chapter, we present the detailed description of the Altman bankruptcy prediction model. In the second chapter, the history of the food industry and the historical development of the five most important dough companies are presented. In the third chapter, we reported the comparative results from the application of bankruptcy prediction model for finding the Z-Score of all five companies and whether these operations are consistent and trustworthy. Finally, the conclusions drawn from the application of the model based on the published financial statements of the companies are disclosed.*

### **KEYWORDS**

*Altman Bankruptcy Model, frozen Dough Business, Multivariate Discriminant Analysis*

### **INTRODUCTION**

The sustainability of companies depends on many factors. The competitive financial environment and the outburst of financial crises is some of factors that affect companies. In this environment businesses have to survive and make profit. For this reason, the executives of enterprises use various models for forecasts. There are many researches that have been realized for the investigation and the forecast of operational bankruptcy. The relative techniques of forecast of imminent bankruptcy include: a) Univariate Discriminant Analysis<sup>4</sup> and b) Multivariate Discriminant Analysis<sup>5</sup>. In this paper we will be realized analysis with the model of forecast of bankruptcy Altman<sup>6</sup> which belongs in Multivariate Discriminant Analysis. More specifically, the professor of finances of University of New York, Edward I. Altman, with the article of "Financial Ratios Discriminant Analysis and the

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<sup>4</sup> Beaver, W. (1966), "Financial Ratios as Predictors of Failure", Empirical Research in Accounting: Selected Studies 1966, Journal of Accounting Research 4 pp.71-111

<sup>5</sup> Ohlson James A., 1980, "Financial Ratios and the Probabilistic Prediction of Bankruptcy", Journal of Accounting Research, v. 18 no. 1, pp. 109-131

<sup>6</sup> Altman I., (1968), Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy, The Journal of Finance, 23, 4, 589-609

Prediction of Corporate Bankruptcy”, that was published in September 1968. He was the first to propose Multivariate Discriminant Analysis (MDA<sup>7</sup>) according to Altman MDA (Multivariate Discriminant Analysis), constitutes a statistical technique which is used in order to it categorizes an observation between two or more teams that beforehand have been fixed with base certain common characteristics. It is also important to note that Altman used numerical indicators from the accountant situations of companies, and with the MDA, combined the analysis of indicators with statistical techniques. It focused on, substantially in the analysis of five<sup>8</sup> indicators which concerns fluidity, efficiency, leverage, solvency and activity. The first indicator is given by the press Capital of Movement to the Total Asset and shows the clearly fluid elements of asset of company concerning it with the total capitalization. The second indicator is given by the press Retained profits to Total Asset showing that size that presents the total sum of reinvested profits or damage of company every financial year. The third indicator, is given by Profits and Interest pre Taxes divide to Total Asset and shows the measure of productivity of asset of enterprise, independent from any factors of tax or leverage factors. The fourth indicator, are given by the type of Own Funds divide to Foreigner Capital and show us the whether the company's assets may be impaired in value before their liabilities exceed the assets and the firm becomes insolvent. The fifth indicator is given by the Type of Turnover divide to Total Asset and it shows the faculty of administration to active itself in competitive environment. Thus, the model of Altman was created which appears as follows:

$$Z = 0,717 * X_1 + 0,847 * X_2 + 3,107 * X_3 + 0,420 * X_4 + 0,998 * X_5 \quad .$$

Therefore, Multivariate Discriminant Analysis is categorizes the companies in bankruptcy or not. With more than one index, in one combinational Z-Score. The model of Altman, in turn, scores the companies and categorizes them into consistent and inconsistent, dividing the results of the Z-Score into three zones. The first area is the area of safety with  $Z > 2,9$  where the company is sure. The second area with prices between  $1,20 < Z < 2,9$  where the company is in alert. The finally area is the area of danger with  $Z < 1,20$  and the company presents probability of bankruptcy in two years. To note that bankruptcy is not an instantaneous phenomenon. Usually it is a result of long-lasting financial problem and drive the company to bankruptcy. This trend can be detected on time (via the financial analysis and forecasting by specialized tools). So that, the company to make corrective action. The objective of this article is the evaluation the five of most important enterprises in the frozen dough industry (ALFA S.A, ARABATZIS S.A, Chrysi Zymi - ALESIS S.A, Allatini-ELBISCO S.A, Kanaki-Hellenic Quality Foods S.A) with Altman's Z-Score model. Finally, the financial data how needed to calculate the abovementioned analysis collected from the companies' balance sheets for the period 2002 to 2016.

## 1 PRESENTATION OF LINEAR MODELS

The interest in predicting corporate bankruptcy has occupied the scientific community in the late 1960s. Since then, many models have been presented. Choosing the right model, however, is a problem because each of the bankruptcy models has its own disadvantages and advantages. The first to deal with bankruptcy prediction models was Tamari in 1964, who used financial indices as a means of

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<sup>7</sup> Dimitras, A.I., Zanakis, S.H. and Zopounidis, C. (1996), “A Survey of Business Failures with an Emphasis on Prediction Methods and Industrial Applications”, European Journal of Operational Research, Vol. 90, pp.487-513

<sup>8</sup> G. Kyriazopoulos – K. Kanta – K. Mitou (2012)., “The Edward I. Altman's Model of Bankruptcy and the Implementation of it on the Greek Corporative Banks”

predicting bankruptcy. While Beaver was in 1966, Altman<sup>9</sup> in 1968, Edmister and Deakin in 1972, Haldeman & Narayanan in 1977, Martin 1997 and Ohlson in 1980 and others.

## 1.2 ALTMAN'S Z-SCORE MODEL

In New York University the Assistant Professor of Economics, Edward I. Altman, with his article "Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy" published in September 1968, explains the procedure followed to develop a Bankruptcy Probability Assessment Method of industrial enterprises in the US. He was the first to propose the Very Variable Discrimination Analysis (MDA) to classify companies in bankruptcies or not, with more than one index in a combined Z-Score.

Altman used numeric indicators from the company's accounting records, and the Very Variable Discrimination Analysis (MDA) combined the analysis of indicators with statistical techniques. The Altman's Z-Score model evaluates business and categorizes it into consistent and inconsistent business. The sample for his survey consisted of 66 companies divided into two groups of 33. The first group included the companies that had gone bankrupt from 1946 to 1965 with an average assets of \$ 6.4 million, asset prices ranging from \$ 0.7 to \$ 25.9 million. The second group is made up of companies operating until 1966 which were distributed by company and size with assets ranging from \$ 1 to \$ 25 million. These data were collected by Moody's.

From the bankruptcy group and for the period before bankruptcy, Altman used the accounting statements and created 22 indexes based on their popularity in the bibliography and their possible utility in his research. He noticed that 5 of them could be used in his model for better prediction results. The five indicators<sup>10</sup> that he ultimately came down to liquidity, profitability, leverage, solvency and activity. So he created the following formula:

$$Z = 0,12 \cdot X_1 + 0,014 \cdot X_2 + 0,033 \cdot X_3 + 0,006 \cdot X_4 + 0,999 \cdot X_5 \quad (1)$$

### **X1: Working Capital / Total Assets**

This indicator reflects the net assets of a company in relation to its total capitalization. The Working Capital is calculated by the difference between the current assets and the short-term liabilities of the company. Typically, a company that has continuous operating losses, limits its current assets in relation to its total assets.

### **X2: Retained Earnings / Total Assets**

Retained Profit is the amount that shows the total amount of reinvested earnings / losses of a company during its life. The age of a company is reviewed in this index. For example, a relatively new company will probably show a low index because it has no time to generate accumulated earnings. For this reason, it may be argued that "new" companies are offended in relation to other companies in this analysis, and the likelihood of being classified into those companies threatened with bankruptcy is greater than another older company, assuming the other factors remain unchanged. The probability of failure is much greater in the early years of a company. It is characteristic that according to statistics of the time the model was developed, 50% of the bankruptcies took place in the first five years of operation of these enterprises, while over 31% in the first three years of operation.

<sup>9</sup> Altman I., (1968), Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy, The Journal of Finance, 23, 4, 589-609.

<sup>10</sup> G. Kyriazopoulos – K. Kanta – K. Mitou (2012)., "The Edward I. Altman's Model of Bankruptcy and the Implementation of it on the Greek Corporative Banks"



### **X3: Profit before Tax and Interest / Total Assets**

This indicator is a measure of the real productivity of an enterprise's assets, regardless of any tax or leverage factors. The existence of a company is based on the profitability of its assets. This indicator appears to be perfectly suited to studies that address corporate failure. In addition, insolvency in the sense of bankruptcy occurs when total borrowing goes far beyond the company's assets.

### **X4: Market Value of Equity / Total Liabilities**

The value of the shares is measured by the combined market value of all shares, common and preferred, while the items of liabilities include both short-term and long-term liabilities. This measure shows whether the company's assets may be reduced in value before the liabilities exceed the assets and the firm becomes insolvent. This indicator adds the dimension of capitalization, which previous studies did not take into account.

### **X5: Turnover / Total Assets**

This indicator is a standardized financial indicator that depicts the ability of the company's assets to be "transformed" into sales. It is a measure that shows the ability of the management to operate in competitive conditions. This latter index is of particular value because despite the fact that if it is scrutinized it is not very important, within the particular Altman model is decisive. Indeed, Altman argues that based on statistical measures, this indicator should not appear at all. However, due to its unique relationship with the other model variables, this index is second in terms of its contribution to the "diagnostic" capability of the model.

The Z-Score model is a linear analysis in which 5 pointers are summed up in a total score by which companies are classified as failed or not. It is worth noting that, variables that were not interesting at the level of univariate analysis, in fact their supply was very important at MDA level. For example, the index that had the most predictive bankruptcy capacity as prized by Beaver's 1966 Treasury Flow / Total Liabilities model was not included in the Z-Score. Altman's goal through MDA was to look for independent variables that would contribute to the maximum predictive capacity of the model without necessarily having the greatest statistical significance when viewed separately. Altman searched for and used those indexes that would offer the greatest possible heterogeneity between the two groups but at the same time increase the homogeneity within the group of bankrupt or non-corporation.

With his model, Altman, he managed to correctly classify 95% of his sample companies. Thus, he managed to indicate that companies with a score of  $Z > 2,675$  are not at risk (within the year) with failure, while companies with  $Z < 1,81$  are failing this year. In addition, companies with a score of  $1.81 < Z < 2.675$  can not safely be classified as unsuccessful or not and are in a "gray zone".

The Altman model can give us a more secure forecast if it is used for companies in the past two years, and for each year from then on, the probability of success of the forecast is reduced (up to 5 years).

The Altman model was the starting point for using MDA in the bankruptcy prediction study. The Altman model is used to date in new applications and in new data to compare the results of proposed discrimination methods with discrete analysis and as a basis for making variations of its original model.

## **1.3 Revised Model Z-score**

Altman's model from 1968 and then studied and commented by many researchers. In 2000, Altman presented an overview of his model in which he incorporated the comments of the various researchers and came up with a new form of the Z-Score model. Essentially, this new model is the same as its

original form, with the main difference that the coefficients of the five indices have changed. Also, Altman proceeded with the modification of the primary model, replacing the company's stock market value with the equity value shown in the balance sheet. This would facilitate calculations for companies not listed on a stock exchange, since a non-listed company has no Securities or Securities. Therefore, the revised Altman model is as follows:

$$Z = 0,717 \cdot X_1 + 0,847 \cdot X_2 + 3,107 \cdot X_3 + 0,420 \cdot X_4 + 0,998 \cdot X_5 \quad (2)$$

In the revised model, the score distribution is more stringent, while the "gray zone" varies with the original model. Now in the revised model its limits are between Z-values in the range of 1.23 to 2.90. Compared to the original model, the lower limit is now 1.23, as opposed to 1.81 of the original model. In particular, in the revised model, space for which no provision can be made is now wider (1.23 - 2.90).

#### 1.4 ADVANTAGES AND DISADVANTAGES OF MDA AND Z-SCORE MODELS

One of the benefits of MDA is that through it, dozens of company-class ratios can be examined and summarized in a Z-score that can take values from  $-\infty$  to  $+\infty$ . The coefficients of the model and its figures can be easily calculated. Also, through the Very Variable Discrete Analysis, the company's entire profile is analyzed, not if it is part of it.

The main advantages<sup>11</sup> of Z-Score are:

- a) Ease of use.
- b) The credibility of its results.
- c) Free of charge for anyone interested.
- d) Continuous upgrade.

On the other hand, the disadvantages<sup>12</sup> of this method are:

- a) Its use mainly in industrial enterprises and the special attention it needs in other forms of business
- b) The stability of financial ratios
- c) Any falsification of the financial statements of the companies under review which may lead to an erroneous estimation
- d) These models are ad hoc econometric models that have emerged from a selection process and not from a theoretical model
- e) These models ignore factors that can not be quantified

For all of the aforementioned reasons bankruptcy prediction techniques should be used as a tool of analysis and in no case be replaced by economists. These models should be considered as a "bell" for companies that require further evaluation.

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<sup>11</sup> Kyriazopoulos G., (2010). "What are the Advantages and Disadvantages that lead banks into mergers and acquisitions? Is Altman's Z-Score Model for bankruptcy motivate banks for mergers and acquisitions? Evidence from the Greek Banking System"

<sup>12</sup> Kyriazopoulos G., (2010). "What are the Advantages and Disadvantages that lead banks into mergers and acquisitions? Is Altman's Z-Score Model for bankruptcy motivate banks for mergers and acquisitions? Evidence from the Greek Banking System"

## 2 HISTORICAL GENERAL AND ECONOMIC DATA OF THE FROZEN FERTILITY SECTOR

The role of the Food Industry is fundamental to the Greek economy. The Greek Food Industry is consistently one of the most important sectors of the secondary sector of the domestic economy. The Greek Food and Drink Industry<sup>13</sup> is a dynamic, competitive and extroverted sector with significant investment and business activity in Greece, the Balkans and across Europe. The food industry has maintained its fundamental role over the years, even in the prolonged recession.

The domestic food industry covers 25% of all Greek processing enterprises, around 14,434 companies, which ranks it first among the manufacturing industries. At the same time, it is also the largest employer of domestic processing, since it also employs more than 28% of the total employed around 80,147 employees.

The presence of the sector is also of fundamental importance in purely economic terms, since it is among the first branches of manufacturing, with production value reaching 20%, gross value added exceeding 26%, and second turnover terms of almost 22%.

### 2.1 SUMMARY PRESENTATION OF ALFA S.A.

The company ALFA S.A.<sup>14</sup> is the transformation of a small family craft that began in the 1950s in Kozani. Its founder was Athanasios Koukoutaris, who started the handmade production and sale of pies in the city and managed to make his products known to the surrounding prefectures. In 1965, the company was transformed into a general partnership, expanding its distribution network and its presence in Central Macedonia and Thessaly. In the 1980s the mass production and packaged products of the company became widely known. The company is transformed into S.A., secures financing and gradually modernize its production and distribution network. A landmark year was 1996 where new facilities were created, covering initially 4,500 sq. Meters. (nowadays the installations have reached 12,000 m2) and in 1998 it establishes a branch in Athens and in the following years sales and distribution centers in the major cities of the country. Having recorded a major commercial success with Kichi, the company continues to grow and start exporting, which now covers more than 35 countries. Thus, in 2004 private owned establishments were created in Athens and Thessaloniki, and in 2005 in Ioannina. In the same year it established a subsidiary in Romania and four years later it started building its own storage facilities in Bucharest. In 2009, it is expanding to Serbia with its subsidiary as well as to the USA in 2011 with Alfa Pastry Creations. The company, in the year 2016, lent approximately EUR 2 million under the Jeremie Investment Program to raise working capital. The program subsidizes 50% of the annual floating rate, which is 2.95%. The loan will be repaid in 14 quarterly installments of equal installments starting from 30 November 2016 and expiring on February 29, 2020. Finally, assistance for development plans is also considered to be the company's incorporation into the New Developments Market (CSE) of the Cyprus Stock Exchange ).

Today, ALFA S.A, which has its headquarters in Kozani, employs more than 270 employees, has 50 regional distributors and 11,000 sales points. At the same time, it has expanded its exports to Europe, USA, Canada and Australia.

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<sup>13</sup> FOUNDATION OF FINANCIAL AND INDUSTRIAL RESEARCH, (2017) "FOOD AND BEVERAGES INDUSTRY. FACTS & FIGURES 2016 -2017"[http://iobe.gr/docs/research/RES\\_05\\_B\\_06042017\\_REP\\_GR.pdf](http://iobe.gr/docs/research/RES_05_B_06042017_REP_GR.pdf)

<sup>14</sup> <http://www.alfapastry.com/el/content/istoriko>

## **2.2 SUMMARY PRESENTATION OF THE COMPANY KANAKI-HELLENIC QUALITY FOODS S.A.**

KANAKI products<sup>15</sup> began to be produced in a small craft factory in Kamatero in 1980. At that time the company was a large craft manufacture. It was housed in a rented space in Kamatero with a total area of 800 m<sup>2</sup>, employing a total of 80 people and its turnover was 800,000,000 drachmas (2,350,000 euros). In 1988 the company was acquired by the I. Philippos Group. The aim of the new owners was the creation of a large and modern Greek food company, with an emphasis on the branded product of high added value. A five-year investment plan was carried out to achieve this goal. In 1993 the company has been fully relocated to its new plant located on a private plot of 30 acres in Magoula, Attica. The factory has 11,000 m<sup>2</sup> of production space and 2,200 m<sup>2</sup> of office space. At the new factory, new products were created. The KANAKI BOUQUITS, the frozen Pizza and later the Pies and the Striped Pitas and recently the Mini Calzone are some of the KANAKI family of products.

All KANAKI products are produced and marketed by Hellenic Quality Foods or else HQF. HQF is one of the largest Greek food companies in Greece that produces and distributes in Greece and abroad the products of KANAKI DESS and the fresh MIMIKOS chickens. HQF belongs to the Philippos Group of Companies.

The Hellenic Quality Foods (HQF) food industry recorded a slight decline in sales and a reduction in pre-tax and post-tax losses of € 2m in 2016. In order to cope with the lack of liquidity and reduce the company's unbearable financial position, shareholders are proceeding with new share capital increases by cash payments. Already in April, they contributed € 4 million, while a new decision to increase the share capital by € 1.6 million is imminent. It had preceded in 2016, in four phases, the increase of its share capital by € 11.7 million, by cash payment. For 2017, it looks, like in 2016, to maintain at least its turnover and to increase sales volumes as well as depreciation results. In the dough sector, it hopes to see the launch of new branded products in 2016, including the US market and selected European markets, but also to expand the volume of private label products.

## **2.3 SUMMARY PRESENTATION OF THE COMPANY CHRYSI ZYMI-ALESIS S.A.**

Vivartia<sup>16</sup>, one of the largest food companies in the Greek market, has a leading promoter that covers the nutritional needs and habits of millions of consumers in Greece and abroad. It was established in September 2006 after the absorption of DELTA, CHIPITA, GOODY'S (and FLOCAFE) and BARMPA STATION.

The merged companies are now branches of Vivartia. In particular, Vivartia has a presence in the following industries:

1. Dairy and beverages through the former Delta Standard Milk Industry (milk, similar yogurt products and fruit juices).
2. Bakery and Confectionery via Chipita (soft dough products, nuts).
3. Catering and Entertainment Services through the former Goody's, Flocafe, Megusto and Hellenic Catering.
4. Frozen Foods through the activity of former General Food - Barba Stathis, Froza and Golden Dough.

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<sup>15</sup> <http://www.kanaki.gr/?pname=Company&la=1>

<sup>16</sup> <http://xrisizimi.gr/>

## **2.4 SUMMARY PRESENTATION OF ARABATZIS COMPANY S.A.**

The Greek Dough - Arabatzis<sup>17</sup> food industry is active in the frozen dough products industry. The company's operating structure is based on the production unit located in the Industrial Area of Thessaloniki. From the beginning, the company invested with the prospect of developing a company of equal size to large Greek and multinational companies.

With this prospect he bought a plot of land of 41.420sq.m. with a 20.200m<sup>2</sup> indoor industrial space, where they are housed in the 2 latest state-of-the-art machines. The Greek Dough - Arabatzis food industry has an extensive sales network with three branches (Athens, Patra, Ioannina), as well as partners throughout Greece. Greek Dough is one of the most modern food industries in Greece and in Europe, which since its inception has been working with a vision of producing high quality products. The countries that are mainly exporting are Germany and Cyprus, and in recent years it has also exported to other European countries such as England, France, Sweden, Italy, Turkey.

In the period 2001-2004 investments of € 8.5 million were completed with the following:

- Installation of new Chiller-Maintenance Chillers, with storage racks, front rooms, at the headquarters of the company
- Installation of Ioannina Branch
- Installation of Athens Branch
- Install a Warehouse Logistics Tracking System
- Analytical equipment for Quality Control equipment.
- Various machines of production process
- New Production Line (Laminator)
- Cooling tunnel for instant cooling of products
- Automated Pricing Management System.

In the period 2005-2013 the investments completed reached € 18 million with the following investments:

- New installation close to the existing one for the reception of new Pizza and Croissant production lines
- Automated Production lines for the production of existing and new innovative products
- Cooling tunnel for instant cooling of products
- Packaging machines
- Radar X Detectors
- Create new storage
- Trucks to cover new distribution points

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<sup>17</sup> <http://www.elzymi.gr/>

## **2.5 SUMMARY PRESENTATION OF ELBISCO-ALLATINI S.A.**

ELBISCO<sup>18</sup> started its own course in the biscuit and flour industry when the FILIPPOU INVESTMENTS Group buys the HELLENIC BISCOON COMPANY S.A. following the spin-off of ALATHINI S.A., consumer goods and commodities business and continues to own exclusive production and disposal Allatini flour and biscuits, the first packaged, known and beloved to the Greek consumer since 1967. The extensive program of investment in production, the development of new products and their active commercial promotion The prescribing a dynamic growth path for the company. In 1988, HELLENIC BISKOTH COMPANY acquired the ELITE S.A. BREAD, the largest bread making plant in Greece. in 1991 The HELLENIC BISQUOT COMPANY is dynamically penetrating the new important toast and bakery industry by acquiring the KRIS CRIS SA brewery, which is then merged with ELITE S.A. Having already made a remarkable development, in 1994, HELLENIC BISCOTE COMPANY introduced its shares in the Main Market of the Athens Stock Exchange, aiming at increasing its funds to finance new investment projects.

In 1995, the bakery of N. VOSINAKIS S.A., already distinguished in the production of toasted bread, is added to the "portfolio" of HELLENIC BISKOTON COMPANY. In 2000, following a reorganization process, HISCOPOULOS BISKOTA S.A. becomes a holding company and is renamed to ELBISCO S.A. Holdings. In 2001 ELBISCO Holdings strengthened its presence abroad with the majority acquisition of FYROM's largest flour and bread company, ZITO LUKS AD SCOPJE. In 2005, the robust societies anonymes HELLENIC COMPANY BISKOON S.A., N. VOSINAKIS S.A. and BREAD ELITE S.A. merged and absorbed by ELBISCO A.B.E.E. ELBISCO has two production units in Pikermi and Chalkida, 20,000 sqm and 22,000 sqm respectively and has developed a dynamic distribution network that covers and serves the whole of Greece. It is worth noting that the Company, both in the Pikermi plant and in the Halkida plant, has certifications in the implementation of the International Quality Management Systems, Food Safety and Environment Management Systems in accordance with ISO standards.

## **3. COMPARATIVE ANALYSIS OF FIVE COMPANIES WITH ALTMAN'S Z-SCORE BANKRUPTCY MODEL**

In this chapter, we calculate the Z-Score for the 5 most important dough companies. Also we will comment the result for each company according to the result of Z-Score and we categorize it.

Below we see the aggregate table and chart of Altman's Z-Score for the five companies.

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<sup>18</sup> <http://www.elbisco.gr/>

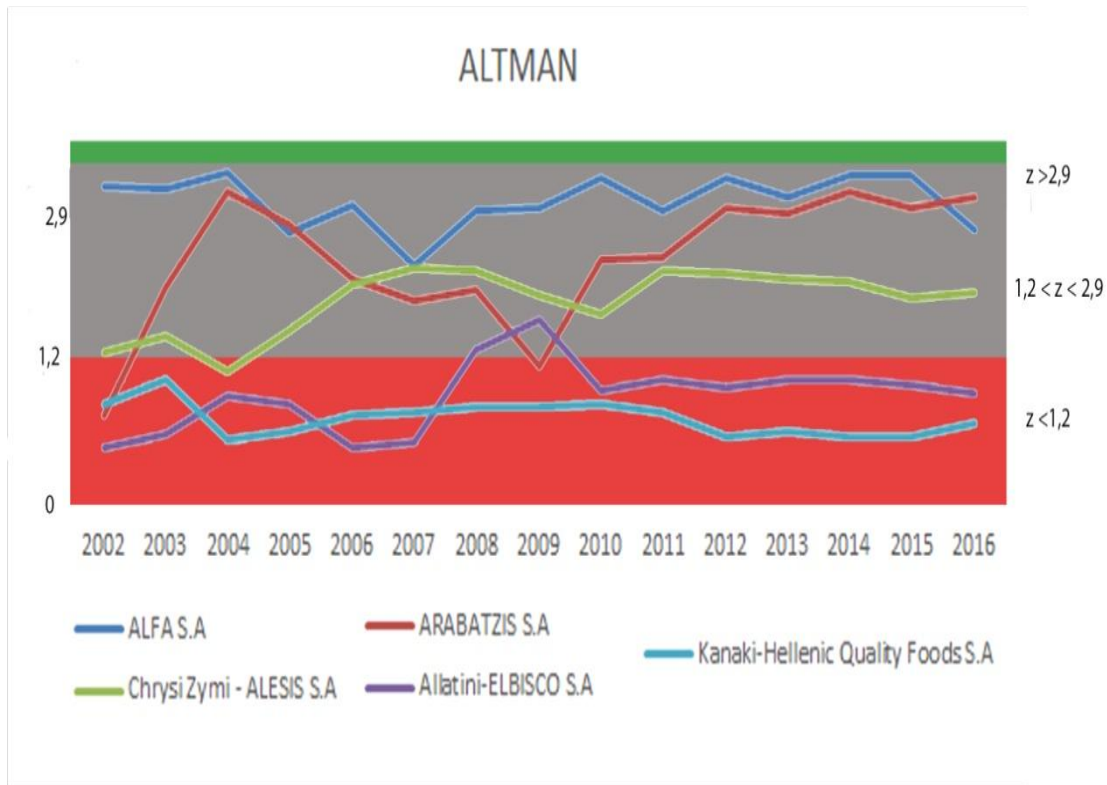
### ALMAN'S Z-SCORE TABLE OF 5 COMPANIES

Years	ALFA S.A	ARABATZIS S.A	Chrysi Zymi - ALESIS S.A	Allatini- ELBISCO S.A	Kanaki-Hellenic Quality Foods S.A
2002	2,61	0,75	1,25	0,47	0,84
2003	2,59	1,78	1,38	0,59	1,02
2004	2,72	2,57	1,09	0,9	0,54
2005	2,24	2,3	1,43	0,82	0,61
2006	2,46	1,86	1,82	0,47	0,75
2007	1,98	1,68	1,95	0,51	0,76
2008	2,41	1,76	1,92	1,27	0,8
2009	2,45	1,14	1,72	1,53	0,81
2010	2,69	2,01	1,57	0,93	0,82
2011	2,42	2,04	1,92	1,03	0,77
2012	2,68	2,43	1,91	0,96	0,57
2013	2,52	2,4	1,85	1,04	0,6
2014	2,71	2,58	1,84	1,04	0,57
2015	2,7	2,45	1,71	0,98	0,57
2016	2,25	2,53	1,74	0,92	0,67

Source: Author's own construction from published financial data

According to the above table of the Altman model, we can distinguish between the five companies. It is obvious that companies can be categorized into three categories. The first group includes the company ALFA S.A. and Arabatzis S.A. These two companies have, compared to the other three, the best score in the Altman model every year. Their score averages to 2.5 points. That is why these two companies are in the standby area. We also notice that both companies do not have big deviations per year, thus achieving a satisfactory score. In the second group belongs the company Chrysi Zymi - ALESIS S.A., which has lower scores than the aforementioned two companies. The results of Chrysi Zymi- ALESIS S.A. ranging from 1.09 to 1.95, which suggests that there is a possibility that the company will have significant financial problems over the next two years. Subsequently, in the third group, we will rank the companies Allatini Elbisco S.A. and Kanaki - Hellenic Quality Foods S.A. Both of these companies, we see that they have scored a very low score in all fifteen years. These companies score less than a unit. For this reason, they have a high probability of bankruptcy.

### ALTMAN 'S Z-SCORE DISPLAY OF 5 COMPANIES



Source: Author's own construction from published financial data

From the aggregate chart of the five companies, we can see how the Altman model was moved, the years under review. As clearly seen at a more sustainable level, the companies ALFA S.A. and Arabatzis S.A. ALFA S.A. shows that it holds a more stable level in all years, fluctuating at around 2.5 points and a small decline from 2014 onwards. The company Arabatzis S.A. had a steep rise until 2004 and then dropped by 2007. An upward trend has been seen since 2008 and managed to remain at steady levels until 2016. Subsequently, Chrysi Zymi-ALESIS S.A. is at a more neutral level with prices ranging between 1 and 2 units. Some fluctuations appear to have until 2010 but from then on it maintains a steady course between 1.5 and 2 units. On the other hand, Allatini - Elbisco S.A. and Kanaki - Hellenic Quality Foods S.A. have far the lowest scores of all five companies, as shown in the diagram. Allatini-Elbisco S.A. exhibits particularly strong fluctuations until the year 2010 but from then on it maintains a steady course. The prices of Kanaki-Hellenic Quality Foods S.A. are between half (0.5) and one unit, outlining a slight increase in the years 2004 to 2010. Thus, these two latter companies are in a higher risk zone and therefore with more sustainability problems and with their prices being lower than one.

### CONCLUSIONS

To sum up, it is important to emphasize that the Altman Z-Score bankruptcy prediction model is a very useful tool for analysts, credit institutions, banks, investors, and even business executives used it. This model gives the opportunity to evaluate business performance and categorize them. The Altman's Z-Score model is made up of five ranges that refer to liquidity, profitability, leverage, solvency, and activity. Many businesses in recent years, especially during the economic crisis, have resorted to mergers and acquisitions because they have had problems of sustainability. As has been seen, some of the five companies concerned have experienced problems and some have not. From the results of the



survey conducted with the Altman model, it turns out that at a more sustainable level in all fifteen years, ALFA S.A. is located, with a score of about 2.5 points. This is mainly due to the fact that the company is based on its own funds. Second is ARABATZIS S.A., which also manages to survive very well in the industry, with a good Z-Score over the last four years compared to the previous one. These two businesses are very close to the model's safety belt, making them quite viable. Then, the CHRYSI ZYMI-ALESIS S.A. business, which is at a more neutral level with the results of the Z-Score ranging between 1 and 2 points all the years under review. This business belongs to the gray zone of the Altman model and is on the alert. On the other hand, ALLATINI-ELBISCO S.A. and KANAKI-HELLENIC QUALITY FOODS S.A. are far behind the aforementioned companies, with ALLATINI S.A. showing scores near the unit. This company survives because it belongs to a group, however, it is burdened by other bankrupt chains. KANAKI-HQF S.A. finally faces particular problems since its score does not reach even the unit, many times close to zero. Manages to keep in the domestic market because it belongs to a group, holding a stable background. These two companies, therefore, belong to the risk zone of the model with a high probability of bankruptcy in the coming years.

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## Web Sites

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<http://www.elbisco.gr/>  
<http://www.elzymi.gr/>

## **BUSINESS EVALUATION USING DUPONT ANALYSIS. “THE CASE OF ENTERPRISES IN THE FROZEN DOUGH INDUSTRY”**

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### **ABSTRACT**

*The aim of this paper is to study the usefulness of the Du Pont analysis. With Du Pont. We study the effectiveness and profitability of the five most important companies in the frozen dough sector of the food industry. A comparative analysis is made before and after the financial crisis that has occurred in Greece. From which, we will try to see how well these companies progress and how they manage to cope and survive in the domestic market. Du Pont's analysis measures ROE (Return On Equity). That is the wealth of shares of company. With ROA (Return On Assets) measure the effectiveness of the company's assets. Also, with the leverage ratio, it measures the borrowing level of the business. These three indicators affect each other. The Du Pont analysis is carried out over a period of fifteen years. In fact, four years before the financial crisis (2002-2005) and eleven years after the financial crisis (2006-2016). The resulting financial information is based on the published financial statements of the companies examined. In the first chapter, we refer the methodology of the Du Pont analysis and how it is derived from the numerals. In the second chapter, we refer, the history of the food industry and the historical development of the five dough companies. In the third chapter, we report the comparative results of the efficiency of the analysis, which are given in tables and diagrams. In the finally chapter, the conclusions of this work are outlining, showing the most profitable companies.*

### **KEYWORDS**

*DuPont Financial Analysis, Profitability Ratios, Frozen Dough Business, Profit*

### **INTRODUCTION**

The Sustainability of companies depends from many factors. The competitive environment and the outbreak of the economic crisis are some of the factors that change the business environment. In this difficult environment businesses should be survived and bring profit. For this reasons, business executives use performance indicators to monitor financial data and check if the company is profitable. Essentially, what interest business executives, is the profitability of the business. See the relationship of profits to other metrics. Such as, invested funds or sales volume and other. Business executives examining a number of indicators how are called profitability ratios<sup>19</sup>, such as ROE<sup>20</sup> which counts the return on equity. The wealth of stock, showing the efficiency of the operation of the

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<sup>19</sup> Anderson, K. & McAdam, R. “A critique of benchmarking and performance measurement. Lead or lag?, Benchmarking: An International Journal, Vol. 11, No 5 (2004) 465-483

<sup>20</sup> Lazaridis Th.- Konteos G.- Sariannidis N., Modern Financial Analysis, 2013, Self-Authoring of Writers

business. In essence, what profit it draws from its receipts. A second important indicator is ROA<sup>21</sup> return on asset which measures asset efficiency by showing the effectiveness of using the assets of the company. Namely, how effectively the company uses its assets. And finally, Financial leverage EM<sup>22</sup>, how showing the use of loan funds for the business so that it acquires assets. These indicators are analyzed through DuPont Analysis. DuPont<sup>23</sup> is an American company which started as a chemical industry and today has activate in many industries. To calculate DuPont, we use the indicator return on equity (ROE), which consists of Net Profit Margin. Which the higher the net profit margin means that sales bring more income to the business. Also indicator return on assets (ROA) in which the increased circulation of assets means that the company has more sales in terms of its assets and hence the profitability of its own funds. Finally, the indicator of equity multiplier (EM). Who inform the company with how much capital can produce property. The business tries to achieve as much profit as possible with small funds. If the business increases its leverage is a way to be able to cope in the market increasing the risk of company. To achieve this the company increasing the financial stocks who have. The company trying to keep an analogy that can keep high the profitability of its own funds. As is apparent from the above. Analysis of DuPont gives the opportunity to better assess the source of returns on Equity or to find out where the problem is. The objective of this article is the evaluation of the five most important enterprises in the frozen dough industry (ALFA S.A, ARABATZIS S.A, Chrysi Zymi - ALESIS S.A, Allatini-ELBISCO S.A, Kanaki-Hellenic Quality Foods S.A) through the DuPont Analysis method. The financial data how needed to calculate the abovementioned analysis collected from the companies' balance sheets for the period 2002 to 2016.

## **1. THE DU PONT ANALYSIS METHOD**

Company performance plays an important role for both business executives, investors and credit institutions that finance the business. The ratio analysis, based on the analysis of the financial statements, helps us to draw useful conclusions as mentioned above. Most importantly, a tool for analyzing business efficiency is the DuPont model<sup>24</sup>.

The method of DuPont as amended in the 1970s analyzes the return on equity (ROE), which is the net profit of the company by dividing it by the Company's own funds. This index shows us the company's ability to make profits from the use of its own funds. It is used as an indication of the effectiveness of a company, is how much profit it can generate using the available resources invested by its shareholders (equity) and its reserves. The ROE is composed of three parts.

Return On Equity = Profit Margin \* Asset Turnover \* Financial Leverage

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<sup>21</sup> Fairfield, P.M. & Yohn, T.L. "Using asset turnover and profit margin to forecast changes in profitability". Review of Accounting Studies, Vol. 6, No 4 (2001) 371-385

<sup>22</sup> Investopedia.com, "Leverage",

<http://www.investopedia.com/terms/l/leverage.asp?ad=dirN&qo=investopediaSiteSearch&qsrc=0&o=40186>

<sup>23</sup> Thomas J. Liesz, 2002, "Really modified DuPont Analysis: five ways to improve return on equity"

<http://www.sbaer.uca.edu/research/sbida/2002/Papers/19.pdf>

<sup>24</sup> Anderson, K. & McAdam, R. "A critique of benchmarking and performance measurement.

**(Profit Margin):**

$$\text{Profit Margin} = \frac{\text{Net Income}}{\text{Net Sales}} \quad (1)$$

This figure shows the percentage of net profit a company earns from its sales, that is, it informs us of the profit that a business has from its operating activities. The profit margin arises by dividing the operating profits of a period with total net sales for the same period. Operating earnings do not include non-operating earnings and gains such as temporary investments, as well as non-operating expenses and losses. The bigger the profit margin the more profitable and effective a business is.

**(Asset Turnover):**

$$\text{Asset Turnover} = \frac{\text{Net Sales}}{\text{Total Assets}} \quad (2)$$

This ratio is equal to the quotient of dividing the net sales of an enterprise by its own funds. The ROI expresses the extent to which the firm uses its assets for the ultimate purpose of sales. In other words, it shows whether or not there is over-investment of capital in the business relative to the amount of sales made. When this indicator is large, the position of the business is better because it generates many sales with a relatively small amount of property. In terms of security, however, the higher the index, the less favorable the position of the business may be, because it may work on the basis of many foreign heads.

**(Financial Leverage):**

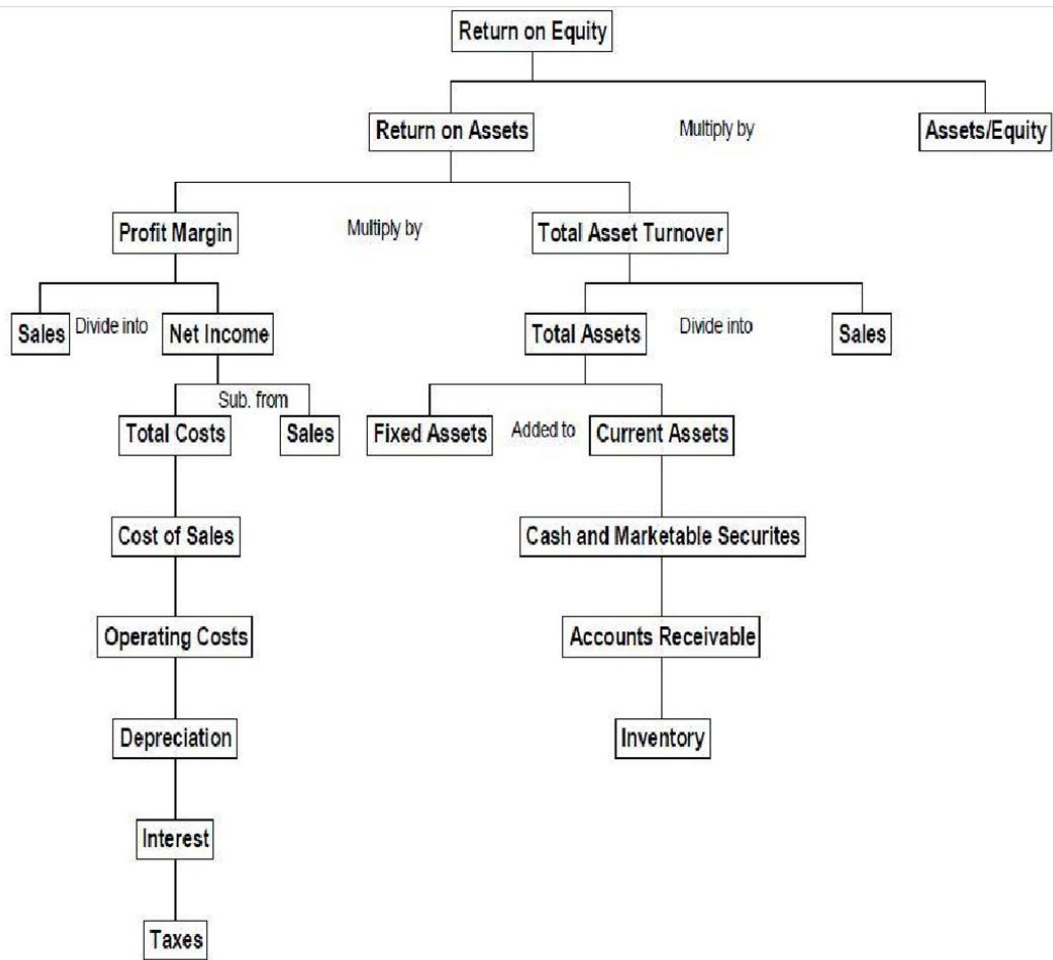
$$\text{Financial Leverage} = \frac{\text{Total Assets}}{\text{Total Equity}} \quad (3)$$

Financial Leverage is defined as the use of borrowed funds for return on equity. Thus, the term associates the asset with the liability in the balance sheet. In general, the existence of foreign capital brings higher yields, yet it also produces counter products when the return on assets is less than the cost of borrowed funds. So if the company fails to meet its obligations it may go bankrupt. With the help of this indicator, we can measure the impact of borrowed funds on the business. If the return on equity is greater than the return on total capital (is AOM > 1), then the company benefits from borrowing. This is due to the fact that the profitability of the total funds is higher than the cost of its borrowed funds. When AOM = 1, then the effect of foreign capital is negligible and borrowing does not provide economic benefit to the business. Finally, when AOM < 1, then recourse to borrowing for the business is unprofitable<sup>25</sup>. Using these three elements, DuPont analysis allows analysts to segment a company, and effectively identify where the company is weak and strong, and quickly get to know which areas of the business they should look at (inventory management, structure debt, profit margins).

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<sup>25</sup> Investopedia.com, "Leverage",  
<http://www.investopedia.com/terms/l/leverage.asp?ad=dirN&qo=investopediaSiteSearch&qsrc=0&o=40186>

## DU PONT MODEL



Source: Van Voorhis, K.R., (1981) "The DuPont Model Revisited: A Simplified Application to Small Business" Journal of Small Business Management, 19(2), 45-51

### 1.2 ANALYSIS OF THE METHODOLOGY OF DU PONT ANALYSIS

In 1918, electrician engineer F. Donaldson Brown, an employee at DuPont's accounting department, tried to analyze General Motors' finance, which DuPont had bought 23 percent of its equity.

The DuPont model<sup>26</sup> is a matrix that expresses the relationship of one item of the company's balance sheet to another. In its original form, the DuPont model expresses the relationship between profit margin and asset turnover. In the following relationship, it appears that the numeric indicators are associated.

$$\text{ROA} = \text{NPM} * \text{TAT} \quad (4)$$

<sup>26</sup> Niarchos N., Financial Analysis of Accounting Situations, A. Stamoulis Publications, Athens 2004

where ROA is the asset efficiency index<sup>27</sup>, NPM the net profit margin index and the TAT the asset turnover index.

During the 1970s, interest focused on how the Chief Financial Officer will maximize the company's profitability. This has the effect of focusing on return on equity (ROE) to achieve maximization.

$$\text{ROE} = (\text{Net Profit Margin}) \times (\text{Asset Turnover}) \times (\text{Equity Multiplier}) \quad (5)$$

These three parameters include:

- Operating efficiency as measured by the net profit margin is what profit the company derives from its receipts
- Effective use of equity as measured by asset turnover, is how effectively the company uses its assets
- Financial leverage as measured by the equity multiplier is the level of leverage or borrowing of the company

So the new index is the ratio of equity to equity (EMI<sup>28</sup>), which is referred to as leverage. In essence, it reflects the ability of the Chief Financial Officer to generate profits with as few capital as possible.

This approach led to the first major modification of DuPont<sup>29</sup> presented below in its new form

$$\text{ROE} = \text{ROA} * \text{EM} = \text{NPM} * \text{TAT} * \text{EM} (=)$$

$$\left( \frac{\text{Net Income}}{\text{Sales}} \right) * \left( \frac{\text{sales}}{\text{Total Assets}} \right) * \left( \frac{\text{Total Assets}}{\text{Equity}} \right) \quad (6)$$

So if ROE increases due to the net profit margin or because of the asset turnover this suggests that the company is moving in the right direction. On the other hand, if the cause of ROE growth is equity multiplier and the company already has high levels of leverage then there is a potential risk to the company. Finally, if the equity multiplier is kept low, this would be a good sign for the company, indicating that it has good management.

Even if ROE remains stable, the use of DuPont Analysis can help us better understand the company. For example, let's assume ROE remains stable, DuPont can show that both the net profit margin and the asset turnover have fallen, two very worrying signs for the company. Therefore, the only reason that ROE has remained stable is that the equity multiplier price has risen, irrespective of the initial state of the company, is a very worrying sign.

It is now perceived that the ROE of an enterprise is influenced by many factors, indeed its rise is generally considered a positive sign for the company.

More recently, in 1999 Hawawini and Viallet contributed to another modification of DuPont by introducing five different variables to calculate ROE, the relationship is shown in the following equation:

$$\text{ROE} = \left( \frac{\text{BRIT}}{S} \right) * \left( \frac{S}{IC} \right) * \left( \frac{\text{BBT}}{\text{EBIT}} \right) * \left( \frac{IC}{\text{Equity}} \right) * \left( \frac{\text{EAT}}{\text{EBT}} \right) \quad (7)$$

<sup>27</sup> Investopedia.com, "Return On Assets" ROA, <http://www.investopedia.com/terms/r/returnonassets.asp>

<sup>28</sup> Thomas J. Liesz, "Really modified DuPont analysis: five ways to improve return on equity", Mesa State College

<sup>29</sup> Kyriazopoulos G., "DuPont Analysis Of The World Systemic Banks", 2013

Where:

- S: sales
- IC: Investing capital
- EAT: Earnings After Taxes
- EBT: Earnings Before Taxes

The equation for the variable Investment Capital is as follows:

$$IC = \text{Cash} + \text{Working Capital Requirement} + \text{Net Fixed Assets} \quad (8)$$

This amendment retains the importance of administrative and financial decisions and also gives us the opportunity to understand in more detail what is responsible for changing the ROE. We therefore have better information on what's going on in the company.

## 2. HISTORICAL GENERAL AND ECONOMIC DATA OF THE FROZEN FERTILITY SECTOR

The role of the Food Industry is fundamental to the Greek economy. The Greek Food Industry is consistently one of the most important sectors of the secondary sector of the domestic economy. The Greek Food and Drink Industry<sup>30</sup> is a dynamic, competitive and extroverted sector with significant investment and business activity in Greece, the Balkans and across Europe. The food industry has maintained its fundamental role over the years, even in the prolonged recession.

The domestic food industry covers 25% of all Greek processing enterprises, around 14,434 companies, which ranks it first among the manufacturing industries. At the same time, it is also the largest employer of domestic processing, since it also employs more than 28% of the total employed around 80,147 employees.

The presence of the sector is also of fundamental importance in purely economic terms, since it is among the first branches of manufacturing, with production value reaching 20%, gross value added exceeding 26%, and second turnover terms of almost 22%.

### 2.1 SUMMARY PRESENTATION OF ALFA S.A.

The company ALFA S.A.<sup>31</sup> is the transformation of a small family craft that began in the 1950s in Kozani. Its founder was Athanasios Koukoutaris, who started the handmade production and sale of pies in the city and managed to make his products known to the surrounding prefectures. In 1965, the company was transformed into a general partnership, expanding its distribution network and its presence in Central Macedonia and Thessaly. In the 1980s the mass production and packaged products of the company became widely known. The company is transformed into S.A, secures financing and gradually modernises its production and distribution network. A landmark year was 1996 where new facilities were created, covering initially 4,500 sq. Meters. (nowadays the installations have reached 12,000 m2) and in 1998 it establishes a branch in Athens and in the following years sales and distribution centers in the major cities of the country. Having recorded a major commercial success

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<sup>30</sup>FOUNDATION OF FINANCIAL AND INDUSTRIAL RESEARCH, (2017) "FOOD AND BEVERAGES INDUSTRY. FACTS & FIGURES 2016 -2017 " [http://iobe.gr/docs/research/RES\\_05\\_B\\_06042017\\_REP\\_GR.pdf](http://iobe.gr/docs/research/RES_05_B_06042017_REP_GR.pdf)

<sup>31</sup> <http://www.alfapastry.com/el/content/istoriko>



with Kichi, the company continues to grow and start exporting, which now covers more than 35 countries. Thus, in 2004 private owned establishments were created in Athens and Thessaloniki, and in 2005 in Ioannina. In the same year it established a subsidiary in Romania and four years later it started building its own storage facilities in Bucharest. In 2009, it is expanding to Serbia with its subsidiary as well as to the USA in 2011 with Alfa Pastry Creations. The company, in the year 2016, lent approximately EUR 2 million under the Jeremie Investment Program to raise working capital. The program subsidizes 50% of the annual floating rate, which is 2.95%. The loan will be repaid in 14 quarterly installments of equal installments starting from 30 November 2016 and expiring on February 29, 2020. Finally, assistance for development plans is also considered to be the company's incorporation into the New Developments Market (CSE) of the Cyprus Stock Exchange ).

Today, ALFA S.A., which has its headquarters in Kozani, employs more than 270 employees, has 50 regional distributors and 11,000 sales points. At the same time, it has expanded its exports to Europe, USA, Canada and Australia.

## **2.2 SUMMARY PRESENTATION OF THE COMPANY KANAKI-HELLENIC QUALITY FOODS S.A.**

KANAKI products<sup>32</sup> began to be produced in a small craft factory in Kamatero in 1980. At that time the company was a large craft and catafifi sheet manufacture. It was housed in a rented space in Kamatero with a total area of 800 m<sup>2</sup>, employing a total of 80 people and its turnover was 800,000,000 drachmas (2,350,000 euros). In 1988 the company was acquired by the I. Philippos Group. The aim of the new owners was the creation of a large and modern Greek food company, with an emphasis on the branded product of high added value. A five-year investment plan was carried out to achieve this goal. In 1993 the company has been fully relocated to its new plant located on a private plot of 30 acres in Magoula, Attica. The factory has 11,000 m<sup>2</sup> of production space and 2,200 m<sup>2</sup> of office space. At the new factory, new products were created. KANAKI BOUQUITS, frozen Pizza and later the Pies and the Striped Pitas and recently the Mini Calzone are some of the KANAKI family of products.

All KANAKI products are produced and marketed by Hellenic Quality Foods or else HQF. HQF is one of the largest Greek food companies in Greece that produces and distributes in Greece and abroad the products of KANAKI DESS and the fresh MIMIKOS chickens. HQF belongs to the Philippos Group of Companies.

The Hellenic Quality Foods (HQF) food industry recorded a slight decline in sales and a reduction in pre-tax and post-tax losses of € 2m in 2016. In order to cope with the lack of liquidity and reduce the company's unbearable financial position, shareholders are proceeding with new share capital increases by cash payments. Already in April, they contributed € 4 million, while a new decision to increase the share capital by € 1.6 million is imminent. It had preceded in 2016, in four phases, the increase of its share capital by € 11.7 million, by cash payment. For 2017, it looks, like in 2016, to maintain at least its turnover and to increase sales volumes as well as depreciation results. In the dough sector, it hopes to see the launch of new branded products in 2016, including the US market and selected European markets, but also to expand the volume of private label products.

## **2.3 SUMMARY PRESENTATION OF THE COMPANY CHRYSI ZYMI-ALESIS S.A.**

Vivartia<sup>33</sup>, one of the largest food companies in the Greek market, has a leading promoter that covers the nutritional needs and habits of millions of consumers in Greece and abroad. It was established in

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<sup>32</sup> <http://www.kanaki.gr/?pname=Company&la=1>

<sup>33</sup> <http://xrisizimi.gr/>



September 2006 after the absorption of DELTA, CHIPITA, GOODY'S (and FLOCAFE) and BARMPA STATION.

The merged companies are now branches of Vivartia. In particular, Vivartia has a presence in the following industries:

1. Dairy and beverages through the former Delta Standard Milk Industry (milk, similar yogurt products and fruit juices).
2. Bakery and Confectionery via Chipita (soft dough products, nuts).
3. Catering and Entertainment Services through the former Goody's, Flocafe, Megusto and Hellenic Catering.
4. Frozen Foods through the activity of former General Food - Barba Stathis, Froza and Golden Dough.

## **2.4 SUMMARY PRESENTATION OF ARABATZIS COMPANY S.A.**

The Greek Dough - Arabatzis<sup>34</sup> food industry is active in the frozen dough products industry. The company's operating structure is based on the production unit located in the Industrial Area of Thessaloniki. From the beginning, the company invested with the prospect of developing a company of equal size to large Greek and multinational companies.

With this prospect he bought a plot of land of 41.420sq.m. with a 20.200m<sup>2</sup> indoor industrial space, where they are housed in the 2 latest state-of-the-art machines. The Greek Dough - Arabatzis food industry has an extensive sales network with three branches (Athens, Patras, Ioannina), as well as partners throughout Greece. Greek Dough is one of the most modern food industries in Greece and in Europe, which since its inception has been working with a vision of producing high quality products. The countries that are mainly exporting are Germany and Cyprus, and in recent years it has also exported to other European countries such as England, France, Sweden, Italy, Turkey.

In the period 2001-2004 investments of € 8.5 million were completed with the following:

- Installation of new Chiller-Maintenance Chillers, with storage racks, front rooms, at the headquarters of the company
- Installation of Ioannina Branch
- Installation of Athens Branch
- Install a Warehouse Logistics Tracking System
- Analytical equipment for Quality Control equipment.
- Various machines of production process
- New Production Line (Laminator)
- Cooling tunnel for instant cooling of products
- Automated Pricing Management System.

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<sup>34</sup> <http://www.elzymi.gr/>

In the period 2005-2013 the investments completed reached € 18 million with the following investments:

- New installation close to the existing one for the reception of new Pizza and Croissant production lines
- Automated Production lines for the production of existing and new innovative products
- Cooling tunnel for instant cooling of products
- Packaging machines
- Radar X Detectors
- Create new storage
- Trucks to cover new distribution points

## **2.5 SUMMARY PRESENTATION OF ELBISCO-ALLATINI S.A.**

ELBISCO<sup>35</sup> launches its own course in the biscuit and flour industry when the FILIPPOU INVESTMENTS Group buys the HELLENIC BISCOON COMPANY S.A following the spin-off of ALATHINI S.A. consumer goods and commodities business and continues to own exclusive production and disposal Allatini flour and biscuits, the first packaged, known and beloved to the Greek consumer since 1967. The extensive program of investment in production, the development of new products and their active commercial promotion The prescribing a dynamic growth path for the company. In 1988, HELLENIC BISKOTH COMPANY acquired the ELITE S.A BREAD, the largest bread making plant in Greece. in 1991 The HELLENIC BISQUOT COMPANY is dynamically penetrating the new important toast and bakery industry by acquiring the KRIS CRIS S.A brewery, which is then merged with ELITE S.A. Having already made a remarkable development, in 1994, HELLENIC BISCOTE COMPANY introduced its shares in the Main Market of the Athens Stock Exchange, aiming at increasing its funds to finance new investment projects.

In 1995, the bakery of N. VOSINAKIS S.A, already distinguished in the production of toasted bread, is added to the "portfolio" of HELLENIC BISKOTON COMPANY. In 2000, following a reorganization process, HISCOPOULOS BISKOTA SA becomes a holding company and is renamed to ELBISCO SA Holdings. In 2001 ELBISCO Holdings strengthened its presence abroad with the majority acquisition of FYROM's largest flour and bread company, ZITO LUKS AD SCOPJE. In 2005, the robust societies anonymes HELLENIC COMPANY BISCOON SA, N. VOSINAKIS S.A and BREAD ELITE S.A. merged and absorbed by ELBISCO A.B.E.E. ELBISCO has two production units in Pikermi and Chalkida, 20,000 sqm and 22,000 sqm respectively and has developed a dynamic distribution network that covers and serves the whole of Greece. It is worth noting that the Company, both in the Pikermi plant and in the Halkida plant, has certifications in the implementation of the International Quality Management Systems, Food Safety and Environment Management Systems in accordance with ISO standards.

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<sup>35</sup> <http://www.elbisco.gr/>

### 3. COMPARATIVE ANALYSIS OF THE FIVE COMPANIES

As we have already mentioned in chapter one, Company performance plays an important role for business executives, investors and credit institutions that finance the business. Numerous indicators based on the analysis of financial statements help to have useful conclusions. The most important tool for analyzing business efficiency is the DuPont model. The DuPont method is performed by analyzing ROE, ROA and EM. ROE shows return on equity, ROA administrative capacity for return on equity and EM financial leverage.

This section calculates ROE, ROA and EM, of the 5 most important dough companies and commented on each company according to the results.

**ROE COMPARATIVE TABLE OF 5 COMPANIES**

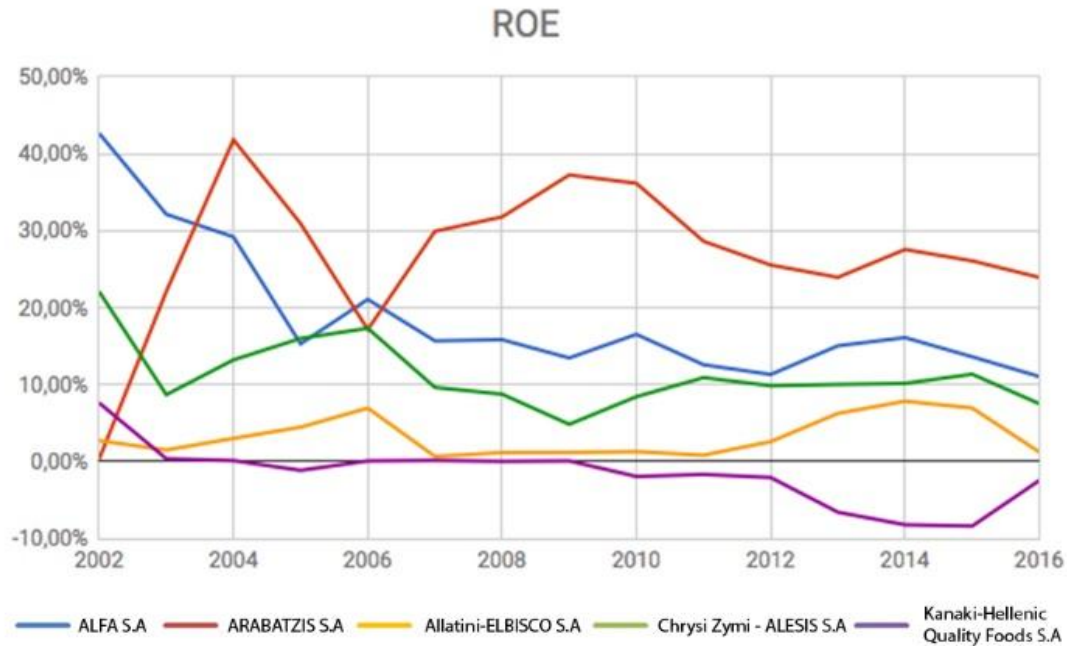
Years	ALFA S.A	ARABATZIS S.A	Allatini- ELBISCO S.A	Chrysi Zymi - ALESIS S.A	Kanaki-Hellenic Quality Foods S.A
2002	42,65%	0,33%	2,72%	22,08%	7,62%
2003	32,14%	22,10%	1,50%	8,69%	0,36%
2004	29,20%	41,82%	3,02%	13,21%	0,12%
2005	15,30%	30,93%	4,47%	16,00%	-1,14%
2006	21,08%	17,16%	6,95%	17,32%	0,08%
2007	15,68%	29,93%	0,67%	9,64%	0,15%
2008	15,84%	31,79%	1,16%	8,76%	0,03%
2009	13,46%	37,25%	1,18%	4,84%	0,08%
2010	16,53%	36,16%	1,28%	8,43%	-1,94%
2011	12,58%	28,62%	0,83%	10,90%	-1,67%
2012	11,32%	25,54%	2,59%	9,86%	-2,07%
2013	15,04%	23,94%	6,26%	10,03%	-6,58%
2014	16,11%	27,56%	7,84%	10,16%	-8,21%
2015	13,61%	26,08%	6,96%	11,35%	-8,38%
2016	11,05%	23,94%	1,23%	7,52%	-2,45%

Source: Author's own construction from published financial data

According to the table of aggregate ROEs of the five companies, as is evident, the company ALFA S.A notes a very good picture in time. In the years 2002 to 2004, its own return on equity appears to be fairly reliable. Between 2005 and 2016, there is a small decline in the ROE, but this is not worrying about the business, since it manages to keep returns at a steady profitable level. Then we see something similar in the company Arabatzis S.A. Which since 2003 has increased its profits. A small decline occurred in 2006 and from 2011 to 2016 the ROE fell to an average of 25%, but the company continued to maintain a good image and manage each year to cope with the market. Allatini - Elbisco S.A, shows lower ROE ratios. Fairly good seems to be the profitability of its own capital by the year 2006. It is significant its fall from 2007 to 2011, where there are times reaching rates close to zero. The top of it begins to take place in 2012 and then, but ends in 2016 when there is a fall again. The Golden Dough - ALESIS S.A, in turn, has a fairly good track record in earnings until the year 2006. It is clear that from 2007 to 2010 the fall is evident, thus reducing the index ratios. Then, from 2011 to

2016, there are several fluctuations in its profitability. In conclusion, Kanaki - Hellenic Quality Foods S.A which had a good track record in 2002, from 2003 onwards, its own return on equity has declined significantly, reaching even negative rates. Finally, he ends up trying to keep on the market with foreign capital.

### REPRESENTATION OF ROE FOR THE 5 COPMPANIES



Source: Author's own construction from published financial data

The diagram shows that the companies ALFA S.A, ARABATZIS S.A and Chrysi Zymi-ALESIS S.A. have a nearly parallel course with quite a few pitches, but since 2006 they have managed to keep the ROE index at a more stable level. The ROE of Arabatzis S.A is very strong, as it seems that, approximately two years to 2009, it had an upward and downward trend. From 2010 onwards it is normalized. ROE of Kanaki-Hellenic Quality Foods S.A, shows a strong downward trend, which by 2009 is almost zero, and from 2010 to 2016 it reaches negative territory.

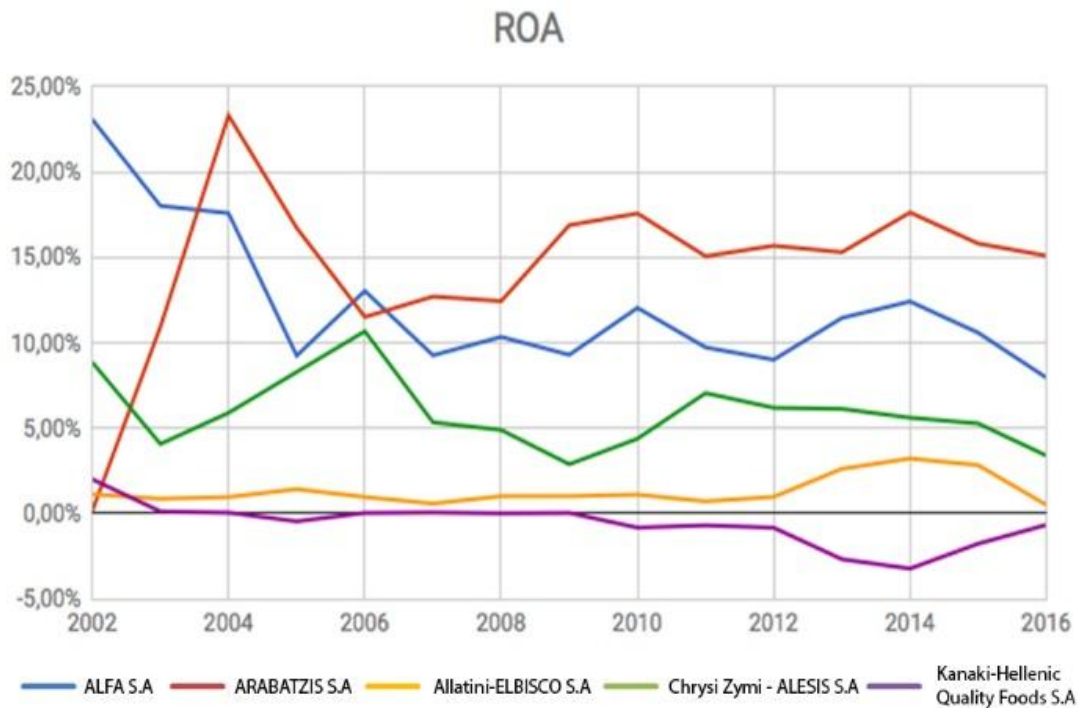
**ROA COMPARATIVE TABLE OF 5 COMPANIES**

Years	ALFA S.A	ARABATZIS S.A	Allatini-ELBISCO S.A	Chrysi Zymi - ALESIS S.A	Kanaki-Hellenic Quality Foods S.A
2002	23,08%	0,15%	1,13%	8,86%	2,01%
2003	18,02%	10,94%	0,86%	4,07%	0,12%
2004	17,59%	23,31%	0,97%	5,89%	0,05%
2005	9,24%	16,72%	1,43%	8,29%	-0,46%
2006	13,03%	11,51%	0,97%	10,67%	0,03%
2007	9,26%	12,71%	0,58%	5,34%	0,06%
2008	10,34%	12,44%	1,01%	4,89%	0,01%
2009	9,29%	16,89%	1,01%	2,89%	0,03%
2010	12,04%	17,57%	1,10%	4,38%	-0,83%
2011	9,73%	15,07%	0,71%	7,05%	-0,69%
2012	9,01%	15,68%	0,98%	6,19%	-0,83%
2013	11,45%	15,30%	2,62%	6,13%	-2,68%
2014	12,41%	17,63%	3,22%	5,61%	-3,23%
2015	10,58%	15,81%	2,83%	5,27%	-1,77%
2016	7,96%	15,10%	0,51%	3,39%	-0,67%

Source: Author's own construction from published financial data

Analyzing the ROA index for ALFA S.A, we will see that from 2002 to 2004 it has a steady decline. Then, from 2005 to 2012 it seems to have several ups and downs with the index going up one year and the other falling. Its administrative capacity seems to be facing problems in those years. Also, in the years 2013 to 2015, there is a minimal increase that ends again in the year 2016. Subsequently, at Arabatzis S.A, at all levels, it keeps the ability to manage its own capital to a satisfactory level. In particular, from 2009 to 2016, it has a rather positive picture. The company Allatini - Elbisco S.A, the years from 2002 to 2012, presents a course which also has several fluctuations in the profitability of the property. Its course seems to improve from 2013 onwards when its rates are clearly high. Chrysi Zymi - ALESIS S.A in turn, from 2002 to 2006 marks the best management capacity of all years. Then, between 2007 and 2016, the ROA ratios vary all years at very low rates, particularly from 2010, and then even at negative rates. The ROA, apparently affected by the ROE, points to almost non-existent levels of administrative equity.

### REPRESENTATION OF ROA FOR THE 5 CPMAPANIES



Source: Author's own construction from published financial data

From the aggregate chart of the ROA, it appears that by the year 2006 all five companies have fluctuated quite strongly, pointing to the fact that the management capacity was not very methodical. From 2006 onwards, ALFA S.A., Arabatzis S.A. and Chrysi Zymi- ALESIS S.A. show a more similar path to each other and compared to the other two. Allatini is coming - Elbisco S.A. which has remained at almost the same constant level for several years and Kanaki - Hellenic Quality Foods S.A.. In which its ineffectiveness in its administrative capacity is obvious.

### LEVERAGE COMPARATIVE TABLE OF 5 COMPANIES

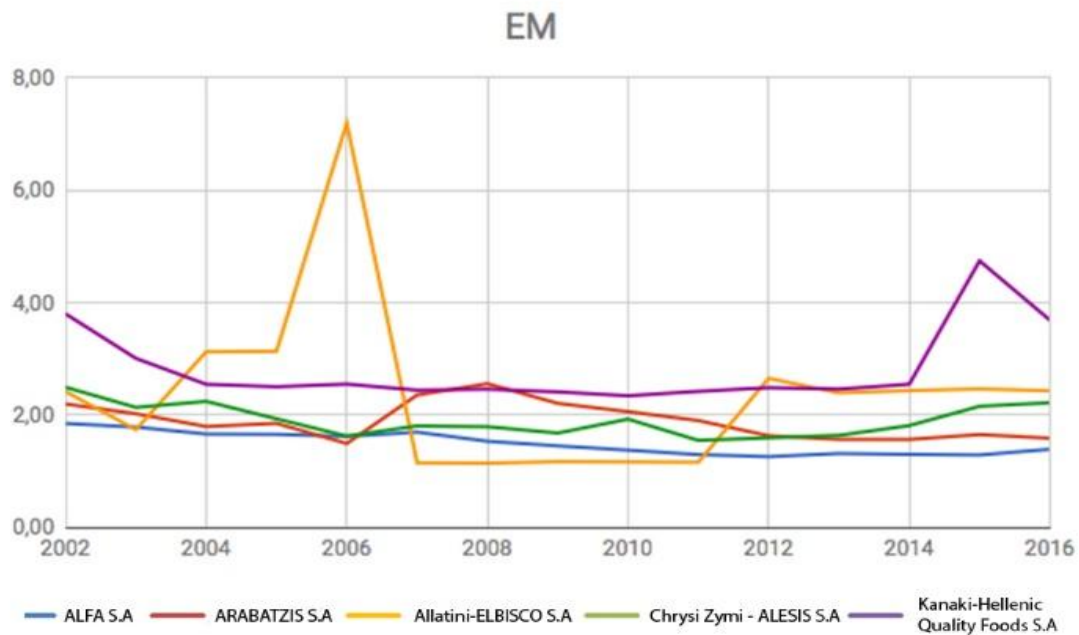
Years	ALFA S.A	ARABATZIS S.A	Allatini-ELBISCO S.A	Chrysi Zymi - ALESIS S.A	Kanaki-Hellenic Quality Foods S.A
2002	1,85	2,19	2,42	2,49	3,8
2003	1,78	2,02	1,74	2,13	3,01
2004	1,66	1,79	3,13	2,24	2,55
2005	1,66	1,85	3,13	1,93	2,5
2006	1,62	1,49	7,2	1,62	2,55
2007	1,69	2,36	1,15	1,8	2,44
2008	1,53	2,56	1,14	1,79	2,46
2009	1,45	2,21	1,17	1,68	2,41
2010	1,37	2,06	1,16	1,92	2,34
2011	1,29	1,9	1,16	1,55	2,42
2012	1,26	1,63	2,65	1,59	2,48
2013	1,31	1,56	2,39	1,64	2,46
2014	1,3	1,56	2,43	1,81	2,55
2015	1,29	1,65	2,46	2,15	4,74
2016	1,39	1,59	2,43	2,22	3,69

Source: Author's own construction from published financial data

Leverage (multiplier of equity) shows the size of debt, is debt, used by the company to finance its operation in relation to equity. A company with high borrowing in relation to equity is considered to have high leverage. As the leverage rises, the risk for shareholders and investors is growing, as in the event of loss the losses are multiplied by its non-existence. So, desirable is a reasonably low leverage ratio. In our table, therefore, there are changes in the EM index. The company ALFA S.A initially shows steady levels of leverage ranging from year to year to about 1.5 points on average, showing a good image of the venture without any particular risk. Arabatzis S.A. appears to be at a higher risk for the years 2002-2003 and 2007 to 2010, as the risk seems to be higher at around 2.3 units on average. The remaining years range to 1.5 points. Allatini - Elbisco S.A., which records the most changes in time, complements the follow up. The leverage levels are constantly fluctuating over the years with a somewhat more stable trend in the years 2007 to 2011 and 2012 to 2016. Chrysi Zymi- ALESIS S.A, while it has a higher risk in the years 2002 to 2004, from in the year 2005 to 2014, manages to reduce this risk to 1.6 points on average. In doing so, it shows a good business situation. At this point, the leverage levels of Kanaki - Hellenic Quality Foods S.A, which, while showing a negative image of the company, do not make any special risk movements, so that it can improve or save in some way yielding its own capital, making profits. More specifically, in the years 2002-2003 its leverage is close to 3 points. Between 2004 and 2014, however, leverage is maintained at 2.5 points, which shows us that the company did not make any special efforts to increase its sales. A late rise, it had been in the last two years where it was forced to increase the risk for it to be kept on the market.



## REPRESENTATION OF LEVERAGE FOR THE 5 CPMAPANIES



Source: Author's own construction from published financial data

From this diagram, what is clearly distinguished is the high leverage of Allatini - Elbisco SA. 2005-2007 and Kanaki - Hellenic Quality Foods A.E. in the year 2014. Moreover, for ALFA S.A, Arabatzis S.A and Chrysi Zymi- ALESIS S.A, the years 2002 to 2016 show a single steady course, at low risk.

## CONCLUSIONS

DuPont analyzes ROE (Return on equity) in two key segments that determine profitability, asset efficiency and leverage. It is an attempt to isolate the causes of power and weakness in the performance of the company. It focuses on cost control, resource utilization and company management. More specifically, initially observing the ROE index of all five companies, it is clear that the most profitable companies for the past 15 years are ALFA and ARABATZIS. ALFA is based on its own funds and sales for the period 2005-2016 amounted to € 257 million and earned EBITDA of € 43 million, equivalent to 16% of all employees chapters. The company exhibited a high ROE and ROA with low leverage, but its performance declined slightly over the past five years. On the other hand, ARABATZIS, between the years 2005-2015, generated sales of € 488 million, which generated EBITDA of € 75 million equal to 15% of sales and 16% of the average of the employed capital of the period. The company for fifteen years had a very high ROE index and even better ROA, without having to raise leverage levels. ROE even fluctuates even over the years of the economic crisis to 25% to 30% on average. On Tuesday, Chrysi Zymi-ALESIS is coming to a profit with the best time period in 2011-2015. ROE returns to an average of 10% and the ROA index is also affected accordingly. The company did not make any special efforts to increase its profitability and so leverage levels remained low. The two following companies, ALLATINI-ELBISCO and KANAKI-HELLENIC QUALITY FOODS, showed a low return on equity, with KANAKI-HQF recording even negative rates. More specifically, ALLATINI-ELBISCO, for the period 2005-2016, generated total sales of € 1.69 billion due to its group. Total EBITDA earnings amounted to € 158 million, equal to 9.3% of sales and 6.8% of the average working capital of the period. Nevertheless, the ROE was around 5% on average and leverage levels increased. KANAKI-HQF, for the period 2005-2016, sold sales of € 1.13 billion due to



its HQF Group, and generated EBITDA of € 118 million, equal to 10,5% of sales and 5.43% of all employees employed in it. Profit-loss was also the result of the twelve years with a total loss of 22.6% million euros, equal to -2% of sales and -2.7% of the average own funds of the period. The return on ROE from 2010 to 2016 is negative territory with a lower rate of -0.46% and greater than 2% at all times. These rates are enough to make it unprofitable and have serious financial problems. The ROA and leverage levels are also directly affected, as it has been forced to increase the risk in order to cope with the domestic market.

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## CORPORATE SOCIAL RESPONSIBILITY - A COMPETITIVE ADVANTAGE FOR ORGANIZATIONS

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**Abstract:** *Tendencies in the world economy raise new and unexpected challenges before the business. The financial crisis and the economic decline in the last decade are only a part of the preconditions for the search of new methods of achieving competitiveness by the contemporary organizations. The ability to comply with the needs of the society, i.e. involving the organizations in solving social, ethical and environmental matters, can not only lead to the realization of financial profits, but also guarantees the achievement of competitiveness. The necessity of change in keeping the competitive positions business brings forward the Corporate Social Responsibility (CSR) as an optional leverage for improving the company performance.*

*In this context, the **purpose** of this article is to analyze the connections and the dependencies between the corporate social responsibility and the organization's competitiveness.*

**Key words:** *corporate social responsibility, competitiveness, competitive advantage.*

**JEL:** *M10, M14, M19*

### Introduction

The corporate social responsibility includes a number of organizational activities varying from environmental protection, a social engagement to the parties involved, business ethics, anti-discrimination, socially responsible investment politics, etc. The most common feature of these activities is the social subservience the organizations create, and that the initiative and the performance of the corporate social responsibility is under the control and at the expense of the organization.

In the latest years more and more organizations create and integrate the social responsibility politics in their organizational development strategies. In relation to that the contemporary business studies begin to face questions like: “What social, environmental, financial and political aims are being followed by the social responsibility politics?” and “What are the real results and benefits of the implementation of the socially responsible activities?” These questions logically provoke studies on the topic: How can the corporate social responsibility influence the organization's competitiveness, and is it its determinant.

The indicated arguments define the growing **importance and popularity** of the subject in focus.

In this context, the **purpose** of this article is to analyze the connections and the dependencies between the corporate social responsibility and the organization's competitiveness.

**Subject** of study are the corporate social responsibility and the organization's competitiveness.

- **Nature of the corporate social responsibility**

It is hard to draw a unified definition of the concept corporate social responsibility, because it covers a wide specter of activities, politics, processes, initiatives and instruments. In relation to this, when the meaning of the corporate responsibility is being researched, often are being used auxiliary specifications and auxiliary definitions: Corporate social responsibility, corporate sustainability, corporate citizenship and business ethics.

Corporate social responsibility is the most often used term when the focus is on the role of the business for ensuring the wellbeing of the local community. Although the main purpose of the organization is to gain profits, satisfying the needs of the society is an important engagement which leads to certain activities the organization has to perform. According to the modern conceptual frame of the corporative social responsibility, it is bound by the theory of the parties involved formulated for the first time by Freeman in 1984. The theory of the parties involved introduces the management approach for the performance of the social activities by shifting the focus from the exclusive manager's personal responsibility (Bowen, 1953). For this reason, with the theory on the parties involved, began the conception on corporate social responsibility as a complete management approach where the boundaries between charity and philanthropy intercept. Under parties involved one should understand "any group or person that can influence on or can be affected by the achievement of the the aims of the organization" (Freeman, 1984).

The term corporate sustainability is being used in order to emphasize the growing importance of the care for the environment and the development of organizational environmental efficiency programs. Today the conception on sustainability generally refers to the ability of the organization to build and sustain high lifestyle for the present and the future generations. Regarding the corporate sustainability, the social responsibility of the organization has two general directions of operations - internal and external. The companies achieve internal sustainability, when they have the ability to sustain a long-term competitive advantage. Regarding the external sustainability, the organization has to maintain the resources, the society and environmental needs as a whole.

The use of the term corporate citizenship has had the purpose of identifying the corporate philanthropy in the USA. Today the term finds its meaning in social activities where the accent falls on the role of the organizations as citizens in the global society. The organizations voluntarily undertake responsibilities as a main participant in the society by contributing to the increase in the quality of life in the society. Thus, in regards to their management, the companies become increasingly more responsible for the effect they incur on the society and the public rights, on the individual or the citizens' rights, and on the political rights (Waddock, 2006).

The business ethics refers to the common ethical systems applied in the context of the profit oriented organizations. The topic is a part of the philosophical ethics related before all to doing the "right things" (Sims, 2003). The business ethics is partially related to the behavior of the separate persons as members of the organization and the society in a wider scale. It is interested in the business values as a whole, and in the manner in which the organization integrates values like honesty, trust, honor, respect and fairness in the organization's politics, the practices and the organizational decision making (Blowfield and Murray, 2008).

CSR is a wide-specter conception, and because of that, measuring its influence over the other organizational components is a complex methodological task. The social responsibility studies are often divided into four main dimensions: Work place, market, environment and community.

- Corporate social responsibility at the work place - it refers to the manner in which the organization treats its employees. This dimension includes matters like recruitment, work force variety, remuneration and labor conditions, health and safety, and syndicates recognition.
- Market corporate social responsibility - covers the methods by which the company operated in reference to its suppliers, clients and competitors. This dimension covers matters like the responsible advertising and marketing, managing the clients' complaints, the anti-corruption measures, the ethical practice and imposing social and environmental requirements to the suppliers.
- The corporate social responsibility related to the environment - describes the measures an organization may take in order to soften the negative impact on the environment due to its activity, for example energy efficiency measures, or through using less polluters. The social responsibility may be translated into the production of goods or rendering services which actively contribute to the improvement of the environment where the organization operates.
- Corporate social responsibility related to the community - it refers to the relations between the organization and the communities that may be affected by its activities. This dimension involves matters like the human rights, the dialog and the partnership with the potentially concerned communities, and the active contribution to the wellbeing of the community.

Some of these dimensions are inevitably overlapping each other in the organizational practice. For example, the CSR measure related to the environment may be of great importance in the relations with communities affected by the activities of the organization. The transparency and the communication regarding the social and the financial performance of the organization are among the key aspects of CSR and they are related to all the other CSR dimensions above. The practice of preparing and publishing sustainability reports referring to the manifestation of the social activities become of increasing importance for measuring the importance and the influence CSR has over the rest of the organizational components - image, reputation, financial sustainability, sustainable development and competitiveness.

They find their summary of the inquiry we have performed on evaluating the CSR application in the organization's business management<sup>36</sup>.

The inquiry was sent to companies listed in top 50 by Capital Gazette<sup>37</sup>. It holds questions based on the standard ISO 26 000 and on the evaluation criteria by the International Business Leaders' forum on<sup>38</sup> Socially Responsible Practices. It aims to estimate how CSR influences the financial performance of the company, the customer's satisfaction, the employees' satisfaction, and the company reputation.

The company managers responding to the inquiry are of the sectors Energetics, Fuels, Trade, Light Industry, Metals, Machines and equipment manufacturing, telecommunications, Transport. Under the size criteria - more than 2/3 are defined as big, and the remainders are categorized as medium-sized companies.

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<sup>36</sup> The inquiry was developed on the basis of ISO 26000 <https://www.iso.org/standard/42546.html>

<sup>37</sup> [https://www.capital.bg/biznes/kompanii/2017/07/01/2998761\\_nai-golemite\\_kompanii\\_edna\\_dobra\\_godina/](https://www.capital.bg/biznes/kompanii/2017/07/01/2998761_nai-golemite_kompanii_edna_dobra_godina/)

<sup>38</sup> <https://www.csr-online.cz/en/15-questions-answers-about-csr/>

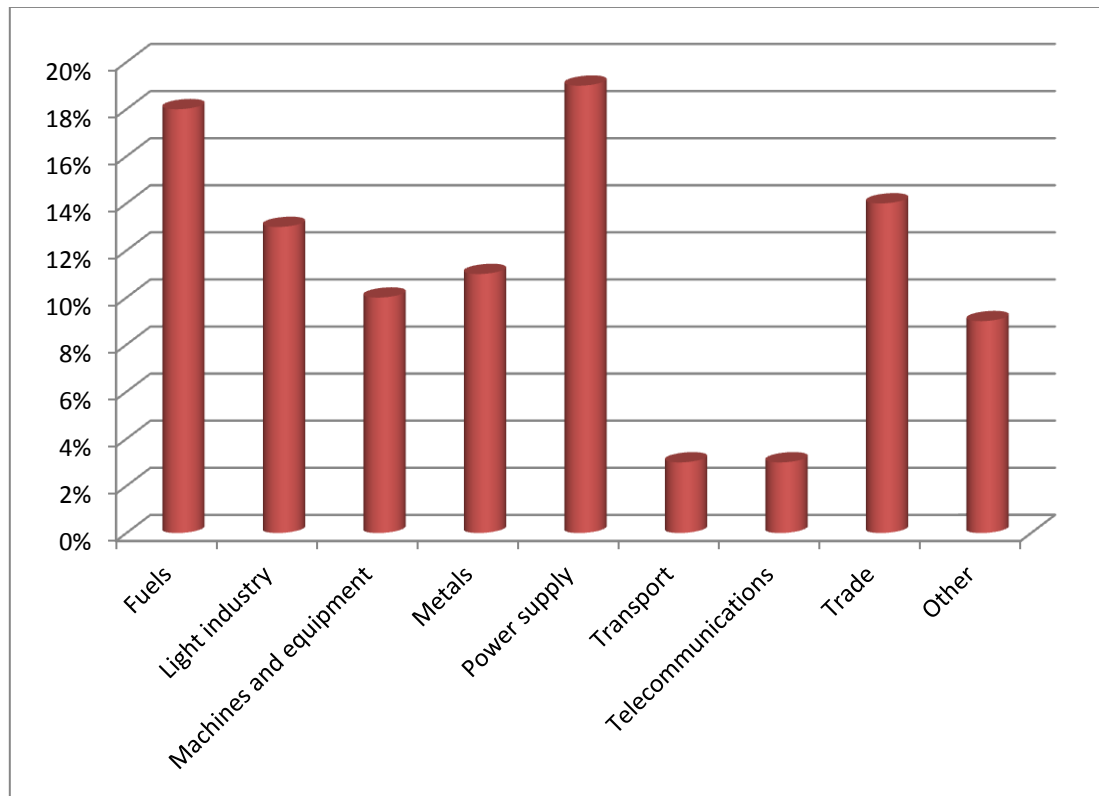


Fig. 1. The participating companies across the sectors

On the question: Is your company acquainted with ISO 26000 and the theoretical conception set in the standard?

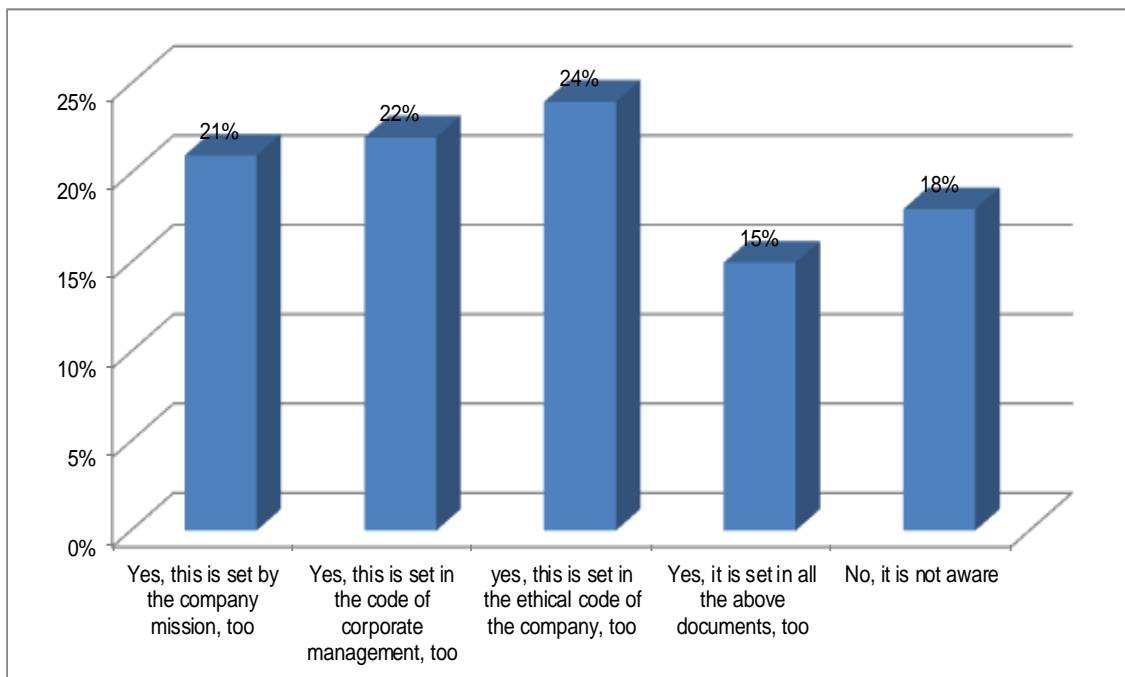


Fig.

## 2. Implementation of the principles set in the standard ISO 26 00 in the company business

More than 2/3 of the interviewed respond that they are well acquainted and it is set in key documents like the mission, the code for Corporate management and the Company Code of Ethics. This gives us the basis to conclude that an increase in the socially responsible corporate behaviour is being observed when the word is about this segment of the inquired companies.

As mentioned above, the competitiveness of the organization is directly connected with CSR. They are connected by three management components: strategies, parties involved and responsibilities. Introducing the CSR strategies directly influences the competitiveness because it reinforces the sustained development of the organization, improves the connection between the organization and the parties involved, and expands the conception on the organizational responsibilities in regards to the social, environmental and the political matters.

Therefore it is not a surprise that 78% of the interviewed give a positive answer to the question does the corporate social responsibility make you more competitive on the market.

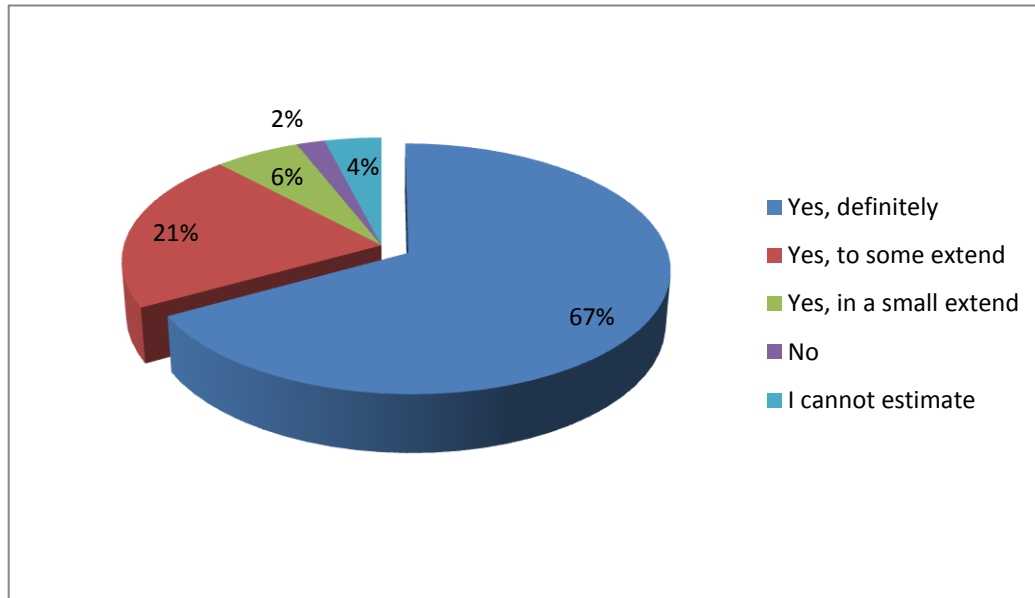


Fig. 3. Influence of CSR on the organizations' competitiveness

CSR gives a positive influence on the expenses and the production of organizations, too. The correctly designed environmental standards can provoke innovations that can reduce the overall cost of products or to improve their value to the consumers. The CSR perspective can not only lead to reduction in production costs, but also to improvement in the chances for lower consumption, lower insurance rates, and lower cost for solving possible future conflicts. This same direction gives the companies the aspiration for being energy efficient (73%), to reduce the row materials consumption (51%), to use eco-labels (for 48%).

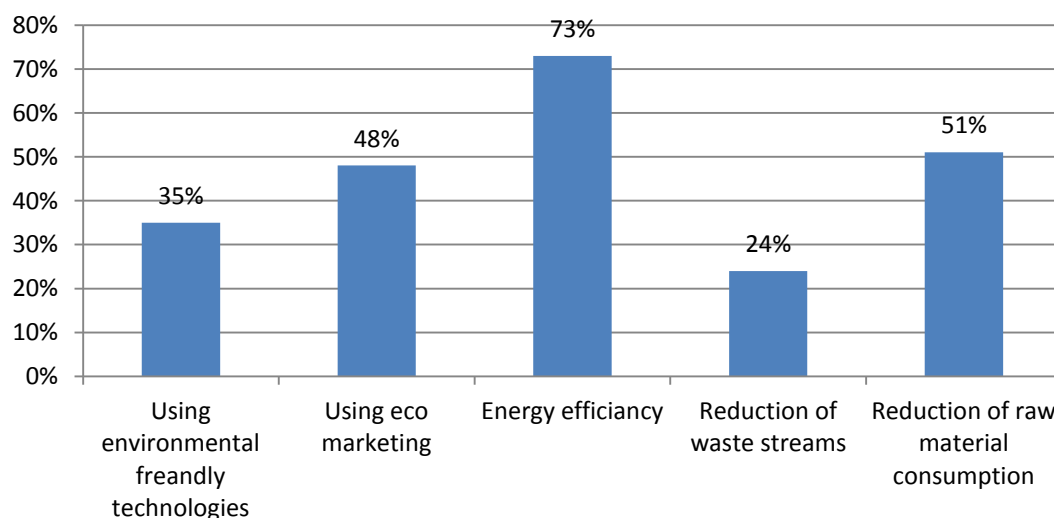


Fig. 4 Opportunities for reduction of production expense directly repated to CSR

The inquiry also lays down a relation between the corporate social responsibility and the human resources management. The organizations with a well developed human Resources Management strategy based on socially responsible initiatives, can reduce the overall number of employees and gain higher work motivation. Organizations with a strong corporate social responsibility have better ability to attract better professionals and keep them in a long-term plan. On the other hand the higher employees qualification and experience are a precondition for gaining competitive advantage of the organization in regards to the technical and production innovations in the organization.

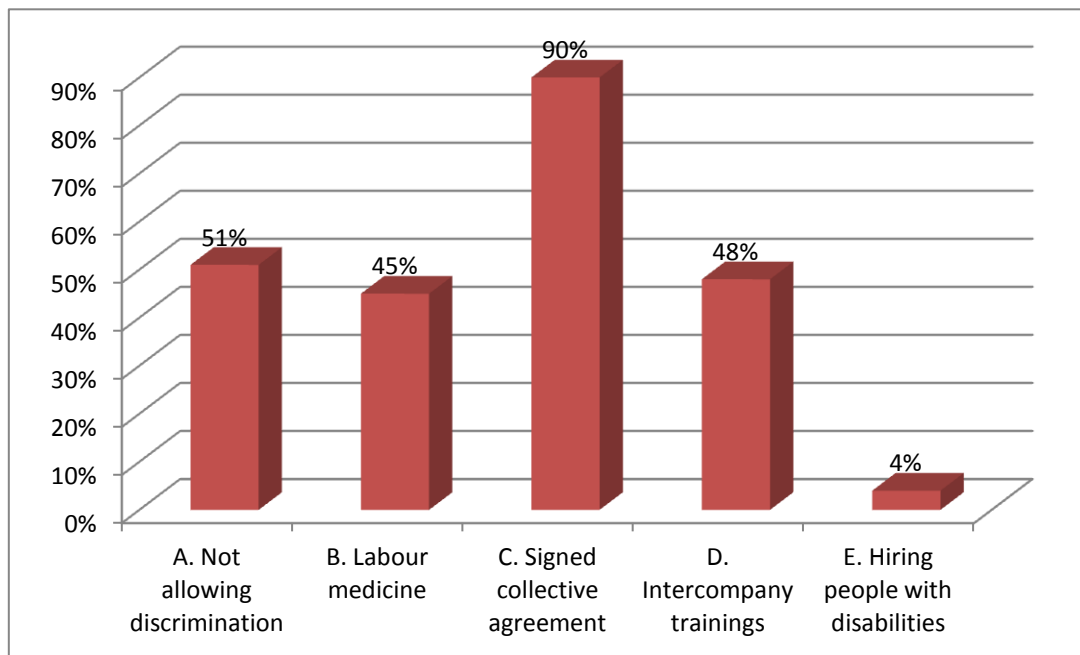


Fig. 5 CSR practices in regards to employees

There is more to be expected by the Bulgarian companies in this line, mostly due to the low percentage of employment of people with disabilities. Only 4% of the interviewed have responded, that they employ people with disabilities. The higher is the percentage of the ones responding that they do not allow discrimination in the employment process (51%) and they conduct internal company trainings (48%) which has been dictated by the awareness, that keeping the ethical principles and increasing the employees' qualification helps to build the public company image as a good employer. Learning and applying the latest trends and products has a positive effect on the company results. Trainings also help to overcome the so called boreout syndrome characterized by monotony and boredom at the work place and appears to be a general cause for demotivation. Obtaining new professional skills introduces variety in operations and generates new ideas.

Therefore, we can conclude, that the organizations performing socially responsible initiatives, have as a precondition for building a more durable relationship and engagement with their employees, in comparison to the organizations that neglect CSR in their development strategies and strategies for gaining competitiveness.

Many organizations accept their engagement on socially responsible activities, generally, as a mean to raise their reputation in the eyes of the parties involved. The presence of CSR reduces to a minimum the conflicts between the various organizations and the participants in their external environment, which actually draws CSR as a factor for building a positive organizational image and competitive advantages.

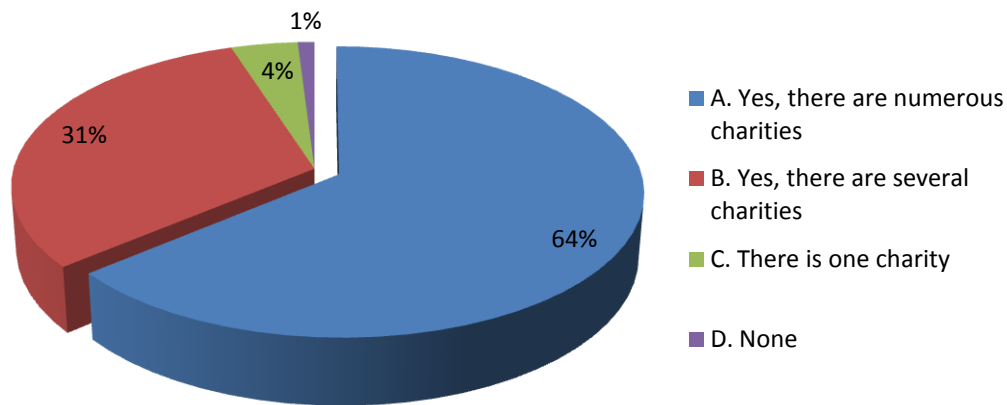


Fig. 6 Socially responsible practices of the interviewed companies

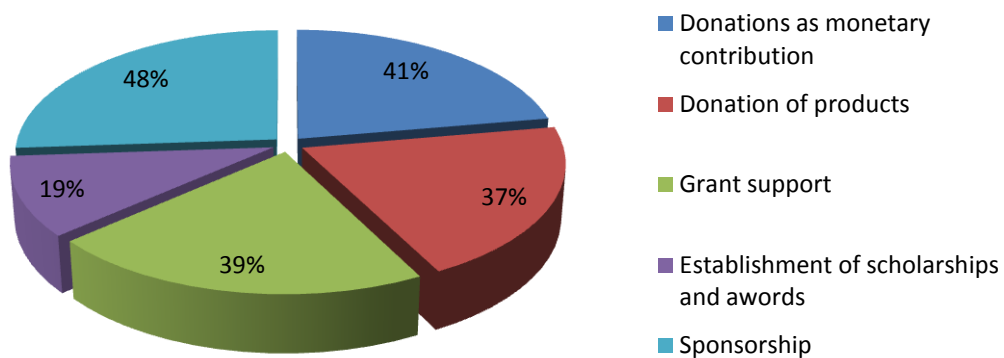


Fig. 7. Types of Socially responsible practices

From figures 6 and 7 is visible that 64% of the interviewed have made a number of charities which cover charities to orphanages and homes for elderly people, as well as to sports, cultural initiatives and events. When the corporations successfully demonstrate to the parties involved, that they are engaged with the social, economical and political problems, then they are able to build a positive reputation, which on its own, can reduce the risk of loss of competitive advantages. In other words, the organizations' competitiveness is strongly depending on its reputation and the relations with the parties involved, which are built thanks to the corporate social responsibility.

The last component which we are about to introduce in this publication is the connection between the business innovations and the corporate social responsibility. This exactly gives the companies the capability to produce new products and services, to offer new methods of work, and to increase their productiveness and competitiveness. Sales also



increase, and the effect of its implementation has a social, environmental and image character. This is why innovations are recognized more persistently as constant competitive power, a source of competitive advantages. By accomplishing the development of the innovation activities in the companies, their products and services always keep the leading place in the conditions of the dynamic and constantly changing market.

Conclusion: It can be said that the Bulgarian companies successfully implement not separate, but systematic socially responsible initiatives set out in their business strategies. The socially responsible practices of the companies are not one-sided, but on the contrary - dispersed in the general CSR dimensions set out in the theoretical framework - economical, social and environmental. In this context the company CSR is the core of their corporate sustainability. It complements the competitiveness and the innovations capacity which forms a degree of advantage, especially by improving the company image, raising the customers' loyalty, the employees' motivation and their satisfaction from the work.

## **Public Space as a Necessity for a Flexible and Effective Strategic Public Management. The Opportunity of Independent Agencies.**

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### **Abstract:**

*This paper seeks to present the necessity of the public “space” availability as a relaxation of the legislation margins in order of a flexible and efficient Strategic Public Management. This paper is about to be proposed with inclusion of the basic ideas of public strategic management. The proposed strategic plan is supposed to be adopted by an Independent Authority in Greece, the Ombudsman, which is a part of Hellenic Public Administration. The enhanced Bryson model of strategic public administration was selected, as the basis for this application. The whole strategic plan development methodology constitutes from the hyper thesis of several models, while each Bryson step, may assumed as a discrete method, as well as an implementation of qualitative and quantitative analysis such as text analysis and regression analysis. The Balanced Scorecard business model was performed, with regards to breaking down strategic goals to operational and individual. The final outcome of the strategic planning methodology in the Greek Ombudsman is that according to the strategic mapping model, the focus should be placed on the citizen as a user of the services and the rest of the operational goals should be set in such a way as to allow and guide the Ombudsman’s services around the citizen’s needs. As a basic finding of the whole application is the need for extended flexibility of such organization in terms of self-determining the vision and the operational goals.*

**KEYWORDS:** Strategic Management, Independent Agencies, Public Administration, Balanced Scorecard.

**JEL CLASSIFICATION CODES:** H11, H83, C88

### **Introduction**

The foundation of the Ombudsman institution has its roots in Sweden. The Swedish Ombudsman for Justice was founded in 1809 and its establishment was part of a major political modification (Magnetite, P. 2003). The initial idea of the classic Swedish ombudsman was irrelevant from the concept of a human rights institution, as it was only focusing on guaranteeing the maintenance of law in public administration (Koo, J.-W., Ramirez, F.O, 2012). However, it is accepted that the later scope of such institutions was closer in defending human rights. Since their initial appearance in Sweden in 1809, 178 NHRIs (National Human Rights Institutions) have been founded in 133 countries. Depending on the typology, a number of countries have adopted both a classical ombudsman and a commission, but the majority use only one model. Among them, the European Ombudsman is a new kind of NHRI, whose status and aim remain fuzzy (Magnetite P., 2003): While it is typically a parliamentary organization aiming to strengthen the control of EU institutions, on the other hand, the consequential profile of this organ resembles that of a court. A commonly accepted definition of such agents refers to “government-sponsored organs whose functions are specifically defined in terms of promoting and protecting human rights” (Koo, J.-W.,

Ramirez, F.O, 2012). The Ombudsman, as the most characteristic NHRI, is deep seated at the heart of the European identity. Thus, not only it is aligned with the European core values, ethics and politics meeting the need of an organization to be in contrast with the economic impact on the society, but also balances the power between the Government and the Parliament.

However, the international situation is facing obstacles regarding the Ombudsman's functional ability to accomplish its aim. The amount of complaints an ombudsman receives follows a growing trend, varying from hundreds to thousands annually. This variation depends not only on the national demographic scale, but mainly on the degree of the general public accessibility and awareness of the organization. The Ombudsman's responds to the annual public quests experience a trough and if this continued to be, this would mean a demotion of the agency that also happens in other institutions of the public sector. So, there is an increasing need of visibility, awareness and accountability, in accordance with the need to respond in a proper rate to the complaints. These reasons lead to the public strategic management necessity.

Strategic management is usually referred as the alignment of internal capabilities with external demands (Johnsen, A. 2015). This may take the form of plans, patterns, positions, perspectives, and plots" (Mintzberg et al., 2009). According to Williamson (1999), "strategy is now considered a field that makes it possible for the leaders of public and private organizations to "opt for the future". Strategic management was initially invented and implemented in order to deal with the 'industrial dynamic' marked by "cut throat competition" (Porter, 1982). As a topic of knowledge, strategic management has been developed over half a century ago.

Nowadays, many countries have seen multiple transformations in their public sector with varying priorities. The, so called, New Public Management (NPM) reforms have been a significant influence in diverse public domains (Hansen R.G. et al 2016). A characteristic example is the Hellenic Ombudsman, which is the case study of this paper.

### ***Study methodology***

This research project develops and evaluates a Strategic Plan in order to be implemented by the Independent Authority (usually named "agency") of the Hellenic Ombudsman (hereinafter "Ombudsman"). For the development of this Strategic Plan, Bryson's Strategic Management Model for Public Institutions (Bryson, 1988) was applied, due to the fact that the Ombudsman constitutes a component of Public Administration. The ultimate goal is to create highly autonomous public organizations with well-defined strategy and figurative tasks with more 'strategic space' to operate. Strategic space could be provided by legislative moderations giving to the Ombudsman's agency the freedom to be completely independent and autonomous from the general state mechanism. According to this formula, strategic management in public institutions consists of ten essential steps: 1. Development of an initial agreement, 2. Identification of the institutional framework and expectations of stakeholders, 3. Development and formulation of the mission and identification of values, 4. Analysis of the environment (existing situation of the agency and external influences), 5. Identification of strategic issues, 6. Formulation and implementation of strategic planning (using Balanced Scorecard), 7. Reviewing and adopting the strategy, 8: Description of the Future Image of the Organization, 9: Development of effective application processes, 10: Strategy and strategic planning procedures, re-evaluation.

In this study, focus is being on identifying the functional objectives and the method of monitoring their achievements. For the quantitative analysis SPSS v.20 was used, whilst the qualitative analysis (context analysis) implemented using the Nvivo v.10 software. The

evaluation procedure of the emerged strategic planning was implemented using a structured questionnaire that distributed to a sample of 30 public administrators.

### ***Strategic Planning process***

**Step1:** Developing an Initial Agreement: It is important to be an agreement among the Ombudsman leadership towards a formulation of a strategic plan.

**Step 2:** Identification of the institutional setting and expectations of stakeholders: The strategic planning application regarding the Ombudsman is based on the recent law No. 4369/2016, which along with the law No. 3230/2004 constitutes the institutional framework of the Hellenic government regarding the administration and system performance management strategy.

**Step 3:** Development and devising of the mission and identification of values: This step includes Stakeholders Analysis, Mission, Vision, and Values declaration. The key in mission development of the organization is the analysis of interactions i.e. all stakeholders who interact to form a network policy (Sabatier P.A., 1987).

The mission of an organization depicts the reason of its establishment and manoeuvre. Ombudsman's mission is already defined in Article I of its founding law as "The mediation between citizens and public services, local authorities, legal entities and public utilities to protect citizens' rights, to fight against maladministration and to maintain the observance of legality." The above description ensures the uniqueness of the institution, without creating conflicts with other organizations and justifies its existence.

The vision is the illustration for the future of the organization and has a long-term horizon. The vision of the Ombudsman is defined as "the sustainable coexistence between Citizens and Public Administration."

In terms of values, the IOA (International Ombudsman Association) suggest that all Ombudsmen, including the Greek one, are obliged to embrace the four following fundamental principles:

- i) Independence: The Ombudsman is independent in structure, functions and appearance to the extent possible in terms of executive procedure.
- ii) Neutrality and impartiality: The Ombudsman, by definition an impartial institution must remain unbiased and must not assume tasks where there is a possibility of conflict of interests.
- iii) Confidentiality: The Ombudsman must communicate with those seeking its services in strict confidence and must not disclose any confidential information, unless obliged by court. The only exception in breach of confidentiality should be when a major risk or serious harm is imminent.
- iv) Informality: The Ombudsman is not involved in legal procedures related to cases handled by itself.

**Step 4:** Analysis of the environment: Environmental analysis is an asset for the success of a strategic plan developing process, as it identifies external and internal events and factors which affect the organization in order to calculate its strengths and weaknesses. PESTEL Analysis tool was used to analyze the external environment of the Ombudsman. Using PESTEL Analysis, the environment is analyzed based on five factors. Data resulting from the analysis of the external and internal environment using the SWOT environment analysis tool are classified into four major categories, as showing in Appendix C: Interior environment (Strengths, Weaknesses), External environment (Opportunities, Threats).

By examining both the organization's website and the 2016 annual report, the following findings rose regarding the strategic management application in the Ombudsman: 1. There is no precise statement that any type of managerial outline is implemented at the organization. 2. No vision exists in the organization and thus the pertinent management's commitment is absent. 3. No set of indicators for monitoring the organization exists, though some reports provide various quantitative totals but without any evaluation, linking to targets, estimating future trends or target value, etc. 4. There is no proof of environmental analytical tools (SWOT, PESTEL, etc.), although an informal analysis of macroeconomic and social driving factors is observed. 5. There is no reference to strategic management laws (3230/2004 4369/2016) nor to the measures taken by the administration to conform to the terms of these regulations. As a consequence, there is a general inadequacy of strategic planning in the organization.

Mapping methodology and evaluation techniques analyzed the 2016 Ombudsman report and provided quantitative and qualitative data. Graphs from this analysis are presented in Appendix B. The main inferences are: There is a temporal trend in increasing the "social impact" of the organization. The agency does not have filtering processes when submitting reports, leading to a gratuitous examination of thousand reports. Nearly 45% of petitions are considered unfounded and this is deemed a significant rate, resulting in a great expenditure of resources. The resolution rate of verified cases fluctuates between 80-85%. The organization has productive competence of 10,000 cases more or less per year with an annual downward trend. The effectiveness of the organization is expected to drop by at least 3%, experiencing a nosedive most likely in November of 2017 (in terms of marginal monthly rate).

Respectively, data deriving from the analysis of the external and internal environment using the SWOT environment analysis tool are classified into four major categories, as showing in Appendix C: Interior environment (Strengths, Weaknesses), External environment (Opportunities, Threats).

Items included in categories 1 and 2 came out the current situation analysis of the internal environment, whilst items in categories 3 and 4 are identified using PESTEL analysis. The Strengths and Opportunities consist the positive aspect of the Organizations, whereas the Weaknesses and Threats have a negative quality.

**Step 5: Identification of Strategic Issues:** The outcomes of the above analyses are then used to ascertain the agency's strategic issues. For their gradual appearance the "Direct approach" (Bryson, 2004) was applied. According to this method, the strategic issues arise from the mission analysis (Step 2), the commands from "above" (Step 3), and the PESTEL and SWOT analyses (mainly from the Weaknesses and Threats of SWOT, and the negative PESTEL points) (Step 4). Moreover, the organizational culture strongly influences what strategic disputes will be placed in the agenda.

According to Bryson, Strategic Issues are those which stem from the application of the "do nothing scenario", have an impact on an organization and -most important- the institution is in position to take action to address them and has more than one alternatives to face them. In order to recognize them, the following particulars were analyzed:

1. A frame question which identifies the strategic issue: «What will happen if the level of services to citizens does not get improved by enhancing the Ombudsman's efficacy?" This question in essence also comprise the strategic issue for the Ombudsman, which is: Does the effective provision of mediation services meet citizen's needs by upgrading the service efficiency and diversifying its operation?
2. A series of crucial factors of the strategic issue: I. Low function of organizational framework (Ineffective Operations Management), II. Reduced efficiency and effectiveness,

III. Low institutional visibility, IV. Measurement systems about citizens' satisfaction shortage.

3. Failure consequences to solve the issue: Self-sabotage of the institution leads to its desuetude and obsolescence, to an inadequate citizens' rights protection mechanism, to an amplification of maladministration phenomena and last but not least to waste of resources (staff-time lost).

**Step 6:** Strategy Formulation and Development (using Balanced Scorecard): At this stage, the organization's strategy is performed. The strategic objectives are identified and operational goals are emerged finally by the strategic issues shake out, which are further divided to functional and personal goals. For these purposes, Bryson's "5-step process" model was used (Bryson, 2004, 2010). According to this model, the following questions are addressed:

1. Which alternative approach could address the strategic issue? At this point the "do nothing scenario" contrasts with alternative scenarios/options which solve any strategic issue. For instance, the "do-nothing scenario" regarding the citizens' satisfaction measurement may lead to a fewer use of the Ombudsman's services ending to an institutional obsolescence.

2. Which are the barriers obstructing the realization of such strategic alternatives? For example, efforts to improve processes at the Ombudsman's internal operation (operations management) is possible to erase staff's reactions.

3. What recommendations should be made to deal with these problems? Regarding the previous example, the Ombudsman could effectively communicate to the staff the positive dimensions of the changes.

4. Which actions could be supportive along with the available resources of the organization, in order to implement the operational plans within the next two years? In this step the strategic aims are transformed to operational aims, including all the available resources. A parameter of vital importance at this step, is the strategic plan embracing by all the staff. This is mainly achieved via the methodological use of the Balanced Scorecard.

5. Which specific actions should be undertaken in the next six months and who would be responsible for them? At this last step, the operational objectives are transformed into objectives of administrative units and individual goals within a six month timetable. In this study however, the process of analyzing the organization's strategy stops at the level of operational objectives.

By applying the above 5 step process, the following Strategic Objectives for the Ombudsman achieved: Better quality service to citizens, organizational embarking upon new action fields, promotion and enhancement of Ombudsman's public image/visibility, boost in Ombudsman's actions effectiveness.

These objectives concern both the efficiency and the diversification effort of the agency.

For the breaking down of strategic goals into operational ones and for the development of indicators to calculate them, the Balanced Scorecard business planning model was applied. According to this model, each strategic objective is specialized into an operational one through four dimensions. Of those four dimensions, one is the output that covers the focus of the strategy, while the other three are inputs.

In case of public institutions such as the Ombudsman, the focus is being on the citizen and the related services, while other dimensions are set so as to monitor the service quality.

Therefore, the four dimensions which were chosen are:

1. Value added services (Output): This includes all procedures / actions targeting citizens' satisfaction by the Ombudsman's services amenity.

2. Internal processes: This dimension concerns all functions with regards to the operations management inside the Ombudsman.
3. Human resources: This includes all acts for the optimal utilization of the Ombudsman's human resources in order to conduct its work properly.
4. External Actions and Partnerships (External Procedures): This dimension relates to the Ombudsman meddling with the external environment by widening its strengths and endorsing its accessibility. In addition, it has to do with actions of high communicative skills (such as lobbying) and personal relations, as well as informational sessions targeted at vulnerable groups.

### Description of Balanced Scorecard tables:

- The objectives that were set to meet the requirement of being SMART and the indicators were selected with criteria of simplicity, reliability, acceptance (of the applicable users), relativity (with the goal that would evaluate), objectivity and ability to confirm (by external observations).
- The current value of the index. Its value is absent if there was no prior measuring system or if the operational objective introduces rather a new process / procedure.
- The target value of the indicator, must be realistic, in order to create the so-called «stretching effect», i.e. to have a certain degree of difficulty. Also there is a need to be able to provide motivation to staff to achieve the objective value of the index.
- The operational actions that will contribute to achieve this goal.
- The people who are responsible for implementing the actions and achieving the goal.

Table 1a: Balanced Scorecards for Dimension 1 (output): Provided Value added services

I d	Operational objective	Indicator	Current value	Target value	Implementatio n actions	Implemente r
1	Creating a "one stop-shop" Ombudsman services in selected ADS throughout the country for preventive information and citizens' complaints collection	% Partner CSC (which would provide Ombudsman services) Regions	-	Services Ombudsman function in 35% of CSC Regions 2020	Cooperation with the Ministry of Interior (responsible for the ADS) for the determination of levels of responsibility and to change the institutional framework  Reorganization body	Head/Quality Manager/Operations Manager
2	Improving level civil service	Citizens satisfaction degree (by completing		Rating> 80%	Locating synergies and grouping of	Quality Manager /Operations

Id	Operational objective	Indicator	Current value	Target value	Implementation actions	Implementer
3	Improving cooperation Ombudsman & Administration	the relevant form/questionnaire )  % Complaints on all reports	83%	<2%	reports  Actions motivational personnel (e.g. by introducing model " Employee of the Month ")	Manager /  Personnel Officer
		% of reasonable complaints with successful resolution with actions of the Ombudsman			Development of interactive online services (chat, skype) for the effective and efficient collaboration Ombudsman and Administration and dealing "organizational failures"  Improving coordination with Administration incorporating new ICTs and platforms As SYZEFXIS II	Quality Manager /Operations Manager  Manager ICT
		% Reporting except competence Ombudsman			Front-line update (CRC & Ombudsman)  Interactive form reports with immediate notification in case of lack of jurisdiction  Management reports	Quality Manager /Operations Manager / Head of ICT
4	Improving front-line services	% Reporting except competence Ombudsman	48%	25%	Front-line update (CRC & Ombudsman)  Interactive form reports with immediate notification in case of lack of jurisdiction  Management reports	Quality Manager /Operations Manager / Head of ICT



Table 1b: Balanced Scorecards for Dimension 2: Internal Processes (Internal Operations)

Id	Operational objective	Indicator	Current value	Target value	Implementation actions	Implementer
1	optimization Ombudsman	Number of business cycles	6 cycles	3 cycles	reorganization <sup>28</sup>	Chief Ombudsman/Operations Manager
		Number of documented procedures / year	-	50 / year	recording procedures	
2	Redistribution - reducing operating costs Ombudsman <sup>29</sup>	rent for buildings	388,000 EUR	280.000 EUR 2020	Redistribution administrative and scientific staff in ADS Reducing operating costs due to space-saving	Chief Ombudsman/Finance D/Director
4	Improving scientific staff efficiency	% Fulfilled cases / total cases competence Ombudsman	89%	95%	Motivational actions	Quality Manager / Supervisors Activity Cycles Ombudsman / ICT Officer
		Number Fulfilled reports/year	45 references/Year g/officer	90 reports /year / official until 2020	Development management system matters using ICT	
		Median x time q handling cases	-	90 days	Defining appropriate indicators	

**Step 7:** Reviewing and Adopting the Strategy: In formulating the Ombudsman's strategy, support from the political leadership is of high importance.

**Step 8:** Description of the Future Image of the Organization: The vision for the success of the organization is scattered to the Ombudsman's staff. The staff is informed of its role in the strategic planning, as well as what it will be asked in the future (e.g. through the development of its Code of Conduct).

**Step 9:** Development of Effective Application Procedures: For the effective strategic plan implementation, the agency will create a workgroup (task force) seconded to the project

"Implementation of strategic planning." The group will contain the Chief Ombudsman, the Deputy Ombudsmen, people from the scientific and administrative staff of the Authority. In terms of applying the strategic and operational plan the organization will develop an extensive annual work program for each of the three years for 2018-2020.

**Step 10: Strategy and Strategic Planning Procedures - Reevaluation:** The stage of evaluation is a very crucial process in strategic planning. At this stage the individual, administrative, operational and strategic goals and achievements are reviewed by the task force and corrective measures are proposed if necessary.

### **Results: strategic Planning Evaluation using Multi-criteria Analysis**

Strategic planning fulfillment is followed by the assessment stage. The questions that this evaluation address are the following:

- A) How possible is the developed strategic plan to be implemented?
- B) How useful and efficient is this plan?
- C) Are there any differences in the way that this plan is evaluated according to the individual characteristics and the personal knowledge of the evaluator?

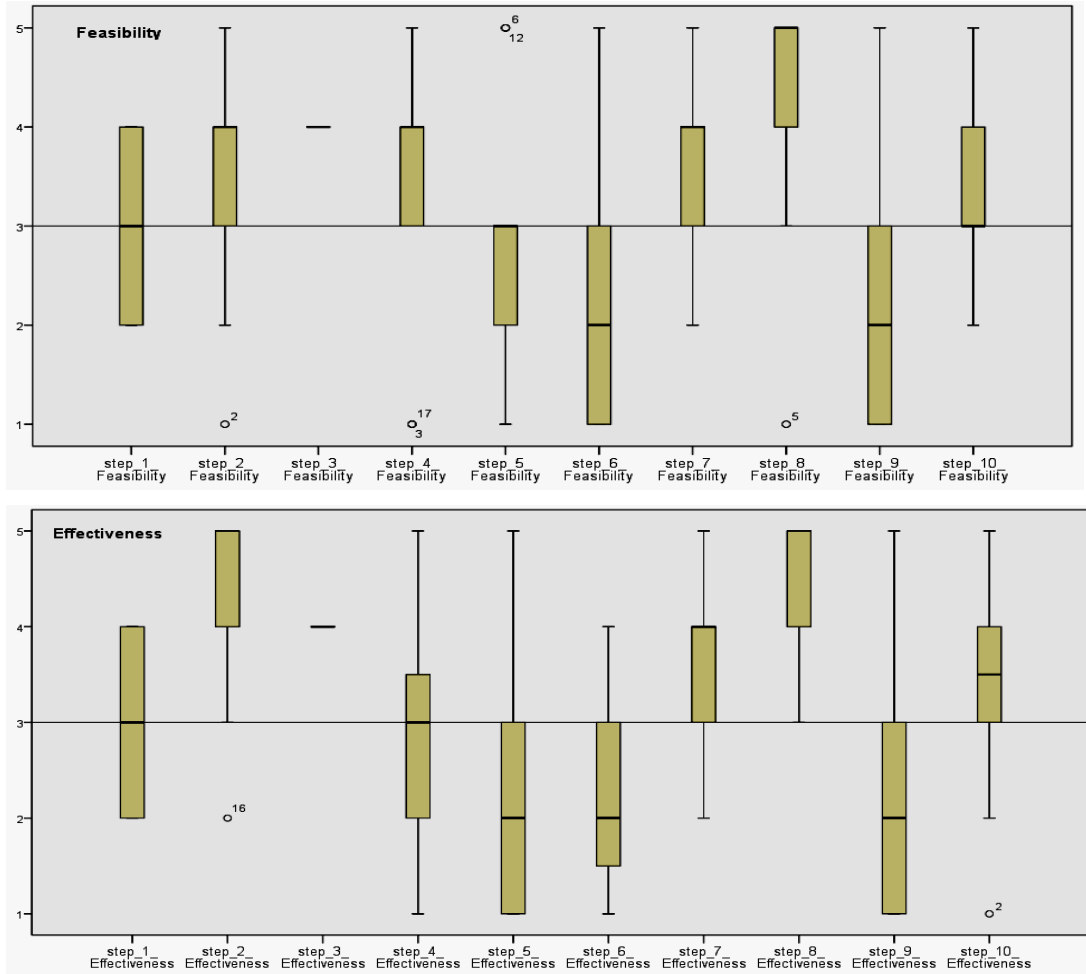
In order to evaluate this strategic plan, Multi-Criteria Decision Analysis (Keeney, R. L., & Raiffa, H. ,1976) method was used along with the use of Utilization Function technique (Department for Communities and Local Government, 2009). As strategic plan evaluators, executive managers who work at least two years in the public sector were chosen. Furthermore, in order to choose an individual to be part of the sample, it was mandatory for him to have either strategic management knowledge or to have practice strategic management at the public sector.

A hard copy of the strategic plan was given to the evaluators as well as detailed explanations for it and for the evaluation procedure. The assessors were called to answer for each of the ten Bryson's strategic planning steps the following:

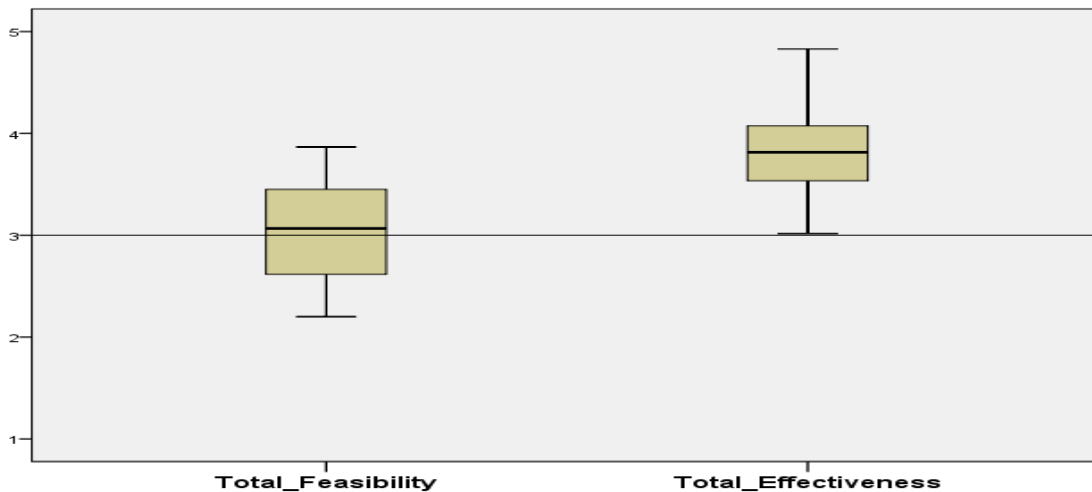
- A) How important is each step for the strategic planning itself? This significance was taken as weights vector in Multi-criteria Analysis (Brownlow S.A. and Watson S.R.,1987) .
- B) How feasible is each of the ten steps as well as the whole plan to be implemented?
- C) How effective is each step and the plan in general?

The evaluation of the above was accomplished with a 5-Likert Scale (1= none – 5= very much).

At graphs 1,2, box plots were given for evaluating the significance, the feasibility and the effectiveness of each step of the strategic plan, while at graph 3 the total Feasibility and Effectiveness are given :



**Graph 1a,b:** Box plots that representing the evaluators opinion about the significance, the feasibility and the effectiveness of each step of the strategic plan



**Graph 2:** Box plots that are representing the evaluators opinion about the total feasibility Effectiveness of the whole strategic plan

In addition, statistical significant positive correlation emerged between work experience in the public sector and estimated strategic plan feasibility. (Pearson's  $r=0.493$ ,  $p=0.021$ ). Also, negative correlation was emerged between feasibility and effectiveness ( $r=-0.372$ ,  $p=0.014$ ).

Moreover, by the t-test emerged that those who hold general managerial positions consider the plan less effective ( $M=3.96$ ,  $SD=1.21$ ) in contrast with those who hold a plain manager position ( $M=2.096$ ,  $SD=0.98$ ),  $t=4.74$ ,  $p<0.05$ . Gender and education had no statistical significant effect. To conclude, the following findings were emerged by the multi-criteria analysis of the strategic plan evaluation:

### ***Conclusions***

It seems that using the appropriate tools for analysis, it can be identified the main strategic issues of both the public sector organization and the citizens. As resulted from our analysis, it seems to be a growing demand from the Ombudsman's services. This observation is in line with the findings of international literature. Our analysis has shown that, a large number of the ombudsman cases, concerns cases in the workplace. Given the fact that Greece is experiencing a severe economic crisis, it is expected that labor rights will be affected, and this will cause more demand for the ombudsman's services. Although we recognize that the Ombudsman's organization is working intensively, there are weaknesses and points to be improved in order to be able to meet the public expectations. In order to do this, a strategic plan needed to be adopted, while simple day-to-day management can downgrade the organization's performance over the long time term.

The developed strategic plan is characterized feasible and effective, meaning that it notes Mean of feasibility and effectiveness well over 3, the neutral rate. Not all steps of the plan are the same determinant on its efficiency. The most crucial steps for planning is the operational objectives determination, the appropriate action planning to achieve the goals, the appropriate indicators development and monitoring to evaluate the actions' effectiveness and the goal achievement re-evaluation. By the open type question processing contained in the questionnaire, it is emerged that the most significant issues the administrators believe the strategic plan would have while implementing, are the following: Lack of long-term culture in planning of public administration, lack of quantification and measurement mechanisms of the findings and lack of knowledge on strategic planning issues of the executives of public administration.

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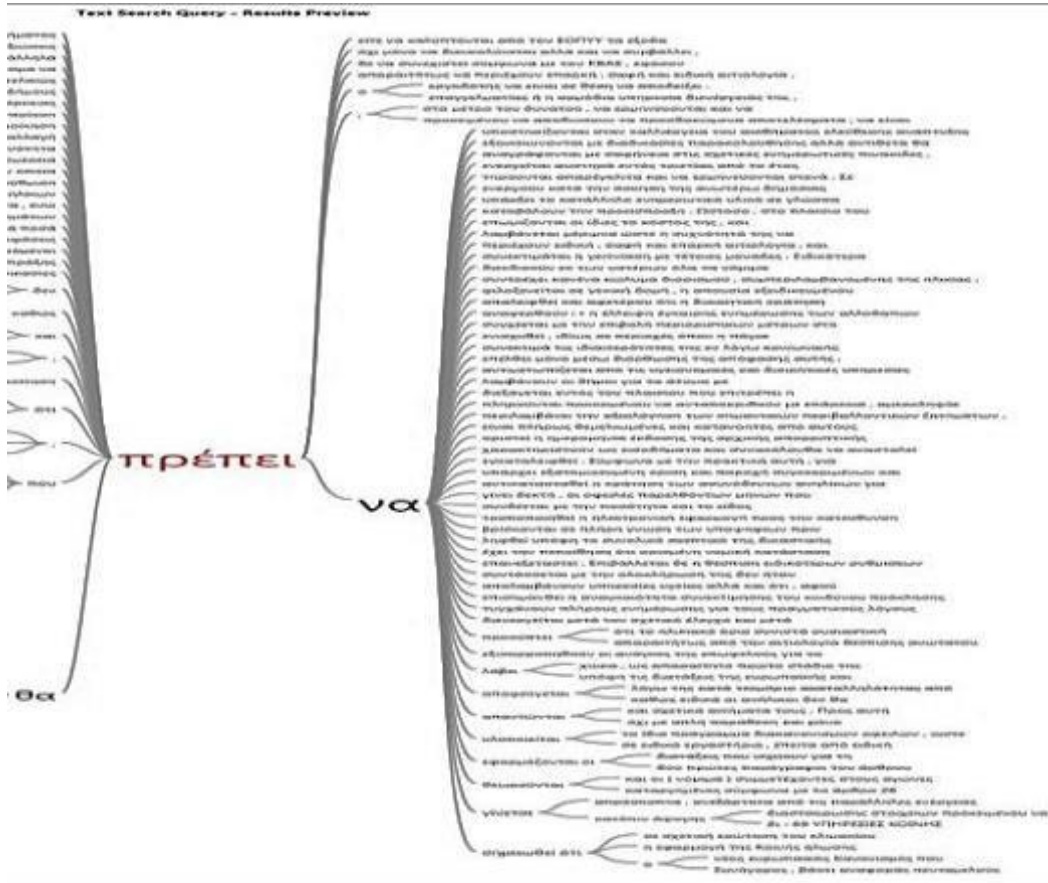
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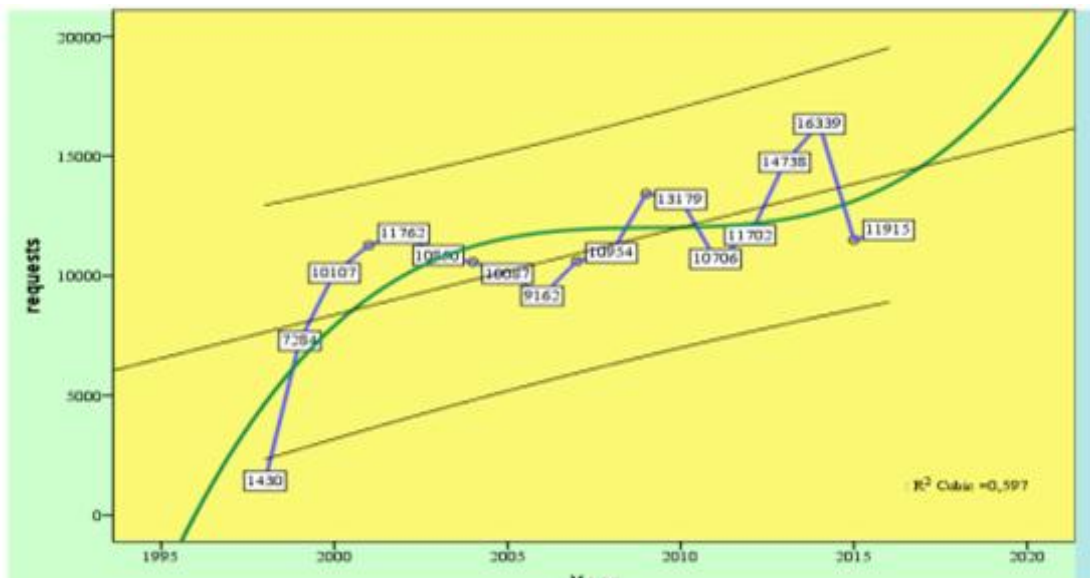
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## Appendices



**Graph 3:** Results from the Nvivo software. Although the fact that the language of the analyzed documents mainly ere written in the Greeks, the above picture of an text search tree, is given as a typical example of the tools and methods used in our analysis. In the above tree, the whole needing for actions (according to Ombudsman) are collected.



**Picture 4:** Results from the regression analysis. Dependent variable selected to be the public demand for the ombudsman services over time. Although it seems to be seasonality, in the background there is a constant linear increasing trend of the demand.

## **AN INTRODUCTION TO THE GREEK INDEPENDENT AUTHORITY FOR PUBLIC REVENUE AND REVENUE COLLECTABILITY**

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### ***Abstract***

*Hellenic Republic has acquired a new example of independent administrative authorities, the Independent Authority for Public Revenue, broadly known as IAPR, which was established by law 4389/2016. Both its institutional antecedent, the Secretariat General for Public Revenue within the Ministry of Finance, introduced in 2012, and the current authority, activated in 01/01/2017, are attributed to the obligations which the Greek State, whose economy is determined and supervised by international creditors from 2010 and on, has taken on towards them, in virtue of memorandums of understanding. On the one hand, IAPR has already achieved some important targets, such as the activation of the “electronic cross-check system for bank deposits. On the other hand, severe criticism has raised against this authority, inter alia given that it has essentially marginalized the Ministry of Finance as for its normal mission and appears essentially almost as a one-man authority. The powerful figure of the authority has in English the majestic title of Governor, which is quite indicative for the substitution of the constitutional Government by a troika-centered Governor, under the supervision of an Expert, pre-selected by European Commission.*

**Keywords:** *Government; Governor; Independent Authority for Public Revenue (IAPR); independent administrative authorities; memorandums of understanding; public economic law; revenue collectability; tax evasion*

### **1. Introduction: Independent authorities in the Greek legal order**

Independent organs within Public Administration have not been a totally unknown institution in the history of Administrative Law but a very uncommon one. For instance, the Council of State and the Court of Auditors constitute the two classical organs endowed with a double legal nature: they have been not only administrative tribunals but also parts of the Public Administration, as for their administrative competencies. From the 1980s and on,



there has been a new trend within Public Administration, in comparative Public Law. It is about the institutional model of independent administrative authorities. This model consists in administrative organs, usually within the legal person of the State, which enjoy a status of personal and institutional independence against the rest organs of the State and exercise various administrative competencies. This trend was introduced in the Greek legal order for the first time in 1989, through the legislative institutionalization of the National Broadcasting Council.

The crucial time of the short history of this category of authorities was 2001, in which some authorities were incorporated (or previewed for the first time) in the Greek Constitution and so acquired a constitutional status like the aforementioned two (supreme) administrative tribunals: it is the case of the National Broadcasting Council, the Data Protection Authority, the Ombudsman, the High Council of Personnel Selection and the Authority for Communications Security and Privacy.

It would be interesting to make an introduction to a new similar authority, the Independent Authority for Public Revenue, broadly known as IAPR, and to examine it particularly in the matter of revenue collectability.

## **2. From the Secretariat General for Public Revenue to IAPR**

IAPR was established on 01/01/2017 by memorandum-centered law 4389/2016. Initially, in 2012, the State proceeded to the institutionalization of the Secretariat General for Public Revenue, in the period of Memorandums of Understanding (MoU), which began in 2010 and goes on to date (although the Greek government has announced the end of the memorandums period in August 2018)<sup>39</sup>. The initial scheme, suggested by the international creditors, was established in order to be transformed gradually into an independent authority, namely as it has been nowadays.

The Governor of IAPR is a freelance lawyer, who took on the duty of the (last) Secretary General in January 2016. An authority that is independent should also thoroughly appear as an independent one.

It is notable that IAPR is not the first independent authority to have been created under the pressure of European Commission, in the current era of memorandums<sup>40</sup>. By law 4013/2011

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<sup>39</sup> A. Maniatis, *Les aspects juridiques de la crise économique de la Grèce*, HREL International Edition 2018.

<sup>40</sup> A. Maniatis, *Partenariats Public – Privé et autorités indépendantes*, Constitutionalism.gr, 28.12.2017, p. 18.

was introduced in the Greek legal order the Single Independent Authority for Public Procurement. This institutional model is competent for legal aspects and also managerial ones of the works, supplies and services public contracting. So, from 2012 and on, the public procurement law of Greece has been marked by a set of the following public independent organs exercising administrative (not judicial) competences: “Single Independent Authority for Public Procurement – National Broadcasting Council – Court of Auditors”. The Greek State did not avoid the error of institutional inflation as for the independent authorities, by activating in 2017 an original independent authority in the same sector, the Authority for Prejudicial Recourses Examination.

The old authority for public contracting, which initially had a rather marginal mission on the matter, was essentially downgraded through the addition of the new mechanism. It is notable that the newly-created organization of quasi-judicial mission, which has not been imposed by the international creditors, could decongest the burden of courts. So, it results another significant characteristic of the new era of memorandums, the use of independent authorities to avoid trials.

### **3. No independence as for the selection of the - ambivalent - leaders of IAPR**

IAPR has been called “autonomous” by its doubters<sup>41</sup>. As implied by the use of the quotation marks, there is no autonomy, at least in juridical terms. In other words, this authority would be autonomous as long as it could be capable to emit regulations (in form of administrative acts) without a legislative authorization, namely independently to formal laws. Public Administration is endowed with a regulatory competence on the basis of legislative authorization, so it has no autonomy in terms of initiative and determination of normativity.

According to article 1 of establishing law, IAPR enjoys operational independence (whilst law in reality does not attempt to consecrate only the operational independence but also the personal one) as well as administrative and financial autonomy. It is not subject to scrutiny or supervision by government bodies, State carriers or other administrative authorities. However, it is subject to parliamentary scrutiny, in accordance with the Parliament’s Rules of Procedure and the procedure laid out in article 4 of the same law.

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<sup>41</sup> M. Panagiotou, D. Ioakeimidou, *The « odd autonomy » of the IAPR*, Dimokratia Saturday 31 March 2018, p. 03 (in Greek).

IAPR is endowed with two separate management bodies, the Management Board and the Governor, exercising the powers laid out in articles 9 and 14 respectively, of the aforementioned law. It is to signalize that the majestic title ‘‘Governor’’ is used in English by IAPR itself<sup>42</sup>. It is abnormal for an organ, merely conceived as the chief of an administrative authority, let alone the fact that this authority is not endowed with the status of a legal person. The title in Greek should be literally translated in English ‘‘Administrator’’ and not ‘‘Governor’’, being a term with a rather authoritarian sense.

The mode of selection of the Board is odd, as the legislator has invented a new organ, the so-called independent ‘‘Selection Committee’’. Besides the 5 members of national designation, the Committee comprises, uniquely for the first 7 years of operation of the Authority, two representatives that are designated by the European Commission. The Minister of Finance, who anyway controls some of the 5 aforementioned members, has the competence to select the members of the Board among the candidates short-listed by the Committee, with the agreement of the Institutions and Transparency Commission of the Parliament.

As far as the person occupying the office of the Governor is concerned, it is selected by the Minister. According to par. 1 of article 15, the selection of the Governor is held through open tender whilst the aforementioned independent Selection Committee shortlists the 4 leading candidates and, according to par. 4 of article 15 and par. 4a of article 9, the Management Board classifies the two leading candidates and submits the relevant proposal to the minister, who selects the Governor by emitting a motivated decision.

Besides, according to par. 4b of article 9, the Board gives its agreement on the conformity of the Governor’s performance contract to the targets included in the strategic and business plan and follows up the execution of this Governors’ performance contract.

During the first five years of operation of IAPR, there is a figure typical of the current era of memorandums, the so-called Expert. This technocrat is supposed to provide his advice to the Management Board and is endowed with the right to participate in its meetings without the right to vote, like the Governor does. So, it is about essentially a supervisor, acting on behalf of European Union, and particularly of European Commission. However, the Expert is selected uniquely by the Minister, from a list of three candidates, which is formed by European Commission.

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<sup>42</sup> IAPR, *Establishment and operation of IAPR*, 2017 <http://www.aade.gr/sites/default/files/2017-04/IAPR.pdf>.

#### **4.The question of the contribution of the IAPR to revenue collectability**

Public Administration perhaps seems to be satisfied with the recent jurisprudence of the Council of State, which blocked tax evasion sanctions. With more than one decisions the tribunal has recently judged the legislative measure, of prolongation of the control periods (exempted from prescription) as unconstitutional. So, as a general rule, the tax Administration, nowadays IAPR, may control the income of tax payers only for a 5-year period. According to the press criticism, this development has led the Public Administration to close definitely thousands of tax income cases till 2011, of financially powerful tax payers, who are included in the notorious lists of suspects for an extended tax evasion<sup>43</sup>.

The prolonged phase of “reorganization” of tax public services in the years of application of memorandums and the systematic downgrade of the Service of Economic Crime Prosecution were the factors that led thousands of cases to prescription. So, it results the synergy between the tax evasion and the interweaving of interests, in the period prior to the legislative adoption of IAPR. That perspective had been signalized in time by the syndicalist movement towards both the political leadership of the Ministry of Finance and the leadership of IAPR.

Besides, the press has highlighted the serious case of the delay of the prosecutor control in the matter of whether the write-off and the reduction of taxes, occurred by the competent service of the Minister of Finance, for the period from 1/8/2013 till 31/7/2016, were illegal or not. It is impressive the fact that the Dispute Resolution Directorate (which actually is a part of IAPR), in the beginning of its operation, in 2013, proceeded to a very small number of write-offs whilst in 2015 and in 2016 write-offs increased drastically<sup>44</sup>.

However, it is common belief that the “electronic cross-check system for bank deposits and tax affairs”, put into practice by IAPR just in March 2017, was a necessity<sup>45</sup>. Doubters of the IAPR support that if this system had been applied earlier, the great part of the “tax payers elite” would not have remain unexamined, particularly in combination with the aforementioned jurisprudence on prescription. It is also notable that from 9 May 2018 and on, tax payers have been endowed with the possibility to submit in electronic way their recourse before the Dispute Resolution Directorate against the acts of 5 public economic services.

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<sup>43</sup> M. Panagiotou, D. Ioakeimidou, *Essentially uncontrollable (!) the IAPR*, Dimokratia, H. Monday 2 April 2018, p. 05 (in Greek).

<sup>44</sup> M. Panagiotou, D. Ioakeimidou, *The « odd autonomy » of the IAPR*, Dimokratia Saturday 31 March 2018, p. 03 (in Greek).

<sup>45</sup> M. Panagiotou, D. Ioakeimidou, *Heavy responsibility for the prescriptions*, Dimokratia, H. Wednesday 4 April 2018, p. 04 (in Greek).

#### 4. Conclusion: Post-democracy: from Government to ... ‘Governor’!

The authority is considered to have enacted an important role in the national economy, not only in symbolic terms but also in real ones, in the current crucial phase of the economic crisis of Greece, whose economy has been officially supervised by the international creditors since 2010.

It is notable that criticism against IAPR, coming from press, does not adopt a single approach but a rather unclear one, as for the mode of designation and the way of accomplishing its mission. According to this approach, the authority, on the one hand, constitutes an organ exempted from national (governmental and administrative) control but is controlled by international creditors and, on the other hand, tends to favorize the non-perception of public revenues.

We believe that the authority does not constitute, at least clearly, an authentic administrative authority in terms of independence and of amount of powers against the Ministry of Finance. It is obvious that it has contributed in a significant way to the modernization of tax Administration, although some aspects of this attempt have been prepared before its creation, like the activation of the “electronic cross-check system for bank deposits and tax affairs”. The community of professional accountants and tax consultants recognizes particularly the value of the important mission of the Dispute Resolution Directorate, from 2013 and on.

However, in terms of Constitutional and Administrative Law, the quality of the Greek political regime has been essentially altered through the European Union institutional interventions<sup>46</sup>. As far as IAPR is concerned, it has significantly aggravated the image of the sovereign Greek Republic in the authoritarian direction of post-democracy<sup>47</sup>: from democratically legitimized Government to troika-centered ‘Governor’. Post-democracy is emblematic for European Union itself whilst the jurisprudence of the European Union Court of Justice has raised severe criticism on the matter<sup>48</sup>. Anyway, post-democracy has begun to

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<sup>46</sup> I. Kamtsidou, *Un état d’exception nullement exceptionnel. La crise souveraine et le crépuscule de la Constitution. Un aperçu historique*, Constitutionalism, 07-09-2015.

<sup>47</sup> I. Kamtsidou, *Démocratie et citoyenneté européennes : quel avenir pour les peuples de l’Europe ?*, Constitutionalism.gr, 4-3-2014.

<sup>48</sup> C. Yannakopoulos, *La Cour de justice de l’Union européenne et la crise de la zone Euro : « La Trahison des images »*, Constitutionalism.gr, 02-04-2017, p. 19.

become essential even for the Greek State...<sup>49</sup>. It is crucial to attempt to avoid bankruptcy, let alone the political one...<sup>50</sup>

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<sup>49</sup> F. Farah, *La Cour de justice de l'Union européenne : agent d'un 'fédéralisme furtif' et alliée de l'austérité*, lundi 11 avril 2016, <http://l-arene-nue.blogspot.gr/2016/04/la-cour-de-justice-de-lunion-europeenne.html>.

<sup>50</sup> C. Yannakopoulos, *Un Etat devant la faillite: entre droit et non-droit*, Constitutionalism.gr, 10-12-2013, p. 2.

## **The Greek case on e - signatures, the Directive 1999/93/EC and the Regulation (EU) No 910/2014.**

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### ***Abstract***

*The Directive 1999/93/EC took effect in 1999, thus it has been around for many years.<sup>51</sup> Now we are confronted with new legislation,<sup>52</sup> specifically the Regulation (EU) No 910/2014.<sup>53</sup> Although it is not clearly mentioned, as happened with the Directive, the Regulation defines the framework for digital signatures and specifies related and additional details.<sup>54</sup> The Directive and the Regulation almost coexisted in many fields as prescribed in the Regulation, until the 1<sup>st</sup> of July 2016, when the Regulation entered full legal status.*

### **1. Introduction**

Both the Regulation and the 1999s Directive deals with e – signatures.<sup>55</sup> While the general notions of e – signatures remains the same, differences can be found on technical requirements or higher technological levels.

The official definition of the e – signature, according to the Directive we can find in the 1<sup>st</sup> paragraph of the 2<sup>nd</sup> article. Electronic signature means data in electronic form which are attached to or logically associated with other electronic data and which serve as a method of authentication. On the other hand, there is a new definition contained on the 10<sup>th</sup> paragraph of the 3<sup>rd</sup> article of the Regulation which is as follows: «‘electronic signature’ means data in electronic form which is attached to or logically associated with other data in electronic form and which is used by the signatory to sign».

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<sup>51</sup> From now on the Directive.

<sup>52</sup> See G. Sartor, Virtual rules and Internet law. Informatik-Wirtschaft-Recht: Regulierung in der Wissensgesellschaft. 2007, p. 561, for the theoretical relation between law, virtual rules and the Internet.

<sup>53</sup> From now on the Regulation.

<sup>54</sup> See the official title of the Directive: «DIRECTIVE 1999/93/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 December 1999 on a Community framework for electronic signatures». As results from the title of the Regulation: «REGULATION (EU) No 910/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF THE 23 July 2014 on the electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC».

<sup>55</sup> A first approach of e – signatures and the relation between e – signatures and the author of the digital document is given with the L. 2672/1999, see N. Dimaras, Commercial contracts through internet. DEE 2/2008 p. 168. For the relation of the two legal documents see K. Komninos, The new European legal framework for the electronic identification and trust services. EfADPol 6/2017, p. 499.

The definitions above mentioned are referred to the standard type of e – signature. Furthermore, there are also other types of e – signature: the ‘advanced electronic signature’ according to the Directive and the ‘advanced electronic signature’ and the ‘qualified electronic signature’ according to Regulation.<sup>56</sup>

According to the international practice there are different types of e – signatures. But it is clear from the two EU legal documents that only the expressed mentioned type of e – signatures are recognized officially within the EU. So e – mail addresses, internet sites, are not considered e – signatures in any case. The scope of this escalation is no other than to restrict and to more clearly define the e – signature as happened until now with the hand written signature.

## **2. The Directive 1999/93/EC and the Greek executive law Presidential Decree 150/2001**

The Directive posted for the first time a total and common definition of the e – signatures between the EU member states. It can be said that this official legal text was the first to join the notion of signatures with the electronic technology. Furthermore, it was the first attempt to establish the e – technology in transactions, e – commerce,<sup>57</sup> in private and public sector for the entire EU space.<sup>58</sup> Also to recognize for the first time the legal value of e – signatures and also to give them legal value in correspondence with the hand written signatures.<sup>59</sup>

The Directive established from the beginning a dual level type of e – signatures.<sup>60</sup> The first one is the ‘e – signature’ as mentioned before in the introduction and the second type is the ‘advanced electronic signature’. Certain requirements given from the Directive in the 2<sup>nd</sup> paragraph of the 2<sup>nd</sup> article distinguish the simple e – signature from the qualified one.

The four points that require for the qualified e – signature in order to differ from the other type of e – signature must be full field technically to give the higher certification for the advanced e – signature. The first three of them are related with the signature from one hand and the signatory on the other. Meanwhile the fourth requirement sets the standard that can reveal any possibly change between the two masses of data, i.e. the data sent from the sender and the data received by the recipient. This point was based on the use of two PINS (Personal Identification Numbers).<sup>61</sup> The first PIN is public

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<sup>56</sup> For these definitions, see the text of the Directive and the text of the Regulation relatively.

<sup>57</sup> Strictly concerning e – commerce we mention the Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (‘Directive on electronic commerce’).

<sup>58</sup> For the conclusion of e – transactions by electronic means, see E. Alexandridou, The law of electronic commerce. Sakkoulas, 2010, p. 47.

<sup>59</sup> See the preamble of the Directive n. 20.

<sup>60</sup> See E. Alexandridou, The law of electronic commerce. Sakkoulas, 2010, p. 51 and 52, for the analysis of the two types of e – signature.

<sup>61</sup> For the use of the PINS, private and public, see Christos Mouzakis, Electronic contracts and Entrepreneurship in the Collective Volume: Law as the foundation of a modern and growing economy. Greek Jurists’ Union ‘e-Themis’. Nomiki Bibliothiki, Athens 2016, p. 315.



key used by the sender to seal and then send the electronic document and the second PIN is a private key used by the recipient to open the document to make it readable and to certify that there was no distortion or any change between the initial sent document and the received one.<sup>62</sup>

The Directive did not settle specific technology standards for both types of e – signatures. Only certificates must be issued and used according to the requirements of the article 2 and the ANNEXES at the end of the Directive. The legal framework posted from the Directive, has left enough free space for ITC scientists to create the technical – technological framework for the right application of the Directives content. We have to underline that the scope of the Directive is to leave the member states the way to cover the requirements posted from the EU legislator. In any case every government could adopt its own technical – technological level in order to incorporate the Directive.<sup>63</sup> The freedom of choice of the technical means and of the technological level for the creation and application of the e – signatures brings an uncertainty for the safety of the integrity of the e – signatures. In other words this may lead to an uncertainty in the validity of the transactions in general.

The interference of the Directive in all this infrastructure remains at the lower level. Therefore the Members States and the Commission are allowed to proceed on the basis of their own legal framework and recognize the e – signatures as the handwritten signatures, leaving the parties (especially in private law cases) to form a signature recognition system according to their needs.<sup>64</sup> An important chapter for e – signatures is the contract law. The priority of the Commission is to respect mainly the contract law, in order to have valid contract conclusion. The Directive encourages the use of e – signatures at all levels of administration, including internal (between citizens and public offices) and external (between citizens and EU Institutions).<sup>65</sup>

As previously mentioned, the main purposes of the Directive were two: first to establish the use of e – signatures and secondly the achievement of this scope with no interference within the legal rules of the member states and the Community.<sup>66</sup>

Specifications given in the 2<sup>nd</sup> article are to be used as definitions not only for the purpose of the Directive, but also to create the Community framework for e – signatures. The list of definitions contained in the text of the Directive, give a certainty for the user to proceed with these new tools for the conclusion of various legal transactions.

A special note is given in the 7<sup>th</sup> paragraph of the 3<sup>rd</sup> article of the Directive. The note refers to the use of e – signatures for the public sector with proportional measures with the e – signatures used

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<sup>62</sup> About the use of the PINS Private and Public see Al. Varveris, The “electronic document” in the E.U. Law and the importance of the electronic signature. DIMEE 4/2016, p. 514.

<sup>63</sup> See the preamble of the Directive n. 13.

<sup>64</sup> See the preamble of the Directive n. 16.

<sup>65</sup> Mentioned at the preamble 19 of the Directive.

<sup>66</sup> According to the 1<sup>st</sup> article of the Directive.

at the private sector. This diversification offers the creation of two types of e – signature for the same signatory – user.

It is also recommended that between Member States there will be a mutual recognition for the use of all e – signature products. So there will be no different barriers within the internal market at least.<sup>67</sup>

The legal framework regarding the validity of e – signatures is prescribed in the 5<sup>th</sup> article of the Directive. The exact content of this article is the recognition level of e – signatures in comparison with the handwritten signatures. The effects of the e – signature are equal in legal terms with the handwritten signatures and they are admissible as evidence in legal proceedings.<sup>68</sup>

Liability and responsibility aspects are anticipated within the Directive in the 6<sup>th</sup> article. Mainly, there are given specifications for the liability of the providers of the certification services based in the Member States. Moreover, for the facilitation of cross – border transactions Member States shall promote the cooperation needed with other countries for the mutual recognition of certificates and service providers.

Pursuant to the Directive,<sup>69</sup> all Member States must harmonize to the European policy for the e – signatures and operate in conformity with the Directive 95/46/EC for the protection of personal data. In any case, data can be retreated and used in respect of the E.U. law and national legal systems, even thought using and pseudonyms if this is allowed expressly<sup>70</sup>.

It is important to underline that at the 12<sup>th</sup> article of the Directive is forecasted that the Commission in conformity with the review and the report,<sup>71</sup> must review the function of the Directive a few years after its first operation.<sup>72</sup> On that basis of technological and legal changes must redact a report and in consequence make a proposal to the European Parliament for any changes.

Punctually, for the implementation of the Directive we can find specific provisions at the 13<sup>th</sup> article, whereas Member States shall regulate and take all appropriate measures in legal terms and in technology field to fulfill the requirements of the Directive. To accomplice all these aspects, Greece legislated to put into effect Presidential Decree 150/2001.<sup>73 74</sup>

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<sup>67</sup> As posted at the 2<sup>nd</sup> par. of the 4<sup>th</sup> article of the Directive.

<sup>68</sup> In theory see also Al. Varveris, The “electronic document” in the E.U. Law and the importance of the electronic signature. DIMEE 4/2016, p. 515.

<sup>69</sup> See article 8, par. 1.

<sup>70</sup> Pseudonyms are allowed and can be used instead of the signatory's real name.

<sup>71</sup> As posted at the 2<sup>nd</sup> par. of the 12<sup>th</sup> article of the Directive.

<sup>72</sup> For details see article 12 of the Directive.

<sup>73</sup> From now on the P.D..

<sup>74</sup> Presidential Decree 150/2001 Title Adaptation to the Directive 99/93/EC of the European Parliament and the Council relative with the community frame for the electronic signatures.

Directly from the beginning, P.D. 150/2001,<sup>75</sup> illustrates the framework of the legal document. Initially it is clearly underlined that within this P.D. Greek legislation adopts the pre mentioned Directive. Then follows a number of definitions useful for the validity and the execution of the P. D.. Substantially, all the thirteen definitions of the Directive are translated to the Greek language. We could say for the uniformity of the E.U. law the two papers are similar. Only some diversification details can be found for the substantial and procedural law of the Greek legal system.

The 3<sup>rd</sup> article of the P.D. clearly expresses that advanced e – signature issued in the basis of the qualified certificate and is produced by a secure signature – creation device is equal with the handwritten signature, according to the Greek law. This equivalence between the two types of signature consist a great path for the establishment of the new institution of e – signatures.

It is important to mention that the forecasting Committee of the 3<sup>rd</sup> article of the Directive, in compliance with this Greek government settled, is named in the P.D. the National Telecommunications and Post Commission.<sup>76</sup> This Commission has the power to give license to other entities (institutions and or companies), which can issue certificates, Certification service providers act under the control of the National Telecommunications and Post Commission.

Another critical point of the P.D. is the certification services and their providers. As stated at the 5<sup>th</sup> article of the P.D. services offered from provider sited in Greece are regulated according to the Greek law. The same applies for the function of the providers of these services, so they have to be conform to the Greek law and under Greek authorities control.

Further, is regulated that qualification services provided from another Member State of the E.U. to another one are submitted under E.U. law. Also, all of these services must be considered with no further procedures as equal between Member States.<sup>77</sup>

Then follows international aspect when the provider of the certification is based out of the E.U. borders. In that case, the P.D. prescribes the necessary requirements so the provider itself and the services provided from him are conformal to the E.U. law.

Moreover, there are posted three requirements from the P.D..<sup>78</sup> The first talks about the out border provider, and that it can be recognized and its services if the entity is voluntarily before recognized at a Member State. The second element needed so as to be recognized a certificate is that for that certificate must obtain the guaranty of a provider based within a E.U. Member State and that provider is functioning according the provisions of this P.D.. The last point settled from the P.D. is that the recognized certificate issued by a provider is recognized under bilateral or multilateral agreements firmed between the E.U. and third States or International Institutions.

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<sup>75</sup> See article 9 of the P.D. 150/2001.

<sup>76</sup> For details see the official website: [www.eett.gr](http://www.eett.gr)

<sup>77</sup> As provided at the 5<sup>th</sup> article of the P.D.

<sup>78</sup> As stated at the 4<sup>th</sup> par. of the 5<sup>th</sup> article of the P.D.

Responsibility of the providers for their services is regulated under the 6<sup>th</sup> article of the P.D.. There are given the general lines when a person who incurred damaged from the services of the provider can be recompensed and when a provider is not obliged to do so. Also a special reference is contained in the 6<sup>th</sup> paragraph of the 6<sup>th</sup> article of the P.D. where it is mentioned that this specific article must be compatible with the content of the Law 2251/1994 concerning consumer protection.

Among the key points of the P.D. is the protection of personal data. Pursuant to this certification service providers and the National Telecommunications and Post Commission must act carefully under the provisions settled from the Greek laws for the personal protection from the elaboration of data of personal character. In general, it can be said that certification service providers can retreat only directly data from the interested person or with its own consensus, data retreated from a person must be necessary for the issue and the conservation of the certificate. In any case, the collection and the elaboration of these personal data is prohibited for other purposes without the prior consent of the interested person. Then follows the point of the use of pseudonyms. These are allowed instead of using of the name of the signatory person. In any case the identification of the signatory is completed before the use of the pseudonym for the certification service provider.

As entity supervisor for the compliance of the content of article 4 of the P.D. is referred the General Secretary of Telecommunications of the Ministry of Transport and Communications of the Greek government. Always in the same article 8<sup>th</sup> of the P.D. there is mentioned that the competence to inform the European Commission for the names and the directions of all the accredited national certification service providers.

### **3. The Regulation (EU) No 910/2014**

Regulation 910/2014 is the legal document that is officially replacing the Directive.1999/93. This is clearly mentioned in the title of the Regulation. After fifteen years a new law repeals the status posted by the Directive. This change can be also justified because of the changes of the technological – technical status already used for the production of the today's e – signature.

As posted from the preamble n. 2 of the Regulation, the scope of the Regulation is to create a common framework between Member States for the preparation and analogical recognition of the e – signature. As well, the establishment of a mutual recognition inside the E.U. States is settled by the Regulation.<sup>79</sup> It must be said that the Regulation provides a minimum adjustment related to the public services.<sup>80</sup> In any case similar regulation must be obtained for the private sector. A reference is given at n. 13 of the Regulation preamble, where it gives the Member States the power to involve the private

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<sup>79</sup> See preamble n. 11 of the Regulation.

<sup>80</sup> According to preamble n. 12 of the Regulation.

sectors for the electronic identification for the access of on – line services. Under these provisions we are not sure that the Regulation gives a stable joined framework for Member States.

The notions of electronic identification and authentication are clearly mentioned which together with the e – signatures can facilitate and promote the digital economy as a whole.<sup>81</sup> The principles of mutual recognition of electronic identification between Member States can be found in the preamble of the Regulation,<sup>82</sup> such as important topics for the uniformity of E.U. electronic law.

At the beginning the Regulation gives some direction for the technical part of electronic identification and relative trust services.<sup>83</sup> Especially it is unavoidable the diversity of the technological level used by the users of electronic means, by the trust services, such as companies, by the supervisor bodies of Member States. It must be adopted a minimum safety technological net and or as settled by the Regulation open to the new technological innovations for elimination of problems based on different used technologies within Member States and their citizens and or electronic service providers situated within a Member State. Technological neutrality also gives more scope to the future, because of the technological progress, which changes the standard on electronic identification and electronic authentication rapidly. On the other side, technological neutrality at that point probably creates uncertainties between users of these “electronic products”, and also between third parties who are going to certify the above noted “products”.<sup>84</sup>

A matter of security is the use of pseudonyms in certificates.<sup>85</sup> As provided from the Regulation in the preamble n. 33, pseudonyms are acceptable. But Member States can adopt any measures to identify the person – user of the pseudonym according to State and E.U. law. This has to balance between freedom of speech and security level in the field of electronic identification and trust services.<sup>86</sup>

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<sup>81</sup> See n. 5 of preamble of the Regulation. In theory Al. Varveris, The “electronic document” in the E.U. Law and the importance of the electronic signature. DIMEE 4/2016, p. 517.

<sup>82</sup> See the n. 14 and 15 for example of the preamble of the Regulation. In theory for the e – identification see K. Komnios, The new European legal framework for the electronic identification and trust services. EfADPol 6/2017, p. 503.

<sup>83</sup> As results from the content of the preamble n. 19, 26 and 27 of the Regulation. See also the theoretical approach of K. Komnios, The new European legal framework for the electronic identification and trust services. EfADPol 6/2017, p. 503-504.

<sup>84</sup> Relatively for the technical level used for electronic identification and authentication within E.U. see preamble n. 19, 26 and 27 of the Regulation.

<sup>85</sup> About the use and the various degrees of anonymity, see Grijpink J H A M and Prins J E J, ‘New Rules for Anonymous Electronic Transactions? An Exploration of the Private Law Implications of Digital Anonymity’ 2001 (2) The Journal of Information, Law and Technology (JILT).

<sup>86</sup> Generally, anonymity and freedom of speech are very important rights of the Cyberspace, see P. Vogiatzis, The freedom of speech in the Internet: A “great, new world” according case law of the EDDA. DIMEE 3/2016, p. 377. Also for the connection between the Reg. (EU) No. 679/2016 (GDPR) and the Reg. (EU) 910/2014, see Christos Mouzakis, Comments on the new Regulation (EU) 2016/679 of the European Parliament and the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation). Collective Volume: Medicine, Law and the Internet. Nomiki Bibliothiki, Athens 2018, p. 370.

The Regulation refers at the trust service providers, putting the basic requirements for their legal establishment and operation. Provisions for the controls under which are submitted and the interoperability between trust service providers of the Member States are contained at the Regulation.<sup>87</sup>

Specific note for e – signatures can be found in rapport with the technological security level. At that point the Regulation also accepts e – signatures which are created by lower security standards. An example is given within the context of the Commission Decision 2009/767/EC.<sup>88</sup> This procedure, at least from one point of view, boosts the flexibility of the use of e – signatures and it facilitates the rapidity of the e – transactions in general.

The preamble of Regulation,<sup>89</sup> states there must be at least a minimum level of legal effect for the e – signatures of the simplest type.<sup>90</sup> This promotes the general use of e – signatures and enforces the circulation of simple creation e – signatures for example for small value transactions and or for non value agreements. At the same time the Regulation sets the standard that qualified e – signatures and handwritten signatures are equivalent in legal terms.<sup>91</sup>

Although advanced e – signatures can be based on different formats; at least a minimum number must be recognized by all Member States with the scope to retain an interoperability of this type of signature between Member States. In other words every Member State is obliged to support the creation, expedition and the reception of advanced e – signatures. Furthermore, Member States has to maintain all the infrastructure and procedures to facilitate the full scale service of advanced e – signatures.

The preamble of the Regulation mentions qualified e – signatures.<sup>92</sup> It forecasts that a signatory should have the possibility to trust third parties to create the mechanisms for the appropriate function of the qualified e – signature.

The issues of interoperability and cross border recognition of qualified certifications and qualified e – signatures are indicated by the Regulation. Also legal certainty is asked with the precise rules posted by the Regulation. Although concrete standards are mentioned of technology level needed for the acceptable certifications,<sup>93</sup> it must be a great concern the multilevel security – technology and the facilitation of new – advanced technologies. This rule impels the open architecture systems and gives a timeless character at the Regulation itself.

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<sup>87</sup> See preamble n. 34, 35, 36 and 37 of the Regulation.

<sup>88</sup> As provided at the preamble of the Regulation n. 48.

<sup>89</sup> See preamble n. 49 of the Regulation.

<sup>90</sup> Here we define as the e – signatures as the none qualified and the not advanced e – signatures.

<sup>91</sup> Clearly defined at the preamble of the Regulation n. 49.

<sup>92</sup> For the qualified e – signatures and the creation device under the care of the third trusted party see preamble n. 51 of the Regulation.

<sup>93</sup> See details written at the preamble n. 55 and 56 of the Regulation.

Electronic – seals are provided formally at the Regulation.<sup>94</sup> Also a similarity is provided between the e – signature and the e – seal. This equivalence is based on several similar functions recognized between (e –) signature and (e –) seal. Proportionally, as happened with the classic forms of signature and seal of the past, implications relative to future technological changes are acceptable and guarantee a long term period of legal validity of e – signatures and e – seals.

The Regulation focuses on the validity of qualified electronic time stamps. Under these provisions, qualified trust service providers shall work to keep at least the minimum standards required from the Regulation so as to merge other methods of certification and authentication from advanced electronic seal or advanced electronic signature used.<sup>95</sup>

Electronic documents are regulated within the preamble of the Regulation.<sup>96</sup> It is an important principle of legal validity concerning of electronic documents because these documents constitute the subject of electronic transactions.

The status of registered delivery services is a new topic for the electronic legislation. In order to ensure a common framework for registered delivery services between Member States, there is recognition of electronic registered delivery services and the creation of a pan-European registry of such services.<sup>97</sup>

Uniformity of EU law imposes rules that Directive 1999/93/EC is replaced by this Regulation. The path from the Directive to the Regulation for this electronic matters means that the European legislator would like to ensure the common frame and common status for electronic authentication, electronic certification electronic signatures, electronic seals, electronic stamps and electronic documents is identical for all Member States. This gives certainty to electronic transactions and electronic commerce in general.<sup>98</sup>

This Regulation defines a legal framework for adequate and common level for the recognition and use of electronic identification means and trust services. The assurance of this common status for the electronic identification means and trust services valid for all Member States, establish the base for rapid and secure use of many electronic services,<sup>99</sup> which benefits natural and legal persons – users of these electronic means and services.

As well, the Regulation contains a number of definitions which specifies electronic means and services for the users and for public authorities and governments. These forty one definitions of the third article of the Regulation indicates the intention of the E.U. legislator to create an enormous

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<sup>94</sup> First mentioned the e – seals at the n. 58, 59 and 60 preamble of the Regulation.

<sup>95</sup> See the n. 62 of the preamble of the Regulation.

<sup>96</sup> Special report for the e – documents is given at the preamble n. 63 of the Regulation.

<sup>97</sup> This new provision is in the preamble n. 66 of the Regulation.

<sup>98</sup> For transitional measures between Directive and Regulation there is a provision at the preamble of the Regulation n. 74.

<sup>99</sup> Under e – commerce functions.

body of rules for the benefit of the users of such electronic services and means and also to boost electronic commerce and electronic economy as well.

Another important point within the Regulation is the equal acceptance and thus the interoperability within the internal market and between Member States for trust services and their providers. Electronic means and services in compliance with the Regulation can be used without restrictions in the E.U. area.<sup>100</sup>

It is clearly set the permission of use of pseudonyms in electronic transactions.<sup>101</sup> That means that the user of such electronic services and means can freely choose its proper name. Before reaching that stage it must be said that the user has to be identified by the electronic service provider.

Articles 7 and 8 of the Regulation respectively explain the criteria according to the eligibility for notification and assurance levels of electronic identification schemes. These rules provide the importance of the relation between the person and its electronic identification. Furthermore the observance of these standards mentioned above, can help the normal, quick and safe procedure of creating and use of electronic identification and authentication services.

Thereafter articles 9 and 10 of the Regulation forecast for the notification of electronic identification schemes and several details which must be sent from Member States to the Commission. These elements must be notified to the Commission and must be sent any possible breach in relation with the security of electronic identification schemes.

Liability issues and issues regarding the recompense of persons who were damaged intentionally or negligently by a Member State proceeding, not in compliance with the provisions of the Regulation, are settled by the Regulation.<sup>102</sup> The same effect has the liability for the party issuing the electronic identification scheme and the party operating the authentication procedure. The detailed procedure of liability is controlled in accordance of national law provisions.

As we have seen in different articles of the Regulation one of the interesting themes of the Regulation is the principle of cooperation and interoperability. The title of the 12<sup>th</sup> article of the Regulation “Cooperation and interoperability”, shows – underlines clearly that the intention of the European legislator is to achieve this goal within specific procedures confirming with this article. Conditions placed in the article 12 of the Regulation indicate that Member States must act in conformity with the technical criteria for the mutual recognition of the electronic identification schemes.

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<sup>100</sup> As ruled at the 4<sup>th</sup> article of the Regulation.

<sup>101</sup> See article 5 of the Regulation.

<sup>102</sup> Article 11 of the Regulation gives details for the liability issue.



Chapter III of the Regulation provides rules related to the trust services.<sup>103</sup> Furthermore, under this Chapter can be found a series of provisions which explains points regarding liability of the trust service providers, international aspects of the functionality of the trust service providers and accessibility for persons with disabilities. Supervisory bodies must be nominated by Member States with specific role and function. Mutual assistance and security requirements are settled for the function of the trust service providers. Articles 18 and 19 of the Regulation put some standards for mutual assistance between supervisory bodies and technological security level regarding the trust service providers and for the safeguard of their services. Afterwards follow a detailed reference for the supervision of qualified trust service providers the starting of such a qualified trust service indicating in parallel the procedure that must be full field from the trust service provider before issuing concrete services.<sup>104</sup> Then, according to the text of the article 22 of the Regulation there must be formed lists including information about qualified trust service providers with relative information. The next article 23 of the Regulation speaks for the European trust mark for qualified trust services. Moreover, article 24 of the Regulation give concrete details for specific requirements for the functional mode of the qualified trust services.

Chapter 4 may be the most important and practical of the entire Regulation. The articles of this Chapter focus on the electronic signatures. In that context there are stated the legal effects of the electronic signatures and the assessment in comparison with the hand written signatures.<sup>105</sup>

Other rules of the same Chapter determine the requirements for advanced electronic signatures,<sup>106</sup> the requirements asked for the use of the electronic signatures in public services,<sup>107</sup> the requirements of the validity of the qualified certificates for electronic signatures,<sup>108</sup> the requirements for qualified electronic signature creation devices.<sup>109</sup> Respectively, in the same Chapter there are posted details for the certification of qualified electronic signature creation devices.<sup>110</sup> In the article 31, there is included the obligation of the Member States to create and publish a list of certified qualified electronic signature creation devices. Following articles 32, 33 and 34 of the Regulation give the requirements for the validation of qualified electronic signatures, define the qualified validation service for qualified electronic signatures and settle the status for the qualified preservation service for qualified electronic signatures respectively.

Electronic seals are the next general item examined by the 5<sup>th</sup> Section of the Regulation. Special report for the legal effects of the electronic seal is made under the article 35 of the Regulation.

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<sup>103</sup> Chapter III contains articles 13-45 of the Regulation.

<sup>104</sup> Provisions of article 20 plus articles 21, 22, 23 and 24 consists the content of the Section 3 of the Regulation with the title: "Qualified trust services".

<sup>105</sup> As stated at the article 25 of the Regulation.

<sup>106</sup> See article 26 of the Regulation.

<sup>107</sup> Article 27 of the Regulation.

<sup>108</sup> According to the article 28 of the Regulation.

<sup>109</sup> See the content of the article 29 and the ANNEX II of the Regulation.

<sup>110</sup> Article 30 of the Regulation put this important rule.

As in parallel with the electronic signatures of the precedent Section 4, at this Section 5, here are declared the requirements for advanced electronic seals, the use of electronic seals in public services, the qualified certificates for electronic seals, the qualified electronic seal creation devices and the validation and preservation of qualified electronic seals.<sup>111</sup>

Electronic time stamps are regulated at the 6<sup>th</sup> Section of the Regulation. There are details about the legal effect of electronic time stamps (art. 41) and the needed requirements for the legally use of the qualified electronic time stamps (art. 42).

An important and useful topic examined by the 7<sup>th</sup> Section of the Regulation is the electronic registered delivery services. In the article 43 of the Regulation can found the legal effects of an electronic registered delivery services. According next article 44 of the Regulation there are contained the requirements for qualified electronic registered delivery services.

Legal recognition is given to the electronic document. This type of document is acceptable by the Member States and no way denies its legal efficiency.<sup>112</sup>

As well the Regulation provides transitorily measures and other rules for its application. There is also reference for the replacement of Directive 1999/93 until the 1<sup>st</sup> of July 2016.

#### **4. Conclusion**

In theory, we have a balanced legal document which includes detailed legal terms, additional concepts and a greater number of tools for practice. The Regulation consists of a finer, upgraded law in comparison to the Directive. Nonetheless, we must see how effective this Regulation is overall. In the end, how well this new law functions will be determined as we continue to observe e – signatures, e – transactions, e – commerce, international markets and global growth.<sup>113</sup>

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<sup>111</sup> Respectively see articles 36, 37, 38, 39 and 40 of the Regulation.

<sup>112</sup> See article 46 of the Regulation.

<sup>113</sup> For the direct relation between the e – contracts and the entrepreneurship see Christos Mouzakis, *Electronic contracts and Entrepreneurship in the Collective Volume: Law as the foundation of a modern and growing economy*. Greek Jurists' Union 'e-Themis'. Nomiki Bibliothiki, Athens 2016, p. 317-318.





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